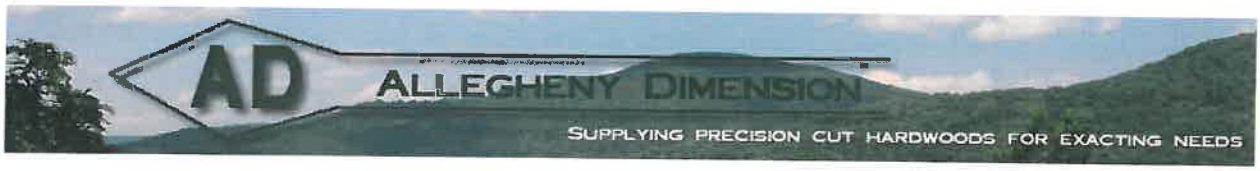
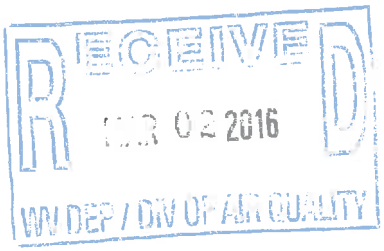


March 2, 2016



Permits Section
WV DEP
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

Allegheny Dimension LLC
45CSR13 Permit Modification/Relocation Application

Please find enclosed one (1) original and three (3) copies of a 45CSR13 permit modification/relocation application for Allegheny Dimension LLC (AD), located in Moorefield, Hardy County, West Virginia. Also enclosed the permit application fee of $2,000.00

AD proposes to relocate its operations from Petersburg to Moorefield.

The public notice will be published in the Moorefield Examiner. The affidavit of publication will be provided as soon as it is made available.

Questions regarding this application should be directed to me at 304-575-7074 or jdilorenzo@alleghenywood.com or Ms. Lori Steele of MSES consultants, inc. at 304-624-9700 or lsteele@msesinc.com.

Best regards,

John DiLorenzo
Safety and Human Resources Manager
Allegheny Wood Products, Inc.

Cc: Lori Steele – MSES consultants, inc.

Enclosures

February 2016
Project No. 16-036

Allegheny Dimension, LLC

Moorefield, WV

45CSR13 Modification and Relocation Permit Application

PREPARED BY:

MSES Consultants, Inc.
PO Drawer 190
Clarksburg, West Virginia 26302-0190
(304) 624-9700

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E	Plot Plan
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P	Public Notice
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WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☐ **CONSTRUCTION** ☒ **MODIFICATION** ☒ **RELOCATION**
☐ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**
☐ **CLASS II ADMINISTRATIVE UPDATE** ☐ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☐ **MINOR MODIFICATION**
☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office):*
Allegheny Dimension, LLC

2. Federal Employer ID No. ***(FEIN):***
461661553

3. Name of facility *(if different from above):*
Moorefield Plant

4. The applicant is the:
☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
390 Industrial Park Road
Moorefield, WV 26836

5B. Facility's present physical address:
238 Dolan Lane
Petersburg, WV 26847

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☒ **YES** ☐ **NO**
- If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**
- If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation:

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**
- If **YES,** please explain: Applicant owns the facility
- If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.): Restart existing wood fired boiler and relocate existing woodworking equipment from Petersburg facility

10. North American Industry Classification System **(NAICS)** code for the facility:
321113

11A. DAQ Plant ID No. (for existing facilities only):

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R13-1958 for the Petersburg facility
R13-2220 for American Woodmark Moorefield facility

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B.**

The facility is located at the Moorefield Industrial Park approximately one mile south of Moorefield on the west side of US Route 220/State Route 28.

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
390 Industrial Park Road	Moorefield	Hardy
12.E. UTM Northing (KM): 4323.12	12F. UTM Easting (KM): 674.25	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:
Restart existing boiler and woodworking equipment.

14A. Provide the date of anticipated installation or change: 05/01/2016 – If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: / /	14B. Date of anticipated Start-Up if a permit is granted: 05/01/2016

14C. Provide a **Schedule** of the planned **Installation** of/**Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day 24 Days Per Week 7 Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved? ☒ **YES** ☐ **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known).* A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known).* Provide this information as **Attachment D.**

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) .
– Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**
– Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**

– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☐ Bulk Liquid Transfer Operations	☐ Haul Road Emissions	☐ Quarry
☐ Chemical Processes	☐ Hot Mix Asphalt Plant	☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Concrete Batch Plant	☐ Incinerator	
☐ Grey Iron and Steel Foundry	☒ Indirect Heat Exchanger	☐ Storage Tanks
☒ General Emission Unit, specify woodworking equipment		

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems	☒ Baghouse	☐ Flare
☐ Adsorption Systems	☐ Condenser	☒ Mechanical Collector
☐ Afterburner	☐ Electrostatic Precipitator	☐ Wet Collecting System

☐ Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

➢ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☐ **YES** ☒ **NO**

➢ If **YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's ***"Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☒ Authority of Corporation or Other Business Entity	☐ Authority of Partnership
☐ Authority of Governmental Agency	☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☐ **Responsible Official** / ☒ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE E. Thomas Plaugher DATE: 2/26/2016

(Please use blue ink) *(Please use blue ink)*

35B. Printed name of signee: E. Thomas Plaugher		35C. Title: Designated Agent
35D. E-mail: tplaugher@alleghenywood.com	36E. Phone: 304-257-9706	36F. FAX: 304-257-9246
36A. Printed name of contact person (if different from above): Paul Gilbert		36B. Title: Plant Manager
36C. E-mail: pgilbert@alleghenydimension.com	36D. Phone: 304-257-9513	36E. FAX: 304-257-9510

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- ☒ **Attachment A: Business Certificate**
- ☒ **Attachment B: Map(s)**
- ☒ **Attachment C: Installation and Start Up Schedule**
- ☒ **Attachment D: Regulatory Discussion**
- ☒ **Attachment E: Plot Plan**
- ☒ **Attachment F: Detailed Process Flow Diagram(s)**
- ☒ **Attachment G: Process Description**
- ☒ **Attachment H: Material Safety Data Sheets (MSDS)**
- ☒ **Attachment I: Emission Units Table**
- ☒ **Attachment J: Emission Points Data Summary Sheet**
- ☒ **Attachment K: Fugitive Emissions Data Summary Sheet**
- ☒ **Attachment L: Emissions Unit Data Sheet(s)**
- ☒ **Attachment M: Air Pollution Control Device Sheet(s)**
- ☒ **Attachment N: Supporting Emissions Calculations**
- ☐ **Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans**
- ☒ **Attachment P: Public Notice**
- ☐ **Attachment Q: Business Confidential Claims**
- ☒ **Attachment R: Authority Forms**
- ☐ **Attachment S: Title V Permit Revision Information**
- ☒ **Application Fee**

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- ☐ ***Forward 1 copy of the application to the Title V Permitting Group and:***
- ☐ ***For Title V Administrative Amendments:***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit,***
- ☐ ***For Title V Minor Modifications:***
  - ☐ ***Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit.***
- ☐ ***For Title V Significant Modifications processed in parallel with NSR Permit revision:***
  - ☐ ***NSR permit writer should notify a Title V permit writer of draft permit,***
  - ☐ ***Public notice should reference both 45CSR13 and Title V permits,***
  - ☐ ***EPA has 45 day review period of a draft permit.***

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT A

Business Certificate

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
ALLEGHENY DIMENSION A WEST VIRGINIA LIMITED LIABILITY COMPANY
JOHNSON RUN RD
PETERSBURG, WV 26847-0000

BUSINESS REGISTRATION ACCOUNT NUMBER: **1043-8615**

This certificate is issued on: 08/26/2011

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered to conduct business in the State of West Virginia at the location above.

This certificate is not transferrable and must be displayed at the location for which issued.

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

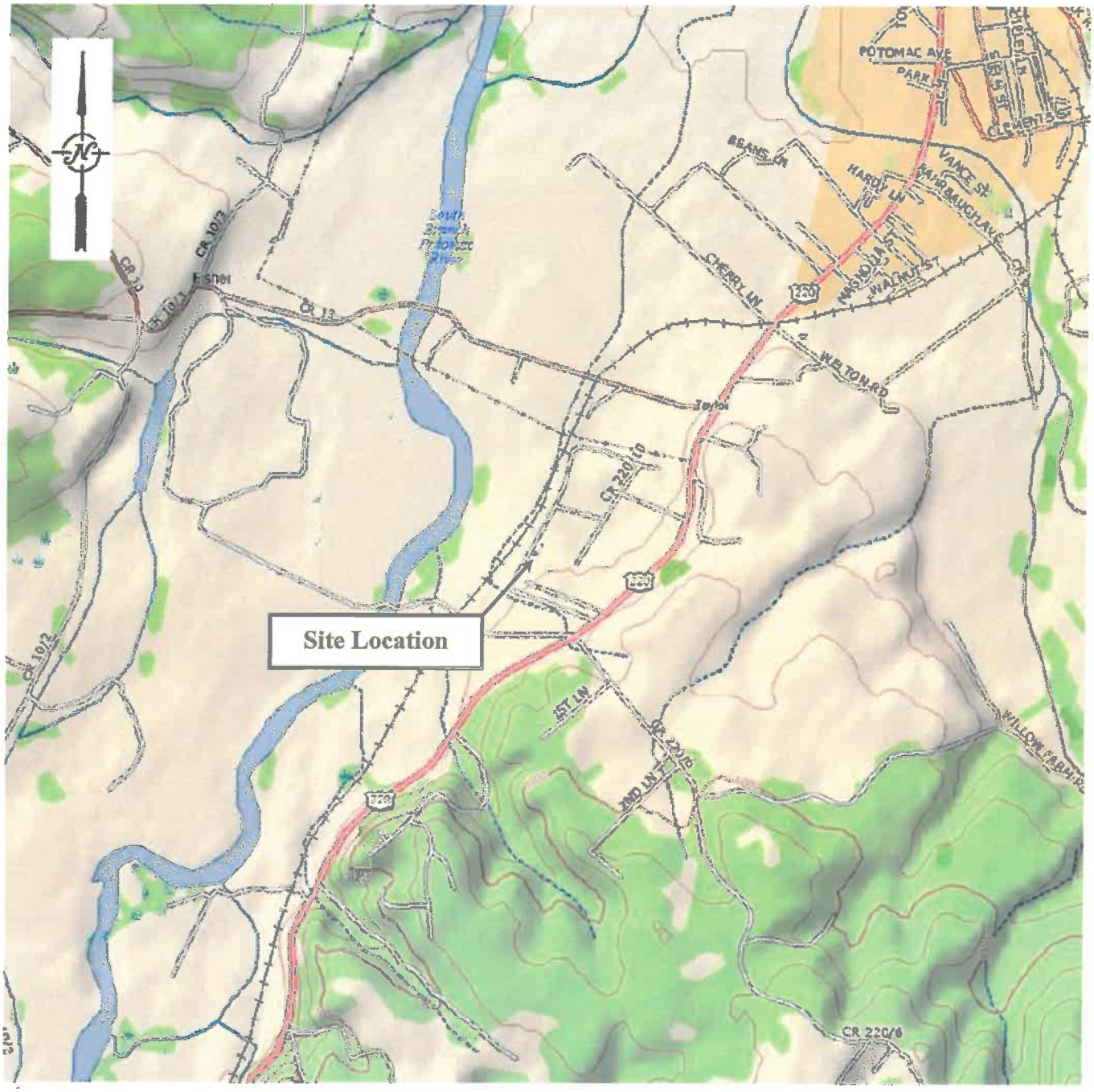
Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.4
L1861636736

ATTACHMENT B

Map(s)



Reference:
XMap 6 Professional © DeLorme,
Yarmouth, Me 04096
Source Data:
7.5 Minute USGS
Topographic Quadrangles

Moorefield, WV
Rig, WV

Vicinity Map

Scale 1" = 2000'

MSES Consultants, Inc.
Clarksburg, West Virginia

Allegheny Dimension, Inc.

