ANALYSIS AND PRELIMINARY DETERMINATION
FOR THE CONSTRUCTION PERMIT FOR
THE PROPOSED CONSTRUCTION OF PROCESSES P01, P02, P03, P04 AND P05; AND
BOILERS B10, B11 AND B12

AND

ANALYSIS AND PRELIMINARY DETERMINATION
FOR THE OPERATION PERMIT FOR
A NEW PAPER COATING AND WOOD LAMINATION FACILITY FOR
ABET USA - JOHNSON CREEK,
TO BE LOCATED AT
1000 ABET WAY,
JOHNSON CREEK, JEFFERSON COUNTY, WISCONSIN

Construction Permit No.: 25-MIN-136
Operation Permit No.: 12814087A-F01
Facility ID No.: 128140870

This review was performed by the Wisconsin Department of Natural Resources, Air Management Program, in accordance with Chapter 285, Wis. Stats., and Chapters NR 400 to NR 499, Wis. Adm. Code.

Copies of the permit review files, the department's analysis, preliminary determination and draft permit, and other materials considered by the department when making its preliminary determination can be found by using the Air Permit Search Tool located at http://dnr.wi.gov/topic/AirPermits/Search.html or by contacting Hanna Moscho at (920) 841-1619 or by e-mail at hanna.moscho@wisconsin.gov.

Approved by:	Barbara Pavliscak	4/3/2026
	(Regional Supervisor or Designee)	*(date)*
Prepared by:	Hanna Moscho	
Peer review by:	Dave Minkey	
Compliance review by:	Samuel Saeian	
Stationary source modeling by:	John Roth	

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INTRODUCTION

Sections 285.60 through 285.69, Wis. Stats., and chapters NR 405 through NR 409, Wis. Adm. Code, require certain types of stationary sources that emit or may emit air contaminants to obtain air pollution control permits. The Wisconsin Department of Natural Resources (hereinafter "department") issues air pollution control permits to new and existing sources of air pollution.

Stationary sources that are not exempt from the requirement to obtain a construction permit under ss. 285.60(2g), (3), (5m) and (6), Wis. Stats., or ch. NR 406, Wis. Adm. Code, may not commence construction, reconstruction, replacement, relocation or modification unless a construction permit for the project has been issued by the department. Sources that are not exempt from the requirement to obtain an operation permit under s. NR 407.03, Wis. Adm. Code, are required to obtain or renew an air pollution control permit to continue operation. Changes made to a source of air pollution may require a revision of a previously issued permit in accordance with chs. NR 406.11 and/or NR 407.11 through NR 407.14 and NR 407.16, Wis. Adm. Code.

Owners or operators subject to air pollution control permit requirements submit the appropriate permit application(s) to the department. The applications are reviewed following the provisions set forth in ss. 285.60 to 285.67, Wis. Stats. The criteria for permit approval are outlined in s. NR 285.63, Wis. Stats., and vary depending on whether the source is major or minor and whether the source is or is proposed to be located in an attainment or nonattainment area.

Prior to issuance of an air pollution control permit, the department is required to prepare an analysis regarding the effect of the proposed construction, reconstruction, replacement or modification and/or operation of the source on ambient air quality and make a preliminary determination on the approvability of the permit application based on the criteria in s. 285.63, Wis. Stats. This document is the department's analysis and preliminary determination for the air pollution control permit action(s) described herein and sets forth the legal and factual basis for the draft permit conditions. The analysis is based on the information contained in the permit application(s) and any additional information requested by the department related to the emissions of air pollutants sufficient to verify which requirements are applicable to the source. The analysis explains why the application(s) should be approved, conditionally approved, or disapproved and identifies the department's authority for the permit action(s) described herein. Any conditions for approval are contained in the draft permit prepared by the department. The conditions in the draft permit may be revised in any final permit issued based on comments received or further evaluation by the department.

A final decision will not be made on any permit until the applicable notification, public comment and hearing requirements in ss. 285.61 and/or 285.62, Wis. Stats., and/or ss. NR 406.11 and/or NR 407.11 through NR 407.14, Wis. Adm. Code, have been met.

GENERAL APPLICATION INFORMATION

Owner/Operator:	Abet USA - Johnson Creek 1000 Abet Way Johnson Creek, Jefferson County, WI
Responsible Official:	Giancesare Drocco CEO 1000 Abet Way, Johnson Creek, WI 53038 giancesare.drocco@abetlaminati.com
Application submittal date:	12/23/2025

Additional Information Submitted:	01/19/2026, 01/25/2026, 01/30/2026, 02/17/2026, 02/24/2026, 03/02/2026, 03/05/2026, 03/06/2026, 03/10/2026, 03/13/2026, 03/17/2026, 03/24/2026, 03/25/2026, 4/2/2026
Date of Complete Application:	4/3/2026

PROJECT DESCRIPTION

The Sigma Group, Inc. (Sigma), on behalf of Abet USA (Abet), submitted a construction and operation permit application for a new paper coating/wood lamination facility to be located at 1000 Abet Way in Johnson Creek, Wisconsin. Abet intends to close the existing facilities at 37031 East Wisconsin Avenue in Oconomowoc (FID #268009500) and 2620 Oak Avenue in Ashippun (FID #114007410) and relocate operations to the Johnson Creek location.

Abet proposes to manufacture high performance laminate (HPL) panels which are found in products such as office and school furniture, cabinets, medical carts and furniture, windows and doors. Abet will utilize proprietary technology to thermally fuse laminates (resin-impregnated paper) with or without wood core materials into panels. The panels are then fabricated into custom parts for customers.

Other Actions:

Because this is a greenfield facility, this construction permit will be processed with operation permit 12814087A-F01, which will cover operations at the entire facility. Operation permits are a vehicle for compiling air quality control requirements from other clean air act (CAA) programs and for providing conditions necessary to assure compliance with such requirements. Each operation permit includes the applicable requirements[*] as they apply to the emissions units at the facility, and such other conditions as are necessary to assure compliance with the requirements of ch. NR 407, Wis. Adm. Code.

Updates to chapter NR 439, Wis. Adm. Code, are effective July 1, 2025, and are reflected in Part I and Part II of the draft permit. Chapter NR 439, Wis. Adm. Code, includes requirements relating to reporting, recordkeeping, testing, inspection, and determination of compliance. Part I includes updated citations for permit conditions that cite chapter NR 439, Wis. Adm. Code. Part II contains general requirements that apply to all air pollution sources and contains the updated NR 439, Wis. Adm. Code, requirements which are different than requirements contained in Part II of previously issued permits. Among the requirements that have changed are deviation reporting requirements, monitoring equipment accuracy and calibration requirements, and malfunction prevention and abatement plan requirements. The updated requirements in Part II become effective upon issuance of the final permit.

SOURCE DESCRIPTION

Proposed operations include two paper coating (i.e. treater) lines to produce resin impregnated paper. Each treater will be equipped with a natural gas-fired curing oven. Emissions from the two treaters will be controlled by a regenerative thermal oxidizer (RTO).

A manual paper setup station will be used to stack high density particle/fiberboard and/or multiple layers of resin impregnated paper before placing them into one HPL press. Once inside the press, heat and pressure will be applied to the sheets or panels. VOC and HAP emissions occur in the setup station and HPL press.

Abet also proposes to operate two sawdust collection systems which will consist of a series of air/sawdust pickup locations for miscellaneous woodworking equipment associated with production at the facility. Each collection system will be routed to a fabric filter baghouse which will exhaust directly outdoors.

Two natural gas-fired boilers will be installed to heat the one HPL press. In addition to the natural gas-fired curing

[*] "Applicable requirement" is defined in s. NR 400.02(26), Wis. Adm. Code, and lists all of the types of requirements which are considered applicable requirements for the purpose of inclusion in an operation permit.

ovens and RTO on the two treaters, other natural gas-fired equipment will include make-up air units, unit heaters, and units for building heat.

Description of Proposed Facility Operations

Processes P01 and P02, Control Device C01 – Paper Coaters (or Treaters)

Two paper coating (treater) lines are proposed to be installed. A core of paper will be treated (or laminated) by running it through a resin bath. The excess resin will be scraped off before the resin impregnated paper is dried in an oven. The paper will be either sliced into sheets or recoiled into rolls. One treater line will use a phenolic resin (Process P01 - Treater #1) and the other treater line will use a melamine resin (Process P02 - Treater #2). Each treater will be equipped with a natural gas-fired curing oven. The curing oven for Treater #1 will have a maximum heat input capacity of 12 million Btu per hour. The curing oven for Treater #2 will have a maximum heat input capacity of 5 million Btu per hour.

Volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) will be the main pollutants from the two treaters. HAPs will include phenol, formaldehyde, and methanol. VOC and HAP emissions from both treaters will be controlled by a thermal oxidizer with a heat input capacity of 10 million Btu per hour.

Process P03 – Paper Set-up Station

A paper setup station is proposed to be installed to layer the phenolic and melamine resin impregnated paper as needed for the individual panels before they are placed into the HPL press. The resin impregnated paper from the phenolic treater will be used to form the core of the panel. The amount of resin impregnated paper will vary from panel to panel, depending on the customer's needs. The resin impregnated paper from the melamine treater will only be used as the top layer of the panel.

The setup station will consist of two side-by-side workstations where operators will sort/mix the stacks of resin impregnated paper in the exact order needed for each panel. Each workstation will have a capture hood. The exhaust from both capture hoods will be routed to a single duct before being exhausted to the outdoors uncontrolled via a stack. This process will emit VOCs and HAPs (phenol and formaldehyde). The maximum quantity of paper that can be sorted/mixed is estimated to be 2,000 pounds per hour.

Process P04 – High Pressure Laminate (HPL) Press

The stacked resin impregnated paper is proposed to be placed into the HPL press where the paper is pressed (or thermally fused) into a HPL panel under heat and pressure. The panels will be pressed in batches. For thick laminates (1/2-inch thickness), it is estimated that each batch will contain approximately 18 panels. For thin laminates (1/32-inch thickness), it is estimated that each batch will contain approximately 90 panels. The duration of a batch can vary from 45 minutes (smaller-sized batches) to 90 minutes (larger-sized batches) based on different production needs. The panels will be removed from the press and allowed to cool. A capture hood will be installed on top of the press. This process will emit uncontrolled VOCs and HAPs (phenol and formaldehyde). The estimated maximum quantity of panels that can be produced in one batch will vary from approximately 1,600 pounds (larger-sized batches) to 2,200 pounds (smaller-sized batches).

Process P05, Control Devices C05 and C06 – Sanding, Edging/Trimming, and Fabrication

Abet proposes to operate two sawdust collection systems for the sanding, edging/trimming, and fabrication areas which will consist of a series of air/sawdust pickup locations. Each collection system will be routed to a fabric filter baghouse which will exhaust outdoors. The exhaust fan for each collection system will be 25,000 cubic feet per minute. If all the equipment in the sanding, edging/trimming, and fabrication area operates at the same time, the air flow requirement will exceed 40,000 cubic feet per minute. Therefore, simultaneous use of the equipment will be dictated by the maximum exhaust flowrate to each baghouse.

Upon initial startup of the facility, Abet intends to have one sawdust collection system consisting of the HPL thin laminates sanding machine, two CNC machines, and a saw machine. The other sawdust collection system will include all remaining equipment. Following installation and startup of the edging/trimming line, Abet intends to have one sawdust collection system consisting of the HPL thin laminates sanding machine and the edging/trimming line. The other sawdust collection system will include all equipment in the fabrication area.

Sanding and Edging/Trimming Activities

Each HPL panel from the press, regardless of thickness, will have irregular edges and is slightly larger than the standard commercial sizes. Therefore, it will be necessary to trim the panels to the standard commercial sizes. This area will include two different lines: sanding machine and an edging/trimming line.

Sanding Machine – HPL Thin Laminates

Abet intends to use a sanding machine for HPL thin laminate panels. For thin laminate panels only (up to 1/16-inch thickness), one of the two large surfaces will be sanded to provide a surface that a customer will be able to glue a material to. Abet will not be performing the gluing activities. These activities will be performed by the customer. The estimated maximum number of panels (64 inches by 166 inches) that will be sanded on one side is 7 panels per minute, equating to 30,987 ft^2 per hour. The air flow rate needed for the HPL thin laminate sanding machine is estimated to be 11,000 scfm.

Edging/Trimming Line

It is estimated that the compact laminate panels (up to 1-inch thickness) will produce the highest amount of dust (particulate matter). The estimated maximum number of compact laminate panels (64 inches by 166 inches) that will be trimmed is 3 panels per minute, equating to 13,280 ft^2 per hour. The air flow rate coming from the HPL edging and trimming activities is estimated to be 7,500 scfm.

Fabrication Activities

The fabrication area may consist of the following machines:

- CNC machine – HOMAG Venture 220 (air flow rate = 2,000 scfm)
- CNC machine – HOMAG Weeke BHC 250 (air flow rate = 2,000 scfm)
- CNC machine – Heian 3 NC 642C (estimated air flow rate = 3,100 scfm)
- CNC machine – MTC AF Flex 514 (estimated air flow rate = 2,000 scfm)
- CNC machine – HOMAG Optimat NBP084 Vantech 510 (air flow rate = 2,000 scfm)
- Edge banding machine – HOMAG Optimat KAL 210/7/A20/S2 (air flow rate = 4,350 scfm)
- Saw machine – HOMAG SAWTEQ B-400 Profiline HPP400/43/43 (air flow rate = 2,350 scfm)
- Sanding machine – Costa KP2 (estimated air flow rate = 5,100 scfm)
- Saw machine – HOMAG SAWTEQ B-300 Profiline HPP300/38/38 (air flow rate = 2,350 scfm)
- Tenoner machine – Friulmac (estimated air flow rate = 5,500 scfm)

CNC Machines

The CNC machines may consist of routing or drilling machines. It is estimated that the productivity from each routing machine is 12 panels (64 inches by 166 inches and ¼ inch thick) per hour.

Saw Machines

It is estimated that the productivity from each saw machine is 20 panels (64 inches by 166 inches and ¼ inch thick) per hour.

Sanding machine – Costa KP2

Abet intends to use a sanding machine for thick laminates. For each thick laminate, both sides of the large surfaces will be sanded. The maximum feed speed of this machine is estimated to be 65 feet per minute, equating to 5 panels per minute for a panel length of 10 feet. The size of each panel is 40 ft^2. Therefore, the estimated maximum throughput of finished panels will be 6,000 ft^2 per hour.

Edge banding machine – HOMAG Optimat KAL 210/7/A20/S2

The maximum feed speed of this machine is estimated to be 65 feet per minute. If the size of each panel is 40 ft^2, then it is estimated that the productivity is 5 panels per minute. Therefore, the estimated maximum throughput of finished panels will be 12,000 ft^2 per hour.

Tenoner machine – Friulmac

It is estimated that the productivity from the tenoner machine is 12 panels (64 inches by 166 inches and ¼ inch thick) per hour.

Boilers B10 and B11 and B12 – Boilers and other natural gas-fired combustion equipment

Two natural gas-fired boilers will be installed to heat the one HPL press. Each boiler will have a maximum heat input capacity of 23.4 million BTU per hour. The boilers will emit uncontrolled particulate matter, sulfur dioxide, nitrogen oxides, volatile organic compounds, and carbon monoxide as well as greenhouses gases from combustion of natural gas. In addition to the natural gas-fired curing ovens on the two treaters, other natural gas-fired equipment will include make-up air units, unit heaters, and units for building heat. This additional equipment will have a maximum heat input total of 25 million BTU per hour.

Emissions Units, Operations and Activities Listed under s. NR 407.05(4)(c)9., Wis. Adm Code

The emissions units, operations and activities listed below are those identified in s. NR 407.05(4)(c)9., Wis. Adm. Code, that are not otherwise included in Part I of the draft operation permit. These units, operations and activities are subject to all applicable requirements including those listed in Part II of the draft operation permit.

- Maintenance of Grounds, Equipment, and Buildings (lawn care, painting, etc.)
- Boiler, Turbine, and HVAC System Maintenance
- Pollution Control Equipment Maintenance
- Internal Combustion Engines Used for Warehousing and Material Transport
- Fire Control Equipment
- Janitorial Activities
- Office Activities
- Convenience Water Heating
- Convenience Space Heating (< 5 million BTU/hr Burning Gas, Liquid, or Wood)
- Demineralization and Oxygen Scavenging of Water for Boilers
- Purging Natural Gas Lines
- Sanitary Sewer and Plumbing Venting
- Storage tanks for resins (losses vented to oxidizer)
- Laboratory and Plotter Room

PREVENTION OF SIGNIFICANT DETERIORATION (PSD) APPLICABILITY

As described in the "Source Classification" section of this preliminary determination, the new facility is proposed to be a synthetic minor source under ch. NR 405, Wis. Adm. Code (PSD). As such, any modifications or additions of new emission units at the facility must be reviewed to determine whether the project, by itself, constitutes a PSD major source. If the project emissions increase of any regulated New Source Review (NSR) air contaminant is greater than the applicable major source threshold in s. NR 405.02(22), Wis. Adm. Code, the project requires a PSD permit, and BACT must be applied to all new or modified emissions units that emit regulated NSR air contaminants for which the project PTE exceeds the corresponding significant emission rate (SER) in s. NR 405.02(27), Wis. Adm. Code. Regulated NSR air contaminants can be found in s. NR 405.02(25i), Wis. Adm. Code.

The proposed Abet facility will be in Jefferson County, which is currently designated as attainment for all pollutants. The proposed Abet facility will not be one of the stationary source types listed in NR 405.02(22)(a)(1). As shown in the Emissions Calculations section, the maximum theoretical emissions (MTE) of particulate matter (PM) and volatile organic compounds (VOCs) are greater than the Prevention of Significant Deterioration (PSD) major source threshold of 250 tons per year and the MTE of all other regulated air pollutants are less than the PSD major source threshold of 250 tons per year. Abet intends to install fabric filter baghouses to control PM and thermal oxidizers to control VOC emissions which will reduce the potential PM and VOC emissions to less than 250 tons per year. Therefore, the proposed Abet facility will not be a major source for permitting under PSD.

EMISSION CALCULATIONS

This section provides information describing how air pollution emissions from the source have been determined. It describes the source of the emission estimates, references emission factors and equations used and/or describes the engineering judgement used to determine emissions. Emission summary tables are included with references to supporting calculations and/or the source of emission information. As required by 40 CFR s. 70.5(c)(3)i., emission estimates sufficient to verify which requirements are applicable to the source are included in this analysis. This information provides the department's legal and factual basis for how the emission estimates support the draft permit conditions. As required by 40 CFR s. 70.5(c)(3)i., these emission estimates are sufficient to verify which requirements are applicable to the source. Refer to the Applicable Requirements and Compliance Demonstration section for details regarding how the emission estimates are used to determine the applicable requirements for the source.

Process P01, Control Device C01, Stack S01– Paper Coaters/Treaters. Equipped with a natural gas-fired curing oven and shares an regenerative thermal oxidizer (RTO) -C01 to control VOC emissions with P02. The curing oven for Process P01 will have a maximum heat input capacity of 12 mm BTU per hour.

Abet USA - Johnson Creek (FID: #128140870)
Johnson Creek, WI
Air Emissions From Natural Gas-Fired Curing Oven for Treater #1 (Process P01, Stack S01)
Project Reference #24580

Maximum Heat Input Capacity:	12.00	MMBtu/hr	
Average Gross Heating Value:	1,020	MMBtu/cf6	AP-42, "Natural Gas Combustion," Section 1.4.1

	Maximum Usage	Estimated Actual Usage	Emission Factor	Estimated Actual Emission Rate		Potential To Emit		Maximum Theoretical Emissions	
Pollutant	**(cf6/yr)**	**(cf6/yr)**	**(lb/cf6)**	**(lb/hr)**	**(lb/yr)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(lb/yr)**
Criteria Pollutants									
PM	103.06	44.71	0.52	0.006	23	0.006	0.03	0.006	54
PM_{10}	103.06	44.71	0.52	0.006	23	0.006	0.03	0.006	54
$PM_{2.5}$	103.06	44.71	0.43	0.005	19	0.005	0.02	0.005	44
SO_2	103.06	44.71	0.6	0.007	27	0.007	0.03	0.007	62
NOx	103.06	44.71	100	1.18	4,471	1.18	5.15	1.176	10,306
VOC	103.06	44.71	5.5	0.06	246	0.06	0.28	0.065	567
CO	103.06	44.71	84	0.99	3,755	0.99	4.33	0.988	8,657
Lead	103.06	44.71	0.0005	0.00001	0.02	0.00001	0.00003	0.00001	0.05
Hazardous Air Pollutants									
Arsenic (f, s)	103.06	44.71	2.00E-04	0.00	0.01	0.00	0.00	0.00	0.02
Benzene (f, s)	103.06	44.71	2.10E-03	0.00	0.09	0.00	0.00	0.00	0.22
Beryllium (f, s)	103.06	44.71	1.20E-05	0.00	0.00	0.00	0.00	0.00	0.00
Cadmium (f, s)	103.06	44.71	1.10E-03	0.00	0.05	0.00	0.00	0.00	0.11

Chromium (f, s)	103.06	44.71	1.40E-03	0.00	0.06	0.00	0.00	0.00	0.14
Cobalt (f, s)	103.06	44.71	8.40E-05	0.00	0.00	0.00	0.00	0.00	0.01
Dichlorobenzene (f, s)	103.06	44.71	1.20E-03	0.00	0.05	0.00	0.00	0.00	0.12
Formaldehyde (f, s)	103.06	44.71	7.50E-02	0.00	3.35	0.00	0.00	0.00	7.73
Hexane (f, s)	103.06	44.71	1.80E+00	0.01	80.47	0.02	0.09	0.02	186
Manganese (f, s)	103.06	44.71	3.80E-04	0.00	0.02	0.00	0.00	0.00	0.04
Mercury (f, s)	103.06	44.71	2.60E-04	0.00	0.01	0.00	0.00	0.00	0.03
Naphthalene (f, s)	103.06	44.71	6.10E-04	0.00	0.03	0.00	0.00	0.00	0.06
Nickel (f, s)	103.06	44.71	2.10E-03	0.00	0.09	0.00	0.00	0.00	0.22
POM (f)	103.06	44.71	6.98E-04	0.00	0.03	0.00	0.00	0.00	0.07
Selenium (f, s)	103.06	44.71	2.40E-05	0.00	0.00	0.00	0.00	0.00	0.00
Toluene (f, s)	103.06	44.71	3.40E-03	0.00	0.15	0.00	0.00	0.00	0.35

f= federal HAP, s= state HAP

Greenhouse Gases

Pollutant	Emission Factor (lb/MMBtu)	Potential to Emit		Maximum Theoretical Emissions		GWP	CO2e	
		(lb/yr)	(tpy)	(lb/yr)	(tpy)		(lb/yr)	(tpy)
Carbon Dioxide (CO2)	117.65	12,367,059	6,184	12,367,059	6,184	1	12,367,059	6,184
Methane (CH4)	0.00225	237	0.12	237	0.12	28	6,637	3.32
Nitrous Oxide (N2O)	0.00216	227	0.11	227	0.11	265	60,083	30.04

Notes:

1. PM/PM10/PM2.5 emissions are based on updated emission factors from USEPA Roy Myers "NG_process_gas_LPG_PM_factors" spreadsheet (obtained from WDNR's website).
2. Natural gas HAP emission factors from AP-42, "Natural Gas Combustion", Tables 1.4-3 and 1.4-4, (7/98).
3. Natural gas criteria pollutant emission factors (except for PM/PM10/ PM2.5) from AP-42, "Natural Gas Combustion," Tables 1.4-1 and -2, for less than 100 MMBtu/hr maximum capacity.

