Air Quality Assessment

Dunaway Timber Co Plant 2
(AI 44386)

Prepared with the assistance of

Process Description and Emission Calculations
Dunaway Timber Co Plant 2 (AI 44386)

Air Permit Modification

Dunaway Timber Co Plant 2 originally submitted an air permit modification to add a proposed pellet mill operation at their sawmill facility on March 4, 2024. On August 27, 2024, the facility met with DAQ to discuss modifying the permit due to potential VOC emissions. DAQ requested that the facility submit an updated application to reflect the potential VOC and HAP emissions for the proposed pellet mill. The updated application will also include the air recirculation to the dryer as an integral control for VOC and HAPs for the following emission points: EP10, EP12, and EP14. The following emission points have been updated:

- EP06– Green Hammermill
- EP09-01– Rotary Drum Dryer
- EP10– Dry Hammermill
- EP12– Pellet Mill (3 units)
- EP13– Pellet Screeners (2 units)
- EP14– Pellet Cooler
- EP17 – Pellet Storage Silos (3 units)
- EP18 – Pellet Packaging

Process Description

Dunaway Timber currently operates a sawmill facility located in Fordsville, KY. They are requesting a modification to their existing air permit (S-15-007) to add a pellet mill to their facility operations. The facility will process 100% hardwood stock: red/white oak, hickory, maple, cherry, and ash species. Once the facility completes construction of the facility, they will be operating the pellet mill year-round, 24 hours a day, and 7 days a week.

Pellet Mill Process Description

Twelve walking floor trailers will deliver up to twenty-five tons of green woodchips and sawdust (47.0% moisture content) to an open, outdoor storage pad with no barriers that is about 1.0 acre in size. A box chain feeder will load the greenwood material from the storage pad onto an open conveyor belt where a magnet will remove unwanted materials. The raw material will then be conveyed into a wet hammermill to grind the material to a more uniform size. A cyclone is used to separate the air and green hammermill furnishings which will be transferred to an open walking floor trailer. After this point, all material will enter a closed loop system where product will be transferred via mechanical conveyors, high-efficiency cyclones, or a positive pressure blower system.

An auger screw conveyor will transfer the raw material from the walking floor trailer into a triple rotary drum dryer (Uzelac 1300) to dry the woodchips until it reaches ~9.0% moisture content. Natural gas will be used to initially heat the rotary dryer; the direct fired heat exchanger (30 MMBtu/hr) will combust 1.65 tons of dry sawdust per hour to maintain the temperature of the dryer at 825°F. A set of three cyclones (Uzelac) will separate the dried sawdust/woodchips from the air stream. Dried material will be conveyed to a fully enclosed walking floor trailer until it is ready to be pneumatically conveyed into the dry hammermill, where the dried wood material is further reduced in size (1/5"-5/8"). At this point, the material will be conveyed into the enclosed pellet mill building where three pellet mills (Graf 900/138) and a briquette machine will process the dried sawdust material into the wood pellets and wood briquettes. Steam and pressure are used to form the briquette and pellet products; no additives or chemicals are utilized. A 1.26 MMBtu boiler provides steam for the pellet mill processes. Once formed, the hot wood pellets will move along the hot pellet drag conveyor (enclosed) to the CSE Bliss Pellet Cooler, then they are screened to remove fines. The final product is stored in three storage silos until it is ready to be packaged.

Fines Collection System

A pellet screener is located under the packaging unit and the pellet cooler. Screened fines will be conveyed via a positive pressure blower to either the briquette bin or the fuel bin. Bin vent filters are located on top of the briquette and dry sawdust (fuel) bin to control dust emissions as air will exhaust out below the ceiling of the building. The final product and recovered fines will be redirected to the dryer burner via a closed piping system to be used as fuel to provide combustion heat for the rotary drum dryer burner.

Air Recycling System

The facility will install an air recycling system that will direct processed air from specific emission points to the dryer burner (2200F°) where VOCS and HAPs will be combusted. An air handling fan located behind the dry hammermill will draw the air from the cyclone and recycle it to the intake fan on the burner. An air handling fan will draw the air from the cooler through a cyclone and divert the air back to the burner in the suspension chamber. Lastly, a steam extraction fan will divert the process heat from the pellet mills and the hot pellet drag conveyor and recycle it back to the burner/dryer system suspension chamber to provide combustion heat.

Emission Calculations

Based on historic usage and operational data provided by the facility, actual rates were determined and then modified to represent potential usage rates for all emission point sources. For the following process, 8,760 hours per year was used as the potential operating time.

Emission Points

EP01 – Greenwood Truck Unloading- Fugitive

- Throughput: 13.54 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014
- Control: None Known

EP02 – Outdoor Greenwood Storage Pad - Fugitive

- Throughput: 1 acre
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014
- Control: Wet Suppression (90.00% for Particulate Matter)

EP03– Greenwood Handling to Feed Hopper- Fugitive

- Throughput: 15 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014
- Control: None Known

EP04 – Feed Hopper- Fugitive

- Throughput: 15 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014
- Control: None Known

EP05 – Open Conveyor Belt - Fugitive

- Throughput: 15 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014
- Control: None Known

EP06– Green Hammermill

- Throughput: 15 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014
- Control: Cyclone 1 (95.00% for Particulate Matter)

EP07– Greenwood Handling to Walking Floor Trailer- Fugitive

- Throughput: 15 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014
- Control: None Known

EP08– Open Walking Floor Trailer- Fugitive

- Throughput: 15 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014
- Control: Partial Enclosure - (50.00% for Particulate Matter)

EP09-01– Rotary Drum Dryer

- Throughput: 15 tons/hr
- Emission Factor Source: AP42 10.6.2-1; DAQ Combustion/ Appling County Pellets
- Control: Cyclones 2, 3, 4 (99.99% for Particulate Matter)

EP09-02– Rotary Drum Dryer-Burner

- Throughput: 1.65 tons/hr
- Emission Factor Source: AP-42 1.6
- Control: Cyclones 2, 3, 4 (99.99% for Particulate Matter)

EP10– Dry Hammermill

- Throughput: 11.65 tons/hr
- Emission Factor Source: AP42 11.19.2; DAQ Combustion/ Appling County Pellets
- Control: Cyclone 5 (95.00% for Particulate Matter); Air Recirculation to Burner (85.00% for VOC and HAPs)

EP11– Natural Gas Boiler

- Throughput: 1.24E-03 MMscf/hr
- Emission Factor Source: AP 42 1.4
- Control: None Known

EP12– Pellet Mill (3 units)

- Throughput: 11.65 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014; DAQ Combustion/Appling County Pellets
- Control: Building Enclosure (70.00% for Particulate Matter); Air Recirculation to Burner (85.00% for VOC and HAPs)
-

EP13– Pellet Screeners (2 units)

- Throughput: 11.65 tons/hr
- Emission Factor Source: AP-42 11.19.2; DAQ Combustion
- Control: Building Enclosure (70.00% for Particulate Matter)

EP14– Pellet Cooler

- Throughput: 11.65 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014; DAQ Combustion
- Control: Cyclone 6 (95.00% for Particulate Matter); Building Enclosure (70.00% for Particulate Matter); Air Recirculation to Burner (85.00% for VOC and HAPs)

EP15– Dry Sawdust Fuel Storage Bin

- Throughput: 11.65 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014
- Control: Bin Vent Filter Enclosure (70.00% for Particulate Matter); Building Enclosure (70.00% for Particulate Matter)

EP16 – Briquette Bin

- Throughput: 11.65 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014
- Control: Bin Vent Filter (70%); Building Enclosure (70%)

EP17 – Pellet Storage Silos (3 units)

- Throughput: 2.4E-02 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014;; DAQ Combustion
- Control: None Known

EP18 – Pellet Packaging

- Throughput: 11.65 tons/hr
- Emission Factor Source: EPA Memo on Sawmill EFs dated May 08, 2014; DAQ Combustion
- Control: Building Enclosure (70.00% for Particulate Matter)

EP19 – Haul Road- Fugitive

- Throughput: 24.38 tons/hr
- Emission Factor Source: DAQ Minerals Section
- Control: None Known

<u>Applicable Regulations</u>

- 401 KAR 59:010- New Process Operations
- 401 KAR 63:020- Potentially Hazardous Matter or Toxic Substances
- 401 KAR 59:015- New Indirect Heat Exchanger
- 401 KAR 63:010- Fugitive Emissions

<u>Non-Applicable Regulations</u>

- 40 CFR 63, Subpart JJJJJJ - NESHAP: Industrial, Commercial, and Institutional Boilers for Area Sources
    - (EP09-02) The Direct Sawdust Fired Dryer Heater will not be utilized to produce steam or hot water; hence it is not defined as a “boiler”.
    - (EP11) The boiler utilizes natural gas.

- 40 CFR 60 Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
    - The Natural Gas Boiler has a rated capacity of less than 10.0 MMBtu/hr.

Recommendation

Based on potential emission calculations and applicable requirements, the Environmental Compliance Assistance Program is recommending that ***Dunaway Timber Co Plant 2*** file an application for a ***Conditional Major Permit***. Below is a table that reflects the potential emissions for the equipment.

Facility-wide Emissions

Total Emissions			Requested Limit
Pollutant	Uncontrolled TPY	Controlled TPY	
PM	59.25	6.80	
PM_{10}	40.48	2.63	
SO_2	2.89	2.89	
CO	69.83	69.83	
NOx	57.20	57.20	
VOC	256.56	241.12	90
CO_2	23197.51	23197.51	
N_2O	1.52	1.52	
Methane	2.44	2.44	
Lead	5.55E-03	3.40E-06	
Formaldehyde	5.47	5.34	
Benzene	4.86E-01	4.86E-01	
Toluene	1.06E-01	1.06E-01	
Ethylbenzene	3.58E-03	3.58E-03	
Xylene	2.89E-03	2.89E-03	
Naphthalene	1.12E-02	1.12E-02	
Antimony	9.13E-04	1.14E-07	
Arsenic	2.54E-03	3.18E-07	
Beryllium	4.99E-04	6.24E-08	
Cadmium	2.96E-05	3.70E-09	
Chromium	1.52E-04	1.90E-08	
Chromium (VI)	2.53E-05	3.16E-09	
Cobalt	4.70E-05	5.87E-09	
Manganese	1.16E-02	1.45E-06	
Mercury	2.53E-05	3.16E-09	
Nickel	2.38E-04	2.98E-08	
Selenium	2.02E-05	2.53E-09	
Acetaldehyde	2.93	2.76	
Methanol	10.25	9.64	
Total HAPS	19.28	18.35	

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007AI

Administrative Information

___ Section AI.1: Source Information

___ Section AI.2: Applicant Information

___ Section AI.3: Owner Information

___ Section AI.4: Type of Application

___ Section AI.5: Other Required Information

___ Section AI.6: Signature Block

___ Section AI.7: Notes, Comments, and Explanations

Additional Documentation

___ Additional Documentation attached

Source Name: **Dunaway Timber Co 2**

KY EIS (AFS) #: **21- 183-00070**

Permit #: **S-15-007**

Agency Interest (AI) ID: **44386**

Date: **10/3/2024**

Section AI.1: Source Information

Physical Location Address:	**Street:**	Kelly Orchard Rd. and Easton Rd.				
	City:	Fordsville	**County:**	Ohio	**Zip Code:**	42343
Mailing Address:	**Street or P.O. Box:**	214 Easton Road				
	City:	Fordsville	**State:**	KY	**Zip Code:**	42343

Standard Coordinates for Source Physical Location

Longitude: -86.7254298 (decimal degrees) **Latitude:** 37.645795 (decimal degrees)

Primary (NAICS) Category: Wood Product Manufacturing **Primary NAICS #:** 321113

Classification (SIC) Category: Sawmills and Planing Mills, General **Primary SIC #:** 2421

Briefly discuss the type of business conducted at this site: The facility operates a sawmill and is a producer of primary wood products.

Description of Area Surrounding Source: ☑ Rural Area ☐ Industrial Park ☐ Residential Area ☐ Urban Area ☐ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: 12

Approximate distance to nearest residence or commercial property: *650*

Property Area: >2 acres

Is this source portable? ☐ Yes ☑ No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	☑ Currently Hold	☐ Need	☐ N/A
Solid Waste:	☐ Currently Hold	☐ Need	☑ N/A
RCRA:	☐ Currently Hold	☐ Need	☑ N/A
UST:	☐ Currently Hold	☐ Need	☑ N/A

Type of Regulated Waste Activity:

☐ Mixed Waste Generator ☐ Generator ☐ Recycler ☐ Other: _____

☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☑ N/A

Section AI.2: Applicant Information

Applicant Name: Dunaway Timber Co 2

Title: (if individual)

Mailing Address:
Street or P.O. Box: P.O. Box 157
City: Fordsville **State:** KY **Zip Code:** 42343

Email: (if individual)

Phone:

Technical Contact

Name: Allison Hall

Title: Environmental Scientist Advisor

Mailing Address:
Street or P.O. Box: 300 Sower Blvd.
City: Frankfort **State:** KY **Zip Code:** 40601

Email: allison.hall@ky.gov

Phone:

Air Permit Contact for Source

Name: Gavin Christ

Title: Safety Administrator

Mailing Address:
Street or P.O. Box: P.O. Box 157
City: Fordsville **State:** KY **Zip Code:** 42343

Email: gavin@dunawaytimber.com

Phone: 270-316-5952

Section AI.3: Owner Information

☐ **Owner same as applicant**

Name: Henry Christ

Title: President

Mailing Address:
Street or P.O. Box: 200 St Rt 54
City: Fordsville **State:** KY **Zip Code:** 42343

Email: henry@dunawaytimber.com

Phone: 270-929-2820

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position
Henry Christ	President
Gavin Christ	Safety Administrator
Megan Brown	Chief Financial Officer

Section AI.4: Type of Application

Current Status: ☐ Title V ☐ Conditional Major ☑ State-Origin ☐ General Permit ☐ Registration ☐ None

Requested Action: *(check all that apply)*

☐ Name Change	☐ Initial Registration	☐ Significant Revision	☐ Administrative Permit Amendment
☐ Renewal Permit	☐ Revised Registration	☐ Minor Revision	☐ Initial Source-wide OperatingPermit
☐ 502(b)(10)Change	☐ Extension Request	☐ Addition of New Facility	☐ Portable Plant Relocation Notice
☐ Revision	☐ Off Permit Change	☐ Landfill Alternate Compliance Submittal	☑ Modification of Existing Facilities
☐ Ownership Change	☐ Closure		

Requested Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ PSD ☐ NSR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☑ Yes ☐ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☐ Particulate Matter		☐ Single HAP	
☑ Volatile Organic Compounds (VOC)	90	☐ Combined HAPs	
☐ Carbon Monoxide		☐ Air Toxics (40 CFR 68, Subpart F)	
☐ Nitrogen Oxides		☐ Carbon Dioxide	
☐ Sulfur Dioxide		☐ Greenhouse Gases (GHG)	
☐ Lead		☐ Other	

For New Construction:

Proposed Start Date of Construction: *(MM/YYYY)* N/A

Proposed Operation Start-Up Date: *(MM/YYYY)* N/A

For Modifications:

Proposed Start Date of Modification: *(MM/YYYY)* 09/2023

Proposed Operation Start-Up Date: *(MM/YYYY)* ASAP

Applicant is seeking coverage under a permit shield. ☐ **Yes** ☑ **No**

Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

- [x] DEP7007A Indirect Heat Exchangers and Turbines
- [x] DEP7007B Manufacturing or Processing Operations
- [ ] DEP7007C Incinerators and Waste Burners
- [ ] DEP7007F Episode Standby Plan
- [ ] DEP7007J Volatile Liquid Storage
- [ ] DEP7007K Surface Coating or Printing Operations
- [ ] DEP7007L Mineral Processes
- [ ] DEP7007M Metal Cleaning Degreasers
- [x] DEP7007N Source Emissions Profile
- [ ] DEP7007P Perchloroethylene Dry Cleaning Systems
- [ ] DEP7007R Emission Offset Credit
- [ ] DEP7007S Service Stations
- [ ] DEP7007T Metal Plating and Surface Treatment Operations
- [ ] DEP7007V Applicable Requirements and Compliance Activities
- [ ] DEP7007Y Good Engineering Practice and Stack Height Determination
- [ ] DEP7007AA Compliance Schedule for Non-complying Emission Units
- [ ] DEP7007BB Certified Progress Report
- [ ] DEP7007CC Compliance Certification
- [ ] DEP7007DD Insignificant Activities
- [ ] DEP7007EE Internal Combustion Engines
- [ ] DEP7007FF Secondary Aluminum Processing
- [x] DEP7007GG Control Equipment
- [x] DEP7007HH Haul Roads
- [ ] Confidentiality Claim
- [ ] Ownership Change Form
- [x] Secretary of State Certificate
- [x] Flowcharts or diagrams depicting process
- [ ] Digital Line Graphs (DLG) files of buldings, roads, etc.
- [ ] Site Map
- [x] Map or drawing depicting location of facility
- [ ] Safety Data Sheet (SDS)
- [ ] Emergency Response Plan
- [ ] Other: _____

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

Henry Christ
Authorized Signature

10/3/24
Date

HENRY CHRIST
Type or Printed Name of Signatory

PRESIDENT
Title of Signatory

*Responsible official as defined by 401 KAR 52:001.

Section AI.7: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007N

Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Information
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: Dunaway Timber Co Plant 2
KY EIS (AFS) #: 21- 183-00070
Permit #: S-15-007
y Interest (AI) ID: 44386
Date: 9/18/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EP01	Greenwood Truck Unloading	N/A	N/A	None Known	N/A	N/A	13.54 tons/hr	PM	7.50E-04 lb/ton	EPA Region 10 Memo	0.00%	0.00%	1.02E-02	1.02E-02	4.45E-02	4.45E-02
								PM10	3.50E-04 lb/ton	EPA Region 10 Memo	0.00%	0.00%	4.74E-03	4.74E-03	2.08E-02	2.08E-02
EP02	Outdoor Greenwood Storage Pad	N/A	N/A	Wet Suppression	1	N/A	1.00 acre	PM	8.68E-02 lb/acre-hr	EPA Region 10 Memo	100.00%	90.00%	8.68E-02	8.68E-03	3.80E-01	3.80E-02
								PM10	4.34E-02 lb/acre-hr	EPA Region 10 Memo	100.00%	90.00%	4.34E-02	4.34E-03	1.90E-01	1.90E-02
EP03	Greenwood Handling to Feed Hopper	N/A	N/A	None Known	N/A	N/A	15.00 tons/hr	PM	7.50E-04 lb/ton	EPA Region 10 Memo	0.00%	0.00%	1.13E-02	1.13E-02	4.93E-02	4.93E-02
								PM10	3.50E-04 lb/ton	EPA Region 10 Memo	0.00%	0.00%	5.25E-03	5.25E-03	2.30E-02	2.30E-02
EP04	Feed Hopper	N/A	N/A	None Known	N/A	N/A	15.00 tons/hr	PM	7.50E-04 lb/ton	EPA Region 10 Memo	0.00%	0.00%	1.13E-02	1.13E-02	4.93E-02	4.93E-02
								PM10	3.50E-04 lb/ton	EPA Region 10 Memo	0.00%	0.00%	5.25E-03	5.25E-03	2.30E-02	2.30E-02
EP05	Open Conveyor Belt	N/A	N/A	None Known	N/A	N/A	15.00 tons/hr	PM	7.50E-04 lb/ton	EPA Region 10 Memo	0.00%	0.00%	1.13E-02	1.13E-02	4.93E-02	4.93E-02
								PM10	3.50E-04 lb/ton	EPA Region 10 Memo	0.00%	0.00%	5.25E-03	5.25E-03	2.30E-02	2.30E-02
EP06	Green Hammermill	N/A	N/A	Cyclone 1	2	N/A	15.00 tons/hr	PM	3.90E-02 lb/ton	AP42 11.19.2	100.00%	95.00%	5.85E-01	2.93E-02	2.56	1.28E-01
								PM10	1.50E-02 lb/ton	AP42 11.19.2	100.00%	95.00%	2.25E-01	1.13E-02	9.86E-01	4.93E-02
								VOC	5.70E-01 lb/ton	DAQ Combustion Section	0.00%	0.00%	8.55	8.55	37.46	37.46
								Formaldehyde	1.12E-04 lb/ton	DAQ Combustion Section	0.00%	0.00%	1.68E-03	1.68E-03	7.35E-03	7.35E-03
								Methanol	5.59E-01 lb/ton	DAQ Combustion Section	0.00%	0.00%	8.39E-03	8.39E-03	3.67E-02	3.67E-02

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EP07	Greenwood Handling to Walking Floor Trailer	N/A	N/A	None Known	N/A	N/A	15.00 tons/hr	PM	7.50E-04 lb/ton	EPA Region 10 Memo	0.00%	0.00%	1.13E-02	1.13E-02	4.93E-02	4.93E-02
								PM10	3.50E-04 lb/ton	EPA Region 10 Memo	0.00%	0.00%	5.25E-03	5.25E-03	2.30E-02	2.30E-02
EP08	Open Walking Floor Trailer	N/A	N/A	Partial Enclosure	3	N/A	15.00 tons/hr	PM	7.50E-04 lb/ton	EPA Region 10 Memo	100.00%	50.00%	1.13E-02	5.63E-03	4.93E-02	2.46E-02
								PM10	3.50E-04 lb/ton	EPA Region 10 Memo	100.00%	50.00%	5.25E-03	2.63E-03	2.30E-02	1.15E-02
EP09	Rotary Drum Dryer	1	Rotary Drum Dryer	Cylones 2,3, and 4	4	1	15.00 tons/hr	PM	3.20E-02 lb/ton	AP42 10.6.2-1	100.00%	99.99%	4.80E-01	6.00E-05	2.10	2.63E-04
								PM10	3.20E-02 lb/ton	AP42 10.6.2-1	100.00%	99.99%	4.80E-01	6.00E-05	2.10	2.63E-04
								VOC	2.41 lb/ton	DAQ Combustion Section	0.00%	0.00%	36.09	36.09	158.07	158.07
								Acetaldehyde	4.00E-02 lb/ton	DAQ Combustion Section	0.00%	0.00%	6.00E-01	6.00E-01	2.63	2.63
								Formaldehyde	7.00E-02 lb/ton	DAQ Combustion Section	0.00%	0.00%	1.05	1.05	4.60	4.60
								Methanol	1.43E-01 lb/ton	DAQ Combustion Section	0.00%	0.00%	2.15	2.15	9.40	9.40
EP09	Rotary Drum Dryer	2	Drum Dryer Burner	Cylones 2,3, and 4	4	1	1.65 tons/hr	PM	4.80 lb/ton	AP-42 1.6	100.00%	99.99%	7.92	9.90E-04	34.69	4.34E-03
								PM10	4.32 lb/ton	AP-42 1.6	100.00%	99.99%	7.13	8.91E-04	31.22	3.90E-03
								SO2	4.00E-01 lb/ton	AP-42 1.6	0.00%	0.00%	6.60E-01	6.60E-01	2.89	2.89
								CO	9.60 lb/ton	AP-42 1.6	0.00%	0.00%	15.84	15.84	69.38	69.38
								NOx	7.84 lb/ton	AP-42 1.6	0.00%	0.00%	12.94	12.94	56.66	56.66
								VOC	2.72E-01 lb/ton	AP-42 1.6	0.00%	0.00%	4.49E-01	4.49E-01	1.97	1.97
								CO2	3120.00 lb/ton	AP-42 1.6	0.00%	0.00%	5148.00	5148.00	22548.24	22548.24
								N2O	2.08E-01 lb/ton	AP-42 1.6	0.00%	0.00%	3.43E-01	3.43E-01	1.50	1.50
								Lead	7.68E-04 lb/ton	AP-42 1.6	100.00%	99.99%	1.27E-03	1.58E-07	5.55E-03	6.94E-07
								Methane	3.36E-01 lb/ton	AP-42 1.6	0.00%	0.00%	5.54E-01	5.54E-01	2.43	2.43
								Formaldehyde	7.04E-02 lb/ton	AP-42 1.6	0.00%	0.00%	1.16E-01	1.16E-01	5.09E-01	5.09E-01
								Benzene	6.72E-02 lb/ton	AP-42 1.6	0.00%	0.00%	1.11E-01	1.11E-01	4.86E-01	4.86E-01
								Toluene	1.47E-02 lb/ton	AP-42 1.6	0.00%	0.00%	2.43E-02	2.43E-02	1.06E-01	1.06E-01
								Ethylbenzene	4.96E-04 lb/ton	AP-42 1.6	0.00%	0.00%	8.18E-04	8.18E-04	3.58E-03	3.58E-03
								Xylene	4.00E-04 lb/ton	AP-42 1.6	0.00%	0.00%	6.60E-04	6.60E-04	2.89E-03	2.89E-03
								Naphthalene	1.55E-03 lb/ton	AP-42 1.6	0.00%	0.00%	2.56E-03	2.56E-03	1.12E-02	1.12E-02
								Antimony	1.26E-04 lb/ton	AP-42 1.6	100.00%	99.99%	2.09E-04	2.61E-08	9.13E-04	1.14E-07
								Arsenic	3.52E-04 lb/ton	AP-42 1.6	100.00%	99.99%	5.81E-04	7.26E-08	2.54E-03	3.18E-07
								Beryllium	6.95E-05 lb/ton	AP-42 1.6	100.00%	99.99%	1.14E-04	1.42E-08	4.99E-04	6.24E-08
								Cadmium	4.10E-06 lb/ton	AP-42 1.6	100.00%	99.99%	6.77E-06	8.46E-10	2.96E-05	3.70E-09
								Chromium	2.10E-05 lb/ton	AP-42 1.6	100.00%	99.99%	3.47E-05	4.33E-09	1.52E-04	1.90E-08
								Chromium (VI)	3.50E-06 lb/ton	AP-42 1.6	100.00%	99.99%	5.78E-06	7.22E-10	2.53E-05	3.16E-09
								Cobalt	6.56E-06 lb/ton	AP-42 1.6	100.00%	99.99%	1.07E-05	1.34E-09	4.70E-05	5.87E-09
								Manganese	1.60E-03 lb/ton	AP-42 1.6	100.00%	99.99%	2.64E-03	3.30E-07	1.16E-02	1.45E-06
								Mercury	3.56E-06 lb/ton	AP-42 1.6	100.00%	99.99%	5.78E-06	7.22E-10	2.53E-05	3.16E-09
								Nickel	3.50E-05 lb/ton	AP-42 1.6	100.00%	99.99%	5.45E-05	6.81E-09	2.38E-04	2.98E-08
								Selenium	2.801E-06 lb/ton	AP-42 1.6	100.00%	99.99%	4.62E-06	5.78E-10	2.02E-05	2.53E-09

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EP10	Dry Hammermill	N/A	N/A	Cyclone 5; Air Recirculation to Dryer	2; 8	N/A	11.65 tons/hr	PM	3.90E-02 lb/ton	AP42 11.19.2	100.00%	95.00%	4.54E-01	2.27E-02	1.99	9.95E-02
								PM10	1.50E-02 lb/ton	AP42 11.19.2	100.00%	95.00%	1.75E-01	8.74E-03	7.65E-01	3.83E-02
								VOC	9.20E-02 lb/ton	DAQ Combustion Section	100.00%	85.00%	1.07	1.61E-01	4.69	7.04E-01
								Acetaldehyde	1.00E-03 lb/ton	DAQ Combustion Section	100.00%	85.00%	1.17E-02	1.75E-03	5.10E-02	7.65E-03
								Formaldehyde	1.00E-03 lb/ton	DAQ Combustion Section	100.00%	85.00%	1.17E-02	1.75E-03	5.10E-02	7.65E-03
								Methanol	2.00E-03 lb/ton	DAQ Combustion Section	100.00%	85.00%	2.33E-02	3.50E-03	1.02E-01	1.53E-02
EP11	Natural Gas Boiler	N/A	N/A	None Known	N/A	2	1.24E-03 mmscf/hr	PM	7.60 lb/MMscf	AP 42 1.4	0.00%	0.00%	9.39E-03	9.39E-03	4.11E-02	4.11E-02
								PM10	7.60 lb/MMscf	AP 42 1.4	0.00%	0.00%	9.39E-03	9.39E-03	4.11E-02	4.11E-02
								CO	84.00lb/MMscf	AP 42 1.4	0.00%	0.00%	1.04E-01	1.04E-01	4.54E-01	4.54E-01
								NOx	100.00 lb/MMscf	AP 42 1.4	0.00%	0.00%	1.24E-01	1.24E-01	5.41E-01	5.41E-01
								Lead	5.00E-04 lb/MMscf	AP 42 1.4	0.00%	0.00%	6.18E-07	6.18E-07	2.71E-06	2.71E-06
								SO2	6.00E-01 lb/MMscf	AP 42 1.4	0.00%	0.00%	7.41E-04	7.41E-04	3.25E-03	3.25E-03
								VOC	5.50 lb/MMscf	AP 42 1.4	0.00%	0.00%	6.79E-03	6.79E-03	2.98E-02	2.98E-02
								CO2	120000.00 lb/MMscf	AP 42 1.4	0.00%	0.00%	148.24	148.24	649.27	649.27
								N2O	2.20 lb/MMscf	AP 42 1.4	0.00%	0.00%	2.72E-03	2.72E-03	1.19E-02	1.19E-02
								Methane	2.30 lb/MMscf	AP 42 1.4	0.00%	0.00%	2.84E-03	2.84E-03	1.24E-02	1.24E-02
								CO2 Equivalent	120713.10 lb/MMscf	AP 42 1.4	0.00%	0.00%	149.12	149.12	653.13	653.13
								Formaldehyde	7.50E-02 lb/MMscf	AP 42 1.4	0.00%	0.00%	9.26E-05	9.26E-05	4.06E-04	4.06E-04
								Benzene	2.10E-03 lb/MMscf	AP 42 1.4	0.00%	0.00%	2.59E-06	2.59E-06	1.14E-05	1.14E-05
								Toluene	3.40E-03 lb/MMscf	AP 42 1.4	0.00%	0.00%	4.20E-06	4.20E-06	1.84E-05	1.84E-05
EP12	Pellet Mill (3 units)	N/A	N/A	Building Enclosure; Air Recirculation to Dryer	5; 8	N/A	11.65 tons/hr	PM	7.50E-04 lb/ton	EPA Region 10 Memo	100.00%	70.00%	8.74E-03	2.62E-03	3.83E-02	1.15E-02
								PM10	3.50E-04 lb/ton	EPA Region 10 Memo	100.00%	70.00%	4.08E-03	1.22E-03	1.79E-02	5.36E-03
								VOC	1.34E-01 lb/ton	DAQ Combustion Section	100.00%	85.00%	1.56	2.34E-01	6.84	1.03
								Acetaldehyde	1.00E-03 lb/ton	DAQ Combustion Section	100.00%	85.00%	1.17E-02	1.75E-03	5.10E-02	7.65E-03
								Formaldehyde	1.00E-03 lb/ton	DAQ Combustion Section	100.00%	85.00%	1.17E-02	1.75E-03	5.10E-02	7.65E-03
								Methanol	6.00E-03 lb/ton	DAQ Combustion Section	100.00%	85.00%	6.99E-02	1.05E-02	3.06E-01	4.59E-02