Moorefield Plant
Air Permit Application

Project No. 16-036

ATTACHMENT B
VICINITY MAP

ATTACHMENT C

Installation and Start Up Schedule

ATTACHMENT C

Installation and Start Up Schedule

The subject Moorefield, WV site already has the boiler and silos in place from the previous American Woodmark operation conducted there. Allegheny Dimension will begin moving machining equipment and installation of the two baghouses on May 1, 2016. Some limited operation of the machining equipment which is located inside the building will be conducted as early as May 1, 2016. Maintenance on the existing boiler will be performed and start-up on the boiler is anticipated to take place in August of 2016.

Full operation is anticipated to commence in August 2016.

ATTACHMENT D

Regulatory Discussion

ATTACHMENT D

Regulatory Discussion

The proposed facility is subject to the following state and federal regulations.

45CSR2 – To Prevent and Control Particulate Air Pollution From Combustion of Fuel in Indirect Heat Exchangers.

45CSR7 – To Prevent and Control Particulate Matter Air Pollution From Manufacturing Processes and Associated Operations.

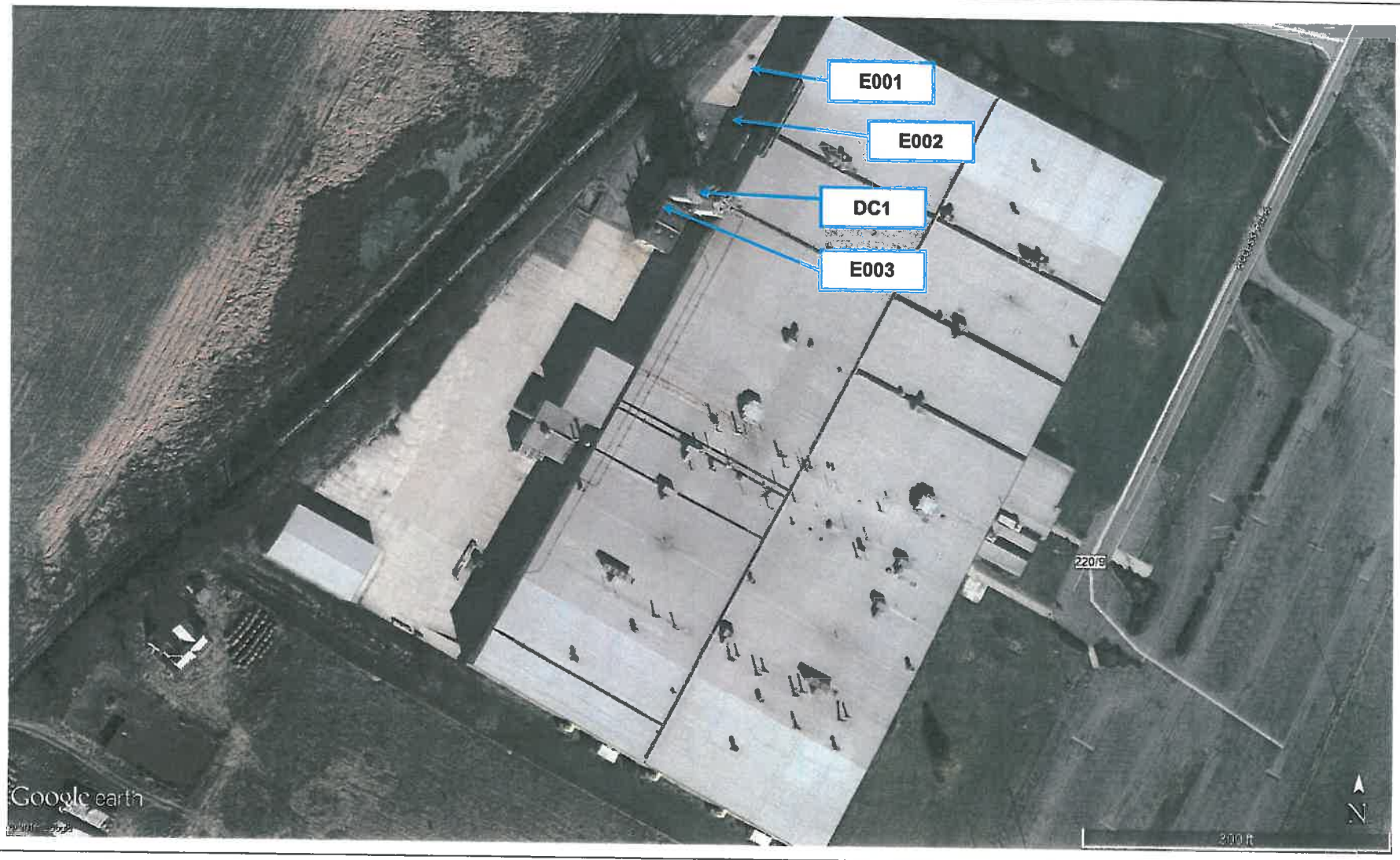
45CSR13 – Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation.

40 C.F.R. 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.

40 C.F.R. 63 Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.

ATTACHMENT E

Plot Plan



Aerial Photo

©2016 Google™
Imagery Date: 11/19/2013

Scale 1" = 160'

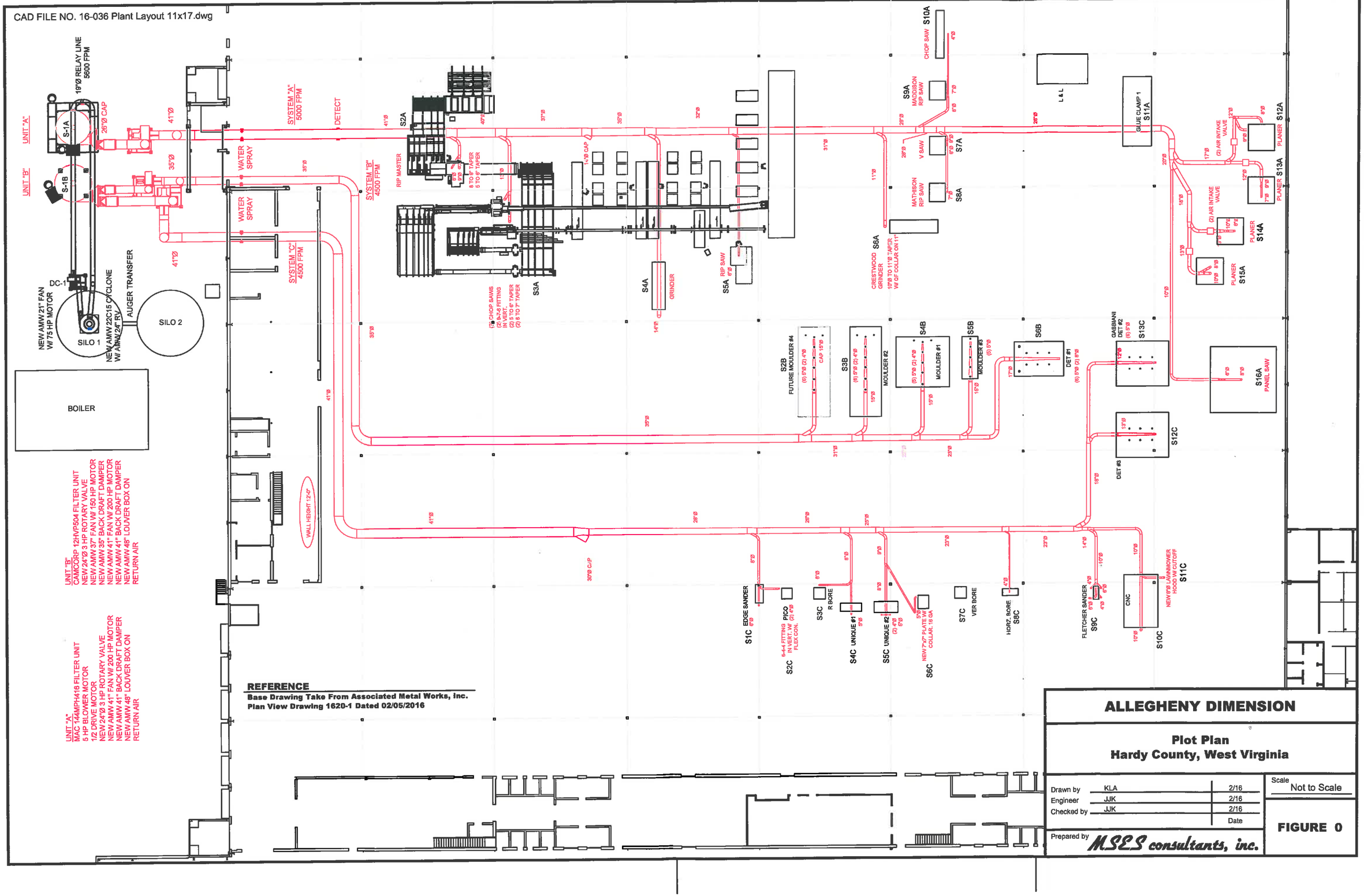
MSES Consultants, Inc.
Clarksburg, West Virginia

ATTACHMENT E
FACILITY PLOT PLAN

Allegheny Dimension, Inc.
Hardy County Plant
Moorefield, WV

Project No. 16-036

CAD FILE NO. 16-036 Plant Layout 11x17.dwg



REFERENCE
Base Drawing Take From Associated Metal Works, Inc.
Plan View Drawing 1620-1 Dated 02/05/2016