4. PM2.5 estimated to be 100% of Particulate/PM10 emissions based on AP-42, "Natural Gas Combustion."
5. Global Warming Potentials for CO2, CH4, and N2O are from Table A-1 to subpart A of 40 CFR Part 98.
6. Greenhouse gas emission factors from AP-42, "Natural Gas Combustion," Table 1.4-2, (7/98).

TOTAL POLYCYCLIC ORGANIC MATTER (POM): HAP	**Emission Factor (lb/cf6)**
2-Methylnaphthalene	2.40E-05
3-Methylchloranthrene	1.80E-06
7,12-Dimethylbenz(a)anthracene	1.60E-05
Acenaphthene	1.80E-06
Acenaphthylene	1.80E-06
Anthracene	2.40E-06
Benz(a)anthracene	1.80E-06
Benzo(a)pyrene	1.20E-06
Benzo(b)fluoranthene	1.80E-06
Benzo(g,h,i)perylene	1.20E-06
Benzo(k)fluoranthene	1.80E-06
Chrysene	1.80E-06
Dibenzo(a,h)anthracene	1.20E-06
Fluoranthene	3.00E-06
Fluorene	2.80E-06
Indeno(1,2,3-cd)pyrene	1.80E-06
Naphthalene	6.10E-04
Phenanthrene	1.70E-05
Pyrene	5.00E-06
TOTAL (POM):	**6.98E-04**

Potential to Emit Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr
Maximum Theoretical Emissions Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr

Abet USA - Johnson Creek (FID: #128140870)

Johnson Creek, WI

Air Emissions From Paper Coater (Treater #1) (Process P01, Control Device C01, Stack S01)

Project Reference #24580

Description	Estimated Total Maximum Resin Annual Usage (lb/hr)	Estimated Total Maximum Resin Annual Usage (lb/yr)	Estimated Total Actual Resin Annual Usage (lb/yr)	Web (Paper) Width (in)	Web (Paper) Width (ft)	Line Speed (ft/min)	Line Speed (ft2/min)	Estimated Dry Application Rate: Coating Weight of Material Applied to Web		% Coverage	Maximum Hours of Operation (hr/yr)	Potential Hours of Operation (hr/yr)	VOC Content (lb VOC/gal)	% VOC by weight	% HAP by weight	VOC/HAP Capture Efficiency	VOC/HAP Destruction Efficiency	Overall VOC Control Efficiency	Total Estimated Potential to Emit Emissions (controlled) lb/hr	Total Estimated Potential to Emit Emissions (controlled) lb/yr	Total Estimated Potential to Emit Emissions (controlled) tons/yr	Total Estimated Maximum Theoretical Emissions (uncontrolled) lb/hr	Total Estimated Maximum Theoretical Emissions (uncontrolled) lb/yr	Total Estimated Maximum Theoretical Emissions (uncontrolled) tons/yr
Product A - Assuming Highest Line Speed/Application Rate																								
Product A - VOCs	3,076	26,946,397	26,946,397	64	5.3	311	1,659	0.017	lb/ft2	100%	8,760	8,760	0.20	1.95%		98%	99%	97%	1.79	15,659	7.83	59.98	525,455	262.73
Product A - Phenol	3,076	26,946,397	26,946,397	64	5.3	311	1,659	0.017	lb/ft2	100%	8,760	8,760			1.71%	98%	99%	97%	1.57	13,731	6.87	52.60	460,783	230.39
Product A - Formaldehyde	3,076	26,946,397	26,946,397	64	5.3	311	1,659	0.017	lb/ft2	100%	8,760	8,760			0.24%	98%	99%	97%	0.22	1,927	0.96	7.38	64,671	32.34

Product B - Assuming Highest Line Speed/Application Rate																				*see limit below			
Product B - VOCs	3,076	26,946,397	26,946,397	64	5.3	311	1,659	0.017	lb/ft2	100%	8,760	8,760	1.07	10.24%		98%	99%	97%	9.39	82,227	41.11	315	2,759,311	1,380
Product B - Phenol	3,076	26,946,397	26,946,397	64	5.3	311	1,659	0.017	lb/ft2	100%	8,760	8,760			2.00%	98%	99%	97%	1.83	16,060	8.03	61.52	538,928	269.46
Product B - Formaldehyde *	3,076	26,946,397	26,946,397	64	5.3	311	1,659	0.017	lb/ft2	100%	8,760	8,760			0.24%	98%	99%	97%	0.22	1,927	0.96	7.38	64,671	32.34
Product B - Methanol*	3,076	26,946,397	26,946,397	64	5.3	311	1,659	0.017	lb/ft2	100%	8,760	8,760			8.00%	98%	99%	97%	7.33	64,240	32.12	246	2,155,712	1,078
Product B - Assuming Highest Line Speed/Application Rate																				*see limit below			
Product B - VOCs	3,076	26,946,397	26,946,397	64	5.3	311	1,659	0.017	lb/ft2	100%	8,760	8,760	1.07	10.24%		98%	99%	97%	9.39	82,227	41.11	315	2,759,311	1,380
Product B - Phenol	3,076	26,946,397	26,946,397	64	5.3	311	1,659	0.017	lb/ft2	100%	8,760	8,760			2.00%	98%	99%	97%	1.83	16,060	8.03	61.52	538,928	269.46
Product B - Formaldehyde *	3,076	26,946,397	26,946,397	64	5.3	311	1,659	0.017	lb/ft2	100%	8,760	8,760			0.24%	98%	99%	97%	0.22	1,927	0.96	7.38	64,671	32.34

Product B - Methanol*	3,076	26,946,397	26,946,397	64	5.3	311	1,659	0.017	lb/ft2	100%	8,760	8,760			8.00%	98%	99%	97%	7.33	64,240	32.12	246	2,155,712	1,078

Notes:

1. Design parameters (such as web width, line speed, application rates) and SDSs provided by Abet.
2. These calculations use the proposed coating which has the worst-case VOC or HAP concentration.
3. Formaldehyde emissions will have a yearly permit limit to below NR 445 threshold of 1,337 pounds per year for P01 and P02 combined.
4. Methanol emissions will have a facility-wide yearly permit limit to below federal HAP thresholds of 9.9 tons per year

Calculations:

VOC emissions, MTE (lb/hr):	line speed (ft2/min) x estimated dry application rate (lb/ft2) x % coverage x % VOC by weight
uncontrolled	311vft2/min x 60 min/hr x (0.017 lb/ft2 / 55% solids) x 100% x 10.42% 315 lb/hr
VOC emissions, MTE (lb/yr):	315 lb/hr x 8,760 hr/yr
uncontrolled	2,759,311 lb/yr (or 1,380 tons/yr)
VOC emissions, PTE (lb/hr):	line speed (ft2/min) x estimated dry application rate (lb/ft2) x % coverage x % VOC by weight x (1 - capture x control efficiency)
controlled	311 ft2/min x 60 min/hr x (0.017 lb/ft2 / 55% solids) x 100% x 10.42% VOCs x (1 - 98% x 99%) 9.39 lb/hr
VOC emissions, PTE (lb/yr):	9.39 lb/hr x 8,760 hr/yr
controlled	82,227 lb/yr (or 41.11 tons/yr)
Formaldehyde emissions, MTE (lb/hr):	line speed (ft2/min) x estimated dry application rate (lb/ft2) x % coverage x % formaldehyde by weight

uncontrolled	311 ft2/min x 60 min/hr x (0.017 lb/ft2 / 55% solids) x 100% x 0.24% 7.38 lb/hr
Formaldehyde emissions, MTE (lb/yr): uncontrolled	7.38 lb/hr x 8,760 hr/yr 64,671 lb/yr (or 32.34 tons/yr)
Formaldehyde emissions, PTE (lb/hr): controlled, product B	line speed (ft2/min) x estimated dry application rate (lb/ft2) x % coverage x % formaldehyde by weight x (1 - capture x control efficiency) 311 ft2/min x 60 min/hr x (0.017 lb/ft2 / 55% solids) x 100% x 0.24% x (1 - 98% x 99%) 0.22 lb/hr
Formaldehyde emissions, PTE (lb/yr): controlled, product B	0.22 lb/hr x 2,700 hr/yr 594 lb/yr (or 0.30 tons/yr)

Process P02, Control Device C01, Stack S01– Paper Coaters/Treaters. Equipped with a natural gas-fired curing oven and shares an regenerative thermal oxidizer (RTO) -C01 to control VOC emissions with P01. The curing oven for Process P02 will have a maximum heat input capacity of 5 mm BTU per hour.

Abet USA - Johnson Creek (FID: #128140870)
Johnson Creek, WI
Air Emissions From Natural Gas-Fired Curing Oven for Treater #2 (Process P02, Stack S01)
Project Reference #24580

Maximum Heat Input Capacity:	5.00	MMBtu/hr	
Average Gross Heating Value:	1,020	MMBtu/cf6	AP-42, "Natural Gas Combustion," Section 1.4.1

	Maximum Usage	Estimated Actual Usage	Emission Factor	Estimated Actual Emission Rate		Potential To Emit		Maximum Theoretical Emissions	
Pollutant	**(cf6/yr)**	**(cf6/yr)**	**(lb/cf6)**	**(lb/hr)**	**(lb/yr)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(lb/yr)**
Criteria Pollutants									
PM	42.94	17.89	0.52	0.003	9	0.003	0.01	0.003	22
PM_{10}	42.94	17.89	0.52	0.003	9	0.003	0.01	0.003	22
$PM_{2.5}$	42.94	17.89	0.43	0.002	8	0.002	0.01	0.002	18
SO_2	42.94	17.89	0.6	0.003	11	0.003	0.01	0.003	26
NOx	42.94	17.89	100	0.49	1,789	0.49	2.15	0.490	4,294
VOC	42.94	17.89	5.5	0.03	98	0.03	0.12	0.027	236
CO	42.94	17.89	84	0.41	1,503	0.41	1.80	0.412	3,607
Lead	42.94	17.89	0.0005	0.00000	0.01	0.00000	0.00001	0.00000	0.02
Hazardous Air Pollutants									
Arsenic (f, s)	42.94	17.89	2.00E-04	0.00	0.00	0.00	0.00	0.00	0.01
Benzene (f, s)	42.94	17.89	2.10E-03	0.00	0.04	0.00	0.00	0.00	0.09
Beryllium (f, s)	42.94	17.89	1.20E-05	0.00	0.00	0.00	0.00	0.00	0.00

Cadmium (f, s)	42.94	17.89	1.10E-03	0.00	0.02	0.00	0.00	0.00	0.05
Chromium (f, s)	42.94	17.89	1.40E-03	0.00	0.03	0.00	0.00	0.00	0.06
Cobalt (f, s)	42.94	17.89	8.40E-05	0.00	0.00	0.00	0.00	0.00	0.00
Dichlorobenzene (f, s)	42.94	17.89	1.20E-03	0.00	0.02	0.00	0.00	0.00	0.05
Formaldehyde (f, s)	42.94	17.89	7.50E-02	0.00	1.34	0.00	0.00	0.00	3.22
Hexane (f, s)	42.94	17.89	1.80E+00	0.01	32.21	0.01	0.04	0.01	77
Manganese (f, s)	42.94	17.89	3.80E-04	0.00	0.01	0.00	0.00	0.00	0.02
Mercury (f, s)	42.94	17.89	2.60E-04	0.00	0.00	0.00	0.00	0.00	0.01
Naphthalene (f, s)	42.94	17.89	6.10E-04	0.00	0.01	0.00	0.00	0.00	0.03
Nickel (f, s)	42.94	17.89	2.10E-03	0.00	0.04	0.00	0.00	0.00	0.09
POM (f)	42.94	17.89	6.98E-04	0.00	0.01	0.00	0.00	0.00	0.03
Selenium (f, s)	42.94	17.89	2.40E-05	0.00	0.00	0.00	0.00	0.00	0.00
Toluene (f, s)	42.94	17.89	3.40E-03	0.00	0.06	0.00	0.00	0.00	0.15

f= federal HAP, s= state HAP

Greenhouse Gases

Pollutant	Emission Factor (lb/MMBtu)	Potential to Emit		Maximum Theoretical Emissions		GWP	CO2e	
		(lb/yr)	(tpy)	(lb/yr)	(tpy)		(lb/yr)	(tpy)
Carbon Dioxide (CO2)	117.65	5,152,941	2,576	5,152,941	2,576	1	5,152,941	2,576
Methane (CH4)	0.00225	99	0.05	99	0.05	28	2,765	1.38
Nitrous Oxide (N2O)	0.00216	94	0.05	94	0.05	265	25,035	12.52

Notes:

1. PM/PM10/PM2.5 emissions are based on updated emission factors from USEPA Roy Myers "NG_process_gas_LPG_PM_factors" spreadsheet (obtained from WDNR's website).
2. Natural gas HAP emission factors from AP-42, "Natural Gas Combustion", Tables 1.4-3 and 1.4-4, (7/98).
3. Natural gas criteria pollutant emission factors (except for PM/PM10/ PM2.5) from AP-42, "Natural Gas Combustion," Tables 1.4-1 and -2, for less than 100 MMBtu/hr maximum capacity.

4. PM2.5 estimated to be 100% of Particulate/PM10 emissions based on AP-42, "Natural Gas Combustion."
5. Global Warming Potentials for CO2, CH4, and N2O are from Table A-1 to subpart A of 40 CFR Part 98.
6. Greenhouse gas emission factors from AP-42, "Natural Gas Combustion," Table 1.4-2, (7/98).

TOTAL POLYCYCLIC ORGANIC MATTER (POM): HAP	**Emission Factor (lb/cf6)**
2-Methylnaphthalene	2.40E-05
3-Methylchloranthrene	1.80E-06
7,12-Dimethylbenz(a)anthracene	1.60E-05
Acenaphthene	1.80E-06
Acenaphthylene	1.80E-06
Anthracene	2.40E-06
Benz(a)anthracene	1.80E-06
Benzo(a)pyrene	1.20E-06
Benzo(b)fluoranthene	1.80E-06
Benzo(g,h,i)perylene	1.20E-06
Benzo(k)fluoranthene	1.80E-06
Chrysene	1.80E-06
Dibenzo(a,h)anthracene	1.20E-06
Fluoranthene	3.00E-06
Fluorene	2.80E-06
Indeno(1,2,3-cd)pyrene	1.80E-06
Naphthalene	6.10E-04
Phenanthrene	1.70E-05
Pyrene	5.00E-06
TOTAL (POM):	**6.98E-04**

Actual Operating Hours:	2,600	hr/yr
Potential to Emit Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr
Maximum Theoretical Emissions Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr

Abet USA - Johnson Creek (FID: #128140870)

Johnson Creek, WI

Air Emissions From Natural Gas-Fired Burner for Oxidizer for Process P01/P02, C01, S01

Project Reference #24580

Maximum Heat Input Capacity: 10.00 MMBtu/hr

Average Gross Heating Value: 1,020 MMBtu/cf6 AP-42, "Natural Gas Combustion," Section 1.4.1

	Maximum Usage	Estimated Actual Usage	Emission Factor	Estimated Actual Emission Rate		Potential To Emit		Maximum Theoretical Emissions	
Pollutant	**(cf6/yr)**	**(cf6/yr)**	**(lb/cf6)**	**(lb/hr)**	**(lb/yr)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(lb/yr)**
Criteria Pollutants									
PM	85.88	37.25	0.52	0.005	19	0.005	0.02	0.005	45
PM_{10}	85.88	37.25	0.52	0.005	19	0.005	0.02	0.005	45
$PM_{2.5}$	85.88	37.25	0.43	0.004	16	0.004	0.02	0.004	37
SO_2	85.88	37.25	0.6	0.006	22	0.006	0.03	0.006	52
NOx	85.88	37.25	100	0.98	3,725	0.98	4.29	0.980	8,588
VOC	85.88	37.25	5.5	0.05	205	0.05	0.24	0.054	472
CO	85.88	37.25	84	0.82	3,129	0.82	3.61	0.824	7,214
Lead	85.88	37.25	0.0005	0.00000	0.02	0.00000	0.00002	0.00000	0.04
Hazardous Air Pollutants									
Arsenic (f, s)	85.88	37.25	2.00E-04	0.00	0.01	0.00	0.00	0.00	0.02
Benzene (f, s)	85.88	37.25	2.10E-03	0.00	0.08	0.00	0.00	0.00	0.18
Beryllium (f, s)	85.88	37.25	1.20E-05	0.00	0.00	0.00	0.00	0.00	0.00
Cadmium (f, s)	85.88	37.25	1.10E-03	0.00	0.04	0.00	0.00	0.00	0.09
Chromium (f, s)	85.88	37.25	1.40E-03	0.00	0.05	0.00	0.00	0.00	0.12

Cobalt (f, s)	85.88	37.25	8.40E-05	0.00	0.00	0.00	0.00	0.00	0.01
Dichlorobenzene (f, s)	85.88	37.25	1.20E-03	0.00	0.04	0.00	0.00	0.00	0.10
Formaldehyde (f, s)	85.88	37.25	7.50E-02	0.00	2.79	0.00	0.00	0.00	6.44
Hexane (f, s)	85.88	37.25	1.80E+00	0.01	67.06	0.02	0.08	0.02	155
Manganese (f, s)	85.88	37.25	3.80E-04	0.00	0.01	0.00	0.00	0.00	0.03
Mercury (f, s)	85.88	37.25	2.60E-04	0.00	0.01	0.00	0.00	0.00	0.02
Naphthalene (f, s)	85.88	37.25	6.10E-04	0.00	0.02	0.00	0.00	0.00	0.05
Nickel (f, s)	85.88	37.25	2.10E-03	0.00	0.08	0.00	0.00	0.00	0.18
POM (f)	85.88	37.25	6.98E-04	0.00	0.03	0.00	0.00	0.00	0.06
Selenium (f, s)	85.88	37.25	2.40E-05	0.00	0.00	0.00	0.00	0.00	0.00
Toluene (f, s)	85.88	37.25	3.40E-03	0.00	0.13	0.00	0.00	0.00	0.29

f= federal HAP, s= state HAP

Greenhouse Gases

Pollutant	Emission Factor (lb/MMBtu)	Potential to Emit		Maximum Theoretical Emissions		GWP	CO2e	
		(lb/yr)	(tpy)	(lb/yr)	(tpy)		(lb/yr)	(tpy)
Carbon Dioxide (CO2)	117.65	10,305,882	5,153	10,305,882	5,153	1	10,305,882	5,153
Methane (CH4)	0.00225	198	0.10	198	0.10	28	5,531	2.77
Nitrous Oxide (N2O)	0.00216	189	0.09	189	0.09	265	50,069	25.03

Notes:

1. PM/PM10/PM2.5 emissions are based on updated emission factors from USEPA Roy Myers "NG_process_gas_LPG_PM_factors" spreadsheet (obtained from WDNR's website).
2. Natural gas HAP emission factors from AP-42, "Natural Gas Combustion", Tables 1.4-3 and 1.4-4, (7/98).
3. Natural gas criteria pollutant emission factors (except for PM/PM10/ PM2.5) from AP-42, "Natural Gas Combustion," Tables 1.4-1 and -2, for less than 100 MMBtu/hr maximum capacity.
4. PM2.5 estimated to be 100% of Particulate/PM10 emissions based on AP-42, "Natural Gas Combustion."

5. Global Warming Potentials for CO2, CH4, and N2O are from Table A-1 to subpart A of 40 CFR Part 98.
6. Greenhouse gas emission factors from AP-42, "Natural Gas Combustion," Table 1.4-2, (7/98).

TOTAL POLYCYCLIC ORGANIC MATTER (POM): HAP	**Emission Factor (lb/cf6)**
2-Methylnaphthalene	2.40E-05
3-Methylchloranthrene	1.80E-06
7,12-Dimethylbenz(a)anthracene	1.60E-05
Acenaphthene	1.80E-06
Acenaphthylene	1.80E-06
Anthracene	2.40E-06
Benz(a)anthracene	1.80E-06
Benzo(a)pyrene	1.20E-06
Benzo(b)fluoranthene	1.80E-06
Benzo(g,h,i)perylene	1.20E-06
Benzo(k)fluoranthene	1.80E-06
Chrysene	1.80E-06
Dibenzo(a,h)anthracene	1.20E-06
Fluoranthene	3.00E-06
Fluorene	2.80E-06
Indeno(1,2,3-cd)pyrene	1.80E-06
Naphthalene	6.10E-04
Phenanthrene	1.70E-05
Pyrene	5.00E-06
TOTAL (POM):	**6.98E-04**

Actual Operating Hours:	3,800	hr/yr
Potential to Emit Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr
Maximum Theoretical Emissions Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr

Abet USA - Johnson Creek (FID: #128140870)

Johnson Creek, WI

Air Emissions From Paper Coater (Treater #2) (Process P02, Control Device C01, Stack S01)

Project Reference #24580

Description	Estimated Total Maximum Resin Annual Usage (lb/hr)	Estimated Total Maximum Resin Annual Usage (lb/yr)	Web (Paper) Width (in)	Web (Paper) Width (ft)	Line Speed (ft/min)	Line Speed (ft2/min)	Estimated Dry Application Rate: Coating Weight of Material Applied to Web		% Coverage	Maximum Hours of Operation (hr/yr)	Potential Hours of Operation (hr/yr)	VOC Content (lb VOC/gal)	% VOC by weight	% HAP by weight	VOC/HAP Capture Efficiency	VOC/HAP Destruction Efficiency	Overall VOC Control Efficiency	Total Estimated Potential to Emit Emissions (controlled) lb/hr	lb/yr	tons/yr	Total Estimated Maximum Theoretical Emissions (uncontrolled) lb/hr	lb/yr	tons/yr
Product A - Assuming Highest Line Speed/Application Rate																								
Product A - VOCs	873	7,645,091	64	5.3	50	267	0.030	lb/ft2	100%	8,760	8,760	0.50	4.76%		98%	99%	97%	1.24	10,844	5.42	41.54	363,906	181.95
Product A - Formaldehyde	873	7,645,091	64	5.3	50	267	0.030	lb/ft2	100%	8,760	8,760			0.45%	98%	99%	97%	0.12	1,025	0.51	3.93	34,403	17.20

Notes:

1. Design parameters (such as web width, line speed, application rates) and SDSs provided by Abet.
2. These calculations use the proposed application coating rate which has the worst-case VOC and HAP concentrations.
3. Formaldehyde emissions in draft permit includes a limit to stay below the NR 445 threshold of 1,337 pounds per year for P01 and P02 combined.

