CITY OF MEMPHIS
COUNCIL AGENDA CHECK OFF SHEET

| ONE ORIGINAL |
| ONLY STAPLED |
|TO DOCUMENTS|

Planning & Development
DIVISION

Planning & Zoning COMMITTEE: **02/06/2024**
DATE

PUBLIC SESSION: **02/06/2024**
DATE

ITEM (*CHECK ONE*)
_____ ORDINANCE __X__ RESOLUTION __X__ REQUEST FOR PUBLIC HEARING

ITEM DESCRIPTION: Resolution pursuant to Chapter 9.6 of the Memphis and Shelby County Unified Development Code approving a planned development at the subject property located at 1230 N. Watkins St, known as case number PD 23-25

CASE NUMBER: PD 23-25

DEVELOPMENT: Memphis Urban Wood Planned Development

LOCATION: 1230 N. Watkins St.

COUNCIL DISTRICTS: District 7 and Super District 8

OWNER/APPLICANT: Memphis Urban Wood, LLC

REPRESENTATIVE: Kevin Normal of A2H, LLC

REQUEST: planned development for Biomass Campus

AREA: +/-9.98 acres

RECOMMENDATION: The Division of Planning and Development recommended ***Approval with conditions***
The Land Use Control Board recommended ***Approval with conditions***

RECOMMENDED COUNCIL ACTION: **Public Hearing Required**
Add to consent agenda requesting public hearing – 01/09/2024
Public hearing – 02/06/2024

PRIOR ACTION ON ITEM:
(1) APPROVAL - (1) APPROVED (2) DENIED
12/14/2023 DATE
(1) Land Use Control Board ORGANIZATION - (1) BOARD / COMMISSION
(2) GOV'T. ENTITY (3) COUNCIL COMMITTEE

FUNDING:
(2) REQUIRES CITY EXPENDITURE - (1) YES (2) NO
$ AMOUNT OF EXPENDITURE
$ REVENUE TO BE RECEIVED

SOURCE AND AMOUNT OF FUNDS
$ OPERATING BUDGET
$ CIP PROJECT #_____
$ FEDERAL/STATE/OTHER

ADMINISTRATIVE APPROVAL:	***DATE***	***POSITION***
		PLANNER
		DEPUTY ADMINISTRATOR
Brett Ragsdale	12/28/2024	ADMINISTRATOR
		DIRECTOR (JOINT APPROVAL)
		COMPTROLLER
		FINANCE DIRECTOR
		CITY ATTORNEY

		CHIEF ADMINISTRATIVE OFFICER
		COMMITTEE CHAIRMAN

Memphis City Council
Summary Sheet

PD 23-25

RESOLUTION PURSUANT TO CHAPTER 9.6 OF THE MEMPHIS AND SHELBY COUNTY UNIFIED DEVELOPMENT CODE APPROVING A PLANNED DEVELOPMENT AT THE SUBJECT PROPERTY LOCATED AT 1230 N. WATKINS ST, KNOWN AS CASE NUMBER PD 23-25

- This item is a resolution with conditions to allow a planned development for Biomass Campus; and

- This resolution, if approved with conditions, will supersede the existing zoning for this property; and

- The item may require future public improvement contracts.

LAND USE CONTROL BOARD RECOMMENDATION

At its regular meeting on ***Thursday, December 14, 2023***, the Memphis and Shelby County Land Use Control Board held a public hearing on the following application:

CASE NUMBER:	PD 23-25
DEVELOPMENT:	Memphis Urban Wood Planned Development
LOCATION:	1230 N. Watkins St.
COUNCIL DISTRICT(S):	District 7 and Super District 8
OWNER/APPLICANT:	Memphis Urban Wood, LLC
REPRESENTATIVE:	Kevin Normal of A2H, LLC
REQUEST:	planned development for Biomass Campus
EXISTING ZONING:	Employment
AREA:	+/- 9.98 acres

The following spoke in support of the application: Kevin Norman, Jeff Carroll, Walter Green, Quincey Morris

The following spoke in opposition the application: Stephanie Walker, Karen Edwards, Jane Jeffrey, Lenora Pipkin, Louise Jones

The Land Use Control Board reviewed the application and the staff report. A motion was made and seconded to recommend approval with conditions.

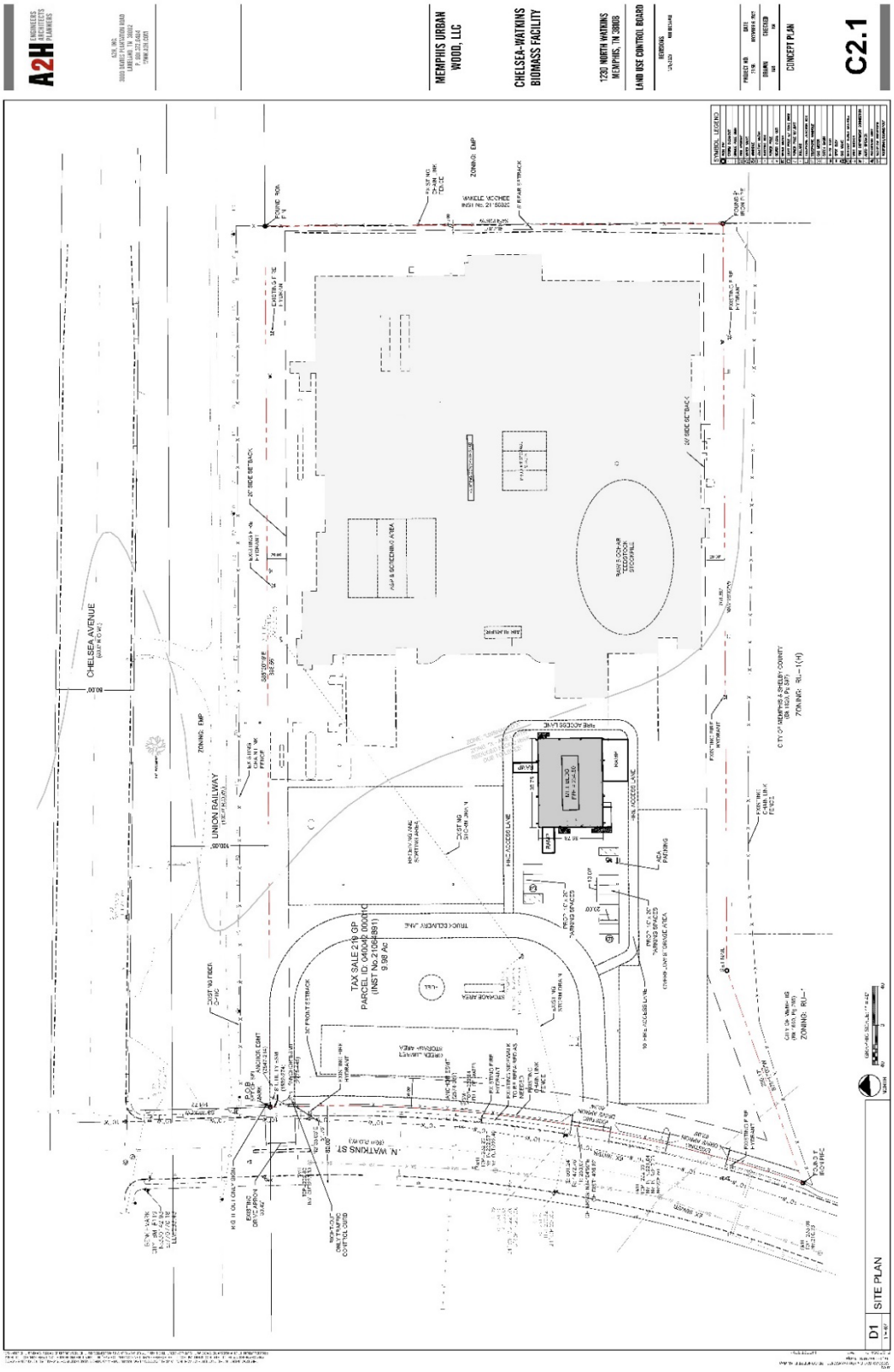
The motion passed by a vote of 5-4.

Respectfully,

Brett Ragsdale
Zoning Administrator
Land Use and Development Services
Division of Planning and Development

Cc: Committee Members
File

PD 23-25
CONCEPT PLAN



OUTLINE PLAN CONDITIONS

1. Use Permitted
    A. Any use permitted by right in the Employment (EMP) District including the following specifically permitted uses:
        1. Outdoor storage
        2. Container storage

    B. The following uses are strictly prohibited:
        1. Payday Loans
        2. Pawn shop
        3. Tattoo, palmist, psychic, or medium
        4. Vapor shop
        5. Drive-in theater
        6. Campground
        7. Undertaking establishment
        8. Adult entertainment
        9. Manufacture of chemical, cosmetic, drug, soap, paints, abrasive products, fabricated metal products
        10. Tavern, cocktail lounge, or night club

2. Bulk Regulations
    A. The development shall comply with the bulk requirements of the Employment (EMP) District.

3. Access, Parking and Circulation
    A. Existing curb cuts to N. Watkins shall be utilized.
    B. The north curb cut shall be a right-only exit onto Watkins Street.
    C. Curb cuts shall be approved by the City Engineer.
    D. Sight distances and geometry requirements for public streets shall comply with the Unified Development Code.
    E. All required parking shall be illustrated on the final plat.
    F. Adequate queuing space in accordance with the Unified Development Code shall be provided between any gatehouse/guardhouse and entry/exit points.

4. Landscaping
    A. Landscaping shall be provided as illustrated on the Concept Plan.
    B. Dumpsters shall be enclosed on all four sides with wood, brick or other solid materials by the Department of Planning and Development.
    C. Lighting shall be directed so as to not glare onto residential property or onto traffic on N. Watkins Street.
    D. Streetscape along Watkins Street shall be an S-10 plate and fencing shall be located behind the landscaping. Modifications to the streetscape plate shall be subject to administrative review and approval.
    E. All outdoor storage shall be indicated on the site plan and screened from the public Right-of-way or any abutting properties.

5. Signs
    A. Signage shall be in conformance with the EMP District regulations.

6. The Land Use Control Board may modify the bulk, access, parking, landscaping, and sign requirements if equivalent alternatives are presented, provided, however, any adjacent property owner who is dissatisfied with the modifications of the Land Use Control Board hereunder may, within ten days of such action, file a written appeal to the Director of the Division of Planning and Development, to have such action reviewed by the appropriate Governing Bodies.

7. Any final plan shall include:
    A. The outline plan conditions.
    B. The location and dimensions of all buildings, parking areas, drives, loading spaces and facilities, required landscaping, and signage.
    C. The number of parking spaces.
    D. The location and ownership of any easement
    E. The 100 year flood elevation
    F. Fire hydrants in accordance with the requirements of the Memphis Fire Department.

RESOLUTION PURSUANT TO CHAPTER 9.6 OF THE MEMPHIS AND SHELBY COUNTY UNIFIED DEVELOPMENT CODE APPROVING A PLANNED DEVELOPMENT AT THE SUBJECT PROPERTY LOCATED AT 1230 N. WATKINS ST., KNOWN AS CASE NUMBER PD 23-25

WHEREAS, Chapter 9.6 of the Memphis and Shelby County Unified Development Code, being a section of the Joint Ordinance Resolution No. 5367, dated August 10, 2010, authorizes the Council of the City of Memphis to grant a planned development for certain stated purposes in the various zoning districts; and

WHEREAS, the Memphis Urban Wood, LLC filed an application with the Memphis and Shelby County Division of Planning and Development to allow a planned development for Biomass Campus; and

WHEREAS, the Division of Planning and Development has received and reviewed the application in accordance with procedures, objectives and standards for planned developments as set forth in Chapter 9.6 with regard to the proposed development's impacts upon surrounding properties, availability of public facilities, both external and internal circulation, land use compatibility, and that the design and amenities are consistent with the public interest; and has submitted its findings and recommendation subject to outline plan conditions concerning the above considerations to the Memphis and Shelby County Land Use Control Board; and

WHEREAS, a public hearing in relation thereto was held before the Memphis and Shelby County Land Use Control Board on December 14, 2023, and said Board has submitted its findings and recommendation subject to outline plan conditions concerning the above considerations to the Council of the City of Memphis; and

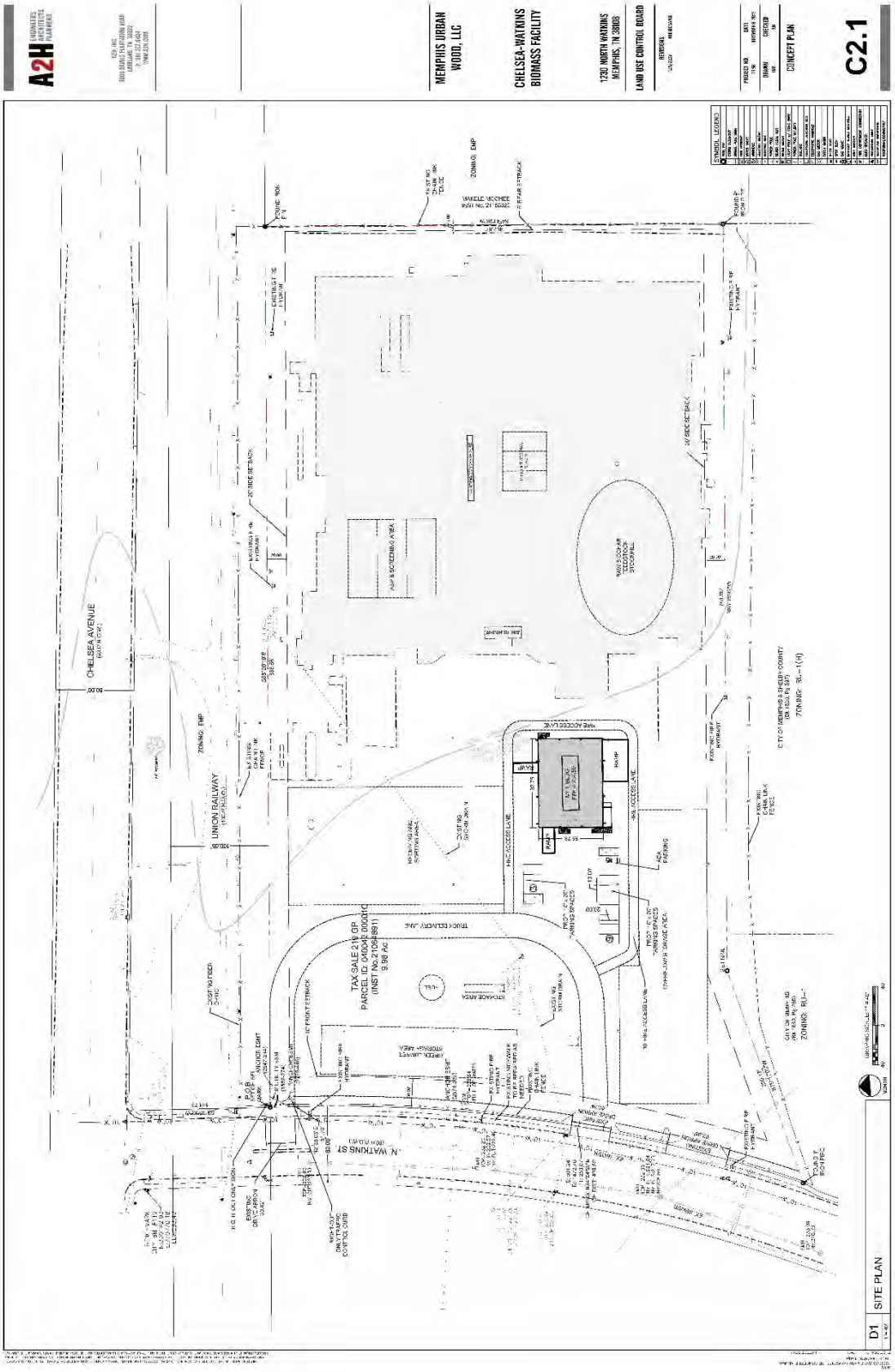
WHEREAS, the Council of the City of Memphis has reviewed the aforementioned application pursuant to Tennessee Code Annotated Section 13-4-202(B)(2)(B)(iii) and has determined that said development is consistent with the Memphis 3.0 General Plan; and

WHEREAS, the Council of the City of Memphis has reviewed the recommendation of the Land Use Control Board and the report and recommendation of the Division of Planning and Development and has determined that said development meets the objectives, standards and criteria for a special use permit, and said development is consistent with the public interests.

NOW, THEREFORE, BE IT RESOLVED, BY THE COUNCIL OF THE CITY OF MEMPHIS, that, pursuant to Chapter 9.6 of the Memphis and Shelby County Unified Development Code, a planned development is hereby granted in accordance with the attached outline plan conditions.

BE IT FURTHER RESOLVED, that the requirements of said aforementioned clause of the Unified Development Code shall be deemed to have been complied with; that the outline plan shall bind the applicant, owner, mortgagee, if any, and the legislative body with respect to the contents of said plan; and the applicant and/or owner may file a final plan in accordance with said outline plan and the provisions of Section 9.6.11 of the Unified Development Code.

CONCEPT PLAN



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        8. Adult entertainment
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    C. The number of parking spaces.
    D. The location and ownership of any easement
    E. The 100 year flood elevation
    F. Fire hydrants in accordance with the requirements of the Memphis Fire Department.

ATTEST:

CC: Division of Planning and Development
– Land Use and Development Services
– Office of Construction Enforcement

dpd MEMPHIS AND SHELBY COUNTY STAFF REPORT

AGENDA ITEM: 3

CASE NUMBER: PD 2023-025 **L.U.C.B. MEETING:** December 14, 2023

DEVELOPMENT: Memphis Urban Wood Planned Development

LOCATION: 1230 N. Watkins St.

COUNCIL DISTRICT: District 7 and Super District 8

OWNER/APPLICANT: Memphis Urban Wood, LLC

REPRESENTATIVE: Kevin Normal of A2H, LLC

REQUEST: Special use permit for a planned industrial development

AREA: 9.98 acres

EXISTING ZONING: Employment

CONCLUSIONS

1. Memphis Urban Wood, LLC, has requested a special use permit for a planned industrial development, of a biomass campus for the processing of wood salvaged from tree removal by arboricultural activity in the greater Memphis area. The resulting products are lumber, wood compost, and biochar (a charcoal like material used as a soil amendment)
2. The proposed addition of a streetscape along Watkins St. will create a more desirable and aesthetically pleasing street frontage.
3. The proposed construction of a right-only exit onto Watkins will restrict truck traffic from travelling south into the residential neighborhoods.
4. The applicant has applied for an Air Pollution Control Permit to Construct Air Emissions Equipment to the Shelby County Health Department. The application can be found as Appendix A to the report.
5. The location and arrangement of the structures, parking areas, walks, lighting, and other service facilities are compatible with the surrounding land uses.
6. The proposed development will not unduly injure or damage the use, value and enjoyment of surrounding property nor unduly hinder or prevent the development of surrounding property in accordance with the current development policies and plans of the City and County.

CONSISTENCY WITH MEMPHIS 3.0

According to the Office of Comprehensive Planning, this request is ***consistent*** with Memphis 3.0.

RECOMMENDATION

Approval with conditions

Staff Writer: ***Brett Ragsdale*** **E-mail:** ***brett.ragsdale@memphistn.gov***

GENERAL INFORMATION

Street Frontage:	North Watkins Street	+/-597.6 curvilinear feet
	Chelsea Avenue	+/-897.3 feet
Zoning Atlas Page:	1930	
Parcel ID:	040042 00001C	
Existing Zoning:	Employment Industrial (EMP)	

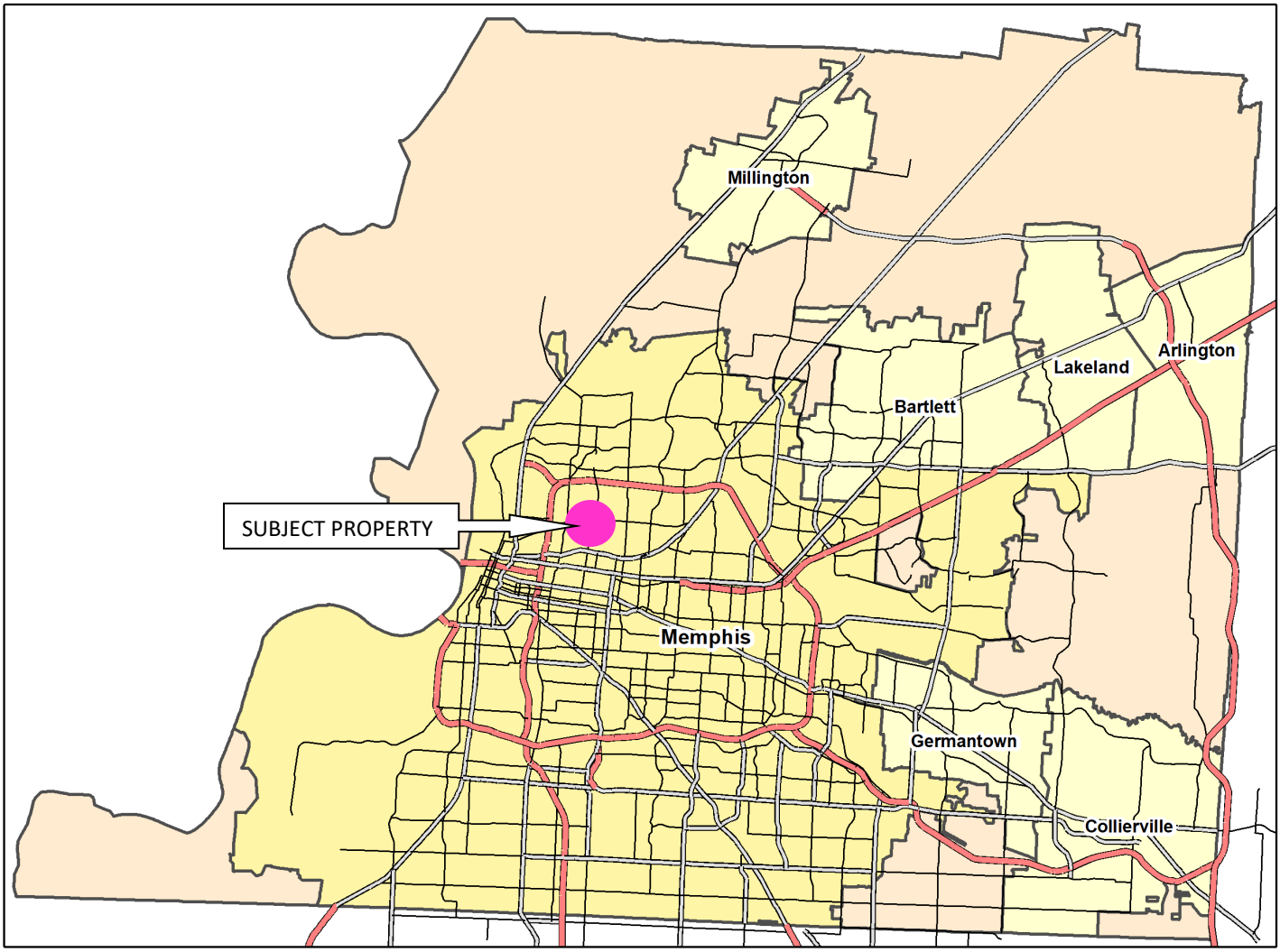
NEIGHBORHOOD MEETING

The meeting was held at 6:00 PM on October 30 2023, at Vollentine Evergreen Community Association located at 1680 Jackson Avenue Memphis TN.

PUBLIC NOTICE

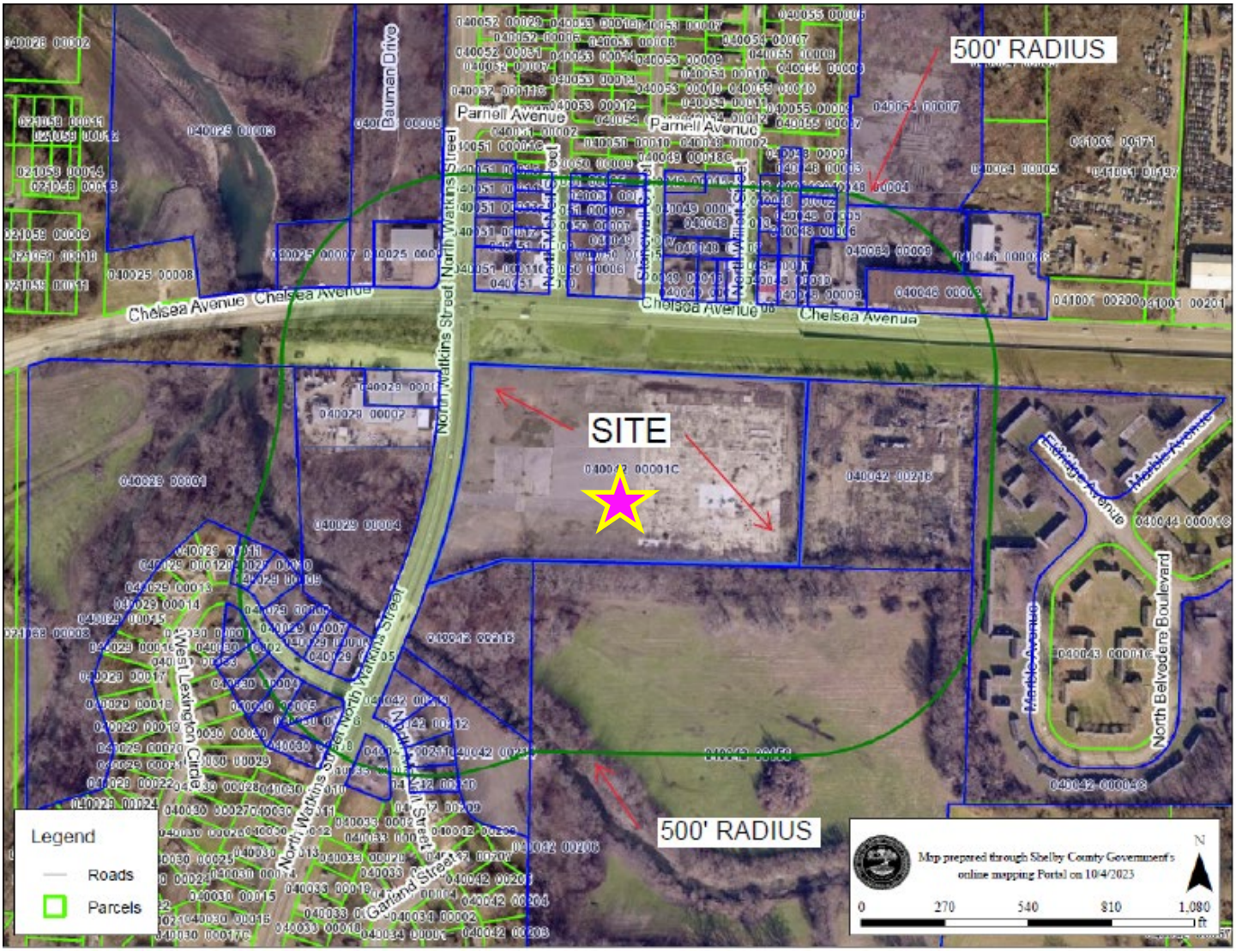
In accordance with Sub-Section 9.3.4A of the Unified Development Code, a notice of public hearing is required to be mailed and signs posted. A total of 46 notices were mailed on October 26, 2023, and a total of 1 sign posted at the subject property. The sign affidavit can be found on page 33 of this report.

LOCATION MAP



Subject property located within the pink circle, Parran neighborhood

VICINITY MAP

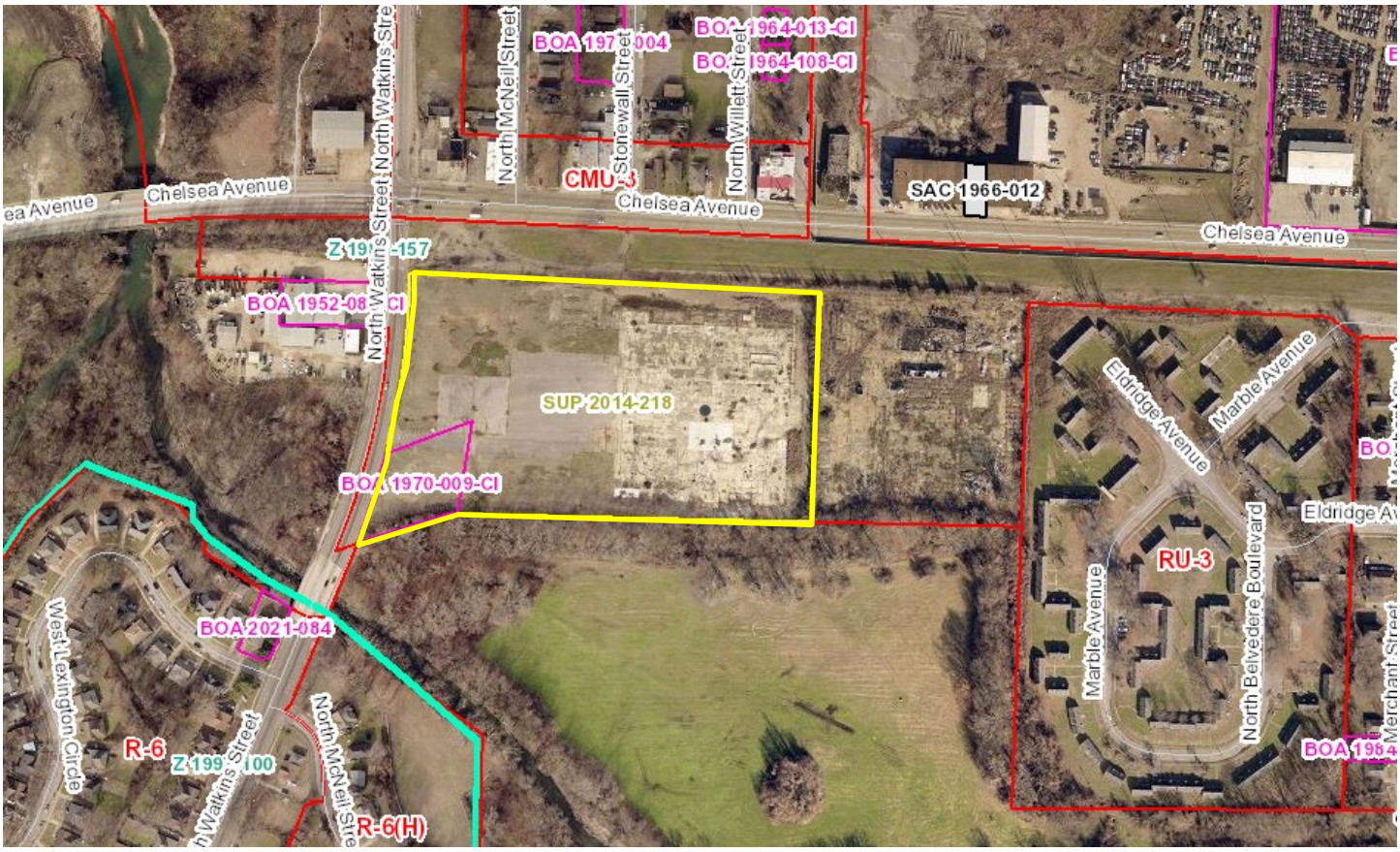


Subject property indicated by the pink star.

AERIAL

Subject property outlined in yellow, imagery from August 23, 2023

ZONING MAP



Subject property outlined in yellow

Existing Zoning: Employment (EMP)

Surrounding Zoning

North: Commercial CMU-3

East: Residential Urban (RU-3)

South: (RU-6) (RU-1H)

West: (RU-1)

LAND USE MAP

Subject property indicated by a pink star

SITE PHOTOS

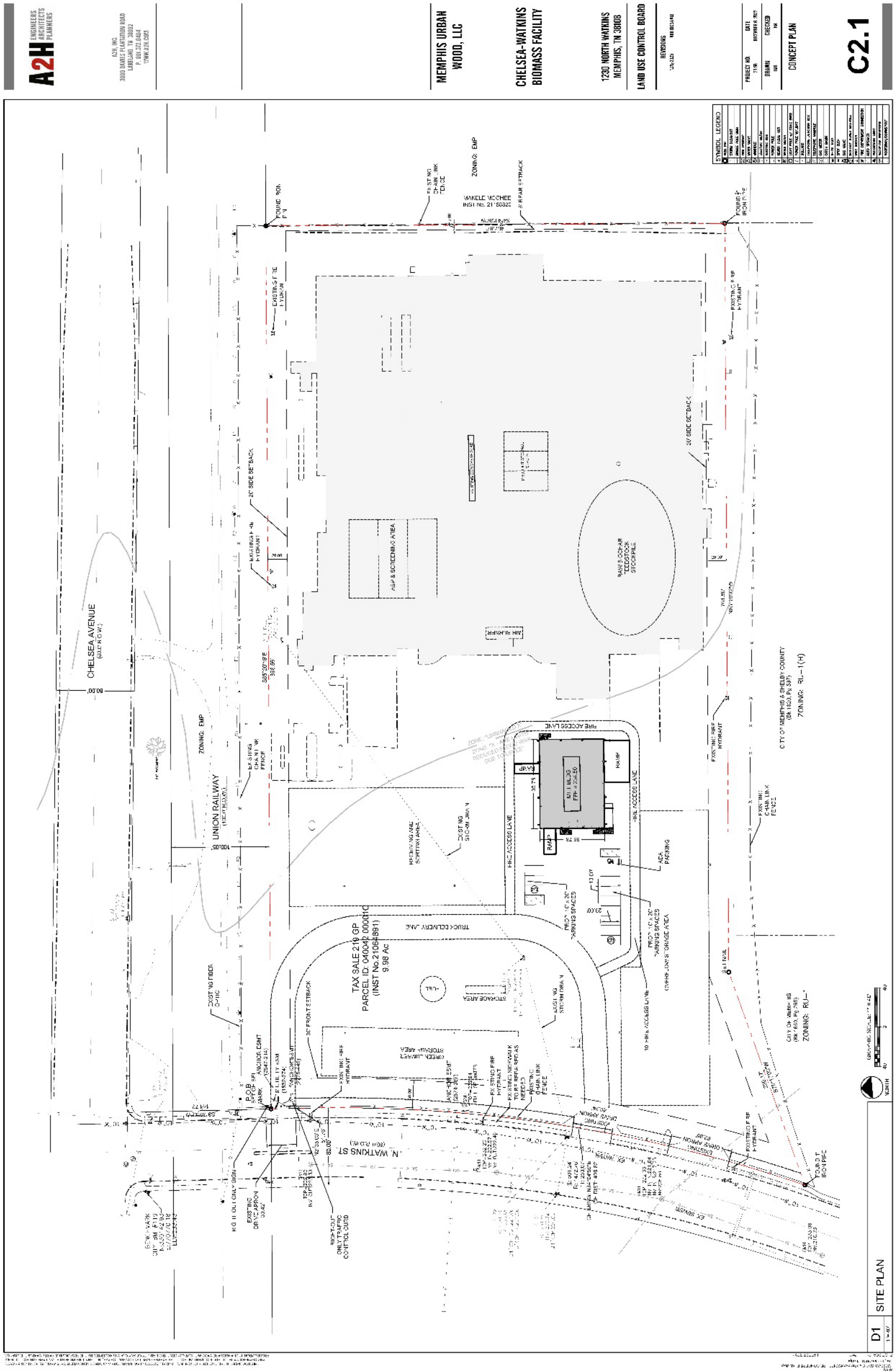
View along North Watkins looking south.