ALLEGHENY DIMENSION

Plot Plan
Hardy County, West Virginia

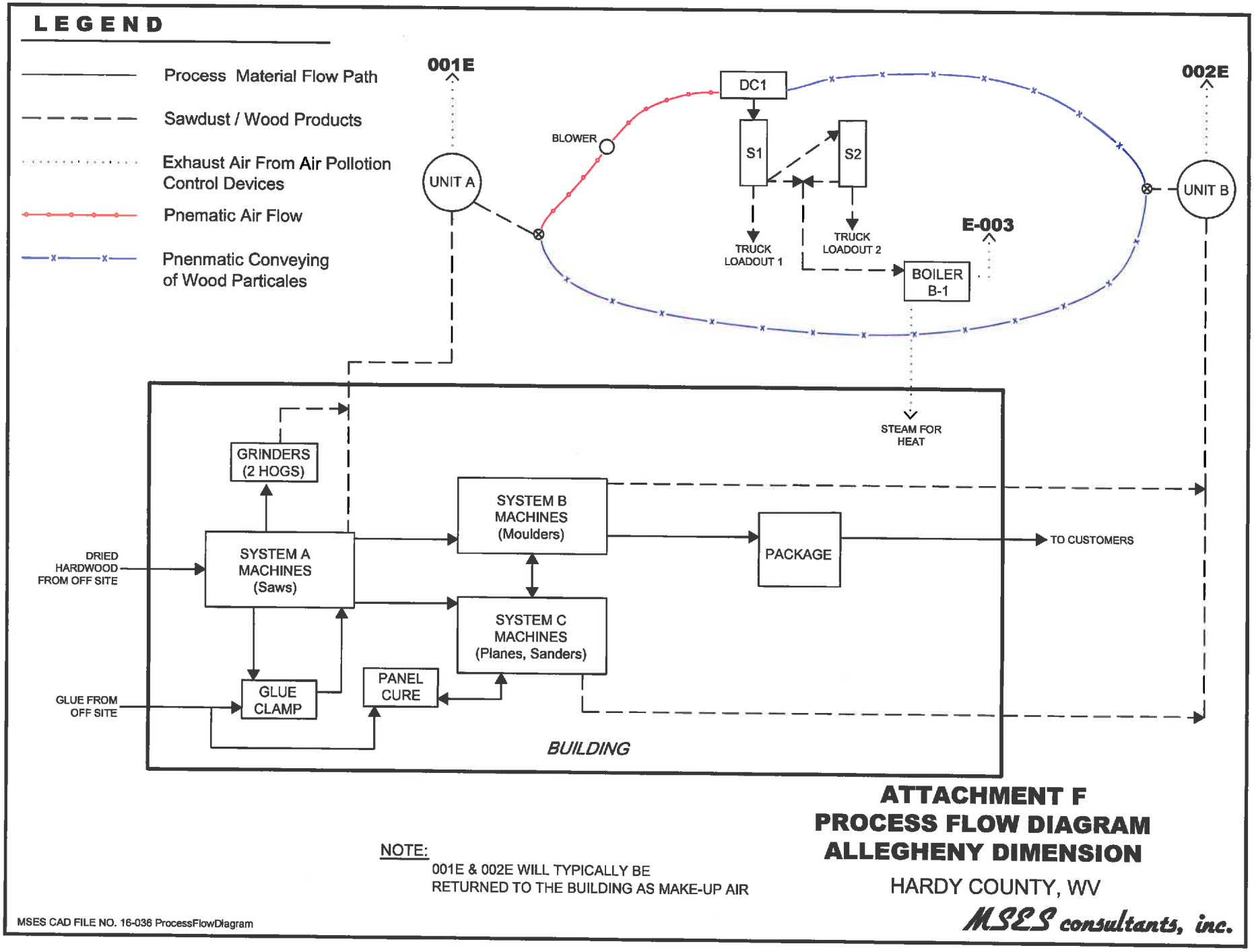
Drawn by	KLA	2/16	Scale: Not to Scale
Engineer	JJK	2/16	
Checked by	JJK	2/16	
		Date	

Prepared by *MSES consultants, inc.*

FIGURE 0

ATTACHMENT F

Detailed Process Flow Diagram(s)



ATTACHMENT F
PROCESS FLOW DIAGRAM
ALLEGHENY DIMENSION
HARDY COUNTY, WV

NOTE:
001E & 002E WILL TYPICALLY BE RETURNED TO THE BUILDING AS MAKE-UP AIR

MSES CAD FILE NO. 16-036 ProcessFlowDiagram

MSES consultants, inc.

ATTACHMENT G

Process Description

ATTACHMENT G

PROCESS DESCRIPTION

Allegheny Dimension LLC (AD) operates a facility near Petersburg, WV, that manufactures hardwood dimension stock components for furniture manufacturers. The facility utilizes saws, planers, moulders, lathes, mills, and sanders to manufacture these wood components. Some components are glued and some receive a partial coating of a water-based glue (panel cure) to prevent end splitting. Gluing and panel cure have no emissions to the air. Safety data sheets for the glues are included in Attachment H.

AD wishes to relocate most of the existing woodworking equipment to a former cabinet manufacturing facility near Moorefield, WV. The cabinet manufacturing company had two (2) boilers that utilized sawdust for fuel and two (2) silos for storage of sawdust. AD will use one (1) of the two (2) boilers and both silos for the new operation

Sawdust and wood chips from the woodworking operations will vent to one (1) of two (2) new baghouse systems. The air stream from the exhaust ventilation systems servicing the woodworking equipment is filtered by these baghouses and either returned to the building as make-up air or vented to the outside through emission point E-001 and E-002. The scrap wood and chips are routed to grinders (hogs). The ground wood from the grinders is pneumatically conveyed via the Line A exhaust ventilation system to the Unit A baghouse (S1A). The wood particles collected by the two (2) baghouses are discharged via rotary valves to a duct for pneumatic conveyance to a cyclone (DC1) located above silo (S-1). This pneumatic conveying system is "closed loop" in that the wood particles conveyed from the baghouses enter into the new cyclone (DC1) where the particles drop out and the cleaned air stream is recycled back into the pneumatic conveying system from the cyclone. A rotary feeder in the bottom cone of the cyclone is used to discharge the wood particles to silo 1.

The woodworking (machining) equipment is organized as three (3) systems with each "system" serviced by separate exhaust ventilation ductwork as described below:

System Designation	Type of Equipment	Baghouse Unit Receiving Dust from System
A	Saws, grinder, planer	A
B	Moulders	B
C	Sanders, saws, mills, lathe	B

The sawdust generated by each of these systems is collected via a dust collection ductwork system which is vented to the respective baghouse.

The plot plan contained in Attachment E shows the proposed equipment layout.

Screw conveyors transfer the wood particles from Silo S-1 to Silo S-2 for storage as needed and for transfer for use as fuel in the boiler (B1).

The sawdust and grindings from wood chips and wood scrap are used to fuel the facility wood fueled boiler. Steam from the boiler is used to provide comfort heating inside the building. In the event that excess saw dust is produced, there are truck loadouts for off-site shipment from each of the two (2) storage silos.

The maximum annual throughput of wood for the facility will be 15 million board feet which is equivalent to 56,250,000 pounds per year. The hours of woodworking operation for a maximum production year is 4000 hours per year which results in a process weight rate of 14,062.5 pounds per hour.

The maximum annual sawdust/wood particle generation for the new facility is 14,062.5 tons, which equates to an average of 14,062.5 pounds per hour of operation.

The filtered exhaust from the two (2) baghouses which have a 99.98% control efficiency results in 2.8 pounds per hour of total particulate emissions from the S1A and S1B combination. The DC1 filtered cyclone will have no emissions since the filtered air stream from it is recycled for use in the pneumatic conveying system.

The majority of the dust particle production is from grinding the wood waste and the rip saws. This accounts for approximately 90% of the dust particles generated, which will have a diameter of >10 microns. The dust quantity with a particle size of 10 microns or less generated by the machining which is transferred to the baghouses is estimated to be less than 268 pounds per hour entering the baghouses and less than 0.05 pounds per hour total discharged from the combination of the two (2) baghouses. The quantity of dust produced with a diameter of 2.5 microns or less is

estimated to be less than 0.01 pound per hour from both baghouses since such machining of wood does not typically generate PM 2.5.

With respect to the silo loadout of wood particles for off-site shipment, covered trucks can be positioned beneath the silos with the wood particles dropped to the bed of the trucks. Based on the large particle size of the majority of the particles stored in the silos and the configuration of the partial enclosure of the truck loadout, no local exhaust ventilation is deemed necessary for control of dust, based on AD's experience with wood particles at its current site.

ATTACHMENT H

Material Safety Data Sheets (MSDS)

Franklin International

Material Safety Data Sheet

Product name : Multibond 3200

1. Product and company identification

Address	: Franklin International 2020 Bruck Street Columbus OH 43207
Contact person	: Franklin Technical Services
Telephone	: (800) 877-4583
Emergency phone:	: Franklin Security (614) 445-1300
Product code	: 136124000
Date of revision	: 1/1/2009.
Print date	: 4/16/2009.
Chemtrec (24 Hour)	: (800) 424 - 9300
Chemtrec International	: (703) 527 - 3887
Chemical family	: Adhesive.

2. Hazards identification

Physical state	: Liquid.
Odor	: Characteristic. [Slight]
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	: WARNING! MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE TARGET ORGAN DAMAGE. Moderately irritating to eyes. Slightly irritating to the skin and respiratory system. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. May cause target organ damage. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry	: Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation	: Inhalation of oil mist or vapors at elevated temperatures may cause respiratory irritation. Slightly irritating to the respiratory system.
Ingestion	: No known significant effects or critical hazards.
Skin	: Slightly irritating to the skin.
Eyes	: Moderately irritating to eyes.

Potential chronic health effects

Chronic effects	: May cause target organ damage.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Target organs	: May cause damage to the following organs: upper respiratory tract, skin, eyes.

2 . Hazards identification

Over-exposure signs/symptoms

Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing
Ingestion	: No specific data.
Skin	: Adverse symptoms may include the following: irritation redness
Eyes	: Adverse symptoms may include the following: irritation watering redness
Medical conditions aggravated by over-exposure	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3 . Composition/information on ingredients

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First aid measures

Eye contact	: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Inhalation	: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
Notes to physician	: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product	: In a fire or if heated, a pressure increase will occur and the container may burst.
Extinguishing media	
Suitable	: Use an extinguishing agent suitable for the surrounding fire.
Not suitable	: None known.
Special exposure hazards	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Small spill : Stop leak if without risk. Move containers from spill area. Dispose of via a licensed waste disposal contractor. Absorb with an inert material.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

8 . Exposure controls/personal protection

Hands	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eyes	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Skin	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

9 . Physical and chemical properties

Physical state	: Liquid.
Flash point	: Closed cup: >93.333°C (>200°F) [Setaflash.]
Color	: Off-white.
Odor	: Characteristic. [Slight]
pH	: 3
Boiling/condensation point	: 98.889°C (210°F)
Relative density	: 1.09
Volatility	: 52% (w/w)
Evaporation rate	: <1 (Butyl acetate. = 1)
VOC (less water, less exempt solvents)	: 4.4 g/l
Dispersibility properties	: Easily dispersible in the following materials: cold water and hot water.

10 . Stability and reactivity

Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: No specific data.
Materials to avoid	: No specific data.
Incompatibility	: Highly reactive or incompatible with the following materials: acids and alkalis.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Acute toxicity

No known significant effects or critical hazards.

Chronic toxicity

No known significant effects or critical hazards.

Irritation/Corrosion

No known significant effects or critical hazards.

Sensitizer

No known significant effects or critical hazards.

Carcinogenicity

11 . Toxicological information

No known significant effects or critical hazards.

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Reproductive toxicity

No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

No known significant effects or critical hazards.