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EP13	Pellet Screeners (2 units)	N/A	N/A	Building Enclosure	5	N/A	11.65 tons/hr	PM	3.00E-01 lb/ton	AP-42 11.19.2	100.00%	70.00%	3.50	1.05	15.31	4.59
								PM10	7.20E-02 lb/ton	AP-42 11.19.2	100.00%	70.00%	8.39E-01	2.52E-01	3.67	1.10
								VOC	4.00E-01 lb/ton	DAQ Combustion Section	0.00%	0.00%	4.66	4.66	20.41	20.41
								Acetaldehyde	1.00E-03 lb/ton	DAQ Combustion Section	0.00%	0.00%	1.17E-02	1.17E-02	5.10E-02	5.10E-02
								Formaldehyde	2.00E-03 lb/ton	DAQ Combustion Section	0.00%	0.00%	2.33E-02	2.33E-02	1.02E-01	1.02E-01
								Methanol	1.00E-03 lb/ton	DAQ Combustion Section	0.00%	0.00%	1.17E-02	1.17E-02	5.10E-02	5.10E-02
EP14	Pellet Cooler	N/A	N/A	Building Enclosure; Cyclone 6; Air Recirculation to Dryer	5; 6; 8	N/A	11.65 tons/hr	PM	7.50E-04 lb/ton	EPA Region 10 Memo	100.00%	98.50%	8.74E-03	1.31E-04	3.83E-02	5.74E-04
								PM10	3.50E-04 lb/ton	EPA Region 10 Memo	100.00%	98.50%	4.08E-03	6.12E-05	1.79E-02	2.68E-04
								VOC	1.30E-01 lb/ton	DAQ Combustion Section	100.00%	85.00%	1.51	2.27E-01	6.63	9.95E-01
								Acetaldehyde	2.00E-03 lb/ton	DAQ Combustion Section	100.00%	85.00%	2.33E-02	3.50E-03	1.02E-01	1.53E-02
								Formaldehyde	1.00E-03 lb/ton	DAQ Combustion Section	100.00%	85.00%	1.17E-02	1.75E-03	5.10E-02	7.65E-03
								Methanol	6.00E-03 lb/ton	DAQ Combustion Section	100.00%	85.00%	6.99E-02	1.05E-02	3.06E-01	4.59E-02
EP15	Dry Sawdust Fuel Storage Bin	N/A	N/A	Bin Vent Filter; Enclosure	5;7	N/A	11.65 tons/hr	PM	1.50E-03 lb/ton	EPA Region 10 Memo	100.00%	91.00%	1.75E-02	1.57E-03	7.65E-02	6.89E-03
								PM10	7.00E-04 lb/ton	EPA Region 10 Memo	100.00%	91.00%	8.16E-03	7.34E-04	3.57E-02	3.21E-03
EP16	Briquette Bin	N/A	N/A	Bin Vent Filter; Enclosure	5;7	N/A	11.65 tons/hr	PM	1.50E-03 lb/ton	EPA Region 10 Memo	100.00%	91.00%	1.75E-02	1.57E-03	7.65E-02	6.89E-03
								PM10	7.00E-04 lb/ton	EPA Region 10 Memo	100.00%	91.00%	8.16E-03	7.34E-04	3.57E-02	3.21E-03
EP17	Pellet Storage Silos (3 units)	N/A	N/A	None Known	None Known	N/A	2.42E-02 tons/hr	PM	1.50E-03 lb/ton	EPA Region 10 Memo	0.00%	0.00%	3.60E-05	3.60E-05	1.58E-04	1.58E-04
								PM10	7.00E-04 lb/ton	EPA Region 10 Memo	0.00%	0.00%	1.68E-05	1.68E-05	7.35E-05	7.35E-05
								VOC	4.00E-01 lb/ton	DAQ Combustion Section	0.00%	0.00%	9.59E-03	9.59E-03	4.20E-02	4.20E-02
								Acetaldehyde	1.00E-03 lb/ton	DAQ Combustion Section	0.00%	0.00%	2.40E-05	2.40E-05	1.05E-04	1.05E-04
								Formaldehyde	2.00E-03 lb/ton	DAQ Combustion Section	0.00%	0.00%	4.79E-05	4.79E-05	2.10E-04	2.10E-04
								Methanol	1.00E-03 lb/ton	DAQ Combustion Section	0.00%	0.00%	2.40E-05	2.40E-05	1.05E-04	1.05E-04
EP18	Pellet Packaging	N/A	N/A	Building Enclosure	5	N/A	11.65 tons/hr	PM	1.50E-03 lb/ton	EPA Region 10 Memo	100.00%	70.00%	1.75E-02	5.24E-03	7.65E-02	2.30E-02
								PM10	7.00E-04 lb/ton	EPA Region 10 Memo	100.00%	70.00%	8.16E-03	2.45E-03	3.57E-02	1.07E-02
								VOC	4.00E-01 lb/ton	DAQ Combustion Section	0.00%	0.00%	4.66	4.66	20.41	20.41
								Acetaldehyde	1.00E-03 lb/ton	DAQ Combustion Section	0.00%	0.00%	1.17E-02	1.17E-02	5.10E-02	5.10E-02
								Formaldehyde	2.00E-03 lb/ton	DAQ Combustion Section	0.00%	0.00%	2.33E-02	2.33E-02	1.02E-01	1.02E-01
								Methanol	1.00E-03 lb/ton	DAQ Combustion Section	0.00%	0.00%	1.17E-02	1.17E-02	5.10E-02	5.10E-02
EP19	Haul Road	N/A	N/A	None Known	N/A	N/A	24.38 tons/hr	PM	1.48E-02 lb/ton	DAQ Minerals Section	0.00%	0.00%	3.61E-01	3.61E-01	1.58	1.58
								PM10	5.34E-03 lb/ton	DAQ Minerals Section	0.00%	0.00%	2.80E-01	2.80E-01	1.23	1.23

Section N.2: Stack Information

UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter *(ft)*	Height *(ft)*	Base Elevation *(ft)*	Northing *(m)*	Easting *(m)*	Flowrate *(acfm)*	Temperature *(° F)*	Exit Velocity *(ft/sec)*
1	EP06 Green Hammermill; EP09-01 Rotary Drum Dryer; EP09-02 Rotary Drum Dryer Burner	4.00	50.00	454	4166587.52	524234.36	10910 cfm	200F	56.4
2	EP11- Natural Gas Boiler	8.33E-01	45.00	454	4166587.52	524234.36	Unknown	Unknown	Unknown

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side *(ft)*	Length of the Y Side *(ft)*	Northing *(m)*	Easting *(m)*	Release Temperature *(°F)*	Release Height *(ft)*
EP01	Greenwood Truck Unloading- Fugitive	N/A	Unknown	Unknown	4166524.957	524237.185	Ambient	Unknown
EP02	Outdoor Greenwood Storage Pad - Fugitive	N/A	~200.00	~200.00	4166524.957	524237.185	Ambient	Unknown
EP03	Greenwood Handling to Feed Hopper- Fugitive	N/A	Unknown	Unknown	4166661.74	524233.26	Ambient	Unknown
EP04	Feed Hopper- Fugitive	N/A	Unknown	Unknown	4166661.74	4166661.74	Ambient	Unknown
EP05	Open Conveyor Belt - Fugitive	N/A	Unknown	50.00	4166661.74	4166661.74	Ambient	Unknown
EP07	Greenwood Handling to Walk Floor Trailer- Fugitive	N/A	Unknown	Unknown	4166661.74	4166661.74	Ambient	Unknown
EP08	Open Walking Floor Trailer- Fugitive	N/A	Unknown	Unknown	4166661.74	4166661.74	Ambient	Unknown
EP19	Haul Road	N/A	Unknown	Unknown	4166524.957	524237.185	Ambient	Unknown

Section N.4: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007A

Indirect Heat Exchangers and Turbines

___ Section A.1: General Information

___ Section A.2: Operating and Fuel Information

___ Section A.3: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.

____ Manufacturer's specifications

Source Name: Dunaway Timber Co., Inc.

KY EIS (AFS) #: **21-183-00070**

Permit #: S-15-007

Agency Interest (AI) ID: 44386

Date: 2/27/2024

Section A.1: General Information

Emission Unit #	Emission Unit Name	Process ID	Process Name	Identify General Type: Indirect Heat Exchanger, Gas Turbine, or Combustion Turbine	Indirect Heat Exchanger Configuration	Manufacturer	Model No./ Serial No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	SCC Code	SCC Units	Control Device ID	Stack ID
EP11	Natural Gas Boiler	N/A	N/A	Indirect Heat Exchanger	N/A	Lattner	30HP- WLF	06/2024	1-02-006-02	MMscf	None Known	2

Section A.2: Operating and Fuel Information

Emission Unit #	If multipurpose unit, identify the percentage of use by purpose				Rated Capacity Heat Input *(MMBTU/hr)*	Rated Capacity Power Output		Describe Operating Scenario (only if this unit will be used in different configurations)	Classify Fuel as Primary or Secondary	Identify Fuel Type: Coal, Natural Gas, Wood, Biomass, Landfill/Digester Gas, Fuel Oil # (specify 1-6), or Other	Heat Content (HHV)		Maximum Operating Hours	Ash Content *(%)*	Sulfur Content *(%)*
	Space Heat	Process Heat	Power	Emergency			*(Specify units: hp, MW, or lb steam/hr)*					*(Specify units: Btu/lb, Btu/gal, or Btu/scf)*			
Natural Gas Boiler	0	100	0	0	1.26	1035	lb steam/hr	N/A	Primary	Natural Gas	1,050	Btu/scf	8760	0.00	0.04

Section A.3: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007B

Manufacturing or Processing Operations
___ Section B.1: Process Information
___ Section B.2: Materials and Fuel Information
___ Section B.3: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.
___ Attach a flow diagram
___ Attach SDS

Source Name: **Dunaway Timber Co Plant 2**
KY EIS (AFS) #: **21- 183-00070**
Permit #: **S-15-007**
Agency Interest (AI) ID: **44386**
Date: **9/18/2024**

Section B.1: Process Information

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Is the Process Continuous or Batch?	Number of Batches per 24 Hours	Hours per Batch *(if applicabl*
EP01	Greenwood Truck Unloading	Greenwood Truck Unloading	N/A	N/A	N/A	N/A	ASAP	Batch	13 trucks a day	N/A
EP02	Outdoor Greenwood Storage Pad	Outdoor Greenwood Storage Pad	N/A	N/A	N/A	N/A	ASAP	Continuous	N/A	N/A
EP03	Greenwood Handling to Feed Hopper	Greenwood Handling to Feed Hopper	N/A	N/A	N/A	N/A	ASAP	Continuous	N/A	N/A
EP04	Feed Hopper	Feed Hopper	N/A	N/A	N/A	N/A	ASAP	Continuous	N/A	N/A
EP05	Open Conveyor Belt	Open Conveyor Belt	N/A	N/A	N/A	N/A	ASAP	Continuous	N/A	N/A
EP06	Green Hammermill	Green Hammermill	N/A	N/A	Schutte	4460	ASAP	Continuous	N/A	N/A
EP07	Greenwood Handling to Walking Floor Trailer	Greenwood Handling to Walking Floor Trailer	N/A	N/A	N/A	N/A	ASAP	Continuous	N/A	N/A

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Is the Process Continuous or Batch?	Number of Batches per 24 Hours	Hours per Batch *(if applicabl*
EP08	Open Walking Floor Trailer	Open Walking Floor Trailer	N/A	N/A	N/A	N/A	12/2023	Continuous	N/A	N/A
EP09	Rotary Drum Dryer	Rotary Drum Dryer	1	N/A	Uzelac	TPD-13000 Wood Chip Dryer	09/2023	Continuous	N/A	N/A
EP09	Dryer Burner	Direct Fired Heat Exchanger- Natural Gas/Biomass	2	N/A	McConnel Model 42 Dry Fuel Suspension Burner	Model 42	ASAP	Continuous	N/A	N/A
EP10	Dry Hammermill	Dry Hammermill	N/A	N/A	Schutte	4460	ASAP	Continuous	N/A	N/A
EP12	Pellet Mill (3x)	Pellet Mill (3x)	N/A	N/A	Graf	900/138	ASAP	Continuous	N/A	N/A
EP13	Pellet Screener (2x)	Pellet Screener (2x)	N/A	N/A	BM&M	Super Screen 3x81SS	ASAP	Continuous	N/A	N/A
EP14	Pellet Cooler	Pellet Cooler	N/A	N/A	CSE Bliss	CSE 15-375-5	ASAP	Continuous	N/A	N/A
EP15	Dry Sawdust Fuel Storage Bin	Dry Sawdust Fuel Storage Bin	N/A	N/A	N/A	N/A	ASAP	Continuous	N/A	N/A
EP16	Briquette Bin	Briquette Bin	N/A	N/A	N/A	N/A	ASAP	Continuous	N/A	N/A
EP17	Pellet Storage Silos (3 units)	Pellet Storage Silos (3 units)	N/A	N/A	N/A	N/A	ASAP	Continuous	N/A	N/A
EP18	Pellet Packaging	Pellet Packaging	N/A	N/A	N/A	N/A	ASAP	Continuous	N/A	N/A

Section B.2: Materials and Fuel Information

**Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
EP01	Greenwood Truck Unloading	Green Sawdust/ Woodchips	13.54	tons/hr	13.54	Green Sawdust/ Woodchips	13.54	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP02	Outdoor Greenwood Storage Pad	Green Sawdust/ Woodchips	1.0	acre	15.00	Green Sawdust/ Woodchips	15.00	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP03	Greenwood Handling to Feed Hopper	Green Sawdust/ Woodchips	15.0	tons/hr	15.00	Green Sawdust/ Woodchips	15.00	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP04	Feed Hopper	Green Sawdust/ Woodchips	15.00	tons/hr	15.00	Green Sawdust/ Woodchips	15.00	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP05	Open Conveyor Belt	Green Sawdust/ Woodchips	15.00	tons/hr	15.00	Dry Sawdust/ Woodchips	11.00	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP06	Green Hammermill	Green Sawdust/ Woodchips	15.00	tons/hr	15.00	Dry Sawdust/ Woodchips	15.00	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP07	Greenwood Handling to Walking Floor Trailer	Green Sawdust/ Woodchips	15.00	tons/hr	15.00	Dry Sawdust/ Woodchips	15.00	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP08	Open Walking Floor Trailer	Green Sawdust/ Woodchips	15.00	tons/hr	15.00	Dry Sawdust/ Woodchips	15.00	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP09	Rotary Drum Dryer	Green Sawdust/ Woodchips	15.00	tons/hr	15.00	Dry Sawdust/ Woodchips	11.65	tons/hr	Natural Gas; Primarily Biomass	1.65	tons/hr	14454	tons/year	0.4	0
EP09	Dryer Burner	Dry Sawdust	1.65	tons/hr	1.65	Consumed to Create Combustion Heat	1.65	tons/hr	Natural Gas; Primarily Biomass	1.65	tons/hr	14454	tons/year	0.4	0
EP10	Dry Hammermill	Dry Sawdust/ Woodchips	11.65	tons/hr	11.65	Wood Pellets	11.65	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit *(tons/hr)*	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content *(%)*	Ash Content *(%)*
				(Specify Units/hr)				*(Specify Units/hr)*			*(Specify Units)*		*(Specify Units)*		
EP12	Pellet Mill (3x)	Dry Sawdust/ Woodchips and Steam	11.65	tons/hr	11.65	Wood Pellets	11.65	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP13	Pellet Screener (2x)	Wood Pellets	11.65	tons/hr	11.65	Wood Pellets	11.65	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP14	Pellet Cooler	Hot wood pellets	11.65	tons/hr	11.65	Cool Wood pellets	11.65	tons/hr	Natural Gas	1.26	MMBTU/hr	11037.6	MMBTU/yr	0	0.4
EP15	Dry Sawdust Fuel Storage Bin	Sawdust fines	11.65	tons/hr	11.65	Sawdust Fines for Dryer Burner	11.65	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP16	Briquette Bin	Wood briquettes	11.65	tons/hr	11.65	Wood Briquettes	11.65	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP17	Pellet Storage Silos (3 units)	Wood pellets	2.40E-02	tons/hr	2.40E-02	Wood Pellets	2.40E-02	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP18	Pellet Packaging	Wood pellets	11.65	tons/hr	11.65	Packaged Wood Pellets	11.65	tons/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section B.3: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007HH

Haul Roads

_____ Section HH.1: Haul Roads
_____ Section HH.2: Yard Area
_____ Section HH.3: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N and DEP7007V

___ SDS for dust suppressant

Source Name: **Dunaway Timber Co Plant 2**

KY EIS (AFS) #: **21-** **183-00070**

Permit #: **S-15-007**

Agency Interest (AI) ID: **44386**

Date: **2/27/2024**

Section HH.1: Haul Roads

HH.1A Unpaved Haul Roads:

Average Number of Days in a Year with 0.01 inches of Precipitation (P): 103 Days

Mean Vehicle Weight (W): 45 Tons

Surface Material Silt Content (s): 8.4 %

Haul Road Length: 0.06 Miles

Maximum Vehicle Miles Traveled in a Year: 3701.1 Miles

Describe the dust control method for unpaved haul road(s):
(If dust control suppressants will be utilized, attach the approved Safety Data Sheet(s), as applicable.)

Wet Suppression

Emission factor: PM: 1.4E-02 lb/ton;
PM10: 5.43E-03 lb/ton

HH.1B Paved Haul Roads:

Average Number of Days in a Year with 0.01 inches of Precipitation (P): N/A Days

Mean Vehicle Weight (W): N/A Tons

Road Surface Silt Loading (sL): N/A (G/M^2)

Haul Road Length: N/A Miles

Maximum Vehicle Miles Traveled in a Year: N/A Miles

Describe the dust control method for paved haul road(s):
(If dust control suppressants will be utilized, attach the approved Safety Data Sheet(s), as applicable.)

N/A

Section HH.2: Yard Area (Aggregate Handling And Storage Piles):

Average Number of Days in a Year with 0.01 inches of Precipitation (P): 103 Days

Mean Wind Speed (U): 7.25 MPH

Material Moisture Content (M): 47 %

Describe the dust control method for yard area:
(If dust control suppressants will be utilized, attach the approved Safety Data Sheet(s), as applicable.)

Green material is inherently wet at 47% moisture content.

Section HH.3: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007GG

Control Equipment

Additional Documentation

___ Complete Sections GG.1 through GG.12, as applicable

___ Attach manufacturer's specifications for each control device

___ Complete DEP7007AI

Source Name: Dunaway Timber Co Plant 2

KY EIS (AFS) #: 21- 183-00070

Permit #: S-15-007

Agency Interest (AI) ID: 44386

Date: 10/2/2024

Section GG.1: General Information - Control Equipment

Control Device ID #	Control Device Name	Cost	Manufacturer	Model Name/ Serial #	Date Installed	Inlet Gas Stream Data For All Control Devices					Inlet Gas Stream Data For Condensers, Adsorbers, Afterburners, Incinerators, Oxidizers Only			Equipment Operational Data For All Control Devices		
						Temperature (°F)	Flowrate (scfm @ 68 °F)	Average Particle Diameter (μm)	Particle Density (lb/ft^3) or Specific Gravity	Gas Density (lb/ft^3)	Gas Moisture Content (%)	Gas Composition	Fan Type	Pressure Drop Range ($in. H_2O$)	Pollutants Collected/ Controlled	Pollutant Removal (%)
1	Wet Suppression	Unknown	N/A	N/A	TBD	Ambient	Unknown	Unknown	Unknown	Unknown	N/A	N/A	N/A	Unknown	PM_T and PM_{10}	90.00%
2	Cyclones 1 and 5	Unknown	Koger	Unknown	TBD	Ambient	10,910 cfm	~15 µm	Unknown	Unknown	N/A	N/A	N/A	Unknown	PM_T and PM_{10}	95.00%
3	Partial Enclosure	Unknown	Keith Walking Floor	Unknown	TBD	Ambient	Unknown	~15 µm	Unknown	Unknown	N/A	N/A	N/A	Unknown	PM_T and PM_{10}	50.00%
4	Cyclones 2-4	Unknown	Uzelac	Custom	TBD	200F	10910 cfm	~15 µm	Unknown	Unknown	N/A	N/A	N/A	Unknown	PM_T and PM_{10}	99.99%
5	Building Enclosure	Unknown	N/A	N/A	TBD	Ambient	Unknown	~15 µm	Unknown	Unknown	N/A	N/A	N/A	Unknown	PM_T and PM_{10}	70.00%
6	Cyclone 6	Unknown	Koger	Custom	TBD	Ambient	18000 cfm	~15 µm	Unknown	Unknown	N/A	N/A	N/A	Unknown	PM_T and PM_{10}	95.00%
7	Bin Vent Filters	Unknown	AIRCON	BV 25-6	TBD	Ambient	1350 cfm	~15 µm	Unknown	Unknown	N/A	N/A	N/A	Unknown	PM_T and PM_{10}	70.00%
8	Air Recirculation to Dryer	Unknown	Unknown	Unknown	TBD	Unknown	3168 -18000 cfm	Unknown	Unknown	Unknown	N/A	N/A	N/A	Unknown	VOCs/ acetaldehyde /formaldehyde/ methanol	85%

Section GG.3: Cyclone

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Cyclone	Identify Number of Cyclones: Single or Multiple	Identify Type: High-Efficiency, Conventional, or High-Throughput	Inlet Height *(ft)*	Inlet Width *(ft)*	Bottom Cone Height *(ft)*	Body Height *(ft)*	Body Diameter *(ft)*	Dust Outlet Tube Diameter *(ft)*	Gas Outlet Tube Diameter *(ft)*	Vortex Finder Height *(ft)*
2	Cyclone 1- Green Hammermill; Cyclone 5- Dry Hammermill	Single	High-Efficiency	Unknown	5.25	12.7	5.7	7.3	Unknown	3.2	5.7
4	Cylones 2,3, 4- EP09-01 Rotary Drum and EP09-02 - Rotary Drum Dryer Burner	Multiple	CY2: High-Efficiency	Unknown	Unknown	6.8	13.9	11.0	4.3	Unknown	Unknown
			CY3&4: High-Efficiency	Unknown	Unknown	6.0	15.0	8.6	Unknown	Unknown	7.9
6	Cyclone 6- Pellet Cooler	Single	High-Efficiency	Unknown	2.2	14.5	9.0	6.2	Unknown	Unknown	3.8

Control Device ID #	**Identify all Emission Units and Control Devices that Feed to Cyclone**	**Identify Number of Cyclones:** Single or Multiple	**Identify Type:** High-Efficiency, Conventional, or High-Throughput	**Inlet Height** *(ft)*	**Inlet Width** *(ft)*	**Bottom Cone Height** *(ft)*	**Body Height** *(ft)*	**Body Diameter** *(ft)*	**Dust Outlet Tube Diameter** *(ft)*	**Gas Outlet Tube Diameter** *(ft)*	**Vortex Finder Height** *(ft)*

Section GG.6: Filter

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Filter	Identify Type of Filter Unit: Baghouse, Cartridge Collector, or Other (specify)	Identify Type of Filtering Material: Fabric, Paper, Synthetic, or Other (specify)	Total Filter Area *(ft²)*	Effective Air-to-Filter Ratio *(acfm/ft²)*	Continuous Monitoring Instrumentation (e.g. COMS, BLDS, none)	Additional Materials Introduced into the Control System (e.g. lime, carbon)		Identify Cleaning Method: Shaker, Pulse Air, Reverse Air, Pulse Jet, or Other (specify)	Identify Gas Cooling Method: Ductwork, Heat Exchanger, Bleed-in Air, Water Spray, or Other (specify)	For Ductwork:		For Bleed-in Air:	For Water Spray:
							Material	Injection Rate *(lb/hr)*			Length *(ft)*	Diameter *(ft)*	Flowrate *(scfm @ 68°F)*	Flowrate *(gal/min)*
7	Briquette and Dry Sawdust Fuel Bin; Bin Vent Filters	Filter cloth bags	Polyester filter bags	226	6.4 scfm/ 225 sq. ft.	None	None	N/A	Pulse Air or Replacement	Unknown	N/A	N/A	N/A	N/A

Section GG.7: Afterburner/Incinerator/Oxidizer

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Afterburner/Incinerator/ Oxidizer	Identify Type: Afterburner, Incinerator, Oxidizer, or Other (specify)	Number of Burners	Burner Rating *(BTU/hr)*	Dimensions of Combustion Chamber *(specify units)*	Residence Time *(sec)*	Combustion Chamber Temperature *(°F)*	Type of Catalyst (if applicable)	Type of Heat Exchanger (if applicable)	Auxiliary Fuel							Composition and Quantities of Combusted Waste
										Identify Fuel Type	Higher Heating Value *(MMBtu/scf)*	Hourly Fuel Usage *(scf/hr)*	% Sulfur (Maximum)	% Sulfur (Average)	% Ash (Maximum)	% Ash (Average)	
8	EP10– Dry Hammermill; EP12– Pellet Mill (3 units); EP14– Pellet Cooler	Air Recycling System Directs Air to Dryer Burner	1	30 MMBtu/hr	TBD	Unknown	2200F	N/A	Direct Fired	Sawdust/Wood chips	7,082	1.65 tons/hr	0.06	0.00	2.00	0.08	Air contaminents (VOCs and HAPs) are combusted in the burner.

Section GG.11: Other Control Equipment

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Control Equipment	**Type of Control Equipment** (provide description and a diagram with dimensions)
1	EP02- Wet Suppression	Wet Suppression- Raw material is inherently wet (47%)
3	EP08- Partial Enclosure	Keith Walking Floor is open on top but closed on 3 sides.
5	EP12-18- Building Enclosure	Building schematic included in application. Height varies in different sections. Length x width: 130' * 90't. Height is 25' for 85' long section of building; height is 40' and peaks at 52' at center for the other 45' length of building. See schematic for details.

Section GG.12: Notes, Comments, and Explanations

Schematics are included for Cyclones 1-6 and the building enclosure. Bin vent filter equipment specification sheet also included.

Air recycling system drawings/plan layouts included in the application. Proceseed air is recycled to the dryer burner's combustion chamber.