Calculations:

VOC emissions, MTE (lb/hr): line speed (ft2/min) x estimated dry application rate (lb/ft2) x % coverage x % VOC by weight

uncontrolled: 267 ft2/min x 60 min/hr x (0.030 lb/ft2 / 55% solids) x 100% x 4.76%

41.54 lb/hr

VOC emissions, MTE (lb/yr): uncontrolled	41.54 lb/hr x 8,760 hr/yr 363,906 lb/yr (or 181.95 tons/yr)
VOC emissions, PTE (lb/hr): controlled	line speed (ft2/min) x estimated dry application rate (lb/ft2) x % coverage x % VOC by weight x (1 - capture x control efficiency) 267 ft2/min x 60 min/hr x (0.030 lb/ft2 / 55% solids) x 100% x 4.76% VOCs x (1 - 98% x 99%) 1.24 lb/hr
VOC emissions, PTE (lb/yr): controlled	1.24 lb/hr x 3,000 hr/yr 3,714 lb/yr (or 1.86 tons/yr)
Formaldehyde emissions, MTE (lb/hr): uncontrolled	line speed (ft2/min) x estimated dry application rate (lb/ft2) x % coverage x % formaldehyde by weight 267 ft2/min x 60 min/hr x (0.030 lb/ft2 / 55% solids) x 100% x 0.45% 3.93 lb/hr
Formaldehyde emissions, MTE (lb/yr): uncontrolled	3.93 lb/hr x 8,760 hr/yr 34,403 lb/yr (or 17.20 tons/yr)
Formaldehyde emissions, PTE (lb/hr): controlled	line speed (ft2/min) x estimated dry application rate (lb/ft2) x % coverage x % formaldehyde by weight x (1 - capture x control efficiency) 267 ft2/min x 60 min/hr x (0.030 lb/ft2 / 55% solids) x 100% x 0.45% x (1 - 98% x 99%) 0.12 lb/hr
Formaldehyde emissions, PTE (lb/yr): controlled	0.12 lb/hr x 3,000 hr/yr 351 lb/yr (or 0.18 tons/yr)

Process P03 Stack S03 – Paper Set-up Station

Abet USA - Johnson Creek (FID: #128140870)

Johnson Creek, WI

Air Emissions From Kraft Paper Setup (Process P03, Stack S03)

Project Reference #24580

Pollutant	Maximum Paper Throughput (lb/hr)	Maximum Paper Throughput (lb/yr)	Emission Factor From Italian Factory Stack Testing x Safety Factor (x2.5)	Emission Factor (lb/ton)	Maximum Hours of Operation (hr/yr)	Total Estimated Potential to Emit Emissions (uncontrolled)			Total Estimated Maximum Theoretical Emissions (uncontrolled)		
						lb/hr	lb/yr	tons/yr	lb/hr	lb/yr	tons/yr
Criteria Pollutants											
VOC	2,000	17,520,000	0.41 lb/hr	0.41	8,760	0.41	3,614	1.81	0.41	3,614	1.81
Hazardous Air Pollutant (HAPs)											
Phenol (108-95-2)	2,000	17,520,000	0.0022 lb/hr	0.002	8,760	0.0022	19	0.010	0.0022	19	0.010
Formaldehyde (50-00-0)	2,000	17,520,000	0.0110 lb/hr	0.01	8,760	0.01	96	0.05	0.01	96	0.05

Notes:

1. The paper setup station to be installed will be similar to the setup station currently used at Abet's Italian factory. There will be a capture hood above the setup station which will exhaust directly outdoors.

2. Abet personnel provided the estimated maximum throughput of panels at the paper setup station and the testing results for the setup station at the Italian factory.

3. The melamine resin used at the Italian factory has less than 0.2% by weight of formaldehyde. The potential melamine resin to be used at the Johnson Creek facility may have up to 0.45% by weight of formaldehyde. The setup station is not heated.

4. The emission factor was estimated by the VOC, phenol, and formaldehyde testing results from the Italian factory multiplied by a safety factor of 2.5.

Calculations:

VOC emissions, MTE/PTE (lb/hr): maximum paper throughput x emission factor
2,000 lb/hr x 1 ton/2,000 lb x
uncontrolled 0.41 lb/ton
0.41 lb/hr

VOC emissions, MTE/PTE (lb/yr): 0.41 lb/hr x 8,760 hr/yr
uncontrolled 3,614 lb/yr (or 1.81 tons/yr)

Formaldehyde emissions, MTE/PTE (lb/hr): maximum paper throughput x emission factor
uncontrolled 2,000 lb/hr x 1 ton/2,000 lb x 0.01 lb/ton
0.01 lb/hr

Formaldehyde emissions, MTE/PTE (lb/yr): 0.01 lb/hr x 8,760 hr/yr
uncontrolled 96 lb/yr (or 0.05 tons/yr)

Abet USA - Johnson Creek (FID: NEW FACILITY)

Johnson Creek, WI

Air Emissions From Kraft Paper Setup (Process P03, Stack S03)

Project Reference #24580

Pollutant	Maximum Panel Throughput (lb/hr)	Maximum Panel Throughput (lb/yr)	Maximum Panel Throughput (sqft/hr)	Maximum Panel Throughput (sqft/yr)	Emission Factor (lb/1000 sf)	Maximum Hours of Operation (hr/yr)	Total Estimated Potential to Emit Emissions (uncontrolled)			Total Estimated Maximum Theoretical Emissions (uncontrolled)		
							lb/hr	lb/yr	tons/yr	lb/hr	lb/yr	tons/yr
Criteria Pollutants												
PM	2,200	19,272,000	1,328	11,633,280	0.10	8,760	0.13	1,152	0.58	0.13	1,152	0.58
PM10	2,200	19,272,000	1,328	11,633,280	0.10	8,760	0.13	1,152	0.58	0.13	1,152	0.58

Notes:

1. The paper setup station to be installed will be similar to the setup station currently used at Abet's Italian factory. There will be a capture hood above the setup station which will exhaust directly outdoors.
2. Abet personnel provided the estimated maximum throughput of panels at the paper setup station and the testing results for the setup station at the Italian factory.
3. This station will be used to sort and stack the resin-impregnated paper to be used on each panel. It is assumed that the particulate matter emitted is from the boards which the paper is stacked on and not the resin-impregnated paper itself.
4. Emission factor from AP-42, 10.6.2 Particleboard, Table 10.6.2-4 Emission Factors for Particleboard Presses and Board Coolers - Particulate Matter. Assumed emission factor for board cooler is similar to particulate matter emission factor for paper setup station.

Calculations:

PM10 emissions,	
MTE/PTE (lb/hr):	maximum panel throughput x emission factor
	(1,328 sqft/hr / 1000 sf) x
uncontrolled	0.10 lb/1,000 sqft
	0.13 lb/hr

PM10 emissions,	
MTE/PTE (lb/yr):	0.13 lb/hr x 8,760 hr/yr
uncontrolled	1,152 lb/yr (or 0.58 tons/yr)

Process P04 Stack S04– High Pressure Laminate (HPL) Press

Air Emissions From HPL Press (Process P04, Stack S04)

Project Reference #24580

Pollutant	Maximum Panel Throughput (lb/hr)	Maximum Panel Throughput (lb/yr)	Emission Factor From Italian Factory Stack Testing x Safety Factor (x5)	Emission Factor (lb/ton)	Maximum Hours of Operation (hr/yr)	Total Estimated Potential to Emit Emissions (uncontrolled)			Total Estimated Maximum Theoretical Emissions (uncontrolled)		
						lb/hr	lb/yr	tons/yr	lb/hr	lb/yr	tons/yr
Criteria Pollutants											
VOC	2,200	19,272,000	0.37 lb/hr	0.34	8,760	0.37	3,276	1.64	0.37	3,276	1.64
Hazardous Air Pollutant (HAPs)											
Phenol (108-95-2)	2,200	19,272,000	0.0011 lb/hr	0.001	8,760	0.0011	10	0.005	0.0011	10	0.005
Formaldehyde (50-00-0)	2,200	19,272,000	0.04 lb/hr	0.04	8,760	0.04	385	0.19	0.04	385	0.19

Notes:

1. The HPL press to be installed will be similar to the HPL press currently used at Abet's Italian factory. There will be a capture hood above the HPL press which will exhaust directly outdoors.
2. Abet personnel provided the estimated maximum throughput of panels in the HPL press and the testing results for the press at the Italian factory.
3. The melamine resin used at the Italian factory has less than 0.2% by weight of formaldehyde. The potential melamine resin to be used at the Johnson Creek facility may have up to 0.45% by weight of formaldehyde.
4. The emission factor was estimated by the VOC, phenol, and formaldehyde testing results from the Italian factory multiplied by a safety factor of 5.

Calculations:

VOC emissions, MTE/PTE (lb/hr): maximum panel throughput x emission factor
uncontrolled 2,200 lb/hr x 1 ton/2,000 lb x 0.34 lb/ton
0.37 lb/hr

VOC emissions, MTE/PTE (lb/yr): 0.37 lb/hr x 8,760 hr/yr

uncontrolled 3,276 lb/yr (or 1.64 tons/yr)

Formaldehyde emissions, MTE/PTE (lb/hr): maximum panel throughput x emission factor
uncontrolled 2,200 lb/hr x 1 ton/2,000 lb x 0.04 lb/ton
0.04 lb/hr

Formaldehyde emissions, MTE/PTE (lb/yr): 0.04 lb/hr x 8,760 hr/yr
uncontrolled 385 lb/yr (or 0.19 tons/yr)

Abet USA - Johnson Creek (FID: NEW FACILITY)

Johnson Creek, WI

Air Emissions From HPL Press (Process P04, Stack S04)

Project Reference #24580

Pollutant	Maximum Panel Throughput (lb/hr)	Maximum Panel Throughput (lb/yr)	Maximum Panel Throughput (sqft/hr)	Maximum Panel Throughput (sqft/yr)	Emission Factor (lb/1000 sf)	Maximum Hours of Operation (hr/yr)	Total Estimated Potential to Emit Emissions (uncontrolled)			Total Estimated Maximum Theoretical Emissions (uncontrolled)		
							lb/hr	lb/yr	tons/yr	lb/hr	lb/yr	tons/yr
Criteria Pollutants												
PM	2,200	19,272,000	1,328	11,633,280	0.43	8,760	0.57	5,002	2.50	0.57	5,002	2.50
PM10	2,200	19,272,000	1,328	11,633,280	0.25	8,760	0.33	2,862	1.43	0.33	2,862	1.43

Notes:
1. The HPL press to be installed will be similar to the HPL press currently used at Abet's Italian factory. There will be a capture hood above the HPL press which will exhaust directly outdoors.

2. Abet personnel provided the estimated maximum throughput of panels in the HPL press.

3. Emission factor from AP-42, 10.6.2 Particleboard, Table 10.6.2-4 Emission Factors for Particleboard Presses and Board Coolers - Particulate Matter

Calculations:

PM10 emissions, MTE/PTE (lb/hr):	maximum panel throughput x emission factor
uncontrolled	(1,328 sqft/hr / 1000 sf) x 0.25 lb/1,000 sqft
	0.33 lb/hr
PM10 emissions, MTE/PTE (lb/yr):	0.33 lb/hr x 8,760 hr/yr
uncontrolled	2,862 lb/yr (or 1.43 tons/yr)

Process P05, Control Devices C05 and C06, Stacks S05 and S06– Sanding, Edging/Trimming, and Fabrication equipment. Process P05 consists of the following equipment:

- CNC machine – HOMAG Venture 220 (air flow rate = 2,000 scfm)
- CNC machine – HOMAG Weeke BHC 250 (air flow rate = 2,000 scfm)
- CNC machine – Heian 3 NC 642C (estimated air flow rate = 3,100 scfm)
- CNC machine – MTC AF Flex 514 (estimated air flow rate = 2,000 scfm)
- CNC machine – HOMAG Optimat NBP084 Vantech 510 (air flow rate = 2,000 scfm)
- Edge banding machine – HOMAG Optimat KAL 210/7/A20/S2 (air flow rate = 4,350 scfm)
- Saw machine – HOMAG SAWTEQ B-400 Profiline HPP400/43/43 (air flow rate = 2,350 scfm)
- Sanding machine – Costa KP2 (estimated air flow rate = 5,100 scfm)
- Saw machine – HOMAG SAWTEQ B-300 Profiline HPP300/38/38 (air flow rate = 2,350 scfm)
- Tenoner machine – Friulmac (estimated air flow rate = 5,500 scfm)

Abet USA - Johnson Creek (FID: #128140870)

Johnson Creek, WI

Air Emissions From Sanding, Edging/Trimming, and Fabrication (Process P05, Control Device C05, Stack S05)

Project Reference #24580

Pollutant	Maximum Throughput (ft2/hr)	Maximum Throughput (ft2/yr)	Estimated Actual Throughput (ft2/yr)	Baghouse Concentration (gr/dscf)	Emission Factor From Italian Factory Data Collection	Total Estimated Maximum Theoretical Emissions (uncontrolled) (lb/hr)	(lb/yr)	(tons/yr)
Criteria Pollutants								
Particulate (sanding machine)	30,987	271,443,200	193,356,800	0.004	0.017 lb/ft2	527	4,614,534	2,307
PM10 (sanding machine)	30,987	271,443,200	193,356,800	0.004	0.017 lb/ft2	527	4,614,534	2,307
Particulate (edging/trimming)	13,280	116,332,800	82,867,200	0.004	0.158 lb/ft2	2,094	2.E+07	9,172
PM10 (edging/trimming)	13,280	116,332,800	82,867,200	0.004	0.158 lb/ft2	2,094	2.E+07	9,172

Pollutant	Maximum Throughput (ft2/hr)	Maximum Throughput (ft2/yr)	Estimated Actual Throughput (ft2/yr)	Baghouse Concentration (gr/dscf)	Emission Factor From Italian Factory Data Collection	Total Estimated Maximum Theoretical Emissions (uncontrolled) (lb/hr)	(lb/yr)	(tons/yr)
Criteria Pollutants								
Particulate (routing - CNC Machine #1)	885	7,755,520	5,524,480	0.004	0.020 lb/ft2	17	152,859	76
PM10 (routing - CNC Machine #1)	885	7,755,520	5,524,480	0.004	0.020 lb/ft2	17	152,859	76
Particulate (routing - CNC Machine #2)	885	7,755,520	5,524,480	0.004	0.020 lb/ft2	17	152,859	76
PM10 (routing - CNC Machine #2)	885	7,755,520	5,524,480	0.004	0.020 lb/ft2	17	152,859	76
Particulate (sawing - Machine #1)	1,476	12,925,867	9,207,467	0.004	0.020 lb/ft2	29	254,765	127
PM10 (sawing - Machine #1)	1,476	12,925,867	9,207,467	0.004	0.020 lb/ft2	29	254,765	127
TOTAL PM (P05)						**2,685**	**2.E+07**	**11,759**
TOTAL PM10 (P05)						**2,685**	**2.E+07**	**11,759**

Notes:

1. Process includes miscellaneous equipment, such as HPL sanding machine, edging/trimming, sawing, and CNC machines.

2. Upon initial startup of the facility, Abet intends to have one sawdust collection system consisting of the HPL thin laminates sanding machine, two CNC machines, and a saw machine. The other sawdust collection system will include all remaining equipment. Following installation and startup of the edging/trimming line, Abet intends to have one sawdust collection system consisting of the HPL thin laminates sanding machine and the edging/trimming line. The other sawdust collection system will include all equipment in the fabrication area.

3. The exhaust fan for the collection system will be 25,000 ft3 per minute. If all the equipment listed above operates at the same time, the air flow requirement will exceed 25,000 ft3 per minute. Therefore, simultaneous use of the equipment will be dictated by the maximum exhaust flowrate to each baghouse. As a worst-case scenario, all of the above equipment is assumed to operate at the same time.

4. Process includes one sawdust collection system which consists of a series of air/sawdust pickup locations for miscellaneous woodworking equipment.

5. The sawdust collection system empties into one fabric filter baghouse and is vented to the atmosphere.

6. Abet personnel provided a dust density of 87.40 lb/ft3.

7. Donaldson Dura-Life filter media to be capable of achieving average emission levels of no more than 0.004 grains per dry standard cubic foot.

Maximum Theoretical Emissions Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr

Potential to Emit Emissions:

PTE, PM/PM10 (lb/hr): Baghouse design criteria (gr/acf) x safety factor x flowrate (acfm) x 1 lb/7,000 gr x 60 min/hr = lb PM/PM10/hr
0.004 gr/acf x 1.15 x 25,000 acfm x 1 lb/7,000 gr x 60 min/hr = 0.99 lb PM/PM10/hr

PTE, PM/PM10 (lb/yr): lb PM/PM10/hr x hr/yr = lb PM/PM10/yr

		Sanding Machine
		We know, from Italian production data, that the average production of dust is 0,083 kg/sqmt or 0,272 Ounce/Sqft or 0,0170 lbs/sqft
1	inch thickness (max)	**With a throughput of 7 panel/minute of the larger size 46 (64”x166”) we obtain 3,9 kg/min or 8,6 lbs/min (230kg/h or 500lb/h)**

0.031	inch					2866	lb/h
25	thickness					61	r
7.188	in3 one panel	1.817 672	lb/ min	(length of panel x thickness of panel x thickness of wood removed during cutting/sawing) * # sides + (width of panel x thickness of panel x thickness of wood removed during cutting/sawing) * # sides		143	ton/ hr
230.0 00	in3 one panel	34.89 931	lb/ min	(length of panel x thickness of panel x amount of wood removed during cutting/sawing) * # sides + (width of panel x thickness of panel x thickness of wood removed during cutting/sawing) * # sides		38.3 1	
0.133	ft3 one panel	dust production					
87.40	lb/ft3	dust density (per Abet)					
11.63	lb/pane l	dust production		**trimming - panels are made 1" larger than commercial size so each side needs to be trimmed**			
73.78	ft2 one panel	dust production		**To calculate the dust production From HPL trimming activities imagine two different scenarios:**			
0.158	lb/ft2	dust production		**Line Running at 100% Thin laminates of the larger size 46 (64”x166”) (thickness around 1/32”) throughput of 5 panels/minute**			
				Line running at 100% compact laminate of the larger size 46 (64”x166”) (thickness from 1/8” to 1”, average thickness 1/2”) throughput 3 panels/minute			
0.25	inch thickness (average)						
1	inch thickness (max)						
28.75 0	in3 one panel	(length of panel x thickness of panel x thickness of wood removed during cutting/sawing) * # sides + (width of panel x thickness of panel x thickness of wood removed during cutting/sawing) * # sides					
115.0 00	in3 one panel	(length of panel x thickness of panel x amount of wood removed during cutting/sawing) * # sides + (width of panel x thickness of panel x thickness of wood removed during cutting/sawing) * # sides					
0.017	ft3 one panel	dust production					
87.40	lb/ft3	dust density (per Abet)					

1.45	lb/panel	dust production	
73.78	ft2 one panel	dust production	
0.020	lb/ft2	dust production	**Only for reference in a CNC to divide ¼ thick 64"x 166" HPL panels in 3 parts and carry out a rounded edge the productivity could be 12 panels/hour** **To cut a ¼ " thick panels of the larger size (64"x 166") into 4 pieces the cycle time is about 3 minutes**

Abet USA - Johnson Creek (FID: #128140870)

Johnson Creek, WI

Air Emissions From Sanding, Edging/Trimming, and Fabrication (Process P05, Control Device C06, Stack S06)

Project Reference #24580

Pollutant	Maximum Throughput (ft2/hr)	Maximum Throughput (ft2/yr)	Estimated Actual Throughput (ft2/yr)	Baghouse Concentration (gr/dscf)	Emission Factor From Italian Factory Data Collection	Total Estimated Maximum Theoretical Emissions (uncontrolled) (lb/hr)	(lb/yr)	(tons/yr)
Criteria Pollutants								
Particulate (routing - CNC Machine #3)	885	7,755,520	5,524,480	0.004	0.020 lb/ft2	17	152,859	76
PM10 (routing - CNC Machine #3)	885	7,755,520	5,524,480	0.004	0.020 lb/ft2	17	152,859	76
Particulate (tenoner)	885	7,755,520	5,524,480	0.004	0.020 lb/ft2	17	152,859	76
PM10 (tenoner)	885	7,755,520	5,524,480	0.004	0.020 lb/ft2	17	152,859	76

Particulate (edge banding machine)	12,000	105,120,000	74,880,000	0.004	0.005 lb/ft2	59	517,971	259
PM10 (edge banding machine)	12,000	105,120,000	74,880,000	0.004	0.005 lb/ft2	59	517,971	259
Particulate (sanding Costa KP2 machine)	6,000	52,560,000	37,440,000	0.004	0.017 lb/ft2	102	893,520	447
PM10 (sanding Costa KP2 machine)	6,000	52,560,000	37,440,000	0.004	0.017 lb/ft2	102	893,520	447
Particulate (routing - CNC Machine #4)	885	7,755,520	5,524,480	0.004	0.020 lb/ft2	17	152,859	76
PM10 (routing - CNC Machine #4)	885	7,755,520	5,524,480	0.004	0.020 lb/ft2	17	152,859	76
Particulate (routing - CNC Machine #5)	885	7,755,520	5,524,480	0.004	0.020 lb/ft2	17	152,859	76
PM10 (routing - CNC Machine #5)	885	7,755,520	5,524,480	0.004	0.020 lb/ft2	17	152,859	76
Particulate (sawing - Machine #2)	1,476	12,925,867	9,207,467	0.004	0.020 lb/ft2	29	254,765	127
PM10 (sawing - Machine #2)	1,476	12,925,867	9,207,467	0.004	0.020 lb/ft2	29	254,765	127

TOTAL PM (P05)	**260**	**2,277,692**	**1,139**
TOTAL PM10 (P05)	**260**	**2,277,692**	**1,139**

Notes:

1. Process includes miscellaneous fabrication equipment, such as CNC machines, sawing, sanding, tenoner, and edge banding.