Biodegradability

No known significant effects or critical hazards.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
Mexico Classification	Not regulated.	-	-	-		-
ADR/RID Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA-DGR Class	Not regulated.	-	-	-		-

PG* : Packing group

15 . Regulatory information

United States

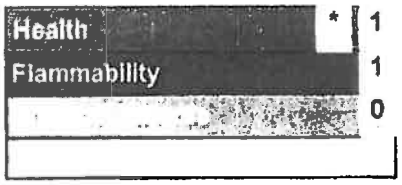
DSS Classification	:	Irritating material Target organ effects
U.S. Federal regulations	:	**United States inventory (TSCA 8b):** All components are listed or exempted. **SARA 302/304/311/312 extremely hazardous substances:** No products were found. **SARA 302/304 emergency planning and notification:** No products were found. **SARA 302/304/311/312 hazardous chemicals:** No products were found. **SARA 311/312 MSDS distribution - chemical inventory - hazard identification:** No products were found.
DEA List I Chemicals (Precursor Chemicals)	:	Not listed
DEA List II Chemicals (Essential Chemicals)	:	Not listed
State regulations	:	**Massachusetts Spill:** None of the components are listed. **Massachusetts Substances:** None of the components are listed. **New Jersey Hazardous Substances:** None of the components are listed. **New Jersey Spill:** None of the components are listed. **New Jersey Toxic Catastrophe Prevention Act:** None of the components are listed. **Pennsylvania RTK Hazardous Substances:** None of the components are listed.

International regulations

International lists	:	**Australia inventory (AICS):** Not determined. **China inventory (IECSC):** Not determined. **Japan inventory (ENCS):** Not determined. **Japan inventory (ISHL):** Not determined. **Korea inventory (KECI):** Not determined. **New Zealand Inventory of Chemicals (NZIoC):** Not determined. **Philippines inventory (PICCS):** Not determined.
Chemical Weapons Convention List Schedule I Chemicals	:	Not listed
Chemical Weapons Convention List Schedule II Chemicals	:	Not listed
Chemical Weapons Convention List Schedule III Chemicals	:	Not listed

16 . Other information

Label requirements	:	MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE TARGET ORGAN DAMAGE.
Hazardous Material Information System (U.S.A.)	:	



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

16 . Other information

Date of printing	: **4/16/2009.**
Date of issue	: 1/1/2009.
Date of previous issue	: 12/19/2008.
Version	: 1

☑ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Franklin International

Material Safety Data Sheet

Product name : Titebond 50

1. Product and company identification

Address	:	Franklin International 2020 Bruck Street Columbus OH 43207
Contact person	:	Franklin Technical Services
Telephone	:	(800) 877-4583
Emergency phone:	:	Franklin Security (614) 445-1300
Reference number	:	3130
Product code	:	133130000
Date of revision	:	2/24/2009.
Print date	:	4/16/2009.
Chemtrec (24 Hour)	:	(800) 424 - 9300
Chemtrec International	:	(703) 527 - 3887
Chemical family	:	Adhesive.
Product use	:	Wood Glue
oduct type	:	Aliphatic resin emulsion

2. Hazards identification

Physical state	:	Liquid.
Odor	:	Faint odor.
OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	:	WARNING! MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE TARGET ORGAN DAMAGE. Moderately irritating to eyes. Slightly irritating to the skin and respiratory system. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. May cause target organ damage. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry	:	Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation	:	Inhalation of oil mist or vapors at elevated temperatures may cause respiratory irritation. Slightly irritating to the respiratory system.
Ingestion	:	No known significant effects or critical hazards.
Skin	:	Slightly irritating to the skin.
Eyes	:	Moderately irritating to eyes.

Potential chronic health effects

Chronic effects	:	May cause target organ damage.
Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	No known significant effects or critical hazards.
Teratogenicity	:	No known significant effects or critical hazards.

2. Hazards identification

Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Target organs	: May cause damage to the following organs: upper respiratory tract, skin, eyes.

Over-exposure signs/symptoms

Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing
Ingestion	: No specific data.
Skin	: Adverse symptoms may include the following: irritation redness
Eyes	: Adverse symptoms may include the following: irritation watering redness
Medical conditions aggravated by over-exposure	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3. Composition/information on ingredients

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact	: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Inhalation	: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
Notes to physician	: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product	: In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable	: Use an extinguishing agent suitable for the surrounding fire.
Not suitable	: None known.
Special exposure hazards	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

5 . Fire-fighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Small spill : Stop leak if without risk. Move containers from spill area. Dispose of via a licensed waste disposal contractor. Absorb with an inert material.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

8. Exposure controls/personal protection

Personal protection

Respiratory	: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Hands	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eyes	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Skin	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

9. Physical and chemical properties

Physical state	: Liquid.
Flash point	: Closed cup: >93.3°C (>199.9°F) [Setaflash.]
Flammable limits	: Lower: 55%
Color	: Yellow.
Odor	: Faint odor.
pH	: 4.5
Boiling/condensation point	: 100°C (212°F)
Relative density	: 1.15
Volatility	: 55% (w/w)
Evaporation rate	: <1 (Butyl acetate. = 1)
VOC (less water, less exempt solvents)	: 2.39 g/l = .020 lbs./gallon
Dispersibility properties	: Dispersible in the following materials: cold water and hot water.

lbs/gal VOC Formula Conversion

2.39 grams = .005269 lbs.

1 litre = .2641721 gal. = .020 lbs/gal

10. Stability and reactivity

Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: No specific data.
Materials to avoid	: No specific data.
Incompatibility	: Reactive or incompatible with the following materials: acids and alkalis.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Acute toxicity

No known significant effects or critical hazards.

Chronic toxicity

No known significant effects or critical hazards.

Irritation/Corrosion

Conclusion/Summary

Skin	: PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION.
Eyes	: Moderately irritating to eyes.
Respiratory	: Inhalation of oil mist or vapors at elevated temperatures may cause respiratory irritation.

Sensitizer

No known significant effects or critical hazards.

Carcinogenicity

No known significant effects or critical hazards.

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Reproductive toxicity

No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

No known significant effects or critical hazards.

Biodegradability

No known significant effects or critical hazards.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
Mexico Classification	Not regulated.	-	-	-		-
ADR/RID Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA-DGR Class	Not regulated.	-	-	-		-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Irritating material
Target organ effects

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

State regulations : **Massachusetts Spill:** None of the components are listed.
Massachusetts Substances: None of the components are listed.
New Jersey Hazardous Substances: None of the components are listed.
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
Pennsylvania RTK Hazardous Substances: None of the components are listed.

International regulations

International lists : **Australia Inventory (AICS):** Not determined.
China Inventory (IECSC): Not determined.
Japan Inventory (ENCS): Not determined.
Japan Inventory (ISHL): Not determined.
Korea Inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines Inventory (PICCS): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

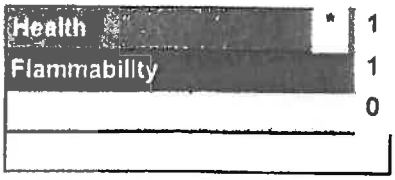
15 . Regulatory information

Chemical Weapons Convention List Schedule III Chemicals : Not listed

16 . Other information

Label requirements : MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE TARGET ORGAN DAMAGE.

Hazardous Material Information System (U.S.A.) :



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Date of printing : **4/16/2009.**

Date of issue : 2/24/2009.

Date of previous issue : 1/1/2009.

Version : 1

☑ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

ATTACHMENT I

Emission Units Table

Attachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
B1	003E	Wood Fired Boiler: Hurst Boiler and Welding Co. Model H-1950-150-WF	1998	14.4 mmbtu/hr	Modification	DB3
DC1	none	Filtered Cyclone	2016	NA	New	none
S1A	001E	Baghouse	2016	NA	New	S1A
S1	004E	Silo 1	1998	NA	Modification	DC1
S2A	001E	Rip Progressive Saws	2016	NA	New	S1A
S3A&S17A	001E	Talon Chop	2016	NA	New	S1A
S4A	001E	Vecoplan Grinder (Hog)	2016	NA	New	S1A
S5A	001E	Maddison Rip Saw 3	2016	NA	New	S1A
S6A	001E	Crestwood Grinder (Hog)	2016	NA	New	S1A
S7A	001E	Variety Saw	2016	NA	New	S1A
S8A	001E	Maddison Rip Saw 1	2016	NA	New	S1A
S9A	001E	Maddison Rip Saw 2	2016	NA	New	S1A
S10A	001E	Whirlwind Chop Saws 2	2016	NA	New	S1A
S11A	None	Glue Clamp 1	2016	NA	New	None
S12A	001E	Planer 1	2016	NA	New	S1A
S13A	001E	Planer 2	2016	NA	New	S1A
S14A	001E	Planer 3	2016	NA	New	S1A
S15A	001E	Planer 4	2016	NA	New	S1A
S16A	001E	Panel Saw	2016	NA	New	S1A
S2	002E	Silo 2	1998	NA	Modification	None
S3	001E	Pneumatic Sawdust Conveyor	2016	NA	New	None

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

Attachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
S1B	002E	Baghouse	2016	NA	New	S1B
S2B	002E	Moulder 4	2016	NA	New	S1B
S3B	002E	Weinig Moulder 2	2016	NA	New	S1B
S4B	002E	Weinig Moulder 1	2016	NA	New	S1B
S5B	002E	Weinig Moulder 3	2016	NA	New	S1B
S6B	002E	Celassi DET	2016	NA	New	S1B
S7B	None	Panel Cure	2016	NA	New	none
S1C	002E	Edger Sander	2016	NA	New	S1B
S2C	002E	PICO	2016	NA	New	S1B
S3C	002E	R-Bore	2016	NA	New	S1B
S4C	002E	Unique 1	2016	NA	New	S1B
S5C	002E	Unique 2	2016	NA	New	S1B
S6C	002E	Fletcher Frame/ Rail Machine	2016	NA	New	S1B
S7C	002E	Root Boring Machine	2016	NA	New	S1B
S8C	002E	Horizontal Bore	2016	NA	New	S1B
S9C	002E	Fletcher Sander	2016	NA	New	S1B
S10C	002E	CNC Lathe	2016	NA	New	S1B
S11C	002E	Razor Industrial Chopsaw	2016	NA	New	S1B
S12C	002E	Gabioni DET	2016	NA	New	S1B
S13C	002E	DET 2	2016	NA	New	S1B
S14C	002E	Edger Sander	2016	NA	New	S1B
S15C	002E	Pico Boring Machine	2016	NA	New	S1B

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

ATTACHMENT J

Emission Points Data Summary Sheet

Attachment J

EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions[4]		Maximum Potential Controlled Emissions[5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used[6]	Emission Concentration[7] (mg/m^3)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
003E	Upward Vertical	B1	Boiler	DB3	Multi-clone	NA	NA	CO	8.64	21.77	8.64	21.77	Gas	EE	19,228
								NOx	3.17	7.98	3.17	7.98	Gas		7,055
								PM	14.4	36.29	2.88	7.26	Solid		6,409
								PM10	12.95	32.63	2.59	6.53	Solid		5,764
								PM2.5	11.1	27.95	2.22	5.59	Solid		4,940
								SO2	0.36	0.91	0.36	0.91	Gas		801
								VOC	0.55	1.38	0.55	1.38	Gas		1,224
001E	Upward Vertical	S2A - S16A	Unit A Wood working equip-ment	S1A	Bag-house	NA	NA	PM	6,328	12,656	1.27	2.53	Solid	EE	423
								PM10	70.31	127	0.014	0.025	Solid	EE	3.5
002E	Upward Vertical	S1B – S7B & S1C – S15C	Units B & C Wood working equip-ment	S1B	Bag-house	NA	NA	PM	703	1,406	0.14	0.28	Solid	EE	32
								PM10	70	141	0.014	0.028	Solid	EE	3.5

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

1 Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

2 Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

3 List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, etc. **DO NOT LIST** CO_2, H_2, H_2O, N_2, O_2, and Noble Gases.