Name: Dunaway Timber LLC		AI # 44386										
						Emission Factors			Uncontrolled		Controlled	
Identification	Description	Material	Throughput	Units	Hours	Pollutant	EF	Units	Overall	lb/hr	TPY	lb/hr	TPY
Name	**Greenwood Truck Unloading- Fugitive**											
EIS Point	EP01	Woodchips and Sawdust Usage:	13.54	tons/hr	8760	PM	7.50E-04	lb/ton	0.00%	1.02E-02	4.45E-02	1.02E-02	4.45E-02
SCC	3-07-008-22	Moisture Content: 47%				PM_{10}	3.50E-04	lb/ton	0.00%	4.74E-03	2.08E-02	4.74E-03	2.08E-02
Reg	401 KAR 59:010; 401 KAR 63:010												
Stack #	None												
Height	N/A	Green Sawdust Delivered:	25.00	tons/truck									
Diameter	N/A	# Deliveries Daily:	13.00	trucks/day									
Flowrate	N/A	Greenwood Material Processed Daily:	325.0	tons									
Temp	N/A												
Date	June 2024												
Control	None Known												
	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at												
EF Reference	Sawmills, dated May 8, 2014												
Notes	Raw material is inherently wet (MC 47%)- "Wet" emission factors used.												
Name	**Outdoor Greenwood Storage Pad - Fugitive**											
EIS Point	EP02	Woodchip/Sawdust Storage Pad Area:	1.00	acre	8760	PM	8.68E-02	lb/acre-hr	90.00%	8.68E-02	3.80E-01	8.68E-03	3.80E-02
SCC	3-07-008-21	Moisture Content: 47%				PM_{10}	4.34E-02	lb/acre-hr	90.00%	4.34E-02	1.90E-01	4.34E-03	1.90E-02
Reg	401 KAR 59:010; 401 KAR 63:010												
Stack #	None	Storage Pad Area:	1.00	acre									
Height	N/A												
Diameter	N/A												
Flowrate	N/A												
Temp	N/A	Wind Erosion of Pile PM EF:	3.80E-01	ton/acre-year									
Date	June 2024	Wind Erosion of Pile PM_{10} EF:	1.90E-01	ton/acre-year									
Control	Raw material is inherently wet - Wet Suppression (90%)	1 ton:	2000.0	lbs									
EF Reference	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at	1 year	8760.0	hours									
	Sawmills, dated May 8, 2014	Wind Erosion of Pile PM EF:	8.68E-02	lb/acre-hr									
		Wind Erosion of Pile PM_{10} EF:	4.34E-02	lb/acre-hr									
Notes													
Name	**Greenwood Handling to Feed Hopper- Fugitive**											
EIS Point	EP03	Sawdust/Wood Chip Usage:	15.00	tons/hr	8760	PM	7.50E-04	lb/ton	0.00%	1.13E-02	4.93E-02	1.13E-02	4.93E-02
SCC	3-07-008-22	Moisture Content: 47%				PM_{10}	3.50E-04	lb/ton	0.00%	5.25E-03	2.30E-02	5.25E-03	2.30E-02
Reg	401 KAR 59:010; 401 KAR 63:010												
Stack #	None												
Height	N/A												
Diameter	N/A	Dryer Maximum Capactiy:	15.0	tons/hr									
Flowrate	N/A												
Temp	N/A												
Date	June 2024												
Control	None Known												
EF Reference	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at												
	Sawmills, dated May 8, 2014												
Notes	Raw material is inherently wet (MC 47%)- "Wet" emission factors used.												
Name	**Feed Hopper- Fugitive**											
EIS Point	EP04	Sawdust/Wood Chip Usage:	15.00	tons/hr	8760	PM	7.50E-04	lb/ton	0.00%	1.13E-02	4.93E-02	1.13E-02	4.93E-02
SCC	3-07-008-22	Moisture Content: 47%				PM_{10}	3.50E-04	lb/ton	0.00%	5.25E-03	2.30E-02	5.25E-03	2.30E-02
Reg	401 KAR 59:010; 401 KAR 63:010												
Stack #	None												
Height	N/A												
Diameter	N/A	Dryer Maximum Capactiy:	15.0	tons/hr									
Flowrate	N/A												
Temp	N/A												
Date	June 2024												
Control	None Known												
EF Reference	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at												
	Sawmills, dated May 8, 2014												
Notes	Raw material is inherently wet (MC 47%)- "Wet" emission factors used.												

Name	**Open Conveyor Belt - Fugitive**											
EIS Point	EP05	Sawdust/Wood Chip Usage:	15.00 tons/hr	8760	PM	7.50E-04 lb/ton	0.00%	1.13E-02	4.93E-02	1.13E-02	4.93E-02
SCC	3-07-008-22	Moisture Content: 47%			PM_{10}	3.50E-04 lb/ton	0.00%	5.25E-03	2.30E-02	5.25E-03	2.30E-02
Reg	401 KAR 59:010; 401 KAR 63:010										
Stack #	None										
Height	N/A										
Diameter	N/A	Dryer Maximum Capactiy:	15.0 tons/hr								
Flowrate	N/A										
Temp	N/A										
Date	June 2024										
Control	None Known										
EF Reference	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at Sawmills, dated May 8, 2014										
Notes	Raw material is inherently wet (MC 47%)- "Wet" emission factors used.										
Name	**Green Hammermill**										
EIS Point	EP06	Sawdust/Wood Chip Usage:	15.00 tons/hr	8760	PM	3.90E-02 lb/ton	95.00%	5.85E-01	2.56	2.93E-02	1.28E-01
SCC	3-05-020-05	Moisture Content: 47%			PM_{10}	1.50E-02 lb/ton	95.00%	2.25E-01	9.86E-01	1.13E-02	4.93E-02
Reg	401 KAR 59:010				VOC	5.70E-01 lb/ton	0.00%	8.55	37.46	8.55	37.46
Stack #	1				Formaldehyde	1.12E-04 lb/ton	0.00%	1.68E-03	7.35E-03	1.68E-03	7.35E-03
Height	44.0'				Methanol	5.59E-04 lb/ton	0.00%	8.39E-03	3.67E-02	8.39E-03	3.67E-02
Diameter	4.0'										
Flowrate	10910 cfm										
Temp	200F										
Date	June 2024	Dryer Maximum Capactiy:	15.0 tons/hr								
Control	Cyclone 1 (95%)										
EF Reference	AP42 11.19.2; DAQ Combustion/Appling County Pellets Testing										
Notes	Make/Model: Schutte Hammermill (44-60) Raw material is inherently wet (MC 47%). Integral Control/Product Recovery										
Name	**Greenwood Handling to Walking Floor Trailer- Fugitive**										
EIS Point	EP07	Sawdust/Wood Chip Usage:	15.00 tons/hr	8760	PM	7.50E-04 lb/ton	0.00%	1.13E-02	4.93E-02	1.13E-02	4.93E-02
SCC	3-07-008-22	Moisture Content: 47%			PM_{10}	3.50E-04 lb/ton	0.00%	5.25E-03	2.30E-02	5.25E-03	2.30E-02
Reg	401 KAR 59:010; 401 KAR 63:010										
Stack #	None										
Height	N/A										
Diameter	N/A	Dryer Maximum Capactiy:	15.0 tons/hr								
Flowrate	N/A										
Temp	N/A										
Date	June 2024										
Control	None Known										
EF Reference	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at Sawmills, dated May 8, 2014										
	Raw material is inherently wet (MC 47%)- "Wet" emission factors used. Cyclone conveys woodchips to open top trailer										
Name	**Open Walking Floor Trailer- Fugitive**										
EIS Point	EP08	Sawdust/Wood Chip Usage:	15.00 tons/hr	8760	PM	7.50E-04 lb/ton	50.00%	1.13E-02	4.93E-02	5.63E-03	2.46E-02
SCC	3-07-008-21	Moisture Content: 47%			PM_{10}	3.50E-04 lb/ton	50.00%	5.25E-03	2.30E-02	2.63E-03	1.15E-02
Reg	401 KAR 59:010; 401 KAR 63:010										
Stack #	None										
Height	N/A										
Diameter	N/A	Dryer Maximum Capactiy:	15.0 tons/hr								
Flowrate	N/A										
Temp	N/A										
Date	December 2023										
Control	Partial Enclosure - (50%)										
EF Reference	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at Sawmills, dated May 8, 2014										
	Walking floor trailer is enclosed on the sides and open on top. Raw material is inherently wet (MC 47%)- "Wet" emission factors used.										

Name	**Rotary Drum Dryer**												
EIS Point	EP09-01	Woodchip/sawdust Usage	15.00 tons/hr	8760	PM	3.20E-02 lb/ton	99.99%	4.80E-01	2.10	6.00E-05	2.63E-04
SCC	3-07-006-32				PM_{10}	3.20E-02 lb/ton	99.99%	4.80E-01	2.10	6.00E-05	2.63E-04
Reg	401 KAR 59:010				VOC	2.41 lb/ton	0.00%	36.09	158.07	36.09	158.07
Stack #	1				Acetaldehyde	4.00E-02 lb/ton	0.00%	6.00E-01	2.63	6.00E-01	2.63
Height	44.0'				Formaldehyde	7.00E-02 lb/ton	0.00%	1.05	4.60	1.05	4.60
Diameter	4.0'	Dryer Maximum Capactiy:	40000.00 lbs/hr		Methanol	1.43E-01 lb/ton	0.00%	2.15	9.40	2.15	9.40
Flowrate	10910 cfm	Conversion Factor	2000.0 lbs/ton								
Temp	200F	Dryer Maximum Capactiy:	15.0 tons/hr								
Date	September 2023										
Control	Cyclones 2, 3, 4 (99.99%)										
EF Reference	AP42 10.6.2-1; ;DAQ Combustion- Appling County Pellet Testing										
Notes	Uzelac- Model TPD-13000 Wood Chip Dryer										
	Integral Control/Product Recovery										

Name	**Rotary Drum Dryer-Burner**										
EIS Point	EP09-02	Biomass Combusted	1.65 tons/hr	8760	PM	4.80 lb/ton	99.99%	7.92	34.69	9.90E-04	4.34E-03
SCC	1-02-009-08; 1-02-006-03				PM_{10}	4.32 lb/ton	99.99%	7.13	31.22	8.91E-04	3.90E-03
Reg	401 KAR 59:010; 401 KAR 63:020	Woodchips Usage	3300.00 lb/hr		SO_2	4.00E-01 lb/ton	0.00%	6.60E-01	2.89	6.60E-01	2.89
Stack #	1		1.65 tons/hr		CO	9.60 lb/ton	0.00%	15.84	69.38	15.84	69.38
Height	44.0'	Maximum Rated Capacity	30.00 MMBtu/hr		NOx	7.84 lb/ton	0.00%	12.94	56.66	12.94	56.66
Diameter	4.0'				VOC	2.72E-01 lb/ton	0.00%	4.49E-01	1.97	4.49E-01	1.97
Flowrate	10910 cfm				CO_2	3120.00 lb/ton	0.00%	5148.00	22548.24	5148.00	22548.24
Temp	200F				N_2O	2.08E-01 lb/ton	0.00%	3.43E-01	1.50	3.43E-01	1.50
Date	February 2024				Lead	7.68E-04 lb/ton	99.99%	1.27E-03	5.55E-03	1.58E-07	6.94E-07
Control	Cyclones 2, 3, 4				Methane	3.36E-01 lb/ton	0.00%	5.54E-01	2.43	5.54E-01	2.43
EF Reference	AP-42 1.6				Formaldehyde	7.04E-02 lb/ton	0.00%	1.16E-01	5.09E-01	1.16E-01	5.09E-01
					Benzene	6.72E-02 lb/ton	0.00%	1.11E-01	4.86E-01	1.11E-01	4.86E-01
					Toluene	1.47E-02 lb/ton	0.00%	2.43E-02	1.06E-01	2.43E-02	1.06E-01
					Ethylbenzene	4.96E-04 lb/ton	0.00%	8.18E-04	3.58E-03	8.18E-04	3.58E-03
					Xylene	4.00E-04 lb/ton	0.00%	6.60E-04	2.89E-03	6.60E-04	2.89E-03
					Naphthalene	1.55E-03 lb/ton	0.00%	2.56E-03	1.12E-02	2.56E-03	1.12E-02
					Antimony	1.26E-04 lb/ton	99.99%	2.09E-04	9.13E-04	2.61E-08	1.14E-07
					Arsenic	3.52E-04 lb/ton	99.99%	5.81E-04	2.54E-03	7.26E-08	3.18E-07
					Beryllium	6.90E-05 lb/ton	99.99%	1.14E-04	4.99E-04	1.42E-08	6.24E-08
					Cadmium	4.10E-06 lb/ton	99.99%	6.77E-06	2.96E-05	8.46E-10	3.70E-09
Notes	Natural gas will be used to initiate dryer; dry sawdust will be added to maintain the heat				Chromium	2.10E-05 lb/ton	99.99%	3.47E-05	1.52E-04	4.33E-09	1.90E-08
	for the direct fired heater. Worst case emission factors were used for natural gas and				Chromium (VI)	3.50E-06 lb/ton	99.99%	5.78E-06	2.53E-05	7.22E-10	3.16E-09
	biomass.				Cobalt	6.50E-06 lb/ton	99.99%	1.07E-05	4.70E-05	1.34E-09	5.87E-09
					Manganese	1.60E-03 lb/ton	99.99%	2.64E-03	1.16E-02	3.30E-07	1.45E-06
					Mercury	3.50E-06 lb/ton	99.99%	5.78E-06	2.53E-05	7.22E-10	3.16E-09
	Integral Control/Product Recovery				Nickel	3.30E-05 lb/ton	99.99%	5.45E-05	2.38E-04	6.81E-09	2.98E-08
	McConnel Model 42 Dry Fuel Suspension Burner - Burner temp 2200°F				Selenium	2.80E-06 lb/ton	99.99%	4.62E-06	2.02E-05	5.78E-10	2.53E-09
	Located in covered shelter that is open on 3 sides.										

Name	**Dry Hammermill**										
EIS Point	EP10	Dry Wood Shavings Usage	11.65 tons/hr	8760	PM	3.90E-02 lb/ton	95.00%	4.54E-01	1.99	2.27E-02	9.95E-02
SCC	3-05-020-05				PM_{10}	1.50E-02 lb/ton	95.00%	1.75E-01	7.65E-01	8.74E-03	3.83E-02
Reg	401 KAR 59:010				VOC	9.20E-02 lb/ton	85.00%	1.07	4.69	1.61E-01	7.04E-01
Stack #	N/A				Acetaldehyde	1.00E-03 lb/ton	85.00%	1.17E-02	5.10E-02	1.75E-03	7.65E-03
Height	N/A	Dryer Maximum Output:	23300.00 lbs/hr		Formaldehyde	1.00E-03 lb/ton	85.00%	1.17E-02	5.10E-02	1.75E-03	7.65E-03
Diameter	N/A	Conversion Factor	2000.0 lbs/ton		Methanol	2.00E-03 lb/ton	85.00%	2.33E-02	1.02E-01	3.50E-03	1.53E-02
Flowrate	N/A	Dryer Maximum Output:	11.65 tons/hr								
Temp	N/A										
Date	June 2024										
Control	Cyclone 5 (95%); Air Recirculation to Burner (85%)										
EF Reference	AP42 11.19.2; DAQ Combustion- Appling County Pellet Testing										
Notes	Schutte Hammermill (44-60)										
	Moisture Content: 8-11%										
	Air handling fan recycles air from cyclone back to burner.										

Name	**Natural Gas Boiler**												
EIS Point	EP11	Natural Gas Combusted	1.24E-03	MMscf/hr	8760	PM	7.60	lb/MMscf	0.00%	9.39E-03	4.11E-02	9.39E-03	4.11E-02
SCC	1-02-006-03					PM_{10}	7.60	lb/MMscf	0.00%	9.39E-03	4.11E-02	9.39E-03	4.11E-02
Reg	401 KAR 59:010; 401 KAR 63:020; 401 KAR 59:015					CO	84.00	lb/MMscf	0.00%	1.04E-01	4.54E-01	1.04E-01	4.54E-01
Stack #	2	Rated capacity	1.26	MMBtu/hr		NOx	100.00	lb/MMscf	0.00%	1.24E-01	5.41E-01	1.24E-01	5.41E-01
Height	45.0'	Conversion factor	1020.00	Btu/scf		Lead	5.00E-04	lb/MMscf	0.00%	6.18E-07	2.71E-06	6.18E-07	2.71E-06
Diameter	10.0"					SO_2	6.00E-01	lb/MMscf	0.00%	7.41E-04	3.25E-03	7.41E-04	3.25E-03
Flowrate	Unknown					VOC	5.50	lb/MMscf	0.00%	6.79E-03	2.98E-02	6.79E-03	2.98E-02
Temp	Unknown					CO_2	120000.00	lb/MMscf	0.00%	148.24	649.27	148.24	649.27
Date	June 2024					N_2O	2.20	lb/MMscf	0.00%	2.72E-03	1.19E-02	2.72E-03	1.19E-02
Control	None Known					Methane	2.30	lb/MMscf	0.00%	2.84E-03	1.24E-02	2.84E-03	1.24E-02
EF Reference	AP 42 1.4 Boiler <100 MMBtu/hr					CO2 Equivalent	120713.10	lb/MMscf	0.00%	149.12	653.13	149.12	653.13
Notes						Formaldehyde	7.50E-02	lb/MMscf	0.00%	9.26E-05	4.06E-04	9.26E-05	4.06E-04
	CO2 Equiv. Global Warming Potential Source AR4					Benzene	2.10E-03	lb/MMscf	0.00%	2.59E-06	1.14E-05	2.59E-06	1.14E-05
	Lartner- 30HP boiler					Toluene	3.40E-03	lb/MMscf	0.00%	4.20E-06	1.84E-05	4.20E-06	1.84E-05

Name	**Pellet Mill (3 units)**												
EIS Point	EP12	Dry Wood Sawdust Usage	11.65	tons/hr	8760	PM	7.50E-04	lb/ton	70.00%	8.74E-03	3.83E-02	2.62E-03	1.15E-02
SCC	3-07-008-20					PM_{10}	3.50E-04	lb/ton	70.00%	4.08E-03	1.79E-02	1.22E-03	5.36E-03
Reg	401 KAR 59:010					VOC	1.34E-01	lb/ton	85.00%	1.56	6.84	2.34E-01	1.03
Stack #	N/A					Acetaldehyde	1.00E-03	lb/ton	85.00%	1.17E-02	5.10E-02	1.75E-03	7.65E-03
Height	N/A	Dryer Maximum Output:	23300.00	lbs/hr		Formaldehyde	1.00E-03	lb/ton	85.00%	1.17E-02	5.10E-02	1.75E-03	7.65E-03
Diameter	N/A	Conversion Factor	2000.0	lbs/ton		Methanol	6.00E-03	lb/ton	85.00%	6.99E-02	3.06E-01	1.05E-02	4.59E-02
Flowrate	N/A	Dryer Maximum Output:	11.65	tons/hr									
Temp	N/A												
Date	June 2024												
Control	Building Enclosure (70%); Air Recirculation to Burner (85%)												
	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at												
EF Reference	Sawmills, dated May 8, 2014; DAQ Combustion- Appling County Pellet Testing												
Notes	Make Model: Graf 900/138												
	Moisture content: 12-15%												
	Steam extraction fan recyles air back to burner.												

Name	**Pellet Screeners (2 units)**												
EIS Point	EP13	Pellet Usage	11.65	tons/hr	8760	PM	3.00E-01	lb/ton	70.00%	3.50	15.31	1.05	4.59
SCC	3-07-008-20					PM_{10}	7.20E-02	lb/ton	70.00%	8.39E-01	3.67	2.52E-01	1.10
Reg	401 KAR 59:010					VOC	4.00E-01	lb/ton	0.00%	4.66	20.41	4.66	20.41
Stack #	N/A					Acetaldehyde	1.00E-03	lb/ton	0.00%	1.17E-02	5.10E-02	1.17E-02	5.10E-02
Height	N/A					Formaldehyde	2.00E-03	lb/ton	0.00%	2.33E-02	1.02E-01	2.33E-02	1.02E-01
Diameter	N/A					Methanol	1.00E-03	lb/ton	0.00%	1.17E-02	5.10E-02	1.17E-02	5.10E-02
Flowrate	N/A												
Temp	N/A	Dryer Maximum Output:	23300.00	lbs/hr									
Date	June 2024	Conversion Factor	2000.0	lbs/ton									
Control	Building Enclosure (70%)	Dryer Maximum Output:	11.65	tons/hr									
EF Reference	AP-42 11.19.2; DAQ Combustion												
Notes	Fines collection system blows PM to fuel bin.												
	Integral Control/Product Recovery												
	BM&M (3x81SS)												

Name	**Pellet Cooler**												
EIS Point	EP14	Pellet Usage	11.65	tons/hr	8760	PM	7.50E-04	lb/ton	98.50%	8.74E-03	3.83E-02	1.31E-04	5.74E-04
SCC	3-07-008-99	Moisture Content: 12-15%				PM_{10}	3.50E-04	lb/ton	98.50%	4.08E-03	1.79E-02	6.12E-05	2.68E-04
Reg	401 KAR 59:010					VOC	1.30E-01	lb/ton	85.00%	1.51	6.63	2.27E-01	9.95E-01
Stack #	N/A	Dryer Maximum Output:	23300.00	lbs/hr		Acetaldehyde	2.00E-03	lb/ton	85.00%	2.33E-02	1.02E-01	3.50E-03	1.53E-02
Height	N/A	Conversion Factor	2000.0	lbs/ton		Formaldehyde	1.00E-03	lb/ton	85.00%	1.17E-02	5.10E-02	1.75E-03	7.65E-03
Diameter	N/A	Dryer Maximum Output:	11.65	tons/hr		Methanol	6.00E-03	lb/ton	85.00%	6.99E-02	3.06E-01	1.05E-02	4.59E-02
Flowrate	N/A												
Temp	N/A												
Date	June 2024												
Control	Cyclone 6- (95%); Building Enclosure (70%); Air Recirculation to Burner (85%)												
	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at												
EF Reference	Sawmills, dated May 8, 2014;DAQ Combustion												
Notes:	CSE Bliss Pellet Cooler- 15-375-5 (15 tons/hr)												

Name	**Dry Sawdust Fuel Storage Bin**											
EIS Point	EP15	Pellet Usage	11.65	tons/hr	8760	PM	1.50E-03	lb/ton	91.00%	1.75E-02	7.65E-02	1.57E-03	6.89E-03
SCC	3-07-008-99					PM_{10}	7.00E-04	lb/ton	91.00%	8.16E-03	3.57E-02	7.34E-04	3.21E-03
Reg	401 KAR 59:010												
Stack #	None	Dryer Maximum Output:	23300.00	lbs/hr									
Height	N/A	Conversion Factor	2000.0	lbs/ton									
Diameter	N/A	Dryer Maximum Output:	11.65	tons/hr									
Flowrate	N/A												
Temp	N/A												
Date	June 2024												
Control	Bin Vent Filter (70%); Building Enclosure (70%)												
EF Reference	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at Sawmills, dated May 8, 2014												
	Fines from pellet screener blown into dry sawdust fuel storage bin.												
	Exhausts horizontally into building.												
Name	**Briquette Bin**											
EIS Point	EP16	Pellet Usage	11.65	tons/hr	8760	PM	1.50E-03	lb/ton	91.00%	1.75E-02	7.65E-02	1.57E-03	6.89E-03
SCC	3-07-008-99					PM_{10}	7.00E-04	lb/ton	91.00%	8.16E-03	3.57E-02	7.34E-04	3.21E-03
Reg	401 KAR 59:010												
Stack #	None	Dryer Maximum Output:	23300.00	lbs/hr									
Height	N/A	Conversion Factor	2000.0	lbs/ton									
Diameter	N/A	Dryer Maximum Output:	11.65	tons/hr									
Flowrate	N/A												
Temp	N/A												
Date	June 2024												
Control	Bin Vent Filter (70%); Building Enclosure (70%)												
EF Reference	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at Sawmills, dated May 8, 2014												
	Exhausts horizontally into building.												
Name	**Pellet Storage Silos (3 units)**											
EIS Point	EP17	Pellet Usage	2.40E-02	tons/hr	8760	PM	1.50E-03	lb/ton	0.00%	3.60E-05	1.58E-04	3.60E-05	1.58E-04
SCC	3-07-040-01					PM_{10}	7.00E-04	lb/ton	0.00%	1.68E-05	7.35E-05	1.68E-05	7.35E-05
Reg	401 KAR 59:010					VOC	4.00E-01	lb/ton	0.00%	9.59E-03	4.20E-02	9.59E-03	4.20E-02
Stack #	None					Acetaldehyde	1.00E-03	lb/ton	0.00%	2.40E-05	1.05E-04	2.40E-05	1.05E-04
Height	N/A					Formaldehyde	2.00E-03	lb/ton	0.00%	4.79E-05	2.10E-04	4.79E-05	2.10E-04
Diameter	N/A	Maximum Pellet Capacity per Silo:	70.00	tons		Methanol	1.00E-03	lb/ton	0.00%	2.40E-05	1.05E-04	2.40E-05	1.05E-04
Flowrate	N/A	# of Silo:	3.0	silos									
Temp	N/A	Total Weight:	210.00	tons									
Date	June 2024	Operating Hours:	8760.0	hrs									
Control	None Known												
EF Reference	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at Sawmills, dated May 8, 2014; DAQ Combustion												
Notes													
Name	**Pellet Packaging**											
EIS Point	EP18	Pellet Usage	11.65	tons/hr	8760	PM	1.50E-03	lb/ton	70.00%	1.75E-02	7.65E-02	5.24E-03	2.30E-02
SCC	3-07-008-99	Moisture Content: 12-15%				PM_{10}	7.00E-04	lb/ton	70.00%	8.16E-03	3.57E-02	2.45E-03	1.07E-02
Reg	401 KAR 59:010					VOC	4.00E-01	lb/ton	0.00%	4.66	20.41	4.66	20.41
Stack #	None	Dryer Maximum Output:	23300.00	lbs/hr		Acetaldehyde	1.00E-03	lb/ton	0.00%	1.17E-02	5.10E-02	1.17E-02	5.10E-02
Height	N/A	Conversion Factor	2000.0	lbs/ton		Formaldehyde	2.00E-03	lb/ton	0.00%	2.33E-02	1.02E-01	2.33E-02	1.02E-01
Diameter	N/A	Dryer Maximum Output:	11.65	tons/hr		Methanol	1.00E-03	lb/ton	0.00%	1.17E-02	5.10E-02	1.17E-02	5.10E-02
Flowrate	N/A												
Temp	N/A												
Date	June 2024												
Control	Enclosure (70%)												
EF Reference	Note-EPA Region 10 Memorandum regarding PM PTE Emission Factors for Activities at Sawmills, dated May 8, 2014; DAQ Combustion												
Notes													
Name	**Haul Road- Fugitive**											
EIS Point	EP19	Fugitive Dust:	24.38	tons/hr	8760	PM	1.48E-02	lb/ton	0.00%	3.61E-01	1.58	3.61E-01	1.58
SCC	30502099					PM_{10}	5.34E-03	lb/ton	0.00%	2.80E-01	1.23	2.80E-01	1.23
Reg	401 KAR 59:010; 401 KAR 63:010												
Stack #	None												
Height	N/A	# of Vehicles:	13.0	trucks/daily									
Diameter	N/A		4745.0	trucks/yearly									
Flowrate	N/A	Vehicle Weight:	45.0	tons/truck									
Temp	N/A	Total Weight:	213525.0	tons/yearly									
Date	June 2024												
Control	None												
EF Reference	DAQ Minerals Section												
Notes													
	0.06 miles Unpaved Round Trip												

Naturgal Gas Burner Emmission Factors

PM	7.45E-03	lbMMBtu	
PM_{10}	5.59E-03	lbMMBtu	
$PM_{2.5}$	1.86E-03	lbMMBtu	
SO_2	5.88E-04	lbMMBtu	
CO	8.24E-02	lbMMBtu	
NOx	9.80E-02	lbMMBtu	
VOC	5.39E-03	lbMMBtu	
CO_2	117.65	lbMMBtu	
N_2O	2.16E-03	lbMMBtu	
Lead	4.90E-07	lbMMBtu	
Methane	2.25E-03	lbMMBtu	
Formaldehyde	7.35E-05	lbMMBtu	
Benzene	2.06E-06	lbMMBtu	
Toluene	3.33E-06	lbMMBtu	
Arsenic	1.96E-07	lbMMBtu	
Beryllium	4.31E-06	lbMMBtu	6.90E-05 lb/hr
Cadmium	1.08E-06	lbMMBtu	
Chromium	1.37E-06	lbMMBtu	
Cobalt	8.24E-08	lbMMBtu	
Manganese	3.73E-07	lbMMBtu	
Mercury	2.55E-07	lbMMBtu	
Nickel	2.06E-06	lbMMBtu	
Selenium	2.35E-08	lbMMBtu	

AP 42 Ch 1.4 Boiler <100 MMBtu/hr

Biomass Burner Emissions Factors

PM	3.00E-01	lb/MMBtu	4.80 lb/hr
PM10	2.70E-01	lb/MMBtu	4.32 lb/hr
PM2.5	1.60E-01	lb/MMBtu	2.56 lb/hr
SO2	2.50E-02	lb/MMBtu	4.00E-01 lb/hr
CO	6.00E-01	lb/MMBtu	9.60 lb/hr
NOx	4.90E-01	lb/MMBtu	7.84 lb/hr
VOC	1.70E-02	lb/MMBtu	2.72E-01 lb/hr
CO2	195.00	lb/MMBtu	3120.00 lb/hr
N2O	1.30E-02	lb/MMBtu	2.08E-01 lb/hr
Lead	4.80E-05	lb/MMBtu	7.68E-04 lb/hr
Methane	2.10E-02	lb/MMBtu	3.36E-01 lb/hr
Formaldehyde	4.40E-03	lb/MMBtu	7.04E-02 lb/hr
Benzene	4.20E-03	lb/MMBtu	6.72E-02 lb/hr
Toluene	9.20E-04	lb/MMBtu	1.47E-02 lb/hr
Ethylbenzene	3.10E-05	lb/MMBtu	4.96E-04 lb/hr
Xylene	2.50E-05	lb/MMBtu	4.00E-04 lb/hr
Naphthalene	9.70E-05	lb/MMBtu	1.55E-03 lb/hr
Antimony	7.90E-06	lb/MMBtu	1.26E-04 lb/hr
Arsenic	2.20E-05	lb/MMBtu	3.52E-04 lb/hr
Beryllium	1.10E-06	lb/MMBtu	1.76E-05 lb/hr
Cadmium	4.10E-06	lb/MMBtu	6.56E-05 lb/hr
Chromium	2.10E-05	lb/MMBtu	3.36E-04 lb/hr
Chromium (VI)	3.50E-06	lb/MMBtu	5.60E-05 lb/hr
Cobalt	6.50E-06	lb/MMBtu	1.04E-04 lb/hr
Manganese	1.60E-03	lb/MMBtu	2.56E-02 lb/hr
Mercury	3.50E-06	lb/MMBtu	5.60E-05 lb/hr
Nickel	3.30E-05	lb/MMBtu	5.28E-04 lb/hr
Selenium	2.80E-06	lb/MMBtu	4.48E-05 lb/hr

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Yellow highlight indicates worst case EF used in PTE.