2. Upon initial startup of the facility, Abet intends to have one sawdust collection system consisting of the HPL thin laminates sanding machine, two CNC machines, and a saw machine. The other sawdust collection system will include all remaining equipment. Following installation and startup of the edging/trimming line, Abet intends to have one sawdust collection system consisting of the HPL thin laminates sanding machine and the edging/trimming line. The other sawdust collection system will include all equipment in the fabrication area.

3. The exhaust fan for the collection system will be 25,000 ft3 per minute. If all the equipment listed above operates at the same time, the air flow requirement will exceed 25,000 ft3 per minute. Therefore, simultaneous use of the equipment will be dictated by the maximum exhaust flowrate to each baghouse. As a worst-case scenario, all of the above equipment is assumed to operate at the same time.
4. Process includes one sawdust collection system which consists of a series of air/sawdust pickup locations for miscellaneous woodworking equipment.
5. The sawdust collection system empties into one fabric filter baghouse and is vented to the atmosphere.
6. Abet personnel provided a dust density of 87.40 lb/ft3
7. Donaldson Dura-Life filter media to be capable of achieving average emission levels of no more than 0.004 grains per dry standard cubic foot.

Maximum Theoretical Emissions Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr

Potential to Emit Emissions:

PTE, PM/PM10 (lb/hr):	Baghouse design criteria (gr/acf) x safety factor x flowrate (acfm) x 1 lb/7,000 gr x 60 min/hr = lb PM/PM10/hr 0.004 gr/acf x 1.15 x 25,000 acfm x 1 lb/7,000 gr x 60 min/hr = 0.99 lb PM/PM10/hr
PTE, PM/PM10 (lb/yr):	lb PM/PM10/hr x hr/yr = lb PM/PM10/yr 0.99 lb PM/PM10/hr x 8,760 hr/yr = 8,635 lb PM/PM10/yr (or 4.32 tpy)

Dust Production:

0.25 inch thickness (average)

1	inch thickness (max)	
28.750	in3 one panel	(length of panel x thickness of panel x amount of wood removed during cutting/sawing) * # sides + (width of panel x thickness of panel x amount of wood removed during cutting/sawing) * # sides
115.000	in3 one panel	(length of panel x thickness of panel x amount of wood removed during cutting/sawing) * # sides + (width of panel x thickness of panel x amount of wood removed during cutting/sawing) * # sides
0.017	ft3 one panel	dust production
87.40	lb/ft3	dust density (per Abet)
1.45	lb/panel	dust production
73.78	ft2 one panel	dust production
0.020	lb/ft2	dust production

The maximum throughputs of boards :

Only for reference in a CNC to divide ¼ thick 64”x 166” HPL panels in 3 parts and carry out a rounded edge the productivity could be 12 panels/hour

Sanding machine (costa KP2) this machine works on thick laminate, so its productivity is lower than the one that process thin laminate.

Sanding machine: The max feed speed of this machine operation is 20 m/min (65 ft/min), that means 5 panel/min (panel length 10 feet) the size of panel is 40 ft2 and it need to be sanded on both sides (two pass) so I can guess a maximum throughput of finished panels (two pass for each panel) of 6.000 ft2/h

Edge bending: in this process a narrow strip of material is applied on panel’s edge. The working speed is 20 mt/min (65 ft/min) as it works on finished product, which size can vary a lot. Assume emission factor is 1/4 of 0.020 lb/ft2 since a small amount of PM is expected to be emitted due to the machine operations.

Sanding Machine: We know, from Italian production data, that the average production of dust is 0,083 kg/sqmt or 0,272 Ounce/Sqft or 0,0170 lbs/sqft

To cut a ¼ “ thick panels of the larger size (64”x 166”) into 4 pieces the cycle time is about 3 minutes

Boiler B10/S10 – Natural Gas-Fired Boilers. Permitted for a maximum of 23.4 MMBtu/hr

Air Emissions From Natural Gas-Fired Boiler (Boiler B10, Stack S10)
Project Reference #24580

Maximum Heat Input Capacity: 23.40 MMBtu/hr
Average Gross Heating Value: 1,020 MMBtu/cf6 AP-42, "Natural Gas Combustion," Section 1.4.1

	Maximum Usage	Estimated Actual Usage	Emission Factor	Estimated Actual Emission Rate		Potential To Emit		Maximum Theoretical Emissions	
Pollutant	**(cf6/yr)**	**(cf6/yr)**	**(lb/cf6)**	**(lb/hr)**	**(lb/yr)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(lb/yr)**
Criteria Pollutants									
PM	200.96	143.15	0.52	0.012	74	0.012	0.05	0.012	105
PM_{10}	200.96	143.15	0.52	0.012	74	0.012	0.05	0.012	105
$PM_{2.5}$	200.96	143.15	0.43	0.010	62	0.010	0.04	0.010	86
SO_2	200.96	143.15	0.6	0.014	86	0.014	0.06	0.014	121
NOx	200.96	143.15	50	1.15	7,158	1.15	5.02	1.147	10,048
VOC	200.96	143.15	5.5	0.13	787	0.13	0.55	0.126	1,105
CO	200.96	143.15	84	1.93	12,025	1.93	8.44	1.927	16,881
Lead	200.96	143.15	0.0005	0.00001	0.07	0.00001	0.00005	0.00001	0.10
Hazardous Air Pollutants									
Arsenic (f, s)	200.96	143.15	2.00E-04	0.00	0.03	0.00	0.00	0.00	0.04
Benzene (f, s)	200.96	143.15	2.10E-03	0.00	0.30	0.00	0.00	0.00	0.42
Beryllium (f, s)	200.96	143.15	1.20E-05	0.00	0.00	0.00	0.00	0.00	0.00
Cadmium (f, s)	200.96	143.15	1.10E-03	0.00	0.16	0.00	0.00	0.00	0.22
Chromium (f, s)	200.96	143.15	1.40E-03	0.00	0.20	0.00	0.00	0.00	0.28

Cobalt (f, s)	200.96	143.15	8.40E-05	0.00	0.01	0.00	0.00	0.00	0.02
Dichlorobenzene (f, s)	200.96	143.15	1.20E-03	0.00	0.17	0.00	0.00	0.00	0.24
Formaldehyde (f, s)	200.96	143.15	7.50E-02	0.00	10.74	0.0017	0.01	0.0017	15.07
Hexane (f, s)	200.96	143.15	1.80E+00	0.04	257.68	0.04	0.18	0.04	362
Manganese (f, s)	200.96	143.15	3.80E-04	0.00	0.05	0.00	0.00	0.00	0.08
Mercury (f, s)	200.96	143.15	2.60E-04	0.00	0.04	0.00	0.00	0.00	0.05
Naphthalene (f, s)	200.96	143.15	6.10E-04	0.00	0.09	0.00	0.00	0.00	0.12
Nickel (f, s)	200.96	143.15	2.10E-03	0.00	0.30	0.00	0.00	0.00	0.42
POM (f)	200.96	143.15	6.98E-04	0.00	0.10	0.00	0.00	0.00	0.14
Selenium (f, s)	200.96	143.15	2.40E-05	0.00	0.00	0.00	0.00	0.00	0.00
Toluene (f, s)	200.96	143.15	3.40E-03	0.00	0.49	0.00	0.00	0.00	0.68

f= federal HAP, s= state HAP

Greenhouse Gases

Pollutant	Emission Factor (lb/MMBtu)	Potential to Emit		Maximum Theoretical Emissions		GWP	CO2e	
		(lb/yr)	(tpy)	(lb/yr)	(tpy)		(lb/yr)	(tpy)
Carbon Dioxide (CO2)	117.65	24,115,765	12,058	24,115,765	12,058	1	24,115,765	12,058
Methane (CH4)	0.00225	462	0.23	462	0.23	28	12,942	6.47
Nitrous Oxide (N2O)	0.00216	442	0.22	442	0.22	265	117,162	58.58

Notes:

1. PM/PM10/PM2.5 emissions are based on updated emission factors from USEPA Roy Myers "NG_process_gas_LPG_PM_factors" spreadsheet (obtained from WDNR's website).
2. Natural gas HAP emission factors from AP-42, "Natural Gas Combustion", Tables 1.4-3 and 1.4-4, (7/98).
3. Natural gas criteria pollutant emission factors (except for PM/PM10/ PM2.5) from AP-42, "Natural Gas Combustion," Tables 1.4-1 and -2, for less than 100 MMBtu/hr maximum capacity.
4. PM2.5 estimated to be 100% of Particulate/PM10 emissions based on AP-42, "Natural Gas Combustion."

5. Global Warming Potentials for CO2, CH4, and N2O are from Table A-1 to subpart A of 40 CFR Part 98.
6. Greenhouse gas emission factors from AP-42, "Natural Gas Combustion," Table 1.4-2, (7/98).

TOTAL POLYCYCLIC ORGANIC MATTER (POM): HAP	**Emission Factor (lb/cf6)**
2-Methylnaphthalene	2.40E-05
3-Methylchloranthrene	1.80E-06
7,12-Dimethylbenz(a)anthracene	1.60E-05
Acenaphthene	1.80E-06
Acenaphthylene	1.80E-06
Anthracene	2.40E-06
Benz(a)anthracene	1.80E-06
Benzo(a)pyrene	1.20E-06
Benzo(b)fluoranthene	1.80E-06
Benzo(g,h,i)perylene	1.20E-06
Benzo(k)fluoranthene	1.80E-06
Chrysene	1.80E-06
Dibenzo(a,h)anthracene	1.20E-06
Fluoranthene	3.00E-06
Fluorene	2.80E-06
Indeno(1,2,3-cd)pyrene	1.80E-06
Naphthalene	6.10E-04
Phenanthrene	1.70E-05
Pyrene	5.00E-06
TOTAL (POM):	**6.98E-04**

Actual Operating Hours:	6,240	hr/yr
Potential to Emit Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr
Maximum Theoretical Emissions Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr

For Natural Gas:
NOx: ppm (3% reference) = pounds per million BTU x 850
Reference: ConvFactors | CleanBoiler.org

From burner manufacturer:
NOx (ppm) = 30 at 3% O2
NOx (lb/million BTU) = 30 ppm / 850
0.035 lb NOx/MMBtu

Boiler B11/S11 – Natural Gas-Fired Boilers. Permitted for a maximum of 23.4 MMBtu/hr

Abet USA - Johnson Creek (FID: #128140870)
Johnson Creek, WI
Air Emissions From Natural Gas-Fired Boiler (Boiler B11, Stack S11)
Project Reference #24580

Maximum Heat Input Capacity:	23.40	MMBtu/hr	
Average Gross Heating Value:	1,020	MMBtu/cf6	AP-42, "Natural Gas Combustion," Section 1.4.1

	Maximum Usage	Estimated Actual Usage	Emission Factor	Estimated Actual Emission Rate		Potential To Emit		Maximum Theoretical Emissions	
Pollutant	**(cf6/yr)**	**(cf6/yr)**	**(lb/cf6)**	**(lb/hr)**	**(lb/yr)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(lb/yr)**
Criteria Pollutants									
PM	200.96	143.15	0.52	0.012	74	0.012	0.05	0.012	105
PM_{10}	200.96	143.15	0.52	0.012	74	0.012	0.05	0.012	105
$PM_{2.5}$	200.96	143.15	0.43	0.010	62	0.010	0.04	0.010	86
SO_2	200.96	143.15	0.6	0.014	86	0.014	0.06	0.014	121
NOx	200.96	143.15	50	1.15	7,158	1.15	5.02	1.147	10,048
VOC	200.96	143.15	5.5	0.13	787	0.13	0.55	0.126	1,105
CO	200.96	143.15	84	1.93	12,025	1.93	8.44	1.927	16,881
Lead	200.96	143.15	0.0005	0.00001	0.07	0.00001	0.00005	0.00001	0.10
Hazardous Air Pollutants									
Arsenic (f, s)	200.96	143.15	2.00E-04	0.00	0.03	0.00	0.00	0.00	0.04
Benzene (f, s)	200.96	143.15	2.10E-03	0.00	0.30	0.00	0.00	0.00	0.42
Beryllium (f, s)	200.96	143.15	1.20E-05	0.00	0.00	0.00	0.00	0.00	0.00

Cadmium (f, s)	200.96	143.15	1.10E-03	0.00	0.16	0.00	0.00	0.00	0.22
Chromium (f, s)	200.96	143.15	1.40E-03	0.00	0.20	0.00	0.00	0.00	0.28
Cobalt (f, s)	200.96	143.15	8.40E-05	0.00	0.01	0.00	0.00	0.00	0.02
Dichlorobenzene (f, s)	200.96	143.15	1.20E-03	0.00	0.17	0.00	0.00	0.00	0.24
Formaldehyde (f, s)	200.96	143.15	7.50E-02	0.00	10.74	0.00	0.01	0.00	15.07
Hexane (f, s)	200.96	143.15	1.80E+00	0.04	257.68	0.04	0.18	0.04	362
Manganese (f, s)	200.96	143.15	3.80E-04	0.00	0.05	0.00	0.00	0.00	0.08
Mercury (f, s)	200.96	143.15	2.60E-04	0.00	0.04	0.00	0.00	0.00	0.05
Naphthalene (f, s)	200.96	143.15	6.10E-04	0.00	0.09	0.00	0.00	0.00	0.12
Nickel (f, s)	200.96	143.15	2.10E-03	0.00	0.30	0.00	0.00	0.00	0.42
POM (f)	200.96	143.15	6.98E-04	0.00	0.10	0.00	0.00	0.00	0.14
Selenium (f, s)	200.96	143.15	2.40E-05	0.00	0.00	0.00	0.00	0.00	0.00
Toluene (f, s)	200.96	143.15	3.40E-03	0.00	0.49	0.00	0.00	0.00	0.68

f= federal HAP, s= state HAP

Greenhouse Gases

Pollutant	Emission Factor (lb/MMBtu)	Potential to Emit		Maximum Theoretical Emissions		GWP	CO2e	
		(lb/yr)	(tpy)	(lb/yr)	(tpy)		(lb/yr)	(tpy)
Carbon Dioxide (CO2)	117.65	24,115,765	12,058	24,115,765	12,058	1	24,115,765	12,058
Methane (CH4)	0.00225	462	0.23	462	0.23	28	12,942	6.47
Nitrous Oxide (N2O)	0.00216	442	0.22	442	0.22	265	117,162	58.58

Notes:

1. PM/PM10/PM2.5 emissions are based on updated emission factors from USEPA Roy Myers "NG_process_gas_LPG_PM_factors" spreadsheet (obtained from WDNR's website).
2. Natural gas HAP emission factors from AP-42, "Natural Gas Combustion", Tables 1.4-3 and 1.4-4, (7/98).
3. Natural gas criteria pollutant emission factors (except for PM/PM10/ PM2.5) from AP-42, "Natural Gas Combustion," Tables 1.4-1 and -2, for less than 100 MMBtu/hr maximum capacity.

4. PM2.5 estimated to be 100% of Particulate/PM10 emissions based on AP-42, "Natural Gas Combustion."
5. Global Warming Potentials for CO2, CH4, and N2O are from Table A-1 to subpart A of 40 CFR Part 98.
6. Greenhouse gas emission factors from AP-42, "Natural Gas Combustion," Table 1.4-2, (7/98).

TOTAL POLYCYCLIC ORGANIC MATTER (POM): HAP	**Emission Factor (lb/cf6)**
2-Methylnaphthalene	2.40E-05
3-Methylchloranthrene	1.80E-06
7,12-Dimethylbenz(a)anthracene	1.60E-05
Acenaphthene	1.80E-06
Acenaphthylene	1.80E-06
Anthracene	2.40E-06
Benz(a)anthracene	1.80E-06
Benzo(a)pyrene	1.20E-06
Benzo(b)fluoranthene	1.80E-06
Benzo(g,h,i)perylene	1.20E-06
Benzo(k)fluoranthene	1.80E-06
Chrysene	1.80E-06
Dibenzo(a,h)anthracene	1.20E-06
Fluoranthene	3.00E-06
Fluorene	2.80E-06
Indeno(1,2,3-cd)pyrene	1.80E-06
Naphthalene	6.10E-04
Phenanthrene	1.70E-05
Pyrene	5.00E-06
TOTAL (POM):	**6.98E-04**

Actual Operating Hours:	6,240	hr/yr
Potential to Emit Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr
Maximum Theoretical Emissions Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr

For Natural Gas:
NOx: ppm (3% reference) = pounds per million BTU x 850
Reference: ConvFactors | CleanBoiler.org

From burner manufacturer:
NOx (ppm) = 30 at 3% O2
NOx (lb/million BTU) = 30 ppm / 850
0.035 lb NOx/MMBtu

Boiler B12/S12 – Natural Gas-Fired Combustion Equipment. Includes make-up air units, unit heaters, and units for building heat. Permitted assuming a maximum of 25 MMBtu/hr.

Abet USA - Johnson Creek (FID: #128140870)
Johnson Creek, WI
Air Emissions From Miscellaneous Natural Gas-Fired Combustion Equipment (Process B12, Stack S12)
Project Reference #24580

Maximum Heat Input Capacity:	25.00	MMBtu/hr	(see attached proposed list of equipment)
Average Gross Heating Value:	1,020	MMBtu/cf6	AP-42, "Natural Gas Combustion," Section 1.4.1

	Maximum Usage	Estimated Actual Usage	Emission Factor	Estimated Actual Emission Rate		Potential To Emit		Maximum Theoretical Emissions	
Pollutant	**(cf6/yr)**	**(cf6/yr)**	**(lb/cf6)**	**(lb/hr)**	**(lb/yr)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(lb/yr)**
Criteria Pollutants									
PM	214.71	107.35	0.52	0.013	56	0.013	0.06	0.013	112
PM_{10}	214.71	107.35	0.52	0.013	56	0.013	0.06	0.013	112
$PM_{2.5}$	214.71	107.35	0.43	0.011	46	0.011	0.05	0.011	92
SO_2	214.71	107.35	0.6	0.015	64	0.015	0.06	0.015	129
NOx	214.71	107.35	100	2.45	10,735	2.45	10.74	2.451	21,471
VOC	214.71	107.35	5.5	0.13	590	0.13	0.59	0.135	1,181
CO	214.71	107.35	84	2.06	9,018	2.06	9.02	2.059	18,035
Lead	214.71	107.35	0.0005	0.00001	0.05	0.00001	0.00005	0.00001	0.11
Hazardous Air Pollutants									
Arsenic (f, s)	214.71	107.35	2.00E-04	0.00	0.02	0.00	0.00	0.00	0.04
Benzene (f, s)	214.71	107.35	2.10E-03	0.00	0.23	0.00	0.00	0.00	0.45
Beryllium (f, s)	214.71	107.35	1.20E-05	0.00	0.00	0.00	0.00	0.00	0.00

Cadmium (f, s)	214.71	107.35	1.10E-03	0.00	0.12	0.00	0.00	0.00	0.24
Chromium (f, s)	214.71	107.35	1.40E-03	0.00	0.15	0.00	0.00	0.00	0.30
Cobalt (f, s)	214.71	107.35	8.40E-05	0.00	0.01	0.00	0.00	0.00	0.02
Dichlorobenzene (f, s)	214.71	107.35	1.20E-03	0.00	0.13	0.00	0.00	0.00	0.26
Formaldehyde (f, s)	214.71	107.35	7.50E-02	0.00	8.05	0.0018	0.01	0.0018	16.10
Hexane (f, s)	214.71	107.35	1.80E+00	0.03	193.24	0.04	0.19	0.04	386
Manganese (f, s)	214.71	107.35	3.80E-04	0.00	0.04	0.00	0.00	0.00	0.08
Mercury (f, s)	214.71	107.35	2.60E-04	0.00	0.03	0.00	0.00	0.00	0.06
Naphthalene (f, s)	214.71	107.35	6.10E-04	0.00	0.07	0.00	0.00	0.00	0.13
Nickel (f, s)	214.71	107.35	2.10E-03	0.00	0.23	0.00	0.00	0.00	0.45
POM (f)	214.71	107.35	6.98E-04	0.00	0.07	0.00	0.00	0.00	0.15
Selenium (f, s)	214.71	107.35	2.40E-05	0.00	0.00	0.00	0.00	0.00	0.01
Toluene (f, s)	214.71	107.35	3.40E-03	0.00	0.37	0.00	0.00	0.00	0.73

f= federal HAP, s= state HAP

Greenhouse Gases

Pollutant	Emission Factor (lb/MMBtu)	Potential to Emit		Maximum Theoretical Emissions		GWP	CO2e	
		(lb/yr)	(tpy)	(lb/yr)	(tpy)		(lb/yr)	(tpy)
Carbon Dioxide (CO2)	117.65	25,764,706	12,882	25,764,706	12,882	1	25,764,706	12,882
Methane (CH4)	0.00225	494	0.25	494	0.25	28	13,827	6.91
Nitrous Oxide (N2O)	0.00216	472	0.24	472	0.24	265	125,174	62.59

Notes:

1. PM/PM10/PM2.5 emissions are based on updated emission factors from USEPA Roy Myers "NG_process_gas_LPG_PM_factors" spreadsheet (obtained from WDNR's website).
2. Natural gas HAP emission factors from AP-42, "Natural Gas Combustion", Tables 1.4-3 and 1.4-4, (7/98).
3. Natural gas criteria pollutant emission factors (except for PM/PM10/ PM2.5) from AP-42, "Natural Gas Combustion," Tables 1.4-1 and -2, for less than 100 MMBtu/hr maximum capacity.

4. PM2.5 estimated to be 100% of Particulate/PM10 emissions based on AP-42, "Natural Gas Combustion."
5. Global Warming Potentials for CO2, CH4, and N2O are from Table A-1 to subpart A of 40 CFR Part 98.
6. Greenhouse gas emission factors from AP-42, "Natural Gas Combustion," Table 1.4-2, (7/98).