4 Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

5 Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

6 Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

7 Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m^3) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO_2, use units of ppmv (See 45CSR10).

Attachment J

EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data								
Emission Point ID No. *(Must match Emissions Units Table)*	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (°F)	Volumetric Flow [1] (acfm) *at operating conditions*	Velocity (fps)	Ground Level *(Height above mean sea level)*	Stack Height[2] *(Release height of emissions above ground level)*	Northing	Easting
003E	1.92	400	7,235	43.5	840	35	4323.12	674.25
001E	4	70	45,840	60.8	840	20	4323.12	674.25
002E	4	70	69,628	92.4	840	20	4323.12	674.25

[1] Give at operating conditions. Include inerts.
[2] Release height of emissions above ground level.

ATTACHMENT K

Fugitive Emissions Discussion

ATTACHMENT K

Fugitive Emissions

The subject Moorefield, WV site receives and ships all raw materials and products by truck. The only materials located outside the main building is the saw dust in the silos and the ash from the boiler. No fugitive emissions will be created during the operation of this facility.

ATTACHMENT L

Emissions Unit Data Sheet(s)

Attachment L
Emission Unit Data Sheet
(INDIRECT HEAT EXCHANGER)

Control Device ID No. (must match List Form): DB3

Equipment Information

1. Manufacturer: Hurst Boiler and Welding Co.	2. Model No. H-1950-150-WF Serial No.
3. Number of units: 1	4. Use space heating
5. Rated Boiler Horsepower: 300 hp	6. Boiler Serial No.:
7. Date constructed: 1998	8. Date of last modification and explain: NA
9. Maximum design heat input per unit: 14.4 $\times 10^6$ BTU/hr	10. Peak heat input per unit: 14.4 $\times 10^6$ BTU/hr
11. Steam produced at maximum design output: 10,350 LB/hr 150 psig	12. Projected Operating Schedule: Hours/Day 24 Days/Week 7 Weeks/Year 30
13. Type of firing equipment to be used: ☐ Pulverized coal ☐ Spreader stoker ☐ Oil burners ☐ Natural Gas Burner ☒ Others, specify Screw feed, underfeed stoker	14. Proposed type of burners and orientation: ☐ Vertical ☐ Front Wall ☐ Opposed ☐ Tangential ☐ Others, specify
15. Type of draft: ☐ Forced ☐ Induced	16. Percent of ash retained in furnace: 60 %
17. Will flyash be reinjected? ☒ Yes ☐ No	18. Percent of carbon in flyash: 50 %

Stack or Vent Data

19. Inside diameter or dimensions: ft.	20. Gas exit temperature: 400 °F
21. Height: ft.	22. Stack serves: ☒ This equipment only ☐ Other equipment also (submit type and rating of all other equipment exhausted through this stack or vent)
23. Gas flow rate: 5474 ft^3/min	
24. Estimated percent of moisture: 20 %	

Fuel Requirements

25. Type	Fuel Oil No.	Natural Gas	Gas (other, specify)	Coal, Type:	Other:
Quantity (at Design Output)	gph@60°F	ft^3/hr	ft^3/hr	TPH	2,060 lb/hr wood waste
Annually	$\times 10^3$ gal	$\times 10^6$ ft^3/hr	$\times 10^6$ ft^3/hr	tons	5,191 tons
Sulfur	Maximum: wt. % Average: wt. %	gr/100 ft^3	gr/100 ft^3	Maximum: wt. %	0.5%
Ash (%)				Maximum	1.5
BTU Content	BTU/Gal. Lbs/Gal.@60°F	BTU/ft^3	BTU/ft^3	BTU/lb	7136 BTU/lb
Source					
Supplier					
Halogens (Yes/No)					No
List and Identify Metals					See Attachment N

26. Gas burner mode of control:
☐ Manual ☐ Automatic hi-low
☐ Automatic full modulation ☐ Automatic on-off

27. Gas burner manufacture:

28. Oil burner manufacture:

29. If fuel oil is used, how is it atomized?
☐ Oil Pressure ☐ Steam Pressure
☐ Compressed Air ☐ Rotary Cup
☐ Other, specify

30. Fuel oil preheated: ☐ Yes ☒ No

31. If yes, indicate temperature: °F

32. Specify the calculated theoretical air requirements for combustion of the fuel or mixture of fuels described above actual cubic feet (ACF) per unit of fuel:
@ °F, PSIA, % moisture

33. Emission rate at rated capacity: lb/hr

34. Percent excess air actually required for combustion of the fuel described: %

Coal Characteristics

35. Seams: NA

36. Proximate analysis (dry basis): % of Fixed Carbon: % of Sulfur:
% of Moisture: % of Volatile Matter:
% of Ash:

Emissions Stream

37. What quantities of pollutants will be emitted from the boiler before controls?

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA
CO	8.64			
Hydrocarbons				
NO_x	3.17			
Pb	0.00040			
PM_{10}	12.95			
SO_2	0.36			
VOCs	0.55			
Other (specify)				
Filterable PM	14.4			
Filterable PM2.5	11.1			
Condensible PM	0.24			

38. What quantities of pollutants will be emitted from the boiler after controls?

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA
CO	8.64			
Hydrocarbons				
NO_x	3.17			
Pb	0.00040			
PM_{10}	2.59			
SO_2	0.36			
VOCs	0.55			
Other (specify)				
Filterable PM	2.88			
Filterable PM2.5	2.21			
Condensible PM	0.24			

39. How will waste material from the process and control equipment be disposed of?
Ash from the control device will be collected in drums or super sacks and stored on site for shipment to an off site composting faciltiy.

40. Have you completed an *Air Pollution Control Device Sheet(s)* for the control(s) used on this Emission Unit. Yes

41. Have you included the ***air pollution rates*** on the Emissions Points Data Summary Sheet? Yes

42. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING PLAN: Please list (1) describe the process parameters and how they were chosen (2) the ranges and how they were established for monitoring to demonstrate compliance with the operation of this process equipment operation or air pollution control device.
Daily vissible emission observations (method 22) will be performed.

TESTING PLAN: Please describe any proposed emissions testing for this process equipment or air pollution control device.
Periodic boiler tuneups including testing of the emission stream will be performed.

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.
Records of vissible emission observations and boiler tune-ups will be maintained along with a log of daily boler activity.

REPORTING: Please describe the proposed frequency of reporting of the recordkeeping.
The records will be provide upon request per the permit conditions.

43. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*):

1. Name or type and model of proposed affected source: Emission Units S1A - S16A various saws, planers and grinders in process line A
2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.
3. Name(s) and maximum amount of proposed process material(s) charged per hour: 3,750 boardfeet of hardwood lumber per hour
4. Name(s) and maximum amount of proposed material(s) produced per hour: 1,875 boardfeet per hour of dimensional stock components
5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants: none

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

not applicable

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

not applicable

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@ °F and psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

not applicable

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

not applicable

(g) Proposed maximum design heat input: $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	16	Days/Week	5	Weeks/Year	50

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ °F and psia

a.	NO_X		lb/hr		grains/ACF
b.	SO_2		lb/hr		grains/ACF
c.	CO		lb/hr		grains/ACF
d.	PM_{10}	70.31	lb/hr	10	grains/ACF
e.	Hydrocarbons		lb/hr		grains/ACF
f.	VOCs		lb/hr		grains/ACF
g.	Pb		lb/hr		grains/ACF
h.	Specify other(s)				
			lb/hr		grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING	RECORDKEEPING
Daily Vissible Emissions (Method 22) observations and magnehelic guage monitoring.	Vissible Emissions and pressure loss.
REPORTING	**TESTING**
Per Permit requirements	None

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
Maintenance of machine blades/tooling

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.
Identification Number (as assigned on *Equipment List Form*):

1. Name or type and model of proposed affected source: Emission Units S1B - S7B various moulders in process line B
2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.
3. Name(s) and maximum amount of proposed process material(s) charged per hour: 1,875 boardfeet of hardwood lumber per hour
4. Name(s) and maximum amount of proposed material(s) produced per hour: 1,875 boardfeet per hour of dimensional stock components
5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants: none

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

not applicable

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

not applicable

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@ °F and psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

not applicable

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

not applicable

(g) Proposed maximum design heat input: $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	16	Days/Week	5	Weeks/Year	50

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ °F and psia

a.	NO_X		lb/hr		grains/ACF
b.	SO_2		lb/hr		grains/ACF
c.	CO		lb/hr		grains/ACF
d.	PM_{10}	35	lb/hr	10	grains/ACF
e.	Hydrocarbons		lb/hr		grains/ACF
f.	VOCs		lb/hr		grains/ACF
g.	Pb		lb/hr		grains/ACF
h.	Specify other(s)				
			lb/hr		grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING	RECORDKEEPING
Dailiy Vissible Emissions observations (Method 22) of baghouse	vissible emissions observations
REPORTING	**TESTING**
Per Permit requirments	None

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
Maintain machining equipment.

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.
Identification Number (as assigned on *Equipment List Form*):

1. Name or type and model of proposed affected source: Emission Units S1C - S15C various sanders, saws, mills, lathes in process line C
2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.
3. Name(s) and maximum amount of proposed process material(s) charged per hour: 1,875 boardfeet of hardwood lumber per hour
4. Name(s) and maximum amount of proposed material(s) produced per hour: 1,875 boardfeet per hour of dimensional stock components
5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants: none

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

not applicable

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

not applicable

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@ °F and psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

not applicable

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

not applicable

(g) Proposed maximum design heat input: $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	16	Days/Week	5	Weeks/Year	50

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ °F and psia

a.	NO_X		lb/hr		grains/ACF
b.	SO_2		lb/hr		grains/ACF
c.	CO		lb/hr		grains/ACF
d.	PM_{10}	35	lb/hr	10	grains/ACF
e.	Hydrocarbons		lb/hr		grains/ACF
f.	VOCs		lb/hr		grains/ACF
g.	Pb		lb/hr		grains/ACF
h.	Specify other(s)				
			lb/hr		grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING	RECORDKEEPING
Daily Vissible Emissions (Method 22) Observations of baghouse for emissions,	Vissible emissions records and Pressure loss across baghouse.
REPORTING	**TESTING**
As required by permit	None

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
Maintain machining equipment.

ATTACHMENT M

Air Pollution Control Device Sheet(s)

Attachment M
Air Pollution Control Device Sheet
(MECHANICAL COLLECTOR-CYCLONE)

Control Device ID No. (must match Emission Units Table): DB3

Equipment Information

1. Manufacturer: Hurst

   Model No. 12K-L7

2. Method: ☐ Wet ☐ Dry
   ☐ Single-stage
   ☐ Multiple: number
   ☒ In series: number 2

3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.