View along North Watkins looking north.

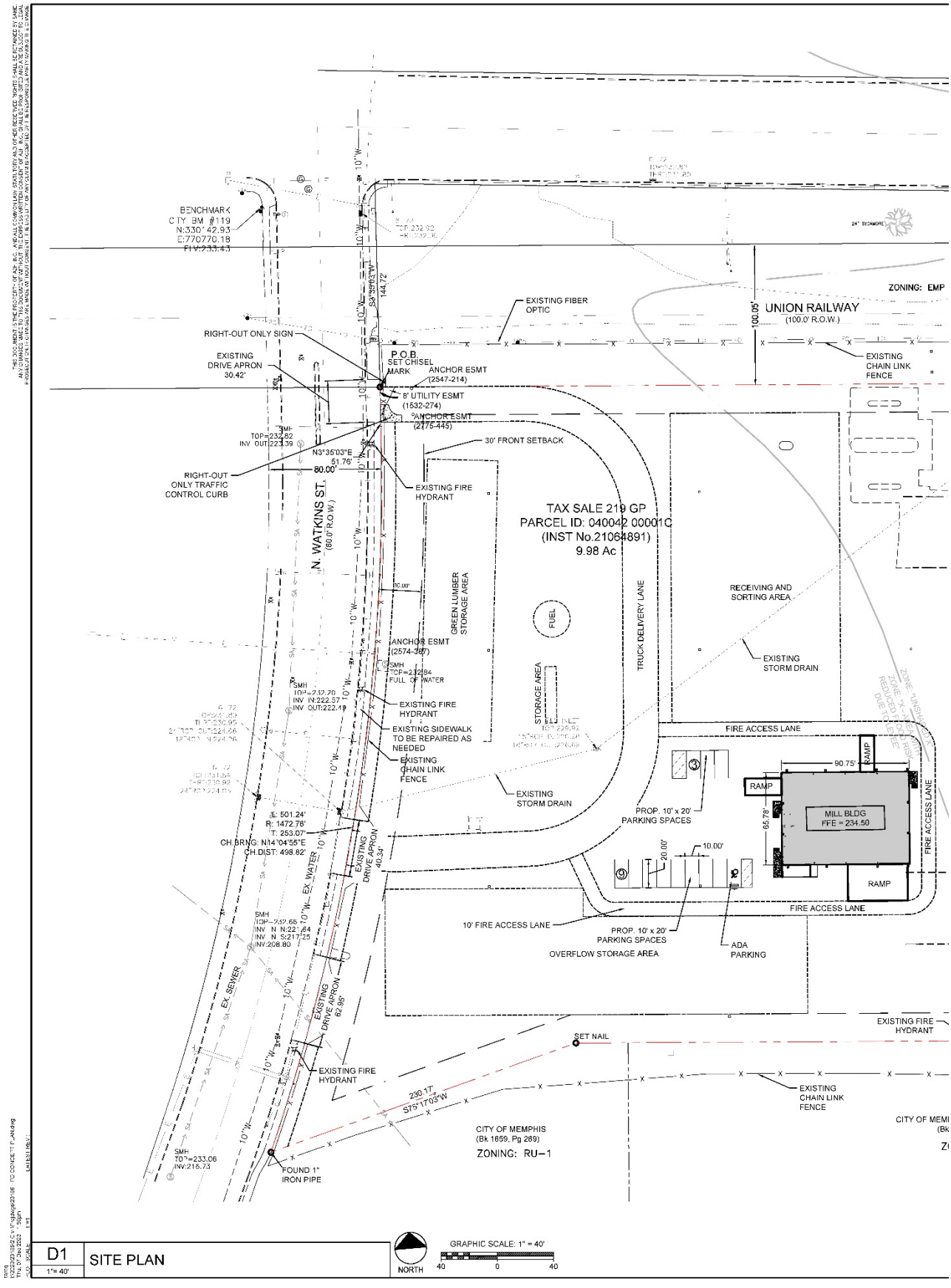
View of the northwest corner of the subject property from North Watkins Road looking southeast.

View of the subject property from the intersection of Chelsea and North Watkins looking southeast

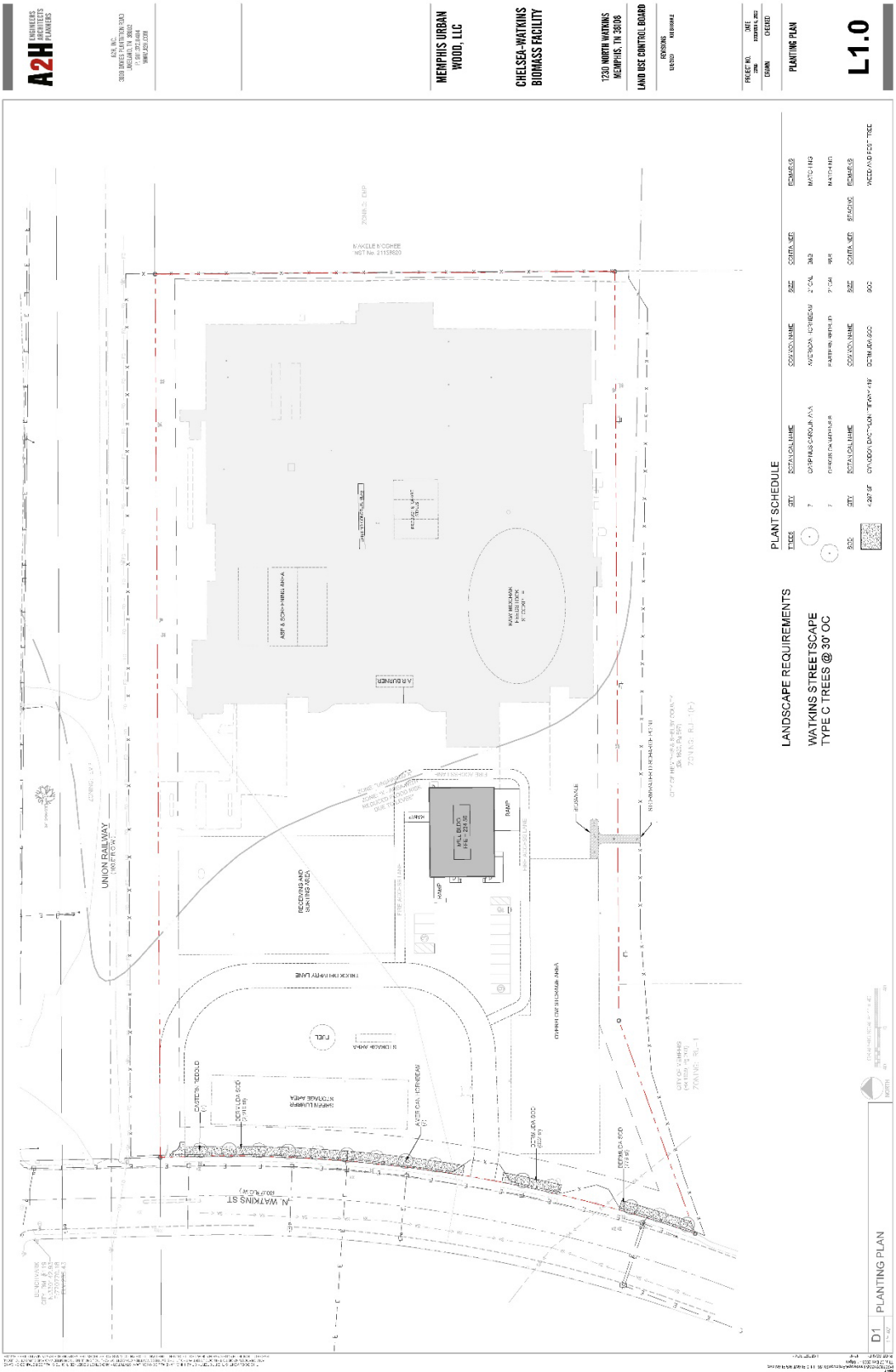
CONCEPT PLAN



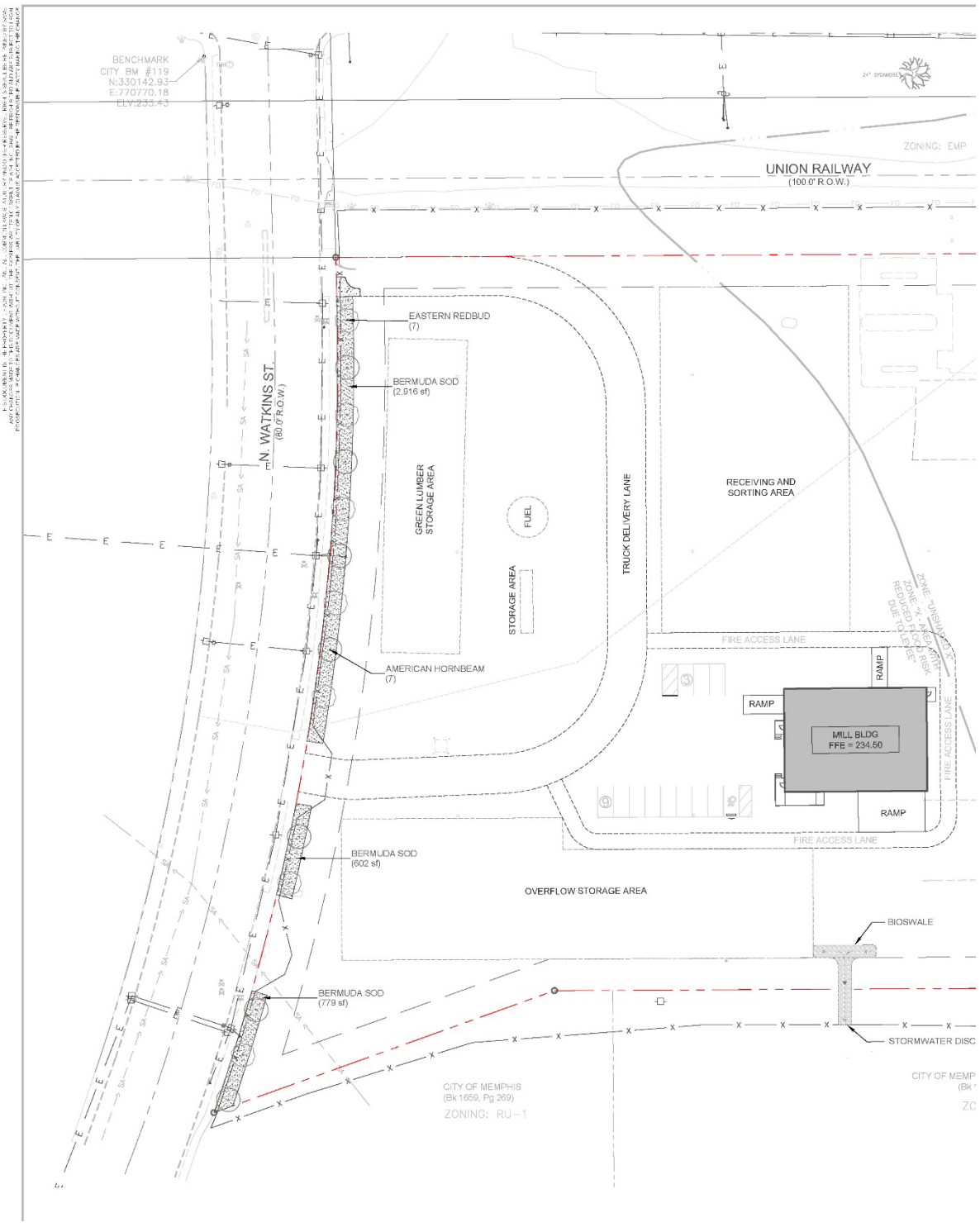
CONCEPT PLAN - ENLARGED



LANDSCAPE PLAN



LANDSCAPE PLAN - ENLARGED



STAFF ANALYSIS

Request

The request is development of a biomass campus for the processing of wood salvaged from tree removal by arboricultural activity in the greater Memphis area. The resulting products are lumber, wood compost, and biochar (a charcoal like material used as a soil amendment)

Applicability

Staff agrees the applicability standards and criteria as set out in Section 4.10.2 of the Unified Development Code are or will be met.

4.10.2 Applicability

The governing bodies may, upon proper application, grant a special use permit for a planned development (see Chapter 9.6) for a tract of any size within the City or for tracts of at least three acres in unincorporated Shelby County to facilitate the use of flexible techniques of land development and site design, by providing relief from district requirements designed for conventional developments, and may establish standards and procedures for planned developments in order to obtain one or more of the following objectives:

A. Environmental design in the development of land that is of a higher quality than is possible under the regulations otherwise applicable to the property.
B. Diversification in the uses permitted and variation in the relationship of uses, structures, open space and height of structures in developments intended as cohesive, unified projects.
C. Functional and beneficial uses of open space areas.
D. Preservation of natural features of a development site.
E. Creation of a safe and desirable living environment for residential areas characterized by a unified building and site development program.
F. Rational and economic development in relation to public services.
G. Efficient and effective traffic circulation, both within and adjacent to the development site, that supports or enhances the approved transportation network.
H. Creation of a variety of housing compatible with surrounding neighborhoods to provide a greater choice of types of environment and living units.
I. Revitalization of established commercial centers of integrated design to order to encourage the rehabilitation of such centers in order to meet current market preferences.
J. Provision in attractive and appropriate locations for business and manufacturing uses in well-designed buildings and provision of opportunities for employment closer to residence with a reduction in travel time from home to work.
K. Consistency with the Memphis 3.0 General Plan.

General Provisions

Staff agrees the general provisions standards and criteria as set out in Section 4.10.3 of the Unified Development Code are or will be met.

4.10.3 General Provisions

The governing bodies may grant a special use permit for a planned development which modifies the applicable district regulations and other regulations of this development code upon written findings and recommendations of the Land Use Control Board and the Planning Director which shall be forwarded pursuant to provisions contained in this Chapter.

A. The proposed development will not unduly injure or damage the use, value and enjoyment of surrounding property nor unduly hinder or prevent the development of surrounding property in accordance with the current development policies and plans of the City and County.

B. An approved water supply, community waste water treatment and disposal, and storm water drainage facilities that are adequate to serve the proposed development have been or will be provided concurrent with the development.

C. The location and arrangement of the structures, parking areas, walks, lighting and other service facilities shall be compatible with the surrounding land uses, and any part of the proposed development not used for structures, parking and loading areas or access way shall be landscaped or otherwise improved except where natural features are such as to justify preservation.

D. Any modification of the district standards that would otherwise be applicable to the site are warranted by the design of the outline plan and the amenities incorporated therein, and are not inconsistent with the public interest.

E. Homeowners' associations or some other responsible party shall be required to maintain any and all common open space and/or common elements.

F. Lots of record are created with the recording of a planned development final plan.

Commercial or Industrial Criteria

Staff agrees the additional planned commercial or industrial development criteria as set out in Section 4.10.5 of the Unified Development Code are or will be met.

4.10.5 Planned Commercial or Industrial Developments

Approval of a planned commercial or industrial development may be issued by the governing bodies for buildings or premises to be used for the retail sale of merchandise and services, parking areas, office buildings, hotels and motels and similar facilities ordinarily accepted as commercial center uses and those industrial uses which can be reasonably be expected to function in a compatible manner with the other permitted uses in the area. In addition to the applicable standards and criteria set forth in Section 4.10.3, planned commercial or industrial developments shall comply with the following standards:

A. Screening

When commercial or industrial structures or uses in a planned commercial or industrial development abut a residential district or permitted residential buildings in the same development, screening may be required by the governing bodies.

B. Display of Merchandise

All business, manufacturing and processing shall be conducted, and all merchandise and materials shall be displayed and stored, within a completely enclosed building or within an open area which is completely screened from the view of adjacent properties and public rights-of-way, provided, however, that when an automobile service station or gasoline sales are permitted in a planned commercial development, gasoline may be sold from pumps outside of a structure.

C. Accessibility

The site shall be accessible from the proposed street network in the vicinity which will be adequate to carry the anticipated traffic of the proposed development. The streets and driveways on the site of the proposed development shall be adequate to serve the enterprises located in the proposed development.

D. Landscaping

Landscaping shall be required to provide screening of objectionable views of uses and the reduction of noise. High-rise buildings shall be located within the development in such a way as to minimize any

adverse impact on adjoining low-rise buildings.

Approval Criteria

Staff agrees the approval criteria as set out in Section 9.6.9 of the Unified Development Code are being met.

9.6.9 Approval Criteria

No special use permit or planned development shall be approved unless the following findings are made concerning the application:

A. *The project will not have a substantial or undue adverse effect upon adjacent property, the character of the neighborhood, traffic conditions, parking, utility facilities and other matters affecting the public health, safety, and general welfare.*
B. *The project will be constructed, arranged and operated so as to be compatible with the immediate vicinity and not interfere with the development and use of adjacent property in accordance with the applicable district regulations.*
C. *The project will be served adequately by essential public facilities and services such as streets, parking, drainage, refuse disposal, fire protection and emergency services, water and sewers; or that the applicant will provide adequately for such services.*
D. *The project will not result in the destruction, loss or damage of any feature determined by the governing bodies to be of significant natural, scenic or historic importance.*
E. *The project complies with all additional standards imposed on it by any particular provisions authorizing such use.*
F. *The request will not adversely affect any plans to be considered (see Chapter 1.9), or violate the character of existing standards for development of the adjacent properties.*
G. *The governing bodies may impose conditions to minimize adverse effects on the neighborhood or on public facilities, and to insure compatibility of the proposed development with surrounding properties, uses, and the purpose and intent of this development code.*
H. *Any decision to deny a special use permit request to place, construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in a written record, per the Telecommunications Act of 1996, 47 USC 332(c)(7)(B)(iii). The review body may not take into account any environmental or health concerns.*

Site Description

The subject property is +/-9.98 acres located on the east side of Watkins Street just south of Chelsea Avenue. To the south is property that is owned by Memphis and Shelby County Flood Control and is unlikely to be developed. A vacant railroad right-of-way is located to the north along Chelsea Avenue.

Conclusions

Memphis Urban Wood, LLC, has requested a special use permit for a planned industrial development, of a biomass campus for the processing of wood salvaged from tree removal by arboricultural activity in the greater Memphis area. The resulting products are lumber, wood compost, and biochar (a charcoal like material used as a soil amendment)

The proposed addition of a streetscape along Watkins St. will create a more desirable and aesthetically pleasing street frontage.

The proposed construction of a right-only exit onto Watkins will restrict truck traffic from travelling south into the residential neighborhoods.

The applicant has applied for an Air Pollution Control Permit to Construct Air Emissions Equipment to the Shelby County Health Department. The application can be found as Appendix A to the report.

The location and arrangement of the structures, parking areas, walks, lighting, and other service facilities are compatible with the surrounding land uses.

The proposed development will not unduly injure or damage the use, value and enjoyment of surrounding property nor unduly hinder or prevent the development of surrounding property in accordance with the current development policies and plans of the City and County.

RECOMMENDATION

Staff recommends approval with the following outline plan conditions.

Outline Plan Conditions

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    D. The location and ownership of any easement
    E. The 100 year flood elevation
    F. Fire hydrants in accordance with the requirements of the Memphis Fire Department.

DEPARTMENTAL COMMENTS

The following comments were provided by agencies to which this application was referred:

City/County Engineer: CASE 7: * PD 2023-025
NAME: 1230 North Watkins Street; VOLLINTINE EVERGREEN ADJACENT

1. Standard Public Improvement Contract or Right-Of-Way Permit as required in Section 5.5.5 of the Unified Development Code.

Sewers:
2. The availability of City sanitary sewer capacity is unknown at this time. Once the developer has submitted proposed sewer discharge rates to the City's Sewer Design Dept, a determination can be made as to available sewer capacity.

3. If sewer services are approved for this development, all sewer connections must be designed and installed by the developer. This service is no longer offered by the Public Works Division.

Roads:
4. The Developer shall be responsible for the repair and/or replacement of all existing curb and gutter along the frontage of this site as necessary.

5. All existing sidewalks and curb openings along the frontage of this site shall be inspected for ADA compliance. The developer shall be responsible for any reconstruction or repair necessary to meet City standards.

Traffic Control Provisions:
6. The developer shall provide a traffic control plan to the city engineer that shows the phasing for each street frontage during demolition and construction of curb gutter and sidewalk. Upon completion of sidewalk and curb and gutter improvements, a minimum 5-foot-wide pedestrian pathway shall be provided throughout the remainder of the project. In the event that the existing right of way width does not allow for a 5-foot clear pedestrian path, an exception may be considered.

7. Any closure of the right of way shall be time limited to the active demolition and construction of sidewalks and curb and gutter. Continuous unwarranted closure of the right of way shall not be allowed for the duration of the project. The developer shall provide on the traffic control plan, the time needed per phase to complete that portion of the work. Time limits will begin on the day of closure and will be monitored by the Engineering construction inspectors on the job.

8. The developer's engineer shall submit a Trip Generation Report that documents the proposed land use, scope and anticipated traffic demand associated with the proposed development. A detailed Traffic Impact Study will be required when the accepted Trip Generation Report indicates that the number for projected trips meets or exceeds the criteria listed in Section 210-Traffic Impact Policy for Land Development of the City of Memphis Division of Engineering Design and Policy Review Manual. Any required Traffic Impact Study will need to be formally approved by the City of Memphis, Traffic Engineering Department.

Curb Cuts/Access:

9. The City Engineer shall approve the design, number, and location of curb cuts.

10. Any existing nonconforming curb cuts shall be modified to meet current City Standards or closed with curb, gutter, and sidewalk.

11. Will require engineering ASPR.

12. Will need to repair the existing curb gutter, grass strip and sidewalk.

Drainage:

13. A grading and drainage plan for the site shall be submitted to the City Engineer for review and approval prior to recording of the final plat.

14. Drainage improvements, including possible on-site detention, shall be provided under a Standard Subdivision contract in accordance with Unified Development Code and the City of Memphis/Shelby County Storm Water Management Manual.

15. Drainage data for assessment of on-site detention requirements shall be submitted to the City Engineer.

16. The following note shall be placed on the final plat of any development requiring on-site storm water detention facilities: The areas denoted by "Reserved for Storm Water Detention" shall not be used as a building site or filled without first obtaining written permission from the City and/or County Engineer. The storm water detention systems located in these areas, except for those parts located in a public drainage easement, shall be owned and maintained by the property owner and/or property owners' association. Such maintenance shall be performed so as to ensure that the system operates in accordance with the approved plan on file in the City and/or County Engineer's Office. Such maintenance shall include, but not be limited to removal of sedimentation, fallen objects, debris and trash, mowing, outlet cleaning, and repair of drainage structures.

17. The developer should be aware of his obligation under 40 CFR 122.26(b)(14) and TCA 69-3-101 et. seq. to submit a Notice of Intent (NOI) to the Tennessee Division of Water Pollution Control to address the discharge of storm water associated with the clearing and grading activity on this site.

General Notes:

18. The width of all existing off-street sewer easements shall be widened to meet current city standards.

19. Development is greater than 1 acre and is in **FLOOD CONTROL SECTION 5.**

20. No other utilities or services may occupy sanitary sewer easements in private drives and yards except for crossings.

21. All connections to the sewer shall be at manholes only.

22. All commons, open areas, lakes, drainage detention facilities, private streets, private sewers and private drainage systems shall be owned and maintained by a Property Owner's Association. A statement to this

effect shall appear on the final plat.

23. Required landscaping shall not be placed on sewer or drainage easements.

City/County Fire Division: No comments received.

City Real Estate: No comments received.

City/County Health Department: No comments received.

Shelby County Schools: No comments received.

Construction Code Enforcement: No comments received.

Memphis Light, Gas and Water: No comments received.

Office of Sustainability and Resilience:

MEMPHIS AND SHELBY COUNTY DIVISION OF PLANNING AND DEVELOPMENT

Robin Richardson
Planner II
Office of Sustainability and Resilience
125 N. Main St., Memphis, TN 38103
Dorothy.Richardson1@memphistn.gov
MEMORANDUM

To: Brett Davis, Planner II

From: Robin Richardson, Planner II

Date: October 20, 2023

Subject: OSR Comments on PD 23-25: VOLLINTINE EVERGREEN ADJACENT

General Comments & Analysis:

Located in Zone 1 of the Resilience Zone Framework:

Zone 1 areas have the lowest level of development risk and conflict. These areas avoid high risk disaster zones, such as floodplains, and they also do not conflict with sensitive ecological areas. These areas are the most

straightforward for development, and development would have the lowest impact on regional resilience. Consider incorporating the protection of ecological assets while balancing the promotion of low-impact site design and compact development typologies in appropriate areas.

The site is currently vacant with little tree cover according to aerial photography. Most of the parcel is covered by impervious surfaces.

The site will be used for the processing of salvaged wood, creating timber, wood compost, and biochar. Both wood compost and biochar can be used as soil amendments to improve the fertility and productivity of soil, and they are ways to utilize the byproducts created from wood processing without generating extra waste. Biochar is created by a process called pyrolysis, during which material (such as wood, corn stalks, or other forms of dry organic waste) is burned at a high temperature with low or no oxygen content. Pyrolysis requires a specialized kiln to ensure that the organic material does not burn down to ash. Biochar can be useful for sequestering carbon from the atmosphere, as well as for some environmental remediation projects.

Consistent with the Mid-South Regional Resilience Master Plan best practices: Yes

This application is generally consistent with the Mid-South Regional Resilience Master Plan. The development will be infill development in Zone 1, which would be consistent with Section 4.1 – Resilient Sites and Section 4.2 – Smart Growth. Additionally, the purpose of this site – recycling salvaged wood – can contribute to the goals set forward in Section 6.2 – Debris Recycling, which specifically calls for the salvaging and recycling of things like fallen trees and other vegetative debris following natural disasters.

Consistent with the Memphis Area Climate Action Plan best practices: Yes

This application is also consistent with the best practices outlined in the Memphis Area Climate Action Plan. By reusing salvaged wood for other purposes, like lumber, compost, or biochar, the project would be consistent with Priority Action W.1 – Divert Greater Amounts of Organic Waste from Landfills. Additionally, as biochar can sequester carbon emissions, the increased use of biochar in the Memphis area would contribute to the Climate Action Plan's overall goal of reducing greenhouse gas emissions below 2016 levels 71% by 2050.

Recommendations: Staff has no recommendations.

Office of Comprehensive Planning:

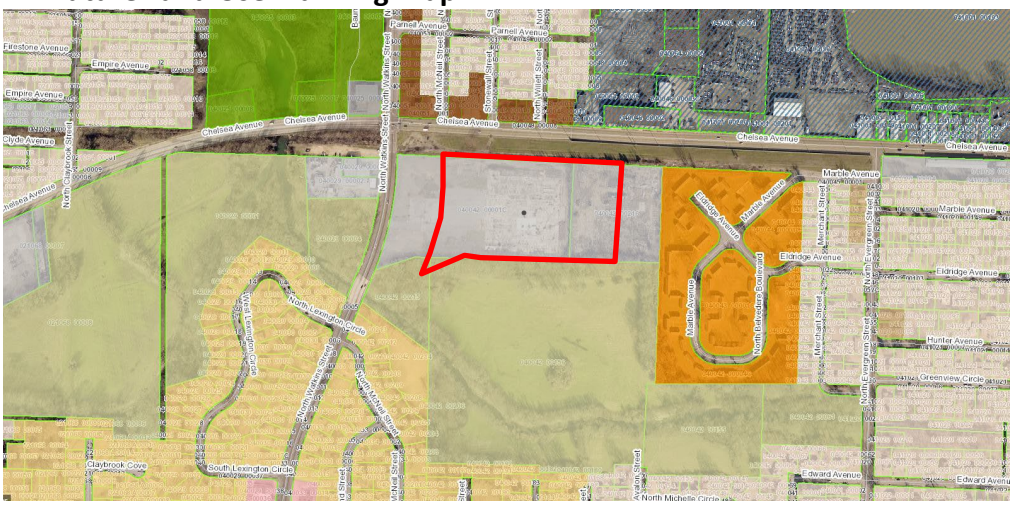
Comprehensive Planning Review of Memphis 3.0 Consistency

This summary is being produced in response to the following application to support the Land Use and Development Services department in their recommendation: LUCB Case PD 2023:025: Vollintine Evergreen Adjacent

Site Address/Location: 1230 N Watkins St.
Overlay District/Historic District/Flood Zone: Not in an Overlay District, Historic District, but in a .02% Annual Chance Flood Hazard Zone.
Future Land Use Designation: Industrial Flex (IF)
Street Type: Avenue

The applicant is proposing for a planned development to allow a biomass campus for the processing of wood from salvaged trees.
The following information about the land use designation can be found on pages 76 – 122:

1. Future Land Use Planning Map



Red polygon indicates the application site on the Future Land Use Map.

2. Land Use Description/Intent

Lower intensity industrial areas with a mix of uses and building scales that are generally compatible with nearby neighborhoods. Graphic portrayal of IF is to the right.

"IF" Form & Location Characteristics
Industrial with some commercial and service uses 1-6 stories.

"IF" Zoning Notes

Generally compatible with the following zone districts: EMP, IH in accordance with Form and characteristics listed above.

Existing, Adjacent Land Use and Zoning

Existing Land Use and Zoning: Parking, EMP

Adjacent Land Use and Zoning: Commercial, Industrial, and Vacant; CMU-3, RU-1(H), and EMP

Overall Compatibility: *This requested use to allow a biomass campus for the processing of wood from salvaged trees is compatible with the land use description/intent, form & location characteristics, zoning notes, and existing, adjacent land use and zoning. Additionally, the proposed use is buffered from the multi-family and single-family neighborhoods by the railroad right of way and vacant properties owned by Memphis and Shelby County Flood Control Authority.*

3. Degree of Change Map

Red polygon denotes the proposed site on the Degree of Change Map. There is no Degree of Change.

4. Degree of Change Description NA

5. Objectives/Actions Consistent with Goal 1, Complete, Cohesive, Communitie NA

6. Pertinent Sections of Memphis 3.0 that Address Land Use Recommendations NA

Consistency Analysis Summary

The applicant is proposing for a planned development to allow a biomass campus for the processing of wood from salvaged trees.

This requested use to allow a biomass campus for the processing of wood from salvaged trees is compatible with the land use description/intent, form & location characteristics, zoning notes, and existing, adjacent land use and zoning. Additionally, the proposed use is buffered from the multi-family and single-family neighborhoods by the railroad right of way and vacant properties owned by Memphis and Shelby County Flood Control Authority.

Based on the information provided, the proposal is CONSISTENT with the Memphis 3.0 Comprehensive Plan.

Summary Compiled by: Faria Urmy, Comprehensive Planning.

APPLICATION

MEMPHIS AND SHELBY COUNTY DIVISION OF PLANNING AND DEVELOPMENT

Record Summary for Planned Development

Record Detail Information

Record Type: Planned Development

Record Status: Pending

Opened Date: October 5, 2023

Record Number: PD 2023-025

Expiration Date:

Record Name: Memphis Urban Wood

Description of Work: Development of a biomass campus for the processing of wood salvaged from tree removal by arboricultural activity in the greater Memphis area. The resulting products are lumber, wood compost, and biochar (a charcoal like material used as a soil amendment)

Parent Record Number:

Address:
1230 N WATKINS ST, MEMPHIS 38108

Owner Information

Primary	Owner Name
Y	TAX SALE 219 GP

Owner Address

1779 KIRBY PKWY, GERMANTOWN, TN 38138

Owner Phone

Parcel Information
040042 00001C

Data Fields

PREAPPLICATION MEETING

Name of DPD Planner	Lucas Skinner
Date of Meeting	09/13/2023
Pre-application Meeting Type	In Person

GENERAL PROJECT INFORMATION

Planned Development Type	New Planned Development (PD)
Previous Docket / Case Number	Z 1988-157 SUP 2014-218 BoA 1970-009-CI
Medical Overlay / Uptown	No
If this development is located in unincorporated Shelby County, is the tract at least three acres? (Note a tract of less than three acres is not eligible for a planned development in unincorporated Shelby County)	N/A
Is this application in response to a citation, stop work order, or zoning letter	No
If yes, please provide a copy of the citation, stop work order, and/or zoning letter along with any other relevant information	-

APPROVAL CRITERIA

UDC Sub-Section 9.6.9A	Existing properties in the area along Chelsea and N. Watkins are either industrial in nature, such as demolition companies, auto glass, and tire companies, or vacant. To the south is property that is owned by Memphis and Shelby County Flood Control and is unlikely to be developed.
UDC Sub-Section 9.6.9B	Adjacent properties are vacant and/or owned by Memphis and Shelby County Flood Control. A vacant railroad right-of-way is located to the north along Chelsea Avenue.
UDC Sub-Section 9.6.9C	The property is served by primary streets. Parking is proposed on-site and general utilities will be provided by MLGW. There is an existing fire station located to the north on Chelsea Avenue for fire protection.
UDC Sub-Section 9.6.9D	There are no significant natural, scenic, or historic features on the site.
UDC Sub-Section 9.6.9E	Acknowledged
UDC Sub-Section 9.6.9F	Acknowledged

GENERAL PROVISIONS

UDC Sub-Section 4.10.3A	Acknowledged. Surrounding properties are generally vacant or undevelopable.
B) An approved water supply, community waste water treatment and disposal, and storm water drainage facilities that are adequate to serve the proposed development have been or will be provided concurrent with the development	Acknowledged
C) The location and arrangement of the structures, parking and loading areas, walks,	Surrounding uses are vacant properties and industrial uses.

GENERAL PROVISIONS	
lighting and other service facilities shall be compatible with the surrounding land uses, and any part of the proposed development not used for such facilities shall be landscaped or otherwise improved except where natural features are such as to justify preservation	
D) Any modification of the district standards that would otherwise be applicable to the site are warranted by the design of the outline plan and the amenities incorporated therein, and are not inconsistent with the public interest	Acknowledged. The site lies within an industrial zoning district and are not inconsistent with the public interest.
E) Homeowners' associations or some other responsible party shall be required to maintain any and all common open space and/or common elements	N/A
F) Lots of record are created with the recording of a planned development final plan	N/A

GIS INFORMATION	
Central Business Improvement District	No
Case Layer	-
Class	-
Downtown Fire District	No
Historic District	-
Land Use	-
Municipality	-
Overlay/Special Purpose District	-
Zoning	-
State Route	-
Lot	-
Subdivision	-
Planned Development District	-
Wellhead Protection Overlay District	No

Data Tables

AREA INFORMATION

Size (Acres):	9.98
Existing Use of Property:	Vacant
Requested Use of Property:	Wood processing

Contact Information

Name	Contact Type
MEMPHIS URBAN WOOD	APPLICANT

Address

114 S. COLLINGTON AVE., BALTIMORE, MD, 21231

Phone

(410)300-4206

Fee Information

Invoice #	Fee Item	Quantity	Fees	Status	Balance	Date Assessed
1507917	Planned Development - each additional or fractional acres above 5	5	500.00	INVOICED	0.00	10/05/2023
1507917	Credit Card Use Fee (.026 x fee)	1	52.00	INVOICED	0.00	10/05/2023
1507917	Planned Development - 5 acres or less	1	1,500.00	INVOICED	0.00	10/05/2023

Total Fee Invoiced: $2,052.00 Total Balance: $0.00

Payment Information

Payment Amount	Method of Payment
$2,052.00	Credit Card

LETTER OF INTENT

A2H
ENGINEERS · ARCHITECTS · PLANNERS

October 5, 2023

Division of Planning and Development
125 N. Main Street, Suite 468
Memphis, TN 38103

ATTN: Lucas Skinner

RE: Planned Development Outline Plan – Memphis Urban Wood LLC
Parcel ID 040042 00001C

On behalf of:
Urban Renaissance Partners
1708 Monroe Avenue
Memphis, TN 38104

A2H # 23156

Dear Mr. Skinner,

This Project Narrative concerns the Planned Development Outline Plan application for the Memphis Urban Wood biomass campus project.