Haul Road Emissions

	D	EF Particulates		EF PM_{10}	
Surface	Distance (miles)	Emission Factor (lb/VMT)	Emission Factor (lb/ton)	Emission Factor (lb/VMT)	Emission Factor (lb/ton)
unpaved < 0.25 miles	5.70E-02	3.90	0.01482	1.404	0.00534
unpaved ≥ 0.25 miles	0.00	7.80	0.00000	2.808	0.00000
paved	0.00E+00	0.78	0.00000	0.453	0.00000

Facility-wide Emissions

Pollutant	Total Emissions		Requested Limit
	Uncontrolled TPY	Controlled TPY	
PM	59.25	6.80	
PM_{10}	40.48	2.63	
SO_2	2.89	2.89	
CO	69.83	69.83	
NOx	57.20	57.20	
VOC	256.56	241.12	90
CO_2	23197.51	23197.51	
N_2O	1.52	1.52	
Methane	2.44	2.44	
Lead	5.55E-03	3.40E-06	
Formaldehyde	5.47	5.34	
Benzene	4.86E-01	4.86E-01	
Toluene	1.06E-01	1.06E-01	
Ethylbenzene	3.58E-03	3.58E-03	
Xylene	2.89E-03	2.89E-03	
Naphthalene	1.12E-02	1.12E-02	
Antimony	9.13E-04	1.14E-07	
Arsenic	2.54E-03	3.18E-07	
Beryllium	4.99E-04	6.24E-08	
Cadmium	2.96E-05	3.70E-09	
Chromium	1.52E-04	1.90E-08	
Chromium (VI)	2.53E-05	3.16E-09	
Cobalt	4.70E-05	5.87E-09	
Manganese	1.16E-02	1.45E-06	
Mercury	2.53E-05	3.16E-09	
Nickel	2.38E-04	2.98E-08	
Selenium	2.02E-05	2.53E-09	
Acetaldehyde	2.93	2.76	
Methanol	10.25	9.64	
Total HAPS	19.28	18.35	

Dunway Timber Co 2- AI 44386

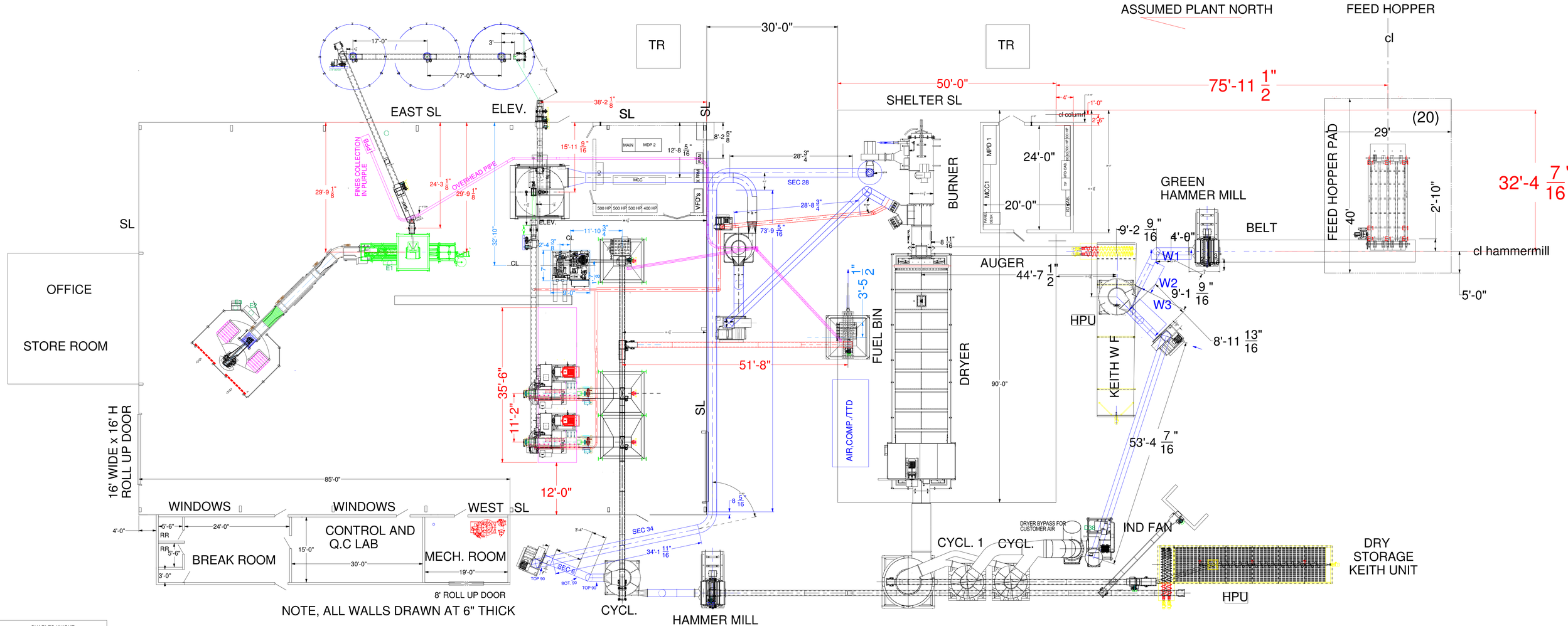
Emission Point	Process ID	Equipment	Description	Maximum Throughput /Production Rate	Bottleneck	Raw Materials Used	Air Pollution Control Device	Air Pollution Control Device #	Control Integral?	Outdoor or indoor	Note	Fuel	Fuel Usage	Operating Schedule
1	01	Debarker	Circle Sawmill; Sawmill #1	1500 board ft per hour	No	Green Hardwood	N/A	N/A	N/A	Outdoor		N/A	N/A	Mon-Fri 6:30AM - 3:00PM
	02	Circle Saw		"	No	"	Enclosure	15	Yes	Indoor		N/A	N/A	"
	03	Resaw		"	No	"	Enclosure	15	Yes	Indoor		N/A	N/A	"
	04	Grade Edger		"	No	"	Enclosure	15	Yes	Indoor		N/A	N/A	"
	05	Chipper		"	No	"	Cyclone1; Enclosure	1;15	Yes	Indoor		N/A	N/A	"
2	01	Debarker	Circle Sawmill; Sawmill #2	1500 board ft per hour	No	Green Hardwood	N/A	N/A	N/A	Outdoor	*under roof	N/A	N/A	Mon-Fri 6:30AM - 3:00PM
	02	Sawmill		"	No	"	Enclosure	15	Yes	Indoor		N/A	N/A	"
	03	Grade Edger		"	No	"	Cyclone 2; Enclosure	2;15	Yes	Indoor		N/A	N/A	"
	04	Chipper		"	No	"	Cyclone 2, Cyclone 3; Enclosure	2, 3;15	Yes	Indoor		N/A	N/A	"
3	01	Whole Log Chipper	Whole Log Chipper	10 tons per hour	No	Green Hardwood	Cyclone 4; Wet Suppression	4; 5	Yes	Outdoor	*under roof	N/A	N/A	Mon-Fri 7:00AM - 3:30PM
4	01	Gang Saw	Pallet Parts Mill	2000 board ft per hour	No	Green Hardwood	Enclosure	15	Yes	Indoor		N/A	N/A	Mon-Fri 6:00AM - 2:30PM
	02	Planer		"	Equipment runs sequentially	"	Enclosure	15	Yes	Indoor		N/A	N/A	"
	03	Notcher		"	Equipment runs sequentially	"	Enclosure	15	Yes	Indoor		N/A	N/A	"
	04	Trim Saw		"	Equipment runs sequentially	"	Enclosure	15	Yes	Indoor		N/A	N/A	"
	05	Chipper		"	No	"	Cyclone 5	6	Yes	Outdoor		N/A	N/A	"
5	01	Band Saw	Bandsaw Mill, Sawmill #3	1500 board ft per hour	No	Green Hardwood	Enclosure	15	Yes	Indoor		N/A	N/A	Mon-Fri 6:00AM - 2:30PM
	02	Resaw		"	No	"	Enclosure	15	Yes	Indoor		N/A	N/A	"
	03	Edger		"	No	"	Enclosure	15	Yes	Indoor		N/A	N/A	"
	04	Chipper		"	No	"	Cyclone 6	7	Yes	Outdoor	*under roof	N/A	N/A	"
6	01	Band Saw	Bandsaw Mill, Sawmill #4	1500 board ft per hour	No	Green Hardwood	Enclosure	15	Yes	Indoor		N/A	N/A	Mon-Fri 6:00AM - 2:30PM
	02	Resaw		"	No	"	Enclosure	15	Yes	Indoor		N/A	N/A	"
	03	Edger		"	No	"	Enclosure	15	Yes	Indoor		N/A	N/A	"
	04	Chipper		"	No	"	N/A	N/A	N/A	Outdoor	*under roof	N/A	N/A	"

Dunway Timber Co 2- AI 44386

Emission Point	Process ID	Equipment	Description	Maximum Throughput /Production Rate	Bottleneck	Raw Materials Used	Air Pollution Control Device	Air Pollution Control Device #	Control Integral?	Outdoor or indoor	Note	Fuel	Fuel Usage	Operating Schedule
7	01	Band Saw	Bandsaw Mill, Sawmill #5	1500 board ft per hour	No	Green Hardwood	Enclosure	15	Yes	Indoor		N/A	N/A	Mon-Fri 6:00AM - 2:30PM
8		Bandsaw Mill, Sawmill #6	Shutdown and removed from property											
9	01	Stavemill	Insignificant Actvity											
10	01	Loadout	Dust loadout from EU 6 and EU 9	1960 board ft per hour	No	Green Hardwood Dust	N/A	N/A	N/A	Outdoor		N/A	N/A	Mon-Fri 6:00AM - 2:30PM
11	01	Greenwood Truck Unloading	Greenwood Truck Unloading	13.54 tons per hour	No	Green Hardwood Dust	N/A	N/A	N/A	Outdoor		N/A	N/A	24/7
12	01	Outdoor Greenwood Storage	Outdoor Greenwood Storage	1 acre	No	Green Hardwood Dust	Wet Suppression	5	No	Outdoor		N/A	N/A	24/7
13	01	Greenwood Handling to Feed Hopper	Greenwood Handling to Feed Hopper	15 tons per hour	Limited by 15 tons/hr dryer max input	Green Hardwood Dust	N/A	N/A	N/A	Outdoor		N/A	N/A	24/7
14	01	Feed Hopper	Box Chain Conveyor	15 tons per hour	Limited by 15 tons/hr dryer max input	Green Hardwood Dust	N/A	N/A	N/A	Outdoor		N/A	N/A	24/7
15	01	Belt Conveyor	Open Belt Conveyor	15 tons per hour	Limited by 15 tons/hr dryer max input	Green Hardwood Dust	N/A	N/A	N/A	Outdoor	*belt conveyor does have a roof cover	N/A	N/A	24/7
16	01	Green Hammermill	Green Hammermill	15 tons per hour	Limited by 15 tons/hr dryer max input	Green Hardwood Dust	Cyclone 7	8	Yes	Outdoor		N/A	N/A	24/7
17	01	Greenwood Handling to Walking Floor	Transfer point from open bin to enclosed pipe to walking floor	15 tons per hour	Limited by 15 tons/hr dryer max input	Green Hardwood Dust	N/A	N/A	N/A	Outdoor	*enclosed pipe	N/A	N/A	24/7
18	01	Green Walking Floor	Open Walking Floor	15 tons per hour	Limited by 15 tons/hr dryer max input	Green Hardwood Dust	Partial Enclosure	9	No	Outdoor	*walking floor will be under shed roof	N/A	N/A	24/7
19	01	Rotary Drum Dryer	Wood dryer	15 tons per hour (greenwood)	Limited by 15 tons/hr dryer max input	Green Hardwood Dust	Set of 3 cyclones (8,9,10)	10,11,12	Yes	Outdoor	*dryer will be under shed roof	N/A	N/A	24/7
	02	Dryer Burner	Biomass/NG burner	1.65 tons per hour of biomass	No	Dry Hardwood Dust	Set of 3 cyclones (8,9,10)	10,11,12	Yes	Outdoor	*burner will be under shed roof	N/A	N/A	24/7

Dunway Timber Co 2- AI 44386

Emission Point	Process ID	Equipment	Description	Maximum Throughput /Production Rate	Bottleneck	Raw Materials Used	Air Pollution Control Device	Air Pollution Control Device #	Control Integral?	Outdoor or indoor	Note	Fuel	Fuel Usage	Operating Schedule
20	01	Dry Hammermill	Dry Hammermill	11.65 tons per hour	No	Dry Hardwood Dust	Cyclone 11; Air Recirculation to Dryer	13	Yes	Outdoor	*Air from cyclone is recirculated to dryer	N/A	N/A	24/7
21	01	Natural Gas Boiler	Gas Boiler	1.24E-03 mmscf/hr	No	Natural Gas	N/A	N/A	N/A	Indoor		Natural Gas		24/7
22	01	Pellet Mills	Pellet Mills (3 units)	11.65 tons per hour	Limited by 11.65 tons/hr dryer output	Dry Hardwood Dust	Enclosure; Air Recirculation to Dryer	15	Yes	Indoor	*Steam is extracted & recirculated to the dryer	N/A	N/A	24/7
23	01	Pellet Cooler	Pellet Cooler	11.65 tons per hour	Limited by 11.65 tons/hr dryer output	Hardwood Pellet	Enclosure, Cyclone 12; Air Recirculation to Dryer	15; 14	Yes	Indoor	*Air from cyclone is recirculated to dryer	N/A	N/A	24/7
24	01	Pellet Screener	Pellet Screener (2 units)	11.65 tons per hour	Limited by 11.65 tons/hr dryer output	Hardwood Pellet	Enclosure	15	No	Indoor	*Dust is extracted back to burner	N/A	N/A	24/7
25	01	Dry Sawdust Fuel Storage Bin	Dry Sawdust Fuel Storage Bin	11.65 tons per hour	Limited by 11.65 tons/hr dryer output	Dry Hardwood Dust	Bin Vent Filter; Building Enclosure	16;15	Yes	Indoor		N/A	N/A	24/7
26	01	Briquette Bin	Briquette Bin	11.65 tons per hour	Limited by 11.65 tons/hr dryer output	Dry Hardwood Dust	Bin Vent Filter; Building Enclosure	16;15	Yes	Indoor		N/A	N/A	24/7
27	01	Pellet Storage Silo	Pellet Storage Silo (3 units)	2.42E-02 tons per hour		Hardwood Pellet	N/A	N/A	N/A	Outdoor		N/A	N/A	24/7
28	01	Pellet Packaging	Pellet Packaging	11.65 tons per hour	Limited by 11.65 tons/hr dryer output	Hardwood Pellet	Enclosure	15	No	Indoor		N/A	N/A	24/7
29	01	Haul Road	.06 mile Gravel Haul Road	24.38 tons per hour		N/A	Wet Suppression	4	No	Outdoor		N/A	N/A	24/7



CHARLES KNIGHT
CONSULTING ASSOCIATES, LLC
4232 TILLMAN BLUFF ROAD
VALDOSTA, GA., 31602
843-901-0262 CHARLES
770-856-0240 CHASE
charlesknight8@yahoo.com

DATE: 11/28/22	PLANT LAYOUT
DRAWN BY:	CHARLES KNIGHT
DR.#FP001PR24-A7	FORDSVILLE PELLET CO.
SCALE: PROP.	FORDSVILLE KENTUCKY
R.: 7/6/23, 7/28/23	ADD, BURNER,MODS, FINES SCR.

6/27/24, MODIFY CONTRROL RM, MECH. RM, ETC.
3/11/24, FUEL BIN, FB CONV. MOVE, GATE LOCATIONS, ETC.

Emission Factors From Testing @ 100% Hardwood (lb/ODT)

Unit	Pollutant	Minimum	Average	Maximum	# of Tests
Dryer	VOC	9.56E-01	1.53	2.41	6
	Acetaldehyde	2.00E-02	3.10E-02	4.00E-02	4
	Formaldehyde	4.00E-02	5.60E-02	7.00E-02	5
	Methanol	6.00E-02	9.00E-02	1.43E-01	5
Pellet Mill	VOC		1.34E-01		1
	Acetaldehyde		1.00E-03		1
	Formaldehyde		1.00E-03		1
	Methanol		6.00E-03		1
Dry Hammer Mill	VOC		9.20E-02		1
	Acetaldehyde		1.00E-03		1
	Formaldehyde		1.00E-03		1
	Methanol		2.00E-03		1
SE01	VOC		4.32E-01		1
	Acetaldehyde		1.00E-03		1
	Formaldehyde		1.00E-03		1
	Methanol		7.00E-03		1
SE04	VOC		4.80E-02		1
	Acetaldehyde		2.78E-04		1
	Formaldehyde		2.78E-04		1
	Methanol		2.00E-03		1

Emission Factors From Other Sources (lb/ODT)

Unit	Pollutant	Minimum	Average	Maximum	Source
Pellet Cooler	VOC		1.30E-01		March 27, 2019 Permit for Appling County Pellets. Before RTO was added. >70% hardwood
	Acetaldehyde		2.00E-03		
	Formaldehyde		1.00E-03		
	Methanol		6.00E-03		
Pellet Handling and Storage	VOC		4.00E-01		
	Acetaldehyde		1.00E-03		
	Formaldehyde		2.00E-03		
	Methanol		1.00E-03		
Green Hammer Mill	VOC		5.70E-01		Drax LaSalle 2023 testing average values (pre-control)
	Acetaldehyde		0.00		
	Formaldehyde		1.12E-04		
	Methanol		5.59E-04		

Test Date	Pollutant Tested	Percentage Hardwood	Source Tested	Operating Rate (ODT/hr)	Average Emission Rate (lb/hr)	Emission Factor (lb/ODT)
1/12/2010	VOC	100	Dryer	17.4	41.86	2.41
6/10/2010	Formaldehyde	100	Wood Dryer Multiclone Exhaust Main Stack	18	1.20	0.07
6/10/2010	Methanol	100	Wood Dryer Multiclone Exhaust Main Stack	18	1.12	0.06
6/10/2010	VOC	100	Wood Dryer Multiclone Exhaust Main Stack	18	17.20	0.96
7/12/2016	Acetaldehyde	100	WD02	18	0.38	0.02
7/12/2016	Formaldehyde	100	WD02	18	0.71	0.04
7/12/2016	Methanol	100	WD02	18	2.58	0.14
7/12/2016	VOC	100	Wood Dryer Multiclone Exhaust Main Stack WD02	18	36.36	2.02
6/21/2017	Acetaldehyde	100	ST01	18	0.45	0.03
6/21/2017	Formaldehyde	100	ST01	18	1.09	0.06
6/21/2017	Methanol	100	ST01	18	1.23	0.07
6/21/2017	VOC	100	ST01	18	20.18	1.12
6/22/2017	Acetaldehyde	80	ST01	18	0.67	0.04
6/22/2017	Acetaldehyde	70	ST01	18	0.81	0.05
6/22/2017	Formaldehyde	80	ST01	18	1.33	0.07
6/22/2017	Formaldehyde	70	ST01	18	1.63	0.09
6/22/2017	Methanol	80	ST01	18	1.15	0.06
6/22/2017	Methanol	70	ST01	18	1.36	0.08
6/22/2017	VOC	80	ST01	18	31.89	1.77
6/22/2017	VOC	70	ST01	18	36.64	2.04
8/1/2017	Acetaldehyde	70	ST01	18	0.14	0.01
8/1/2017	Formaldehyde	70	ST01	18	0.16	0.01
8/1/2017	Methanol	70	ST01	18	0.30	0.02
8/1/2017	VOC	70	ST01	18	24.17	1.34
8/2/2017	Acetaldehyde	100	ST01	18	0.63	0.04
8/2/2017	Acetaldehyde	80	ST01	18	0.41	0.02
8/2/2017	Formaldehyde	100	ST01	18	1.04	0.06
8/2/2017	Formaldehyde	80	ST01	18	0.86	0.05
8/2/2017	Methanol	100	ST01	18	1.44	0.08
8/2/2017	Methanol	80	ST01	18	1.31	0.07
8/2/2017	VOC	100	ST01	18	26.16	1.45
8/2/2017	VOC	80	ST01	18	24.85	1.38
8/29/2017	Acetaldehyde	100	ST01	18	0.76	0.04
8/29/2017	Formaldehyde	100	ST01	18	1.20	0.07
8/29/2017	Methanol	100	ST01	18	1.33	0.07
8/29/2017	VOC	100	ST01	18	22.33	1.24
8/30/2017	Acetaldehyde	80	ST01	18	0.73	0.04
8/30/2017	Acetaldehyde	70	ST01	18	0.61	0.03
8/30/2017	Formaldehyde	80	ST01	18	1.17	0.07

8/30/2017	Formaldehyde	70	ST01	18	0.77	0.04
8/30/2017	Methanol	80	ST01	18	2.20	0.12
8/30/2017	Methanol	70	ST01	18	2.33	0.13
8/30/2017	VOC	80	ST01	18	27.65	1.54
8/30/2017	VOC	70	ST01	18	22.56	1.25

Test Date	Pollutant Tested	Percentage Hardwood	Source Tested	Operating Rate (ODT/hr)	Average Emission Rate (lb/hr)	Emission Factor (lb/ODT)
7/13/2016	VOC	100%	PM05	18	2.42	0.134
7/12/2016	Formaldehyde	100%	PM05	18	0.01	0.001
7/12/2016	Methanol	100%	PM05	18	0.10	0.006
7/12/2016	Acetaldehyde	100%	PM05	18	0.02	0.001

Test Date	Pollutant Tested	Percentage Hardwood	Source Tested	Operating Rate (ODT/hr)	Average Emission Rate (lb/hr)	Emission Factor (lb/ODT)	
7/13/2016	VOC	100%	HM04	18	1.65	0.092	
7/13/2016	Formaldehyde	100%	HM04	18	0.01	0.001	
7/13/2016	Methanol	100%	HM04	18	0.04	0.002	OTM-26 Wood produ
7/13/2016	Acetaldehyde	100%	HM04	18	0.01	0.001	

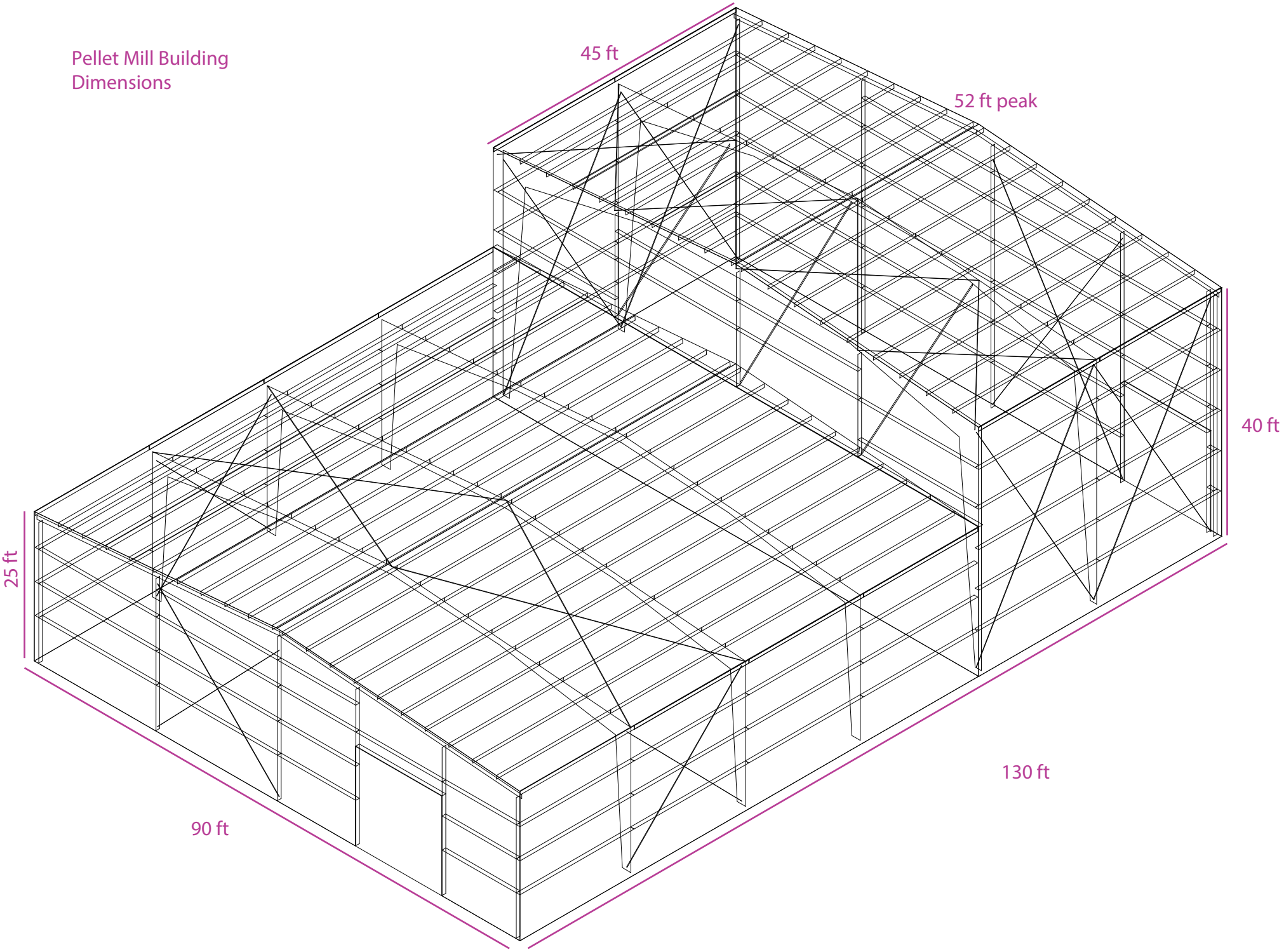
Test Date	Pollutant Tested	Percentage Hardwood	Source Tested	Operating Rate (ODT/hr)	Average Emission Rate (lb/hr)
7/13/2016	VOC	100%	SE01	18	7.61
7/13/2016	Formaldehyde	100%	SE01	18	0.02
7/13/2016	Methanol	100%	SE01	18	0.12
7/13/2016	Acetaldehyde	100%	SE01	18	0.02

Emission Factor (lb/ODT)	
0.423	
0.001	
0.007	OTM-26 Wood products protocol 1
0.001	

Test Date	Pollutant Tested	Percentage Hardwood	Source Tested	Operating Rate (ODT/hr)	Average Emission Rate (lb/hr)	Emission Factor (lb/ODT)
7/13/2016	VOC	100%	SE04	18	0.86	0.048
7/13/2016	Formaldehyde	100%	SE04	18	0.005	0.000
7/13/2016	Methanol	100%	SE04	18	0.03	0.002
7/13/2016	Acetaldehyde	100%	SE04	18	0.005	0.000

Location of pellet mill addition:

Pellet Mill Building
Dimensions



Aircon Corporation
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Website: www.aircon-corporation.com

Compressed Air Square "BV" BIN VENTS

EFFECTIVE: *January 1, 2001*
SUPERSEDES: January 1, 2000

STANDARD FEATURES

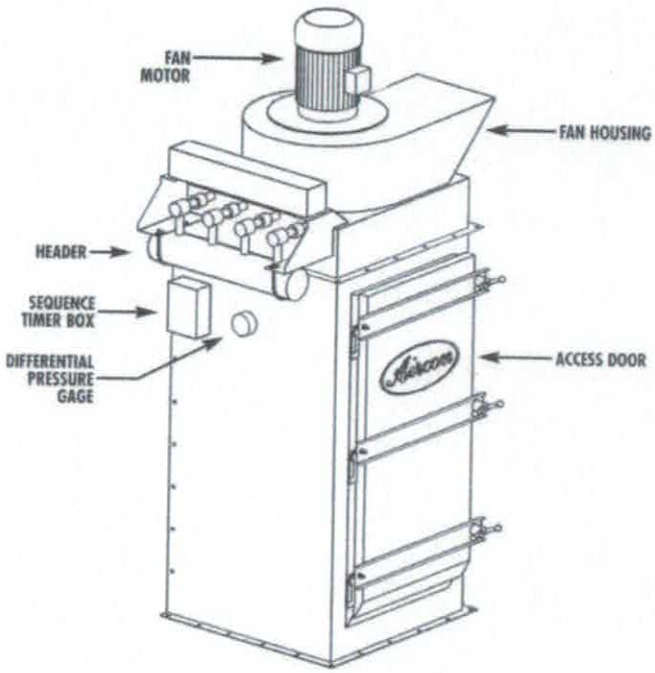
- 12 gauge mild steel bolted construction to operate up to +/- 17" [wg]
- Lifting lugs on clean air plenum
- 4" or 6" SCH 40 pipe header for compressed air reservoir
- Internal compressed air hard piping
- 3/4" or 1" diaphragm valves
- Blower outlet and header orientation per job
- NEMA 4 sequence timer enclosure
- 3/4" NPT thermocouple coupling in plenum
- Magnehelic® differential pressure gauge
- Unit painted Aircon gray with rust-inhibitive primer on both interior and exterior surfaces
- Fabricated grating in bottom of unit to facilitate bag removal
- 16 oz. singled polyester, copper wire grounded, bottom-removal bags with quick-release, stainless steel clamp bands
- Bottom-removal galvanized bag cages with aluminum venturies
- Hinged access door on side wall
- Two sets of installation & maintenance manuals