TOTAL POLYCYCLIC ORGANIC MATTER (POM): HAP	**Emission Factor (lb/cf6)**
2-Methylnaphthalene	2.40E-05
3-Methylchloranthrene	1.80E-06
7,12-Dimethylbenz(a)anthracene	1.60E-05
Acenaphthene	1.80E-06
Acenaphthylene	1.80E-06
Anthracene	2.40E-06
Benz(a)anthracene	1.80E-06
Benzo(a)pyrene	1.20E-06
Benzo(b)fluoranthene	1.80E-06
Benzo(g,h,i)perylene	1.20E-06
Benzo(k)fluoranthene	1.80E-06
Chrysene	1.80E-06
Dibenzo(a,h)anthracene	1.20E-06
Fluoranthene	3.00E-06
Fluorene	2.80E-06
Indeno(1,2,3-cd)pyrene	1.80E-06
Naphthalene	6.10E-04
Phenanthrene	1.70E-05
Pyrene	5.00E-06
TOTAL (POM):	**6.98E-04**

Actual Operating Hours:	4,380	hr/yr
Potential to Emit Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr
Maximum Theoretical Emissions Operating Hours: (7 days/week, 24 hr/day, 52 weeks/yr)	8,760	hr/yr

Abet USA - Johnson Creek (FID: #128140870)
Johnson Creek, WI
List of Miscellaneous Natural Gas-Fired Combustion Equipment (Process B12, Stack S12)
Project Reference #24580

Area / Unit	MBH (assumed rating is output)	MMBtu/hr (assumed rating is output)
Officed RTU -1	400	0.40
Officed RTU -2	400	0.40
Plotter / Lab RTU	200	0.20
High Hazard MAU	500	0.50
Low Hazzard MAU	800	0.80
Impregnated Kraft Storage MAU	1,600	1.60
MFG MAU	6,100	6.10
Impregnated Deco Storage MAU	4,500	4.50
Office Furnace-1	60	0.06
Office Furnace-2	60	0.06
Office Furnace-3	60	0.06
Unit Heater	200	0.20
Unit Heater	250	0.25
Unit Heater	250	0.25
Unit Heater	150	0.15
Unit Heater	250	0.25
Unit Heater	250	0.25
Unit Heater	250	0.25
Unit Heater	250	0.25
Unit Heater	250	0.25
Unit Heater	250	0.25
Unit Heater	250	0.25
Unit Heater	250	0.25
Reserved	1,295	1.30

Total	**18,825**	**18.83**

APPLICABLE REQUIREMENTS AND COMPLIANCE DEMONSTRATION

This section describes the applicable requirements† as they apply to the emissions units at the facility. It includes emission unit and pollutant specific applicable requirements and associated compliance demonstration methods. Some pollutants subject to regulation under the Act do not currently have specific applicable emission limitations or standards, however they are considered when determining source status under programs, such as Part 70 and PSD, and when determining the applicability of requirements that are based on source status, such as CAM. One such pollutant is $PM_{2.5}$. Based on definitions in ss. NR 400.02(123m) and (124), Wis. Adm. Code, direct $PM_{2.5}$ emissions cannot exceed PM_{10} emissions. Since PM_{10} and $PM_{2.5}$ have the same major source thresholds, emission estimates of PM_{10} are sufficient for determining Part 70 and PSD source status and CAM applicability with respect to both $PM_{2.5}$ and PM_{10}. When determining Part 70 source status for particulate matter, a stationary facility is a Part 70 major source if it emits or has the potential to emit, 100 tpy or more of PM_{10} per s. NR 407.02(4)(b), Wis. Adm. Code.

Operation permits are required to contain compliance testing, monitoring, reporting and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit. Where an applicable requirement does not require periodic testing or instrumental or non-instrumental monitoring, periodic monitoring or testing sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit shall be included in the operation permit. Monitoring may consist of recordkeeping sufficient to meet this requirement.

Some standards such as NSPS and NESHAP include compliance demonstration, monitoring and recordkeeping requirements within the standard. The compliance demonstration, monitoring and recordkeeping requirements that are part of a standard are included in the draft operation permit, as applicable. The compliance demonstration methods are included in the draft operation permit and are described below.

***Processes P01 and P02**, Control Device C01, Stack S01*

Chapter NR 415 – Control of Particulate Matter (PM)
Section NR 415.05 provides particulate matter emission limits for processes using either the process weight rate equation (NR 415.05(2)) or the emission factor approach (NR 415.05(1)). A core of paper will be treated (or laminated) by running it through a resin bath. The excess resin will be scraped off before the resin impregnated paper is dried in an oven. Therefore, the particulate matter emitted from paper coating is assumed to be negligible, so P01 and P02 are not subject to the PM limits for processes since the source of PM emissions is combustion of natural gas in the ovens and RTO associated with these processes.

Section NR 415.06(2) establishes PM emission limits for fuel burning units constructed or last modified after April 1, 1972 with maximum heat input more than one MMBtu per hour. The natural gas-fired burners on the oxidizer and curing ovens will be subject to the 0.15 pounds of PM per million BTU heat input emission limitation in NR 415.06(2)(a).

> The total maximum heat input capacity of the proposed burners on the oxidizer and curing ovens will be 27 MMBtu per hour (12 MMBtu/hr for the curing oven for P01 and 5 mm BTU/hr for the curing oven for P02 and 10 MMBtu/hr for the RTO-C01). Thus, the total allowable PM emissions from the oxidizer and ovens are:
>
> 0.15 pounds PM/MMBtu x 27 MMBtu/hour = 4.05 pounds PM per hour

Since the emissions are uncontrolled, maximum theoretical emissions (MTE) equals potential to emit (PTE). Using the EPA's Roy Huntley emission factor of 0.55 pounds of PM per million cubic feet (mmcf) and the maximum heat input capacity, the PM MTE and PTE is 0.014 pounds of PM per hour (27 MMBtu/hour x mmcf/1020 MMBtu x 0.55 pounds PM/mmcf) which is below the allowable emission limit in NR 415.06(2)(a).

Ambient Air Quality

† "Applicable requirement" is defined in s. NR 400.02(26), Wis. Adm. Code, and 40 CFR 70.2, and lists all of the types of requirements which are considered applicable requirements for the purpose of inclusion in an operation permit.

The air quality modeling analysis demonstrated that the processes P01 and P02 will not contribute to the exceedance of the PM_{10} NAAQS. The form of the standard is a 24-hour average. The MTE emission rates for PM_{10} were used in the modeling, and therefore it is expected the source will comply with the NAAQS and increment. See Air Quality Review for more information.

CHAPTER NR 424 – CONTROL OF ORGANIC COMPOUND EMISSIONS FROM PROCESS LINES

Chapter NR 424.03 applies to process lines which emit VOCs. For any process line that emits VOCs and which is not exempt under NR 424.03(1), the facility shall meet the requirements in NR 424.03(2) or (3). NR 424.03(1)(b) provides an exemption to NR 424. NR 424.03(1)(b) states that process lines that are subject to emission limitations listed in chapters NR 419 to NR 423 are exempt from meeting the emission limits in NR 424. The treaters are subject to an emission limit in NR 422. Therefore, they are not subject to NR 424.

COMPLIANCE EMISSION TESTING

VOC compliance emission testing to initially verify the capture efficiency and biannually verify the destruction efficiency of the RTO is included in the draft permit to determine compliance with I.A.3.a.(2). Construction permits may include initial compliance emission testing to verify a source can meet an emission limit, per s. 285.65(3) and (10), Wis. Stats. Estimated emissions from the emission unit are close to the synthetic minor limit. The total quantity of MTE emissions from the source are significant enough, combined with the high capture and removal requirements in the draft permit, to require compliance emission testing to demonstration initial and ongoing compliance. When a control device is being relied upon to meet an emission limit or an avoidance limit, reliable information on the device control efficiency and whether the control device is susceptible to performance degradation, or frequent upset or malfunction is necessary to evaluate continuous compliance.

CHAPTER NR 422 – CONTROL OF ORGANIC COMPOUND EMISSIONS FROM SURFACE COATING, PRINTING AND ASPHALT SURFACING OPERATIONS

NR 422.07(1) – Paper Coating (Part 1) Applicability
Chapter NR 422.07 applies to the coating applicators, including but not limited to blade, air knife or roll coaters, and drying ovens of paper coating lines. This section does ***not*** apply to any piece of equipment on which a non-uniform coating is applied to a substrate, as in printing, or to sources exempted under NR 422.03. These lines apply a uniform coating to a substrate so this section applies to P01 and P02.

NR 422.07(1) – Paper Coating (Part 1) Emission Limitations
Operators of a paper coating line may not cause, allow, or permit the emission of any VOCs in excess of 2.9 pounds per gallon, excluding water, delivered to each coating applicator from a paper coating line. Based on the SDSs and technical data provided by Abet, the water-based coatings will have VOC contents less than 2.9 pounds per gallon. Therefore, it appears that Abet will comply with this limitation through the application of low solvent coating or ink technology under NR 422.04(2)(a).

NR 422.075 – Paper Coating, Part 2
The treaters will be located at a facility in Jefferson County. Therefore, NR 422.075 will not apply.

Chapter NR 426 – Control of Carbon Monoxide Emissions
The natural gas-fired combustion units will be subject to the general limitation under NR 426.03 which states that no person may cause, allow, or permit emissions of carbon monoxide to the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. The general limitations are included in Part II of the permit. Since natural gas is a clean burning fuel, carbon monoxide emissions from the natural gas-fired combustion units are low.

Chapter NR 428 – Control of Nitrogen Compound Emissions
The natural gas-fired combustion units will be subject to the general limitation under NR 428.03 which states that no person may cause, allow, or permit nitrogen oxides or nitrogen compounds to be emitted to the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. The general limitations are included

in Part II of the permit. Since natural gas is a clean burning fuel, nitrogen oxide emissions from the natural gas-fired combustion units are low.

Chapter NR 431 – Control of Visible Emissions
NR 431.05 provides visible emission limitations for air emission sources which commenced construction or modification after April 1, 1972. NR 431.05 states that air emissions may not cause or allow emissions of shade density greater than number 1 of the Ringelmann chart or 20% opacity.

Since natural gas is a clean burning fuel, it is not expected that the visible emission limitation of 20% opacity would be exceeded while the unit is firing natural gas.

NR 445 – Control of Hazardous Air Pollutants
NR 445.07 – Emission thresholds, standards, control requirements and exemptions
Air emission sources which emit hazardous air pollutants (HAPs) are subject to the emission thresholds, standards, and control requirements of chapter NR 445.07. The HAPs emitted at Treater #1 will be formaldehyde and phenol. Abet is proposing limitations on formaldehyde in order to limit HAP emissions to comply with NR 445. Emissions of phenol are below the NR 445.07 Table A threshold value. See the Hazardous Air Pollutant Review section for more information.

40 CFR Part 63, Subpart OOOO – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Printing, Coating, and Dyeing of Fabrics and Other Textiles
Subpart OOOO applies to printing, coating, slashing, dyeing or finishing of fabric and other textiles. Web coating lines exclusively dedicated to coating or printing fabric and other textiles are subject to this subpart. Any web coating operation that is part of the affected source of Subpart JJJJ (NESHAP for paper and other web coating) is not subject to Subpart OOOO. Any web coating line that coats or prints fabric or other textiles for use in flexible packaging and that is included in an affected source under Subpart KK (NESHAP for the Printing and Publishing Industry) is not subject to Subpart OOOO. Facilities are subject to this subpart if they own or operate a new, reconstructed, or existing affected source that is a major source, is located at a major source or is part of a major source of HAPs. Since Abet will be an area source of HAPs (not a major source of HAPs), Abet will not be subject to Subpart OOOO.

40 CFR Part 63, Subpart JJJJ – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Paper and Other Web Coating
Subpart JJJJ applies to paper and other web coating. A web coating line means any number of workstations, of which one or more applies a continuous layer of liquid or semi-liquid coating material across the entire width or any portion of the width of a web substrate, and any associated curing/drying equipment between an unwind or feed station and a rewind or cutting station. The affected source subject to this subpart is the collection of all web coating lines at the facility. Any web coating line that is stand-alone equipment or a product and packaging rotogravure or wide-web flexographic press under Subpart KK (NESHAP for the Printing and Publishing Industry) is not subject to Subpart JJJJ. Any web coating line subject to Subpart OOOO (NESHAP for the Printing, Coating, and Dyeing of Fabrics and Other Textiles) is not subject to Subpart JJJJ. Subpart JJJJ applies to each new and existing facility that is a major source of HAPs at which web coating lines are operated. Since Abet is an area source of HAPs (not a major source of HAPs), Abet will not be subject to Subpart JJJJ.

40 CFR 63, Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Major Sources Industrial, Commercial, and Institutional Boilers and Process Heaters
Subpart DDDDD applies to industrial, commercial, or institutional boilers or process heaters that are located at, or are part of, a major source of HAP, except as specified in 40 CFR s. 63.7491. As defined in 40 CFR s. 63.7575, process heater (such as an oven) means an enclosed device using controlled flame and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material (e.g., glycol or a mixture of glycol and water) for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not come into direct contact with process materials. Since Abet will be an area source of HAPs (not a major source of HAPs), Abet will not be subject to Subpart DDDDD.

40 CFR 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Major Sources Industrial, Commercial, and Institutional Boilers and Process Heaters
Subpart JJJJJJ applies to industrial, commercial, or institutional boiler that are located at, or are part of, an area source of HAP. Since the boilers will be limited to natural gas, they will not be subject to Subpart JJJJJJ.

Process P03 *Stack S03 – Paper Set-up Station*

CHAPTER NR 424 – CONTROL OF ORGANIC COMPOUND EMISSIONS FROM PROCESS LINES

Chapter NR 424.03 applies to process lines which emit VOCs. For any process line that emits VOCs and which is not exempt under NR 424.03(1), the facility shall meet the requirements in NR 424.03(2) or (3). However, s. NR 424.03(1)(a)(4) provides an exemption for process lines which never emit more than 15 pounds of VOC in any given day. Since the estimated VOC emissions from the paper setup station at Abet are less than 15 pounds of VOCs on any given day, the proposed operations meet this exemption. A limit in the draft permit is included to track the VOC emissions daily to demonstrate compliance with the exemption.

NR 445 – Control of Hazardous Air Pollutants
NR 445.07 – Emission thresholds, standards, control requirements and exemptions
Air emission sources which emit hazardous air pollutants (HAPs) are subject to the emission thresholds, standards, and control requirements of chapter NR 445.07. The HAPs emitted at the paper setup station will be formaldehyde and phenol. Emissions of phenol and formaldehyde are below the NR 445.07 Table A threshold value. See the Hazardous Air Pollutant Review section for further information.

Ambient Air Quality
The air quality modeling analysis demonstrated that the process P03 will not contribute to the exceedance of the PM_{10} NAAQS. The form of the standard is a 24-hour average. Since MTE rates were used in the modeling, it is expected that the source will be able to meet the NAAQS and increment. See Air Quality Review for more information.

Process P04 *Stack S04– High Pressure Laminate (HPL) Press*

CHAPTER NR 424 – CONTROL OF ORGANIC COMPOUND EMISSIONS FROM PROCESS LINES

Chapter NR 424.03 applies to process lines which emit VOCs. For any process line that emits VOCs and which is not exempt under NR 424.03(1), the facility shall meet the requirements in NR 424.03(2) or (3). However, NR 424.03(1)(a)(4) provides an exemption for process lines which never emit more than 15 pounds of VOC in any given day. Since the estimated VOC emissions from the HPL press at Abet are less than 15 pounds of VOCs on any given day, Abet meets this exemption. A limit in the draft permit is included to track the VOC emissions daily to demonstrate compliance with the exemption.

NR 445 – Control of Hazardous Air Pollutants
NR 445.07 – Emission thresholds, standards, control requirements and exemptions
Air emission sources which emit hazardous air pollutants (HAPs) are subject to the emission thresholds, standards, and control requirements of chapter NR 445.07. The HAPs emitted at the paper setup station will be formaldehyde and phenol. Emissions of formaldehyde are below the NR 445.07 Table A threshold value. See the Hazardous Air Pollutant Review section for further information.

Ambient Air Quality
The air quality modeling analysis demonstrated that the process P04 will not contribute to the exceedance of the PM_{10} NAAQS. The form of the standard is a 24-hour average.. Since MTE rates were used in the modeling, it is expected that the source will be able to meet the NAAQS and increment. See Air Quality Review for more information.

***Process P05**, Control Devices C05 and C06, Stacks S05 and S06– Sanding, Edging/Trimming, and Fabrication equipment.*

Chapter NR 415 – Control of Particulate Matter (PM)
NR 415.05(2) establishes PM emission limits for air emission processes constructed or last modified after April 1, 1972. The allowable emissions of PM are calculated by using the following equations:

1. $E = 3.59 \times P^{0.62}$ for process weight rates up to 60,000 pounds per hour; and
2. $E = 17.31 \times P^{0.16}$ for process weight rates of 60,000 pounds per hour or more

where E is the allowable PM emission rate in pounds per hour and P is the process weight rate in tons per hour. NR 415.05(2) also states that if the calculated emission rate using the above equation is less restrictive than the applicable concentration specified under NR 415.05(1) based on the maximum exhaust flow rate and normal exhaust gas temperature, the limitation under NR 415.05(1) applies. The PM emission limitation under NR 415.05(1)(o) for any other process not enumerated is 0.40 pounds of PM per 1,000 pounds of exhaust gas.

Particulate matter emissions from sanding, edging/trimming, and fabrication will be controlled using a baghouse. The maximum exhaust flow rate of the baghouse will be 25,000 actual cubic feet per minute (acfm) with a normal exhaust gas temperature of 68 degrees Fahrenheit. At this temperature, the exhaust flow rate in acfm is equal to the flow rate in standard cubic feet per minute (scfm). Process P05 will have a process weight at design capacity of 143 tons per hour.

The allowable PM emission limit is as follows:

NR 415.05(1)(o): 0.40 lb PM/1,000 lb exhaust gas x 0.075 lb gas/scf x 25,000 scfm x 60 min/hour = 45.00 lb PM/hr

NR 415.05(2): $17.31 \times (143)^{0.16}$
= 38.31 lb PM/hr

The PM emission limitation using the applicable concentration limit under 415.05(2) is the more restrictive PM emission limit. Therefore, the allowable PM emission rate is 38.31 pounds of PM per hour.

The PM MTE for Process P05 is 2,685 pounds of PM per hour. A baghouse will be used to control PM. The manufacturer guarantee for the outlet loading of the baghouse will 0.004 gr/dscf Based on the use of a baghouse an outlet loading of 0.004 gr/dscf, the PM MTE for Process P06 will be 0.825 pounds of PM per hour. A 20% safety factor was used when setting the modeling based permit limit of 1.0 lbPM10/hr. With the use of a baghouse, the PM PTE is below the allowable emission rate in NR 415.

Ambient Air Quality
The air quality modeling analysis demonstrated that the process P05 will not contribute to the exceedance of the PM_{10} NAAQS and increment. The form of the standard is a 24-hour average. The stacks associated with P05, S05 and S06, are subject to the following PM_{10} emission limits based on the air quality modeling: 1.0 lbs/hr each. Compliance demonstration will be based on the venting of all wood dust generating activities for collection, controlling particulates with a baghouse, and not exceeding the 0.004 gr/dscf outlet grain loading. See Air Quality Review for more information.

COMPLIANCE EMISSION TESTING

Particulate matter and PM_{10} compliance emission testing is include in the draft permit to initially verify the control efficiency of the baghouses to demonstrate compliance with I.D.1.a.(a) and (2). Construction permits may include initial compliance emission testing to verify a source can meet an emission limit, per s. 285.65(3) and (10), Wis. Stats. Estimated emissions from the emission unit are close to the synthetic minor limit. The total quantity of MTE

emissions from the source are significant enough, combined with the low lb/hr particulate matter and PM_{10} rates in the draft permit, to require compliance emission testing to demonstration initial compliance. When a control device is being relied upon to meet an emission limit or an avoidance limit, reliable information on the control efficiency and whether the control device is susceptible to performance degradation, or frequent upset or malfunction is necessary to evaluate continuous compliance.

Chapter NR 431 – Control of Visible Emissions
NR 431.05 provides visible emission limitations for air emission sources which commenced construction or modification after April 1, 1972. NR 431.05 states that air emissions may not cause or allow emissions of shade density greater than number 1 of the Ringelmann chart or 20% opacity. Since Abet will be using a baghouse to control emissions, it is not expected that the visible emission limitation of 20% opacity would be exceeded.

40 CFR Part 63, Subpart DDDD — National Emission Standards for Hazardous Air Pollutants (NESHAP) for Plywood and Composite Wood Products
Subpart DDDD applies to facilities that own or operate a plywood and composite wood products (PCWP) manufacturing facility that are located at a major source of HAPs. A PCWP manufacturing facility is a facility that manufactures plywood and composite wood products by bonding wood material (fibers, particles, strands, veneers, etc.) or agricultural fiber, generally with resin under heat and pressure, to form a structural panel or engineered wood product. PCWP manufacturing facilities also include facilities that manufacture dry veneer and lumber kilns located at any facility. PCWP include, but are not limited to, plywood, veneer, particleboard, oriented strandboard, hardboard, fiberboard, medium density fiberboard, laminated strand lumber, laminated veneer lumber, wood I-joists, kiln-dried lumber, and glue-laminated beams. Since Abet will be an area source of HAPs (not a major source of HAPs), Abet will not be subject to Subpart DDDD.

40 CFR Part 63, Subpart QQQQQQ — National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wood Preserving Area Sources
Subpart QQQQQQ applies to wood preservation which is the pressure of thermal impregnation of chemicals into wood to provide effective long-term resistance to attack by fungi, bacterial, insects, and marine borers. The pollutants EPA regulates from wood preserving sources include chromium, arsenic, dioxins, and methylene chloride. Facilities are subject to this subpart if they own or operate a new or existing affected source that is an area source, is located at an area source or is part of an area source of HAPs. Abet will be an area source of HAPs but does not intend to use wood preservatives.

40 CFR Part 63, Subpart JJ — National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wood Furniture Manufacturing Operations
Subpart JJ applies to facilities that are major sources of HAPs and that are engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components. Wood furniture means any product made of wood, a wood product such as rattan or wicker, or an engineered wood product such as particleboard that is manufactured at any facility that is engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components, including, but not limited to, facilities under any of the following standard industrial classification codes: 2434, 2511, 2512, 2517, 2519, 2521, 2531, 2541, 2599, or 5712. Wood furniture component means any part that is used in the manufacture of wood furniture. Examples include, but are not limited to, drawer sides, cabinet doors, seat cushions, and laminated tops. However, if a facility only performs incidental wood furniture manufacturing but is a major source due to other unrelated activities, the facility is not subject to the regulation if no more than 100 gallons per month of finishing material and adhesives are used in the manufacture of wood furniture or wood furniture components. This exemption would include operations such as hobby shops on military bases or maintenance shops at chemical plants that manufacture wood furniture items such as bookshelves for on-site use. These facilities must maintain records to demonstrate that their usage of wood furniture finishing material and adhesives is no more than 100 gallons per month. Since Abet will be an area source of HAPs (not a major source of HAPs), Abet will not be subject to Subpart JJ.