This application is for Parcel ID 040042 00001C, located at 1230 N. Watkins Street, Memphis TN 38108. The parcel is located within the southeast corner of the intersection of North Watkins Street and Chelsea Avenue within Shelby County, TN. The existing zoning is EMP Employment Industrial district and upon consultation with DPD Staff, a Planned Development application is considered the best path forward. A2H Engineers will serve as Owner's representative.

A biomass campus is a zero-waste operation processing wood from arboricultural activity into saleable products as an alternative to landfill disposal. Woody biomass is processed into lumber, wood based compost, and biochar (activated charcoal) and sold to generate revenue from wood debris. Employment opportunities are also created in surrounding neighborhoods such as Klondike, Veca, Hyde Park, and Smokey City.

The existing site is approximately 9.98 acres and primarily covered by existing asphalt and concrete surfacing. Chelsea Avenue lies toward the north and N. Watkins St. lies toward the west. Chain-link fencing with a security wire topping presently surrounds the site. Three existing drive aprons accessing N. Watkins Street are located along the western property line. A vacant Union Railway r.o.w. is located along the north property line parallel to Chelsea Avenue. Vacant parcels are also located to the east (asphalt covered) and south of the site (open grass and a stream).

3009 Davies Plantation Road Lakeland, TN 38002 Phone: 901.372.0404 Fax: 901.373.4002
www.A2H.com

The proposed site will be accessed by a semi-circular truck delivery lane with access points to the north and south along the North Watkins right of way. The perimeter of the site will be fenced and screened to provide safety and sight/sound control.

A receiving and sorting area will be located east of the delivery lane, with logs to the south, non-millable material to south but further east, with green lumber storage area proposed toward the west property line within the lane semi-circle. An overflow storage area is proposed along the south property line. Also proposed is a biochar feedstock stockpile and product storage stalls.

A wheel loader and excavator will be used for material handling. Non-millable material will be staged and then processed in a low oxygen environment under an "air curtain" covered 40-yard container located in the middle of the site. The air-curtain apparatus provides mitigation of soot and particulates. Lumber and biochar will be staged on the site awaiting delivery to purchasers.

Utilities will connect to existing lines along N. Watkins. These include fire protection, domestic water, and gas. MLGW will be the utility provider. Sewer will also be provided with connection along N. Watkins Street.

If there are any questions, please do not hesitate to contact me at (901) 372-0404 or kevinn@a2h.com.

Sincerely,

A2H, Inc.

Kevin D. Norman, PLA, ASLA
Senior Planner

SIGN AFFIDAVIT

AFFIDAVIT

Shelby County
State of Tennessee

I, Kevin Norman *, being duly sworn, depose and say that at* 10:30 *am/pm on the* 26th *day of* October *, 20* 23 *, I posted* 3 *Public Notice Sign(s) pertaining to Case No.* PD 2023-025 *at* 1230 N. Watkins *, providing notice of a Public Hearing before the (check one):*

X *Land Use Control Board*
_____ *Board of Adjustment*
_____ *Memphis City Council*
_____ *Shelby County Board of Commissioners*

for consideration of a proposed land use action, a photograph of said sign(s) being attached hereon and a copy of the sign purchase receipt or rental contract attached hereto.

Owner, Applicant or Representative — *Date* 10/26/2023

Subscribed and sworn to before me this 26th *day of* October *, 20* 23 *.*

Notary Public

My commission expires: My Commission Expires September 6, 2026

LINDA BIRD
STATE OF TENNESSEE NOTARY PUBLIC
COUNTY OF SHELBY

LETTERS RECEIVED

Six (6) letters of support and 23 letters of opposition were received at the time of completion of this report and have subsequently been attached.

SUPPORT LETTERS

From: Connie Shepherd
To: Davis, Brett
Subject: Comment on PD 2023-025
Date: Tuesday, October 31, 2023 6:14:12 AM

PD 2023-025: VOLLINTINE EVERGREEN ADJACENT Application Link:
https://www.shelbycountytn.gov/ArchiveCenter/ViewFile/Item/13658

Mr. Davis, I have spoken with the Representative, Kevin Norman and the owner of Memphis Urban Works, Jeff Carroll. Both were able to answer my questions regarding the site and its impact on the neighborhood. I do not have any objections to this project going forward as is. I believe the next meeting is November 9 before Council.

Thank you for listening to my concerns,

Connie Shepherd

From: Reginald Reed
To: Ragsdale, Brett
Subject: Urban Works
Date: Wednesday, December 6, 2023 4:00:49 PM

Brett, I am in support of the proposed Memphis Urban Works facility located 1230 N. Watkins. Recycling wood products is a long needed asset in our community. This proposal lessens the burden on city waste facilities while also creating jobs in the neighborhood.

Thanks,

Reginald Reed
924 Ayers Street
Memphis TN 38107

Sent from my iPad
Reginald Reed

From: Pastor Walter J. Green
To: Ragsdale, Brett
Subject: Memphis Urban Wood Project 1230 N. Watkins
Date: Wednesday, December 6, 2023 5:45:02 PM

RE: Memphis Urban Wood Project

To Whom It May Concern:

Friendship Baptist Church (1355 Vollintine Ave) has been a part of the Klondike community for over 119 years. Many of the congregants were raised and educated in the Klondike/North Memphis Community. Klondike from its birth (1898) until the presence has been an African American Community. The community has been without any economic development until recently.

Presently the Klondike community has been a place of investment, and economic development. In a community that has struggled with blight, poverty, and crime, to have the Memphis Urban Wood Project, and other economic developments is welcomed.

Many have concerns about noise and air pollution. The Project Management Team has reassured the community that this project will be fully safe, and would not cause noise or air pollution. The management group also assured us of the project offerings:
1. Up to 10 jobs paying an average of $20.00 per hour.
2. Training and development on tree preservation, and recycling of fallen and cut downed trees.
3. Training of qualified residents to work with the Wood Project.
4. Planting of Trees to help in air purification
5. Partnership with schools to educate students on environmental safety and preservation.

As the pastor of Friendship Baptist Church, we are in support of this project. Klondike needs partners who are willing to invest in this historic community, I believe that Memphis Urban Wood Project is such a partner.

Sincerely,
Walter J. Green, D. Min.
Senior Pastor
Friendship Baptist Church

Klondike Smokey City
Community Development Corporation

December 6, 2023

Brett Ragsdale, AIA
Zoning Administrator
Division of Planning and Development
125 N. Main, Ste. 468 Memphis, TN 38103

Dear Mr. Ragsdale,

The Klondike Smokey City CDC, Inc., is writing to voice our support for the Memphis Urban Wood project located in Klondike on the corner of Chelsea and Watkins at 1230 N Watkins St. Vacant and blighted properties are a serious issue in our community, and MUW is working to turn one such property into an asset. We believe that the project represents a positive for our community economically and environmentally, and we welcome this kind of investment into the land, economy, and people of our neighborhood.

Respectfully,
Quincey G. Morris
Executive Director

To Brett Ragsdale
Land Use Control Board

From: Jeff Carroll CEO
Urban Wood Economy

Re: The Planned Development for 1230 N. Watkins St.

Subject: Proposal for Planned Development at 1230 N. Watkins St.

Dear Mr. Ragsdale,

I am writing on behalf of Urban Wood Economy (UWE), a non-profit consultancy dedicated to the environmental and social impact of reclaiming urban woody material for the creation of valuable products. Our expertise lies in mitigating carbon emissions and fostering job creation by repurposing wood sourced from trees and buildings within urban areas. With a strong track record in the urban wood and forestry sector, UWE is now actively engaged in Memphis, collaborating with local partners to establish an enterprise-driven model. Our aim is to significantly reduce the amount of woody material destined for landfills, thereby generating revenue and employment opportunities for the people of Memphis.

In Memphis alone, over 200,000 tons of wood waste material meet a fate of either mulching or landfill disposal. This translates not only to substantial revenue loss but also to the forfeiture of numerous job opportunities. Considering the escalating effects of climate change, ongoing urban development, and the consequences of tree-related issues such as disease and aging, the volume of trees being removed in our city will only rise, further exacerbating our losses.

I am confident that Memphis Urban Wood, the enterprise proposed for 1230 N. Watkins St., possesses the potential to become a national exemplar in utilizing wood sourced from the urban waste stream. Just recently, 50 influential figures in the Urban and Community wood sector visited Memphis to survey the location earmarked for MUW and to gain insights into replicating our initiatives in their respective cities across various states including MS, KY, CA, NC, MD, PA, ID, WI, VA, GA, and of course, other parts of TN. This presents an exceptional opportunity for Memphis to take the lead in scaling up urban and community wood utilization on a national level.

I strongly encourage you to recognize the invaluable worth of this project to both our community and the city as a whole. Your approval of the Planned Development would be a pivotal step towards realizing these transformative goals.

Warm regards,

Jeff

Jeff Carroll CEO
Urban Wood Economy
jeff@uweconomy.org

December 5, 2023

Brett Davis, AICP
Memphis & Shelby County Division of Planning & Development
Memphis, TN 38103

Re: PD 2023-025 Memphis Urban Wood Planned Development

Dear Mr Davis,

The Works, Inc. (TWI) is excited to support Memphis Urban Wood's Planned Development application for 1230 N. Watkins. As the largest and most comprehensive community development corporation in Memphis, we believe that the reactivation of this nearly 10-acre vacant parcel underscores a significant rebirth taking place in the Klondike Community.

As you are aware, the proposed application plans to recapture and reuse wood and lumber products that have fallen or are presently discarded and thereby in a state of waste. These products will then be transferred to a separate site where they will be cultivated and ultimately reused as a tangible asset consistent with the type of innovative restoration that enhances the reuse of a long vacant site.

As we continue with our additional efforts to revitalize the Klondike community's additional assests such as housing, food facilities, and community space it is our hope that this project will be granted approval with all due just and merit. Thank you again for your consideration of this critical application.

Sincerely,

The Works, Inc.
1471 Genesis Circle
Memphis, TN 38106

Roshun Austin, President & CEO

1471 Genesis Circle | Memphis |Tennessee | 38106 | www.theworkscdc.org

OPPOSITION LETTERS

From: Natalie Hoffmann
To: Davis, Brett
Subject: Planned development 1230 N Watkins st
Date: Tuesday, October 31, 2023 11:58:46 PM

The CoM Email Security System couldn't recognize this email as this is the first time you received an email from this sender nhdesignmemphis@gmail.com

CAUTION: This email originated outside of the **City of Memphis** organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello Mr. Davis,

My name is Natalie Hoffmann and I'm a resident in Vollentine Evergreen. I went to the meeting last night about the planned development at 1230 N Watkins street and wanted to submit my comments.

I think the project itself could be a very valuable asset to memphis, the idea of creating a new green industry here from wood waste seems very positive and it appears the approach the company is taking is smart and well thought out in terms of waste and recycling and in their dedication to employing people in the community. I think this industry and company could play a very valuable role in the city of Memphis. However, I have many concerns with the proposed location of this operation and it's uncomfortably close proximity to people's homes. I don't understand why this would be located in a neighborhood when more industrial areas are available in the city and seem much more appropriate for something like this. The number of jobs this campus will provide is very low (6-8) and it doesn't seem to justify the problems it could create for those who reside near it.

This entire process also seems very rushed - I think it's important that the health department report regarding the proximity of the biochar to homes is analyzed and discussed in more detail and people need to be given more time to understand exactly what is being proposed for the neighborhood and all of the effects it will have.

Thank you,
Natalie Hoffmann

From: Teresa Henderson
To: Davis, Brett
Cc: Teresa Henderson
Subject: Proposed Planned Development for Biomass Campus
Date: Tuesday, October 31, 2023 11:45:14 PM

Dear Mr. Davis,

I am writing to express my concern to the Land Use Control Board regarding the planned development of a biomass campus for the processing wood at property adjacent to the Vollintine Evergreen neighborhood.

I want to let you know that I am opposed to having the biomass campus placed in this residential area. There is also concern that this biomass campus will adversely affect those residing in this area with carbon dioxide emissions and other emissions.

I am asking that the Land Use Control Board consider a more suitable area for this business other than to Vollintine Evergreen neighborhood.

Thank you for your time and consideration.

Respectfully submitted,

Teresa Henderson
1038 North Willett St.
Memphis, TN 38107

From: Schaeffer Mallory
To: Davis, Brett
Subject: Re: Memphis Urban Wood proposed site
Date: Tuesday, October 31, 2023 10:57:03 PM

Mr. Davis,

My name is Schaeffer Mallory, I am a resident of the VE neighborhood (1454 Faxon Ave) and live just a few blocks from the proposed site for Memphis Urban Wood.

I will try to keep my concerns brief. However to preface, I will say that on the whole I am very much behind the goals and mission of MUW. It is ultimately heartbreaking to consider hundreds of thousands of tons of Memphis canopy rotting in a landfill. The idea that it could be repurposed and have its value reinvested into the world is something I am moved by. It reminds me of how Memphis was once a hub for world class furniture, built from lumber salvaged from abandoned boats floating down the Mississippi.

However, the proposed placement of MUW in the middle of a residential area is at best inefficient and at worst disruptive. A facility of this kind would be much better placed in an already industrial area of Memphis, potentially even nearby major wood suppliers such as Woodland.

The economic impact of MUW would be at best insignificant. 6-8 jobs for a disproportionally underemployed neighborhood is negligible and frankly almost offensive when touted as a "jobs creator."

On the list of needs for this area of Memphis, a cutting edge lumber mill and biochar facility is extremely low. In fact, such a facility would meet virtually zero needs of this community. To list just a few higher priority needs: grocery stores, libraries, child care facilities, parks.

I look forward to hearing about the exciting work of MUW, but hope that its campus finds a site better suited to light industry.

Best,
Schaeffer Mallory

From: George Williford
To: Davis, Brett
Subject: Site of the Biomass Facility
Date: Tuesday, October 31, 2023 9:11:14 PM

The CoM Email Security System couldn't recognize this email as this is the first time you received an email from this sender gm.williford@gmail.com

CAUTION: This email originated outside of the **City of Memphis** organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Mr. Davis,

I'm George Williford, a resident near the proposed facility (1026 N Willett). I appreciate the positive aspects of Memphis Urban Wood's goals, especially the focus on a sustainable, tree-based economy and biochar production.

However, some concerns arise about potential disruptions to our neighborhood's character. I worry about the noise affecting the neighborhood and the local ecosystem, and I think our neighborhood needs to see the paperwork on emissions. The proposed rezoning also raises questions about any alternative future paths of community development.

Given the complex nature of this proposal, more time for community consultation would be appreciated. Perhaps considering a location better suited for such work could be explored. I'm hopeful for ongoing dialogue and potential adjustments.

Best regards,
George Williford

From: Mable Johnson
To: Davis, Brett
Subject: Biomass Campus
Date: Tuesday, October 31, 2023 7:47:08 PM

The CoM Email Security System couldn't recognize this email as this is the first time you received an email from this sender mablejohnson737@gmail.com

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Hello Brett Davis,

I live on North Avalon Street. I am against the Biomass Campus being in my neighborhood. I believe that the Biomass Campus is not good for my neighborhood.

Thank you,
Mable Johnson

---------- Forwarded message ----------
Dear Mr. Davis.
I have many concerned with building this biomass campus at the Watkins address. I attended a neighborhood meeting last night at VECA and was not satisfied with responses to questions.
1. How will this facility affect the air quality in the area.

2. How will this make a positive impact on the neighborhood? Property taxes, etc.
3. Will a heavy industry zone decrease the value of property in the area?
4. How much additional traffic will this create at this intersection, noise level from extra traffic, as well as added emissions from extra vehicles.

---

5. What is the noise level of running machinery?
6. How will waste be handled and will any affect the adjacent creek.

I am an elderly resident in VECA. I would like to have more discussion regarding this facility in my neighborhood.
Thank you.
Lilly R. Gilkey.

Sent from AT&T Yahoo Mail for iPhone

From: Angela Y Walker
To: Davis, Brett
Subject: Application PD2023-025 VOLLINTINE EVERGREEN ADJACENT
Date: Tuesday, October 31, 2023 4:28:09 PM

The CoM Email Security System couldn't recognize this email as this is the first time you received an email from this sender aywalker29@yahoo.com

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Hello Mr. Davis,
My name is Angela Walker. I would like to express my concerns for the application and proposal for a Biomass Campus at 1230 N. Watkins.
I have been a residence of the Vollintine Evergreen Community for over thirty years. I love this neighborhood and enjoy the beauty and quaintness of the homes as well as the neighborhood businesses that makes this a thriving and family friendly community.
Children make up a large number of the residents in our neighborhood. My concerns about the Biomass Campus are of the potential health hazards to our children and all residents of Vollintine Evergreen. The by product of this Biomass campus could adversely effect the health of our community for generations to come.
Another concern is the activity this campus will have on polluting the natural waterways such as Cypress Creek and other Bayous in the area. For these reasons, I am also concerned about the decrease of the property value of this vibrant community.
Therefore, I STRONGLY OPPOSE of the application that the Planning and Development Office have received for a Biomass Campus at 1230 North Watkins. PLEASE DO PROCEED WITH THIS PROPOSAL.
If Planning and Development and others are interested in our neighborhood and community and would like to make positive changes, strongly consider directing your efforts toward decreasing the pollution of Cypress Creek. You can develop a family friendly recreational area like a park with activities for children and a walking trail.

Sincerely,
Angela Walker
1016 N. Willett St.
Sent from my iPhone

From: Brandi Rinks
To: Davis, Brett
Subject: Re: PD 2023-025 Memphis Urban Wood Application
Date: Tuesday, October 31, 2023 10:58:46 AM

Mr. Davis - upon discussion over notes from the community meeting held on this matter along with company representatives, I wanted to follow up and reiterate that the neighborhood stands opposed to this development.

The rezoning of the land from light industrial to heavy is not something that the neighbors and homeowners want and there is worry about what that would open the door to in the future and that it would possibly preclude other neighborhood resources (such as grocery stores, libraries, etc.) from being developed there in the future.

Also, the noise from the equipment so close to residential areas is a serious concern. The company also stated they would create jobs, but it was well under 10 jobs and they stated they may only hire 3 people. Between the very short amount of time given for neighborhood feedback, the rezoning that could bring more noisy corporations in the future, perhaps even in this spot if the proposed business fails, and the minimal benefit to this historic residential neighborhood, I see no reason the neighborhood should be in support of this proposal for this location. There are surely other locations not in residential areas in the heart of our city they could pursue.

Thank you,

Brandi Rinks

Sent from my iPhone

> On Oct 29, 2023, at 12:22 PM, Brandi Rinks <brandi.rinks@gmail.com> wrote:
>
> Mr. Davis:
>
> Please accept this letter as opposition to the proposed Memphis Urban Wood application for a Biomass campus at 1230 N Watkins.
>
> There are noted health risks for communities located near these facilities, and the VECA and Evergreen Historic Districts do not want to live near the health hazards, pollution, and noise that they produce.
>
> The Southern Environmental Law Center states this about communities near such facilities:
>
> **"These communities are exposed to increased air pollution and dust from these facilities, round-the-clock noise, local tree loss, and increased truck and rail traffic—all things that can negatively impact their health and quality of life."**

<Biomass_600x450_TopicPages.jpg>
The environmental impacts of biomass energy
southernenvironment.org

Thank you for respecting the concerns of the neighborhoods when considering this proposal.

Thanks!

Brandi Rinks
Evergreen Historic District

Sent from my iPhone

From: Zach Mitchell
To: Davis, Brett
Subject: Biomass Campus
Date: Tuesday, October 31, 2023 9:18:22 AM

Hello,

My name is Zach Mitchell and I am a resident of the Vollintine-Evergreen neighborhood. I attended the meeting about the proposed biomass campus last night and would like to voice my disagreement with the project. While I believe that the biochar/lumber product production process is environmentally sound and do not oppose such a facility being built somewhere in Shelby County, I do not see what benefit it provides the neighborhood. I do not believe the promise of 6-8 jobs (only 3 of which were guaranteed to go to V-E residents) is worth the hassle and nuisance of rezoning an area so that they can operate machinery closer to residential areas. I worry about the property values in that area dipping and it being less attractive for other, more helpful businesses. I am happy that the company seemed open to some sort of philanthropic venture in the neighborhood, but until they can commit to something like that in writing, I do not believe the tradeoff is worth it.

Sincerely,
Zach

From: Paula Martens
To: Davis, Brett
Subject: Planned Development for a Biomass Campus
Date: Sunday, October 29, 2023 1:45:08 PM

Dear Mr. Davis,

As a 40+ year resident of Vollintine-Evergreen I AM DEFINITELY OPPOSED to the planned development for a Biomass Campus at 1230 N Watkins. This would be adjacent to our family neighborhood as well as very near to Cypress Creek and the Wolf River. The stated purposed of this Biomass facility is to turn trees into compost, lumber and biochar. The conversion processes would affect the air (and smell) in our neighborhood as well as potentially contaminating the nearby soil. I don't know if environmental studies are available on the pollutants these processes will generate (toxins, carcinogens, etc) but they need to be performed. PLEASE DO NOT CONSIDER APPROVING this facility so close to a family neighborhood.

Paula Martens
1001 N. Willett
Memphis,TN 38107

From: Bauer, Rachel
To: Davis, Brett
Subject: Proposed placement of a biomass campus in the Vollentine Evergreen community
Date: Sunday, October 29, 2023 8:35:06 AM

Dear Mr. Davis,

We are writing about the proposed placement of a biomass campus in the Vollentine Evergreen community (https://shelbycountytn.gov/ArchiveCenter/ViewFile/Item/13658).

Our 14 year old has asthma and I (Rachel) also suffer from respiratory problems. Our family is against the creation of anything that will further pollute the air in our neighborhood.

Please decline this permit and instead suggest they look at areas farther away from residential spaces, where their impact on people's health will be negligible.

Please let us know if you need anything else from us,
Rachel Bauer & Alberto del Pozo
755 University Street
Memphis, TN 38107

Dr. Rachel Bauer
Rhodes College
Memphis, TN 38112-1690

From: cheryle braswell
To: Davis, Brett
Subject: Biomass campass
Date: Saturday, October 28, 2023 9:54:31 PM

Dear sir, it has been brought to my attention that a proposal has been presented for a biomass plant for processing wood from savage trees. I am strongly against this, because I believe that it would be harmful to our community.
I'm very concerned about pollutants being filtered in the air. Causing health problems, such as asthma, respiratory disease, and possible birth defects. We have a lot of children and elderly people in our community. For the life of me, I don't understand why someone would want to put this in our neighborhood. Why not put it in some rural area, not around people. Burning wood or anything else is not a clean process. There are several reasons I believe. This happens in certain Communities, let me name a few. 1. being a minority ,2. living beneath the poverty line.3. Everyday, hard-working people trying to make it in life, not begging for anything. I could go on,
but let me say this. I have lived in my home for 35 years and in my neighborhood, there are a lot of retired people, some have been in there homes 60 plus years, and we do take pride in our community. I live on Terry circle. The cross street is Avalon.
Mr Davis, we do have a voice, and we want to be heard loud and clear.

Thanking you in advance for your ear. Respectfully Cheryle Braswell

From: Olivia
To: Davis, Brett
Subject: Biomass Campus
Date: Tuesday, October 31, 2023 4:16:49 PM

Please don't allow this facility to be built so close to a residential area. The wood burner is of concern. Toxicity, stench, environmentally unwelcome.
I own 709 Dickinson St. in VECA
Please don't approve the Biomass Campus
Amy Olivia Flasdick

From: Jennifer Sanders
To: Davis, Brett
Subject: Biomass Campus
Date: Saturday, October 28, 2023 5:22:58 PM

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Hello Brett Davis.
My name is Jennifer Sanders. I am against the Biomass Campus for salvaged trees wood in my community and neighborhood. We have enough problems with Cypress Creek. I refuse to deal with another hazard. I do believe the suburbs would be a better fit, example Germantown, Collierville, Eads, Bartlett, Arlington, Covington, Munford and other suburbs.

Thank you,
Jennifer Sanders

From: Gwen Johnson
To: Davis, Brett
Date: Wednesday, October 25, 2023 5:23:32 PM

The CoM Email Security System couldn't recognize this email as this is the first time you received an email from this sender gwenprayerwarrior@gmail.com

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Mr. Brett I do not want this bio mass facility plant in my neighborhood I have lived in this neighborhood for 40 plus years and I feel that this is a health hazard most of us in this neighborhood are senior citizens and I would appreciate it if you would find another location to place this bio mass facility wood burning plant thank you.
Gwendolyn Johnson

Ragsdale, Brett

From: wealth.mystic0j@icloud.com
Sent: Wednesday, November 1, 2023 7:55 AM
To: Davis, Brett
Subject: PD 2023-025: Vollintine Evergreen Adjacent

Good morning Mr. Brett Davis,

This letter is regarding the Land Use Control Board application PD 2023-025: Vollintine Evergreen Adjacent. The proposed application for 1230 N. Watkins St. has raised concerns due to several reasons. Firstly, it falls beyond the current zoning of the site, so the applicant had to file a Planned Development. Secondly, the Health Department still needs to grant a permit, as they require notification to property owners within 1000 feet. However, the Land Use Control Board only requires notice to property owners within 500 feet.

The public comment process for this application raises accessibility questions, as the public announcement and deadline for written comments only allow less than 20 days to submit public comments. The owners of the proposed site and project did not actively reach out to communities for public input beyond the 500 feet, making it difficult for those impacted by the pollution in Cypress Creek, who are more than 500 feet from the site, to engage in the review process.

Residents have a right to be concerned about environmental hazards and how pollution from industrial facilities threatens their health. The proposed project is adjacent to Cypress Creek, which has a history of toxic pollution from chemical dumping. In the 1950s, 1960s, and 1970s, chemical dumping from local chemical plants occurred, contaminating the water and soil along the creek. Residents of the Vollintine-Evergreen neighborhood were unaware of the extent of the problem until a 1996 neighborhood cleanup when volunteers were advised by environmentalists and regulators not to "be mucking around in that stuff." Testing revealed that the Cypress Creek residential properties around Evergreen contained toxic chemicals that exceeded Environmental Protection Agency standards.

As of 2023, interest in and concern about the contamination of Cypress Creek has not decreased. It is important for there to be environmentally sustainable development. However, we also need more openness and accountability from the applicant and their partners, especially towards the surrounding communities impacted by polluting industries and infrastructure. We cannot ignore the devastating effects of industrial pollution, such as physical and emotional health problems, diminished quality of life, and decreased property values.

I appreciate you taking the time to consider my comments.

Sincerely,

Jay Robert

Land Use Control Board
Re: PD 2023-025 Vollintine Evergreen Adjacent OPPOSED
Attn Brett.Davis@memphistn.gov

LUCB:

We oppose this application because of its lack of detail.

The methods of capturing biomass are diverse and can have powerful and negative effects on the surrounding communities. We'd like to be sure that the lack of information isn't hiding plans for the least expensive and most polluting technique.

This application's choice of location is also a problem, as this neighborhood has been previously devastated by the polluting of Cypress Creek.

We ask the LUCB to support the neighborhoods around this project by insisting on much more information and much more transparency before even considering such a potentially damaging operation. The information NOT contained in this application is far more important than what is being shared.

We oppose this application.

Emily Bishop

Emily Bishop
President, MidtownMemphis.org

Robert Gordon
P&D Cmte Chair

CC:
Robert Montague, Binghampton CDC
VECA Historic
Karen Edwards, VECA
Justin Gillis, Speedway Terrace
Cheryl Hazelton, Speedway Terrace
Don Jones, Evergreen
Jeremy Williams, Evergreen

MIDTOWN MEMPHIS.ORG

66 S. Cooper St., Ste. 506
Memphis, TN 38104

info@midtownmemphis.org

MidtownMemphis.org

From: sf walker
To: Davis, Brett
Cc: sfw757@hotmail.com
Subject: 1230 Watkins OppoSE
Date: Wednesday, November 1, 2023 8:07:27 AM

To whom it may concern,

We are opposed to the attempt or request to the consideration of in any way modifying the Zoning code or district for the 1230 North Watkins property.

The current EMP zoning classification should not be modified from lighter Industrial type that allows the store and sale lumber to allow heaver industrial exception to allow the processing and production of lumber.

The current EMP protects the community by strictly prohibiting Manufacture of chemical, drug, soap, paints, abrasive products, fabricated metal products.

Heavy industrial districts which are intended to accommodate extractive and waste-related uses, that by their nature create some nuisance that should be away from residential districts or other less intense mixed or industrial districts.

This planned development seems to bring nothing to the community. In fact the intent seems to give little and take much. The property owner's and stakeholder's Return on their Investment would significantly outweigh the Risk on their Investment. Their immediate plan to employ 6 to 8 people from the community is no Reinvestment for the community. While further projections may employ up to 200 employees it projects to yield millions maybe billions in revenue based on their other same ventures in other cities.

We employ you to reject the application for the Planned Development at the 1230 N. Watkins site.

Respectfully,

Johnny Walker
850 N. Watkins

From: Jg
To: Davis, Brett
Subject: Fwd: 1230 Watkins OppoSE
Date: Wednesday, November 1, 2023 8:18:12 AM

I oppose the application supporting the email below

James Gultry
786 N McNeil

Begin forwarded message:

From: sf walker <sfw757@hotmail.com>
Date: November 1, 2023 at 8:09:45 AM CDT
To: jamessr@mail.com, nvw2246@gmail.com
Subject: FW: 1230 Watkins OppoSE

From: sf walker [mailto:sfw757@hotmail.com]
Sent: Wednesday, November 1, 2023 8:07 AM
To: brett.davis@memphistn.gov
Cc: sfw757@hotmail.com
Subject: 1230 Watkins OppoSE

To whom it may concern,

We are opposed to the attempt or request to the consideration of in any way modifying the Zoning code or district for the 1230 North Watkins property.

The current EMP zoning classification should not be modified from lighter Industrial type that allows the store and sale lumber to allow heaver industrial exception to allow the processing and production of lumber.

The current EMP protects the community by strictly prohibiting Manufacture of chemical, drug, soap, paints, abrasive products, fabricated metal products.

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This planned development seems to bring nothing to the community. In fact the intent seems to give little and take much. The property owner's and stakeholder's Return on

From: Alexandra Eastburn
To: Davis, Brett
Subject: In regards to the biomass plant proposal for N Watkins
Date: Wednesday, November 1, 2023 8:02:26 AM

The CoM Email Security System couldn't recognize this email as this is the first time you received an email from this sender alexandratheswan@gmail.com

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Dear Brett,
My name is Alexandra Eastburn & I live near the dead end of N Willett off Vollintine. I attended the meeting about the biomass campus at VECA & after thoughtfully listening to the speaker I strongly feel this sort of facility doesn't belong in our neighborhood. However I believe a place like this would be very beneficial to our city, but should be located in a more appropriately designated zone. I also ask that we extend the timeframe to consider this very important matter, as most of my neighbors, myself including, only just learned about the proposal a few days ago. We need more time to bring this important matter to light in our community and give people a chance to have conversations about this. We also need to see a health report. Thank you.

Alexandra Eastburn of the V&E historic district

Sent from my iPhone

From: Judson Williford
To: Davis, Brett
Subject: Application PD-2023-025
Date: Wednesday, November 1, 2023 7:29:17 AM

I wanted to express concerns about the application for the wood processing facility on Watkins.

While the business may have best intentions with respect to bringing jobs into the community and planting trees to offset the cutting of trees, I am concerned that this business may in fact have a side effect of increasing the rate of deforestation occurring within the city and including the surrounding community.

They use the term "salvage trees" to indicate they are not processing any trees that haven't already been cut down for other reasons. But there are economic side-effects that this business may cause. If current tree-cutting firms discover they can be paid, or even that their cost of disposing of cut trees can be reduced, then their businesses will make more profit and they may be encouraged to push the cutting of more trees.

Memphis has sometimes been called a city in a forest. However, development projects within the city and surrounding area are rapidly changing that. Our city is in a period of more intense deforestation.

Yes, changing weather has caused many trees to come down. Much of that is perfectly natural. But humans have begun accelerating the cutting of perfectly healthy trees, often out of fear that even the small chance of a storm bringing their tree down will damage their home. They have to protect their property. But I've already seen several cases in my neighborhood where tree services have pushed the cutting down trees instead of maintenance to the tree, just to get the extra business.

I next would refer your body to the web page published by Memphis Works CDC about this project: https://theworkscdc.org/memphis-urban-wood/
Quote from that web page: "This urban wood reutilization project will also help with tree management at the intersection of forests and urbanized areas (wildland urban interface) where fallen trees can be a fire hazard."
This concerns me even more, because now they are talking about stepping into the forests and interfering with the natural ecology of fallen trees, which scientists have frequently documented as important contributors to the health of the forest!

I'm just concerned that this business will perpetrate actions ostensibly on behalf of environmental good that will actually negatively affect the environment, both human and natural.
This business needs to be held more accountable for their planned actions and the possible side effects BEFORE they are allowed to proceed!

Thank you,

Judson Williford
40 Charlotte Circle
Memphis, TN

From: Jane Jeffrey <jjeffrey1@mac.com>
Sent: Tuesday, October 31, 2023 11:30 AM
To: Davis, Brett
Subject: LUCB application PD 2023-025: Vollintine Evergreen Adjacent

Wkh#FrP #Hp dl#Vhfxulw|#V|vwhp #Frxogq*w#hfrjql}h#klv#hp dl#lv#klv#v#wkh#lnvw#wp h#|rx#hfhlyhg#lq#hp dl#urp # wklv#vhqghu#mhiuh|4C p df1rp #

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Dear Mr. Davis,
I live at 729 N. Avalon, 38107, in the Vollintine-Evergreen neighborhood. I am opposed to the development of the sawmill facility at 1230 N. Watkins. I attended the VECA meeting last night, and after listening to the community's concerns, I am convinced that this facility will have a negative consequences for the neighborhood.
Thank you for the opportunity to voice my concern.
Sincerely yours,
Jane Jeffrey
jjeffrey1@mac.com

From: Susan JENNINGS <skjennings2012@yahoo.com>
Sent: Tuesday, October 31, 2023 9:56 AM
To: Davis, Brett
Cc: Nicole Dorsey; Joni Laney; Robert Gordon; Christina Ross (Lea's Woods); richard russell; Steve Solomon; kristin@inspirecafememphis.com; Vaughan Dewar
Subject: Opposition Letter to PD 2023-024

CAUTION: This email originated outside of the **City of Memphis** organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Mr. Davis,

I understand the need to support new business in Memphis, but am concerned about the increasing traffic volume on Sam Cooper.

Please add my opposition to the section of **PD 2023-024:Binghampton** (planned development to allow any use permitted in the CMU-1 zoning district in addition to Drive-thru restaurants east of Lipford Street at 2957 Broad Ave) that includes a proposal to include a drive-through restaurant which will potentially create a line of cars on Sam Cooper boulevard.