OPTIONAL FEATURES

- Explosion relief panels
- NEMA 9 explosion-proof solenoids, motors, and enclosures
- Other types of filter media
- Epoxy paint or regular paint per specified color
- Thermocouple to monitor temperature of discharge air
- Photohelic® differential pressure gauge
- Compressed air header service platform
- Stainless steel or epoxy-coated carbon steel bag cages
- Sprinkler system installed in plenum

OPERATING REQUIREMENTS

- 115 VAC, 60 Hz. single phase current required for sequence timer with adjustable on time (0.05 to 0.50 sec.) and off time (1.5 to 30 sec.)
- 230/460 VAC, 60 Hz. three phase current required for TEFC motor mounted on top of fan housing
- 90 to 100 PSIG clean, dry, uncontaminated compressed air supply required



HORIZONTAL Discharge under Roof (both units)

Model #	Number of Bags	Length of Bags	Filter Media Cloth Area (sq. ft.)	Compressed Air Required (SCFM)	Shipping Wt. (w/o Options) (lbs.)	CAPACITY (cubic feet air/min.) at given pressures (INCHES WATER GAGE)			MAXIMUM at can Velocity 400 feet/min.
						4"	5"	6"	
BV 9-4	9	4'-0"	54.2	3.8	610	930	776	560	1400
BV 9-6	9	6'-0"	81.3	3.8	720	1367	1141	823	1400
BV 16-4	16	4'-0"	96.3	5.1	830	1620	1365	985	2100
BV 16-6	16	6'-0"	145	5.1	1070	1850	1560	1125	2100
BV 16-8	16	8'-0"	193	5.1	1220	2073	1756	1267	2100
BV 25-6	25	6'-0"	226	6.4	1350	2360	2196	2022	3400
BV 25-8	25	8'-0"	301	6.4	1560	3147	2928	2697	3400
BV 36-6	36	6'-0"	325	7.7	1980	3670	3544	3425	5200
BV 36-8	36	8'-0"	434	7.7	2210	4545	4390	4240	5200
BV 36-10	36	10'-0"	542	7.7	2420	5420	5234	5057	5200
BV 49-6	49	6'-0"	443	8.9	2400	5810	5608	5420	7000
BV 49-8	49	8'-0"	590	8.9	2690	6520	6280	6070	7000
BV 49-10	49	10'-0"	738	8.9	2970	7200	6950	6720	7000

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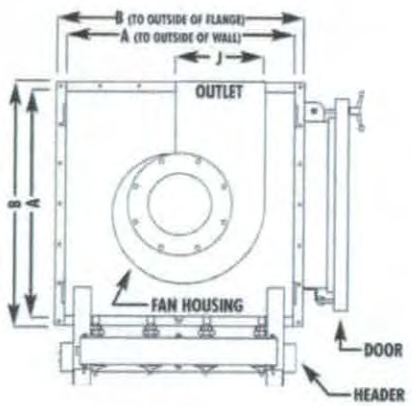
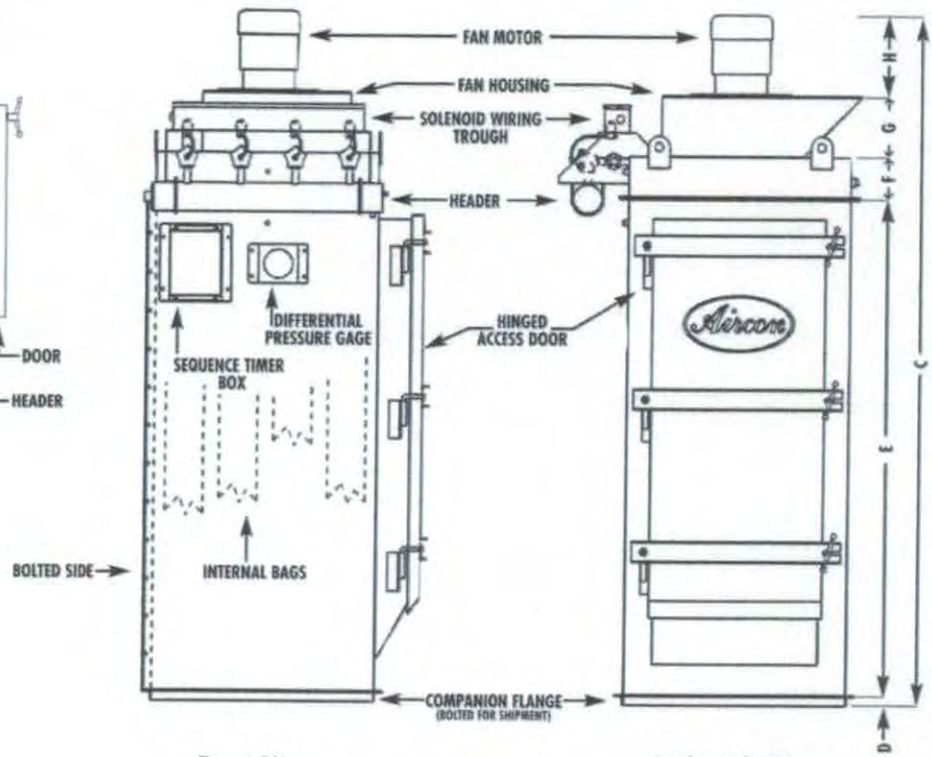
Compressed Air Square "BV" BIN VENTS

EFFECTIVE: **January 1, 2001**
SUPERSEDES: January 1, 2000



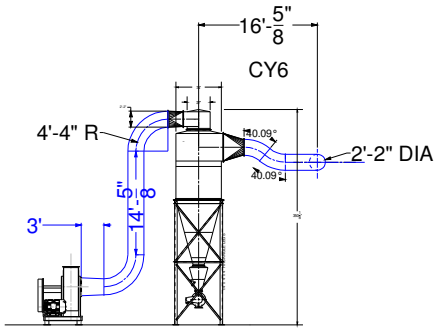
Top View



Front View

Right Side View

Model #	A	B	C	D	E	F	G	H	J	Motor Size HP
BV 9-4	27"	30"	6'-8 1/8"	1 1/2"	54"	6 1/2"	7 15/16"	10 3/16"	13 3/4"	2
BV 9-6	27"	30"	8'-8 1/8"	1 1/2"	6'-6"	6 1/2"	7 15/16"	10 3/16"	13 3/4"	2
BV 16-4	35"	38"	7'-0 1/8"	1 1/2"	54"	6 1/2"	9 13/16"	12 5/16"	13 3/4"	3
BV 16-6	35"	38"	9'-0 1/8"	1 1/2"	6'-6"	6 1/2"	9 13/16"	12 5/16"	13 3/4"	3
BV 16-8	35"	38"	11'-0 1/8"	1 1/2"	8'-6"	6 1/2"	9 13/16"	12 5/16"	13 3/4"	3
BV 25-6	44"	47"	9'-0 1/4"	1 1/2"	6'-6"	6 1/2"	8 15/16"	13 5/16"	16 7/8"	5
BV 25-8	44"	47"	11'-0 1/4"	1 1/2"	8'-6"	6 1/2"	8 15/16"	13 5/16"	16 7/8"	5
BV 36-6	54"	57"	10'-0 3/4"	1 1/2"	6'-6"	12"	13 3/8"	15 7/8"	20 1/2"	10
BV 36-8	54"	57"	12'-0 3/4"	1 1/2"	8'-6"	12"	13 3/8"	15 7/8"	20 1/2"	10
BV 36-10	54"	57"	14'-0 3/4"	1 1/2"	10'-6"	12"	13 3/8"	15 7/8"	20 1/2"	10
BV 49-6	5'-4"	5'-8"	10'-3 5/8"	2"	6'-6"	12"	14 3/8"	17 1/4"	20 1/2"	15
BV 49-8	5'-4"	5'-8"	12'-3 5/8"	2"	8'-6"	12"	14 3/8"	17 1/4"	20 1/2"	15
BV 49-10	5'-4"	5'-8"	14'-3 5/8"	2"	10'-6"	12"	14 3/8"	17 1/4"	20 1/2"	15

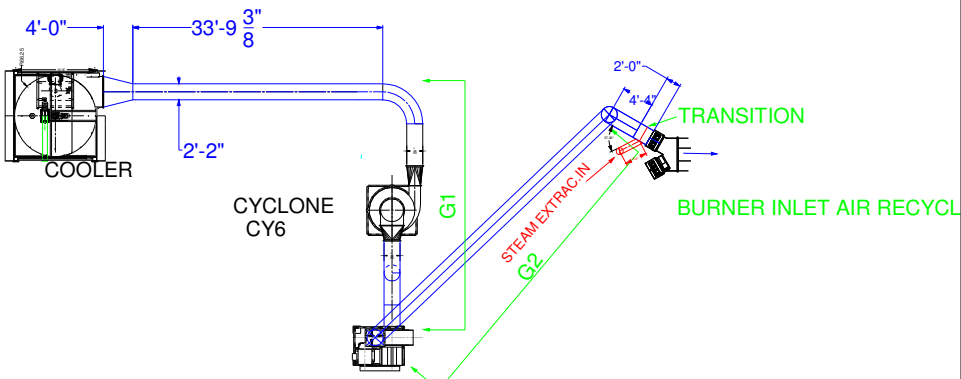


IF4
18,000 CFM
SECTION G1

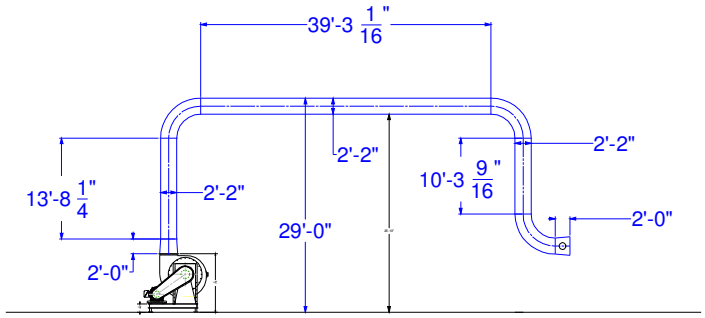
DUCT REQUIRED
TRANSITION, COOLER TO ROUND
14" X 50" TO 26" DIA., 4 FT LONG
26" DIA.
HORIZONTAL, 33' 9 3/8", 39' 3 1/16"
TRANSITION , 26" DIA. TO 29" DIA., 3' LONG (FAN INLET)
TRANSITION 26" DIA TO 26' x 35" , 2' LONG (BURNER INLET)
VERTICAL, 14' 5/8", 13' 8 1/4", 10' 3 9/16"
2' LONG
TRANSITION, 26" DIA. TO 24 5/8" X 28 1/8", (FAN OUTLET)

ELBOWS, 6 REQUIRED
90 DEG.
52" CENTER LINE RADIUS

ELBOWS, 2 REQUIRED
40.09 DEG.
52" CENTER LINE RADIUS



COOLER DUCT PLAN VIEW



SECTION G2

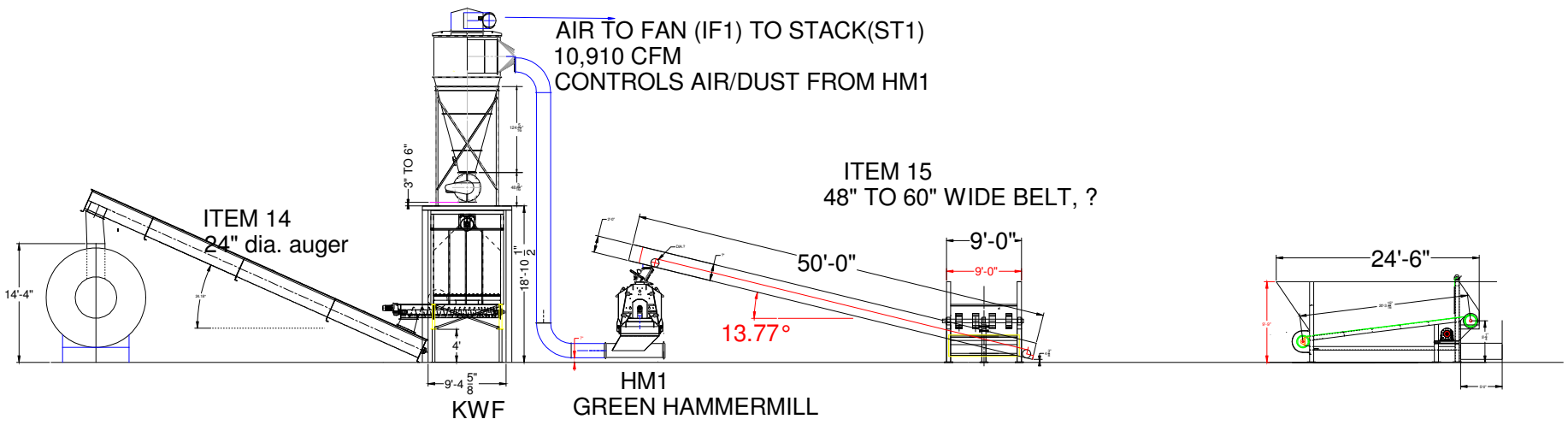
CHARLES KNIGHT
CONSULTING ASSOCIATES, LLC
4232 TILLMAN BLUFF ROAD
VALDOSTA, GA., 31602
843-901-0262 CHARLES
770-856-0240 CHASE
charlesknight8@yahoo.com

CYCLONE
CY1

AIR TO FAN (IF1) TO STACK(ST1)
10,910 CFM
CONTROLS AIR/DUST FROM HM1

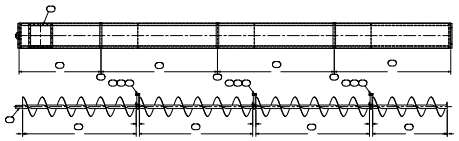
ITEM 14
24" dia. auger

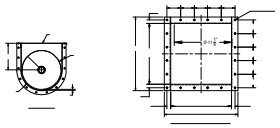
ITEM 15
48" TO 60" WIDE BELT, ?



KWF

HM1
GREEN HAMMERMILL





CHARLES KNIGHT
CONSULTING ASSOCIATES, LLC
4232 TILLMAN BLUFF ROAD
VALDOSTA, GA., 31602
843-901-0262 CHARLES
770-856-0240 CHASE
charlesknight8@yahoo.com

DATE: 6/12/23	DRYER -HAMMERMIL- HOPPER, ELEV.
DRAWN BY:	CHARLES KNIGHT
DR. #FP009PR22	FORDSVILLE PELLET CO.
R. DATE: 6/21/23	FORDSVILLE KENTUCKY
SCALE: PROP. ADD, BURNER,CONV. MODS, ETC.	

CYCLONE
CY5
CONTROLS AIR/WOOD DUST FROM HM2

CYCLONES
CONTOLS BURNER DRYER

CY2 CY3 CY4

56.4 ft/ sec

ITEM 13

STACK (ST1)

AIR FROM CY1/IF1

THIS AIR RECYCLES
TO BURNER COMBUSTION

SCHLAGEL ITEM 10-11

IND. FAN
IF3
10,910 CFM

HM2
DRY HAMMERMILL

IND. FAN
IF2
31590 CFM

ADD LEGS AT 10 PLACES

CHARLES KNIGHT
CONSULTING ASSOCIATES, LLC
4232 TILLMAN BLUFF ROAD
VALDOSTA, GA., 31602
843-901-0262 CHARLES
770-856-0240 CHASE
charlesknight8@yahoo.com

DATE: 5/24/23	DRY END ELEV.,ITEMS 10-11	
DRAWN BY:	CHARLES KNIGHT	
DR. #FP003PR24	FORDSVILLE PELLET CO.	
SCALE: PROP.	FORDSVILLE KENTUCKY	
R. DATE: 7/20/23	MODIFIED ITEM 10-11 CONV.	10/23: STAND MODIFIED, FOR K VALVE

88" CYCLONE & FRAME
DUNAWAY FORDSVILLE GREEN SYSTEM
SCHUTTE HAMMERMILL – BUFFALO, NY

THIS DRAWING IS THE PROPERTY OF

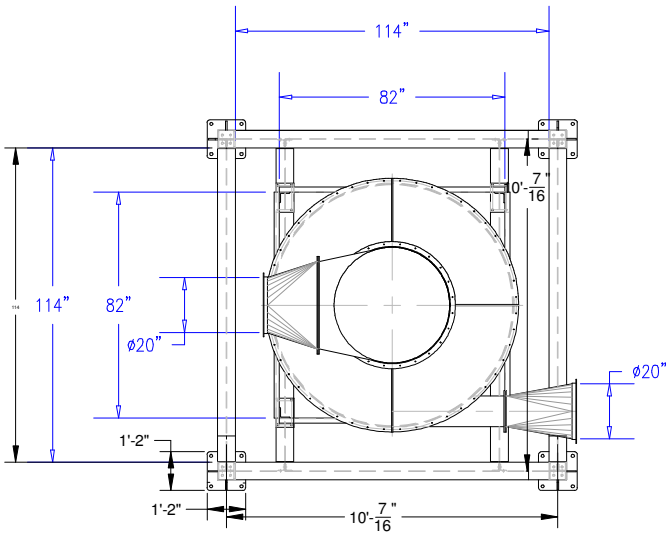
KOGERAIR
P.O. BOX 4668
MARTINSVILLE, VA 24115

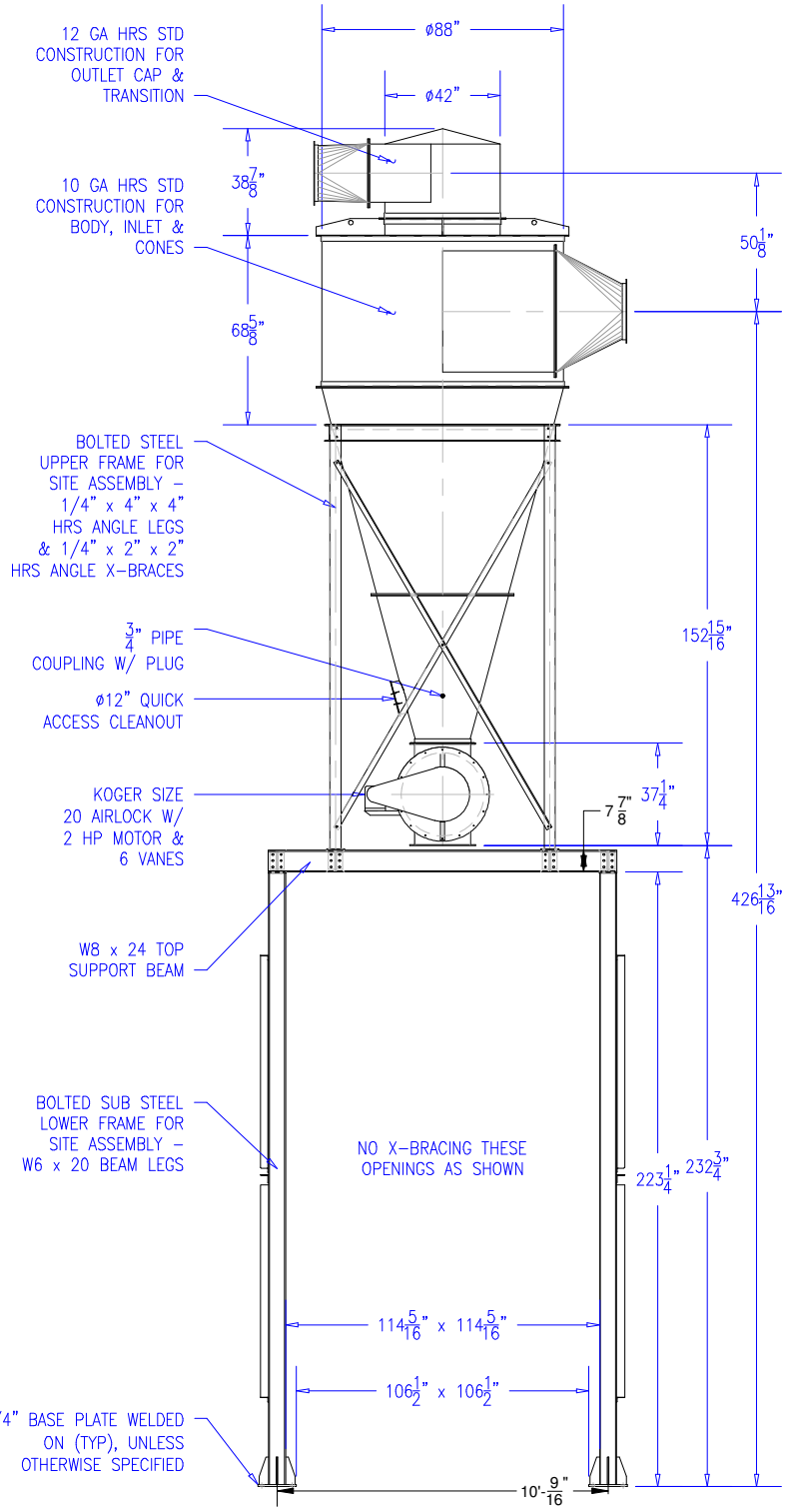
DR. BY: JLH			DWG: CAD-11803
DATE: 09/18/23	SCALE: 1/4" = 1'	JOB NO. 11803	SHEET 1

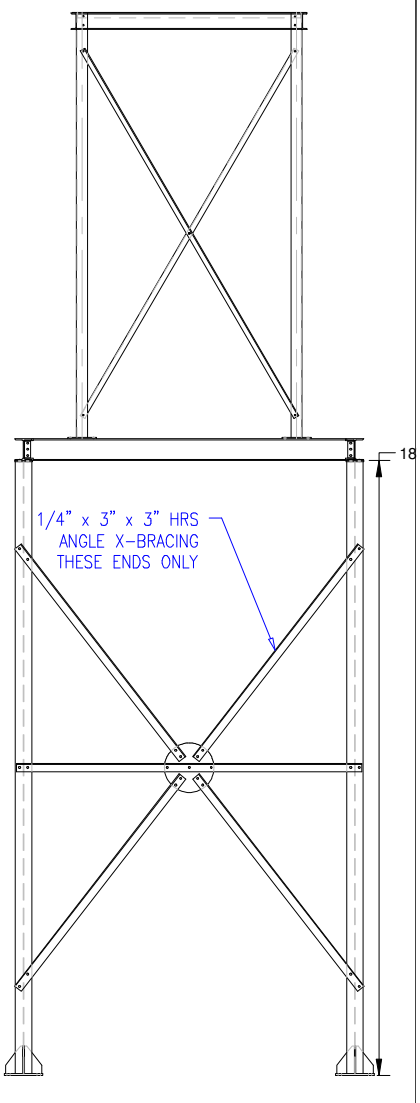
COMMENTS/CORRECTIONS:
DATE:
APPROVED BY:

NOT FOR CONSTRUCTION
FOR APPROVAL ONLY

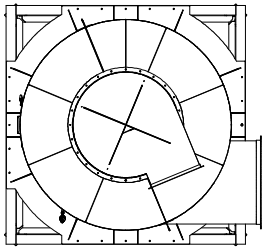
CY1 AND CY5

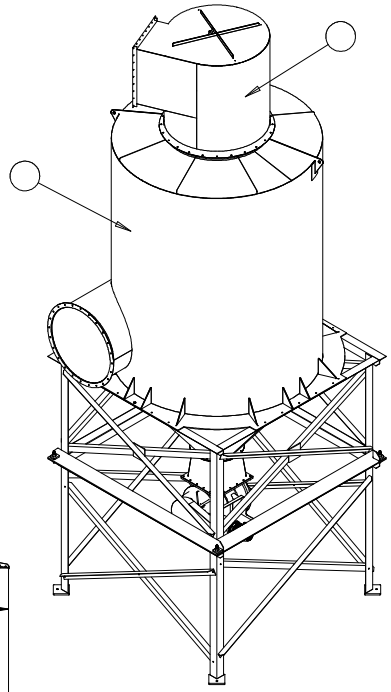


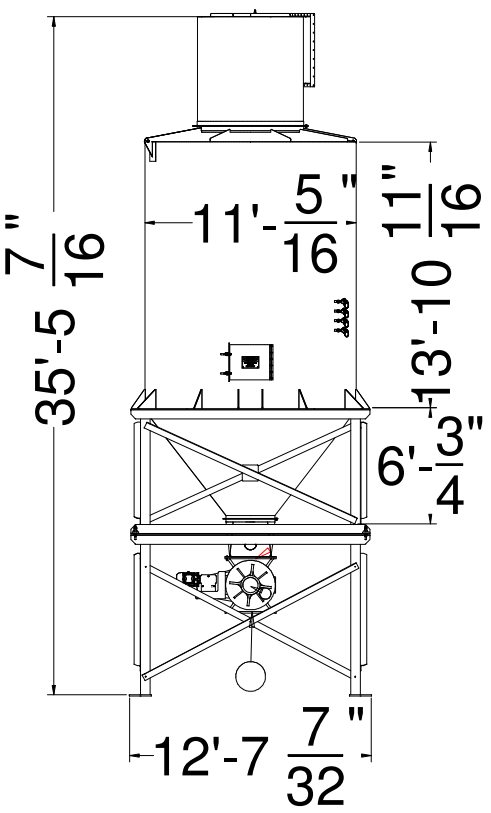


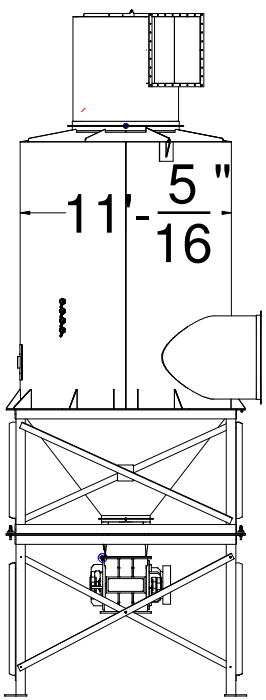


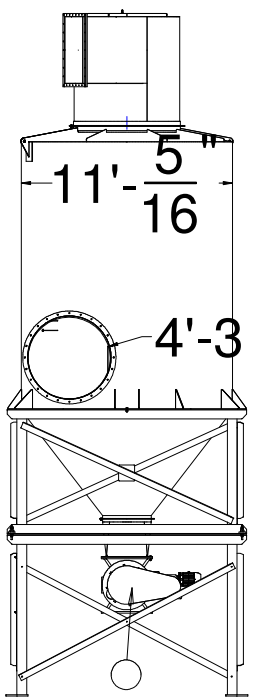
CY2





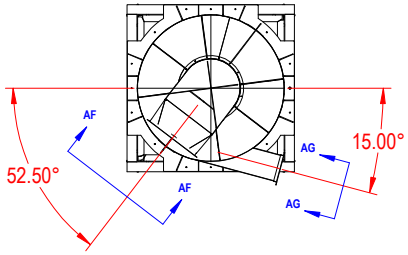


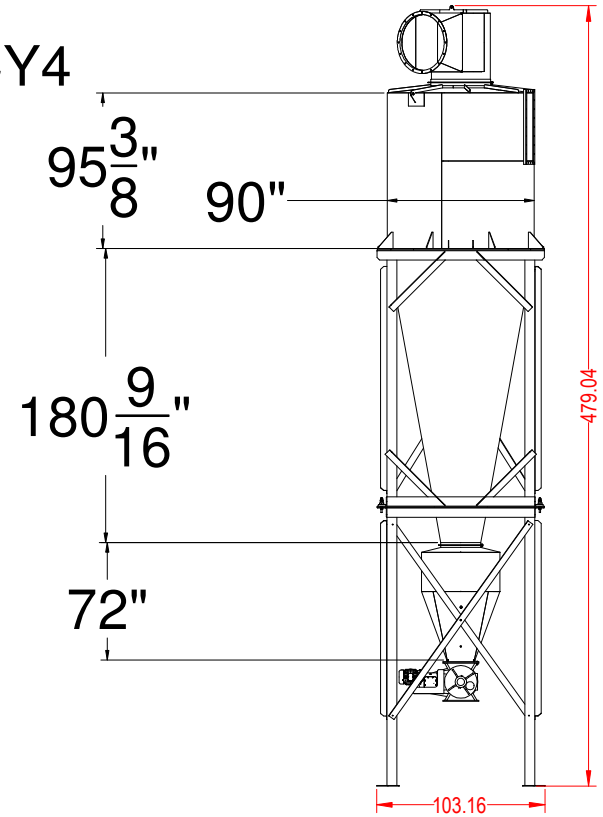


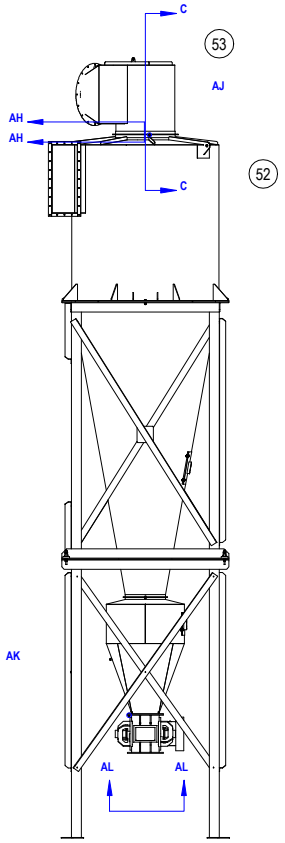


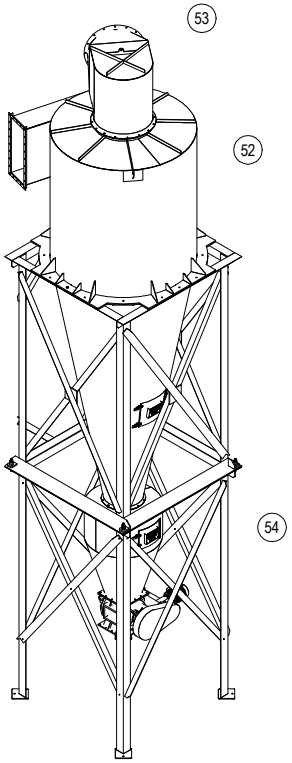
UZELAC INDUSTRIES INC.