40 CFR Part 63, Subpart QQQQ — National Emission Standards for Hazardous Air Pollutants (NESHAP) for Surface Coating of Wood Building Products
Subpart QQQQ applies to facilities that perform surface coating of wood building products, which means the

application of coatings using, for example, roll coaters or curtain coaters in the finishing or laminating of any wood building product that contains more than 50 percent by weight wood or wood fiber excluding the weight of any glass components, and is used in the construction, either interior or exterior, of a residential, commercial, or institutional building. The wood building products source category includes the subcategories: doors, windows, and miscellaneous, flooring, interior wall paneling and tileboard, other interior panels, and exterior siding and primed doorskins. Facilities are subject to this subpart if they own or operate a new, reconstructed, or existing affected source, as defined in § 63.4682, that uses 4,170 liters (1,100 gallons) per year, or more, of coatings in the source category of this section and that is a major source, is located at a major source, or is part of a major source of emissions of hazardous air pollutants (HAP). Since Abet will be an area source of HAPs (not a major source of HAPs), Abet will not be subject to Subpart QQQQ.

Boiler B10*/S10 – Natural Gas-Fired 23.4 MMBtu/hr Boiler*
Boiler B11*/S11 – Natural Gas-Fired 23.4 MMBtu/hr Boiler*

Chapter NR 415 – Control of Particulate Matter (PM)
NR 415.06(2) establishes PM emission limits for fuel burning units constructed or last modified after April 1, 1972 with maximum heat input more than one MMBtu per hour. The natural gas-fired unit will be subject to the 0.15 pounds of PM per million BTU heat input emission limitation in NR 415.06(2)(a).

The heat input capacity of each proposed new boiler will be a maximum of 23.4 million Btu (MMBtu) per hour. Thus, the allowable PM emissions from the boiler are:

0.15 pounds PM/MMBtu x 23.4 MMBtu/hour = 3.5 pounds PM per hour

Since the emissions are uncontrolled, maximum theoretical emissions (MTE) equals potential to emit (PTE). Using the EPA's Roy Huntley emission factor of 0.52 pounds of PM per million cubic feet (mmcf) and the maximum heat input capacity, the PM MTE and PTE is 0.012 pounds of PM per hour (23.4 MMBtu/hour x mmcf/1020 MMBtu x 0.52 pounds PM/mmcf) which is below the allowable emission limit in NR 415.06(2)(a).

Chapter NR 419 – Control of Organic Compound Emissions
The natural gas-fired combustion unit will be subject to the general limitation under NR 419.03 which states that no person may cause, allow, or permit organic compound emissions into the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. The general limitations are included in Part II of the permit. Since natural gas is a clean burning fuel, organic compound emissions from the natural gas-fired combustion unit are low.

Chapter NR 426 – Control of Carbon Monoxide Emissions
The natural gas-fired combustion unit will be subject to the general limitation under NR 426.03 which states that no person may cause, allow, or permit emissions of carbon monoxide to the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. The general limitations are included in Part II of the permit. Since natural gas is a clean burning fuel, carbon monoxide emissions from the natural gas-fired combustion unit are low.

Chapter NR 428 – Control of Nitrogen Compound Emissions
The natural gas-fired combustion unit will be subject to the general limitation under NR 428.03 which states that no person may cause, allow, or permit nitrogen oxides or nitrogen compounds to be emitted to the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. The general limitations are included in Part II of the permit. Since natural gas is a clean burning fuel, nitrogen oxide emissions from the natural gas-fired combustion unit are low.

Chapter NR 431 – Control of Visible Emissions

NR 431.05 provides visible emission limitations for air emission sources which commenced construction or modification after April 1, 1972. NR 431.05 states that air emissions may not cause or allow emissions of shade density greater than number 1 of the Ringelmann chart or 20% opacity.

Since natural gas is a clean burning fuel, it is not expected that the visible emission limitation of 20% opacity would be exceeded while the unit is firing natural gas.

NR 445 – Control of Hazardous Air Pollutants

NR 445.07 – Emission thresholds, standards, control requirements and exemptions

Air emission sources which emit hazardous air pollutants (HAPs) are subject to the emission thresholds, standards, and control requirements of chapter NR 445.07. However, NR 445.07(5), provides an exemption for HAP emissions from combustion of group 1 virgin fossil fuels. Group 1 virgin fossil fuels include natural gas. The boiler at Abet will use group 1 virgin fossil fuels and therefore will only be subject to the general limitations of NR 445.03.

NR 445.03 – General limitations

Chapter NR 445.03 states that no person may cause, allow, or permit emissions into the ambient air of any hazardous substance in a quantity or concentration or for a duration that is injurious to human health, plant or animal life unless the purpose of that emission is for the control of plant or animal life. Since natural gas is a clean burning fuel and the estimated natural gas usage at Abet is anticipated to be low, HAP emissions from the natural gas-fired boiler are assumed to be negligible. It appears that Abet will comply with this general limitation.

40 CFR 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

This subpart applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour) or less, but greater than or equal to 2.9 MW (10 million Btu per hour). The boiler is subject to 40 CFR 60, Subpart Dc because it is a steam generating unit for which construction commenced after June 9, 1989 that has a maximum heat input capacity greater than 10 million BTU per hour [40 CFR 60.40c].

The table below explains the applicability of 40 CFR part 60, subpart Dc, for the Boilers B10 and B11 including any operational restrictions. The applicable requirements from the federal standard are included in the draft permit under the authority of s. 285.65(13), Wis. Stats.

Federal Standard Applicability	
NSPS for [Small Industrial-Commercial-Institutional Steam Generating Units] [40 CFR Part 60, Subpart Dc, as last amended 02/27/2014] (hereinafter subpart Dc)]	
Affected Source(s): **Stacks S10 and S11, Boilers B10 and B11** – Natural gas boilers rated at 23.5 MMBtu/hr each (to be installed under 25-MIN-136)	
This table explains the applicability of the above federal standard for the listed affected source(s), including any operational restrictions. The applicable requirements from the federal standard are included in the draft permit under the authority of s. 285.65(13), Wis. Stats.	
NSPS Section/Requirement	Applicability Description
(1) Operating Requirements	The permittee will be restricted to only firing natural gas in boilers B10 and B11.
(60.40c) *Applicability and delegation of authority*	Boilers B10 and B11 are subject to subpart Dc because they meet the applicability criteria in paragraph (a) of this section: they will each be a steam generating unit constructed after June 9, 1989 that has a maximum design heat input capacity of less than 100 MMBtu/hr and greater than 10 MMBtu/hr. Paragraph (b) explains the implementation and enforcement authority for subpart Dc and does not include applicable permit requirements. B10 and B11 do not meet any of the exemption criteria in paragraphs (c)-(i).
(60.41c) *Definitions*	Terms used in 40 CFR part 60, subpart Dc, and in section I.E.3. of the permit, are defined in 40 CFR s. 60.41c. Terms not defined in 40 CFR s. 60.41c shall

Federal Standard Applicability	
NSPS for [Small Industrial-Commercial-Institutional Steam Generating Units] [40 CFR Part 60, Subpart Dc, as last amended 02/27/2014] (hereinafter subpart Dc)]	
Affected Source(s): **Stacks S10 and S11, Boilers B10 and B11** – Natural gas boilers rated at 23.5 MMBtu/hr each (to be installed under 25-MIN-136)	
This table explains the applicability of the above federal standard for the listed affected source(s), including any operational restrictions. The applicable requirements from the federal standard are included in the draft permit under the authority of s. 285.65(13), Wis. Stats.	
NSPS Section/Requirement	Applicability Description
	have the meaning given them in the Clean Air Act and in subpart A of 40 CFR part 60.
(60.42c) *Standard for sulfur dioxide (SO2)*	Because B10 and B11 do not combust coal or oil, they are not subject to the sulfur dioxide standards in 40 CFR 60.42c(a)-(j).
(60.43c) *Standard for particulate matter (PM)*	Because B10 and B11 do not combust coal, wood or oil, they are not subject to the particulate matter standards in 40 CFR 60.43c(a)-(e)
(60.44c) *Compliance and performance test methods and procedures for sulfur dioxide*	This section does not apply to B10 and B11 because B10 and B11 are not subject to any of the emission standards for SO_2 in 40 CFR 60.42c.
(60.45c) *Compliance and performance test methods and procedures for particulate matter*	This section does not apply to B10 and B11 because B10 and B11 are not subject to any of the emission standards for PM in 40 CFR 60.43c.
(60.46c) *Emission monitoring for sulfur dioxide*	This section does not apply to B10 and B11 because B10 and B11 are not subject to any of the emission standards for SO_2 in 40 CFR 60.42c.
(60.47c) *Emission monitoring for particulate matter*	This section does not apply to B10 and B11 because B10 and B11are not subject to any of the emission standards for PM in 40 CFR 60.43c.
(60.48c) *Reporting and recordkeeping requirements*	Paragraph (a) requires an initial notification for all affected facilities. The information in paragraph (a)(1) is required for B10 and B11. Paragraphs (a)(2) and (a)(3) do not apply to B10 and B11 because they are not subject to a requirement limiting the annual capacity factor for any fuel or mixture of fuels. Paragraph (a)(4) does not apply to B10 and B11 because they are not subject to the SO_2 emission standards and will not be using an emerging technology to control SO_2 emissions. Paragraphs (b)-(f) do not apply to B10 and B11 because B10 and B11 are not subject to the emission standards for SO_2 in 40 CFR 60.42c and are not subject to the emission standards for PM in 40 CFR 60.43c. Paragraph (g) requires records of the amount of each fuel combusted. Because B10 and B11 combusts only natural gas, they are subject to the monthly recordkeeping requirements in paragraph (g)(2). Paragraph (h) does not apply to B10 and B11 because B10 and B11 are not subject to a requirement limiting the annual capacity factor for any fuel or mixture of fuels. Paragraph (i) applies to B10 and B11 and specifies records be retained for 2 years; however, the permit will require a five year record retention time. Paragraph (j) specifies the frequency of report submittals and does not apply to B10 and B11 because B10 and B11 are not required to submit reports under subpart Dc.

40 CFR 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers Area Sources

Abet will be an area source of federal hazardous air pollutant (HAP) emissions. Per 40 CFR §63.11195(e), gas-fired boilers as defined in 40 CFR §63.11237 are not subject to this subpart. The boiler will burn only natural gas and will

meet the definition of gas-fired boilers in subpart JJJJJJ. Therefore, the boilers will not be subject to 40 CFR Part 63, subpart JJJJJJ.

40 CFR 63, Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Major Sources Industrial, Commercial, and Institutional Boilers and Process Heaters
Subpart DDDDD applies to industrial, commercial, or institutional boilers or process heaters that are located at, or are part of, a major source of HAP, except as specified in 40 CFR s. 63.7491. As defined in 40 CFR s. 63.7575, boiler means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Since Abet will be an area source of HAPs (not a major source of HAPs), Abet will not be subject to Subpart DDDDD.

Ambient Air Quality
The air quality modeling analysis demonstrated that the Boilers B10 and B11 will not contribute to the exceedance of the CO, NOx, SO_2, $PM_{10,}$ NAAQS or increment. The MTE emission rates for CO, SO_2 and PM_{10} were used in the modeling, and therefore it is expected the source will comply with the NAAQS and increment. The boilers will be equipped with low-NOx burners that meet an emission rate of 0.05 lb/MMBtu. The draft permit requires that the boilers are specified by the manufacturer to meet an emission rate of 0.05 lb/MMBtu to demonstrate compliance with the NOx increment. See Air Quality Review for more information.

Boiler B12*/S12 – Natural Gas-Fired Combustion Equipment. Includes 25 MMBtu/hr of make-up air units, unit heaters, and units for building heat.*

Chapter NR 415 – Control of Particulate Matter (PM)
NR 415.06(2) establishes PM emission limits for fuel burning units constructed or last modified after April 1, 1972 with maximum heat input more than one MMBtu per hour. The natural gas-fired units will be subject to the 0.15 pounds of PM per million BTU heat input emission limitation in NR 415.06(2)(a).

The maximum heat input capacity of the proposed new combustion equipment (only individual units with a maximum heat input more than one MMBtu/hr) will be less than 25 million BTU (MMBtu) per hour. Thus, the allowable PM emissions from the miscellaneous equipment are:

0.15 pounds PM/MMBtu x 25 MMBtu/hour = 3.75 pounds PM per hour

Since the emissions are uncontrolled, maximum theoretical emissions (MTE) equals potential to emit (PTE). Using the EPA's Roy Huntley emission factor of 0.52 pounds of PM per million cubic feet (mmcf) and the maximum heat input capacity, the PM MTE and PTE is 0.013 pounds of PM per hour (25 MMBtu/hour x mmcf/1020 MMBtu x 0.52 pounds PM/mmcf) which is below the allowable emission limit in NR 415.06(2)(a).

Chapter NR 419 – Control of Organic Compound Emissions
The natural gas-fired combustion units will be subject to the general limitation under NR 419.03 which states that no person may cause, allow, or permit organic compound emissions into the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. The general limitations are included in Part II of the permit. Since natural gas is a clean burning fuel, organic compound emissions from the natural gas-fired combustion units are low.

Chapter NR 426 – Control of Carbon Monoxide Emissions
The natural gas-fired combustion units will be subject to the general limitation under NR 426.03 which states that no person may cause, allow, or permit emissions of carbon monoxide to the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. The general limitations are included in Part II of the permit. Since natural gas is a clean burning fuel, carbon monoxide emissions from the natural gas-fired combustion units are low.

Chapter NR 428 – Control of Nitrogen Compound Emissions

The natural gas-fired combustion units will be subject to the general limitation under NR 428.03 which states that no person may cause, allow, or permit nitrogen oxides or nitrogen compounds to be emitted to the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. The general limitations are included in Part II of the permit. Since natural gas is a clean burning fuel, nitrogen oxide emissions from the natural gas-fired combustion units are low.

Chapter NR 431 – Control of Visible Emissions
NR 431.05 provides visible emission limitations for air emission sources which commenced construction or modification after April 1, 1972. NR 431.05 states that air emissions may not cause or allow emissions of shade density greater than number 1 of the Ringelmann chart or 20% opacity.

Since natural gas is a clean burning fuel, it is not expected that the visible emission limitation of 20% opacity would be exceeded while the units are firing natural gas.

NR 445 – Control of Hazardous Air Pollutants
NR 445.07 – Emission thresholds, standards, control requirements and exemptions
Air emission sources which emit hazardous air pollutants (HAPs) are subject to the emission thresholds, standards, and control requirements of chapter NR 445.07. However, NR 445.07(5), provides an exemption for HAP emissions from combustion of group 1 virgin fossil fuels. Group 1 virgin fossil fuels include natural gas. The combustion units at Abet will use group 1 virgin fossil fuels and therefore will only be subject to the general limitations of NR 445.03.

NR 445.03 – General limitations
Chapter NR 445.03 states that no person may cause, allow, or permit emissions into the ambient air of any hazardous substance in a quantity or concentration or for a duration that is injurious to human health, plant or animal life unless the purpose of that emission is for the control of plant or animal life. Since natural gas is a clean burning fuel and the estimated natural gas usage at Abet is anticipated to be low, HAP emissions from the natural gas-fired combustion units are assumed to be negligible. It appears that Abet will comply with this general limitation.

40 CFR 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers Area Sources
Abet will be an area source of federal hazardous air pollutant (HAP) emissions. Per 40 CFR §63.11195(f), hot water heaters as defined in 40 CFR §63.11237 are not subject to this subpart. Any hot water heaters at Abet will be electric. Therefore, any hot water heaters will not be subject to 40 CFR Part 63, subpart JJJJJJ.

40 CFR 63, Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Major Sources Industrial, Commercial, and Institutional Boilers and Process Heaters
Subpart DDDDD applies to industrial, commercial, or institutional boilers or process heaters that are located at, or are part of, a major source of HAP, except as specified in 40 CFR s. 63.7491. As defined in 40 CFR s. 63.7575, process heater means an enclosed device using controlled flame and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material (e.g., glycol or a mixture of glycol and water) for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not come into direct contact with process materials. Process heaters do not include units used for comfort heat or space heat. Since Abet will be an area source of HAPs (not a major source of HAPs), Abet will not be subject to Subpart DDDDD.

Ambient Air Quality
The air quality modeling analysis demonstrated that B12 units will not contribute to the exceedance of the CO, NOx, SO_2, $PM_{10,}$ NAAQS or increment. The MTE emission rates for CO, NOx, SO_2 and PM_{10} were used in the modeling, and therefore it is expected the source will comply with the NAAQS and increment. The draft permit requires that the B12 units only burn natural gas to demonstrate compliance with the NOx increment. See Air Quality Review for more information.

Facility-Wide

s. 285.65(7), Wis. Stats. – Permit Conditions limiting facility-wide emissions
The permittee elected to limit total monthly VOC emissions from the use of VOC-containing materials in processes P01 to P05 to not more than 16,000 pounds per month averaged over any 12 consecutive month period. This condition ensures that the facility's potential to emit for VOCs will remain below the major source thresholds under Part 70 and PSD. The compliance demonstration for the facility-wide limit does not include VOC emissions from natural gas combustion, which are estimated to be less than 4 TPY based on a combined total heat rating of 98.8 MMBtu/hr for the facility and VOC emission factor of 5.5 lb/10^6scf from AP-42, Section 1.4-2. The proposed limit includes a buffer to account for the VOC MTE from facility-wide natural gas combustion sources. By keeping track of all VOC emissions on a monthly basis from the facility, the permittee will be able to demonstrate compliance with the limit.

The permittee elected to limit total monthly Federal HAP emissions from the use of VOC-containing materials in processes P01 to P05 to 1,650 pounds per month averaged over 12 consecutive month period for any individual Federal HAP, and the total monthly aggregate federal HAP emissions may not exceed 4,000 pounds per month averaged over any 12 consecutive month period for the aggregate of all Federal HAPs. This limits individual federal HAP emissions from the use of HAP-containing materials in processes P01 to P05 to 9.9 TPY and total federal HAP emissions to 24.0 TPY. Since fuel burning emissions are not included in the calculation, the limits allow for a buffer based on the maximum emissions from fuel burning. The highest emitted HAP from fuel combustion is hexane at 0.7 tpy and total combined federal HAPs are 0.8 tpy. The federal HAP limit is met through the use of low federal HAP containing materials and use of the permeant total enclosure and RTO (C01) for processes P01-P02. Based on current materials to be used and production practices, the facility is a natural minor for total aggregate federal HAP emissions. However, methanol emissions from P01 would exceed the individual Federal HAP threshold without the elected limitation in the permit.

HAZARDOUS AIR POLLUTANT REVIEW

A. State Hazardous Air Contaminants Regulated by Ch. NR 445, Wis. Adm. Code:

Chapter NR 445, Wis. Adm. Code, regulates emissions of the hazardous air contaminants listed in Table A of s. NR 445.07, Wis. Adm. Code.

Compliance with ch. NR 445, Wis. Adm. Code, is determined on a facility-wide basis and includes all sources of hazardous air contaminant emissions with the following exceptions:

- The emission limits and control requirements of ch. NR 445, Wis. Adm. Code, do not apply to hazardous air contaminants emitted by the emissions units, operations or activities that are regulated by an emission standard promulgated under section 112 of the Clean Air Act, per s. NR 445.01(1)(b), Wis. Adm. Code. Emission standards promulgated under section 112 of the Act include the National Emission Standards for Hazardous Air Pollutants (NESHAPs) in 40 CFR parts 61 and 63.

- Section NR 445.07(5)(a) through (f), Wis. Adm. Code, exempts specific types of hazardous air contaminant emissions from the requirements of s. NR 445.07(1)-(3), Wis. Adm. Code. Even if exempt under s. NR 445.07(5), Wis. Adm. Code, an emissions unit identified in s. NR 445.07(5)(a) through (f), Wis. Adm. Code, may be subject to other applicable requirements of ch. NR 445, Wis. Adm. Code, such as ss. NR 445.09 and NR 445.10, Wis. Adm. Code.

The following table identifies ch. NR 445, Wis. Adm. Code, applicability for emissions units at the facility that emit ch. NR 445 hazardous air contaminants.

Section NR 445.07, Wis. Adm. Code, Applicability					
		Applicability of NR 445.01(1)(b)			
Stack and Process	Type of NR 445 Contaminant Emitted [1]	Applicable NESHAP (Part, Subpart and Title) [2]	Hazardous Air Contaminants Regulated by an Emission Standard [3]	Applicable exemption under NR 445.07(5) [4]	Subject to s. NR 445.07?
B10, S10	HAPs from natural gas combustion in the boiler	40 CFR 60, Subpart Dc	None – Records of amount of fuel combusted monthly	Combustion of group 1 virgin fossil fuels [s. NR 445.07(5)(a), Wis. Adm. Code]	No – All contaminants
B11, S11	HAPs from natural gas combustion in the boiler	40 CFR 60, Subpart Dc	None – Records of amount of fuel combusted monthly	Combustion of group 1 virgin fossil fuels [s. NR 445.07(5)(a), Wis. Adm. Code]	No – All contaminants
B12, S12	HAPs from natural gas combustion in the heating units	None	N/A	Combustion of group 1 virgin fossil fuels [s. NR 445.07(5)(a), Wis. Adm. Code]	No – All contaminants
P01, S01	Phenol, Formaldehyde, HAPs from natural gas combustion in the oxidizer and oven	None	N/A	Combustion of group 1 virgin fossil fuels [s. NR 445.07(5)(a), Wis. Adm. Code]	Yes – Phenol and Formaldehyde No – HAPs from natural gas combustion
P02, S01	Phenol, Formaldehyde, HAPs from natural gas combustion in the oxidizer and oven	None	N/A	Combustion of group 1 virgin fossil fuels [s. NR 445.07(5)(a), Wis. Adm. Code]	Yes – Phenol and Formaldehyde No – HAPs from natural gas combustion
P03, S03	Phenol, Formaldehyde	None	N/A	None	Yes – Phenol and Formaldehyde
P04, S04	Phenol, Formaldehyde	None	N/A	None	Yes – Phenol and Formaldehyde
P05, S05 and S06	None	None	N/A	None	None

1 Refer to the Emissions Calculations section for process-specific emission rates of individual NR 445 pollutants.
2 Refer to the Applicable Requirements section for detailed descriptions of NESHAP applicability.
3 Only the hazardous air contaminants that are regulated by an emission standard promulgated under section 112 of the Clean Air Act are not subject to the emission limits and control requirements of ch. NR 445, Wis. Adm.