Thank you for your consideration of this matter which will contribute to the safety of Sam Cooper boulevard and the integrity of our neighborhood.

Best regards,

Susan

Susan Jennings

901-487-6467

Appendix A

Minor Source Construction Air Permit Application

Memphis Urban Wood

1230 N. Watkins S

Memphis, TN 38109

October 2023

Project No. 111422.00

Prepared For Submission to:

Shelby County Health Department

1826 Sycamore View Road

Memphis, TN 38134

Prepared By:

Tioga
ENVIRONMENTAL CONSULTANTS
357 North Main Street
Memphis, Tennessee 38103

Table of Contents

APPENDICES

1.0 INTRODUCTION

The Memphis Urban Wood (MUW) facility located at 1230 N. Watkins Street in Memphis, Tennessee, operates under NAICS Code 321113 Sawmills. With this application, Memphis Urban Wood is requesting a Construction Air Permit from the Shelby County Department, Air Pollution Control Branch authorizing the installation of an air curtain incinerator, sawmill, and trommel screen to produce lumber and biochar from clean wood materials.

This permit application is divided into sections for ease of review. Section 2.0 contains descriptions of the facility processes, Section 3.0 contains emission calculations, and Section 4.0 contains a detailed regulatory review. Additional information is contained in the appendices. Appendix A contains the Permit Application Forms, Appendix B contains maps and site plans, and Appendix C contains equipment manufacturer provided information.

2.0 FACILITY AND PROCESS DESCRIPTION

Memphis Urban Wood's mission is to create a zero-waste urban tree economy that generates jobs and community wealth by taking trees typically disposed of in a landfill and turning them into valuable products like lumber and biochar. Memphis Urban Wood (MUW) proposes to construction a sawmill, located at 1230 North Watkins Street, Memphis, Tennessee where clean fallen hardwood trees from around the City of Memphis that would typically end up in a landfill will be used to create valuable lumber, biochar and other carbon capturing products.

With this application, MUW proposes to apply for a Construction Air Permit with the Shelby County Health Department (SCHD) for coverage of the following four emission units (EU):

- Air curtain incinerator (EU-1)
- Sawmill (EU-2)
- Trommel screen (EU-3)
- Material handling between processes (EU-4)

Construction is currently underway, and project completion is expected by October 30, 2023 and we are requesting an expeditious review of our construction application*. The facility's non-mobile equipment is powered by electricity provided by Memphis Light, Gas, & Water (MLGW) and there are no stationary fuel-burning motors in use on-site.*

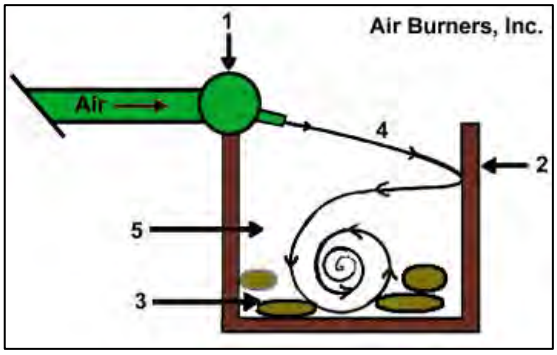
2.1 EU-1 AIR CURTAIN INCINERATOR

MUW plans to install a single CharBoss air curtain incinerator on-site. Clean wood materials collected in Shelby County and generated by the sawmill will be processed by the air curtain incinerator to produce biochar, a high-quality soil supplement used to introduce pure residual carbon back into farmed soil.

The ACI is a 27 ft. x 8.5 ft x. 8 ft. refractory-lined fire box with a 75 HP electric motor and fan. The fan outlet is connected to a manifold that runs along the top of one of the long edges of the ACI. The fan forces air into the fire box as clean wood material burns to reach near 100% combustion efficiency. This process eliminates nearly all visible particulate matter leaving the fire box and increases the rate of combustion to reduce the biochar production time. The ACI has no burners or heaters to keep material burning or at temperature. The process only starts if a fire is started in the ACI by an external source and it only lasts as long as fresh wood is added to the process during operations.

While the air curtain creates conditions for nearly complete combustion of all the gas and particulate emitting from the fire box, there are sections of the firebox which are isolated from receiving fresh air by the air curtain. With minimal fresh air, the wood within the firebox will reach high temperatures, breaking down the wood into biochar without turning it to ash.

Figure 1 provides a diagram and process description of the proposed ACI, as provided by the equipment manufacturer.



1. Manifold and nozzles directing high velocity air into the fire box.
2. Refractory lined wall.
3. Clean Wood Material to be burned.
4. Initial airflow forms a high velocity "air curtain" over the fire.
5. Continued air flow provides excess oxygen keeping fire temperatures high resulting in more complete combustion and a cleaner more complete burn.

Figure 1. Air Curtain Incinerator Diagram

The proposed ACI will have the ability to incinerate 11 tons per hour of clean wood material. At an average conversion rate of 1 cubic yard of biochar produced per ton of wood, the ACI has a potential biochar production rate of 11 cubic yards per hour and up to 72,270 cubic yards per year. This is an excellent way to use wood that normally would be destined for disposal to produce a valuable product.

While "incinerator" is in the name of the ACI, the State of Tennessee's regulatory definition of an incinerator (Rule1200-03-02-.01(w)) requires the equipment be used to reduce the volume of refuse. In this situation, the ACI will be used to produce a product using quality feed stock, and therefore does not meet the regulatory definition of an incinerator. The City of Memphis ordinance (Section 9-12-4**)** specifically refers to the air curtain incinerator process that does apply to MUW operations. Further details on these regulations are available in the Section 4.0 of this report.

2.2 EU-2 SAWMILL

The MUW sawmill is a bandsaw type sawmill that will operate on-site. It will be capable of processing 10,000 tons of wood per year collected from the Shelby County area. The sawmill will produce 750,000 board feet per year. These boards are made from clean wood found in Shelby County that would normally be destined for disposal in a landfill. Sawdust is a byproduct of sawmill production. The bandsaw is expected to produce about 200 cubic yards of sawdust per year, which will be placed into the ACI to produce biochar.

2.3 EU-3 TROMMEL SCREENING

The biochar collected from the air curtain incinerator will be run through a Doppstadt 617 ¾" trommel screen to remove oversized materials called overs. The oversized materials will be fed back into the ACI. The material that makes it through the screen is the final product, biochar, ready to be delivered for soil amendment. The overs pile will be loaded into the ACI each day and the biochar will be either stored on-site for shipment or used to load trucks ready for shipment.

2.4 EU-4 MATERIAL HANDLING

MUW will routinely move materials around the site for different processes and will operate several storage piles on-site. MUW will have a raw timber storage area where logs of

green timber will be stored prior to sawmill processing. The raw timber storage will have no associated fugitive emissions. Rough sawn boards cut from the raw timber will be stored near the sawmill awaiting transportation off-site. There will also be a daily sawdust pile for sawdust and scrap wood materials generated by the sawmill. Each morning the sawdust will be transferred with a loader to the ACI to produce biochar.

The ACI will discharge biochar periodically during operations and water will be applied to quench the biochar to prevent it from turning to ash as it exits the ACI. This quenched biochar will be placed in a pile to fully cool. Each day, the previous day's quenched biochar will be transferred to the trommel screen to remove overs. The trommel screen will then create an overs pile and a processed biochar/finished product pile ready for sale. Each day the overs will be transferred back to the ACI for reprocessing. The processed biochar will be shipped off-site as it is produced, and any left-over biochar will be placed in a processed biochar pile awaiting shipment. These piles are expected to be worked through daily. No long-term storage piles will be present on-site during operations.

The maximum production of each material stored on-site is based on either maximum sawmill production estimates or the maximum processing rate of the ACI. Actual production and storage areas are likely to be much less as the facility is expected to operate 8 hours per day and 240 days per year. Table 2-1 describes the material handling processes and their estimated maximum production rates.

Table 2-1
List of Material Handling Activities

Material Handling Description	Material Handling Process	Maximum Material Produced (tons/year)
Green Timber Storage	Logs of green wood stored on-site in preparation for sawmill operation. These are whole logs with no potential for emissions.	10,000
Cut boards of green wood	The boards that are milled from the logs are stored on-site in preparation for off-site shipment. These are whole boards with no potential for emissions.	<10,000
Clean Woody Material	Clean woody material that may go into the ACI includes clean lumber, branches, bark or yard waste collected from around Shelby County and sawdust and wood scrap produced at the sawmill.	72,270
Sawmill sawdust	Daily production of sawdust and wood scrap from sawmill. (fed to ACI each morning)	83.77
Quenched Biochar Pile	Daily quenched biochar production (wetted) moved to unprocessed biochar pile each day.	34,514
Unprocessed Biochar Pile	Unprocessed Biochar Pile (fed each day through the trommel screen).	34,514
Trommel Screen Overs Pile	Daily overs fed back to the ACI.	Not Determined
Processed Biochar Pile	Screened biochar ready for sale and shipped out as ordered/produced or placed in storage pile in preparation for shipping.	34,514

3.0 EMISSION CALCULATIONS

Emissions from the sources are summarized in the following sub-sections. Specific calculation methods used for these sources are discussed in each.

3.1 EU-1 AIR CURTAIN INCINERATOR EMISSIONS

Emissions from the air curtain incinerator are generated during the biochar production process. To produce biochar, clean wood materials are fed into the ACI fire box and a fire is started. Once the material is burning, a blower is turned on to provide air to the manifold and nozzles which prevent incompletely combusted materials from escaping the firebox. The blower also provides excess oxygen to the incompletely combusted materials, thus reducing visual emissions and increasing the efficiency of the incineration process. ACI emission factors in Table 3-1 were provided by the ACI manufacturer, Air Burners, Inc. The manufacturer-supplied emission factor spreadsheet is available in Appendix C.

Table 3-1
Air Curtain Incinerator Emission Factors

Model Number	PM10 (lb./ton)	NO_x (lb./ton)	SO_2 (lb./ton)	CO (lb./ton)	VOC (lb./ton)
S327E Firebox	1.30	1.00	0.10	2.60	0.90

*Emission factors are based on tons of clean woody material incinerated

The maximum potential emissions listed in Table 3-2 below are calculated using the maximum number of 8,760 hours per year and the maximum potential ACI material feed rate (11 tons per hour of clean woody material) and the manufacturer provided emission factors (E.F.).

Emissions are calculated using the following formula:

Emissions (tons/year) = E.F. lbs./ton x 11 tons/hr. (Material feed rate) x 8,760 hr./yr. x $\frac{1\text{ ton}}{2000\text{ lb}}$

Table 3-2
Air Curtain Incinerator Maximum Potential Emissions

Pollutant	Emission Factor (lb./ton)	Maximum Potential Annual Emissions (tons/year)
PM_{10}	1.3	62.63
NO_x	1.00	48.18
SO_2	0.10	4.82
CO	2.60	125.27
VOC	0.90	43.36

To maintain emission levels below major source thresholds, MUW proposes to limit the annual hours of operation for the ACI to 6,570. This will result in an annual CO emission total of 93.95 tons per year from the ACI and maintain other emission totals below 100 tons per year.

Proposed limit on ACI Hours of Operation per year = 365 days/yr. x 18 hr./day = 6,570 hours per year. This is consistent with a proposed maximum feed rate of 72,270 tons/year.

Expected average hours of operations per year = 240 operating days/yr. x 8 hr./day = 1,920 hours per year. This is consistent with an average feed rate of 21,120 tons/year.

The emissions based on the proposed limit in hours of operation of 18 hours per day are calculated below using the proposed number of hours per year (6,570) and the maximum potential ACI material feed rate (11 tons per hour of clean woody material) and the provided emission factors (E.F.).

Pound per hour emission estimates were calculated using the following formula:

Hourly Emissions (lb./hr) = E.F.(lb./ton) x 11 tons/hr. (Material feed rate)

Tons per year emissions (Table 3-3) are calculated using the following formula:

Proposed Annual Emissions (tons/year) = E.F. lb./ton x 11 tons/hr. (Material feed rate) x 6,570 hr./yr. x $\frac{1\text{ ton}}{2000\text{ lb}}$

Average Annual Emissions (tons/year) = E.F. lb./ton x 11 tons/hr. (Material feed rate) x 8 hr./day x 240 days/yr. x $\frac{1\text{ ton}}{2000\text{ lb}}$

Table 3-3
Proposed Air Curtain Incinerator Emissions at 6,570 Hours/Year

Pollutant	Emission Factor (lb./ton)	Hourly Emissions (lb./hr.)	Proposed Ann. Emissions (tons/year)	Avg. Ann. Emissions (tons/year)
PM_{10}	1.30	14.3	46.98	13.73
NO_x	1.00	11.0	36.14	10.56
SO_x	0.10	1.1	3.61	1.06
CO	2.60	28.6	93.95	27.46
VOC	0.90	9.90	32.52	9.50

3.2 EU-2 SAWMILL EMISSIONS

Emissions from the sawmill consist of particulate matter (PM) emissions of sawdust. The majority of sawmill emissions are large particles that do not contribute significantly to PM emissions. The sawmill emission factors from the 2014 EPA memorandum titled "Particulate Matter Potential to Emit Emissions Factors for Activities at Sawmills Excluding Boilers, Located in Pacific Northwest Indian Country" are listed below in Table 3-4. The sawmill will handle a maximum of 10,000 tons of wood per year and 5.208 lbs/hr. The average and maximum emissions have the same reported application values because there is no information available on what the expected facility wood intake will be.

Table 3-4
Sawmill Particulate Emission Factors

PM (lb./ton*)	PM_{10} (lb./ton*)	$PM_{2.5}$ (lb./ton*)
0.35	0.0175	0.00875

*E.F. based on per ton of log processed

The Sawmill's maximum potential emissions are calculated:

Sawmill Hourly Production Rate (lb./hr.) = E.F. (lb./ton) x 10,000 tons/year of logs processed / 240 days/yr. / 8 hr./day = 5.208 lb./hr.

Sawmill Hourly Emissions (lb./hr.) = E.F. (lb./ton) x 10,000 lb./yr. of logs processed / 240 days/yr. / 8 hr./day

Sawmill Maximum Potential Annual Emissions (tons/year) = E.F. (lb./ton) x 10,000 tons/year of logs processed

The sawmill's calculated maximum potential emissions are in Table 3-5.

Table 3-5
Sawmill Maximum Potential Particulate Emission Totals

Pollutant	Hourly Emissions (lb./hr.)	Maximum Potential Annual Emissions (tons/year)
PM	1.82	1.75
PM_{10}	0.091	0.0875
$PM_{2.5}$	0.046	0.0438

3.3 EU-3 TROMMEL SCREEN EMISSIONS

Emissions from trommel screening operations consist of PM, however, there are no process-specific emission factors for biochar screening. The best estimate for potential PM emissions from screening operations is from AP-42 11.19.2 Crushed Stone Processing and Pulverized Mineral Processing (8/2004). The uncontrolled screening emission factor, shown below in Table 3-6, was chosen as a conservative estimate of the screening emission factor. Total calculated trommel screen particulate emissions are in table 3-7.

Table 3-6
Proposed Trommel Screen Fugitive Particulate Emission Factors

Type	PM_{10} (lb/ton)
Controlled	0.00073
Uncontrolled	0.00865

The maximum hourly, average annual, and maximum annual biochar production rates (Table 3-7) is calculated below.

Hourly Biochar Production (lb./hr.) = ACI Wood Processing Rate (tons/hr.) x 1 CY of biochar/Ton of Wood x 716.36 lb. Biochar/CY Biochar

Average Annual Biochar Production (tons/yr.) = ACI Wood Processing Rate (tons/hr) x 240 days/yr. x 8 hr./day x 1 CY of biochar/Ton of Wood x 716.36 lb./CY Biochar / 2,000 lbs/ton

Max Annual Biochar Production (tons/yr.) = ACI Wood Processing Rate (tons/hr) x 365 days/yr. x 24 hr./day x 1 CY of biochar/Ton of Wood x 716.36 lb./CY Biochar / 2,000 lbs/ton

Where:

ACI Wood Hourly Processing Rate = 11 (tons/hr.)
1 Cubic Yard (CY) of biochar is produced per Ton of Wood Consumed
Density of Biochar = 716.36 lb./CY Biochar

Hourly Trommel Screen PM_{10} Emissions (lb./hr.) = Uncontrolled E.F. (lb./ton) x hourly quenched biochar production (lb./hr.) / 2000 lb./ton

Average Annual Trommel Screen PM_{10} Emissions (tons per year) = Uncontrolled E.F. (lb./ton) x average annual quenched biochar production (tons/year) / 2000 lb./ton

Maximum Potential Annual Trommel Screen PM_{10} Emissions (tons per year) = Uncontrolled E.F. (lb./ton) x max annual quenched biochar production (tons/year) / 2000 lb./ton

Table 3-7
Biochar Production Rates and Trommel Screen Emissions

Biochar Production Rate:	Hourly	Maximum Annual	Average Annual
	7,880 lb./hr.	34,514 tons/yr.	7,565 tons/yr.
Emissions	**Hourly PM10 Emissions (lb./hr.)**	**Maximum Potential Annual Emissions (tons/yr.)**	**Average Annual Emissions (tons/yr.)**
PM_{10}	0.0341	0.1493	0.0327

3.4 EU-4 MATERIAL HANDLING EMISSIONS

Emissions from material handling are comprised of five different processes.

- Sawdust handling from the sawmill.
- Quenched biochar handling (as biochar exits the ACI).
- Unprocessed biochar handling (storage prior to trommel screening)
- Trommel screen overs handling
- Processed biochar handling

The facility will be using a front-end loader to pick-up and move these materials from one process to another or to load the biochar onto trucks for shipment off-site. Handling material containing fine particles in windy conditions can result in emissions. While there

are no emission factors for saw dust or biochar material handling, we can estimate those emissions by calculating a material-specific emission factor using AP-42 13.2.4 Aggregate Handling and Storage Piles (11/2006). Even though these emission factors are for aggregate and rocks, the equation used to calculate the emission factors of different materials is customizable depending on the size of the materials' particles and the materials' moisture content. The process of picking up a material with a front-end loader and dropping it into a process or another storage pile matches the material handling activities described in AP-42 13.2.4. While there are emission factors for other materials (potentially more like sawdust and biochar), they involve bucket elevators, or truck trailers unloading into collection equipment and other processes that don't fit the material handling processes at MUW.

In AP-42 13.2.4, fugitive emissions from material handling can be estimated by the equation below:

$$E.F. = k(0.0032)\frac{(\frac{U}{5})^{1.3}}{(\frac{M}{2})^{1.4}}$$

Where:

E.F. = emission factor (lb./ton)
k = particle size multiplier (dimensionless)
U = mean wind speed (miles per hour)
M = material moisture content (%)

The particle size multiplier, *k,* is based on a table in AP42 13.2.4, which is determined by the particle size distribution. To develop a conservative estimate of emissions, the high *k*-value of 0.74 which is associated with particles of sizes <30 microns or less was used in each of these emissions estimates. While 0.74 may be applicable for sawdust, it is likely very conservative for biochar, which is likely to have fines <2.5 microns and which have a smaller particle size multiplier (*k-value*) of 0.053.

U was determined by reviewing the monthly climatological report from NOAA for each month over the past year (October 2022 through September 2023). Each month's average wind speed was reviewed and the highest monthly average wind speed of 9.5 miles per hour in March was used for *U* in the emission estimates.

The moisture content (*M*) used in the emission factor estimate is based on the material. While biochar is not listed in AP-42 13.2.4 Table 13.2.4-1, which lists typical silt and moisture contents for materials at various industries, we have assumed it should be similar to fly ash. Typical fly ash moisture contents range from 26-29%. This moisture content seems reasonable for the biochar as it is quenched with water upon exiting the ACI. For the majority of materials listed in the AP-42 materials table, most moisture contents are above 1%. To be conservative, the biochar emission factor was calculated assuming a 1% moisture content.

Representative sawdust moisture contents were found in an FPJ Technical Note published in September of 1968, titled "Weight, Volume and Moisture Content of Sawdust from Selected Southern Species." The types of lumber used at the MUW facility are indicated in the Technical Note to have moisture contents of 77-81%. In AP-42 13.2.4, the maximum tested moisture content in their aggregate handling emissions testing was 19%.

Because the sawdust has a much higher moisture content, a conservative value of 19% was used to calculate the sawdust emission factor. The Technical Note also included the density of green sawdust for red oak wood which was 20.4 lb./CF.

Calculated emission factors for biochar and sawdust can be found below. Total calculated material handling emissions can be found in table 3-8.

Maximum Potential Sawdust Handling Emissions Estimate

MUW estimates the sawmill will generate 200 cubic yards per year of sawdust.

Hourly sawdust generation = 200 CY/year x 20.4 lb./CF x 27 CF/CY / 240 days/year / 8 hours/day = 57.38 lb./hr.

Sawmill sawdust generation = 200 CY/year x 20.4 lb./CF x 27 CF/CY x$\frac{1\text{ ton}}{2000\text{ lb}}$ = 83.77 tons of sawdust generated per year

E.F. = *K* x 0.0032 x [(*U* mph / 5)$^{1.3}$ / (*M*% moisture Content/2)$^{1.4}$]

Hourly Sawdust handling PM emissions (lb./hr.) = E.F. (lb. of PM/ton sawdust) x saw dust generation (lb./year) / 240 days/yr. / 8 hr./day

Annual Sawdust handling PM emissions (lb./year) = E.F. (lb. of PM/ton sawdust) x saw dust generation (lb./year) / 2000 lb./ton

Table 3-8
Sawdust Handling Fugitive Emissions Calculation

U- wind speed (mph)	*K* – Particle size multiplier	*M*- Moisture Content (%)	Calculated Emission Factor (lb./ton)	Annual Sawdust Handling (tons/year)	Calculated Fugitive Emissions	
					Hourly (lb./hr.)	Max Potential Annual (lb./year)
9.5	0.74	19	0.000233	83.77	0.000002	0.02

As shown in the table above, annual sawdust handling PM emissions = 0.000233 (lb./ton) x 83.77 (tons/year) = 0.02 lb. per year of PM emissions from sawdust handling.

Maximum Potential Quenched Biochar Emissions Estimate

The quenched biochar is soaked with water as it exits the ACI. Due to the application of water used to prevent further burning of the biochar, there is no opportunity for significant PM emissions to escape during quenched biochar handling.

Maximum Potential Quenched Biochar Handling Emissions Estimate

Maximum and average biochar production rates are equal to the quenched biochar production rates and have been calculated previously as shown in Section 3.3, Table 3-7.

E.F. = *K* x 0.0032 x [(*U* mph / 5)$^{1.3}$ / (*M*% Moisture Content / 2)$^{1.4}$] = 0.144

Where:

U = 9.5
K = 0.74
M = 1

Maximum quenched biochar production (lb./hr.) = Hourly biochar production rate 7,880 (lb./hr.)

Hourly fugitive dust emissions from quenched biochar handling (lb./hr.) = E.F. (lbs./ton) x maximum quenched biochar production (lb./hr.) / 2000 (lb./ton)

Average annual fugitive dust emissions from quenched biochar handling (tons/year) = E.F. (lbs./ton) x average annual quenched biochar production (tons/year) / 2000 (lb./ton)

Maximum annual fugitive dust emissions from quenched biochar handling (tons/year) = E.F. (lbs./ton) x max annual quenched biochar production (tons/year) / 2000 (lb./ton)

Table 3-9
Biochar Production Rates and Quenched Biochar Handling Emissions

Biochar Production Rate:	Hourly	Maximum Annual	Average Annual
	7,880 lb/hr	34,514 tons/yr	7,565 tons/yr
Emissions	**Hourly PM10 Emissions (lb/hr)**	**Maximum Potential Annual Emissions (tons/yr)**	**Average Annual Emissions (tons/yr)**
PM_{10}	0.0567	0.2485	0.0545

Maximum Potential Trommel Screen Overs Handling Emissions Estimate

The overs collected off the trommel screen were not able to pass through a ¾" screen. Because the overs are comprised of only larger pieces of biochar, it is unlikely that any will be picked up by wind or emitted during transport to escape as fugitive emissions. In addition, the maximum potential processed biochar handling emissions estimate has no mass of biochar removed from those emissions calculations to account for the overs being removed by the process, so any potential overs handling emissions are accounted for in the processed biochar handling emissions estimate.

Maximum Potential Processed Biochar Handling Emissions Estimate

Though overs will be removed during the trommel screening process, it is conservatively assumed that no mass of biochar solids were removed in the emissions calculations. Handling of the processed biochar pile coming from the finished trommel screen pile will include material being loaded onto trucks and material being stored in preparation for off-site shipment.

Because no overs are assumed to be removed from the process biochar handling process, the fugitive emission calculations are exactly the same as the calculations in the quenched biochar handling emission calculations. Please refer to that section above for the

calculation explanation. Table 3-10 includes the calculated emissions from process biochar material handling.

Table 3-10
Biochar Production Rates and Processed Biochar Handling Emissions

Biochar Production Rate:	Hourly	Maximum Annual	Average Annual
	7,880 lb/hr	34,514 tons/yr	7,565 tons/yr
Emissions	**Hourly PM10 Emissions (lb/hr)**	**Maximum Potential Annual Emissions (tons/yr)**	**Average Annual Emissions (tons/yr)**
PM_{10}	0.0567	0.2485	0.0545

Total Material Handling Fugitive Emissions

Table 3-11 is a summary of the fugitive emissions calculated from each material handling process at MUW. The total of all the material handling processes are less than 10,000 lb. per year which qualifies the material handling fugitive emissions as insignificant activities.

Table 3-11
Material Handling Fugitive Emissions

Process	Hourly Fugitive Emissions (lb. / hr.)[3]	Maximum Potential Fugitive Emissions (ton PM / year)[3]	Average Fugitive Emissions (ton PM / year)[3]
Sawdust Handling	0.000002	0.00001	0.00001
Quenched Biochar Handling	N/A[1]	N/A[1]	N/A[1]
Unprocessed Biochar Handling	0.0567	0.2485	0.0545
Trommel Screen Overs Handling	N/A[2]	N/A[2]	N/A[2]
Processed Biochar Handling	0.0567	0.2485	0.0545
Total Material Handling Fugitive Emissions	**0.113**	**0.497**	**0.109**

1. Quenched biochar is soaked with water, preventing significant fugitive emissions.
2. Trommel screen overs are large pieces unable to pass through a ¾" screen. There should be no fines to cause emissions and any potential emissions are accounted for in the processed biochar handling.
3. Conservatively assume all PM is PM_{10}

3.5 MUW TOTAL FACILITY EMISSIONS SUMMARY

The proposed MUW facility emission totals are included in tables 3-12 and 3-13 below.

Table 3-12
Total MUW Facility Hourly Emissions (lb./hr.)

Process	PM	PM_{10}	PM2.5	NO_x	SO_2	CO	VOC
EU-1 Air Curtain Incinerator[1]	14.30	14.30	N/D	11.0	1.1	28.6	9.90
EU-2 Sawmill	1.82	0.09	0.05	N/D	N/D	N/D	N/D
EU-3 Trommel Screen	0.0327	0.0327	N/D	N/D	N/D	N/D	N/D
EU-4 Material Handling	0.113	0.113	N/D	N/D	N/D	N/D	N/D
Facility Wide Total Emissions	**16.27**	**14.54**	**0.0456**	**11.0**	**1.1**	**28.6**	**9.9**

1. The ACI's maximum emissions are based on a proposed annual hours of operation limit of 6,570 hours.

Table 3-13
Proposed MUW Facility Total Emissions (tons/year)

Process	PM	PM_{10}	PM2.5	NO_x	SO_2	CO	VOC
EU-1 Air Curtain Incinerator[1]	46.98	46.98	N/D	36.14	3.61	93.95	32.52
EU-2 Sawmill	1.75	0.0875	0.04375	N/D	N/D	N/D	N/D
EU-3 Trommel Screen	0.1493	0.1493	N/D	N/D	N/D	N/D	N/D
EU-4 Material Handling	0.497	0.497	N/D	N/D	N/D	N/D	N/D
Facility Wide Total Emissions	**49.38**	**47.75**	**0.04375**	**36.14**	**3.61**	**93.95**	**32.52**

1. The ACI's maximum emissions are based on a proposed annual hours of operation limit of 6,570 hours.

4.0 REGULATORY REVIEW

Below is a review of the regulations applicable to the ***new sources***. For requirements applicable to the units and/or that require a response, the text has been emphasized in bold italics. The City of Memphis Air Code Section is listed with the referenced State Section where applicable.

LOCAL REGULATIONS

16-83, Reference 1200-03-05 Visible Emissions

1200-03-05-.01 GENERAL STANDARDS.

(d) No person shall cause, suffer, allow or permit discharge of a visible emission from any air contaminant source with opacity in excess of twenty (20) percent for an aggregate of more than five (5) minutes in any one (1) hour or more than twenty (20) minutes in any twenty-four (24) hour period.

1200-03-05-.02 EXCEPTIONS

(d) Consistent with the requirements of Chapter 1200-03-20, due allowance may be made for visible emissions in excess of that permitted in this chapter which are necessary or unavoidable due to routine startup and shutdown conditions. However, no visible emission in excess of that permitted in this chapter shall be allowed which can be proved to cause or contribute to any violations of the Ambient Air Quality Standards contained in Chapter 1200- 03-03 and the National Ambient Air Quality Standards. The owner or operator shall maintain a continuous, current log of all excess visible emissions showing the time at which such conditions began and ended. Such record shall be available to the Technical Secretary or the Technical Secretary's representative upon request.

1200-03-05-.03 METHODS OF EVALUATION AND RECORDING

A determination of visible emissions shall be made by a certified evaluator using six minute averages.

122-03-05-.06 WOOD-FIRED FUEL BURNING EQUIPMENT

The section titled "WOOD-FIRED FUEL BURING EQUIPMENT" is not applicable, as the proposed ACI will be a process emission source, not fuel burning equipment, as the wood added to the ACI's primary purpose is not to heat another material not contacted by the wood.

In general, Reference 1200-03-05 is applicable to the air curtain incinerator, sawmill, trommel screen and biochar pile emission sources. All sources will be monitored for visual emissions as required.

16-79, Reference 1200-03-06 Non-process Emission Standards

This rule is not applicable to the emission sources proposed in this application. The ACI would not be classified as an incinerator as it is not used for the disposal of waste or refuse by burning. It is a process to produce a product, (biochar) and it uses clean woody material as a feed stock in to the process. Even if the process qualified as an incinerator, the particulate emission rate for the ACI is 1.3 lb./ton of woody material, which is approximately 0.065% and is below the requirement of 0.100%.

ACI PM E.F. = 1.30 lb./ton

PM Emission % of Charge Rate = 1.30 lb. PM / ton of charged material / 2000 lb./ ton x 100 = 0.065%

16-78, Reference 1200-03-07 Process Emission Standards

1200-03-07-.01 GENERAL PROCESS PARTICULATE EMISSIONS STANDARDS
(1) No person shall cause, suffer, allow, or permit particulate emissions in excess of the standards in this chapter.

1200-03-07-.03 NEW PROCESSES
(1) The allowable emission level of particulate matter from any process emission source beginning operation on or after April 3, 1972, shall be determined by Table 2.

Equation for determining the new process emission standard:

$$E = 3.59P^{0.62} \text{ where } P \leq 30 \text{ tons/hr.}$$

Where the sawmill process weight rate is approximately 5.2 tons per hour the maximum particulate matter emission limit for new processes would be calculated:

E (lbs./hr.) = 3.59 x (5.2 tons/hr.)$^{0.62}$ = 9.987 lbs./hr.

The sawmill PM emission rate is 1.823 lbs./hr. which is less than the maximum PM limit of 9.987 lbs./hr.

Where the ACI process rate weight is approximately 11 tons per hour the maximum particulate matter emission limit for new processes would be calculated:

E (lbs./hr.) = 3.59 x (11 tons/hr.)$^{0.62}$ = 15.9 lbs./hr.

The sawmill PM emission rate is 14.3 lbs./hr. which is less than the maximum PM limit of 15.9 lbs./hr.

The general process emission standards are applicable to the processes on-site at MUW. Both the sawmill and the air curtain incinerator have particulate matter emission rates below the calculated limit described in 1200-03-07-.03.

16-89, Reference 1200-03-08 Fugitive Dust

(d) No person shall cause, suffer, allow, or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, but not be limited to, the following:

Memphis Urban Wood will take all necessary precautions to prevent the particulate matter in excess of permitted limits from becoming airborne.

16-77, Reference 1200-03-09 Construction and Operating Permits

1200-03-09-.01 CONSTRUCTION PERMITS

(1) Application for Construction Permit – ***This application serves as an application for the construction of a sawmill and air curtain incinerator along with these processes' ancillary activities.***

Memphis Urban Wood will not be a major stationary source as defined in this chapter; therefore, the rules for Prevention of Significant Air Quality Deterioration (PSD) are not applicable.

1200-3-9-.02 OPERATING PERMITS

MUW shall apply for and receive from the SCHD an operating permit in accordance with this Section after initial startup of the proposed emission units at this facility. The application shall be made not more than thirty (30) days after the initial startup of the equipment.

1200-3-9-.02 (11) Major Stationary Source Operating Permits

(a) Statement of Purpose and General Intent

"sources that are subject to this paragraph 1200-03-09-.02(11) may opt out of being subject to the provisions of paragraph 1200-03-09-.02(11) by limiting their potential to emit such that they are below the applicability threshold. In order to exercise this option, the source must agree to be bound by a permit which specifies the more restrictive limit and to be subject to detailed monitoring, reporting and recordkeeping requirements that prove the source is abiding by its more restrictive emission and/or production limits."

Memphis Urban Wood is requesting a permit limit to qualify the facility as a Synthetic Minor Stationary Source. To prevent the facility from exceeding the 100 tons per year major source threshold for CO, Memphis Urban Wood requests a permit limit on the hours of air curtain incinerator operation to be no more than 6,570 hours per year, which equates to 18 hours per day of operation.

The facility's potential to emit CO is 125.27 tons per year assuming 24 hours a day 365 days per year operation. With an air curtain incinerator annual operations limit of 6,570 hours per year, the facility's total annual CO emissions would be 93.95 tons.

1200-3-9-.03 GENERAL PROVISIONS

Memphis Urban Wood will comply with the General Provisions contained in this section.

1200-3-9-.04 EXEMPTIONS

(2) (a) Definitions

d. "Insignificant activity" or "insignificant emissions unit" means any activity or emissions unit at a stationary source for which the emissions unit or activity has a potential to emit less than 5 tons per year of each air contaminant and each regulated air pollutant that is not a hazardous air pollutant, and less than 1,000 pounds per year of each hazardous air pollutant.