CY3 AND CY4



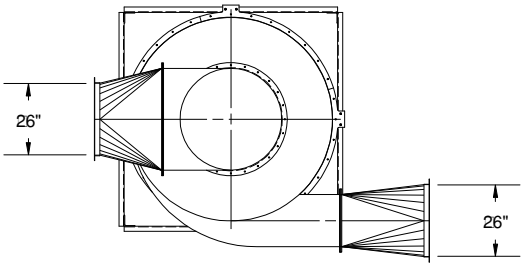




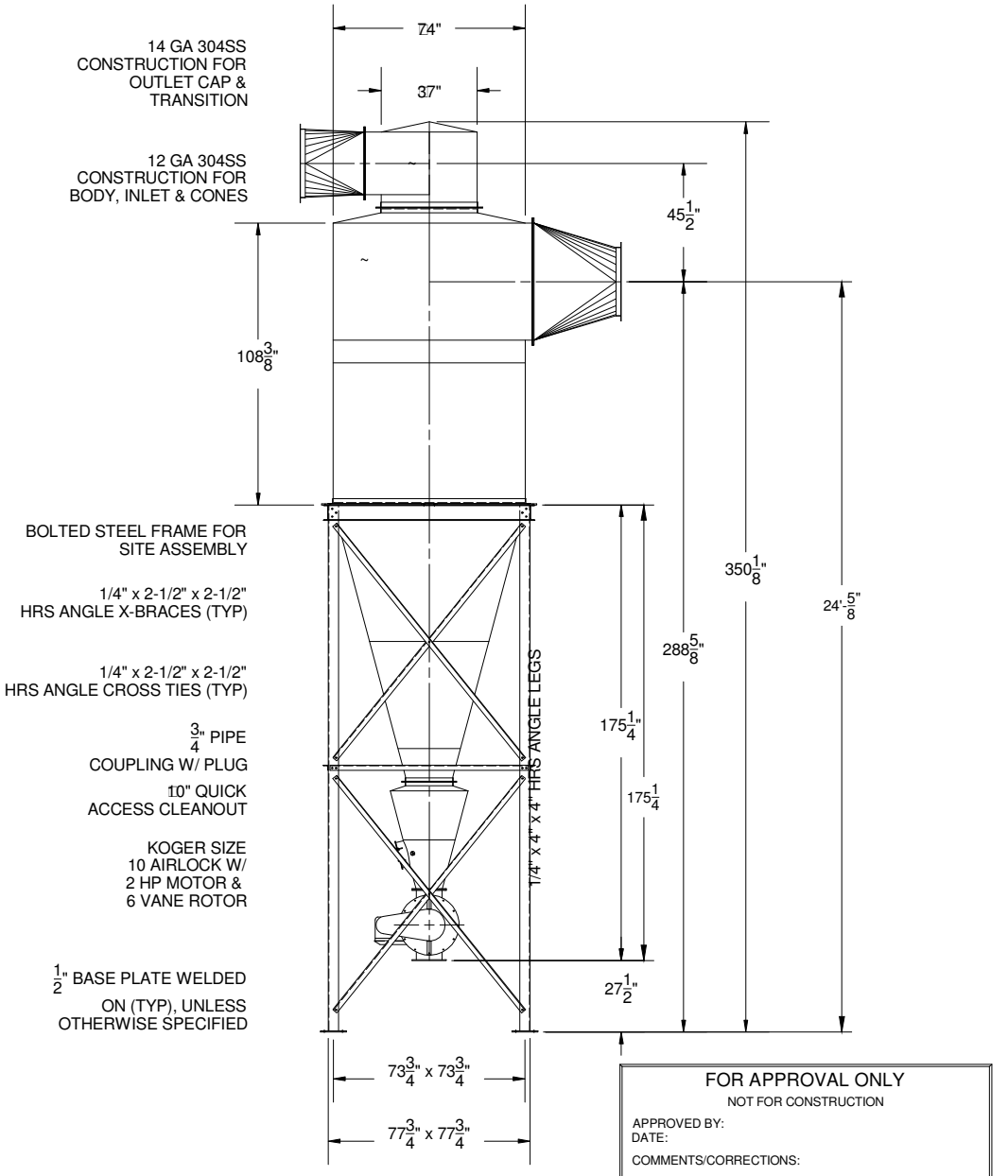


RELEASED

UZELAC INDUSTRIES INC.	DRAWN: JJK 8/25/2023	CUSTOMER: DUNAWAY TIMBER FORDSVILLE, KY	PROJECT DESCRIPTION: TPD-13500 WOOD CHIP DRYING SYSTEM	PROJECT: SO1997
	CHECKED: JTF 8/25/2023	THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF UZELAC INDUSTRIES INC AND IT MUST NOT BE REPRODUCED, USED OR DISCLOSED, WHOLE OR IN PART WITHOUT WRITTEN AUTHORIZATION FROM UZELAC INDUSTRIES INC. IT IS SUBJECT TO RETURN UPON DEMAND.	DWG. NO: 135-013	SCALE: 1:38 DWG SIZE: D
			SHEET DESCRIPTION: CYCLONE 1	SHEET: 12 OF 14 REV: -



CY6



FOR APPROVAL ONLY

NOT FOR CONSTRUCTION

APPROVED BY:
DATE:

COMMENTS/CORRECTIONS:

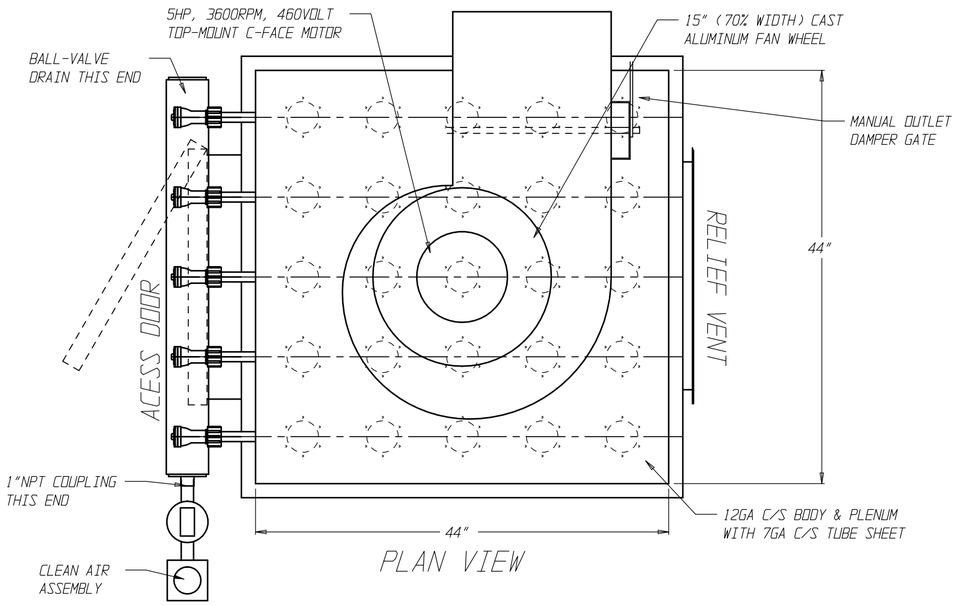
H74 304SS CYCLONE & SUPPORT FRAME

DUNAWAY COOLING SYSTEM

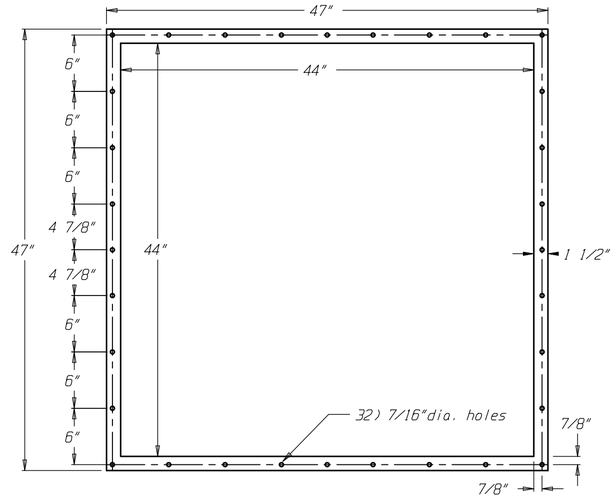
SHCUTTE HAMMERMILL - BUFFALO, NY

P.O. BOX 4668
MARTINSVILLE, VA 24115

DR. BY: JLH			DWG: CAD-11887
DATE: 10/30/23	SCALE: 1/4" = 1'	JOB NO. 11887	SHEET 1



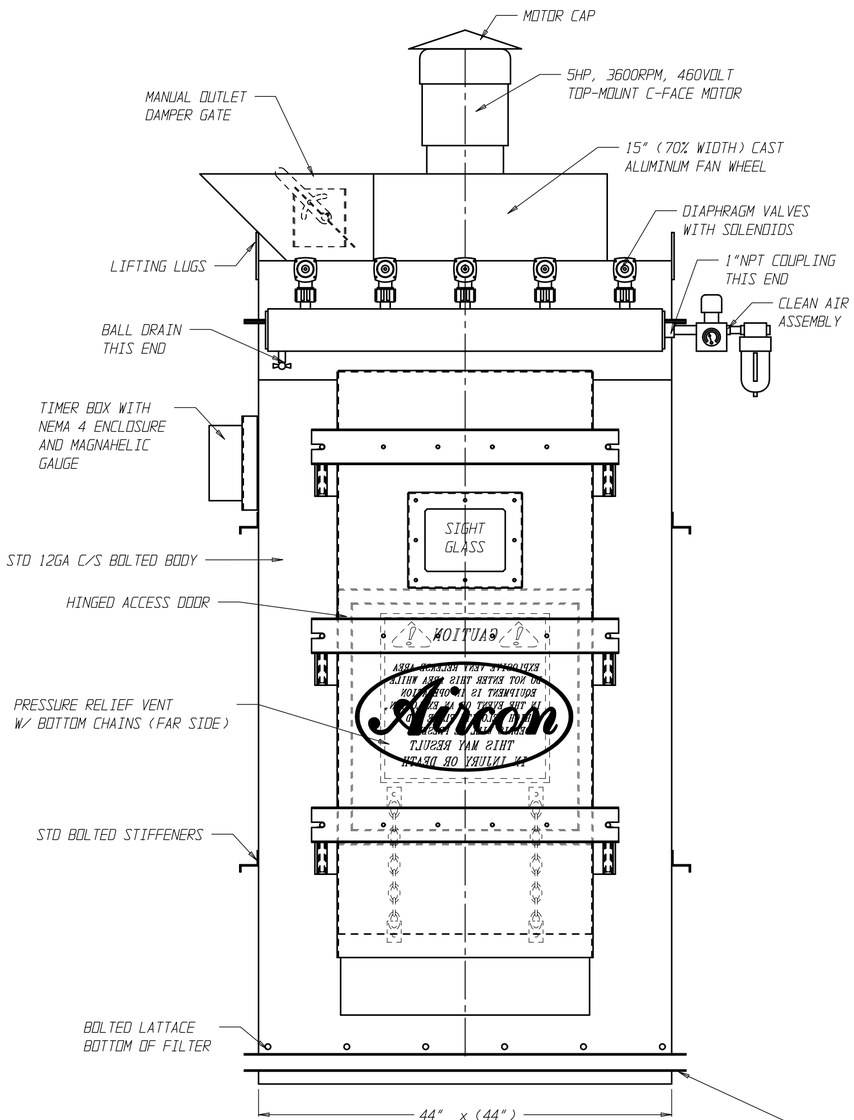
PLAN VIEW



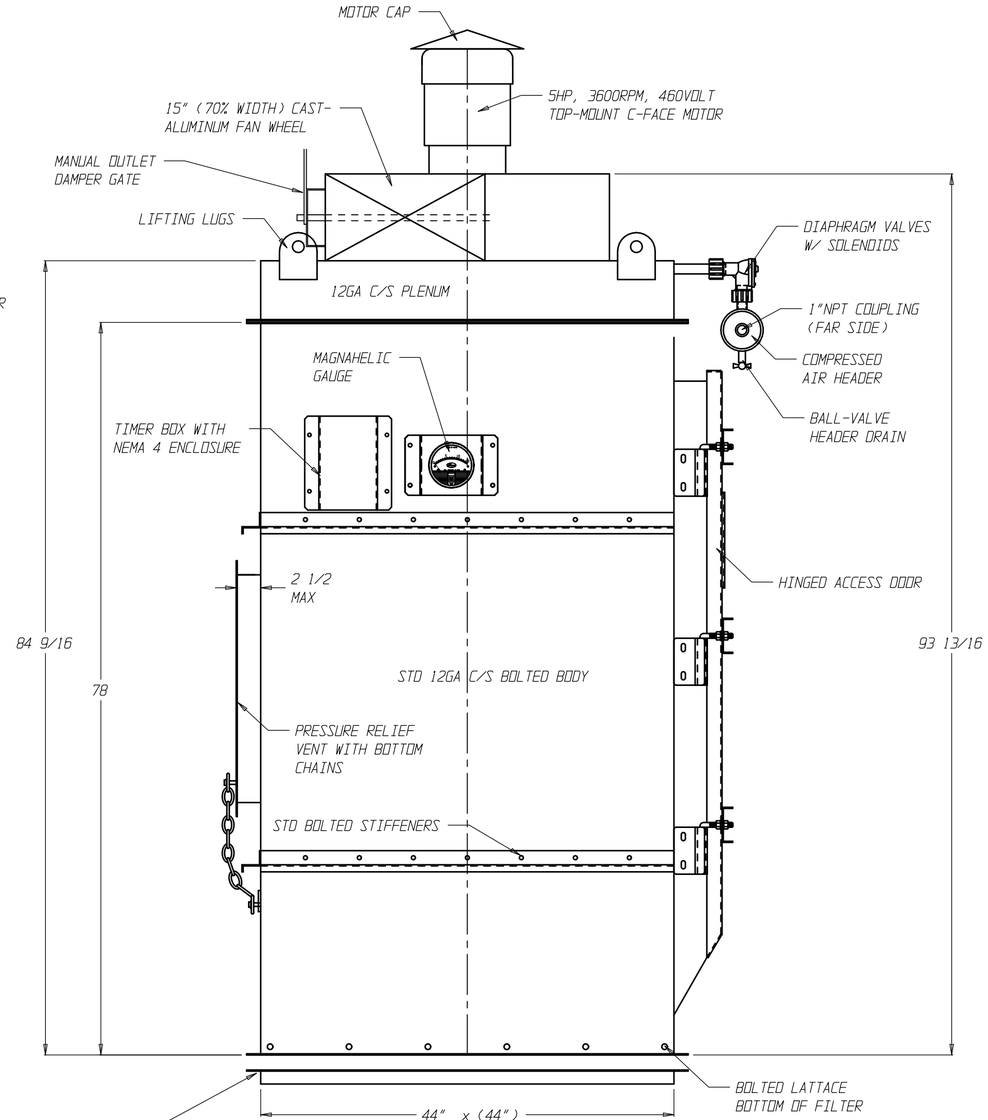
FILTER FLANGE DETAIL

NOTES:

1) BV25-6 TO HAVE 6'- 0" LG. BAGS & GALVANIZED CAGES 16oz. OLEOPHOBIC COATED (BOTTOM REMOVAL)
2) FILTER HOUSING CONSTRUCTED FROM 12GA. CARBON STEEL
3) SEQUENCE TIMER TO BE NEMA-4 AND WIRED TO SOLENOIDS PRIOR TO SHIPMENT FROM AIRCON. (ON TIME = 50 TO 500 MILLISECONDS OFF TIME = 1.5 TO 30 SECONDS)
4) PAINT: INTERIOR = PRIME ONLY
   EXTERIOR = PAINT AND PRIME (AIRCON GRAY)
5) EQUIPMENT WEIGHT= BV25-6 (1,430LBS.)
6) AIRCON TO SUPPLY 5HP 3600RPM 230/460VOLT MOTOR
7) UNIT TO HAVE 15" (70% WIDTH) CAST ALUMINUM FAN WHEEL
8) UNIT REQUIRES 6.4 SCFM OF CLEAN DRY UNCONTAMINED COMPRESSED AIR @ 90 TO 100 PSIG
9) AIRCON TO SUPPLY CLEAN AIR ASSEMBLY
10) FAN RATED FOR 2,022acfm @ 6" TO 2,400acfm @ 4"



FRONT VIEW



LEFT SIDE

APPROVAL PRINT

- ☐ APPROVED AS SUBMITTED
- ☐ APPROVED AS NOTED
- ☐ REVISE AND RESUBMIT
- ☐ APPROVED IN CONCEPT ONLY

SIGNED: _____ DATE: _____

NO.	REVISION - DESCRIPTION	DATE	BY

CORPORATION
P.O. BOX 80446
MEMPHIS, TN 38108-0446
PHONE:(901) 452-0230
FAX: (901) 452-0264
E-MAIL:doranp@aircon-corporation.com

NORTH AMERICAN
PELLETING EQUIP. SALES
BV-25-6 FILTER

DRAWN	R. HOLDER
APPROVED	
SCALE	1" = 1'- 0"
DATE	10/11/23
PROJ.NO.	2023-9403
DWG. NO.	2023-9403-AP-01

SIZE 11 FAN 304SS CONSTRUCTION - CW UBD - (1) REQUIRED

3168 CFM @ 14" SP, 2,871 RPM @ 14.09 BHp
1/4" 304SS HOUSING, FAN BLADES
?11" FLANGED INLET
OVERSIZED 304SS 1-15/16" SHAFT
OVERSIZED 1-15/16" BEARINGS
MOUNTED ON MILD STEEL UNITARY BASE FRAME (BASE PLATES SHIPPED LOOSE)
STD. ACCESS DOOR @ 3:00
STD. DRAIN WITH PLUG
SHAFT SEAL
TECHTOP 20 Hp TEFC MOTOR
256T SLIDE BASE

DRIVES:
FAN: 4/3V-6.5 SHEAVE WITH 2517 x 1-15/16 BUSHING
MOTOR: 4/3V-10.6 SHEAVE WITH 2517 x 1-5/8 BUSHING
BELTS: 4 - 3VX750

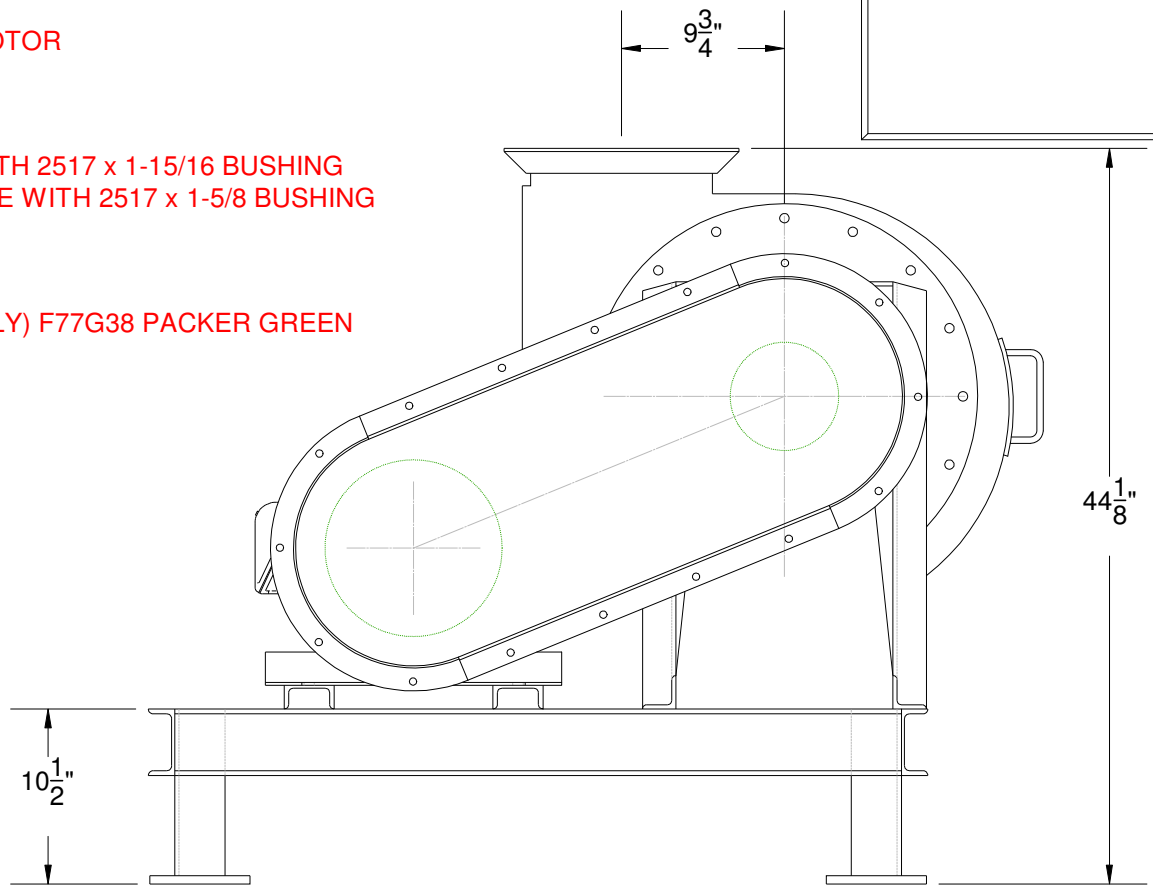
PAINT: (FRAME BASE ONLY) F77G38 PACKER GREEN

FOR APPROVAL ONLY

NOT FOR CONSTRUCTION

APPROVED BY:
DATE:

COMMENTS/CORRECTIONS:



IF5
STEAM EVACUATION FAN
3168 CFM
THIS AIR RECYCLES TO BURNER/DRYER

SIZE 11 CW360 304SS FAN
DUNAWAY STEAM EVAC SYSTEM
SCHUTTE HAMMERMILL - BUFFALO, NY

P.O. BOX 2098
MARTINSVILLE, VA 24113

DR. BY: JLH			DWG: CAD-11899
DATE: 11/08/23	SCALE: 1" = 1'	JOB NO. 11899	SHEET 1 OF

NOTES:

1. INSTALL CONTRACTOR RESPONSIBLE FOR:
   - DUCTWORK SUPPORTS.
   - HIGH TEMP RED RTV CAULK AT ALL CONNECTIONS.
   - FLOOR SHIMS TO ALIGN EQUIPMENT (CRITICAL).
   - ANCHOR BOLTS.
2. DUCTWORK SUPPLIED WITH A LOOSE RING ARE INTENDED TO BE FIELD CUT AND WELDED AS NEEDED.
3. PROVIDE ENOUGH FLEX CONDUIT TO ALLOW FOR THE REMOVAL OF THERMOCOUPLES.
4. FUEL TO BURNER BASED ON A HEATING VALUE OF 8,000 BTU PER POUND OF DRIED WOOD CHIPS
5. GA IS PRELIMINARY AND SUBJECT TO CHANGE BASED ON FURTHER INFORMATION FROM CUSTOMER AND/OR VENDORS.

APPROVAL PRINT

□ APPROVED - PROCEED WITH PRODUCTION AS DRAWN

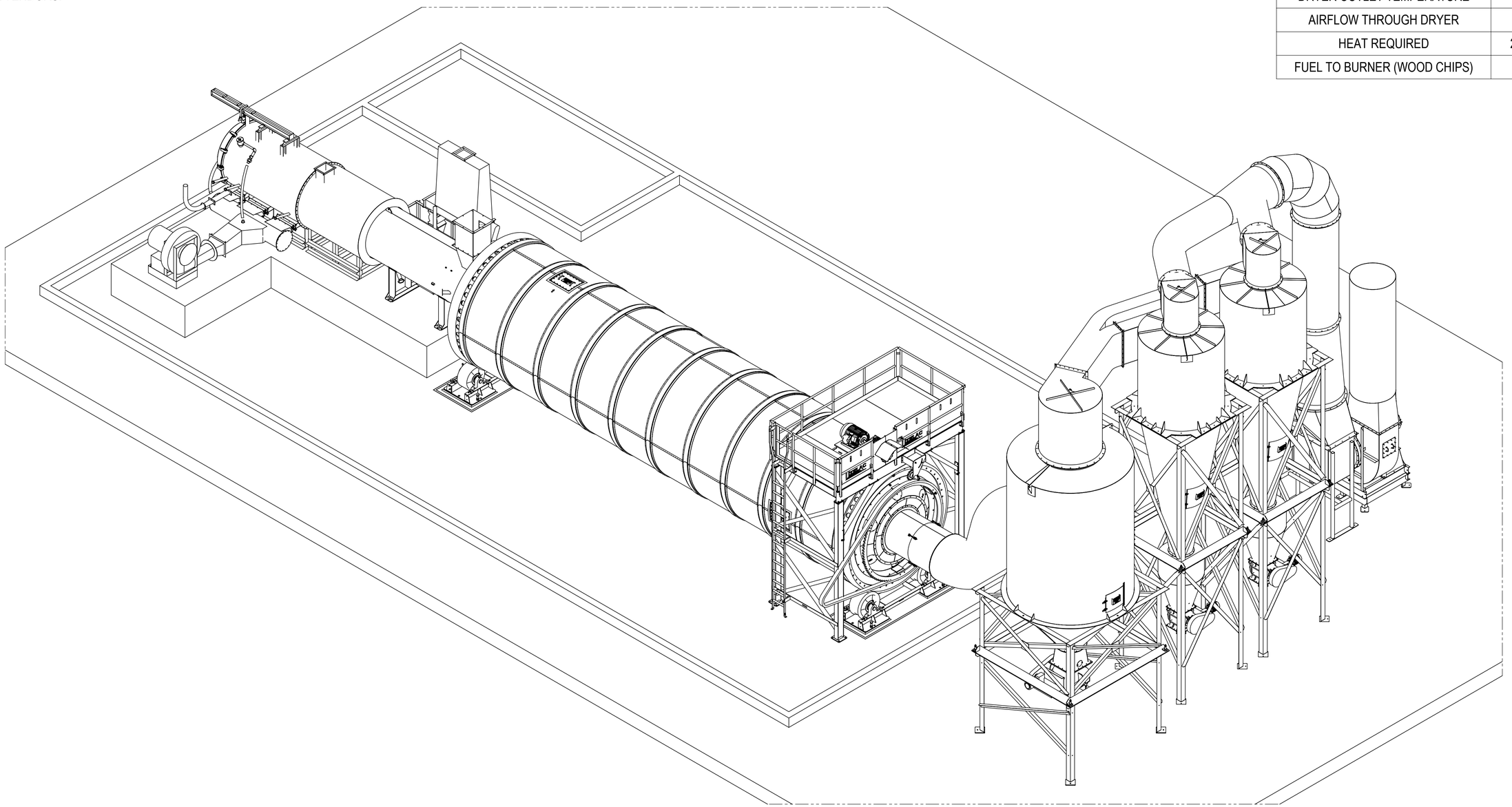
□ APPROVED w/REVISIONS NOTED - PROCEED WITH PRODUCTION

□ NOT APPROVED - REVISE AS NOTED AND RESUBMIT

AUTHORIZED BY _____

AUTHORIZED DATE _____

DESIGNED FLOW RATE	
DRYER INPUT	40,000 #/HR @ 47% M.C.
DRYER OUTPUT (GROSS)	23,300 #/HR @ 9% M.C.
DRYER OUTPUT (NET TO STORAGE)	20,000 #/HR @ 9% M.C.
EVAPORATION	16,700 #/HR
DRYER INLET TEMPERATURE	725 - 825 DEG. F
DRYER OUTLET TEMPERATURE	180 - 200 DEG. F
AIRFLOW THROUGH DRYER	48,000 ACFM
HEAT REQUIRED	26.0 - 27.0 MM BTU/HR
FUEL TO BURNER (WOOD CHIPS)	3,300 LBS/HR

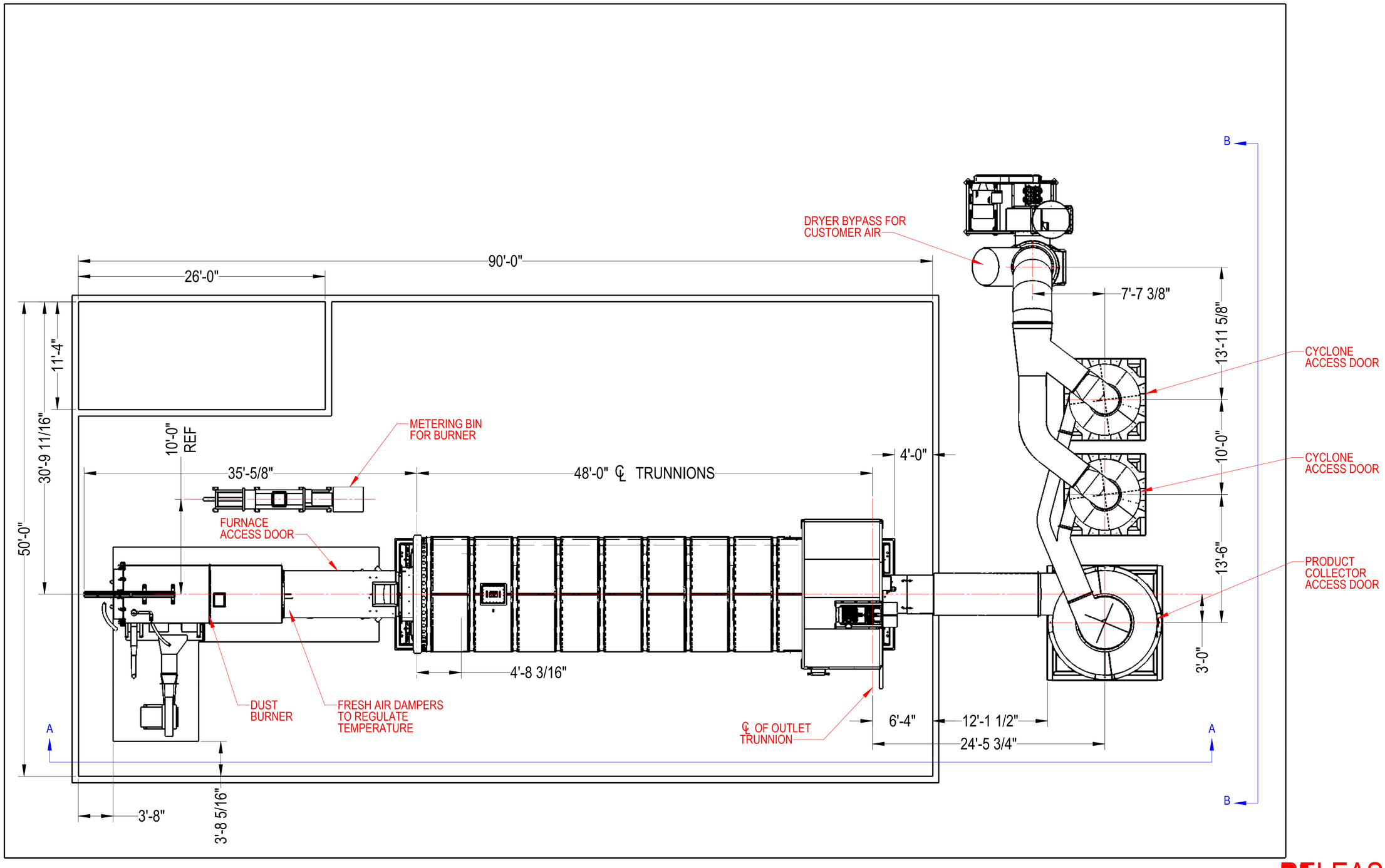


RELEASED

REVISIONS			
REV.	DESCRIPTION	DATE	REVISED BY
B	UPDATED LAYOUT AND CHANGED TO MCCONNELL BURNER	05/17/2023	JTF
A	ADDED CUSTOMER POINT SOURCE INFORMATION	05/17/2023	JTF
-	INITIAL RELEASE	04/26/2023	JTF

UZELAC INDUSTRIES INC.