4. Provide a diagram of the proposed simple cyclone or multicyclone system with examples of the parameters identified below:

5. Simple cyclone system (show units):

Major cylinder diameter:	in.
Major cylinder length:	in.
Cone length:	in.
Gas outlet diameter:	in.
Gas outlet length:	in.
Gas inlet height:	in.
Gas inlet weight:	in.
Dust outlet diameter:	in.
Pressure drop across the cyclone:	in. H_2O

Describe the collected dust discharge valves and system:

6. Multicyclone system (show units):

Major cylinder diameter:		in.
Major cylinder length:		in.
Cone length:		in.
Gas outlet diameter:		in.
Gas outlet length:		in.
Gas inlet height:		in.
Gas inlet weight:		in.
Dust outlet diameter:		in.
Pressure drop across the system:	3	in. H_2O
Number of tubes:	10	
Tube diameter:	9	in.
Tube length:	36	in.

Describe the collected dust discharge valves and system:

7. More than one cyclone:
   Number of cyclones: 2
   Arrangement: ☐ Parallel ☒ Series
   Pressure drop across the system: in. H_2O

8. On a separate sheet answer the following questions for each cyclone and attach:

Major cylinder diameter:	in.	Gas inlet weight:	in.
Major cylinder length:	in.	Dust outlet diameter:	in.
Cone length:	in.	Pressure drop across the system:	in. H_2O
Gas outlet diameter:	in.	Number of tubes:	
Gas outlet length:	in.	Tube diameter:	in.

Describe the collected dust discharge valves and systems:

9. Guaranteed collection efficiency:
   Minimum: 99 %

10. Efficiency of cyclone:
    At design maximum: 80 %
    At average Operation: %

11. Method of handling material removed:
    ash will be stored in drums or super sacks and shipped off site to a composting facility for recycling.

Gas Stream Characteristics

12. Particle characteristics (for particulate matter):
    Type of material: wood ash
    Particle density: 40 lb/cubic foot
    Emission rate at collector outlet: 2.88 lb/hr
    2.8 grains/ACF
    Particulate matter inlet rate to device: 14.4 lb/hr

13. Total flow rate:
    Design maximum: 7235 acfm
    Average expected: 7235 acfm

14. Gas Stream Temperature:
    Inlet: 400 °F
    Outlet: 400 °F

15. Gas flow rate into collector: 7235 acfm at 400 °F and 14.3 PSIA

16. Viscosity of gas stream at the above temperature and pressure: 216 lb/sec-ft

17. Inlet gas velocity: 15 ft/sec

18. Particulate Grain Loading in grains/scf:
    Inlet:
    Outlet:

19. Supply a curve showing particulate collection efficiency versus gas volume from 25 to 100 percent of design rating of collector.

Particulate Distribution

20. Complete the table:	Particle Size Distribution at Inlet to Collector	Fraction Efficiency of Collector
Particulate Size Range (microns)	**Weight % for Size Range**	**Weight % for Size Range**
0 – 2		
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		

21. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):
None

22. Describe the collection material disposal system:
Ash will be collected in drums or super sacks

23. Have you included ***Mechanical Collector (Cyclone) Control Device*** in the Emissions Points Data Summary Sheet? Yes

24. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING:	RECORDKEEPING:
the Boiler exhaust stack will be observed for vissible emissions	Records of VE will be maintained.
REPORTING:	**TESTING:**
Per permit requirments	none

MONITORING:	Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

25. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.
100% for particulate

26. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
99% for particulate

27. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
periodic inspection and cleaning.

Attachment M
Air Pollution Control Device Sheet
(BAGHOUSE)

Control Device ID No. (must match Emission Units Table): S1A

Equipment Information and Filter Characteristics

1. Manufacturer: MAC
   Model No. 144MPH416

2. Total number of compartments: 1

3. Number of compartment online for normal operation: 1

4. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.

5. Baghouse Configuration: (check one)
   ☐ Open Pressure ☐ Closed Pressure ☒ Closed Suction
   ☐ Electrostatically Enhanced Fabric
   ☐ Other, Specify

6. Filter Fabric Bag Material:
   ☐ Nomex nylon ☐ Wool
   ☒ Polyester ☐ Polypropylene
   ☐ Acrylics ☐ Ceramics
   ☐ Fiber Glass
   ☐ Cotton Weight oz./sq.yd
   ☐ Teflon Thickness in
   ☐ Others, specify

7. Bag Dimension:
   Diameter in.
   Length ft.

8. Total cloth area: 6,032 ft^2

9. Number of bags:

10. Operating air to cloth ratio: 7.5:1 ft/min

11. Baghouse Operation: ☒ Continuous ☐ Automatic ☐ Intermittent

12. Method used to clean bags:
   ☐ Mechanical Shaker ☐ Sonic Cleaning ☐ Reverse Air Jet
   ☐ Pneumatic Shaker ☒ Reverse Air Flow ☐ Other:
   ☐ Bag Collapse ☐ Pulse Jet
   ☐ Manual Cleaning ☐ Reverse Jet

13. Cleaning initiated by:
   ☐ Timer ☐ Frequency if timer actuated
   ☒ Expected pressure drop range in. of water ☐ Other

14. Operation Hours: Max. per day: 16
   Max. per yr: 4000

15. Collection efficiency: Rating: %
   Guaranteed minimum: 99.98 %

Gas Stream Characteristics

16. Gas flow rate into the collector: 45,840 ACFM at 70 °F and 14.7 PSIA
   ACFM: Design: 14.7 PSIA Maximum: PSIA Average Expected: 14.7 PSIA

17. Water Vapor Content of Effluent Stream: 0 lb. Water/lb. Dry Air

18. Gas Stream Temperature: 70 °F

19. Fan Requirements: 200 hp
   OR 45,840 ft^3/min

20. Stabilized static pressure loss across baghouse. Pressure Drop: High in. H_2O
   Low in. H_2O

21. Particulate Loading: Inlet: 966 grain/scf Outlet: 0.19 grain/scf

22. Type of Pollutant(s) to be collected (if particulate give specific type):
wood dust

23. Is there any SO_3 in the emission stream? ☒ No ☐ Yes SO_3 content: ppmv

24. Emission rate of pollutant (specify) into and out of collector at maximum design operating conditions:

	IN		OUT	
Pollutant	**lb/hr**	**grains/acf**	**lb/hr**	**grains/acf**
Particulate Matter	6329	966	1.26	0.19

25. Complete the table:

	Particle Size Distribution at Inlet to Collector	**Fraction Efficiency of Collector**
Particulate Size Range (microns)	**Weight % for Size Range**	**Weight % for Size Range**
0 – 2		
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		

26. How is filter monitored for indications of deterioration (e.g., broken bags)?
- ☐ Continuous Opacity
- ☒ Pressure Drop
- ☐ Alarms-Audible to Process Operator
- ☐ Visual opacity readings, Frequency:
- ☐ Other, specify:

27. Describe any recording device and frequency of log entries:
magnehelic guage

28. Describe any filter seeding being performed:
none

29. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):
none

30. Describe the collection material disposal system:
The collected wood particulate is transferred via a rotary feeder located in the hopper portion of the baghouse to a pneumatic conveyance system for transfer to Silo 1.

31. Have you included ***Baghouse Control Device*** in the Emissions Points Data Summary Sheet? Yes

32. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING:	RECORDKEEPING:
REPORTING:	TESTING:

MONITORING:	Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

33. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.

100%

34. Manufacturer's Guaranteed Control Efficiency for each air pollutant.

99.98%

35. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.

Attachment M
Air Pollution Control Device Sheet
(BAGHOUSE)

Control Device ID No. (must match Emission Units Table): S1B

Equipment Information and Filter Characteristics

1. Manufacturer: Camcorp
   Model No. 12HVP504

2. Total number of compartments: 1

3. Number of compartment online for normal operation: 1

4. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.

5. Baghouse Configuration: (check one)
   ☐ Open Pressure ☐ Closed Pressure ☒ Closed Suction
   ☐ Electrostatically Enhanced Fabric
   ☐ Other, Specify

6. Filter Fabric Bag Material:
   ☐ Nomex nylon ☐ Wool
   ☒ Polyester ☐ Polypropylene
   ☐ Acrylics ☐ Ceramics
   ☐ Fiber Glass
   ☐ Cotton Weight oz./sq.yd
   ☐ Teflon Thickness in
   ☐ Others, specify

7. Bag Dimension:
   Diameter in.
   Length ft.

8. Total cloth area: 7,318 ft^2

9. Number of bags:

10. Operating air to cloth ratio: 9.5:1 ft/min

11. Baghouse Operation: ☒ Continuous ☐ Automatic ☐ Intermittent

12. Method used to clean bags:
   ☐ Mechanical Shaker ☐ Sonic Cleaning ☐ Reverse Air Jet
   ☐ Pneumatic Shaker ☒ Reverse Air Flow ☐ Other:
   ☐ Bag Collapse ☐ Pulse Jet
   ☐ Manual Cleaning ☐ Reverse Jet

13. Cleaning initiated by:
   ☐ Timer ☐ Frequency if timer actuated
   ☒ Expected pressure drop range in. of water ☐ Other

14. Operation Hours: Max. per day: 16
   Max. per yr: 4,000

15. Collection efficiency: Rating: %
   Guaranteed minimum: 99.98 %

Gas Stream Characteristics

16. Gas flow rate into the collector: 69,628 ACFM at 70 °F and 14.7 PSIA
   ACFM: Design: 14.7 PSIA Maximum: 14.7 PSIA Average Expected: 14.7 PSIA

17. Water Vapor Content of Effluent Stream: 0 lb. Water/lb. Dry Air

18. Gas Stream Temperature: 70 °F

19. Fan Requirements: 200 hp
   OR 69,628 ft^3/min

20. Stabilized static pressure loss across baghouse. Pressure Drop: High in. H_2O
   Low in. H_2O

21. Particulate Loading: Inlet: 70.6 grain/scf Outlet: 0.001 grain/scf

22. Type of Pollutant(s) to be collected (if particulate give specific type):
wood dust

23. Is there any SO_3 in the emission stream? ☒ No ☐ Yes SO_3 content: ppmv

24. Emission rate of pollutant (specify) into and out of collector at maximum design operating conditions:

Pollutant	IN		OUT	
	lb/hr	grains/acf	lb/hr	grains/acf
Particulate Matter	703	70.6	0.13	0.001

25. Complete the table:

Particulate Size Range (microns)	Particle Size Distribution at Inlet to Collector Weight % for Size Range	Fraction Efficiency of Collector Weight % for Size Range
0 – 2		
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		

26. How is filter monitored for indications of deterioration (e.g., broken bags)?
- ☐ Continuous Opacity
- ☒ Pressure Drop
- ☐ Alarms-Audible to Process Operator
- ☐ Visual opacity readings, Frequency:
- ☐ Other, specify:

27. Describe any recording device and frequency of log entries:
magnehelic guage

28. Describe any filter seeding being performed:
none

29. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):
none

30. Describe the collection material disposal system:
the collected wood particulate is transferred via a rotary feeder located in the hopper portion of the baghouse to a pneumatic conveyance system for transfer to Silo 1.

31. Have you included ***Baghouse Control Device*** in the Emissions Points Data Summary Sheet? Yes

32. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING:	RECORDKEEPING:
REPORTING:	TESTING:

MONITORING:	Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

33. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.

100%

34. Manufacturer's Guaranteed Control Efficiency for each air pollutant.

99.99%

35. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.