(4) The list of exempted air contaminant sources contained in this paragraph shall not be used as "insignificant activities" or "insignificant emission units" when applying for

a major source operating permit under Paragraph 1200-3-9-.02(11). These exemptions shall not be used to lower the sources potential to emit below "major source" applicability thresholds or to avoid any "applicable requirement". Otherwise, no person shall be required to obtain or file a request for a permit due to ownership, operation, construction, or modification of the following types of air contaminant sources unless specifically required to do so by the Board or as provided for in Paragraph (3) of this rule:

(a) Any "insignificant activity" or "insignificant emissions unit":

In order to receive designation as an "insignificant activity" or "insignificant emissions unit", a written notification must be submitted to the Technical Secretary. The notification for designation shall include calculations and sufficient documentation to substantiate the applicant's claim. Upon receipt of the notification, the Technical Secretary will respond with a determination of agreement or disagreement with the applicant's claim. In issuance of determination as "insignificant", the Technical Secretary may base the determination upon any criteria that are relevant to the determination. For new sources, the request for designation must be made at least 30 days prior to the estimated starting date of construction. For new sources, if it is determined that the emissions unit does not qualify as an "insignificant emissions unit", the source must apply for a construction permit. The request for designation as an "insignificant emissions unit" may be made at any time for an existing source. In the absence of being designated as an "insignificant emissions unit" by the Technical Secretary under subparagraph 1200-03-09-.04(4)(a) or in the absence of being exempt under subparagraphs 1200-03-09-.04(4)(b) or 1200-03-09-.04(4)(c), any emission unit or activity must have a valid construction and/or operating permit.

The proposed sawmill (EU-2), trommel screen (EU-3) and material handling processes (EU-4) at the MUW facility will generate pollutants below the 10,000 pounds Per year threshold listed in this regulation, and are therefore considered insignificant activities (Table 4-1). The facility also operates a loader and trackhoe, which are on-site mobile sources which are not required to be listed in the permit application.

Table 4-1
Insignificant Activity Emissions*

Process	Fugitive Emissions (lb. PM / year)[3]
Sawmill	3,500
Trommel Screen	299
Total Material Handling Emissions	994.02

*All insignificant emissions activities are based upon Maximum Potential to Emit

16-85, Reference 1200-3-10 Testing and Monitoring Air Contaminant Sources

Memphis Urban Wood will comply with any requests by the Technical Secretary regarding required sampling, recording, and reporting as outlined in this rule.

16-81, Reference 1200-3-11 Hazardous Air Contaminants

This rule is not applicable to the Memphis Urban Wood facility because none of the proposed process will generate any of the contaminants listed in this regulation.

16-86, Reference 1200-3-12 Methods of Sampling and Analysis

Memphis Urban Wood will comply with any methods of sampling and analysis that are requested by the Technical Secretary as outlined in this rule.

16-82, Reference 1200-3-14 Control of Sulfur Dioxide Emissions

1200-03-14-.03 Process Emission Standards
(3) On and after July 1, 1975, the owner or operator of an air contaminant source located in a Class IV, V or VI county shall not cause, suffer, allow, or permit the emission from that source of sulfur dioxide in excess of 2,000 parts per million, 0.20 percent by volume, dry basis (one hour average).

Memphis Urban Wood's air curtain incinerator biochar production process will emit sulfur dioxide. Based on the hourly emission rate and air curtain exhaust fan the concentration of sulfur dioxide emitting from the ACI should be 5.24 ppmv, well below the limit of 2,000 ppmv.

ACI Exhaust Flow Rate = 1,244,160 cubic feet per hour
SO2 Emission Rate = 1.1 lb./hour

VSO_2 (CFH) = nRT/P (assuming standard temperature and pressure)
n = 1.1 lbs. SO_2/hr. / 64.066 lbs./lb-mole of SO_2 = 0.01717 lb-moles SO_2
R = 0.7302405 atm*ft^3*$lbmole^{-1}$*°R^{-1}
P = 1 atm
T = 520°R

VSO_2 = 0.01717 lb-moles SO_2 x 0.7302405 atm*ft^3*$lbmole^{-1}$*°R^{-1} x 520°R / 1 atm

VSO_2 = 6.520 CF/hour

$V_{Exhaust}$ = 1,244,160 CF/hour

SO_2 Concentration by Volume = VSO_2 / $V_{Exhaust}$ x 10^6

SO_2 Concentration (ppmv) = 6.520 CF/hour / 1,244,160 CF/hour / 10^6 parts per PPM = 5.24 ppmv SO_2 in ACI exhaust

16-76, Reference 1200-3-16 New Source Performance Standards

1200-03-16-.04 Incinerators

(a) "Incinerator" means any furnace used in the process of burning solid waste for the purpose of reducing the volume of the waste by removing combustible matter.

The Memphis Urban Wood facility will only burn clean wood material to produce biochar, a product they will offer for sale. Memphis Urban Wood will not be burning solid waste for the purpose of reducing the volume of waste. Therefore the 1200-3-16-.04 NSPS section is not applicable. There are no requirements in this regulation applicable to Memphis Urban Wood's operations.

16-80, Reference 1200-3-18 Volatile Organic Compounds

The Memphis Urban Wood operations do not emit enough VOC or operate any processes matching the descriptions of any processes in the regulation. The 1200-3-18 Volatile Organic Compounds regulation does not apply to Memphis Urban Wood's operations.

16-87, Reference 1200-3-20 Limits on Emissions due to Malfunctions, Startups and Shutdowns

These rules contain general requirements applicable to the facility. Memphis Urban Wood shall comply with these general requirements.

16-91.2, Reference 1200-3-30 Acid Precipitation Standards

This rule is not applicable to the Memphis Urban Wood facility.

16-91.3, Reference 1200-3-31 National Emission Standards for Hazardous Air Pollutants for Source Categories

Memphis Urban Wood does not emit any Hazardous Air Pollutants. The requirements of this regulation are not applicable to the facility.

CITY OF MEMPHIS 9-12-4, REFERNECE 1200-3-4 – OPEN BURNING

1200-03-04.02 Definitions (State of Tennessee Regulation)

(d) "Open Burning" is the burning of any matter under such conditions that products of combustion are emitted directly into the open atmosphere without passing directly through a stack. Open burning includes, but is not limited to, fires located or burning in a pile on the ground, a barrel, a fire pit, or other semi-enclosure. The use of an air curtain destructor or air curtain incinerator is considered incineration subject to the permitting requirements of Rule Chapter 1200-03-09, and is explicitly not considered open burning.

The referenced TDEC regulation in the City ordinance does not consider air curtain incinerators to be open burning but they are subject to the permitting requirements of 1200-03-09, which have been considered in this application.

The City of Memphis ordinance does consider air curtain incinerators to be open burning and has a set of rules that must be followed to comply with the local ordinance.

CITY OF MEMPHIS Municipal Code 9-12-4 Open Burning

C. Exceptions to subsection A of this section may be permitted for vegetation if all of the following conditions are met when an air curtain destructor is used:

1. A request is filed with the health officer giving the reason why no method except open burning can be employed to dispose of the material involved, the amount and kind of material to be burned, the exact location where the burning will take place, and the dates when the open burning will be done. All changes in types of, or increase in quantities of, materials burned must be preceded by notification. The notification must be delivered to the department at least ten working days prior to commencing the change in the burn;

2. The person applying for the permit certifies, by written statement, compliance with following distance requirements, at a minimum:
   a. The open burning site must be at least 500 feet from any federal and from any state highway,
   b. The open burning site must be at least 1,000 feet from any school, national or state park, national reservation, national or state forest, wildlife area, and/or residence not on the same property as the air curtain destructor, and
   c. The open burning site must be at least one-half mile from any airport, nursing home or hospital;

3. The plume from the air curtain destructor must meet the visible emission standards specified in section 9-12-20, Reference 1200-3-5-.01(1); however, for certain materials the department may allow one start-up period in excess of the standard, per day, not to exceed 20 minutes in 24 hours;

4. All material to be burned must be dry and in other respects be in a state to sustain good combustion. Open burning must be conducted when ambient conditions are such that good dispersion of combustion products will result. Priming materials used to facilitate such burning shall be limited to No. 1 or No. 2 grade fuel oils;

5. No fire shall be ignited while any air pollution emergency episode is in effect in the area of the burn. No fire shall be ignited during any exceedance of the National Ambient Air Quality Standard for ozone, oxides of nitrogen, carbon monoxide, or particulate matter. Permittee is required to contact the department's computerized local air index reporting system (CLAIR) recorded line at (901) 544-7489 or 544-7490 before igniting a fire to determine if it is a burning day or a no-burning day;

6. Approval is received from the health officer in writing;

7. Permission is secured from the fire department in the jurisdiction involved;

8. The burning will be done between the hours of 9:00 a.m. and 4:00 p.m. or as authorized by the health officer. This approval will not relieve the person responsible for such burning from the consequences of any damages, injuries, or claims resulting from such burning.

Memphis Urban Wood will comply with the City of Memphis ordinance for open burning as required.

FEDERAL REGULATIONS

PSD/NSR

New Source Review

Shelby County is designated as in attainment with the 8-hour ozone standard so normal major source threshold limits apply.

In order to be subject to New Source Review in Shelby County, emissions of NO_x or VOCs from a facility must be greater than 100 tons per year. ***All criteria pollutant emission levels from this facility are below the "Major Source" threshold for NSR.***

Prevention of Significant Deterioration

Under PSD an affected source is a facility with emissions exceeding 250 TPY of any regulated NSR pollutants, or emissions exceeding 100 TPY of any regulated NSR pollutants at sources in specific categories. ***PSD is not applicable to this facility.***

40 CFR Part 60 - Standards of Performance for New Stationary Sources

The new source performance standards contained in 40 CFR 60 require new sources to control emissions to the level achievable by the best-demonstrated technology specified in the applicable provisions. This regulation is divided into Subparts, each providing regulations for specific source categories. ***There are no subparts of this rule that are applicable to this facility.***

40 CFR Part 61 - National Standards for Hazardous Air Pollutants

These rules were established by the U.S. Environmental Protection Agency for the specific pollutants asbestos, benzene, beryllium, inorganic arsenic, mercury, radionuclides, radon 222, and vinyl chloride. ***This facility does not emit any of the pollutants regulated by this part.***

40 CFR Part 63 - National Emission Standards for Hazardous Air Pollutants for Source Categories

These regulations are for specific categories and subcategories of hazardous air pollutants and HAP sources.

This facility is not subject to this subpart because it does not emit any of the HAPs and its operation does not fall under any of the source categories listed in the subpart.

40 CFR Part 70 - Major Source Operating Permits

The Shelby County Health Department has been delegated authority to implement the major source operating permit program (Title V) in accordance with the requirements of 40 CFR Part 70 and Title V of the CAA amendments of 1990. ***The proposed facility is a Synthetic Minor Source for air emissions and therefore is not covered by these requirements. The facility does request a limit on the annual hours of air curtain incinerator operations to 6,570 hours per year to maintain CO emission below the major source threshold.***

40 CFR Parts 72 through 78 - Acid Rain Regulations

This rule is not applicable to the Memphis Urban Wood facility.

40 CFR Part 82 - Ozone Depleting Substances

40 CFR 82 establishes regulation to control emissions of substances known to degrade ozone in the upper atmosphere. These regulations establish requirements related to maintenance, service, repair or disposal of ozone depleting substances. They also provide recycling, recovery, and record keeping requirements. ***Memphis Urban Wood will comply with general facility-wide requirements for ozone depleting substances.***

Appendix A
Permit Application Forms

2012
APC-2-01

SHELBY COUNTY HEALTH DEPARTMENT
POLLUTION CONTROL SECTION
1826 Sycamore Road
Memphis, TN 38134
Telephone: (901) 222-9942
FAX: (901) 222-9561

NOT TO BE USED FOR TITLE V APPLICATIONS

PERMIT APPLICATION
GENERAL INFORMATION

SCHD RECEIPT DATE

PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH EMISSION SOURCE. ATTACH APPROPRIATE SOURCE DESCRIPTION FORMS.

1. ORGANIZATION'S LEGAL NAME: Memphis Urban Wood			**SCHD-APC FACILITY ID.:**	
2. MAILING ADDRESS (ST/RD/P.O. BOX): 314 A.W. Willis Avenue			TENNESSEE SECRETARY OF STATE REGISTERED BUSINESS NUMBER:	
CITY: Memphis	STATE: TN	ZIP CODE: 38108	PHONE WITH AREA CODE: 410-300-4206	
3. PRINCIPAL TECHNICAL CONTACT AND TITLE: Jeff Carroll, CEO			PHONE WITH AREA CODE: 410-300-4206	
4. SITE ADDRESS (ST/RD/HWY): 1230 N. Watkins			PHONE: 410-300-4206	FAX: N/A
CITY OR DISTANCE/DIRECTION TO NEAREST REFERENCE POINT: Memphis			ZIP CODE: 38108	E-MAIL: jeff@uweconomy.org

5. NORTH AMERICAN INDUSTRIAL CLASSIFICATION SYSTEM (NAICS)
321113

PRIMARY_____ TERTIARY_____
SECONDARY_____ QUATERNARY_____

6. BRIEF DESCRIPTION OF EMISSION SOURCE(S). INCLUDE AN OVERALL FACILITY PLOT PLAN INDICATING THE EMISSION SOURCE LOCATION WITHIN THE PLANT:

See attached permit report for details.

7. TYPE OF PERMIT REQUESTED

- [✔] NEW CONSTRUCTION
- [ ] MODIFICATION
- [ ] PERMIT TO OPERATE (INITIALREQUEST-NO PREVIOUS PERMITS)
- [ ] PERMIT TO OPERATE (INITIALREQUEST-CONSTRUCTION PERMIT PREVIOUSLY ISSUED)
- [ ] PERMIT TO OPERATE (RENEWAL REQUEST)
- [ ] CHANGE OF LOCATION (PORTABLE AND/OR PERMANENT)
- [ ] CHANGE OF NAME AND/OR OWNERSHIP

ESTIMATED COST OF EQUIPMENT OR MODIFICATION: $ 1,000,000

AIR POLLUTION CONTROL EQUIPMENT COST: $ 200,000

BASIC EQUIPMENT COSTS: $ 200,000

FOR NEW CONSTRUCTION, MODIFICATION, CHANGE OF LOCATION, CHANGE OF NAME AND/OR OWNERSHIP, PROVIDE THE ESTIMATED STARTING AND COMPLETION DATES: Start: 10/15/23 Completion:10/30/2023

PREVIOUS LOCATION OR LOCATION MOVING FROM, PREVIOUS NAME AND/OR OWNER , IF APPLICABLE (FOR PORTABLE **AND** NON-PORTABLE SOURCES): Not Applicable

PREVIOUS SOURCE NUMBER(S) AND PERMIT NUMBER(S) IF APPLICABLE: Not Applicable

8. DESCRIBE CHANGES THAT HAVE BEEN MADE TO THIS EQUIPMENT OR OPERATION SINCE THE LAST CONSTRUCTION OR OPERATING PERMIT APPLICATION:

Not Applicable

9. SIGNATURE (SEE NOTE):		DATE: 10/24/2023
10. SIGNER'S NAME (TYPE OR PRINT): Jeffrey Carroll	TITLE: CEO	PHONE WITH AREA CODE: 410-300-4206

NOTE: APPLICATION MUST BE SIGNED TO BE PROCESSED. SIGNATURE VERIFIES THAT INFORMATION ON ALL FORMS PROVIDED IS TRUE, ACCURATE AND COMPLETE TO THE PERSON'S BEST KNOWLEDGE AND BELIEF. APPLICATIONS SHOULD BE SIGNED BY THE OWNER/OPERATOR OR SENIOR MANAGEMENT OFFICIAL

(OVER)

TABLE OF POLLUTION REDUCTION DEVICE OR METHOD CODES
(ALPHABETICAL LISTING)

NOTE: FOR CYCLONES, SETTLING CHAMBERS, WET SCRUBBERS, AND ELECTROSTATIC PRECIPITATORS. THE EFFICIENCY RANGES CORRESPOND TO THE FOLLOWING PERCENTAGES: HIGH: 95-99+%. MEDIUM: 80-95%. AND LOW: LESS THAN 80%. IF THE SYSTEM HAS SEVERAL PIECES OF CONNECTED CONTROL EQUIPMENT, INDICATE THE SEQUENCE, FOR EXAMPLE: 008/010/97%. IF NONE OF THE BELOW CODES FIT, USE 999 AS A CODE FOR OTHER AND SPECIFY IN THE COMMENTS.

NO EQUIPMENT....000
ACTIVATED CARBON ADSORPTION....048
AFTERBURNER--DIRECT FLAME....021
AFTERBURNER--DIRECT FLAME WITH HEAT EXCHANGER....022
AFTERBURNER--CATALYTIC....019
AFTERBURNER--CATALYTIC WITH HEAT EXCHANGER....020
ALKALIZED ALUMINA....040
CATALYTIC OXIDATION--FLUE GAS DESULFURIZATION....039
CYCLONE--HIGH EFFICIENCY....007
CYCLONE--MEDIUM EFFICIENCY....008
CYCLONE--LOW EFFICIENCY....009
DUST SUPPRESSION BY CHEMICAL STABILIZERS OR WETTING AGENTS....062
ELECTROSTATIC PRECIPITATOR--HIGH EFFICIENCY....010
ELECTROSTATIC PRECIPITATOR--MEDIUM EFFICIENCY....011
ELECTROSTATIC PRECIPITATOR--LOW EFFICIENCY....012
FABRIC FILTER--HIGH TEMPERATURE....016
FABRIC FILTER--MEDIUM TEMPERATURE....017
FABRIC FILTER--LOW TEMPERATURE....018
FABRIC FILTER--METAL SCREENS (COTTON GINS)....059
FLARING....023
GAS ADSORPTION COLUMN--PACKED....050
GAS ADSORPTION COLUMN--TRAY TYPE....051
GAS SCRUBBER (GENERAL: NOT CLASSIFIED)....013
LIMESTONE INJECTION--DRY....041
LIMESTONE INJECTION--WET....042
LIQUID FILTRATION SYSTEM....049
MIST ELIMINATOR--HIGH VELOCITY....014
MIST ELIMINATOR--LOW VELOCITY....015
PROCESS CHANGE....046
PROCESS ENCLOSED....054
PROCESS GAS RECOVERY....060
SETTLING CHAMBER--HIGH EFFICIENCY....004
SETTLING CHAMBER--MEDIUM EFFICIENCY....005
SETTLING CHAMBER--LOW EFFICIENCY....006
SPRAY TOWER (GASEOUS CONTROL ONLY)....052
SULFURIC ACID PLANT--CONTACT PROCESS....043
SULFURIC ACID PLANT--DOUBLE CONTACT PROCESS....044
SULFUR PLANT....045
VAPOR RECOVERY SYSTEM (INCLUDING CONDENSERS, HOODING AND OTHER ENCLOSURES)....047
VENTURI SCRUBBER (GASEOUS CONTROL ONLY)....053
WET SCRUBBER--HIGH EFFICIENCY....001
WET SCRUBBER--MEDIUM EFFICIENCY....002
WET SCRUBBER--LOW EFFICIENCY....003
WET SUPPRESSION BY WATER SPRAYS....061

TABLE OF EMISSION ESTIMATION METHOD CODES

NOT APPLICABLE EMISSIONS ARE KNOWN TO BE ZERO....0

EMISSIONS BASED ON SOURCE TESTING....1

EMISSIONS BASED ON MATERIAL BALANCE USING ENGINEERING EXPERTISE AND KNOWLEDGE OF PROCESS....2

EMISSIONS CALCULATED USING EMISSION FACTORS FROM EPA PUBLICATION NO. AP-42 COMPILATION OF AIR POLLUTANT EMISSIONS FACTORS....3

JUDGEMENT....4

EMISSIONS CALCULATED USING A SPECIAL EMISSION FACTOR DIFFERING FROM THAT IN AP-42....5

OTHER (SPECIFY IN COMMENTS)....6

2012
APC-2-02

SHELBY COUNTY HEALTH DEPARTMENT
POLLUTION CONTROL SECTION
1826 Sycamore Road
Memphis, TN 38134
Telephone: (901) 222-9942
FAX: (901) 222-9550

NOT TO BE USED FOR TITLE V APPLICATIONS

PROCESS OR FUEL BURNING SOURCE DESCRIPTION

SCHD RECEIPT DATE

PLEASE TYPE OR PRINT, SUBMIT IN DUPLICATE, AND ATTACH TO THE PERMIT APPLICATION

1. ORGANIZATION LEGAL NAME: Memphis Urban Wood				**SCHD-APC FACILITY ID.:**
2. EMISSION SOURCE NUMBER: EU-1	NAICS CODE: 321113			**SCHD-APC PERMIT ID.:**
3. DESCRIPTION OF PROCESS OR FUEL BURNING UNIT: Air Curtain Incinerator used to produce biochar				
4. NORMAL OPERATION	HOURS/DAY: 8	DAYS/WEEK: 5	WEEKS/YEAR: 52	DAYS/YEAR: 240
5. MAXIMUM OPERATION	HOURS/DAY: 18	DAYS/WEEK: 7	WEEKS/YEAR: 52	DAYS/YEAR: 365
6. PERCENT ANNUAL THROUGH PUT	DEC.-FEB.: 25%	MAR.-MAY: 25%	JUNE-AUG.: 25%	SEPT.-NOV.: 25%

7. TYPE OF PERMIT APPLICATION	(CHECK BELOW - ONE ONLY)
PROCESS SOURCE: APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. (CHECK AT RIGHT, AND COMPLETE LINES 8, 9, AND 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	( )
PROCESS SOURCE WITH IN-PROCESS FUEL: PRODUCTS OF COMBUSTION CONTACT MATERIALS HEATED. APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. (CHECK AT RIGHT, AND COMPLETE LINES 8 THROUGH 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	(X)
NON-PROCESS FUEL BURNING SOURCE: PRODUCTS OF COMBUSTION DO NOT CONTACT MATERIALS HEATED. COMPLETE THIS FORM FOR EACH BOILER OR FUEL BURNER. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. CHECK AT RIGHT, AND COMPLETE LINES 10 THROUGH 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	( )

8. TYPE OF OPERATION:	CONTINUOUS	BATCH	NORMAL BATCH TIME	NORMAL BATCHES/DAY:
	(X)	( )		

9. PROCESS MATERIAL INPUTS AND IN-PROCESS SOLID FUELS*	DIAGRAM** REFERENCE	INPUT RATES ACTUAL LB/HR	DESIGN LB/HR	AVERAGE TN/YR	MAXIMUM TN/YR	(FOR APC USE ONLY) SCC CODE
A. Clean Woody Material		22,000	22,000	21,120	72,270	
B.						
C.						
D.						
E.						
F.						
TOTALS		22,000	22,000	21,120	72,270	

* PROCESS WEIGHT MEANS THE TOTAL WEIGHT OF ALL MATERIALS INTRODUCED INTO ANY SPECIFIC PROCESS THAT MAY CAUSE ANY EMISSION OF PARTICULATE MATTER. SOLID FUELS CHARGED ARE CONSIDERED AS PART OF THE PROCESS WEIGHT, BUT LIQUID AND GASEOUS FUELS AND COMBUSTION AIR ARE NOT.

** A SIMPLE PROCESS FLOW DIAGRAM MUST BE ATTACHED

(OVER)

10. BOILER OR BURNER DATA (COMPLETE LINES 9 TO 14 USING A SEPARATE FORM FOR EACH BOILER)

BOILER NUMBER:	STACK** NUMBER:	TYPE OF FIRING***:	RATED BOILER HORSEPOWER:	RATED INPUT CAPACITY (10^6 BTU/HR):	OTHER BOILER RATING (SPECIFY CAPACITY AND UNITS):

BOILER SERIAL NUMBER:	DATE CONSTRUCTED:	DATE OF LAST MODIFICATION (EXPLAIN IN COMMENTS BELOW):

** BOILERS WITH A COMMON STACK WILL HAVE THE SAME STACK NUMBER.
*** CYCLONE, SPREADER (WITH OR WITHOUT REINJECTION), PULVERIZED (WET OR DRY BOTTOM, WITH OR WITHOUT REINJECTION), OTHER STOKER (SPECIFY TYPE), HAND-FIRED, AUTOMATIC, OR OTHER TYPE (DESCRIBE BELOW IN COMMENTS).

11. FUEL DATA (COMPLETE FOR A PROCESS SOURCE WITH IN-PROCESS FUEL OR A NON-PROCESS FUEL BURNING SOURCE)

PRIMARY FUEL TYPE (SPECIFY): Wood is both the fuel and the material being processed. | STANDBY FUEL TYPE(S) (SPECIFY) N/A

FUELS USED	ANNUAL USAGE	HOURLY USAGE			% SULFUR	% ASH	BTU VALUE OF FUEL	/ / /	(FOR APC ONLY) SCC CODE
		DESIGN	AVERAGE	MAXIMUM					
NATURAL GAS	10^6 FT^3:	FT^3:	FT^3:	FT^3:	X	X		/ / /	
#2 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		/ / /	
#5 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		/ / /	
#6 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		/ / /	
COAL	TONS	LBS:	LBS:	LBS:				/ / /	
WOOD	TONS 72,270	LBS: 22,000	LBS: 22,000	LBS: 22,000	X	X	TBD	/ / /	
LIQUID PROPANE	10^3 GAL:	GAL:	GAL:	GAL:	X	X		/ / /	
OTHER (SPECIFY TYPE & UNITS)								/ / /	

12. IF WOOD IS USED AS A FUEL, SPECIFY TYPES AND ESTIMATE PERCENT BY WEIGHT OF BARK:
The wood processed will include green timber and clean woody materials sourced from around Memphis and sawdust and wood cuttings generated by the sawmill. The % weight of bark is unknown .

13. IF WOOD IS USED WITH OTHER FUELS, SPECIFY PERCENT BY WEIGHT OF WOOD CHARGED TO THE BURNER:

Other than to begin the wood buring process no other fuels will be used.

14. COMMENTS:
See attached report for details.

2012
APC-2-02

SHELBY COUNTY HEALTH DEPARTMENT
POLLUTION CONTROL SECTION
1826 Sycamore Road
Memphis, TN 38134
Telephone: (901) 222-9942
FAX: (901) 222-9550

NOT TO BE USED FOR TITLE V APPLICATIONS

PROCESS OR FUEL BURNING SOURCE DESCRIPTION

SCHD RECEIPT DATE

PLEASE TYPE OR PRINT, SUBMIT IN DUPLICATE, AND ATTACH TO THE PERMIT APPLICATION

1. ORGANIZATION LEGAL NAME: Memphis Urban Wood				**SCHD-APC FACILITY ID.:**
2. EMISSION SOURCE NUMBER: EU-2		NAICS CODE: 321113		**SCHD-APC PERMIT ID.:**
3. DESCRIPTION OF PROCESS OR FUEL BURNING UNIT: Sawmill used to roughcut green lumber, no fuels are used in this process				
4. NORMAL OPERATION	HOURS/DAY: 8	DAYS/WEEK: 5	WEEKS/YEAR: 50	DAYS/YEAR: 240
5. MAXIMUM OPERATION	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	DAYS/YEAR: 365
6. PERCENT ANNUAL THROUGH PUT	DEC.-FEB.: 25%	MAR.-MAY: 25%	JUNE-AUG.: 25%	SEPT.-NOV.: 25%

7. TYPE OF PERMIT APPLICATION	(CHECK BELOW - ONE ONLY)
PROCESS SOURCE: APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. (CHECK AT RIGHT, AND COMPLETE LINES 8, 9, AND 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	(X)
PROCESS SOURCE WITH IN-PROCESS FUEL: PRODUCTS OF COMBUSTION CONTACT MATERIALS HEATED. APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. (CHECK AT RIGHT, AND COMPLETE LINES 8 THROUGH 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	( )
NON-PROCESS FUEL BURNING SOURCE: PRODUCTS OF COMBUSTION DO NOT CONTACT MATERIALS HEATED. COMPLETE THIS FORM FOR EACH BOILER OR FUEL BURNER. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. CHECK AT RIGHT, AND COMPLETE LINES 10 THROUGH 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	( )

8. TYPE OF OPERATION: CONTINUOUS (X) BATCH ( )	NORMAL BATCH TIME	NORMAL BATCHES/DAY:	

9. PROCESS MATERIAL INPUTS AND IN-PROCESS SOLID FUELS*	DIAGRAM** REFERENCE	INPUT RATES ACTUAL LB/HR	DESIGN LB/HR	AVERAGE TN/YR	MAXIMUM TN/YR	(FOR APC USE ONLY) SCC CODE
A. Raw Lumber	#1	5.208	5.208	10,000	10,000	
B.						
C.						
D.						
E.						
F.						
	TOTALS	5.208	5.208	10,000	10,000	

* PROCESS WEIGHT MEANS THE TOTAL WEIGHT OF ALL MATERIALS INTRODUCED INTO ANY SPECIFIC PROCESS THAT MAY CAUSE ANY EMISSION OF PARTICULATE MATTER. SOLID FUELS CHARGED ARE CONSIDERED AS PART OF THE PROCESS WEIGHT, BUT LIQUID AND GASEOUS FUELS AND COMBUSTION AIR ARE NOT.

** A SIMPLE PROCESS FLOW DIAGRAM MUST BE ATTACHED

(OVER)

10. BOILER OR BURNER DATA (COMPLETE LINES 9 TO 14 USING A SEPARATE FORM FOR EACH BOILER)

BOILER NUMBER:	STACK** NUMBER:	TYPE OF FIRING***:	RATED BOILER HORSEPOWER:	RATED INPUT CAPACITY (10^6 BTU/HR):	OTHER BOILER RATING (SPECIFY CAPACITY AND UNITS):

BOILER SERIAL NUMBER:	DATE CONSTRUCTED:	DATE OF LAST MODIFICATION (EXPLAIN IN COMMENTS BELOW):

** BOILERS WITH A COMMON STACK WILL HAVE THE SAME STACK NUMBER.
*** CYCLONE, SPREADER (WITH OR WITHOUT REINJECTION), PULVERIZED (WET OR DRY BOTTOM, WITH OR WITHOUT REINJECTION), OTHER STOKER (SPECIFY TYPE), HAND-FIRED, AUTOMATIC, OR OTHER TYPE (DESCRIBE BELOW IN COMMENTS).

11. FUEL DATA (COMPLETE FOR A PROCESS SOURCE WITH IN-PROCESS FUEL OR A NON-PROCESS FUEL BURNING SOURCE)

PRIMARY FUEL TYPE (SPECIFY): N/A

STANDBY FUEL TYPE(S) (SPECIFY)

FUELS USED	ANNUAL USAGE	HOURLY USAGE			% SULFUR	% ASH	BTU VALUE OF FUEL	(FOR APC ONLY) SCC CODE
		DESIGN	AVERAGE	MAXIMUM				
NATURAL GAS	10^6 FT^3:	FT^3:	FT^3:	FT^3:	X	X		
#2 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
#5 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
#6 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
COAL	TONS	LBS:	LBS:	LBS:				
WOOD	TONS	LBS:	LBS:	LBS:	X	X		
LIQUID PROPANE	10^3 GAL:	GAL:	GAL:	GAL:	X	X		
OTHER (SPECIFY TYPE & UNITS)								

12. IF WOOD IS USED AS A FUEL, SPECIFY TYPES AND ESTIMATE PERCENT BY WEIGHT OF BARK:

13. IF WOOD IS USED WITH OTHER FUELS, SPECIFY PERCENT BY WEIGHT OF WOOD CHARGED TO THE BURNER:

14. COMMENTS:

The sawmill qualifies as an insignificant activity source.

2012
APC-2-02

SHELBY COUNTY HEALTH DEPARTMENT
POLLUTION CONTROL SECTION
1826 Sycamore Road
Memphis, TN 38134
Telephone: (901) 222-9942
FAX: (901) 222-9550

NOT TO BE USED FOR TITLE V APPLICATIONS

PROCESS OR FUEL BURNING SOURCE DESCRIPTION

SCHD RECEIPT DATE

PLEASE TYPE OR PRINT, SUBMIT IN DUPLICATE, AND ATTACH TO THE PERMIT APPLICATION

1. ORGANIZATION LEGAL NAME: Memphis Urban Wood				**SCHD-APC FACILITY ID.:**
2. EMISSION SOURCE NUMBER: EU-3		NAICS CODE: 321113		**SCHD-APC PERMIT ID.:**
3. DESCRIPTION OF PROCESS OR FUEL BURNING UNIT: Trommel Screen				
4. NORMAL OPERATION	HOURS/DAY: 8	DAYS/WEEK: 5	WEEKS/YEAR: 50	DAYS/YEAR: 240
5. MAXIMUM OPERATION	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	DAYS/YEAR: 365
6. PERCENT ANNUAL THROUGH PUT	DEC.-FEB.: 25%	MAR.-MAY: 25%	JUNE-AUG.: 25%	SEPT.-NOV.: 25%

7. TYPE OF PERMIT APPLICATION	(CHECK BELOW - ONE ONLY)
PROCESS SOURCE: APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. (CHECK AT RIGHT, AND COMPLETE LINES 8, 9, AND 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	(X)
PROCESS SOURCE WITH IN-PROCESS FUEL: PRODUCTS OF COMBUSTION CONTACT MATERIALS HEATED. APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. (CHECK AT RIGHT, AND COMPLETE LINES 8 THROUGH 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	( )
NON-PROCESS FUEL BURNING SOURCE: PRODUCTS OF COMBUSTION DO NOT CONTACT MATERIALS HEATED. COMPLETE THIS FORM FOR EACH BOILER OR FUEL BURNER. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. CHECK AT RIGHT, AND COMPLETE LINES 10 THROUGH 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	( )

8. TYPE OF OPERATION: CONTINUOUS (X) BATCH ( )	NORMAL BATCH TIME		NORMAL BATCHES/DAY:

9. PROCESS MATERIAL INPUTS AND IN-PROCESS SOLID FUELS*	DIAGRAM** REFERENCE	INPUT RATES ACTUAL LB/HR	DESIGN LB/HR	AVERAGE TN/YR	MAXIMUM TN/YR	(FOR APC USE ONLY) SCC CODE
A. Quenched Biochar	#4	7,880	7,880	7,565	34,514	
B.						
C.						
D.						
E.						
F.						
TOTALS		7,880	7,880	7,565	34,514	

* PROCESS WEIGHT MEANS THE TOTAL WEIGHT OF ALL MATERIALS INTRODUCED INTO ANY SPECIFIC PROCESS THAT MAY CAUSE ANY EMISSION OF PARTICULATE MATTER. SOLID FUELS CHARGED ARE CONSIDERED AS PART OF THE PROCESS WEIGHT, BUT LIQUID AND GASEOUS FUELS AND COMBUSTION AIR ARE NOT.

** A SIMPLE PROCESS FLOW DIAGRAM MUST BE ATTACHED

(OVER)

10. BOILER OR BURNER DATA (COMPLETE LINES 9 TO 14 USING A SEPARATE FORM FOR EACH BOILER)

BOILER NUMBER:	STACK** NUMBER:	TYPE OF FIRING***:	RATED BOILER HORSEPOWER:	RATED INPUT CAPACITY (10^6 BTU/HR):	OTHER BOILER RATING (SPECIFY CAPACITY AND UNITS):

BOILER SERIAL NUMBER:	DATE CONSTRUCTED:	DATE OF LAST MODIFICATION (EXPLAIN IN COMMENTS BELOW):

** BOILERS WITH A COMMON STACK WILL HAVE THE SAME STACK NUMBER.
*** CYCLONE, SPREADER (WITH OR WITHOUT REINJECTION), PULVERIZED (WET OR DRY BOTTOM, WITH OR WITHOUT REINJECTION), OTHER STOKER (SPECIFY TYPE), HAND-FIRED, AUTOMATIC, OR OTHER TYPE (DESCRIBE BELOW IN COMMENTS).