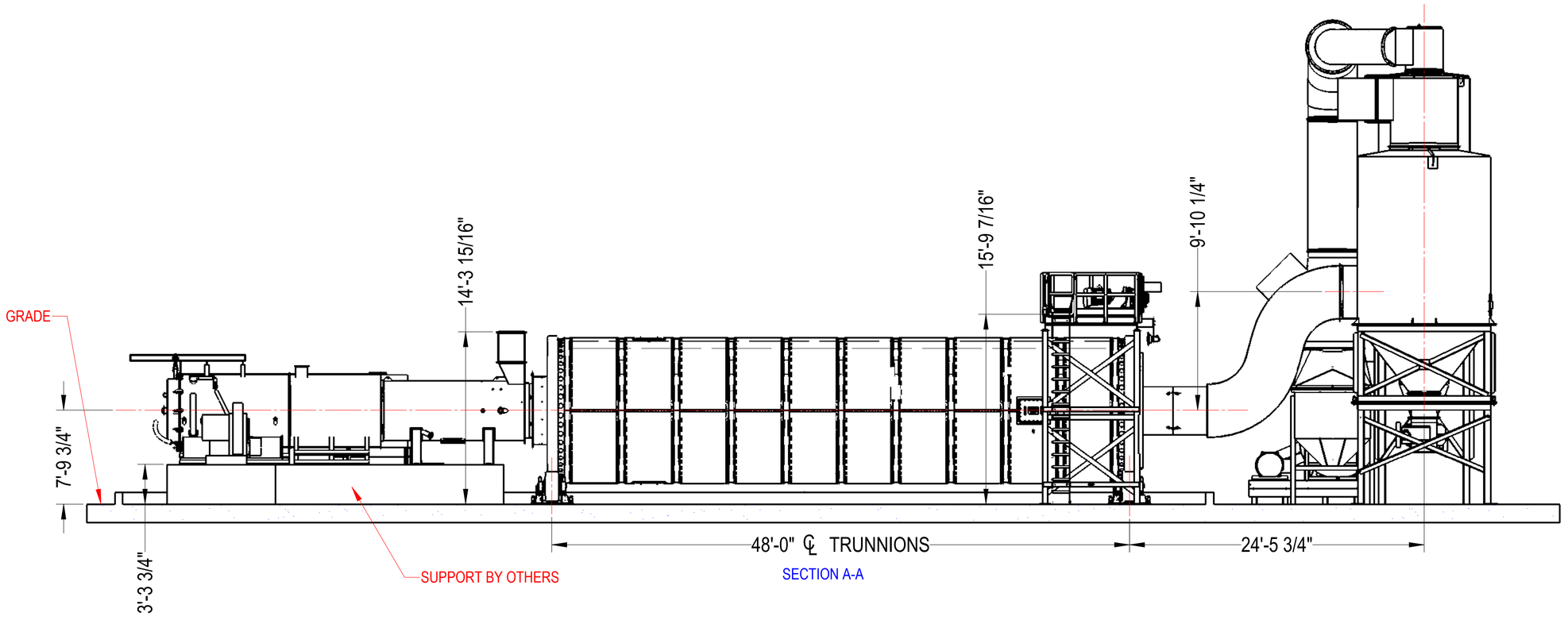
DRAWN: JTF	CUSTOMER: DUNAWAY TIMBER, FORDSVILLE, KY	PROJECT DESCRIPTION: TPD-13500 WOOD CHIP DRYER	PROJECT: SO1997	
DATE: 4/24/2023				
CHECKED: JTF		DWG. NO.: 57-685	SCALE: 1:54	DWG SIZE: D
DATE: 5/18/2023		SHEET DESCRIPTION: GENERAL ARRANGEMENT	SHEET: 1 OF 4	REV: B



RELEASED

UZELAC INDUSTRIES INC.

DRAWN: JTF	CUSTOMER: DUNAWAY TIMBER, FORDSVILLE, KY	PROJECT DESCRIPTION: TPD-13500 WOOD CHIP DRYER	PROJECT: SO1997	
DATE: 4/24/2023				
CHECKED: JTF	THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF UZELAC INDUSTRIES INC AND IT MUST NOT BE REPRODUCED, USED OR DISCLOSED, WHOLE OR IN PART WITHOUT WRITTEN AUTHORIZATION FROM UZELAC INDUSTRIES INC. IT IS SUBJECT TO RETURN UPON DEMAND.	DWG. NO. 57-685	SCALE 1:60	DWG SIZE D
DATE: 5/18/2023		SHEET DESCRIPTION: PLAN VIEW	SHEET 2 OF 4	REV B

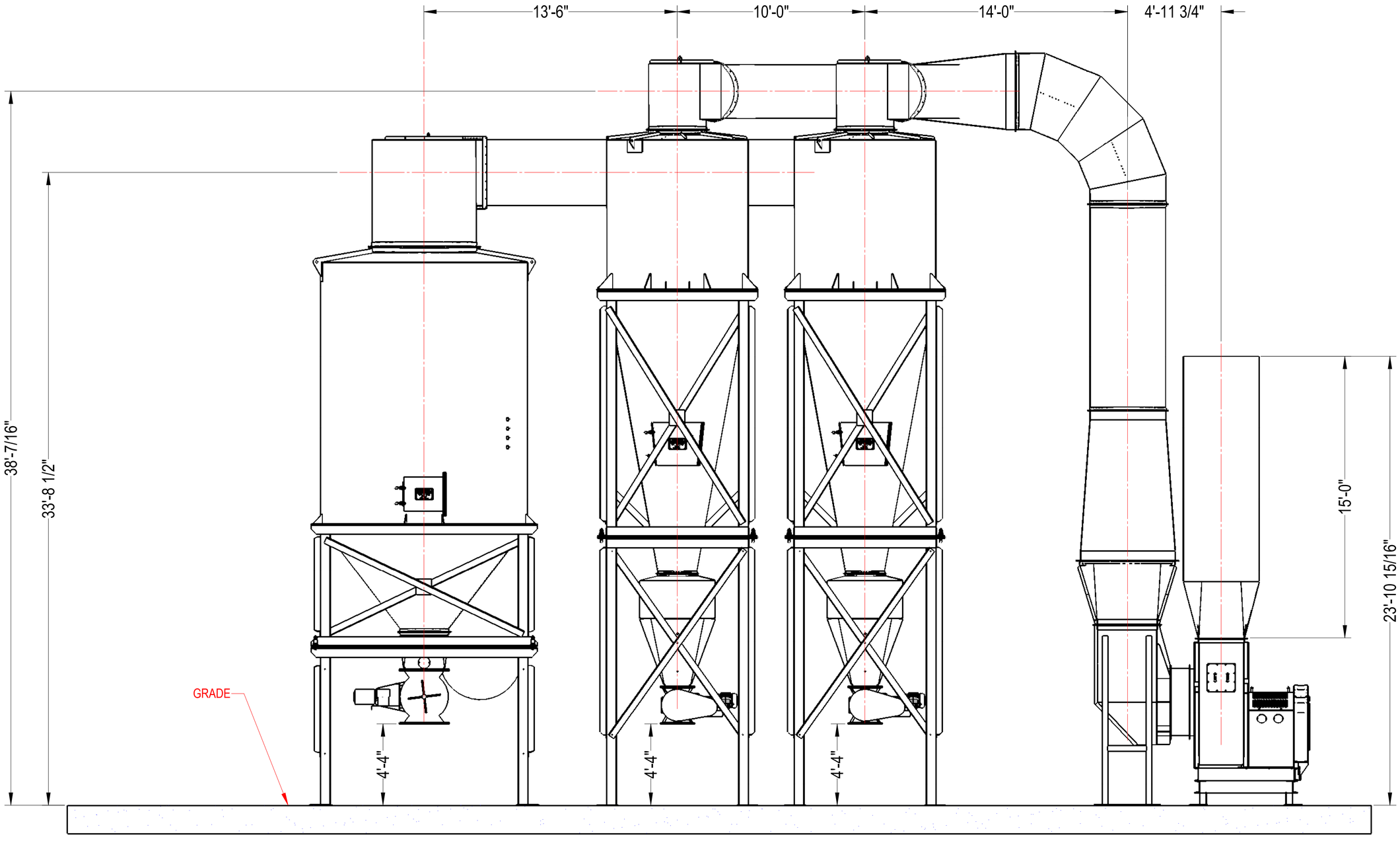


SECTION A-A

RELEASED

UZELAC INDUSTRIES INC.

DRAWN: JTF	CUSTOMER: DUNAWAY TIMBER FORDSVILLE, KY	PROJECT DESCRIPTION: TPD-13500 WOOD CHIP DRYER	PROJECT: SO1997
DATE: 4/24/2023			
CHECKED: JTF	THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF UZELAC INDUSTRIES INC AND IT MUST NOT BE REPRODUCED, USED OR DISCLOSED, WHOLE OR IN PART WITHOUT WRITTEN AUTHORIZATION FROM UZELAC INDUSTRIES INC. IT IS SUBJECT TO RETURN UPON DEMAND.	DWG. NO. 57-685	SCALE 1:54 / DWG SIZE D
DATE: 5/18/2023		SHEET DESCRIPTION: ELEVATION 1	SHEET 3 OF 4 / REV -



SECTION B-B
SCALE 1 : 32

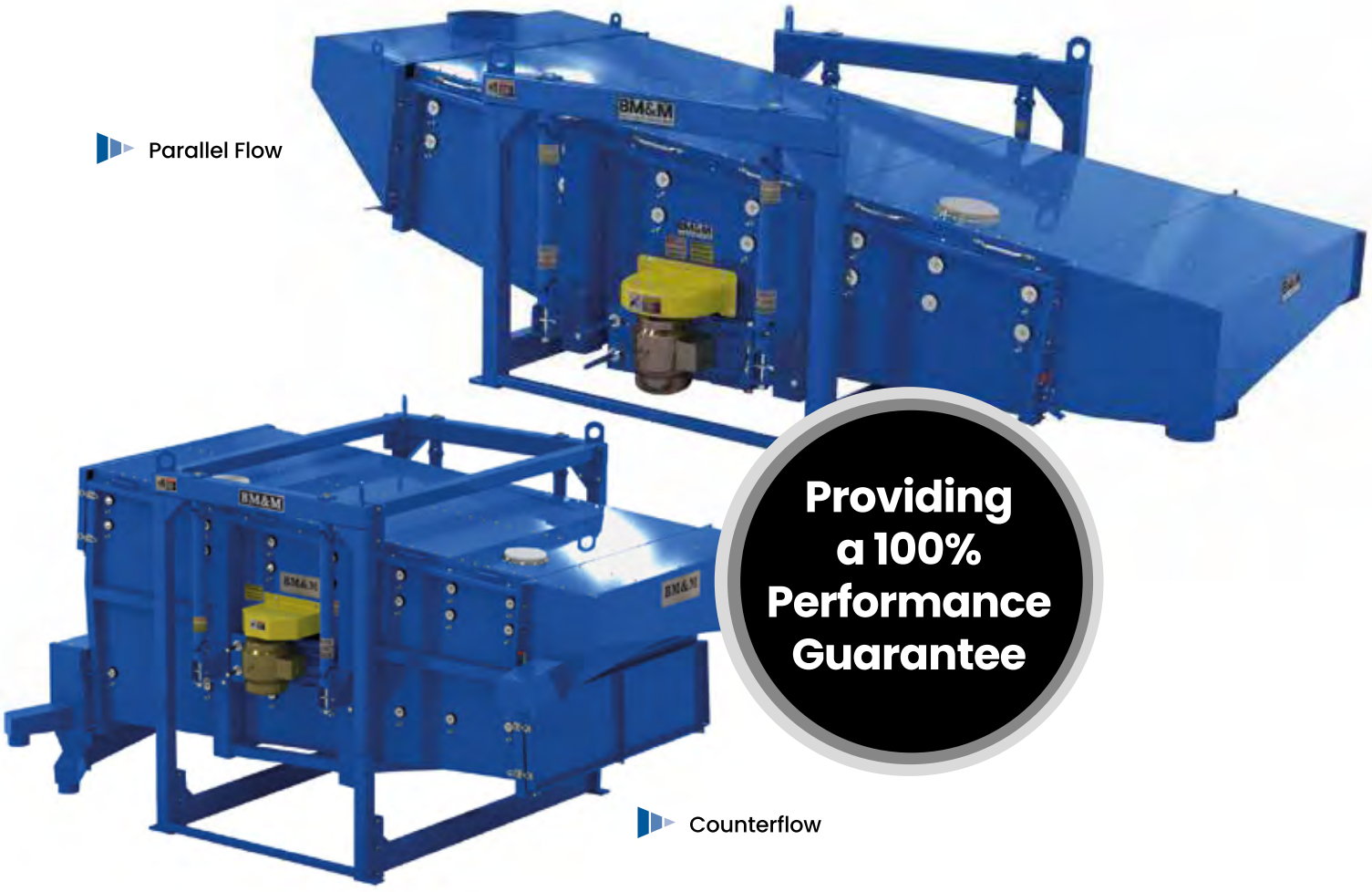
RELEASED

UZELAC INDUSTRIES INC.

DRAWN: JTF	CUSTOMER: DUNAWAY TIMBER	PROJECT DESCRIPTION: TPD-13500 WOOD CHIP DRYER	PROJECT: SO1997	
DATE: 4/24/2023	FORDSVILLE, KY			
CHECKED: JTF	THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF UZELAC INDUSTRIES INC AND IT MUST NOT BE REPRODUCED, USED OR DISCLOSED, WHOLE OR IN PART WITHOUT WRITTEN AUTHORIZATION FROM UZELAC INDUSTRIES INC. IT IS SUBJECT TO RETURN UPON DEMAND.	DWG. NO. 57-685	SCALE 1:60	DWG SIZE D
DATE: 5/18/2023		SHEET DESCRIPTION: ELEVATION 2	SHEET 4 OF 4	REV -

BM&M
SCREENING SOLUTIONS

SUPER SCREEN MODEL



A Flexible Design For All Industries – Greater Speeds And Larger Strokes

The Super Screen is a versatile, adaptable high-speed screener for all industries. The stroke, speed, and slope can be custom-engineered to your specifications; stroke and speed can also be optimized in the field for enhanced performance, no matter how difficult or variable the application.

- **3 year drive warranty**
- **Maximize volume**
- **Improve efficiencies**
- **Reduce maintenance costs**

SUPER SCREEN MODEL

Introducing the Super Screen

The Super Screen encompasses a high-speed horizontal gyratory design that is dynamically balanced to allow greater speeds and higher strokes than conventional sifters and screeners. It has the same aggressive screen action that enables all BM&M screens to achieve high capacities and efficiencies. BM&M's Super Screen was built as a flexible design for all industries. The stroke, speed, and slope can be engineered for each application.

Gyratory Technology

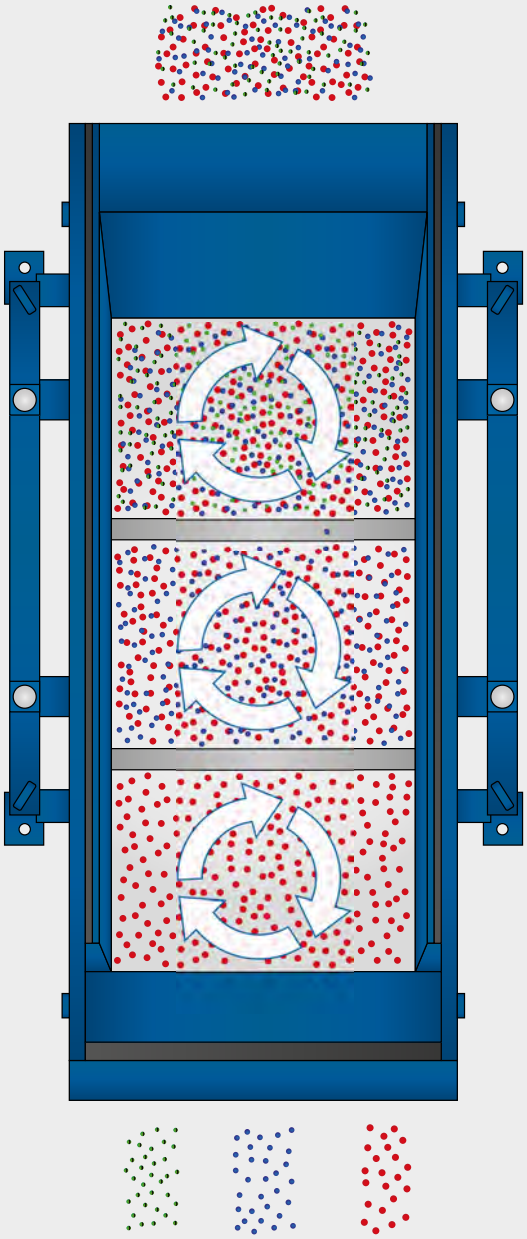
The unique technology developed by BM&M creates an unbeatable combination of motion and speed that generates higher volumes and greater efficiencies. There are 3 core elements that work together to deliver these results.

1 Centering the drive in the middle of the machine generates a gyratory motion over the entire screen surface

2 A stationary and maintenance-free drive with stabilized shaft allows for higher speeds (300 rpm) than the competition (180rpm)

3 Increasing speed results in higher screening energy being applied to the material, eliminating blinding while also increasing throughput

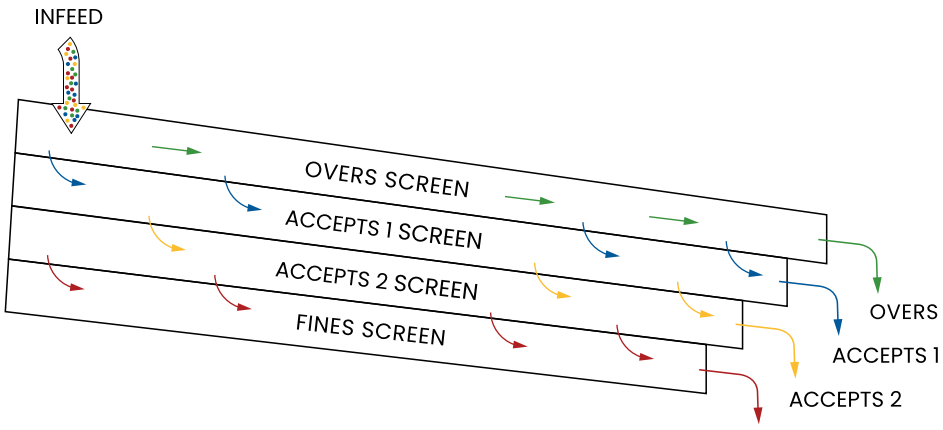
The combined result is material fluidization and maximized screen-contact time!



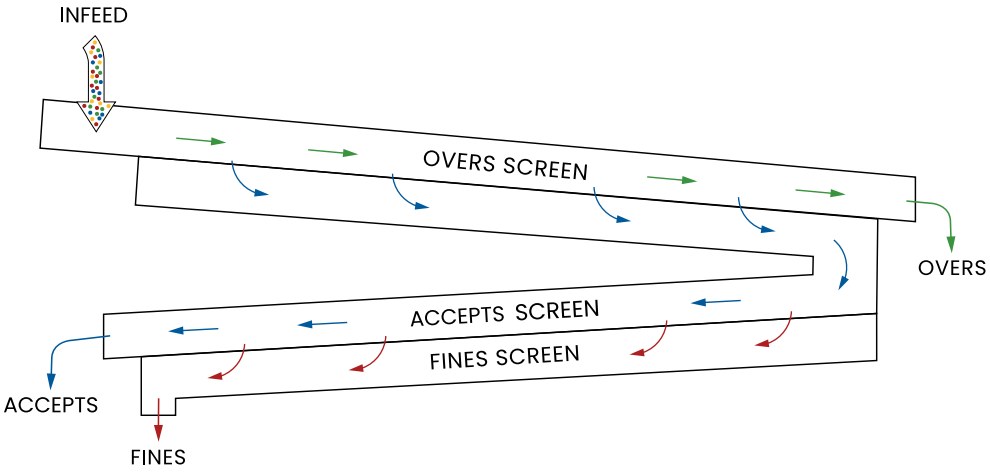
Custom Deck Configurations

BM&M Super Screens are available in a range of sizes consisting of between 1 and 4 decks. The screens can be constructed in a standard parallel flow model or counterflow model to assist in plants with tight space configurations.

Parallel Flow



Counterflow



Ball Decks To Reduce Blinding

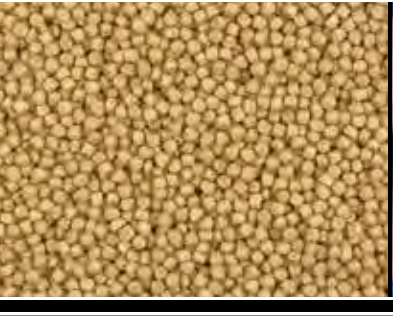
The high bouncing force of the balls will prevent blinding for virtually any application, included in all Super Screens.

Quick Screen Removal & Access

Hinged doors for easy access, inspection and change outs with minimum downtime.

Screen Tensioning System

Designed to prevent loss of tension & ensure higher separation efficiency. CamLoc option upgrade available - a unique seal and hold system allowing quick removal of an element.




DESIGN & SPECIFICATION

Sizes

- Width: 2 ft. to 6 ft.
- Length: 4 ft. to 12 ft.
- Total: up to 72 ft^2 per deck

Number of Decks

- 1-4 deck configurations available

Design & Materials

- Welded steel construction for drive/screen assembly
- Bolted structural steel support stand (floor-mounted standard)
- Mild steel materials, fully stress relieved
- Customized discharge chutes designed for your application or plant operation
- Optional aspiration ports
- Optional Upgraded CamLoc System for easier screen changes

Engineering Parameters	
Standard operating speed	300 RPM
Screen slope range	3 to 7
Adjustable stroke counter weight	5/8" to 2"
Floor mounted support stand	Standard
Aspiration port	Optional
Screen element hold-down system (Standard)	Tensioned

To find out more about our Super Screen locate a rep at:
www.bmandm.com

BM&M
SCREENING SOLUTIONS

Toll-free: 1-800-663-0323
Tel: 604-539-1029 Fax: 604-539-1022
5465 Production Blvd. Surrey, BC, Canada V3S 8P6

44 SERIES
CIRC-U-FLOW HAMMER MILL

Low speed, high production hammer mill

SCHUTTE
HAMMERMILL

www.hammermills.com | info@hammermills.com | 1-800-447-4634

Ruggedly built to outperform and outlast its competitors

Low speed (1,800 RPM) meets high production in the nearly full circle screen coverage of the 44" diameter rotor of our 44 series mill. The 44 Series Circ-U-Flow hammer mill is designed for very high production grinding of a wide variety of products. The nearly full circle screen translates to a larger screen open area, allowing the highest possible production rates on materials that do not require initial grinding against a breaker plate. Suitable for either gravity or pneumatic evacuation.

Quick release levers allow for easy screen change, maintenance and rotor inspection.

Applications

- Alfalfa
- Barley
- Corn
- Herbs and Spices
- Planer shavings
- Rye
- Sawdust
- Sorghum
- Soybeans
- Straw
- Wheat
- Hogged wood scrap
- Dry wood chips
- Green wood chips

End Products/Uses

- Agricultural products
- Animal feed
- Biodiesel
- Boiler fuel
- Cellulosic ethanol
- Pellets and Briquettes
- Sizing for packaging
- Animal bedding
- Landscape mulch
- Playground cover

Key Features

- Six mill widths (13", 17", 24", 30", 48" and 60"); Also available in custom sizes.
- Low speed (1,800 RPM) rotor assembly with four-way reversible hammers.
- Screen discharge areas from 1,375 to 6,600 sq in.
- Optional ribbed plate attrition zone.
- Dual directional rotors.
- Optional rotary feeders, de-stoners and magnets.
- Variety of screen sizes from 3" to .020".
- Easy access to mill's interior through dual access doors.
- Optional side liner plates for moderately abrasive materials.
- Propriety screen cradle for easy removal and insertion.