Attachment M
Air Pollution Control Device Sheet
(BAGHOUSE)

Control Device ID No. (must match Emission Units Table): DC1

Equipment Information and Filter Characteristics

1. Manufacturer:
   Model No. 22C15

2. Total number of compartments: 1

3. Number of compartment online for normal operation:

4. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.

5. Baghouse Configuration: (check one)
   ☐ Open Pressure ☐ Closed Pressure ☐ Closed Suction
   ☐ Electrostatically Enhanced Fabric
   ☐ Other, Specify

6. Filter Fabric Bag Material:
   ☐ Nomex nylon ☐ Wool
   ☒ Polyester ☐ Polypropylene
   ☐ Acrylics ☐ Ceramics
   ☐ Fiber Glass
   ☐ Cotton Weight oz./sq.yd
   ☐ Teflon Thickness in
   ☐ Others, specify

7. Bag Dimension:
   Diameter in.
   Length ft.

8. Total cloth area: 6,900 ft^2

9. Number of bags:

10. Operating air to cloth ratio: 10:1 ft/min

11. Baghouse Operation: ☐ Continuous ☐ Automatic ☐ Intermittent

12. Method used to clean bags:
   ☐ Mechanical Shaker ☐ Sonic Cleaning ☐ Reverse Air Jet
   ☐ Pneumatic Shaker ☐ Reverse Air Flow ☐ Other:
   ☐ Bag Collapse ☐ Pulse Jet
   ☐ Manual Cleaning ☐ Reverse Jet

13. Cleaning initiated by:
   ☐ Timer ☐ Frequency if timer actuated
   ☒ Expected pressure drop range in. of water ☐ Other

14. Operation Hours: Max. per day: 24
   Max. per yr: 8760

15. Collection efficiency: Rating: %
   Guaranteed minimum: 99.96 %

Gas Stream Characteristics

16. Gas flow rate into the collector: 69,000 ACFM at °F and PSIA
   ACFM: Design: PSIA Maximum: PSIA Average Expected: PSIA

17. Water Vapor Content of Effluent Stream: lb. Water/lb. Dry Air

18. Gas Stream Temperature: °F

19. Fan Requirements: 15 hp
   OR ft^3/min

20. Stabilized static pressure loss across baghouse. Pressure Drop: High 4 in. H_2O
   Low 2 in. H_2O

21. Particulate Loading: Inlet: grain/scf Outlet: grain/scf

22. Type of Pollutant(s) to be collected (if particulate give specific type):
wood dust

23. Is there any SO_3 in the emission stream? ☒ No ☐ Yes SO_3 content: ppmv

24. Emission rate of pollutant (specify) into and out of collector at maximum design operating conditions:

	IN		OUT	
Pollutant	**lb/hr**	**grains/acf**	**lb/hr**	**grains/acf**
Particulate Matter	7,031.25		0.00	

25. Complete the table:

	Particle Size Distribution at Inlet to Collector	**Fraction Efficiency of Collector**
Particulate Size Range (microns)	**Weight % for Size Range**	**Weight % for Size Range**
0 – 2		
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		

26. How is filter monitored for indications of deterioration (e.g., broken bags)?
- ☐ Continuous Opacity
- ☐ Pressure Drop
- ☐ Alarms-Audible to Process Operator
- ☐ Visual opacity readings, Frequency:
- ☐ Other, specify:

27. Describe any recording device and frequency of log entries:

28. Describe any filter seeding being performed:

29. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):

30. Describe the collection material disposal system:
all particlulate is collected in Silo 1

31. Have you included ***Baghouse Control Device*** in the Emissions Points Data Summary Sheet?

32. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING:	RECORDKEEPING:
REPORTING:	TESTING:

MONITORING:	Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

33. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.

34. Manufacturer's Guaranteed Control Efficiency for each air pollutant.

35. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.

ATTACHMENT N

Supporting Emissions Calculations

ATTACHMENT N
ALLEGHENY DIMENSION

SUMMARY

POTENTIAL TO EMIT (TONS PER YEAR)

Emission Unit	CO	NOx	PM	PM10	PM2.5	SO2	VOC
Main Boiler	21.77	7.98	7.26	6.53	5.59	0.91	1.38
Woodworking			2.81	0.05			
TOTAL	**21.77**	**7.98**	**10.07**	**6.58**	**5.59**	**0.91**	**1.38**

(POUNDS PER HOUR)

Emission Unit	CO	NOx	PM	PM10	PM2.5	SO2	VOC
Main Boiler	8.64	3.17	2.88	2.59	2.22	0.36	0.55
Woodworking			1.41	0.03			
TOTAL	**8.64**	**3.17**	**4.29**	**2.62**	**2.22**	**0.36**	**0.55**

Allegheny Dimension

Woodworking Equipment
Emission Points 001E and 002E

Maximum Annual Operating Hours = 4,000 hours/year (16 hr/day x 5 days/week x 50 weeks/yr)

Maximum Annual Throughput = 15,000,000 boardfeet/yr
15,000,000 bf/yr / 12 = 1,250,000 ft^3/yr

Average density of wood = 45 lb/ft^3 (CRC Handbook of Applied Engineering Science Table 1-86 Density of Various Solids - Oak 37-56 lb/ft^3, Poplar 22-31 lb/ft^3, Cherry 45-56 lb/ft^3)

Maximum Annual Throughput = 1,250,000 ft^3/yr / 45 lb/ft^3
56,250,000 lbs/yr
28,125 tons/yr

Maximum Hourly Throughput = 56,250,000 lb/yr / 4,000 hr/yr
14,062.5 lbs/hr

Typical Wood Waste Rate = 50%

Max Annual Wood Waste Generation = 28,125 tons/yr x 50%
14,062.5 tons/yr

Max Hourly Wood Waste Generation = 14,062.5 tons/yr / 4,000 hr/yr
3.52 tons/hr
7,031.25 lbs/hr

APCD Efficiency = 99.98%

7,031.25 lb/hr x (1 - 0.9998) = **1.41 lb/hr**
1.41 lb/hr x 4,000 hr/yr / ton/2,000 lb = **2.81 tpy**

45CSR7 Calculations
Table 45-7

	Wt Rate lb/hr	Allowable lb/hr
Type 'a'	10000	10
	14062.5	x
	20000	16

$\frac{20000 - 10000}{20000 - 14062.5} = \frac{16 - 10}{16 - x}$

$\frac{10000}{5937.5} = \frac{6.0}{16 - x}$

$160000 - 10000x = 35625$
$-10000x = -124375$
$x = 12.4375$

Allowable PM = 12.44 lb/hr

Allegheny Dimension

Woodworking Equipment
Emission Points 001E and 002E

Emission Point E001 services System A which generates 90% of woodworking emissions.

PM Emissions

14,063	tons/year x 90% =	12656 tpy woodwaste to S1A baghouse
12,656	tpy x (1 - 0.9998) =	2.53 tpy controlled PM emissions
7,031.25	lb/hr x 90% =	6,328 lb/hr woodwaste to S1A baghouse
6,328.13	lb/hr x (1 - 0.9998) =	1.27 lb/hr controlled PM emissions

PM10 Emissions are estimated to be approximately 1% of total PM emissions

12,656	tpy x 1% =	126.56 tpy PM10 to S1A baghouse
126.56	tpy x (1 - 0.9998) =	0.025 tpy controlled PM10 emissions
7,031.25	lb/hr x 1% =	70.31 lb/hr PM10 to S1A baghouse
70.31	lb/hr x (1 - 0.9998) =	0.014 lb/hr controlled PM10 emissions

Emission Point E002 services Systems B & C which generates 10% of woodworking emissions.

PM Emissions

14,063	tons/year x 10% =	1406 tpy woodwaste to S1A baghouse
1,406	tpy x (1 - 0.9998) =	0.28 tpy controlled PM emissions
7,031.25	lb/hr x 10% =	703 lb/hr woodwaste to S1A baghouse
703.13	lb/hr x (1 - 0.9998) =	0.14 lb/hr controlled PM emissions

PM10 Emissions are estimated to be approximately 10% of total PM emissions

1,406	tpy x 10% =	140.63 tpy PM10 to S1A baghouse
140.63	tpy x (1 - 0.9998) =	0.028 tpy controlled PM10 emissions
703.13	lb/hr x 10% =	70.31 lb/hr PM10 to S1A baghouse
70.31	lb/hr x (1 - 0.9998) =	0.014 lb/hr controlled PM10 emissions

Table 1-86. DENSITY OF VARIOUS SOLIDS*

Approximate Density of Solids at Ordinary Atmospheric Temperature

In the case of substances with voids, such as paper or leather, the bulk density is indicated rather than th density of the solid portion.