11. FUEL DATA (COMPLETE FOR A PROCESS SOURCE WITH IN-PROCESS FUEL OR A NON-PROCESS FUEL BURNING SOURCE)

PRIMARY FUEL TYPE (SPECIFY): N/A | STANDBY FUEL TYPE(S) (SPECIFY)

FUELS USED	ANNUAL USAGE	HOURLY USAGE			% SULFUR	% ASH	BTU VALUE OF FUEL	(FOR APC ONLY) SCC CODE
		DESIGN	AVERAGE	MAXIMUM				
NATURAL GAS	10^6 FT^3:	FT^3:	FT^3:	FT^3:	X	X		
#2 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
#5 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
#6 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
COAL	TONS	LBS:	LBS:	LBS:				
WOOD	TONS	LBS:	LBS:	LBS:	X	X		
LIQUID PROPANE	10^3 GAL:	GAL:	GAL:	GAL:	X	X		
OTHER (SPECIFY TYPE & UNITS)								

12. IF WOOD IS USED AS A FUEL, SPECIFY TYPES AND ESTIMATE PERCENT BY WEIGHT OF BARK:

13. IF WOOD IS USED WITH OTHER FUELS, SPECIFY PERCENT BY WEIGHT OF WOOD CHARGED TO THE BURNER:

14. COMMENTS:

The trommel screen qualifies as an insignificant activity source.

2012
APC-2-02

SHELBY COUNTY HEALTH DEPARTMENT
POLLUTION CONTROL SECTION
1826 Sycamore Road
Memphis, TN 38134
Telephone: (901) 222-9942
FAX: (901) 222-9550

NOT TO BE USED FOR TITLE V APPLICATIONS

PROCESS OR FUEL BURNING SOURCE DESCRIPTION

SCHD RECEIPT DATE

PLEASE TYPE OR PRINT, SUBMIT IN DUPLICATE, AND ATTACH TO THE PERMIT APPLICATION

1. ORGANIZATION LEGAL NAME:		**SCHD-APC FACILITY ID.:**
Memphis Urban Wood		
2. EMISSION SOURCE NUMBER:	NAICS CODE:	**SCHD-APC PERMIT ID.:**
EU-4	321113	

3. DESCRIPTION OF PROCESS OR FUEL BURNING UNIT:
PM emissions from material handling of materials between processes. See report for detailed description.

4. NORMAL OPERATION	HOURS/DAY: 8	DAYS/WEEK: 5	WEEKS/YEAR: 50	DAYS/YEAR: 240
5. MAXIMUM OPERATION	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	DAYS/YEAR: 365
6. PERCENT ANNUAL THROUGH PUT	DEC.-FEB.: 25%	MAR.-MAY: 25%	JUNE-AUG.: 25%	SEPT.-NOV.: 25%

7. TYPE OF PERMIT APPLICATION	(CHECK BELOW - ONE ONLY)
PROCESS SOURCE: APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. (CHECK AT RIGHT, AND COMPLETE LINES 8, 9, AND 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	(X)
PROCESS SOURCE WITH IN-PROCESS FUEL: PRODUCTS OF COMBUSTION CONTACT MATERIALS HEATED. APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. (CHECK AT RIGHT, AND COMPLETE LINES 8 THROUGH 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	( )
NON-PROCESS FUEL BURNING SOURCE: PRODUCTS OF COMBUSTION DO NOT CONTACT MATERIALS HEATED. COMPLETE THIS FORM FOR EACH BOILER OR FUEL BURNER. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. CHECK AT RIGHT, AND COMPLETE LINES 10 THROUGH 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	( )

8. TYPE OF OPERATION:	CONTINUOUS	BATCH	NORMAL BATCH TIME	NORMAL BATCHES/DAY:
	(X)	( )		

9. PROCESS MATERIAL INPUTS AND IN-PROCESS SOLID FUELS*	DIAGRAM** REFERENCE	INPUT RATES ACTUAL LB/HR	DESIGN LB/HR	AVERAGE TN/YR	MAXIMUM TN/YR	(FOR APC USE ONLY) SCC CODE
A. Sawdust	#2	57.38	57.38	83.77	83.77	
B. Unprocessed Biochar	#5	7,880	7,880	7,565	34,514	
C. Processed Biochar	#7	7,880	7,880	7,565	34,514	
D.						
E.						
F.						
	TOTALS	15,817	15,817	15,214	69,112	

* PROCESS WEIGHT MEANS THE TOTAL WEIGHT OF ALL MATERIALS INTRODUCED INTO ANY SPECIFIC PROCESS THAT MAY CAUSE ANY EMISSION OF PARTICULATE MATTER. SOLID FUELS CHARGED ARE CONSIDERED AS PART OF THE PROCESS WEIGHT, BUT LIQUID AND GASEOUS FUELS AND COMBUSTION AIR ARE NOT.

** A SIMPLE PROCESS FLOW DIAGRAM MUST BE ATTACHED

(OVER)

10. BOILER OR BURNER DATA (COMPLETE LINES 9 TO 14 USING A SEPARATE FORM FOR EACH BOILER)

BOILER NUMBER:	STACK** NUMBER:	TYPE OF FIRING***:	RATED BOILER HORSEPOWER:	RATED INPUT CAPACITY (10^6 BTU/HR):	OTHER BOILER RATING (SPECIFY CAPACITY AND UNITS):

BOILER SERIAL NUMBER:	DATE CONSTRUCTED:	DATE OF LAST MODIFICATION (EXPLAIN IN COMMENTS BELOW):

** BOILERS WITH A COMMON STACK WILL HAVE THE SAME STACK NUMBER.
*** CYCLONE, SPREADER (WITH OR WITHOUT REINJECTION), PULVERIZED (WET OR DRY BOTTOM, WITH OR WITHOUT REINJECTION), OTHER STOKER (SPECIFY TYPE), HAND-FIRED, AUTOMATIC, OR OTHER TYPE (DESCRIBE BELOW IN COMMENTS).

11. FUEL DATA (COMPLETE FOR A PROCESS SOURCE WITH IN-PROCESS FUEL OR A NON-PROCESS FUEL BURNING SOURCE)

PRIMARY FUEL TYPE (SPECIFY): N/A | STANDBY FUEL TYPE(S) (SPECIFY)

FUELS USED	ANNUAL USAGE	HOURLY USAGE			% SULFUR	% ASH	BTU VALUE OF FUEL	(FOR APC ONLY) SCC CODE
		DESIGN	AVERAGE	MAXIMUM				
NATURAL GAS	10^6 FT^3:	FT^3:	FT^3:	FT^3:	X	X		
#2 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
#5 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
#6 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
COAL	TONS	LBS:	LBS:	LBS:				
WOOD	TONS	LBS:	LBS:	LBS:	X	X		
LIQUID PROPANE	10^3 GAL:	GAL:	GAL:	GAL:	X	X		
OTHER (SPECIFY TYPE & UNITS)								

12. IF WOOD IS USED AS A FUEL, SPECIFY TYPES AND ESTIMATE PERCENT BY WEIGHT OF BARK:

13. IF WOOD IS USED WITH OTHER FUELS, SPECIFY PERCENT BY WEIGHT OF WOOD CHARGED TO THE BURNER:

14. COMMENTS:

The material handling PM emissions are fugitive sources that qualify as an insignificant source. These processes include handling the same material multiple times as it goes from one process to another which is why the total process throughput weights are higher than the biochar production rates.

SHELBY COUNTY HEALTH DEPARTMENT
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NOT TO BE USED FOR TITLE V APPLICATIONS

SCHD RECEIPT DATE

EMISSION POINT DESCRIPTION

PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH STACK OR EMISSION POINT. ATTACH TO THE PERMIT APPLICATION

1. ORGANIZATION LEGAL NAME: Memphis Urban Wood			**SCHD-APC FACILITY ID.:**	
2. EMISSION SOURCE NUMBER: EU-1	FLOW DIAGRAM POINT NUMBER: #3		**SCHD-APC PERMIT ID.:**	
3. SOURCE LOCATION	LATITUDE: 35°10'19.09"N	LONGITUDE: 90° 0'26.42"W	UTM VERTICAL: 3896203	UTM HORIZONTAL: 772613
4. BRIEF EMISSION POINT DESCRIPTION (ATTACH A SKETCH IF APPROPRIATE): Air Burner Air Curtain Incinerator				DISTANCE TO NEAREST PROPERTY LINE (FT): 230 ft.

COMPLET LINES 5 AND 6 IF DIFFERENT FROM THAT ON THE PROCESS OR FUEL BURNING SOURCE DESCRIPTION (APC-2-02)

5. NORMAL OPERATION	HOURS/DAY: 8	DAYS/WEEK: 5	WEEKS/YEAR: 50	DAYS/YEAR: 240
6. MAXIMUM OPERATION	HOURS/DAY: 18	DAYS/WEEK: 7	WEEKS/YEAR: 52	DAYS/YEAR: 365
7. PERCENT ANNUAL THROUGH PUT	DEC.-FEB.: 25%	MAR.-MAY: 25%	JUNE-AUG.: 25%	SEPT.-NOV.: 25%

8. STACK OR EMISSION POINT DATA	HEIGHT ABOVE GRADE(FT): 9'6"	DIAMETER (FT): 27'2" X 8'5"	TEMPERATURE (°F): TBD	% OF TIME OVER 125°F: 100%	DIRECTION OF EXIT (UP, DOWN, OR HORIZ): Up
DATA AT EXIT CONDITIONS	FLOW (ACTUAL FT^3/MIN): 20,736	VELOCITY (FT/SEC):	MOISTURE (GRAINS/FT^3)		MOISTURE (PERCENT)
DATA AT STANDARD CONDITIONS	FLOW (DRY STANDARD CUBIC FEET PER MINUTE):				

9. AIR CONTAMINANTS	AVERAGE (LBS/HR)	MAXIMUM (LBS/HR)	CONCENTRATION	AVERAGE (TONS/YR)	MAXIMUM (TONS/YR)	EMISSION ESTIMATION METHOD*	CONTROL DEVICES*	CONTROL EFFICIENCY (%)
PARTICULATES PM10)	14.3	14.3	**	13.73	46.98	1	000	0
SULFUR DIOXIDE	1.1	1.1	***	1.06	3.61	1	000	0
CARBON MONOXIDE	28.6	28.6	PPM	27.46	93.95	1	000	0
ORGANIC COMPOUNDS	9.90	9.90	PPM	9.50	32.52	1	000	0
NITROGEN OXIDES	11.0	11.0	PPM	10.56	36.14	1	000	0
FLUORIDES								
OTHER (SPECIFY)								
OTHER (SPECIFY)								

* REFER TO THE BACK OF THE PERMIT APPLICATION FORM FOR ESTIMATION METHOD AND CONTROL DEVICE CODES.
** EXIT GAS PARTICULATE CONCENTRATION UNITS: PROCESS – GRAINS PER DRY STANDARD FT^3 (70°F); WOOD FIRED BOILERS – GRAINS PER DRY STANDARD FT^3 (70°F); ALL OTHER BOILERS – POUNDS PER MILLION BTU HEAT INPUT.
*** EXIT GAS SULFUR DIOXIDE CONCENTRATION UNITS: PROCESS – PPM BY VOLUME, DRY BASIS; BOILERS – POUNDS PER MILLION BTU HEAT INPUT.

(OVER)

10. CHECK TYPES OF MONITORING AND RECORDING INSTRUMENTS THAT ARE ATTACHED:

OPACITY MONITOR ( ), SO_2 MONITOR ( ), NO_X MONITOR ( ), OTHER, SPECIFY IN COMMENTS ( )

11. COMMENTS:

This process is comprised of a firebox with an air curtain along the top of the box to contain emissions within the box while combustion is taking place promoting effiencient combustion.
Please refer to the attached report for details.

2012
APC-2-03

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POLLUTION CONTROL SECTION
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Memphis, TN 38134
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SCHD RECEIPT DATE

EMISSION POINT DESCRIPTION

PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH STACK OR EMISSION POINT. ATTACH TO THE PERMIT APPLICATION

1. ORGANIZATION LEGAL NAME: Memphis Urban Wood			**SCHD-APC FACILITY ID.:**	
2. EMISSION SOURCE NUMBER: EU-2	FLOW DIAGRAM POINT NUMBER: #8		**SCHD-APC PERMIT ID.:**	
3. SOURCE LOCATION	LATITUDE 35°10'18.67"N	LONGITUDE 90° 0'28.45"W	UTM VERTICAL 3896202	UTM HORIZONTAL 772504
4. BRIEF EMISSION POINT DESCRIPTION (ATTACH A SKETCH IF APPROPRIATE): A band saw sawmill used to cut green raw timber				DISTANCE TO NEAREST PROPERTY LINE (FT): 90 ft.

COMPLET LINES 5 AND 6 IF DIFFERENT FROM THAT ON THE PROCESS OR FUEL BURNING SOURCE DESCRIPTION (APC-2-02)

5. NORMAL OPERATION	HOURS/DAY: 8	DAYS/WEEK: 5	WEEKS/YEAR: 50	DAYS/YEAR: 240
6. MAXIMUM OPERATION	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	DAYS/YEAR: 365
7. PERCENT ANNUAL THROUGH PUT	DEC.-FEB.: 25%	MAR.-MAY: 25%	JUNE-AUG.: 25%	SEPT.-NOV.: 25%

8. STACK OR EMISSION POINT DATA	HEIGHT ABOVE GRADE(FT): Ground Level	DIAMETER (FT) N/A	TEMPERATURE (°F) N/A	% OF TIME OVER 125°F:	DIRECTION OF EXIT (UP, DOWN, OR HORIZ):
DATA AT EXIT CONDITIONS	FLOW (ACTUAL FT^3/MIN): Fugitive Emissions	VELOCITY (FT/SEC):	MOISTURE (GRAINS/FT^3)		MOISTURE (PERCENT)
DATA AT STANDARD CONDITIONS	FLOW (DRY STANDARD CUBIC FEET PER MINUTE): N/A				

9. AIR CONTAMINANTS	AVERAGE (LBS/HR)	MAXIMUM (LBS/HR)	CONCENTRATION	AVERAGE (TONS/YR)	MAXIMUM (TONS/YR)	EMISSION ESTIMATION METHOD*	CONTROL DEVICES*	CONTROL EFFICIENCY (%)
PARTICULATES PM PM 10 PM 2.5	1.82 0.091 0.046	1.82 0.091 0.046	**	1.75 0.0875 0.0438	1.75 0.0875 0.0438	5	None	0
SULFUR DIOXIDE			***					
CARBON MONOXIDE			PPM					
ORGANIC COMPOUNDS			PPM					
NITROGEN OXIDES			PPM					
FLUORIDES								
OTHER (SPECIFY)								
OTHER (SPECIFY)								

* REFER TO THE BACK OF THE PERMIT APPLICATION FORM FOR ESTIMATION METHOD AND CONTROL DEVICE CODES.

** EXIT GAS PARTICULATE CONCENTRATION UNITS: PROCESS – GRAINS PER DRY STANDARD FT^3 (70°F); WOOD FIRED BOILERS – GRAINS PER DRY STANDARD FT^3 (70°F); ALL OTHER BOILERS – POUNDS PER MILLION BTU HEAT INPUT.

*** EXIT GAS SULFUR DIOXIDE CONCENTRATION UNITS: PROCESS – PPM BY VOLUME, DRY BASIS; BOILERS – POUNDS PER MILLION BTU HEAT INPUT.

(OVER)

10. CHECK TYPES OF MONITORING AND RECORDING INSTRUMENTS THAT ARE ATTACHED:

OPACITY MONITOR ( ), SO_2 MONITOR ( ), NO_X MONITOR ( ), OTHER, SPECIFY IN COMMENTS ( )

11. COMMENTS:

The sawmill is a source of fugitive PM emissions and qualifies as an insignificant activity.

2012
APC-2-02

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PROCESS OR FUEL BURNING SOURCE DESCRIPTION

SCHD RECEIPT DATE

PLEASE TYPE OR PRINT, SUBMIT IN DUPLICATE, AND ATTACH TO THE PERMIT APPLICATION

1. ORGANIZATION LEGAL NAME: Memphis Urban Wood				**SCHD-APC FACILITY ID.:**
2. EMISSION SOURCE NUMBER: EU-3		NAICS CODE: 321113		**SCHD-APC PERMIT ID.:**
3. DESCRIPTION OF PROCESS OR FUEL BURNING UNIT: Trommel Screen				
4. NORMAL OPERATION	HOURS/DAY: 8	DAYS/WEEK: 5	WEEKS/YEAR: 50	DAYS/YEAR: 240
5. MAXIMUM OPERATION	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	DAYS/YEAR: 365
6. PERCENT ANNUAL THROUGH PUT	DEC.-FEB.: 25%	MAR.-MAY: 25%	JUNE-AUG.: 25%	SEPT.-NOV.: 25%

7. TYPE OF PERMIT APPLICATION	(CHECK BELOW - ONE ONLY)
PROCESS SOURCE: APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. (CHECK AT RIGHT, AND COMPLETE LINES 8, 9, AND 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	(X)
PROCESS SOURCE WITH IN-PROCESS FUEL: PRODUCTS OF COMBUSTION CONTACT MATERIALS HEATED. APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. (CHECK AT RIGHT, AND COMPLETE LINES 8 THROUGH 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	( )
NON-PROCESS FUEL BURNING SOURCE: PRODUCTS OF COMBUSTION DO NOT CONTACT MATERIALS HEATED. COMPLETE THIS FORM FOR EACH BOILER OR FUEL BURNER. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. CHECK AT RIGHT, AND COMPLETE LINES 10 THROUGH 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	( )

8. TYPE OF OPERATION: CONTINUOUS (X) BATCH ( )	NORMAL BATCH TIME		NORMAL BATCHES/DAY:

9. PROCESS MATERIAL INPUTS AND IN-PROCESS SOLID FUELS*	DIAGRAM** REFERENCE	INPUT RATES ACTUAL LB/HR	DESIGN LB/HR	AVERAGE TN/YR	MAXIMUM TN/YR	(FOR APC USE ONLY) SCC CODE
A. Quenched Biochar	#4	7,880	7,880	7,565	34,514	
B.						
C.						
D.						
E.						
F.						
TOTALS		7,880	7,880	7,565	34,514	

* PROCESS WEIGHT MEANS THE TOTAL WEIGHT OF ALL MATERIALS INTRODUCED INTO ANY SPECIFIC PROCESS THAT MAY CAUSE ANY EMISSION OF PARTICULATE MATTER. SOLID FUELS CHARGED ARE CONSIDERED AS PART OF THE PROCESS WEIGHT, BUT LIQUID AND GASEOUS FUELS AND COMBUSTION AIR ARE NOT.

** A SIMPLE PROCESS FLOW DIAGRAM MUST BE ATTACHED

(OVER)

10. BOILER OR BURNER DATA (COMPLETE LINES 9 TO 14 USING A SEPARATE FORM FOR EACH BOILER)

BOILER NUMBER:	STACK** NUMBER:	TYPE OF FIRING***:	RATED BOILER HORSEPOWER:	RATED INPUT CAPACITY (10^6 BTU/HR):	OTHER BOILER RATING (SPECIFY CAPACITY AND UNITS):

BOILER SERIAL NUMBER:	DATE CONSTRUCTED:	DATE OF LAST MODIFICATION (EXPLAIN IN COMMENTS BELOW):

** BOILERS WITH A COMMON STACK WILL HAVE THE SAME STACK NUMBER.
*** CYCLONE, SPREADER (WITH OR WITHOUT REINJECTION), PULVERIZED (WET OR DRY BOTTOM, WITH OR WITHOUT REINJECTION), OTHER STOKER (SPECIFY TYPE), HAND-FIRED, AUTOMATIC, OR OTHER TYPE (DESCRIBE BELOW IN COMMENTS).

11. FUEL DATA (COMPLETE FOR A PROCESS SOURCE WITH IN-PROCESS FUEL OR A NON-PROCESS FUEL BURNING SOURCE)

PRIMARY FUEL TYPE (SPECIFY): N/A

STANDBY FUEL TYPE(S) (SPECIFY)

FUELS USED	ANNUAL USAGE	HOURLY USAGE			% SULFUR	% ASH	BTU VALUE OF FUEL	(FOR APC ONLY) SCC CODE
		DESIGN	AVERAGE	MAXIMUM				
NATURAL GAS	10^6 FT^3:	FT^3:	FT^3:	FT^3:	X	X		
#2 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
#5 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
#6 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
COAL	TONS	LBS:	LBS:	LBS:				
WOOD	TONS	LBS:	LBS:	LBS:	X	X		
LIQUID PROPANE	10^3 GAL:	GAL:	GAL:	GAL:	X	X		
OTHER (SPECIFY TYPE & UNITS)								

12. IF WOOD IS USED AS A FUEL, SPECIFY TYPES AND ESTIMATE PERCENT BY WEIGHT OF BARK:

13. IF WOOD IS USED WITH OTHER FUELS, SPECIFY PERCENT BY WEIGHT OF WOOD CHARGED TO THE BURNER:

14. COMMENTS:

The trommel screen qualifies as an insignificant activity source.

2012
APC-2-02

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POLLUTION CONTROL SECTION
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NOT TO BE USED FOR TITLE V APPLICATIONS

PROCESS OR FUEL BURNING SOURCE DESCRIPTION

SCHD RECEIPT DATE

PLEASE TYPE OR PRINT, SUBMIT IN DUPLICATE, AND ATTACH TO THE PERMIT APPLICATION

1. ORGANIZATION LEGAL NAME:		**SCHD-APC FACILITY ID.:**
Memphis Urban Wood		
2. EMISSION SOURCE NUMBER:	NAICS CODE:	**SCHD-APC PERMIT ID.:**
EU-4	321113	

3. DESCRIPTION OF PROCESS OR FUEL BURNING UNIT:
PM emissions from material handling of materials between processes. See report for detailed description.

4. NORMAL OPERATION	HOURS/DAY: 8	DAYS/WEEK: 5	WEEKS/YEAR: 50	DAYS/YEAR: 240
5. MAXIMUM OPERATION	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	DAYS/YEAR: 365
6. PERCENT ANNUAL THROUGH PUT	DEC.-FEB.: 25%	MAR.-MAY: 25%	JUNE-AUG.: 25%	SEPT.-NOV.: 25%

7. TYPE OF PERMIT APPLICATION	(CHECK BELOW - ONE ONLY)
PROCESS SOURCE: APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. (CHECK AT RIGHT, AND COMPLETE LINES 8, 9, AND 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	(X)
PROCESS SOURCE WITH IN-PROCESS FUEL: PRODUCTS OF COMBUSTION CONTACT MATERIALS HEATED. APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. (CHECK AT RIGHT, AND COMPLETE LINES 8 THROUGH 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	( )
NON-PROCESS FUEL BURNING SOURCE: PRODUCTS OF COMBUSTION DO NOT CONTACT MATERIALS HEATED. COMPLETE THIS FORM FOR EACH BOILER OR FUEL BURNER. **COMPLETE AN APC-2-03 FORM** FOR EACH STACK OR NON-STACK EMISSION POINT. CHECK AT RIGHT, AND COMPLETE LINES 10 THROUGH 14). SEE * BELOW FOR THE DEFINITION OF PROCESS WEIGHT	( )

8. TYPE OF OPERATION:	CONTINUOUS	BATCH	NORMAL BATCH TIME	NORMAL BATCHES/DAY:
	(X)	( )		

9. PROCESS MATERIAL INPUTS AND IN-PROCESS SOLID FUELS*	DIAGRAM** REFERENCE	INPUT RATES ACTUAL LB/HR	DESIGN LB/HR	AVERAGE TN/YR	MAXIMUM TN/YR	(FOR APC USE ONLY) SCC CODE
A. Sawdust	#2	57.38	57.38	83.77	83.77	
B. Unprocessed Biochar	#5	7,880	7,880	7,565	34,514	
C. Processed Biochar	#7	7,880	7,880	7,565	34,514	
D.						
E.						
F.						
	TOTALS	15,817	15,817	15,214	69,112	

* PROCESS WEIGHT MEANS THE TOTAL WEIGHT OF ALL MATERIALS INTRODUCED INTO ANY SPECIFIC PROCESS THAT MAY CAUSE ANY EMISSION OF PARTICULATE MATTER. SOLID FUELS CHARGED ARE CONSIDERED AS PART OF THE PROCESS WEIGHT, BUT LIQUID AND GASEOUS FUELS AND COMBUSTION AIR ARE NOT.

** A SIMPLE PROCESS FLOW DIAGRAM MUST BE ATTACHED

(OVER)

10. BOILER OR BURNER DATA (COMPLETE LINES 9 TO 14 USING A SEPARATE FORM FOR EACH BOILER)

BOILER NUMBER:	STACK** NUMBER:	TYPE OF FIRING***:	RATED BOILER HORSEPOWER:	RATED INPUT CAPACITY (10^6 BTU/HR):	OTHER BOILER RATING (SPECIFY CAPACITY AND UNITS):

BOILER SERIAL NUMBER:	DATE CONSTRUCTED:	DATE OF LAST MODIFICATION (EXPLAIN IN COMMENTS BELOW):

** BOILERS WITH A COMMON STACK WILL HAVE THE SAME STACK NUMBER.
*** CYCLONE, SPREADER (WITH OR WITHOUT REINJECTION), PULVERIZED (WET OR DRY BOTTOM, WITH OR WITHOUT REINJECTION), OTHER STOKER (SPECIFY TYPE), HAND-FIRED, AUTOMATIC, OR OTHER TYPE (DESCRIBE BELOW IN COMMENTS).

11. FUEL DATA (COMPLETE FOR A PROCESS SOURCE WITH IN-PROCESS FUEL OR A NON-PROCESS FUEL BURNING SOURCE)

PRIMARY FUEL TYPE (SPECIFY): N/A | STANDBY FUEL TYPE(S) (SPECIFY)

FUELS USED	ANNUAL USAGE	HOURLY USAGE			% SULFUR	% ASH	BTU VALUE OF FUEL	(FOR APC ONLY) SCC CODE
		DESIGN	AVERAGE	MAXIMUM				
NATURAL GAS	10^6 FT^3:	FT^3:	FT^3:	FT^3:	X	X		
#2 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
#5 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
#6 FUEL OIL	10^3 GAL:	GAL:	GAL:	GAL:		X		
COAL	TONS	LBS:	LBS:	LBS:				
WOOD	TONS	LBS:	LBS:	LBS:	X	X		
LIQUID PROPANE	10^3 GAL:	GAL:	GAL:	GAL:	X	X		
OTHER (SPECIFY TYPE & UNITS)								

12. IF WOOD IS USED AS A FUEL, SPECIFY TYPES AND ESTIMATE PERCENT BY WEIGHT OF BARK:

13. IF WOOD IS USED WITH OTHER FUELS, SPECIFY PERCENT BY WEIGHT OF WOOD CHARGED TO THE BURNER:

14. COMMENTS:

The material handling PM emissions are fugitive sources that qualify as an insignificant source. These processes include handling the same material multiple times as it goes from one process to another which is why the total process throughput weights are higher than the biochar production rates.

SHELBY COUNTY HEALTH DEPARTMENT
POLLUTION CONTROL SECTION
1826 Sycamore Road
Memphis, TN 38134
Telephone: (901) 222-9942
FAX: (901) 222-9550
NOT TO BE USED FOR TITLE V APPLICATIONS

SCHD RECEIPT DATE

EMISSION POINT DESCRIPTION

PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH STACK OR EMISSION POINT. ATTACH TO THE PERMIT APPLICATION

1. ORGANIZATION LEGAL NAME: Memphis Urban Wood			**SCHD-APC FACILITY ID.:**	
2. EMISSION SOURCE NUMBER: EU-1	FLOW DIAGRAM POINT NUMBER: #3		**SCHD-APC PERMIT ID.:**	
3. SOURCE LOCATION	LATITUDE: 35°10'19.09"N	LONGITUDE: 90° 0'26.42"W	UTM VERTICAL: 3896203	UTM HORIZONTAL: 772613
4. BRIEF EMISSION POINT DESCRIPTION (ATTACH A SKETCH IF APPROPRIATE): Air Burner Air Curtain Incinerator				DISTANCE TO NEAREST PROPERTY LINE (FT): 230 ft.

COMPLET LINES 5 AND 6 IF DIFFERENT FROM THAT ON THE PROCESS OR FUEL BURNING SOURCE DESCRIPTION (APC-2-02)

5. NORMAL OPERATION	HOURS/DAY: 8	DAYS/WEEK: 5	WEEKS/YEAR: 50	DAYS/YEAR: 240
6. MAXIMUM OPERATION	HOURS/DAY: 18	DAYS/WEEK: 7	WEEKS/YEAR: 52	DAYS/YEAR: 365
7. PERCENT ANNUAL THROUGH PUT	DEC.-FEB.: 25%	MAR.-MAY: 25%	JUNE-AUG.: 25%	SEPT.-NOV.: 25%

8. STACK OR EMISSION POINT DATA	HEIGHT ABOVE GRADE(FT): 9'6"	DIAMETER (FT): 27'2" X 8'5"	TEMPERATURE (°F): TBD	% OF TIME OVER 125°F: 100%	DIRECTION OF EXIT (UP, DOWN, OR HORIZ): Up
DATA AT EXIT CONDITIONS	FLOW (ACTUAL FT^3/MIN): 20,736	VELOCITY (FT/SEC):	MOISTURE (GRAINS/FT^3)		MOISTURE (PERCENT)
DATA AT STANDARD CONDITIONS	FLOW (DRY STANDARD CUBIC FEET PER MINUTE):				

9. AIR CONTAMINANTS	AVERAGE (LBS/HR)	MAXIMUM (LBS/HR)	CONCENTRATION	AVERAGE (TONS/YR)	MAXIMUM (TONS/YR)	EMISSION ESTIMATION METHOD*	CONTROL DEVICES*	CONTROL EFFICIENCY (%)
PARTICULATES PM10)	14.3	14.3	**	13.73	46.98	1	000	0
SULFUR DIOXIDE	1.1	1.1	***	1.06	3.61	1	000	0
CARBON MONOXIDE	28.6	28.6	PPM	27.46	93.95	1	000	0
ORGANIC COMPOUNDS	9.90	9.90	PPM	9.50	32.52	1	000	0
NITROGEN OXIDES	11.0	11.0	PPM	10.56	36.14	1	000	0
FLUORIDES								
OTHER (SPECIFY)								
OTHER (SPECIFY)								

* REFER TO THE BACK OF THE PERMIT APPLICATION FORM FOR ESTIMATION METHOD AND CONTROL DEVICE CODES.
** EXIT GAS PARTICULATE CONCENTRATION UNITS: PROCESS – GRAINS PER DRY STANDARD FT^3 (70°F); WOOD FIRED BOILERS – GRAINS PER DRY STANDARD FT^3 (70°F); ALL OTHER BOILERS – POUNDS PER MILLION BTU HEAT INPUT.
*** EXIT GAS SULFUR DIOXIDE CONCENTRATION UNITS: PROCESS – PPM BY VOLUME, DRY BASIS; BOILERS – POUNDS PER MILLION BTU HEAT INPUT.

(OVER)

10. CHECK TYPES OF MONITORING AND RECORDING INSTRUMENTS THAT ARE ATTACHED:

OPACITY MONITOR ( ), SO_2 MONITOR ( ), NO_X MONITOR ( ), OTHER, SPECIFY IN COMMENTS ( )

11. COMMENTS:

This process is comprised of a firebox with an air curtain along the top of the box to contain emissions within the box while combustion is taking place promoting effiencient combustion.
Please refer to the attached report for details.

2012
APC-2-03

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EMISSION POINT DESCRIPTION

PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH STACK OR EMISSION POINT. ATTACH TO THE PERMIT APPLICATION

1. ORGANIZATION LEGAL NAME: Memphis Urban Wood			**SCHD-APC FACILITY ID.:**	
2. EMISSION SOURCE NUMBER: EU-2	FLOW DIAGRAM POINT NUMBER: #8		**SCHD-APC PERMIT ID.:**	
3. SOURCE LOCATION	LATITUDE 35°10'18.67"N	LONGITUDE 90° 0'28.45"W	UTM VERTICAL 3896202	UTM HORIZONTAL 772504
4. BRIEF EMISSION POINT DESCRIPTION (ATTACH A SKETCH IF APPROPRIATE): A band saw sawmill used to cut green raw timber				DISTANCE TO NEAREST PROPERTY LINE (FT): 90 ft.

COMPLET LINES 5 AND 6 IF DIFFERENT FROM THAT ON THE PROCESS OR FUEL BURNING SOURCE DESCRIPTION (APC-2-02)

5. NORMAL OPERATION	HOURS/DAY: 8	DAYS/WEEK: 5	WEEKS/YEAR: 50	DAYS/YEAR: 240
6. MAXIMUM OPERATION	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	DAYS/YEAR: 365
7. PERCENT ANNUAL THROUGH PUT	DEC.-FEB.: 25%	MAR.-MAY: 25%	JUNE-AUG.: 25%	SEPT.-NOV.: 25%

8. STACK OR EMISSION POINT DATA	HEIGHT ABOVE GRADE(FT): Ground Level	DIAMETER (FT) N/A	TEMPERATURE (°F) N/A	% OF TIME OVER 125°F:	DIRECTION OF EXIT (UP, DOWN, OR HORIZ):
DATA AT EXIT CONDITIONS	FLOW (ACTUAL FT^3/MIN): Fugitive Emissions	VELOCITY (FT/SEC):	MOISTURE (GRAINS/FT^3)		MOISTURE (PERCENT)
DATA AT STANDARD CONDITIONS	FLOW (DRY STANDARD CUBIC FEET PER MINUTE): N/A				

9. AIR CONTAMINANTS	AVERAGE (LBS/HR)	MAXIMUM (LBS/HR)	CONCENTRATION	AVERAGE (TONS/YR)	MAXIMUM (TONS/YR)	EMISSION ESTIMATION METHOD*	CONTROL DEVICES*	CONTROL EFFICIENCY (%)
PARTICULATES PM PM 10 PM 2.5	1.82 0.091 0.046	1.82 0.091 0.046	**	1.75 0.0875 0.0438	1.75 0.0875 0.0438	5	None	0
SULFUR DIOXIDE			***					
CARBON MONOXIDE			PPM					
ORGANIC COMPOUNDS			PPM					
NITROGEN OXIDES			PPM					
FLUORIDES								
OTHER (SPECIFY)								
OTHER (SPECIFY)								

* REFER TO THE BACK OF THE PERMIT APPLICATION FORM FOR ESTIMATION METHOD AND CONTROL DEVICE CODES.

** EXIT GAS PARTICULATE CONCENTRATION UNITS: PROCESS – GRAINS PER DRY STANDARD FT^3 (70°F); WOOD FIRED BOILERS – GRAINS PER DRY STANDARD FT^3 (70°F); ALL OTHER BOILERS – POUNDS PER MILLION BTU HEAT INPUT.

*** EXIT GAS SULFUR DIOXIDE CONCENTRATION UNITS: PROCESS – PPM BY VOLUME, DRY BASIS; BOILERS – POUNDS PER MILLION BTU HEAT INPUT.

(OVER)

10. CHECK TYPES OF MONITORING AND RECORDING INSTRUMENTS THAT ARE ATTACHED:

OPACITY MONITOR ( ), SO_2 MONITOR ( ), NO_X MONITOR ( ), OTHER, SPECIFY IN COMMENTS ( )

11. COMMENTS:

The sawmill is a source of fugitive PM emissions and qualifies as an insignificant activity.