Section NR 445.07, Wis. Adm. Code, Applicability					
Stack and Process	Type of NR 445 Contaminant Emitted [1]	Applicability of NR 445.01(1)(b)		Applicable exemption under NR 445.07(5) [4]	Subject to s. NR 445.07?
		Applicable NESHAP (Part, Subpart and Title) [2]	Hazardous Air Contaminants Regulated by an Emission Standard [3]		

Code, per s. NR 445.01(1)(b), Wis. Adm. Code. Any other hazardous air contaminants that are not regulated by the section 112 emission standard are subject to the requirements of s. NR 445.07, Wis. Adm. Code, unless otherwise exempted under s. NR 445.07(5), Wis. Adm. Code. To be "regulated by an emission standard promulgated under section 112 of the Act," the hazardous air contaminants must be regulated by name of the contaminant, by virtue of regulation of another substance as a surrogate for the contaminant, or by virtue of regulation of a species or category of hazardous air contaminant that includes the contaminant.
4 Refer to the discussion following this table for additional explanation of the applicable exemptions under NR 445.07(5).

The following table identifies the exhaust points for emissions units that are sources of non-exempt hazardous air contaminants regulated by ch. NR 445, Wis. Adm. Code.

Description of Exhaust Points for Sources of Non-Exempt Hazardous Air Contaminants				
Process ID	Stack ID	Stack Height (ft)	NR 445 Stack Height Category	Stack Configuration
				Unobstructed AND within 10 degrees of vertical (y/n) [1]
P01	S01	40 ft	40 to <75 ft	Yes
P02	S01	40 ft	40 to <75 ft	Yes
P03	S03	38 ft	25 to <40 ft	Yes
P04	S04	38 ft	25 to <40 ft	Yes

1 Per s. NR 445.07(6), Wis. Adm. Code, the emission thresholds in columns (c) to (f) in Tables A, B and C of s. NR 445.07, Wis. Adm. Code, for any hazardous air contaminant may be used if emissions from the source are vented to the atmosphere from an unobstructed discharge point that is within 10 degrees of vertical. A department memorandum dated October 20, 2005, details the method for using the emission thresholds in columns (c) to (f) in Tables A, B and C of s. NR 445.07, Wis. Adm. Code, for obstructed and/or non-vertical stacks and fugitive emissions not exempt under the indoor fugitive emissions exemptions in s. NR 445.07(5)(d), Wis. Adm. Code.

The facility does not generate hazardous air contaminant emissions from the manufacture or treatment of pesticides, rodenticides, insecticides, herbicides, fungicides, or pharmaceuticals. Therefore, the thresholds in Table B and Table C and the requirements of s. NR 445.07(2) and (3), Wis. Adm. Code, are not applicable.

When comparing non-exempt, potential to emit emissions of hazardous air contaminants with the thresholds in columns (c) to (f) of Table A of s. NR 445.07, Wis. Adm. Code, the non-exempt, potential to emit emissions for each contaminant for all stacks within each of the four stack categories are combined and each group of non-exempt, potential to emit emissions are compared against the respective threshold found in column (c), (d), (e) or (f) in Table A of s. NR 445.07, Wis. Adm. Code. The total facility non-exempt, potential to emit of hazardous air contaminants regulated by ch. NR 445, Wis. Adm. Code, are summarized in the following table. Note that these potential emissions do not reflect the permit limitations on formaldehyde emissions that are discussed below. The table also lists the Table A thresholds (annual and/or 1-hour/24-hour average) for each hazardous air contaminant for each stack height category.

Total Facility Non-Exempt, Potential to Emit for Hazardous Air Contaminants Regulated by s. NR 445.07, Wis. Adm. Code									
NR 445 Hazardous Air Contaminant	**Stack Height Category**	**EUnobstructed**		**4 ´ (Eobstructed + EFugitive)**		**ETotal**		**Ch. NR 445 Thresholds (lb/hr or lb/yr)**	
		lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	1-hr/24-hr avg.	Annual
Phenol	25 to <40 ft	0.0033				0.0033		4.02	
Phenol	40 to <75 ft	1.83				1.83		8.1	
Formaldehyde	25 to <40 ft		481				481		562
Formaldehyde	40 to <75 ft		2970				2970		1,337

E = Hazardous air contaminant PTE.

[$E_{Total} = E_{Unobstructed} + 4 \times (E_{Obstructed} + E_{Fugitive})$] per Wisconsin DNR memorandum detailing the method for using Table A for obstructed and/or non-vertical stacks, dated October 20, 2005.

As shown in the previous table the total non-exempt potential emission rates, in the absence of any permit limitations, for each hazardous air contaminant, for each stack category are below the corresponding threshold in columns (c) to (f) of Table A of s. NR 445.07, Wis. Adm. Code, with the following exceptions:

Formaldehyde, for stacks 40<75ft (P01 and P02)

For the hazardous air contaminants with non-exempt potential emissions below all applicable thresholds in columns (c) to (f) of Table A of s. NR 445.07, Wis. Adm. Code, the source satisfies the requirements of s. NR 445.07(1), Wis. Adm. Code, using the compliance method in s. NR 445.08(2)(a), Wis. Adm. Code. A discussion of how the facility will comply with s. NR 445.07, Wis. Adm. Code, for formaldehyde emissions is provided below.

The formaldehyde rate used for the stacks 40<75 assumed the use of an RTO to control formaldehyde emissions from P01 and P02. The controlled emission rate for stacks 40<75 assumes that 97% of the formaldehyde is captured and controlled through combustion in the RTO (C01). All the stacks emitting formaldehyde are vertical and unobstructed. As shown in the below table the total non-exempt potential emission rates for formaldehyde with all draft permit limits ($E_{445.07(1)(a)}$), for each stack category are below the corresponding threshold in columns (c) to (f) of Table A of s. NR 445.07, Wis. Adm. Code, provided that the permittee operates control devices C01 in a manner that achieves good combustion to control formaldehyde emissions by 97% and limits monthly formaldehyde emissions from P01 and P02 combined to 111 pounds per month averaged over each 12 consecutive month period (1,332 pounds per year). Therefore, for formaldehyde, the source satisfies the requirements of s. NR 445.07(1), Wis. Adm. Code, for stacks 25<40 ft using the compliance method in s. NR 445.08(2)(a), Wis. Adm. Code.

Table 7.1-B Summary of emissions of Formaldehyde

Pollutant	**Stack Height Class**	**$E_{Controlled}$**		**$E_{445.07(1)(a)}$**		**Ch. NR 445 Thresholds (lb/hr or lb/yr)**	
		lb/hr	lb/yr	lb/hr	lb/yr	1-hr/24-hr avg.	Annual
Formaldehyde	40 ft to < 75 ft	0.339	2970	0.339	1332		1335

*Because stacks S03 and S04 have obstructed discharge, the proposed permit limit of 138 pounds formaldehyde per year from P03 and P04 is multiplied by four to compare against the s. NR 445 table threshold.

COMPLIANCE ASSURANCE MONITORING (CAM)

Part 64 of 40 CFR requires that certain pollutant-specific emissions units at sources required to obtain a Part 70 permit, comply with CAM requirements.

Because the source is not a Part 70 major source the requirements of CAM do not apply.

AIR QUALITY REVIEW

The Clean Air Act requires U.S. EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants that are common in outdoor air, considered harmful to public health and the environment, and that come from numerous and diverse sources. The criteria pollutants for which there are primary and secondary NAAQS include carbon monoxide (CO), particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}), particulate matter with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3) and Lead (Pb). Primary standards provide protection of public health, including protecting the health of sensitive populations, with an adequate margin for safety. Secondary standards provide protection of public welfare, including protection against decreased visibility and damage to animals, crops, vegetation and buildings. U.S. EPA periodically reviews, revises and establishes new standards based on the latest available scientific information on the nature of and ambient exposure to pollutants. To learn more about NAAQS for criteria pollutants, visit https://www.epa.gov/criteria-air-pollutants.

The NAAQS is a maximum allowable concentration ceiling for a pollutant. An ambient air increment is the maximum allowable increase in concentration that is allowed to occur above a baseline concentration for a pollutant. The baseline concentration is defined for each pollutant and is the ambient concentration existing at the time the first Prevention of Significant Deterioration (PSD) permit application affecting the area is submitted. Significant deterioration is said to occur when the amount of new pollution would exceed the applicable PSD increment. It is important to note, that the air quality cannot be allowed to deteriorate beyond the concentration allowed by the NAAQS, even if not all the PSD increment is consumed.

To learn more about ambient air increments, visit https://www.epa.gov/nsr/prevention-significant-deterioration-basic-information. In addition to the NAAQS which apply to criteria pollutants, Wisconsin has established ambient air standards for approximately 550 hazardous air contaminants that are known or suspected to cause cancer or other serious health impacts or adverse environmental effects.

Section 285.63(1)(b), Wis. Stats., allows the department to approve a permit application only if it finds the source will not cause or exacerbate a violation of any ambient air quality standard or ambient air increment. See the Preliminary Determination section for additional information and other criteria for permit approval. This section describes the department's finding under s. 285.63(1)(b), Wis. Stats.

Volatile Organic Compounds: The emissions units B10, B11, B12, P01, P02, P03 and P04 covered by this permit will be capable of emitting volatile organic compounds. Volatile organic compounds are precursors to ozone. Ozone is a regional pollutant which is formed in the atmosphere through complex chemical reactions. There is no approved dispersion model for predicting the impact VOC emissions from direct stationary sources will have on ozone concentrations. There are no ambient air quality standards specifically for VOCs. Therefore, dispersion modeling of VOC emissions from direct stationary sources is not performed.

$PM_{2.5}$: The emissions units B10, B11, B12, P01 and P02 covered by this permit will be capable of emitting $PM_{2.5}$. For the reasons described in Appendix B of the "Wisconsin Air Dispersion Modeling Guidelines", dated March 2018, the department has concluded that direct $PM_{2.5}$ emissions from existing sources, minor new sources, and minor modifications of sources do not cause or exacerbate violation of the $PM_{2.5}$ air quality standard or increment. This conclusion and the information contained in Appendix B of the "Wisconsin Air Dispersion Modeling Guidelines" serves as the department's finding pursuant to s. 285.63(1)(b), Wis. Stats for the $PM_{2.5}$ air quality standard and increment and sets forth the legal and factual basis for the draft permit conditions.

Nitrogen Oxides: The emissions units B10, B11, B12, P01 and P02 covered by this permit will be capable of emitting nitrogen oxides (NOx). For the reasons described in Appendix C of the "Wisconsin Air Dispersion Modeling Guidelines", dated March 2018, the department has concluded that direct NO_x emissions from stationary sources that are not large and comparatively steady sources of direct NOx emissions, do not cause or exacerbate violation of the 1-hour NO2 ambient air quality standard. This conclusion and the information contained in Appendix C of the "Wisconsin Air Dispersion Modeling Guidelines" serves as the department's finding pursuant to s. 285.63(1)(b), Wis. Stats for the 1-hour NO_2 air quality standard and sets forth the legal and factual basis for the draft permit

conditions. Large and comparatively steady sources of NO_x emissions, include sources with one or more individual combustion units with a maximum heat input rating of 250 MMBtu/hr or more. Emissions Units B10, B11, B12, P01 and P02 are not individual combustion units with a maximum heat input of 250 MMBtu/hr or more and the dispersion modeling analysis described below does not assess the impact of these emissions units on 1-hour NO_2 concentrations.

Dispersion modeling of annual NO_x emissions is an effective tool for predicting a source's impact on ambient annual NO_2 concentrations as explained in Appendix C of the "Wisconsin Air Dispersion Modeling Guidelines". The dispersion modeling analysis described below assesses the impact of the facility on annual NO_2 concentrations.

Dispersion Modeling Analysis: The emissions units covered by this permit will be capable of emitting PM_{10}, SO_2, NO_x, and CO. The department performed a dispersion modeling analysis as part of the review for this permit to predict the source's potential impact on ambient concentrations of these pollutants. See the dispersion modeling analysis described below.

The results of the dispersion modeling are summarized in a memo dated March 26, 2026 and are shown below. The dispersion modeling predicts that the source impact will not cause or exacerbate a violation of the ambient air quality standards and ambient air increments, taking into consideration background concentrations. The assumptions used in the dispersion modeling, including emission rates and stack parameters are summarized below. In addition to the applicable limits the following additional requirements were assumed in the dispersion modeling and are included in the draft permit to assure the ambient air quality standards and increments will be protected. All other processes other than P05 described below were modeled at or above the MTE rates for PM_{10}, and therefore additional requirements weren't included in the draft permit for demonstrating compliance with the PM_{10} increment.

Permit Requirements to Assure Ambient Air Quality Standards and Ambient Air Increments are Protected

Stack ID	Process ID	Permit Requirement
S05/S06	P05	PM10 emissions from stacks S05 and S06 will be restricted to not more than 1.0 pounds per hour each. This limit is more restrictive than the allowable emission rate of 3.3 lbs/hr. It is expected that stacks S05 and S06 will meet this more restrictive limit as the PM10 PTEs are less than 1.0 pound per hour. PTEs were calculated using the 0.004 gr/dscf from the baghouse manufacturer along with a safety factor of 1.15 and assume proper maintenance and monitoring of the baghouse. See permit condition I.D.1.a.(2).

DATE: April 2, 2026 FID: 128140870
Permit: 25-MIN-136

TO: Hanna Moscho

FROM: John Roth

SUBJECT: Revised Air Dispersion Analysis for Abet USA – Johnson Creek (Jefferson County)

Introduction

A revised dispersion modeling analysis was completed on April 2, 2026 to assess the impact to ambient air of carbon monoxide (CO), particulate matter (PM_{10}), sulfur dioxide (SO_2), and nitrogen oxide (NO_x) emissions from Abet USA in Johnson Creek, Jefferson County. The analysis was performed in support of construction permit 25-MIN-136.

Modeling Analysis

- Abet USA supplied the emission parameters used in this analysis via information provided by the Sigma Group. Building dimensions were determined using BPIP-PRIME with measurements taken on plot plans provided with the application. Please refer to the source tables.

- Five years (2016-2020) of processed meteorological data was used in this analysis. The surface data was collected in Madison (KMSN), and the upper air meteorological data originated in Green Bay.

- The AERMIC (AMS/EPA Regulatory Model Improvement Committee) Model (AERMOD) was also used in the analysis. The model used rural dispersion coefficients with the regulatory default options. These allow for calm wind and missing data correction, buoyancy induced dispersion, and building downwash including recirculation cavity effects.

- The receptors used in this analysis consisted of a rectangular grid of 1,330 points with 25-meter resolution extending 450 meters from the facility. Points not considered ambient air were removed. Receptor elevations were derived from AERMAP using the National Elevation Dataset.

- The Jefferson County minor source PSD baselines for PM_{10}, SO_2, and NO_x were all set in 1990, so an increment analysis was performed. Increase of allowable emission since the baseline date may consume increment, and all sources at Abet USA consume. There are no additional increment consuming sources in the area.

- This revised analysis considered updated stack parameters for S03, S04, S05, and S06.

Background Concentrations

Abet USA is in the Village of Johnson Creek, Jefferson County, Wisconsin. The village has a population of about 3,300 people, so background concentrations were determined by examining State of Wisconsin ambient air monitoring data from similar locations. Background concentration for PM_{10} was determined using an average of the monitoring data collected near Horicon Marsh Wildlife Area and at Devils Lake State Park. These two locations are the only PM_{10} monitor locations in Wisconsin outside of large populous areas. Background values for SO_2 and CO were determined using data from the Horicon Marsh Wildlife Area as this is the only monitor location for these pollutants outside of large populous areas. As there is no NO_2 monitoring in Wisconsin outside of large populous cities, background for NO_2 was determined using an average of data collected in Van Buren County, IA and Missaukee County, MI.

Model Results

The results of the dispersion modeling analysis indicate that all air quality standards will be met assuming the emission rates and stack parameters listed in the source tables.

Modeling Analysis Results (All Concentrations in µg/m³)					
•	PM_{10} 24 Hour	PM_{10} Annual	NO_2 Annual	CO 1 Hour	CO 8 Hour
New Source Impact	28.6	6.26	19.1	n/a	n/a
PSD Increment	30.0	17.0	25.0	n/a	n/a

% Increment Consumed	95.3	36.8	76.4	n/a	n/a
Total Concentration (Modeled plus Background)	55.6	n/a	28.6	855.3	614.1
NAAQS	150.0	n/a	100.0	40,000	10,000
% NAAQS	37.1	n/a	28.6	2.1	6.1

Note: The USEPA and WDNR Ambient Ratio Method Tier II was applied to convert NO_x emissions into NO_2

Modeling Analysis Results (All Concentrations in µg/m^3)				
•	SO_2 1 Hour	SO_2 3 Hour	SO_2 24 Hour	SO_2 Annual
New Source Impact	n/a	1.93	0.88	0.19
PSD Increment	n/a	512.0	91.0	20.0
% Increment Consumed	n/a	0.4	1.0	1.0
Total Concentration (Modeled plus Background)	5.41	4.97	n/a	n/a
NAAQS	196.2	1,300	n/a	n/a
% NAAQS	2.8	0.4	n/a	n/a

Conclusion

The results of the modeling analysis demonstrate that the applicable air quality standards will be satisfied assuming the emissions rates and stack parameters listed in the source tables.

ABET USA – Johnson Creek (Jefferson County) Source Parameters‡						
Stack ID	LOCATION (UTM83)	HEIGHT (M)	HEIGHT (FT)	TEMP (K)	VELOCITY (M/S)	DIAM (M)
S01	356240, 4772586	12.19	40	394.3	9.167	1.280
S03	356305, 4772651	11.58	38	293.2	34.50	0.4572
S04	356285, 4772617	11.58	38	422.0	15.81	0.4572
S05	356359, 4772682	12.19	40	324.8	14.56	1.016
S06	356378, 4772678	12.19	40	324.8	14.56	1.016
S10	356251, 4772620	12.80	42	505.4	6.468	0.6096

‡ The source parameters in the table were used for modeling purposes, based on conversion from English units. Refer to the permit application forms or submittals in support of the application for the original English unit parameters.

S11	356254, 4772632	12.80	42	505.4	6.468	0.6096
Area ID	LOCATION (UTM83)	HEIGHT (M)	HEIGHT (FT)	X-DIM (M)	Y-DIM (M)	ANGLE (deg)
B12	356251, 4772536	11.28	37	95	165	15.0

ABET USA – Johnson Creek (Jefferson County) Emission Rates				
Source ID	PM_{10} Rate (LB/HR)	NO_x Rate (LB/HR)	SO_2 Rate (LB/HR)	CO RATE (LB/HR)
S01	**0.020**	**2.65**	**0.016**	2.23
S03	**0.13**	-	-	-
S04	**0.60**	-	-	-
S05	**1.00**	-	-	-
S06	**1.00**	-	-	-
S10	**0.012**	**1.15**	**0.014**	1.93
S11	**0.012**	**1.15**	**0.014**	1.93
B12	**0.013**	**2.45**	**0.015**	2.06

Note: All emissions consume increment

EMISSIONS FROM NEW (OR MODIFIED) EQUIPMENT

The table below provides a summary of the maximum theoretical emissions and potential to emit for each process to be located at the facility. A discussion of how emissions are calculated for each process is provided in the Emission Calculations section.

A. Emissions from New Equipment– PTE

Abet USA - Johnson Creek (FID: #128140870)

Johnson Creek, WI

Facility-Wide Air Emissions - Potential to Emit

Project Reference #24580

	Boiler #1 (B10, S10)		Boiler #2 (B11, S11)		Miscellaneous Natural Gas-Fired Equipment (B12, S12)		Sanding, Edging/Trimming, and Fabrication (P05, C05, S05)		Sanding, Edging/Trimming, and Fabrication (P05, C06, S06)		Treater #1 (P01, C01, S01)		Treater #2 (P02, C01, S01)		Paper Setup Station (P03, S03)		HPL Press (P04, S04)		Facility-Wide Potential to Emit (PTE)	
Pollutant	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**
Criteria Pollutants																				
Particulate	0.012	0.05	0.012	0.05	0.013	0.06	2.0	8.76	2.0	8.76	0.01	0.05	0.00	0.01	0.13	0.58	0.57	2.50	4.74	20.82
PM_{10}	0.012	0.05	0.012	0.05	0.013	0.06	1.0	4.38	1.0	4.38	0.01	0.05	0.00	0.01	0.13	0.58	0.33	1.43	2.63	10.87
$PM_{2.5}$	0.010	0.04	0.010	0.04	0.011	0.05					0.01	0.04	0.00	0.01					0.04	0.18
SO_2	0.014	0.06	0.014	0.06	0.015	0.06					0.01	0.06	0.00	0.01					0.06	0.25
NO_x	1.147	5.02	1.147	5.02	2.451	10.7					2.16	9.45	0.49	2.15					7.39	32.38
VOC	0.126	0.55	0.126	0.55	0.135	0.59					9.51	41.63	1.26	5.54	0.41	1.81	0.37	1.64	11.94	52.31
CO	1.927	8.44	1.927	8.44	2.059	9.02					1.81	7.94	0.41	1.80					8.14	35.64
Hazardous Air Pollutants (HAPs)																				
Arsenic (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Benzene (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Beryllium (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Cadmium (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Chromium (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00

Cobalt (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Dichlorobenzene (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Formaldehyde (f, s)	0.00	0.01	0.00	0.01	0.00	0.01					0.222	0.666	0.117	0.666	0.01	0.05	0.04	0.19	0.40	1.62
Hexane (f, s)	0.04	0.18	0.04	0.18	0.04	0.19					0.04	0.17	0.01	0.04					0.17	0.76
Manganese (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Mercury (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Naphthalene (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Nickel (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
POM (f)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Selenium (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Toluene (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Methanol (f)											7.33	9.90							7.33	9.90
Phenol (f, s)											1.83	8.03			0.0022	0.010	0.0011	0.005	1.84	8.04
Total Federal HAPs	0.04	0.19	0.04	0.19	0.05	0.20													9.74	19.64

Limits for NR 445 limit on P01 and P02 combined for formaldehyde and federal HAP limit of 9.9 tons per year for individual HAPs

B. Emissions from New Equipment– MTE

Abet USA - Johnson Creek (FID: #128140870)

Johnson Creek, WI

Facility-Wide Air Emissions - Maximum Theoretical Emissions

Project Reference #24580

	Boiler #1 (B10, S10)		Boiler #2 (B11, S11)		Miscellaneous Natural Gas-Fired Equipment (B12, S12)		Sanding, Edging/Trimming, and Fabrication (P05, C05, S05)		Sanding, Edging/Trimming, and Fabrication (P05, C06, S06)		Treater #1 (P01, C01, S01)		Treater #2 (P02, C01, S01)		Paper Setup Station (P03, S03)		HPL Press (P04, S04)		Facility-Wide Maximum Theoretical Emissions (MTE) (Uncontrolled)	
Pollutant	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**
Criteria Pollutants																				
Particulate	0.012	0.05	0.012	0.05	0.013	0.06	2,685	11,759	260	1,139	0.01	0.05	0.00	0.01	0.13	0.58	0.57	2.50	2,945	12,901
PM_{10}	0.012	0.05	0.012	0.05	0.013	0.06	2,685	11,759	260	1,139	0.01	0.05	0.00	0.01	0.13	0.58	0.33	1.43	2,946	12,901
$PM_{2.5}$	0.010	0.04	0.010	0.04	0.011	0.05					0.01	0.04	0.00	0.01					0.04	0.18
SO_2	0.014	0.06	0.014	0.06	0.015	0.06					0.01	0.06	0.00	0.01					0.06	0.25
NO_x	1.147	5.02	1.147	5.02	2.451	10.74					2.16	9.45	0.49	2.15					7.39	32.38
VOC	0.126	0.55	0.126	0.55	0.135	0.59					315.1	1,38	41.57	182.1	0.41	1.81	0.37	1.64	357.85	1,567
CO	1.927	8.44	1.927	8.44	2.059	9.02					1.81	7.94	0.41	1.80					8.14	35.64
Hazardous Air Pollutants (HAPs)																				
Arsenic (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Benzene (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Beryllium (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Cadmium (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Chromium (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Cobalt (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Dichlorobenzene (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00

Formaldehyde (f, s)	0.00	0.01	0.00	0.01	0.00	0.01					7.38	32.34	3.93	17.20	0.01	0.05	0.04	0.19	11.37	49.81
Hexane (f, s)	0.04	0.18	0.04	0.18	0.04	0.19					0.04	0.17	0.01	0.04					0.17	0.76
Manganese (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Mercury (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Naphthalene (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Nickel (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
POM (f)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Selenium (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Toluene (f, s)	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00					0.00	0.00
Methanol (f)											246	1,078							246	1,078
Phenol (f, s)											62	269.46			0.0022	0.010	0.0011	0.005	61.52	269.48
Total Federal HAPs	0.04	0.19	0.04	0.19	0.05	0.20													319.16	1,398

SOURCE CLASSIFICATION

The status of the facility is discussed in this section with respect to Prevention of Significant Deterioration (PSD), Non-Attainment Area (NAA), and Part 70 applicability. This discussion identifies whether the proposed project and the facility after the project are major or minor sources with respect to Part 70 and either PSD or NAA. For PSD, major stationary source has the meaning given in s. NR 405.02(22), Wis. Adm. Code. For Part 70, major source has the meaning given in s. NR 407.02(4), Wis. Adm. Code. For NAA, major source has the meaning given in s. NR 408.02(21), Wis. Adm. Code.