Technical Specifications

Model	Housing	Shaft Diameter	Rotor Width	Rotor Diameter	Bearing Size	Power Range	Screen Area	Tip Speed
44-13	¾" (20mm)	3 ¼" (80mm)	12 ½" (320mm)	44" (1120mm)	2 15/16" (75mm)	75-100 hp (55-75 kW)	1375 sq in (8870 sq cm)	20,700
44-17	¾" (20mm)	3 ¼" (80mm)	17 ½" (445mm)	44" (1120mm)	2 15/16" (75mm)	100-125 hp (75-90 kW)	1925 sq in (12420 sq cm)	20,700
44-24	¾" (20mm)	3 ¼" (80mm)	24" (610mm)	44" (1120mm)	2 15/16" (75mm)	125-150 hp (90-110 kW)	2640 sq in (17030 sq cm)	20,700
44-30	¾" (20mm)	5" (130mm)	30" (760mm)	44" (1120mm)	3 7/16" (90mm)	200-300 hp (150-220 kW)	3300 sq in (21290 sq cm)	20,700
44-48	¾" (20mm)	6 ⅜" (160mm)	48" (1220mm)	44" (1120mm)	3 7/16" (90mm)	350-400 hp (260-300 kW)	5280 sq in (34070 sq cm)	20,700
44-60	1" (25mm)	6 ⅜" (160mm)	60" (1525mm)	44" (1120mm)	4 7/16" (110mm)	400-600 hp (300-450 kW)	6600 sq in (42580 sq cm)	20,700
44-72	1" (25mm)	6 ⅜" (160mm)	72" (1830mm)	44" (1120mm)	4 7/16" (110mm)	600-800 hp (450-600 kW)	7920 sq in (51100 sq cm)	20,700

Backed by the Schutte Hammermill Reputation

With thousands of installations around the world, and nearly a century's worth of experience, Schutte Hammermill has a solution for your size reduction challenge. We offer over 200 sizes and styles of mills, and can provide the perfect size machine for each customer's specific processing rate requirements. Call us today to find out more about how we can help improve your process. Call 800/447-4634 or visit www.hammermills.com for more information on the full line of size reduction equipment made by Schutte Hammermill

44 Series | Rev Jan 2019

BENGAL MACHINE

APPLICATION ENGINEERED PROCESSING EQUIPMENT

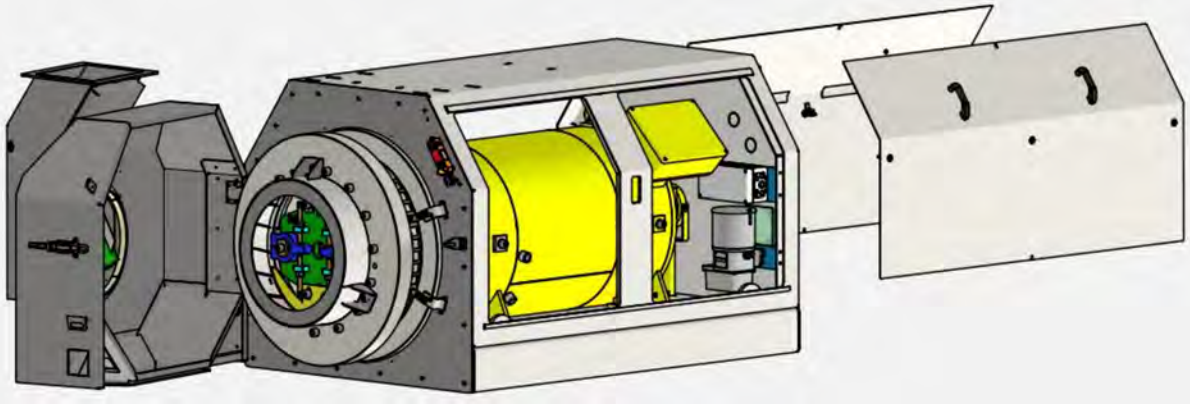
SCHUTTE HAMMERMILL

61 Depot Street | Buffalo, NY 14206

GERMAN DESIGNED EQUIPMENT FOR THE PELLET INDUSTRY

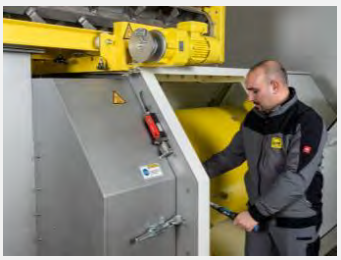
GORILLA PELLET MILL LINE

GRAF EQUIPMENT



The new generation of GRAF Gorilla™ pellet mills is especially designed for applications with very hard pelleting conditions in terms of raw material quality, set-up space, norms, etc. The production of wood pellets is one of these applications.

In fact Gorilla™ is the first pellet mill designed for the biomass industry with direct drive system, without gearbox or V-belts.
The new pellet mill performs a high efficiency thanks to its powerful torque motor, saving around 20% of energy, compared with the conventional drive systems.



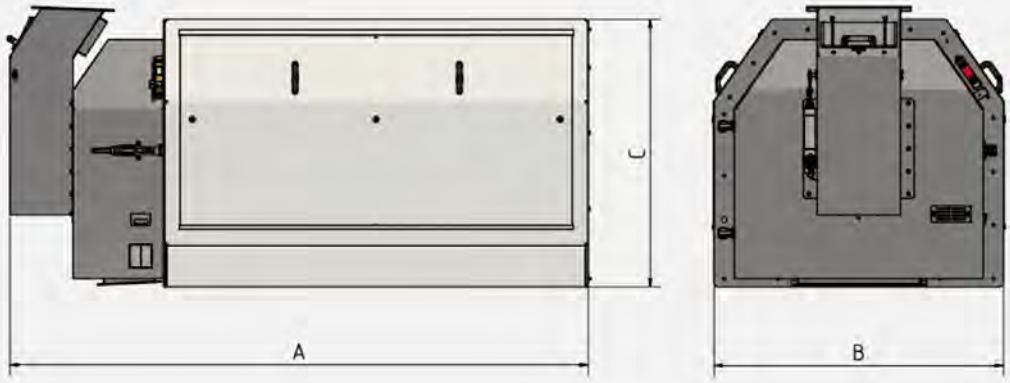
Gorilla™ in combination with the new GRAF steam conditioning system forms also an optimal pelleting line for classical feed products as well as for hulls and extraction meal in the seed oil industry.
The modular pelleting line configuration and the large range of die speed, 4 to 8 m/s without loss of torque, covers quite all pelleting applications. Gorilla assures good pellet quality with a high PDI (Pellet Durability Index).

Don't hesitate to contact us. We will be pleased to help you, to find optimal solutions for your projects.

GRAF EQUIPMENT

QUALITY made in GERMANY

MADE IN GERMANY FOR THE WORLD OF PELLETING



Type	Dimension			Motor	Die			Capacity
	A	B	C		Diameter	Width	Speed	
	mm	mm	mm	kW	mm	mm	m/s	ton/h
for Biomass application								
GEPD900/138	2992	1700	1600	up to 344	900	138	4,5 - 6,5	6,5
GEPD660/108	2813	1410	1300	up to 250	660	108	4,5 - 6,5	3,5
for Feed application								
GEPD1200/350	3400	2000	1900	up to 600	1200	350	6,5 – 8,5	75
GEPD900/300	3300	1700	1600	up to 400	900	300	6,5 – 8,5	40
GEPD660/265	2750	1410	1300	up to 260	660	265	6,5 – 8,5	28
GEPD660/225	2690	1410	1300	up to 260	660	178	6,5 – 8,5	25
GEPD660/178	2670	1410	1300	up to 260	660	138	6,5 – 8,5	22
GEPD420/138	2300	1020	1000	up to 160	420	138	6,5 – 8,5	17

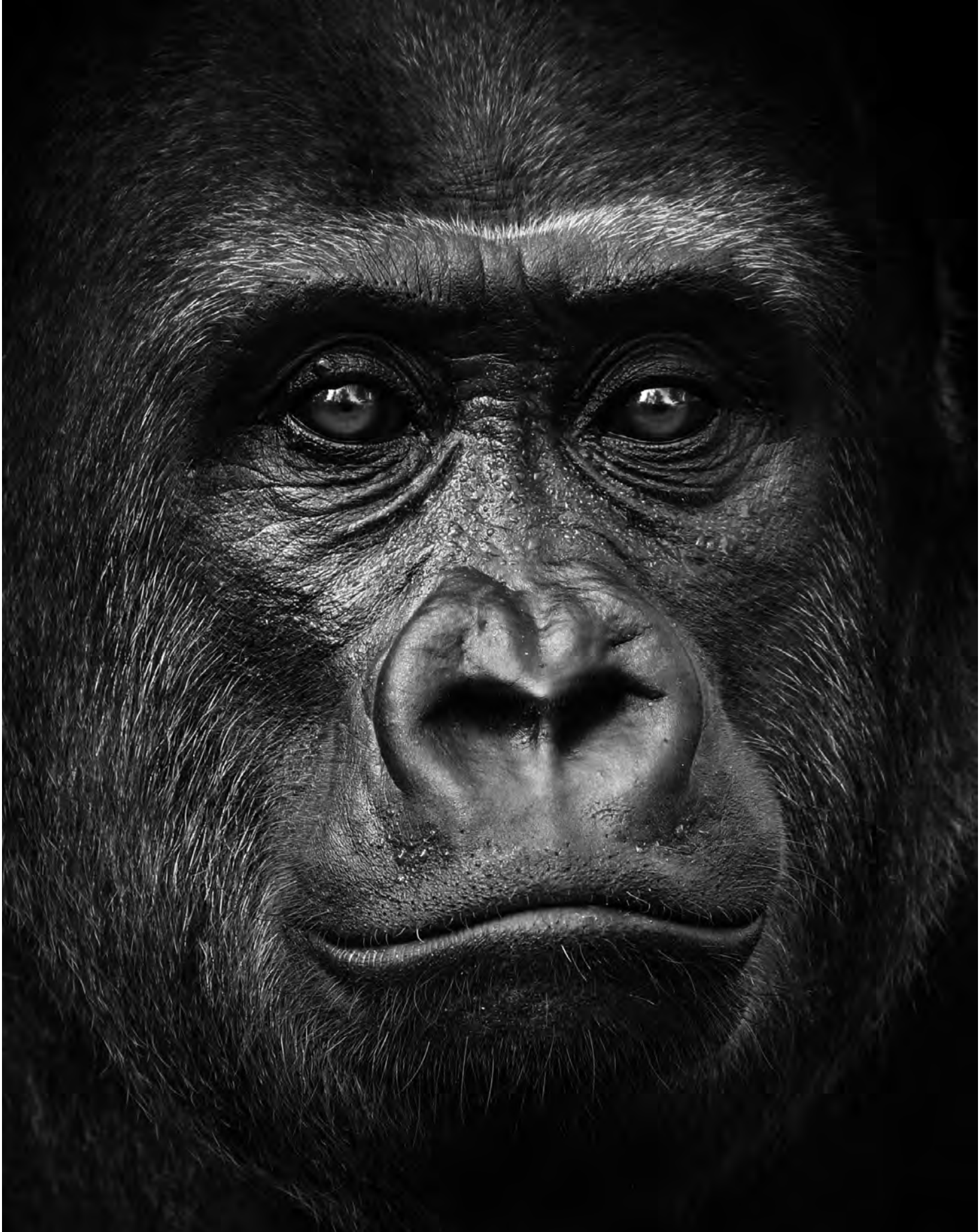
Highlights

- pellet press with rolls and die from one hand
- special designed for your application
- sturdy and available execution
- direct drive system, without gearbox or V-belts
- higher torque compared to classical drive systems
- die speed adjustable, without loss of torque
- excellent pellet quality with high PDI
- Simple monitoring of the product quality by sampling at the press door
- less energy consumption
- less maintenance in time and cost
- less total cost of owner ship
- smallest footprint in its class
- easy accessibility for driving and maintenance
- supplying with, or without control system
- very short start up time

optional for Feed application:

- sophisticated control system
- feeder, conditioner, hygenizer, DDC
- Die and roller lift
- Automatic roll gap adjustment

WILD POWER FOR HIGH QUALITY



GRAF Equipment GmbH
Byk-Gulden-Strasse 9
78467 Konstanz
Germany
Phone: 0049 7531 945370
info@graf-equipment.com
www.graf-equipment.com

LATTNER

Vertical Waterleg Tubeless Boilers
WLF IV Series 9.5-50 HP, Power Burner

Proven Four Pass Efficiency

Innovative Serviceable Shape: Now You Can Make Your Steam Easier and Faster; Compact & Cooler

Steam 9.5-50 HP, Natural or LP Gas

- Four-Pass High Efficiency Power Burner; Up to 150 PSIG; 328 to 1725 LBS/Steam/Hr @212° F
- For Dry Cleaning, Laundry Apparel; Humidification; Sterilization Manufacturing & Commercial Processes; Health & Exercise Clubs; Steam Rooms; Food Preparation & Processing

LATTNER

Safe • Sure • Simple

Proven Four Pass Efficiency

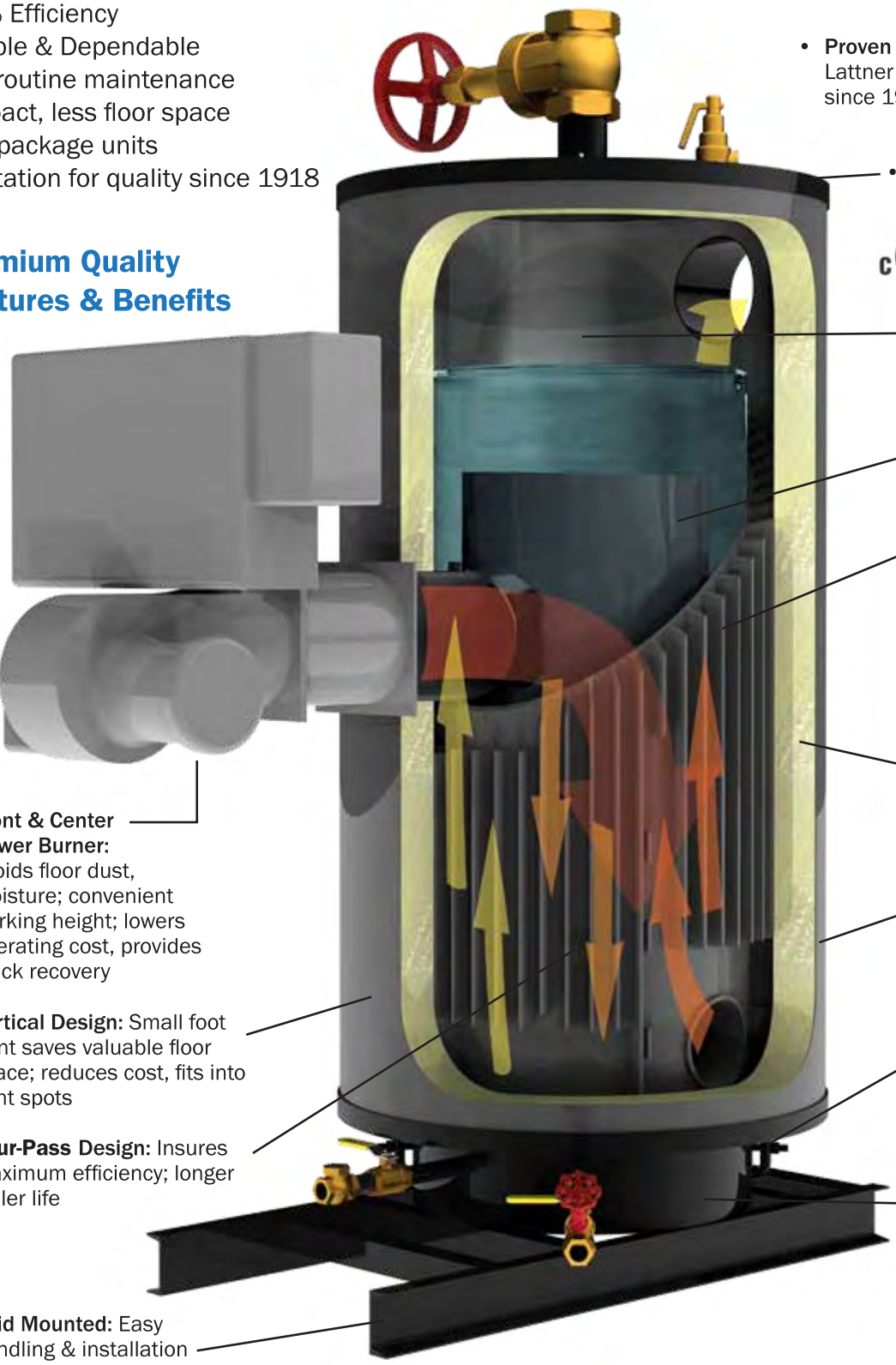
Lattner WLF IV Vertical Tubeless Boiler

8 Sizes, 9.5-50 HP Gas

The Reliable WLF IV Series Features a Four Pass Heating Surface For Maximum Power

- 80+% Efficiency
- Reliable & Dependable
- Easy routine maintenance
- Compact, less floor space
- Total package units
- Reputation for quality since 1918

Premium Quality Features & Benefits



- **Proven Design:** Over 50,000 Lattner boilers installed since 1918
- **Top Access Handhole**

National Board
A.S.M.E.
CSD-I

- **Dryer Steam:** Large steam space for peak loads
- **Submerged, Water Cooled Furnace**
- **Finned Heating Surface:** Absorbs heat from hot gases, then evenly transfers it to outer wall of pressure vessel for optimal efficiency
- **Ceramic Fiber Molded Insulation:** Impedes heat loss; increase efficiency
- **Outer Jacket:** 24 ga. powder-coated baked enamel finished panels
- **Bottom Access Handholes:** For easy, simple clean out; less downtime
- **Cast Refractory Floor:** Protects combustion chamber turnaround

- **Front & Center Power Burner:** Avoids floor dust, moisture; convenient working height; lowers operating cost, provides quick recovery
- **Vertical Design:** Small foot print saves valuable floor space; reduces cost, fits into tight spots
- **Four-Pass Design:** Insures maximum efficiency; longer boiler life
- **Skid Mounted:** Easy handling & installation

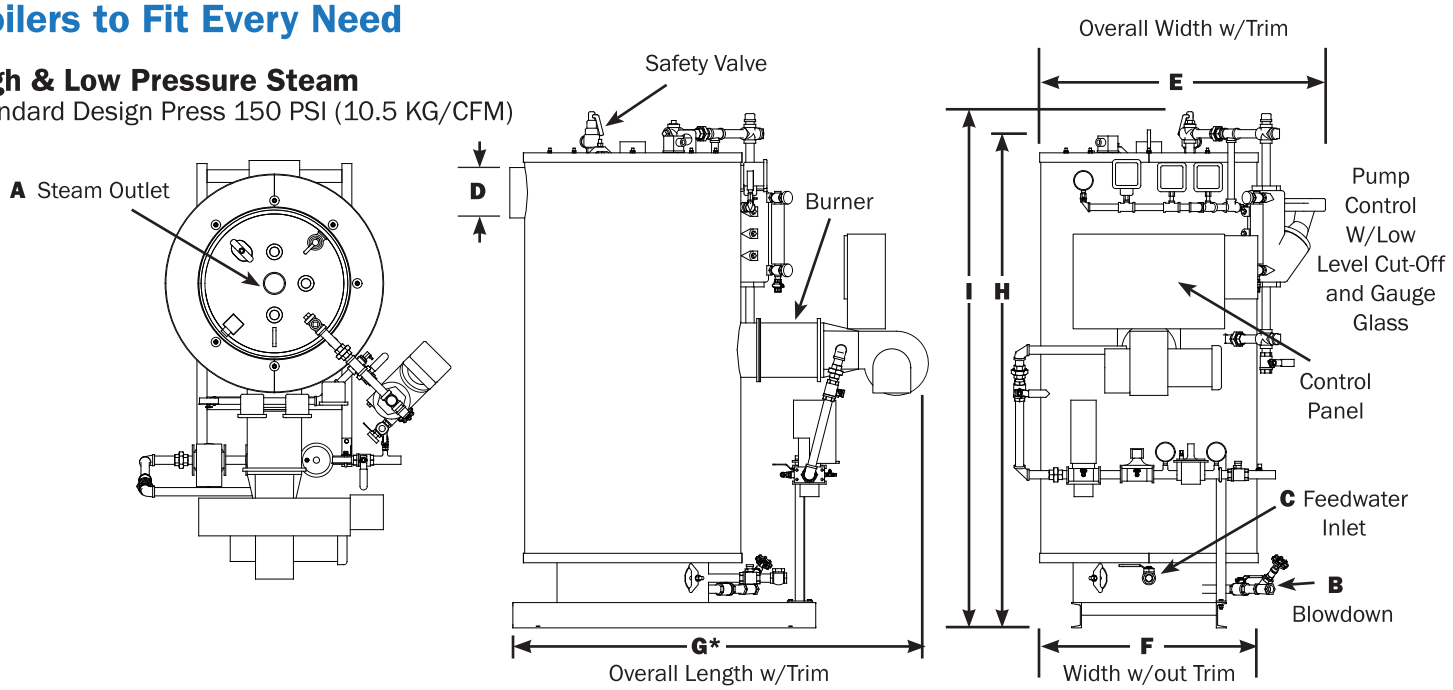
Applications

- Dry cleaning is a perfect application.
- Humidification of high-tech environments such as computer rooms, printing plants, libraries and museums. (e.g. The Field Museum of Natural History in Chicago)
- Sterilization in medical or laboratory environments such as surgical instruments in an autoclave.
- Manufacturing Commercial processes such as retreading plastic vacuum forming, metals cleaning prior to plating and other systems requiring a dependable temperature heat source.
- Health/Exercise Club steam room systems (e.g. Equinox and Bally Health Spas) or the newer condo/apartment complexes with spas and hot tub rooms.
- Food processing in the cafeteria kitchens, sea food preparations, honey processing and steam jacketed kettles in candy making.
- Breweries and Distilleries

Boilers to Fit Every Need

High & Low Pressure Steam

Standard Design Press 150 PSI (10.5 KG/CFM)



DIMENSIONS

Boiler Horsepower			9.5/10	15	20	25	30	40	50
Steam Output From & At 212° F		Lbs./Hr.	345	518	690	863	1035	1380	1725
		KG./Hr.	157	235	313	392	470	626	783
Input Required		BTU x 1000	418	628	837	1046	1255	1675	2100
A	Steam Outlet	150 psi	1 1/2"	1 1/2"	2"	2"	2"	2"	3"
	Steam Outlet	15 psi	2"	2 1/2"	3"	3"	4"	4"	6"
B	Blowdown		1"	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"
C	Feedwater		1"	1"	1"	1"	1"	1"	1 1/4"
D	Stack Diameter		8"	8"	8"	8"	10"	12"	12"
E	Overall Width w/Trim		47"	47"	47"	47"	55"	60"	73"
F	Width w/o Trim		35 1/2"	35 1/2"	35 1/2"	35 1/2"	43 1/2"	43 1/2"	59"
G	Overall Length w/Trim		55"	55"	55"	55"	71"	83"	100"
	* Add for burner removal		12"	12"	12"	12"	14"	14"	20"
H	Height w/o Trim		68"	68"	75"	77"	78"	94"	96"
I	Overall Height		74"	74"	80"	82"	83"	94"	99"
Gas Connection			1"	1"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"
Steam Release Area		In.^{2}	423	423	423	423	680	1134	1520
Water Cap. @ NWL		Gals.	53	55	57	57	75	130	163
Shipping Weight		Lbs.	2000	2000	2100	2200	2900	3700	5500

Standard Steam Trim

Steam pressure gauge, with test cock and drain

Combination low water cut-off and pump control

Auxiliary low water cut-off with manual reset

Water level gauge set w/ drain valve

ASME safety relief valve

Operating and high limit pressure controls

Trimmed for 15 or 150 psi

Standard vessel design ASME Section I

Optional vessel design ASME Section IV

Dimensions subject to change without notice, certified drawing available with order.
All dimensions in inches.
* G dimension varies with burner choice. Add clearance for burner removal.

SAMPLE SPECIFICATIONS

MODEL WLF IV VERTICAL TUBELESS STEAM BOILERS

1. Furnish and install Lattner vertical watering tubeless steam boiler(s) _____horsepower, ❑ natural gas, ❑ propane gas, steam boiler. Boiler to be of all welded four-pass design, ASME Code and National Board stamped for _____ psi design pressure. Boiler operating pressure to be _____ psi.

2. Boiler shall be of vertical tubeless ASME design with 3/8" thick steel furnace wall to assure long boiler life. Boiler shall be mounted on 4" steel channels and fitted with lifting lug(s). Water capacity at a normal level shall be _____ gal., with a minimum of _____ sq.. in. of steam release area to insure high quality (dry) steam.

3. For maximum efficiency, the boiler shall include additional ASME heating surface provided by solid steel strips, which have been securely welded to the shell exterior. Boiler shall include two or more handhole plates in vessel for cleaning and inspection.

4. Boiler shall be insulated with a molded flame barrier and 3.5 inch thick ceramic fiber, which exceeds 8 lbs./cf density. Boiler outer jacket to be 24 gauge steel with chip and heat resistant high gloss polyester urethane powder coated on both sides for protection from corrosion.

5. Boiler shall be fired from a front and center mounted UL-CSD-1 listed and approved multi-orificed, forced draft power burner with flame safe-guard programmer and ultra-violet sensor to supervise ignition and the complete firing cycle. Gas pressure shall be 7" to 14" W.C. Control system will utilize 115 volt, single phase power from 15 amp protected circuit. On/off operation is standard except for 40 to 50 h.p. which are Low/High/Off.

6. Boiler shall be complete with UL and CSD-1 trim as follows:
Operating pressure control, high pressure limit with manual reset, float type level control with primary low water cut-off, auxiliary probe-type low water cut-off with manual reset, blow-off valves for boiler and level control, diaphram and/or motorized gas valve, safety relief valve, steam pressure gauge, water gauge sight glass with protector.

7. Controls will be mounted, wired and factory tested prior to shipment.

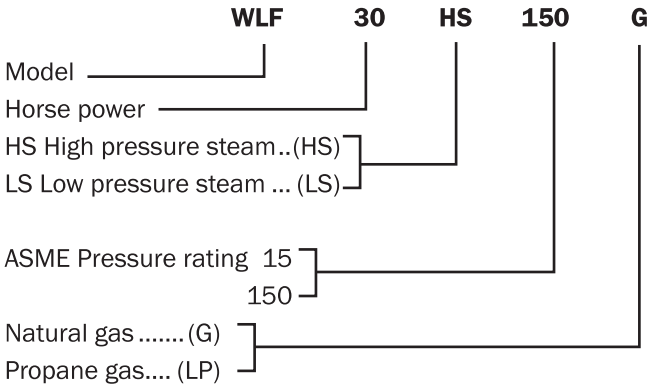
8. Optional equipment and controls

- ❑ Night operating pressure switch package
- ❑ Surface skimmer, manual or automatic
- ❑ Low water alarm
- ❑ IRI controls
- ❑ Full modulation burner
- ❑ Low Hi Low burner
- ❑ High gas pressure _____ Psig
- ❑ Low gas pressure _____ W.C.
- ❑ Low NOx
- ❑ 3-phase motor
- ❑ TEFC motor
- ❑ Stack thermometer
- ❑ Barometric damper
- ❑ Auto bottom blowdown
- ❑ Blowdown separator
- ❑ Aftercooler manual or automatic
- ❑ Feed water System/condensate return
- ❑ Skid mount boiler, return system and blowdown separator
- ❑ ASME piping hydro with P-6 Data Report

BOILER/BURNER START-UP SERVICE

A factory-authorized representative should provide start-up service and training of the operator. Contact factory for arrangements.

MODEL DESIGNATION



HOW TO ORDER

Specify:

- ❑ Model Designation (see above)
- ❑ Vessel design pressure
- ❑ Steam operating pressure
- ❑ Fuel(s) being fired; i.e: natural gas, propane
- ❑ Code requirements; i.e.: UL,CSD-1, FM, IRI, CRN
- ❑ Application (drycleaning/laundry, process)
- ❑ Shipping instructions
- ❑ Optional features
  - Boiler feed system/Condensate return system
  - Blow-down separator w/legs
  - Automatic bottom blowdown
  - Automatic aftercooler w/thermometer
  - Alarms: __ low water __ high water __ high pressure

MANUFACTURER'S WARRANTY

A Lattner boiler shell is guaranteed to be constructed in accordance with the ASME Code. A boiler inspector, not in our employ, certified by the National Board of Boiler and Pressure Vessel Inspectors, supervises the construction, gives final hydrostatic test, and places stamp of approval on the completed shell.

Boiler accessories are guaranteed for one year from date of shipment against defective workmanship and material and such items will be replaced FOB factory. Liability for damages caused by such defective parts is limited to such replacements and in no event shall LATTNER be liable for indirect or consequential damages.

FOR COMPLETE WARRANTY, SEE FORM NO. W01-17.

Lattner Boiler Manufacturing Co.

Lattner Boiler Mfg. Co.
1411 9th St. S.W. Box 1527
Cedar Rapids, IA 52406
800-345-1527 • 319-366-0778
FAX 319-366-0770
www.lattner.com • e-mail: info@lattner.com

Bulletin No. SB202R1-18

Kentucky Secretary of State
Michael G. Adams

FAST TRACK

DUNAWAY TIMBER COMPANY

File Amended Annual Report | Change Address or Registered Agent | File Certificate of Assumed Name (DBA) | File Dissolution | Upload a filing | File Registered Agent Resignation

Print & Mail | Subscribe to changes made to this entity | Certificate of Good Standing

General Information

Organization Number	0014843
Name	DUNAWAY TIMBER COMPANY
Profit or Non-Profit	P - Profit
Company Type	KCO - Kentucky Corporation
Industry	Forestry
Number of Employees	Medium (20-99)
Primary County	Ohio
Status	A - Active
Standing	G - Good
State	KY
File Date	9/25/1962
Organization Date	9/25/1962
Last Annual Report	4/2/2024
Principal Office	DUNAWAY TIMBER COMPANY 214 EASTON ROAD P. O. BOX 157 FORDSVILLE, KY 42343
Registered Agent	HENRY CHRIST 214 EASTON ROAD P.O. BOX 157 FORDSVILLE, KY 42343
Authorized Shares	1000