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EMISSION POINT DESCRIPTION

PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH STACK OR EMISSION POINT. ATTACH TO THE PERMIT APPLICATION

1. ORGANIZATION LEGAL NAME: Memphis Urban Wood			**SCHD-APC FACILITY ID.:**	
2. EMISSION SOURCE NUMBER: EU-3	FLOW DIAGRAM POINT NUMBER: #5		**SCHD-APC PERMIT ID.:**	
3. SOURCE LOCATION	LATITUDE: 35°10'18.80"N	LONGITUDE: 90° 0'23.93"W	UTM VERTICAL: 3896179	UTM HORIZONTAL: 772623
4. BRIEF EMISSION POINT DESCRIPTION (ATTACH A SKETCH IF APPROPRIATE): A trommel screen used to remove oversized material from quenched biochar.				DISTANCE TO NEAREST PROPERTY LINE (FT): 180 ft.

COMPLET LINES 5 AND 6 IF DIFFERENT FROM THAT ON THE PROCESS OR FUEL BURNING SOURCE DESCRIPTION (APC-2-02)

5. NORMAL OPERATION	HOURS/DAY: 8	DAYS/WEEK: 5	WEEKS/YEAR: 50	DAYS/YEAR: 240
6. MAXIMUM OPERATION	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	DAYS/YEAR: 365
7. PERCENT ANNUAL THROUGH PUT	DEC.-FEB.: 25%	MAR.-MAY: 25%	JUNE-AUG.: 25%	SEPT.-NOV.: 25%

8. STACK OR EMISSION POINT DATA	HEIGHT ABOVE GRADE(FT): Ground Level	DIAMETER (FT): N/A	TEMPERATURE (°F): N/A	% OF TIME OVER 125°F:	DIRECTION OF EXIT (UP, DOWN, OR HORIZ):
DATA AT EXIT CONDITIONS	FLOW (ACTUAL FT^3/MIN): Fugitive Emissions	VELOCITY (FT/SEC):	MOISTURE (GRAINS/FT^3)		MOISTURE (PERCENT)
DATA AT STANDARD CONDITIONS	FLOW (DRY STANDARD CUBIC FEET PER MINUTE): N/A				

9. AIR CONTAMINANTS	AVERAGE (LBS/HR)	MAXIMUM (LBS/HR)	CONCENTRATION	AVERAGE (TONS/YR)	MAXIMUM (TONS/YR)	EMISSION ESTIMATION METHOD*	CONTROL DEVICES*	CONTROL EFFICIENCY (%)
PARTICULATES PM 10	0.0341	0.0341	**	0.0327	0.1493	3	000	0
SULFUR DIOXIDE			***					
CARBON MONOXIDE			PPM					
ORGANIC COMPOUNDS			PPM					
NITROGEN OXIDES			PPM					
FLUORIDES								
OTHER (SPECIFY)								
OTHER (SPECIFY)								

* REFER TO THE BACK OF THE PERMIT APPLICATION FORM FOR ESTIMATION METHOD AND CONTROL DEVICE CODES.
** EXIT GAS PARTICULATE CONCENTRATION UNITS: PROCESS – GRAINS PER DRY STANDARD FT^3 (70°F); WOOD FIRED BOILERS – GRAINS PER DRY STANDARD FT^3 (70°F); ALL OTHER BOILERS – POUNDS PER MILLION BTU HEAT INPUT.
*** EXIT GAS SULFUR DIOXIDE CONCENTRATION UNITS: PROCESS – PPM BY VOLUME, DRY BASIS; BOILERS – POUNDS PER MILLION BTU HEAT INPUT.

(OVER)

10. CHECK TYPES OF MONITORING AND RECORDING INSTRUMENTS THAT ARE ATTACHED:

OPACITY MONITOR ( ), SO_2 MONITOR ( ), NO_X MONITOR ( ), OTHER, SPECIFY IN COMMENTS ( )

11. COMMENTS:

The trommel screen is a source of fugitive PM emissions and qualifies as an insignificant activity.

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EMISSION POINT DESCRIPTION

PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH STACK OR EMISSION POINT. ATTACH TO THE PERMIT APPLICATION

1. ORGANIZATION LEGAL NAME: Memphis Urban Wood			**SCHD-APC FACILITY ID.:**	
2. EMISSION SOURCE NUMBER: EU-4	FLOW DIAGRAM POINT NUMBER: 2,4,5,7,8		**SCHD-APC PERMIT ID.:**	
3. SOURCE LOCATION	LATITUDE: 35°10'18.80"N	LONGITUDE: 90° 0'23.93"W	UTM VERTICAL: 3896179	UTM HORIZONTAL: 772623
4. BRIEF EMISSION POINT DESCRIPTION (ATTACH A SKETCH IF APPROPRIATE): PM emissions from material handling of materials between processes. See report for detailed description.				DISTANCE TO NEAREST PROPERTY LINE (FT): 100 ft.

COMPLET LINES 5 AND 6 IF DIFFERENT FROM THAT ON THE PROCESS OR FUEL BURNING SOURCE DESCRIPTION (APC-2-02)

5. NORMAL OPERATION	HOURS/DAY: 8	DAYS/WEEK: 5	WEEKS/YEAR: 50	DAYS/YEAR: 240
6. MAXIMUM OPERATION	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	DAYS/YEAR: 365
7. PERCENT ANNUAL THROUGH PUT	DEC.-FEB.: 25%	MAR.-MAY: 25%	JUNE-AUG.: 25%	SEPT.-NOV.: 25%

8. STACK OR EMISSION POINT DATA	HEIGHT ABOVE GRADE(FT): Ground Level	DIAMETER (FT): N/A	TEMPERATURE (°F): N/A	% OF TIME OVER 125°F: N/A	DIRECTION OF EXIT (UP, DOWN, OR HORIZ):
DATA AT EXIT CONDITIONS	FLOW (ACTUAL FT^3/MIN): Fugitive Emissions	VELOCITY (FT/SEC): N/A	MOISTURE (GRAINS/FT^3): N/A		MOISTURE (PERCENT): N/A
DATA AT STANDARD CONDITIONS	FLOW (DRY STANDARD CUBIC FEET PER MINUTE): N/A				

9. AIR CONTAMINANTS	AVERAGE (LBS/HR)	MAXIMUM (LBS/HR)	CONCENTRATION	AVERAGE (TONS/YR)	MAXIMUM (TONS/YR)	EMISSION ESTIMATION METHOD*	CONTROL DEVICES*	CONTROL EFFICIENCY (%)
PARTICULATES	0.113	0.113	**	0.109	0.497	3	000	0
SULFUR DIOXIDE			***					
CARBON MONOXIDE			PPM					
ORGANIC COMPOUNDS			PPM					
NITROGEN OXIDES			PPM					
FLUORIDES								
OTHER (SPECIFY)								
OTHER (SPECIFY)								

* REFER TO THE BACK OF THE PERMIT APPLICATION FORM FOR ESTIMATION METHOD AND CONTROL DEVICE CODES.
** EXIT GAS PARTICULATE CONCENTRATION UNITS: PROCESS – GRAINS PER DRY STANDARD FT^3 (70°F); WOOD FIRED BOILERS – GRAINS PER DRY STANDARD FT^3 (70°F); ALL OTHER BOILERS – POUNDS PER MILLION BTU HEAT INPUT.
*** EXIT GAS SULFUR DIOXIDE CONCENTRATION UNITS: PROCESS – PPM BY VOLUME, DRY BASIS; BOILERS – POUNDS PER MILLION BTU HEAT INPUT.

(OVER)

10. CHECK TYPES OF MONITORING AND RECORDING INSTRUMENTS THAT ARE ATTACHED:

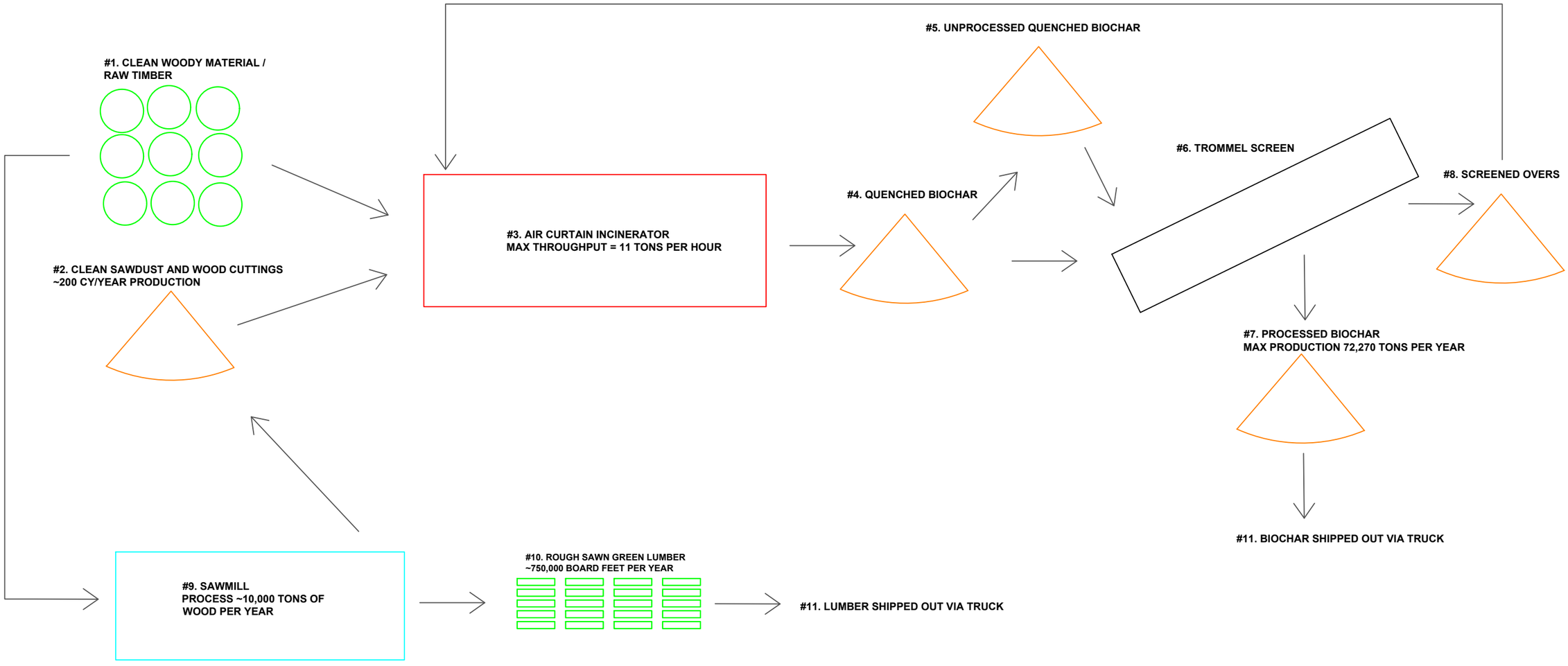
OPACITY MONITOR ( ), SO_2 MONITOR ( ), NO_X MONITOR ( ), OTHER, SPECIFY IN COMMENTS ( )

11. COMMENTS:

There will be several pile locations on-site. The coordinates above are a central location. Acutal material handling locations will depend on how to efficiently handle and move the materials. These emissions are comprised moving and loading and unloading sawdust and biochar between process steps. These piles will be worked daily with fluctuating sizes. Based on the emissions estimates these operations will be insignificant activities.

The maximum and average lb/hr emissions are assumed to be same for the purpose of this application.

Appendix B
Drawings
and Maps



NOT TO SCALE

Tioga
ENVIRONMENTAL CONSULTANTS

MEMPHIS URBAN WOOD
MINOR SOURCE CONSTRUCTION AIR PERMIT APPLICATION

DESCRIPTION: PROCESS FLOW DIAGRAM
PROJECT #: 111422.00
DATE: OCTOBER 2023
LOCATION: 1230 N. WATKINS, MEMPHIS, TN

1" = 140'

Tioga
ENVIRONMENTAL CONSULTANTS

MEMPHIS URBAN WOOD
MINOR SOURCE CONSTRUCTION AIR PERMIT APPLICATION

DESCRIPTION:	SITE OVERVIEW
LOCATION:	1515 N. WATKINS, MEMPHIS, TN
PROJECT #:	111422.00
DATE:	OCTOBER 2023

LEGEND

- AIR CURTAIN INCINERATOR
- SAWDUST OR BIOCHAR STORAGE PILES
- TROMMEL SCREEN
- ROUGH SAWN BOARD STORAGE
- SAWMILL LOCATION
- RAW TIMBER STORAGE

*PROCESS LOCATIONS ARE PRELIMINARY AND MAY CHANGE

NOT TO SCALE

Tioga
ENVIRONMENTAL CONSULTANTS

MINOR SOURCE CONSTRUCTION AIR PERMIT APP. MEMPHIS URBAN WOOD

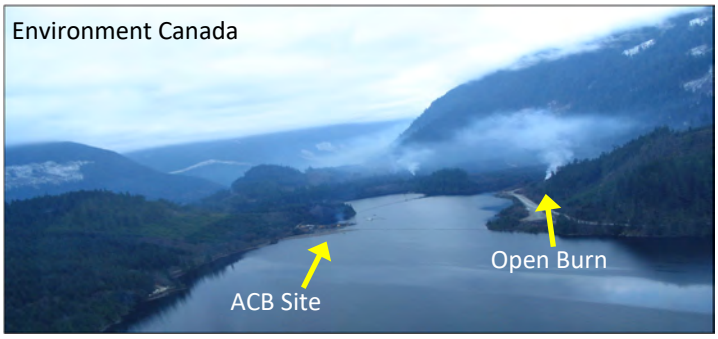
DESCRIPTION:	PROJECT #:
VICINITY MAP	111422.00
LOCATION: 1230 N. WATKINS STREET. MEMPHIS, TENNESSEE	DATE: OCTOBER 2023

3

Appendix C
Equipment Manufacturer Provided Information

Time to Get Technical

Lets try and clear up a few misconceptions about Air Curtain incinerators. The Clean Air Act (CAA) specifically excludes Air Curtain machines from the term solid waste incinerators. That is because they are a very necessary machine in the fight against climate change. They are the only machines designed specifically to prevent Particulate Matter from entering our atmosphere while ELIMINATING vegetative waste.



The photos above were taken by the Canadian Environmental agency. The hydroelectric regions in the mountains of British Columbia, vegetative waste blocks the water intakes. These two photos show the true purpose of Air Curtain Burners (ACB). Two 20 ton piles of waste were eliminated. The left photo shows two ACB's in full operation eliminating 10 tons each compared to the 20 ton open burning pile across the lake. While that in itself is impressive, the photo on the right shows the true and positive impact. The open burn pile lasted more than 48 hours with continuous particulate matter released in the air. The ACB's ELIMINATED the waste in under 1 hour with almost no impact on the air quality.

Today the typical method of handling vegetative waste is to grind it and haul it to a landfill. Grinders do not eliminate waste, 100 tons "in" and you get 100 tons "out." They do provide an excellent service reducing the volume of waste, meaning you will use less trucks to haul it.

Our problem today as a world community is the overabundance of vegetative waste, and most of it we are not even touching. Our forests are full of dead and standing trees that some day will need to be dealt with or a lightning bolt will cause significantly more negative impact on our environment than anything else we can do. We need to efficiently ELIMINATE this waste, which has almost no recycling options.

Standard Air Curtain FireBox

The absolutely best method of ELIMINATION is an Air Curtain Burner (ACB). These machines have been around for over 40 years and they have been tested and retested. They are without question the cleanest simplest and least costly method of ELIMINATING vegetative waste. That is the reason the CAA excluded them from the solid waste incinerator categories. And that is the reason the USEPA has decided to drop them from Title V requirements, that is also the reason many Air Districts like San Joaquin VAPCD in California have changed their rules to allow easier deployment of these machines.

ACB's are the Lowest Cost Environmentally and Economically	Air Curtain S220	Grinder/Chipper	Landfill
Fuel Cost (S220: 13 hrs vs Chip: 6hrs.)	$104	$720	0
Maint & Repair (S220:$0.60/hr vs Chip $16.00/hr	$8	$96	0
Haul Residual to Landfill 50 miles @ $4.00/mile, 20 ton truck	$200 1 Trip	$2,400 12 Trips	$5,000 25 Trips
Landfill Tipping Fees ($30 per ton)	$60	$2,940	$3,000
Total Disposal Cost for 100 Tons (1 day)	$372	$6,156	$8,000

Grinding and Hauling is not a method of elimination and there is a very high environmental cost. See the chart above. If we change our methods now, it will have an immediate positive impact on our air quality. The Intergovernmental Panel on Climate Change (IPCC) have singled out Particulate Matter as one of the most significant climate forcers, and one of the easiest to fix. As a world community we need to get moving fast.

The Future

There are additional reasons you want to encourage the use of air curtain burners. These machines can actually open up a real opportunity for us to recycle this vegetative waste.

At Air Burners, Inc., the leading manufacturer of air curtain machines, two new developments are available. The first is in Biochar. Working under a Cooperative Research and Development Agreement (CRADA) with the US Forest Service (USFS) a new machine called the CharBoss® was developed. This machine is a small towable air curtain firebox with an internal system that turns the vegetative waste into high quality BioChar. This machine can ELIMINATE one (1) ton of waste per hour and produce over 40 gallons of BioChar per hour. The USFS want their Biochar to go back on the forest floor for good health. Agricultural users want the pure carbon residual mixed into their soil too. The commercial user will ELIMINATE vegetative waste and sell the biochar for as much as $125.00 per cubic yard. Everybody wins. Our environment is protected from open burning and grinding and the users have a residual with value.

The second major development is another new machine designed by Air Burners with a partnership that includes Rolls Royce and Volvo CE. Called the BioCharger® this new machine ELIMINATES vegetative waste at more than 10 tons per hour and produces electricity. California and other states are regulating the use of battery powered machines to help phase out the use of diesel power. All of the equipment manufacturers are ready, they have battery powered machines all set to go but one major obstacle remains, how do you recharge these machines at remote construction or forestry sites? Solar is a nice idea but currently impractical as these machines need approximately 600 to 800 kW per day, plus there is no waste elimination with solar. You could run battery packs back and forth between the site and a location for charging but that is the worst possible option as it completely defeats the whole purpose. Besides the obvious round trips, there is no practical way to ensure the battery packs are charged with "Green" energy.

Keeping the permitting easy and simple will allow the use of Air Curtain Burners, and new machines to support our future like the BioCharger® (See the picture below) Heat from the FireBox Module ELIMINATING vegetative waste is delivered to an Organic Rankine Cycle generator in the Power Module. The Power Module sends this electricity to the Battery Storage Module where the battery powered machines will connect to recharge. In addition all the battery powered accessories like radios and chainsaws, etc. also have a place for recharging on the BioCharger. And best of all this system is completely portable, sets up in less than one day and is completely OFFGRID, therefore not requiring any power company interface.

Summary

Burning is natural. As a world community we have to start being more technical about this. Air Curtain Burners do not use ANY hydrocarbon based fuels to aide or support combustion. None of these Air Curtain machines are creating and adding more CO2 to our environment. They are only releasing from this waste the biogenic CO2 created during their growth and photosynthesis. The CO2 from vegetative waste is the same whether you burn it, grind it or let it decay on the forest floor. The major difference is how you handle it. Grinding and hauling adds significant “non biogenic” CO2 exactly what we are trying to prevent. And it creates another waste product, chips, that nobody can use. The ACB’s ELIMINATE up to 98% of the waste with a 2% residual of clean usable carbon ash and biochar that is natural and good for the soil. We have to be realistic if we ever want to turn this climate problem around. Right now we are actually promoting a methodology that increases our emissions and it has absolutely no tangential benefits. Nobody is suggesting we need an ACB in everybody's back yard, but we do need them where we pile our waste because those piles of vegetative waste are doing far more harm than an Air Curtain machine would ever do. We need to shift our thinking to include a method created by Mother Nature. A method that has been tested and proven by many of the finest environmental agencies. A method that has worked since the beginning of time and it works now.

Scan for video
“Open Pile Burning
vs FireBox

AirBurners

4390 SW Cargo Way

Palm City, FL 34990

772-220-7303

www.AirBurners.com

AirBurners

S327E

FIREBOX SPECIFICATIONS

General: A self-contained, completely assembled above ground Air Curtain Burner (air curtain incinerator or FireBox) with a refractory lined burn-container for stationary applications. Designed for the high temperature reduction of wood waste in forestry, agriculture, land clearing, at landfills, transfer stations and other waste streams in compliance with the requirements of US EPA 40CFR60.

Shipped from the factory completely assembled ready for immediate use upon connection to a power grid and does not require disassembly for relocation. The FireBox is also used for disaster recovery and Homeland Security contingencies.

1	Power	75 HP Premium Electric Motor, 3-Phase 460V, 60Hz or 50 Hz; Full enclosure; Security locks; NEMA IV Enclosure for VFD Speed Control.	
2	Burn Container (Firebox)	4" (102 mm) thick refractory wall panels filled with proprietary thermal ceramic material; Two full height refractory rear doors; Three ignition holes; FireBox open to the ground	
3	Safety Systems	Brown-outs (voltage deficiency or under voltage) or excessive voltage spikes will cause default shut-downs by the VFD protective circuitry to prevent overload conditions on the motor side. Grounding lug provided	
4	Control Panel	NEMA IV enclosure with external power switch, preprogrammed air fan speed setting switch and emergency shut-off switch; hour meter	
5	Air Supply	Custom heavy duty fan coupled directly to motor	
6	Power-in	Max 480V balanced 3-Phase power, 60Hz or 50Hz (Other voltages available)	
7	Transportation & Set-up	Shipped completely assembled; Ready for immediate use; Lifting pads provided for crane lifting; Electrical hook-up to power grid to be performed by licensed electrician pursuant to applicable local codes	
8	Options	Ash clean-out rake with 1” (25mm) blank steel faceplate, interface to accommodate loader to be attached by end-user	
9	Average Through-put	9-11 Tons per Hour (Average – See Note)	
10	Power Consumption	Approximately 48 kW at full FireBox fan speed	
11	Weight	54,600 lbs. (24,800 kg)	
12	Dimensions	Overall Size L × W × H	Fire Box L × W × H
		37' 4" × 11' 10" × 9' 6" (11.40 m × 3.6 m × 2.9 m)	27' 2"× 8' 5" ×8' 1" (8.3 m × 2.6 m × 2.46 m)

Note:
Achievable through-put depends on several variables, especially the nature of the waste material, the burn chamber temperature and the loading rate.
All weights and dimensions are approximate and metric conversions are rounded. Specifications are subject to change without notice.

AIR BURNERS, INC.
4390 SW Cargo Way • Palm City, FL 34990
Phone 772-220-7303
E-mail: info@airburners.com • www.AirBurners.com

GSA

Rev. 05.18.2022

AirBurners
4390 SW Cargo Way, Palm City, FL 34990

Vers. 7.4 (14 SPT 2021)

300E SERIES
-ELECTRIC MOTOR-

CRITERIA POLLUTANS FOR AIR CURTAIN BURNERS
FireBox Emissions Factors
(Combustion Process Emissions)
Feedstock: Wood Waste (Clean/Untreated)

Prepared for **TBA**

Electric Model S330

	EQUIPMENT			OPERATION
	Model		3-Phase Electric Motor	Throughput t/hr	hr/day
S	330	E	55kW	11	9.5

REFERENCE FACTORS FROM SJV CALIFORNIA (Max. Allowed EF)

PM10 lbs./t	Nox lbs./t	Sox lbs./t	CO lbs./t	VOC lbs./t
1.30	1.00	0.10	2.60	0.90

PROJECTED EMISSIONS
Emissions in lbs. per hr of Wood Waste

PM10 lbs./hr	NOx lbs./hr	SOx lbs./hr	CO lbs./hr	VOC lbs./hr
14.30	11.00	1.10	28.60	9.90

Motor Emissions g / kW-hr

	NOx	PM10	CO	VOC	HP
55kW	0.00	0.00	0.00	0.00	75

Motor Emissions g / hp-hr

NOx	PM10	CO	VOC
0.0000	0.0000	0.0000	0.0000

The Emissions Factors above are the San Joaquin Valley, California, established thresholds for the FireBox Series 300 used there as an accepted baseline. They are easily achievable by all ACI designs of Air Burners, Inc. and the actual emissions are considerably lower.

PROJECTED EMISSIONS
Emissions Released in lbs. per Day

PM10 lbs./d	NOx lbs./d	SOx lbs./d	CO lbs./d	VOC lbs./d
135.85	104.50	10.45	271.70	94.05

Motor Emissions lbs. per day

	NOx	PM10	CO	VOC	HP
55kW	0.00	0.00	0.00	0.0000	75

Motor Emissions g per day

NOx	PM10	CO	VOC
0.00	0.00	0.00	0.00

PROJECTED EMISSIONS *
Emissions Released in Tons per Year

PM10 t/yr	NOx t/yr	SOx t/yr	CO t/yr	VOC t/yr
16.30	12.54	1.25	32.60	11.29

Motor Emissions tons per year*

	NOx	PM10	CO	VOC	HP
55kW	0.00	0.00	0.00	0.0000	75

Cells with green background are variables.

NOTE: The emissions data in the chart is only applicable to the air curtain burner designs of Air Burners, Inc.
Contact Factory for data on other Air Burners models, i.e. S220.
Subject to Change without Notice.

***Year =** 240 **Work Days**

Use ratio 50/50 for PM10 : PM2.5 if needed.

Overall Total Projected Emissions per Day lbs. per day

Motor	NOx	PM10	CO	VOC	SOx	HP
55kW	104.500	135.850	271.700	94.050	10.450	75

Overall Total Projected Emissions per Year* tons per year

Motor	NOx	PM10	CO	VOC	SOx	HP
55kW	12.540	16.302	32.604	11.286	1.254	75

Total Annual Feedstock (tons)
25,080

Appendix D
Emission Factors

13.2.4 Aggregate Handling And Storage Piles

13.2.4.1 General

Inherent in operations that use minerals in aggregate form is the maintenance of outdoor storage piles. Storage piles are usually left uncovered, partially because of the need for frequent material transfer into or out of storage.

Dust emissions occur at several points in the storage cycle, such as material loading onto the pile, disturbances by strong wind currents, and loadout from the pile. The movement of trucks and loading equipment in the storage pile area is also a substantial source of dust.

13.2.4.2 Emissions And Correction Parameters

The quantity of dust emissions from aggregate storage operations varies with the volume of aggregate passing through the storage cycle. Emissions also depend on 3 parameters of the condition of a particular storage pile: age of the pile, moisture content, and proportion of aggregate fines.

When freshly processed aggregate is loaded onto a storage pile, the potential for dust emissions is at a maximum. Fines are easily disaggregated and released to the atmosphere upon exposure to air currents, either from aggregate transfer itself or from high winds. As the aggregate pile weathers, however, potential for dust emissions is greatly reduced. Moisture causes aggregation and cementation of fines to the surfaces of larger particles. Any significant rainfall soaks the interior of the pile, and then the drying process is very slow.

Silt (particles equal to or less than 75 micrometers [μm] in diameter) content is determined by measuring the portion of dry aggregate material that passes through a 200-mesh screen, using ASTM-C-136 method.[1] Table 13.2.4-1 summarizes measured silt and moisture values for industrial aggregate materials.

Table 13.2.4-1. TYPICAL SILT AND MOISTURE CONTENTS OF MATERIALS AT VARIOUS INDUSTRIES[a]

Industry	No. Of Facilities	Material	Silt Content (%)			Moisture Content (%)		
			No. Of Samples	Range	Mean	No. Of Samples	Range	Mean
Iron and steel production	9	Pellet ore	13	1.3 - 13	4.3	11	0.64 - 4.0	2.2
		Lump ore	9	2.8 - 19	9.5	6	1.6 - 8.0	5.4
		Coal	12	2.0 - 7.7	4.6	11	2.8 - 11	4.8
		Slag	3	3.0 - 7.3	5.3	3	0.25 - 2.0	0.92
		Flue dust	3	2.7 - 23	13	1	—	7
		Coke breeze	2	4.4 - 5.4	4.9	2	6.4 - 9.2	7.8
		Blended ore	1	—	15	1	—	6.6
		Sinter	1	—	0.7	0	—	—
		Limestone	3	0.4 - 2.3	1.0	2	ND	0.2
Stone quarrying and processing	2	Crushed limestone	2	1.3 - 1.9	1.6	2	0.3 - 1.1	0.7
		Various limestone products	8	0.8 - 14	3.9	8	0.46 - 5.0	2.1
Taconite mining and processing	1	Pellets	9	2.2 - 5.4	3.4	7	0.05 - 2.0	0.9
		Tailings	2	ND	11	1	—	0.4
Western surface coal mining	4	Coal	15	3.4 - 16	6.2	7	2.8 - 20	6.9
		Overburden	15	3.8 - 15	7.5	0	—	—
		Exposed ground	3	5.1 - 21	15	3	0.8 - 6.4	3.4
Coal-fired power plant	1	Coal (as received)	60	0.6 - 4.8	2.2	59	2.7 - 7.4	4.5
Municipal solid waste landfills	4	Sand	1	—	2.6	1	—	7.4
		Slag	2	3.0 - 4.7	3.8	2	2.3 - 4.9	3.6
		Cover	5	5.0 - 16	9.0	5	8.9 - 16	12
		Clay/dirt mix	1	—	9.2	1	—	14
		Clay	2	4.5 - 7.4	6.0	2	8.9 - 11	10
		Fly ash	4	78 - 81	80	4	26 - 29	27
		Misc. fill materials	1	—	12	1	—	11

[a] References 1-10. ND = no data.

13.2.4.3 Predictive Emission Factor Equations

Total dust emissions from aggregate storage piles result from several distinct source activities within the storage cycle:

1. Loading of aggregate onto storage piles (batch or continuous drop operations).
2. Equipment traffic in storage area.
3. Wind erosion of pile surfaces and ground areas around piles.
4. Loadout of aggregate for shipment or for return to the process stream (batch or continuous drop operations).

Either adding aggregate material to a storage pile or removing it usually involves dropping the material onto a receiving surface. Truck dumping on the pile or loading out from the pile to a truck with a front-end loader are examples of batch drop operations. Adding material to the pile by a conveyor stacker is an example of a continuous drop operation.

The quantity of particulate emissions generated by either type of drop operation, per kilogram (kg) (ton) of material transferred, may be estimated, with a rating of A, using the following empirical expression:[11]

$$E = k(0.0016) \frac{\left(\frac{U}{2.2}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (kg/megagram [Mg])} \quad (1)$$

$$E = k(0.0032) \frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (pound [lb]/ton)}$$

where:

E = emission factor
k = particle size multiplier (dimensionless)
U = mean wind speed, meters per second (m/s) (miles per hour [mph])
M = material moisture content (%)

The particle size multiplier in the equation, k, varies with aerodynamic particle size range, as follows:

Aerodynamic Particle Size Multiplier (k) For Equation 1				
< 30 µm	< 15 µm	< 10 µm	< 5 µm	< 2.5 µm
0.74	0.48	0.35	0.20	0.053[a]

[a] Multiplier for < 2.5 µm taken from Reference 14.

The equation retains the assigned quality rating if applied within the ranges of source conditions that were tested in developing the equation, as follows. Note that silt content is included, even though silt content does not appear as a correction parameter in the equation. While it is reasonable to expect that silt content and emission factors are interrelated, no significant correlation between the 2 was found during the derivation of the equation, probably because most tests with high silt contents were conducted under lower winds, and vice versa. It is recommended that estimates from the equation be reduced 1 quality rating level if the silt content used in a particular application falls outside the range given:

Ranges Of Source Conditions For Equation 1			
Silt Content (%)	Moisture Content (%)	Wind Speed	
		m/s	mph
0.44 - 19	0.25 - 4.8	0.6 - 6.7	1.3 - 15

To retain the quality rating of the equation when it is applied to a specific facility, reliable correction parameters must be determined for specific sources of interest. The field and laboratory procedures for aggregate sampling are given in Reference 3. In the event that site-specific values for

correction parameters cannot be obtained, the appropriate mean from Table 13.2.4-1 may be used, but the quality rating of the equation is reduced by 1 letter.

For emissions from equipment traffic (trucks, front-end loaders, dozers, etc.) traveling between or on piles, it is recommended that the equations for vehicle traffic on unpaved surfaces be used (see Section 13.2.2). For vehicle travel between storage piles, the silt value(s) for the areas among the piles (which may differ from the silt values for the stored materials) should be used.

Worst-case emissions from storage pile areas occur under dry, windy conditions. Worst-case emissions from materials-handling operations may be calculated by substituting into the equation appropriate values for aggregate material moisture content and for anticipated wind speeds during the worst case averaging period, usually 24 hours. The treatment of dry conditions for Section 13.2.2, vehicle traffic, "Unpaved Roads", follows the methodology described in that section centering on parameter p. A separate set of nonclimatic correction parameters and source extent values corresponding to higher than normal storage pile activity also may be justified for the worst-case averaging period.

13.2.4.4 Controls[12-13]

Watering and the use of chemical wetting agents are the principal means for control of aggregate storage pile emissions. Enclosure or covering of inactive piles to reduce wind erosion can also reduce emissions. Watering is useful mainly to reduce emissions from vehicle traffic in the storage pile area. Watering of the storage piles themselves typically has only a very temporary slight effect on total emissions. A much more effective technique is to apply chemical agents (such as surfactants) that permit more extensive wetting. Continuous chemical treating of material loaded onto piles, coupled with watering or treatment of roadways, can reduce total particulate emissions from aggregate storage operations by up to 90 percent.[12]

References For Section 13.2.4

1. C. Cowherd, Jr., *et al., Development Of Emission Factors For Fugitive Dust Sources*, EPA-450/3-74-037, U. S. Environmental Protection Agency, Research Triangle Park, NC, June 1974.

2. R. Bohn, *et al., Fugitive Emissions From Integrated Iron And Steel Plants*, EPA-600/2-78-050, U. S. Environmental Protection Agency, Cincinnati, OH, March 1978.

3. C. Cowherd, Jr., *et al., Iron And Steel Plant Open Dust Source Fugitive Emission Evaluation*, EPA-600/2-79-103, U. S. Environmental Protection Agency, Cincinnati, OH, May 1979.

4. *Evaluation Of Open Dust Sources In The Vicinity Of Buffalo, New York*, EPA Contract No. 68-02-2545, Midwest Research Institute, Kansas City, MO, March 1979.

5. C. Cowherd, Jr., and T. Cuscino, Jr., *Fugitive Emissions Evaluation*, MRI-4343-L, Midwest Research Institute, Kansas City, MO, February 1977.

6. T. Cuscino, Jr., *et al., Taconite Mining Fugitive Emissions Study*, Minnesota Pollution Control Agency, Roseville, MN, June 1979.

7. *Improved Emission Factors For Fugitive Dust From Western Surface Coal Mining Sources,* 2 Volumes, EPA Contract No. 68-03-2924, PEDCo Environmental, Kansas City, MO, and Midwest Research Institute, Kansas City, MO, July 1981.

8. *Determination Of Fugitive Coal Dust Emissions From Rotary Railcar Dumping,* TRC, Hartford, CT, May 1984.

9. *PM-10 Emission Inventory Of Landfills In the Lake Calumet Area*, EPA Contract No. 68-02-3891, Midwest Research Institute, Kansas City, MO, September 1987.

10. *Chicago Area Particulate Matter Emission Inventory — Sampling And Analysis*, EPA Contract No. 68-02-4395, Midwest Research Institute, Kansas City, MO, May 1988.

11. *Update Of Fugitive Dust Emission Factors In AP-42 Section 11.2*, EPA Contract No. 68-02-3891, Midwest Research Institute, Kansas City, MO, July 1987.