Facility Status After Issuance of Permit

The facility is not located in an area designated as nonattainment for any pollutant.

The facility is an area (minor) source of hazardous air pollutants regulated by the Clean Air Act (federal HAPs) because the current permit limits the potential emissions of each single federal HAP to less than 10 tons per year and the potential emissions of all federal HAPs combined to less than 25 tons per year.

The facility is a minor source for Part 70 because the permit will limit the potential emissions of PM10 and VOC to less than the Part 70 major source threshold of 100 tons per year. The potential emissions of each other regulated pollutant is less than the Part 70 threshold of 100 tons per year.

The facility is a minor source for Prevention of Significant Deterioration (PSD) purposes because the source is not one of the stationary source types listed in s. NR 405.02(22)(a)1., Wis. Adm. Code, and the potential emissions of each air contaminant subject to regulation under the Act are less than 250 tons per year.

Source Status Summary

Facility Classification [a]				
Program [b]	**After Permit Issuance**			
	Major	**Synthetic Minor**		**Minor**
PSD		X		
NAA NSR		NA		
Part 70 [e]		X		
Federal HAPs		X		
EPA Class Code				
	A	**SM80**	**SM**	**B**
EPA Class Code [f]			X	

[a] *A facility can only have one overall classification for each program. If a facility has potential emissions of a single pollutant which exceed the major source thresholds for Part 70, including the major source thresholds for HAPS, the facility is a Part 70 source. The same applies for the EPA class code and the source status for PSD. A facility can be a Part 70 source for criteria pollutants and an area (i.e., minor) source of HAPs. If a facility is a major source of HAPs, it is a Part 70 source.*

[b] *As required by 40 CFR s. 70.5(c)(3)i., emission estimates sufficient to verify which requirements are applicable to the source are included in this analysis. Based on the definitions in ss. NR 400.02(123m) and (124), Wis. Adm. Code, direct $PM_{2.5}$ emissions cannot exceed PM_{10} emissions. Since PM_{10} and $PM_{2.5}$ have the same major source thresholds, emission estimates of PM_{10} are sufficient for determining Part 70 and PSD source status.*

[c] *For PSD, major stationary source has the meaning given in s. NR 405.02(22), Wis. Adm. Code. For nonattainment areas (NAA), major stationary source has the meaning given in s. NR 408.02(21), Wis. Adm. Code. For Part 70, major source has the meaning given in s. NR 407.02(4), Wis. Adm. Code.*

[d] *A source classified as synthetic minor is a stationary source that has maximum theoretical emissions greater than the major source threshold and has its potential to emit limited by practicably enforceable permit conditions so that it is not a major source. There are two categories of synthetic minor sources for EPA Class Code, SM80 and SM.*

[e] *Part 70 source is defined in s. NR 407.02(6), Wis. Adm. Code. Note: When determining whether a stationary source is a major source for particulate matter, a stationary source is a Part 70 major source if it emits or has the potential to emit, 100 tpy or more of PM_{10} per s. NR 407.02(4)(b), Wis. Adm. Code.*

[f] *EPA Class Codes: "A" means the source's maximum theoretical emissions and potential to emit for one or more pollutants are greater than Part 70 major source thresholds. "SM80" means the source's maximum theoretical emissions of one or more pollutants are greater than Part 70 major source thresholds and potential to emit is at least 80% but less than 100% of Part 70 major source thresholds. "SM" means the source's maximum theoretical emissions of one or more pollutants are greater than Part 70 major source thresholds but potential to emit for all pollutants is less than 80% of Part 70 major source thresholds. "B" means the source's maximum theoretical emissions and potential to emit for all pollutants are less than major source thresholds.*

Pollutant Specific EPA Class Code

Pollutant specific classifications are used for compliance purposes. A facility can only have one overall EPA class code. The facility's EPA class code is shown in the previous section.

Pollutant	Pollutant Specific EPA Class Code After Permit Issuance			
	A	SM80	SM	B
PM			X	
PM_{10}			X	
$PM_{2.5}$				X
SO_2				X
NO_x				X
CO				X
VOC			X	
Individual CAA HAPs			X	
Total CAA HAPs			X	

EPA Class Codes:

A *means the source's maximum theoretical emissions and potential to emit for one or more pollutants are greater than Part 70 major source thresholds.*

SM80 *means the source's maximum theoretical emissions of one or more pollutants are greater than Part 70 major source thresholds and potential to emit is at least 80% but less than 100% of Part 70 major source thresholds.*

SM *means the source's maximum theoretical emissions of one or more pollutants are greater than Part 70 major source thresholds but potential to emit for all pollutants is less than 80% of Part 70 major source thresholds.*

B *means the source's maximum theoretical emissions and potential to emit for all pollutants are less than major source thresholds, including sources that do not emit the pollutant.*

STATUS UNDER WISCONSIN ENVIRONMENTAL POLICY ACT (WEPA)

The Wisconsin Environmental Policy Act (WEPA) sets forth the state's environmental policy and created section 1.11, Wis. Stats. Under WEPA, all state agencies must analyze, consider and disclose the anticipated environmental impacts of certain proposed actions, along with reasonable alternatives to those actions. Chapter NR 150, Wis. Adm. Code, codifies how the department meets its obligations under s. 1.11, Wis. Stats., and requires the department to evaluate the effects of department actions, including air permit decisions, on the human and natural environment.

An air pollution control construction permit that does not require review under chs. NR 405 or 408, Wis. Adm. Code, is considered a minor action under s. NR 150.20(1m)(o), Wis. Adm. Code, and as such, is compliant with WEPA and does not require a determination prior to permit issuance.

The issuance of an initial operation permit is considered an integrated analysis action under s. NR 150.20(2)(a)4., Wis. Adm. Code. Actions specified under s. NR 150.20(2) require a WEPA compliance determination under s. NR 150.35, Wis. Adm. Code, but do not require a separate environmental analysis under ch. NR 150. The permit applicant has completed an Environmental Assessment (EA) Questionnaire, which is attached to this preliminary determination as Appendix A. The issuance of the initial operation permit has been assessed considering ch. NR 150, Wis. Adm. Code, and the information contained in the EA Questionnaire, and the department has determined that the issuance of the initial operation permit is not expected to have the potential to cause significant adverse environmental or secondary effects and the environmental review is complete without the need for an EIS.

Notification of the determination required under s. NR 150.35, Wis. Adm. Code, is included in the public notice.

STATUS UNDER WISCONSIN HISTORIC PRESERVATION PROGRAM

Section 44.40(1), Wis. Stats., requires each state agency to consider whether any proposed agency action will affect any historic property that is a listed property, on the inventory or on the list of locally designated historic places under s. 44.45, Wis. Stats. Listed property means property which is listed on the national register of historic places in Wisconsin or the state register of historic places, or both. This section describes the department's obligations for this permit action under the Historic Preservation Program in s. 44.40, Wis. Stats., and the Memorandum of Agreement (MOA) with the Wisconsin Historical Society (WHS).

The proposed project is for construction of a source that involves construction of over 10,000 square feet outside of an existing structure and therefore, to fulfill its obligations under s. 44.40(1), Wis. Stats., the department must consider whether the project will affect any historic property on the Wisconsin inventory of historic places or on the list of locally designated historic places.

The department has reviewed the general locations of historic properties recorded by the Wisconsin Historical Society. Based on that review, the department has determined that the proposed project will not impact any known historic property.

NEW SOURCE PERFORMANCE STANDARDS (NSPS) AND NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS)APPLICABILITY

		Yes	No	NA	Explanation
NSPS	**For proposed construction of a source:**				
	1. Is the proposed source in a source category for which there is an existing or proposed NSPS?	☒	☐	☐	40 CFR Part 60, Subpart Dc for B10 and B11
	2. Is the proposed source an affected facility?	☒	☐	☐	Proposed boilers are less than 100 MMBtu/hr and greater than 10 MMBtu/hr
NESHAPS	**Part 61 NESHAPS:**				
	1. Is the source subject to a Part 61 NESHAPS?	☐	☒		
	Part 63 NESHAPS:				
	1. Is the source subject to an existing Part 63 NESHAPS?	☐	☒		
	2. Is the proposed project subject to s. 112(g) of the Clean Air Act?	☐	☒		
	The section 112(g) rules only apply to case-by-case MACT standards that are developed for new construction or reconstruction of sources that (by themselves) constitutes a new major source of federal hazardous air pollutants (for source categories not covered under an existing Part 63 MACT standard).				

PRELIMINARY DETERMINATION FOR CONSTRUCTION PERMIT 25-MIN-136

As set forth in the criteria for permit approval in s. 285.63(1), Wis. Stats., the department may approve the application for a construction permit required or allowed under s. 285.60, Wis. Stats., if it finds:

(a) The stationary source will meet all applicable emission limitations and other requirements promulgated under ch. 285, Wis. Stats., standards of performance for new stationary sources under s. 285.27(1), Wis. Stats., and emission standards for hazardous air contaminants under s. 285.27(2), Wis. Stats.; and

(b) The source will not cause or exacerbate a violation of any ambient air quality standard or ambient air increment under s. 285.21(1) or (2), Wis. Stats.

(c) If the source is operating or seeks to operate under an emission reduction option, the required permit applications for other sources participating in that emission reduction option are approvable.

(d) The stationary source will not degrade the air quality in an area sufficiently to prevent the construction, reconstruction, replacement, modification or operation of another stationary source if the department received plans, specifications and other information under s. 285.61(2)(a), Wis. Stats., for the other stationary source prior to commencing its analysis under s. 285.61(3), Wis. Stats., for the former stationary source.

The source is not operating or seeking to operate under an emission reduction option.

As set forth in s. 285.61, Wis. Stats., the department has reviewed the application and other materials submitted by Abet Usa - Johnson Creek for 25-MIN-136 and hereby makes a preliminary determination that it may approve the permit application and may issue a construction permit with the applicable limits and conditions contained in the draft permit. Furthermore, the department hereby makes a preliminary finding that the criteria for permit approval as set forth in ss. 285.63, Wis. Stats., will be met provided the source constructs and operates in accordance with the conditions of the draft permit. After providing an opportunity for public input in accordance with s. 285.61, Wis. Stats., and reviewing all comments received, the department will make a final decision regarding whether the criteria established under ss. 285.63, Wis. Stats., are met and whether a construction permit may be issued. The applicable limits and conditions in the draft permit may be changed as a result of public comments or further evaluation by the department.

PRELIMINARY DETERMINATION FOR OPERATION PERMIT 12814087A-F01

As set forth in the criteria for permit approval in s. 285.63, Wis. Stats., the department may approve the application for an operation permit required or allowed under s. 285.60, Wis. Stats., if it finds:

(a) The stationary source will meet all applicable emission limitations and other requirements promulgated under ch. 285, Wis. Stats., standards of performance for new stationary sources under s. 285.27(1), Wis. Stats., and emission standards for hazardous air contaminants under s. 285.27(2), Wis. Stats.; and

(b) The source will not cause or exacerbate a violation of any ambient air quality standard or ambient air increment under s. 285.21(1) or (2), Wis. Stats.

As set forth in s. 285.62, Wis. Stats., the department has reviewed the application and other materials submitted by Abet Usa - Johnson Creek for 12814087A-F01 and hereby makes a preliminary determination that it may approve the permit application and may issue an operation permit with the applicable limits and conditions contained in the draft permit. Furthermore, the department hereby makes a preliminary finding that the criteria for permit approval as set forth in ss. 285.63 and 285.64, Wis. Stats., will be met provided the source operates in accordance with the conditions of the draft permit. After providing an opportunity for public input in accordance with s. 285.62, Wis. Stats., and reviewing all comments received, the department will make a final decision regarding whether the criteria established under ss. 285.63 and 285.64, Wis. Stats., are met and whether an operation permit may be issued. The

applicable limits and conditions in the draft permit may be changed as a result of public comments or further evaluation by the department.

COMMONLY USED ACRONYMS AND ABBREVIATIONS

acfm	Actual cubic feet per minute
AP-42	Compilation of Air Pollutant Emission Factors
BACT	Best Available Control Technology
BTU or btu	British Thermal Unit
ºC	Degrees Celsius
CAA	Federal Clean Air Act
CAMS	Compliance Assurance Monitoring System
CEM	Continuous Emission Monitoring
CFR	Code of Federal Regulations
CH_4	Methane
CI	Compression Ignition
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalents
COMS	Continuous Opacity Monitoring System
department	Wisconsin Department of Natural Resources
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
EPA	United States Environmental Protection Agency
ESP	Electrostatic Precipitator
ºF	Degrees Fahrenheit
FESOP	Federal Enforceable State Operating Permit
FID	Facility Identification Number
FOP	Federal Operating Permit
ft	Feet
g	Grams
GACT	Generally Available Control Technology
GCP	General Construction Permit
GHG	Greenhouse Gas
GOP	General Operation Permit
gr	Grains
MTE	Maximum Theoretical Emissions
MW	Megawatts
n/a	Not Applicable
N_2O	Nitrous Oxide
NAA	Non-Attainment Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NMOC	Non-methane Organic Compounds
NO_2	Nitrogen Dioxide
NOx	Oxides of Nitrogen
NSCR	Non-Selective Catalytic Reduction
NSPS	New Source Performance Standards
NSR	New Source Review
Pb	Lead
PHAP	Hazardous Air Pollutant Emitted as a Particulate
PM	Particulate Matter
PM_{10}	Particulate Matter less than 10 microns in diameter
$PM_{2.5}$	Particulate Matter less than 2.5 microns in diameter
ppm	Parts per million
ppmdv	Parts per million by dry volume
ppmv	Parts per million by volume
ppmw	Parts per million by weight
PSD	Prevention of Significant Deterioration
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
PTE	Potential to Emit
RACT	Reasonable Available Control Technology
RCP	Registration Construction Permit
RICE	Reciprocating Internal Combustion Engine
ROG	Reactive Organic Gases
ROP	Registration Operating Permit

GWP	Global Warming Potential	s.	Section
HAP	Hazardous Air Pollutant	scf	Standard cubic feet
Hg	Mercury	sec	Seconds
hr	Hour	SCR	Selective Catalytic Reduction
hp	Horsepower	SDS	Safety Data Sheet
H_2S	Hydrogen Sulfide	SI	Spark Ignition
HVLP	High Volume Low Pressure	SNCR	Selective Non-Catalytic Reduction
Kg	Kilogram	SO_2	Sulfur Dioxide
kW	Kilowatt	SOP	State Operating Permit
LACT	Latest Available Control Techniques	Temp	Temperature
LAER	Lowest Achievable Emission Rate	THC	Total Hydrocarbons
lb	Pound	TPY	Tons per year
m	Meter	µg	Microgram
MACT	Maximum Achievable Control Technology	VE	Visible Emissions
MPAP	Malfunction, Prevention, and Abatement Plan	VHAP	Hazardous Pollutant Emitted as a Vapor
mg	Milligram	VOC	Volatile Organic Compounds
mm	Millimeter	Wis. Adm. Code	Wisconsin Administrative Code
MM	Million	Wis. Stats.	Wisconsin Statutes
MMBtu/hr	Million British Thermal Units Per Hour	yr	Year

PERMIT FEE CALCULATION

DESCRIPTION	AMOUNT
Construction or modification of a Part 70 minor source – issued after 3/31/26	$3,600.00
(2)(a) – Review of two or more basic emissions units – issued after 3/31/26	$10,800.00
(2)(e) – Detailed modeling for a minor source or minor modification – issued after 3/31/26	$1,800.00
(2)(g) – Emission limitation under chs. NR 445 to 469 or emission limit for a NR 445 contaminant – issued after 3/31/26	$1,200.00
(2)(h) – Construction permit requires emission testing – issued after 3/31/26	$6,000.00
(2)(m) – Conditions limiting the PTE to make the source or modification minor – issued after 3/31/26	$4,200.00
(2)(j) – Public hearing – issued after 3/31/26	$2,000.00
The initial fee submitted with the application [$7,500]	-$7,500.00
TOTAL DUE	$22,100.00

ATTACHMENT A: ENVIRONMENTAL ANALYSIS QUESTIONNAIRE

ENVIRONMENTAL ANALYSIS QUESTIONNAIRE
Wisconsin Department of Natural Resources
Air Management Program

APPLICANT INFORMATION

Applicant: **Abet USA – Johnson Creek**

Address: **1000 Abet Way, Johnson Creek, WI 53038 (Physical Address)**

Contact Information: Phone: **414-643-4115 (consultant)** E-mail: **nbraun@thesigmagroup.com**

Title of Project: **Initial Operation Permit**

Location: County: **Jefferson** City/Town/Village: **Johnson Creek**

Township Range Section(s): **Northeast 1/4 of Section 7, Township 7 North, Range 15 East**

☐ Attach any maps, plans and other descriptive material.

BRIEF OVERVIEW OF THE PROJECT

Initial Operation Permit for air emission sources

PURPOSE AND NEED (INCLUDE HISTORY AND BACKGROUND AS APPROPRIATE)

To operate a new facility to produce high performance laminate panels. Operations will include several air emission sources with associated control devices.

AUTHORITIES AND APPROVALS (LIST LOCAL, STATE AND FEDERAL PERMITS OR APPROVALS REQUIRED)

Please list all other approvals required for this project. If additional approvals are required, you should also consider these under sections V. and VI. below.

Storm Water Permit(s) under ch. NR 216, Wis. Adm. Code

ENVIRONMENTAL ANALYSIS

A. Analysis of affected environment and probable impacts (primary, secondary and cumulative):

Have you researched to determine if there are any of the following on the affected property or that may be affected by actions resulting from the project? Briefly describe any existing features or resources that may be affected by the project and the probable impacts on those features. Provide any supporting information that demonstrates that you have done this.

☒ 1. Physical environment (land use, geologic, soils and topographic)
The projected air emissions from the facility are not anticipated to affect the physical environment.

☒ 2. Physical environment (surface waters, groundwater resources and wetlands)
The projected air emissions from the facility are not anticipated to affect the physical environment.

☒ 3. Biological environment - threatened/endangered resources (NHI)
The projected air emissions from the facility are not anticipated to affect the biological environment.

☒ 4. Biological environment – Aquatic species and habitats
The projected air emissions from the facility are not anticipated to affect the biological environment.

☒ 5. Biological environment – Terrestrial species and habitats
The projected air emissions from the facility are not anticipated to affect the biological environment.

☒ 6. Social and economic – environmental justice and economic impacts including traffic, public safety, noise and visual change impacts on neighboring or other populations
The projected air emissions from the facility are not anticipated to cause social and economic impacts.

☐ 7. Social and economic - archaeological/historical sites
Click or tap here to enter text.

☐ 8. Other special resources (e.g., State Natural Areas)
Click or tap here to enter text.

B. Analysis of alternatives:

Briefly describe the impacts of no action and of alternatives to the project that would decrease or eliminate adverse environmental impacts

There are no alternatives being evaluated.

OTHER CONSIDERATIONS AND ASSESSING THE NEED FOR AN ENVIRONMENTAL IMPACT STATEMENT (EIS)

A. Does the Project meet any of the following criteria under s. NR 150.20(4)(b)?

All of the following are considerations for whether an Environmental Impact Statement may be prepared. Check all that potentially apply.

☒ 1. The project involves multiple Department actions.

☐ 2. The project may be in conflict with local, state or federal environmental policies.
[NR 150.20(4)(b)2. Wis. Adm. Code]

☐ 3. The project may set precedent for reducing or limiting environmental protection.
[NR 150.20(4)(b)3. Wis. Adm. Code]

☐ 4. The project may result in deleterious effects over large geographic areas.
[NR 150.20(4)(b)4. Wis. Adm. Code]

☐ 5. The project may result in long-term deleterious effects that are prohibitively difficult or expensive to reverse.
[NR 150.20(4)(b)5. Wis. Adm. Code]

☐ 6. The project may result in deleterious effects on especially important, critical, or sensitive environmental resources.
[NR 150.20(4)(b)6. Wis. Adm. Code]

☐ 7. The project involves broad public controversy.
[NR 150.20(4)(b)7. Wis. Adm. Code]

☐ 8. The project may result in substantial risk to human life, health, or safety.
[NR 150.20(4)(b)8. Wis. Adm. Code]

B. For all boxes checked in section 6.A. above, describe the criteria in more detail below:

The facility will apply for storm water permit(s) under ch. NR 216, Wis. Adm. Code.