Substance	Grams per cu cm	Pounds per cu ft	Substance	Grams per cu cm	Pounds per cu ft	Substance	Grams per cu cm	Poun per cu fi
Agate	2.5–2.7	156–168	Glass			Tallow		
Alabaster			Common	2.4–2.8	150–175	Beef	0.94	59
Carbonate	2.69–2.78	168–173	Flint	2.9–5.9	180–370	Mutton	0.94	59
Sulfate	2.26–2.32	141–145	Glue	1.27	79	Tar	1.02	66
Albite	2.62–2.65	163–165	Granite	2.64–2.76	165–172	Topaz	3.5–3.6	219–2
Amber	1.06–1.11	66–69	Graphite†	2.30–2.72	144–170	Tourmaline	3.0–3.2	190–2
Amphiboles	2.9–3.2	180–200	Gum arabic	1.3–1.4	81–87	Wax, sealing	1.8	112
Anorthite	2.74–2.76	171–172	Gypsum	2.31–2.33	144–145	Wood (seasoned)		
Asbestos	2.0–2.8	125–175	Hematite	4.9–5.3	306–330	Alder	0.42–0.68	26–42
Asbestos slate	1.8	112	Hornblende	3.0	187	Apple	0.66–0.84	41–52
Asphalt	1.1–1.5	69–94	Ice	0.917	57.2	Ash	0.65–0.85	40–53
Basalt	2.4–3.1	150–190	Ivory	1.83–1.92	114–120	Balsa	0.11–0.14	7–9
Beeswax	0.96–0.97	60–61	Leather, dry	0.86	54	Bamboo	0.31–0.40	19–25
Beryl	2.69–2.7	168–169	Lime, slaked	1.3–1.4	81–87	Basswood	0.32–0.59	20–37
Biotite	2.7–3.1	170–190	Limestone	2.68–2.76	167–171	Beech	0.70–0.90	32–56
Bone	1.7–2.0	106–125	Linoleum	1.18	74	Birch	0.51–0.77	32–48
Brick	1.4–2.2	87–137	Magnetite	4.9–5.2	306–324	Blue gum	1.00	62
Butter	0.86–0.87	53–54	Malachite	3.7–4.1	231–256	Box	0.95–1.16	59–72
Calamine	4.1–4.5	255–280	Marble	2.6–2.84	160–177	Butternut	0.38	24
Calcspar	2.6–2.8	162–175	Meerschaum	0.99–1.28	62–80	Cedar	0.49–0.57	30–35
Camphor	0.99	62	Mica	2.6–3.2	165–200	Cherry	0.70–0.90	43–56
Caoutchouc	0.92–0.99	57–62	Muscovite	2.76–3.00	172–187	Dogwood	0.76	47
Cardboard	0.69	43	Ochre	3.5	218	Ebony	1.11–1.33	69–83
Celluloid	1.4	87	Opal	2.2	137	Elm	0.54–0.60	34–37
Cement, set	2.7–3.0	170–190	Paper	0.7–1.15	44–72	Hickory	0.60–0.93	37–58
Chalk	1.9–2.8	118–175	Paraffin	0.87–0.91	54–57	Holly	0.76	47
Charcoal			Peat blocks	0.8	52	Juniper	0.56	35
Oak	0.57	35	Pitch	1.07	67	Larch	0.50–0.56	31–35
Pine	0.28–0.44	18–28	Porcelain	2.3–2.5	143–156	Lignum vitae	1.17–1.33	73–83
Cinnabar	8.12	507	Porphyry	2.6–2.9	162–181	Locust	0.67–0.71	42–44
Clay	1.8–2.6	112–162	Pressed wood			Logwood	0.91	57
Coal			pulp board	0.19	12	Mahogany		
Anthracite	1.4–1.8	87–112	Pyrite	4.95–5.1	309–318	Honduras	0.66	41
Bituminous	1.2–1.5	75–94	Quartz	2.65	165	Spanish	0.85	53
Cocoa butter	0.89–0.91	56–57	Resin	1.07	67	Maple	0.62–0.75	39–47
Coke	1.0–1.7	62–105	Rock salt	2.18	136	Oak	0.60–0.90	37–56
Copal	1.04–1.14	65–71	Rubber, hard	1.19	74	Pear	0.61–0.73	38–45
Cork	0.22–0.26	14–16	Rubber, soft			Pine		
Cork linoleum	0.54	34	Commercial	1.1	69	Pitch	0.83–0.85	52–53
Corundum	3.9–4.0	245–250	Pure gum	0.91–0.93	57–58	White	0.35–0.50	22–31
Diamond	3.01–3.52	188–220	Sandstone	2.14–2.36	134–147	Yellow	0.37–0.60	23–37
Dolomite	2.84	177	Serpentine	2.50–2.65	156–165	Plum	0.66–0.78	41–49
Ebonite	1.15	72	Silica			Poplar	0.35–0.5	22–31
Emery	4.0	250	Fused trans-			Satinwood	0.95	59
Epidote	3.25–3.50	203–218	parent	2.21	138	Spruce	0.48–0.70	30–44
Feldspar	2.55–2.75	159–172	Translucent	2.07	129	Sycamore	0.40–0.60	24–37
Flint	2.63	164	Slag	2.0–3.9	125–240	Teak		
Fluorite	3.18	198	Slate	2.6–3.3	162–205	Indian	0.66–0.88	41–55
Galena	7.3–7.6	460–470	Soapstone	2.6–2.8	162–175	African	0.98	61
Gamboge	1.2	75	Spermaceti	0.95	59	Walnut	0.64–0.70	40–43
Garnet	3.15–4.3	197–268	Starch	1.53	95	Water gum	1.00	62
Gas carbon	1.88	117	Sugar	1.59	99	Willow	0.40–0.60	24–37
Gelatin	1.27	79	Talc	2.7–2.8	168–174			

†Some values reported as low as 1.6

*Based largely on: "Smithsonian Physical Tables", 9th rev. ed., W.E. Forsythe, Ed., The Smithsonian Institution, 1956, p. 292.

ALLEGHENY DIMENSION

Boiler Fuel Consumption

1. From previous permit, the boiler maximum fuel consumption rate is 2,060 pounds per hour.

2. Steam is generated by the boiler for use in heating in the building.
   Assume average heating period to be seven months per year = 210 days per year
   Average time for fuel to boiler – 40%

3. Annual Fuel Use = 2,060 pounds per hour x 210 days per year x 24 hours per day x 40%
   = 4,152,960 pounds per year
   = 2,076.5 tons per year

4. Excess Sawdust = 14,062.5 tons per year produced – 2,076.5 tons per year burned
   = 11,986 tons per year

ATTACHMENT N
ALLEGHENY DIMENSION - MOOREFIELD

14.4 MMBtu/Hr Hurst Wood Fired Boiler
Emission Point 003E

Annual Hours of Operation	5040		
Max Fuel Combusted	2060	lb/hr	from American Woodmark air permit R13-2220
	5191	tons/yr	(not used for emissions calculations)

Design Heat Input (MMBtu/hr) 14.4

Pollutant	Emission Factor (lb/mmBtu)	Max PTE Emissions lb/hr	Max PTE Emissions (tpy)	AP-42 Emission Factors
Filterable PM	0.56	8.06	20.32	Bark/Bark and Wet Wood w/No Control
Filterable PM-10	0.5	7.20	18.14	Bark/Bark and Wet Wood w/No Control
Filterable PM-2.5	0.43	6.19	15.60	Bark/Bark and Wet Wood w/No Control
Condensible PM	0.017	0.24	0.62	All Fuels w/All Controls/No Controls
SO_2	0.025	0.36	0.91	Bark/bark and wet wood/wet wood-fired boiler
NOx	0.22	3.17	7.98	Bark/bark and wet wood/wet wood-fired boiler
VOC	0.038	0.55	1.38	Wood Residue Combustion
CO	0.6	8.64	21.77	Bark/bark and wet wood/wet wood-fired boiler
Controlled PM		2.88	7.26	Manufacturer's guaranteed emission rate
Controlled PM10		2.59	6.53	Manufacturer's guaranteed emission rate ≤ 90% of PM
Controlled PM2.5		2.22	5.59	AP-42 ratio of PM2.5 to PM (77%)

Pollutant	Emission Factor (lb/MMBtu)	Max PTE Emissions (lb/hr)	Max PTE Emissions (tpy)	AP-42 Emission Factors
Arsenic	2.20E-05	0.00018	0.0008	Wood Residue Combustion
Chromium	2.10E-05	0.00017	0.0008	Wood Residue Combustion
Cr^{+6}	3.50E-06	0.000029	0.00013	Wood Residue Combustion
Lead	4.80E-05	0.00040	0.0017	Wood Residue Combustion
Manganese	1.60E-03	0.013	0.06	Wood Residue Combustion
Nickel	3.30E-05	0.00027	0.0012	Wood Residue Combustion
Formaldehyde	4.40E-03	0.036	0.16	Wood Residue Combustion
Acetaldehyde	8.30E-04	0.007	0.030	Wood Residue Combustion
Benzene	4.20E-03	0.035	0.15	Wood Residue Combustion
Total HAPs		0.09	0.40	Wood Residue Combustion
Carbon Dioxide	1.95E+02	1615.561644	7076	Wood Residue Combustion
Nitrous Oxide	1.30E-02	0.11	0.47	Wood Residue Combustion
Methane	2.10E-02	0.17	0.76	Wood Residue Combustion

AP-42 Chapter 1, Section 6
Filterable PM, PM10, PM2.5 and Condensible PM from Table 1.6-1
NOx, SO_2, CO from Table 1.6-2
VOC, HAPs, CO_2, Nitrous Oxide, and Methane from Table 1.6-3

ATTACHMENT N
ALLEGHENY DIMENSION - MOOREFIELD

45CSR2 Calculations
Table 45-2

	MMBtu/hr	lb/hr
Type 'c'	10	3.4
	14.4	x
	20	5.6

$$\frac{20 - 10}{20 - 14.4} \qquad \frac{5.6 - 3.4}{5.6 - x}$$

$$\frac{10}{5.6} \qquad \frac{2.2}{5.6 - x}$$

$$56 - 10x = 12.32$$
$$-10x = -43.68$$
$$x = 4.368$$

Allowable PM = 4.37 lb/hr

Manufacturer's Information from American Woodmark R13 permit application

	Emissions		
Pollutant	**lb/hr**	**(tpy)**	
Controlled PM	2.88	7.26	Manufacturer's guaranteed emission rate
Controlled PM10	2.59	6.53	Manufacturer's guaranteed emission rate ≤ 90% of PM
Controlled PM2.5	2.22	5.59	AP-42 ratio of PM2.5 to PM (77%)

Minimum control efficiency of the multiclone = 80%

Uncontrolled PM = 2.88 lb/hr / (1-0.80) = 14.4 lb/hr PM
Uncontrolled PM10 = 2.59 lb/hr / (1-0.80) = 12.95 lb/hr PM10
Uncontrolled PM2.5 = 2.22 lb/hr / (1-0.80) = 11.1 lb/hr PM2.5

Uncontrolled PM = 7.26 tpy / (1-0.80) = 36.29 tpy PM
Uncontrolled PM10 = 6.53 tpy / (1-0.80) = 32.63 tpy PM10
Uncontrolled PM2.5 = 5.59 tpy / (1-0.80) = 27.97 tpy PM2.5

ATTACHMENT P

Public Notice

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Allegheny Dimension, LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a 45CSR13 permit to relocate a hardwood component facility located near at 390 Industrial Park Road in Moorefield, Hardy County, West Virginia. The latitude and longitude coordinates are: 39.041939 north latitude, -78.987719 west longitude.

The applicant estimates the potential to discharge the following Regulated Air Pollutants: 21.77 tons per year of carbon monoxide, 7.98 tons per year of oxides of nitrogen, 10.07 tons per year of total particulate matter, 0.91 tons per year of sulfur dioxide, and 1.38 tons per year of volatile organic compounds.

The change will take place on or about the first day of May, 2016. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 3rd day of March, 2016.

By: Allegheny Dimension, Inc.
E. Thomas Plaugher
Designated Agent
PO Box 130
Petersburg, WV 26847

ATTACHMENT R

Authority Forms

ALLEGHENY DIMENSION, A WEST VIRGINIA
LIMITED LIABILITY COMPANY
RESOLUTION OF MANAGER
IN LIEW OF FORMAL MEETING

I, John W. Crites, II, hereby certify that I am the sole Member of Allegheny Dimension, a West Virginia limited liability company (the "Company") and am the duly appointed Manager of the Company pursuant to Article V of the Operating Agreement of the Company dated July 27, 1995.

I, further certify that E. Thomas Plaugher should be appointed the designated agent for the Company to execute any and all documents relating to environmental permits.

I, further certify that it is in best interest of the Company that Mr. E. Thomas Plaugher be given authority to execute any and all documents relating to environmental permits or on behalf of the Company.

I, further certify that the following resolution was duly adopted by me as the Manager of the Company, has not been modified, rescinded or revoked, and is now in full force and effect:

> RESOLVED, that it is in the best interest of the Company to appoint E. Thomas Plaugher as designated agent to execute all documents relating to environmental permits including, but not limited to permit applications and renewals as if said documents were executed by its Member Manager.
>
> FURTHER RESOLVED, that John W. Crites, II, the Manager of the Company is hereby authorized and empowered to appoint E. Thomas Plaugher as the Company's designated agent for environmental matters.
>
> FURTHER RESOLVED, that John W. Crites, the Manager of the Company, hereby authorizes, empowers and directs E. Thomas Plaugher to take all such steps and actions necessary on behalf of the Company to carry out the intent and purposes of the foregoing resolutions.

IN WITNESS WHEREOF, I have hereunto subscribed my hand on this 25th day of February, 2016.

John W. Crites, II