12. G. A. Jutze, *et al., Investigation Of Fugitive Dust Sources Emissions And Control*, EPA-450/3-74-036a, U. S. Environmental Protection Agency, Research Triangle Park, NC, June 1974.

13. C. Cowherd, Jr., *et al., Control Of Open Fugitive Dust Sources*, EPA-450/3-88-008, U. S. Environmental Protection Agency, Research Triangle Park, NC, September 1988.

14. C. Cowherd, *Background Document for Revisions to Fine Fraction Ratios &sed for AP-42 Fugitive Dust Emission Factors*. Prepared by Midwest Research Institute for Western Governors Association, Western Regional Air Partnership, Denver, CO, February 1, 2006.

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OFFICE OF
AIR, WASTE, AND TOXICS

MAY 08 2014

MEMORANDUM

SUBJECT: Particulate Matter Potential to Emit Emission Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country

FROM: Dan Meyer, Environmental Engineer
Air Permits & Diesel Unit

THRU: Donald A. Dossett, P.E., Manager
Air Permits & Diesel Unit

TO: Permit File

EPA Region 10 has compiled the attached list of particulate matter (PM – CAA § 111 pollutant, PM_{10} and $PM_{2.5}$ – criteria pollutants) emission factors ("EFs") for use in determining the potential emissions, more commonly referred to as potential to emit ("PTE"), for activities at sawmills, excluding boilers, located in Pacific Northwest Indian Country.[1] The EFs are presented in units appropriate for the particular activity. PTE generally represents the maximum capacity of a source to emit a pollutant under its physical and operational design taking into consideration restrictions that are federally enforceable. While PM, PM_{10} and $PM_{2.5}$ PTE are all used to determine applicability of the Compliance Assurance Monitoring program and Prevention of Significant Deterioration construction permit program, only PM_{10} and $PM_{2.5}$ are employed to determine applicability of the Title V operating permit program.[2]

The Federal Air Rules for Reservations ("FARR") limit particulate matter emissions from applicable activities at sawmills. The rules and the rationale for not employing them to determine PTE are as follows: (a) 20 percent opacity limit (40 CFR § 49.124) – lack of a correlation between opacity and particulate matter emissions, (b) requirements for limiting fugitive emissions (40 CFR § 49.126) – lack of a correlation between compliance with requirements and particulate matter emissions, (c) non-combustion stack 0.1 grain per dry standard cubic foot PM emission limit (40 CFR § 49.125) – resultant PTE would be unrealistically high as we assume that an unreasonable amount of wood residue is exhausted to atmosphere rather than recovered for sale or combustion in on-site boiler.

There are no other federal regulations beyond the FARR that limit particulate matter emissions from activities addressed by this memorandum. Under the circumstances, it is appropriate to employ the EFs presented in the attachment to estimate PTE, unless a more representative (e.g. site-specific) EF is available.

---

[1] Activities include log bucking and debarking, sawing, lumber drying, mechanical and pneumatic conveyance of wood residue, wind erosion of wood residue piles and traffic along paved and unpaved roads.
[2] October 16, 1995 EPA memorandum entitled, "Definition of Regulated Pollutant for Particulate Matter for Purposes of Title V"

EPA Region 10 Particulate Matter Potential to Emit Emission Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country, May 2014

EF Reference No.	Emissions Generating Activity[1]	PM[2] EF	PM_{10} % of PM	PM_{10} EF	$PM_{2.5}$ % of PM	$PM_{2.5}$ EF	Units
1, 2, 3, 4	Log Bucking[3]	0.035	50	0.0175	25	0.00875	lb/ton log
1, 2, 3, 5	Log Debarking[3]	0.024	50	0.012	25	0.006	lb/ton log
1, 2, 3, 6	Sawing[3]	0.350	50	0.175	25	0.0875	lb/ton log
1, 3, 7	Lumber Drying - Resinous Softwood Species[4]	0.02	100	0.02	100	0.02	lb/mbf
1, 3, 7	Lumber Drying - Non-Resinous Softwood Species[5]	0.05	100	0.05	100	0.05	lb/mbf
1, 2, 3, 8	"Drop" of "wet" material[5] from one surface to another including, but not limited to, (a) each mechanical conveyance drop between point of generation and storage bin (but not including bin unless open to atmosphere) (b) loadout from storage bin into a truck bed or railcar and (c) drop onto a pile. Apply EF to each "drop."	0.00075	N/A	0.00035	N/A	0.00005	lb/bdt material
1, 2, 3, 8	"Drop" of "dry" material[5] from one surface to another including, but not limited to, (a) each mechanical conveyance drop between point of generation and storage bin (but not including bin unless open to atmosphere) (b) loadout from storage bin into a truck bed or railcar and (c) drop onto a pile. Apply EF to each "drop."	0.0015	N/A	0.0007	N/A	0.0001	lb/bdt material
1, 3, 9	Pneumatically convey material[6] through medium efficiency cyclone to bin	0.5	85	0.425	50	0.25	lb/bdt material
1, 3, 9	Pneumatically convey material[6] through high efficiency cyclone to bin	0.2	95	0.19	80	0.16	lb/bdt material
1, 3, 9	Pneumatically convey material[6] through cyclone to bin. Exhaust routed through baghouse.	0.001	99.5	0.000995	99	0.00099	lb/bdt material
1, 3, 9	Pneumatically convey material[6] into target box	0.1	85	0.085	50	0.05	lb/bdt material
1, 2, 10	Wind Erosion of Pile	0.38	50	0.19	25	0.095	ton/acre-yr
1, 2, 11	Paved Roads	Emission factors based upon site-specific parameters.					lb/VMT
1, 2, 12	Unpaved Roads	Emission factors based upon site-specific parameters.					lb/VMT

Acronyms

bdt: bone dry ton

mbf: 1000 board foot lumber

VMT: vehicle mile traveled

[1] If any activity occurs within a building, reduce the PM, PM_{10} and $PM_{2.5}$ emission factor ("EF") by 100 percent (engineering judgement) as emissions struggle to escape through doorways and other openings. If an activity's by-products are evacuated pneumatically to a target box, cyclone or bag filter system, then only the associated downstream conveyance emissions are counted.

[2] PM refers to the CAA § 111 pollutant generally measured using EPA Reference Method 5 to determine the filterable fraction of particulate matter. "Particulate matter" is a term used to define an air pollutant that consists of a mixture of solid particles and liquid droplets found in the ambient air. PM does not include a condensable fraction.

[3] EF for log bucking, debarking and sawing are expressed in units of "lb/ton log" in the table above. The EF can be expressed in units of "lb/mbf" lumber as follows:

$$\text{lb/mbf} = (\text{lb PM/ton log}) \times (\text{ton/2000 lb}) \times (\text{LD lb/ft}^3) \times (\text{LRF bf lumber/ft}^3 \text{ log}) \times (1000 \text{ bf/mbf})$$

where "LD" stands for log density and "LRF" stands for log recovery factor

• LD values are species-specific and are provided by The Engineering ToolBox and are listed at http://www.engineeringtoolbox.com/weigt-wood-d_821.html

• LRF value of 6.33 bf/ft^3 log is specific to softwood species of the Pacific Coast East. See Section 2 of Appendix D to Forest Products Measurements and Conversion Factors with Special Emphasis on the U.S. Pacific Northwest. College of Forest Resources, University of Washington. 1994. See http://www.ruraltech.org/projects/conversions/briggs_conversions/briggs_append2/appendix02_combined.pdf

[4] Douglas Fir, Engelmann Spruce, Larch, Lodgepole Pine, Ponderosa Pine and Western White Pine

[5] White Fir, Western Hemlock and Western Red Cedar

[6] The "material" in this entry refers to bark, hogged fuel, green chips, dry chips, green sawdust, dry sawdust, shavings and any other woody by-product of lumber production.

<table>
<tr><th>No.</th><th>EF Reference</th></tr>
<tr><td>1</td><td>Although this activity may be subject to the FARR visible emissions limit of 20% opacity (40 CFR § 124(d)), the limit was not further considered in deriving an emission factor due to the lack of a correlation between opacity and particulate matter emissions.</td></tr>
<tr><td>2</td><td>Although this activity may be subject to the FARR requirements for limiting fugitive particulate matter emissions (40 CFR §126), those requirements were not further considered in deriving an emission factor due to lack of a correlation between compliance with requirements and particulate matter emissions.</td></tr>
<tr><td>3</td><td>Although this activity may be subject to the FARR stack PM emission limit of 0.1 gr/dscf (40 CFR § 125(d)(3)), that limit was not further considered in deriving an emission factor because the resultant PTE would be unrealistically high.</td></tr>
<tr><td>4</td><td>For PM, PM_{10}, and $PM_{2.5}$ EF, apply engineering judgement to estimate that log bucking emissions are one-tenth sawing emissions. EPA has stated that log bucking is normally a negligible source of fugitive PM emissions. See page 2-125 of Assessment of Fugitive Particulate Emission Factor for Industrial Processes, EPA-450/3-78-107, September 1978. The document can be downloaded from internet at http://nepis.epa.gov/Simple.html by entering EPA publication number. For sawing emissions details, see Reference No. 3 below.</td></tr>
<tr><td>5</td><td>• For PM EF, see Table 2-47 of Assessment of Fugitive Particulate Emission Factor for Industrial Processes, EPA-450/3-78-107, September 1978. See also Table 2-59 of Technical Guidance for Controls of Industrial Process Fugitive Particulate Emissions, EPA-450/3-77-010, March 1977. Both documents can be downloaded from internet at http://nepis.epa.gov/Simple.html by entering EPA publication number. EPA revoked the PM EF from WebFIRE on January 1, 2002. See detailed search results for SCC 3-07-008-01 (include revoked factors) at http://cfpub.epa.gov/webfire/index.cfm?action=fire.detailedSearch
• For PM_{10} and $PM_{2.5}$ EF, apply engineering judgement to estimate that (a) PM_{10} emissions are one-half PM emissions and (b) $PM_{2.5}$ emissions are one-half PM_{10} emissions.</td></tr>
<tr><td>6</td><td>• Sawing consists of the following cummulative activities: breaking the log into cants and flitches with a smooth edge, breaking cant further down into multiple flitches and/or boards, taking the flitch and trim off all irregular edges to leave four-sided lumber and trimming to square the ends.
• For PM EF, see Table 2-47 of Assessment of Fugitive Particulate Emission Factor for Industrial Processes, EPA-450/3-78-107, September 1978. See also Table 2-59 of Technical Guidance for Controls of Industrial Process Fugitive Particulate Emissions, EPA-450/3-77-010, March 1977. Both documents can be downloaded from internet at http://nepis.epa.gov/Simple.html by entering EPA publication number. EPA revoked the PM EF from WebFIRE on January 1, 2002. See detailed search results for SCC 3-07-008-01 (include revoked factors) at http://cfpub.epa.gov/webfire/index.cfm?action=fire.detailedSearch
• For PM_{10} and $PM_{2.5}$ EF, apply engineering judgement to estimate that (a) PM_{10} emissions are one-half PM emissions and (b) $PM_{2.5}$ emissions are one-half PM_{10} emissions.</td></tr>
<tr><td>7</td><td>• For PM EF, see ODEQ ACDP Application Guidance AQ-EF02 (4/25/00). Douglas fir is a resinous softwood species and western hemlock is a non-resinous softwood species.
• For PM_{10} and $PM_{2.5}$ EF, apply engineering judgement to estimate that all PM emitted is organic aerosols and fully PM_{10} and $PM_{2.5}$ emissions.</td></tr>
<tr><td>8</td><td>• See Section 13.2.4 of EPA's AP-42, November 2006 at http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0204.pdf. Apply Equation 1 on page 13.2.4-4 to estimate emissions resulting from material drops as follows: E [lb PM/ton] = (k) X (0.0032) X $(U/5)^{1.3}$ / $(M/2)^{1.4}$

<u>Wet</u> Material Drop

<table>
<tr><th>Particulate</th><th>k</th><th>0.0032</th><th>$(U/5)^{1.3}$</th><th>$(M/2)^{1.4}$</th><th>lb PM / ton</th></tr>
<tr><td>PM</td><td>0.74</td><td rowspan="3">0.0032</td><td rowspan="3">6.6693</td><td rowspan="3">21.0552</td><td>0.00075</td></tr>
<tr><td>PM_{10}</td><td>0.35</td><td>0.00035</td></tr>
<tr><td>$PM_{2.5}$</td><td>0.053</td><td>0.00005</td></tr>
</table>
The following conservative assumptions were made in applying Equation 1:
Mean wind speed (U) = 15 miles per hour
$(U/5)^{1.3}$ = 6.66930
Material moisture content (M) = 34 percent. Value based upon observations
$(M/2)^{1.4}$ = 21.05520

Note: • Mean wind speed of 15 mph is a reasonable upper bounder estimate.
• Moisture content of 34 percent for "wet" material is based upon observation that average moisture content (dry basis) of green douglas fir lumber (common to the Pacific Northwest) is 51 percent as recorded prior to lab scale kiln VOC emissions testing conducting by Oregon State University's Mike Milota and organized in Microsoft Excel workbook entitled, "EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012." 51 percent moisture content (dry basis) is equivalent to 34 percent moisture content (wet basis) as illustrated below:
MCD = MCW / (1-MCW); where
MCD: moisture content dry basis
MCW: moisture content wet basis

0.51 = MCW / (1 - MCW)
0.51 - (0.51)(MCW) = MCW
(1.51)(MCW) = 0.51
MCW = 0.34, or 34 percent</td></tr>
</table>

Dry Material Drop

Particulate	k × 0.0032 × $(U/5)^{1.3}$ / $(M/2)^{1.4}$ = lb PM / ton				
PM	0.74	0.0032	6.6693	10.5552	0.0015
PM_{10}	0.35				0.0007
$PM_{2.5}$	0.053				0.0001

The following conservative assumptions were made in applying Equation 1:

Mean wind speed (U) = 15 miles per hour

$(U/5)^{1.3}$ = 6.6693

Material moisture content (M) = 13 percent

$(M/2)^{1.4}$ = 10.5552

Note: • Mean wind speed of 15 mph is a reasonable upper bounder estimate.

• Moisture content of 13 percent for "dry" material is based upon observation that typical moisture content (dry basis) of kiln-dried lumber is 15 percent as recorded during lab scale kiln emissions testing conducting by Oregon State University's Mike Milota and organized in Microsoft Excel workbook entitled, "EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012." 15 percent moisture content (dry basis) is equivalent to 13 percent moisture content (wet basis) as illustrated below:

MCD = MCW / (1-MCW); where

MCD: moisture content dry basis

MCW: moisture content wet basis

0.15 = MCW / (1 - MCW)

0.15 - (0.15)(MCW) = MCW

(1.15)(MCW) = 0.15

MCW = 0.13, or 13 percent

9	• For PM EF, see Oregon Department of Environmental Quality (ODEQ) Wood Products Emission Factors, AQ-EF02 Revised 08/01/11. http://www.deq.state.or.us/aq/permit/acdp/docs/AQ-EF02.pdf • For PM_{10} and $PM_{2.5}$ EF, see ODEQ Wood Products Emission Factors - $PM_{10}/PM_{2.5}$ Fractions, AQ-EF03 Revised 08/01/11. http://www.deq.state.or.us/aq/permit/acdp/docs/AQ-EF03.pdf
10	• For PM EF, see last row of Table 11.9-4 on page 11.9-11 of Section 11.9 of EPA's AP-42, July 1998 at http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s09.pdf. • For PM_{10} and $PM_{2.5}$ EF, apply engineering judgement to estimate that (a) PM_{10} emissions are one-half PM emissions and (b) $PM_{2.5}$ emissions are one-half PM_{10} emissions.
11	See Equation 1 on page 13.2.1-4 of Chapter 13.2.1 of AP-42, January 2011 at http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf
12	See Equation 1a on page 13.2.2-4 of Chapter 13.2.2 of AP-42, November 2006 at http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0204.pdf

Weight, Volume, and Moisture Content Of Sawdust from Selected Southern Species

W. S. Thompson and W. N. Darwin[1]

A STUDY OF THE WEIGHT-VOLUME relationships and moisture contents of sawdust from important hardwoods of the Mississippi River bottom lands was recently made by Mississippi State University in cooperation with the Southern Forest Experiment Station. (Sawdust presently is used to a limited extent in the manufacture of wood pulp, and a rise in consumption by this and other segments of the fiber industry is anticipated as technical problems are solved.)

Sawdust from hardwoods of 10 major species, plus baldcypress, was collected from the resaws of six cooperating band sawmills by a system that produced uniform packing between samples. Eight 1-cubic-yard samples, with a total weight of about 2 tons, were taken for each species. The sawdust was from logs of freshly felled trees. From each 1-cubic-yard sample, eight subsamples were collected and ovendried for determinations of moisture content.

The average moisture contents, along with green and ovendry weights, are summarized in Table 1. From these results and specific gravity values published by the U.S. Forest Products Laboratory, the ovendry weight of sawdust appears to be about one-third the ovendry weight of solid wood.

Table 1. — AVERAGE MOISTURE CONTENT AND WEIGHT OF SAWDUST FOR 11 SPECIES.

Species	Moisture content of sawdust	Sawdust weight per cu. ft. of green volume		Solid wood: ovendry weight per cu. ft. of green volume*
		Green	Ovendry	
	%	Lb.	Lb.	Lb.
Ash, green	49	16.2	10.9	33.7
Cottonwood	126	17.2	7.6	23.1
Cypress	90	16.7	8.8	26.2
Elm, soft	78	19.6	11.0	30.0
Sugarberry	74	17.9	10.3	30.6
Oak, red	77	20.4	11.5	32.4
Oak, white	81	20.6	11.4	37.4
Pecan	83	19.2	10.5	37.4
Sweetgum	103	17.9	8.8	28.7
Willow, black	141	18.8	7.8	21.8
Yellow-poplar	109	18.4	8.8	25.0

*62.4 x specific gravity as reported in Standard Terms for Describing Wood. U.S. For. Prod. Lab. Rep. 1169. 12 pp. 1961.

Variation among sample weights for each species was small, the standard error of the mean generally being less than 5 percent when tested at the 0.05 level of significance. The weights obtained in the study can be used for changing sawdust measurements from weight to volume, or *vice versa*. The reported moisture contents are believed to be characteristic of the 11 species and may be used for converting sawdust weight from a green to an ovendry basis.

[1]Forest Products Utilization Laboratory, Mississippi State University, State College, Miss., and Southern Hardwoods Laboratory, Stoneville, Miss., maintained by the Southern Forest Experiment Station in cooperation with the Mississippi Agricultural Experiment Station and the Southern Hardwood Forest Research Group, respectively.

This paper was received for publication in October 1967.

MEMPHIS AND SHELBY COUNTY DIVISION OF PLANNING AND DEVELOPMENT

Record Summary for Planned Development

Record Detail Information

Record Type: Planned Development

Record Status: Pending

Opened Date: October 5, 2023

Record Number: PD 2023-025

Expiration Date:

Record Name: Memphis Urban Wood

Description of Work: Development of a biomass campus for the processing of wood salvaged from tree removal by arboricultural activity in the greater Memphis area. The resulting products are lumber, wood compost, and biochar (a charcoal like material used as a soil amendment)

Parent Record Number:

Address:

1230 N WATKINS ST, MEMPHIS 38108

Owner Information

Primary	Owner Name
Y	TAX SALE 219 GP

Owner Address

1779 KIRBY PKWY, GERMANTOWN, TN 38138

Owner Phone

Parcel Information

040042 00001C

Data Fields

PREAPPLICATION MEETING

Name of DPD Planner	Lucas Skinner
Date of Meeting	09/13/2023
Pre-application Meeting Type	In Person

GENERAL PROJECT INFORMATION

Planned Development Type	New Planned Development (PD)
Previous Docket / Case Number	Z 1988-157 SUP 2014-218 BoA 1970-009-CI
Medical Overlay / Uptown	No
If this development is located in unincorporated Shelby County, is the tract at least three acres? (Note a tract of less than three acres is not eligible for a planned development in unincorporated Shelby County)	N/A
Is this application in response to a citation, stop work order, or zoning letter	No
If yes, please provide a copy of the citation, stop work order, and/or zoning letter along with any other relevant information	-

APPROVAL CRITERIA

UDC Sub-Section 9.6.9A	Existing properties in the area along Chelsea and N. Watkins are either industrial in nature, such as demolition companies, auto glass, and tire companies, or vacant. To the south is property that is owned by Memphis and Shelby County Flood Control and is unlikely to be developed.
UDC Sub-Section 9.6.9B	Adjacent properties are vacant and/or owned by Memphis and Shelby County Flood Control. A vacant railroad right-of-way is located to the north along Chelsea Avenue.
UDC Sub-Section 9.6.9C	The property is served by primary streets. Parking is proposed on-site and general utilities will be provided by MLGW. There is an existing fire station located to the north on Chelsea Avenue for fire protection.
UDC Sub-Section 9.6.9D	There are no significant natural, scenic, or historic features on the site.
UDC Sub-Section 9.6.9E	Acknowledged
UDC Sub-Section 9.6.9F	Acknowledged

GENERAL PROVISIONS

UDC Sub-Section 4.10.3A	Acknowledged. Surrounding properties are generally vacant or undevelopable.
B) An approved water supply, community waste water treatment and disposal, and storm water drainage facilities that are adequate to serve the proposed development have been or will be provided concurrent with the development	Acknowledged
C) The location and arrangement of the structures, parking and loading areas, walks,	Surrounding uses are vacant properties and industrial uses.

GENERAL PROVISIONS

lighting and other service facilities shall be compatible with the surrounding land uses, and any part of the proposed development not used for such facilities shall be landscaped or otherwise improved except where natural features are such as to justify preservation	
D) Any modification of the district standards that would otherwise be applicable to the site are warranted by the design of the outline plan and the amenities incorporated therein, and are not inconsistent with the public interest	Acknowledged. The site lies within an industrial zoning district and are not inconsistent with the public interest.
E) Homeowners' associations or some other responsible party shall be required to maintain any and all common open space and/or common elements	N/A
F) Lots of record are created with the recording of a planned development final plan	N/A

GIS INFORMATION

Central Business Improvement District	No
Case Layer	-
Class	-
Downtown Fire District	No
Historic District	-
Land Use	-
Municipality	-
Overlay/Special Purpose District	-
Zoning	-
State Route	-
Lot	-
Subdivision	-
Planned Development District	-
Wellhead Protection Overlay District	No

Data Tables

AREA INFORMATION

Size (Acres):	9.98
Existing Use of Property:	Vacant
Requested Use of Property:	Wood processing

Contact Information

Name

MEMPHIS URBAN WOOD

Contact Type

APPLICANT

Address

114 S. COLLINGTON AVE., BALTIMORE, MD, 21231

Phone

(410)300-4206

Fee Information

Invoice #	Fee Item	Quantity	Fees	Status	Balance	Date Assessed
1507917	Planned Development - each additional or fractional acres above 5	5	500.00	INVOICED	0.00	10/05/2023
1507917	Credit Card Use Fee (.026 x fee)	1	52.00	INVOICED	0.00	10/05/2023
1507917	Planned Development - 5 acres or less	1	1,500.00	INVOICED	0.00	10/05/2023

Total Fee Invoiced: $2,052.00 Total Balance: $0.00

Payment Information

Payment Amount	Method of Payment
$2,052.00	Credit Card

MEMPHIS AND SHELBY COUNTY DIVISION OF PLANNING AND DEVELOPMENT

City Hall – 125 N. Main Street, Suite 468 – Memphis, Tennessee 38103 – (901) 636-6619

Property Owner's Affidavit

Memphis and Shelby County Unified Development Code Section 12.3.1

OWNER: Includes the holder of legal title as well as holders of any equitable interest, such as trust beneficiaries, contract purchasers, option holders, lessees under leases having an unexpired term of at least ten years, and the like. Whenever a statement of ownership is required by the Memphis and Shelby County Unified Development Code, full disclosure of all legal and equitable interest in the property is required. Memphis and Shelby County Unified Development Code Section 12.3.1.

I, JEFFREY E CARROLL (Print Name) _____ (Sign Name), state that I have read the definition of "Owner" as outlined in the Memphis and Shelby County Unified Development Code Section 12.3.1 and hereby state that (select applicable box):

☐ I am the owner of record as shown on the current tax rolls of the county Assessor of Property; the mortgage holder of record as shown in the mortgage records of the county Register of Deeds; purchaser under a land contract; a mortgagee or vendee in possession; or I have a freehold or lesser estate in the premises

☒ I have charge, care or control of the premises as trustee, agent, executor, administrator, assignee, receiver, guardian or lessee (and have included documentation with this affidavit)

of the property located at 1230 N. WATKINS ST MEMPHIS TN and further identified by Assessor's Parcel Number _____, for which an application is being made to the Division of Planning and Development.

Subscribed and sworn to (or affirmed) before me this 30th day of August in the year of 2023

_____ Signature of Notary Public

Michael P. Sheehan NOTARY PUBLIC Baltimore City State of Maryland My Commission Expires February 24, 2024

02/24/2024 My Commission Expires

CHELSEA AVENUE
(80.0' R.O.W.)
80.00'

UNION RAILWAY
(100.0' R.O.W.)
100.05'

BENCHMARK
CITY BM #119
N:330142.93
E:770770.18
ELV:233.43

6-72
TOP:232.92
THRT:232.00

6-72
TOP:232.82
THRT:231.80

24" SYCAMORE

ZONING: EMP

EXISTING FIBER OPTIC

EXISTING CHAIN LINK FENCE

EXISTING DRIVE APRON 30.42'

P.O.B
SET CHISEL MARK

ANCHOR ESMT (2547-214)

8' UTILITY ESMT (1532-274)

ANCHOR ESMT (2175-445)

S85°20'19"E
898.56'

#11 INLET
TOP:234.46
15"RCP:231.99

EXISTING FIRE HYDRANT

20' SIDE SETBACK

20.00'

FOUND IRON PIN

SMH
TOP=232.82
INV OUT:223.39

N3°35'03"E
51.76'

30' FRONT SETBACK

EXISTING FIRE HYDRANT

80.00'

N. WATKINS ST.
(80.0' R.O.W.)

TAX SALE 219 GP
PARCEL ID: 040042 00001C
(INST No.21064891)
9.98 Ac

80.00'

GREEN LUMBER STORAGE AREA

FUEL

STORAGE AREA

TRUCK DELIVERY LANE

RECEIVING AND SORTING AREA

EXISTING STORM DRAIN

ANCHOR ESMT (2574-387)

SMH
TOP=232.20
INV IN:222.57
INV OUT:222.49

SMH
TOP=232.84
FULL OF WATER

EXISTING FIRE HYDRANT

EXISTING CHAIN LINK FENCE

6-72
TOP:231.80
THRT:230.95
24"RCP OUT:224.66
18"RCP IN:224.26

6-72
TOP:231.84
THRT:230.92
24"RCP:224.03

EXISTING STORM DRAIN

L: 501.24'
R: 1472.76'
T: 253.07'
CH.BRNG: N14°04'55"E
CH.DIST: 498.82'

EXISTING DRIVE APRON 40.34'

EX. WATER

SMH
TOP=232.66
INV IN N:221.64
INV IN S:217.25
INV:208.80

EX. SEWER

EXISTING DRIVE APRON 62.95'

EXISTING FIRE HYDRANT

SMH
TOP=233.06
INV:216.73

FOUND 1" IRON PIPE

CITY OF MEMPHIS
(Bk 1659, Pg 269)
ZONING: RU-1

S75°17'09"W
230.17'

SET NAIL

EXISTING CHAIN LINK FENCE

761.86'
N85°16'32"W

EXISTING FIRE HYDRANT

20' SIDE SETBACK

FOUND ½" IRON PIPE

CITY OF MEMPHIS & SHELBY COUNTY
(Bk 1620, Pg 597)
ZONING: RU-1(H)

ZONE "UNSHADED X" AREA OF MINIMAL FLOOD HAZARD
ZONE "X" AREA OF REDUCED FLOOD RISK DUE TO LEVEE

FIRE ACCESS LANE

PROP. 10' x 20' PARKING SPACES

RAMP

90.75'

65.78'

MILL BLDG
FFE = 234.50

RAMP

RAMP

FIRE ACCESS LANE

10' FIRE ACCESS LANE

PROP. 10' x 20' PARKING SPACES

ADA PARKING

OVERFLOW STORAGE AREA

ASP & SCREENING AREA

EXISTING CONCRETE SLAB

AIR BURNER

PRODUCT STORAGE STALLS

RAW BIOCHAR FEEDSTOCK STOCKPILE

#11 INLET
TOP:229.99
15"RCP IN:226.98
18"RCP OUT:226.69

EXISTING CHAIN LINK FENCE

5.00'

MAKEELE MCGHEE
INST No. 21158820

S4°41'28"W
407.67'

ZONING: EMP

5' REAR SETBACK

SYMBOL LEGEND

	IRON PIN
	STORM CLEANOUT
	SINGLE POLE SIGN
	FIRE HYDRANT
	WATER VALVE
	MANHOLE
	ELECTRIC METER
	ELECTRIC BOX
	POWER POLE
	SEWER CLEAN OUT
	WATER METER
	LIGHT POLE w/ CONC BASE
	POWER POLE W/LIGHT
	BOLLARD
	TELEPHONE JUNCTION BOX
	TELEPHONE MANHOLE
	GAS METER
	CATCH BASIN
	6-72 INLET
	SPOT ELEV
	GAS VALVE
	SANITARY SEWER MANHOLE
	WIRE ANCHOR
	FIRE DEPARTMENT CONNECTION
	AUTO SPEAKER
	PEDESTRIAN LIGHT
	BACKFLOW PREVENTER
	ROOFDRAIN/DOWNSPOUT

D1
1"= 40'
SITE PLAN

NORTH

GRAPHIC SCALE: 1" = 40'
40 0 40

jaime
I:\2023\23156\3 Civil\Prog\dwg\23156 - PD CONCEPT PLAN.dwg
Wed, Nov 01, 2023 - 4:52pm
PLOT SCALE: 1"=1'
LATEST REV.:

A2H ENGINEERS ARCHITECTS PLANNERS

A2H, INC.
3009 DAVIES PLANTATION ROAD
LAKELAND, TN 38002
P. 901.372.0404
WWW.A2H.COM

MEMPHIS URBAN WOOD, LLC

CHELSEA-WATKINS BIOMASS FACILITY

1230 NORTH WATKINS
MEMPHIS, TN 38108

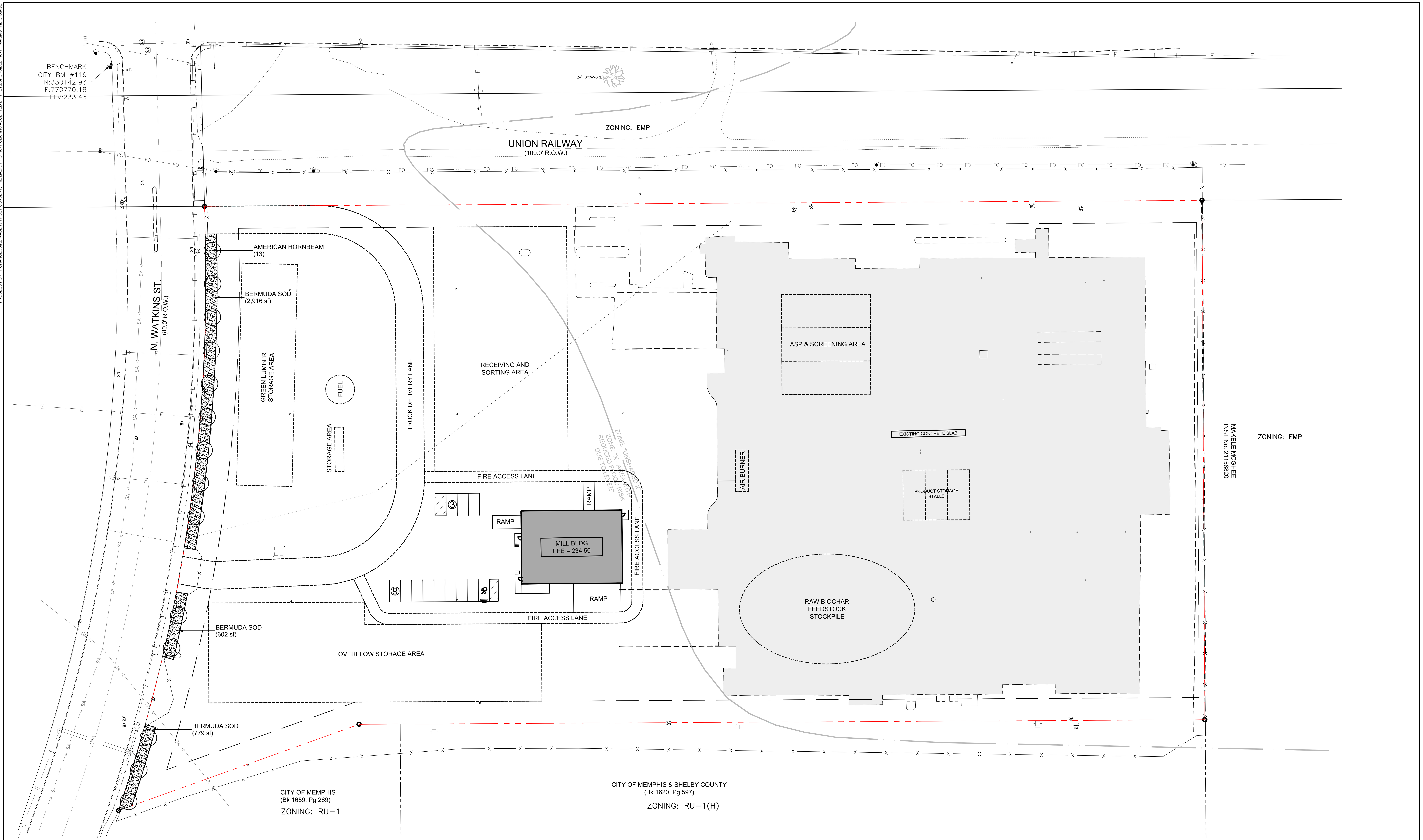
LAND USE CONTROL BOARD

REVISIONS

PROJECT NO.	DATE
23156	OCTOBER 6, 2023
DRAWN	CHECKED
JMB	KN

CONCEPT PLAN

C2.1



BENCHMARK
CITY BM #119
N:330142.93
E:770770.18
ELV:233.43
24" SYCAMORE
ZONING: EMP
UNION RAILWAY
(100.0' R.O.W.)
N. WATKINS ST.
(80.0' R.O.W.)
AMERICAN HORNBEAM
(13)
BERMUDA SOD
(2,916 sf)
GREEN LUMBER
STORAGE AREA
FUEL
STORAGE AREA
TRUCK DELIVERY LANE
RECEIVING AND
SORTING AREA
ASP & SCREENING AREA
EXISTING CONCRETE SLAB
AIR BURNER
PRODUCT STORAGE
STALLS
FIRE ACCESS LANE
RAMP
MILL BLDG
FFE = 234.50
RAMP
FIRE ACCESS LANE
RAMP
FIRE ACCESS LANE
RAW BIOCHAR
FEEDSTOCK
STOCKPILE
MAKELE MCGHEE
INST No. 21158820
ZONING: EMP
BERMUDA SOD
(602 sf)
OVERFLOW STORAGE AREA
BERMUDA SOD
(779 sf)
CITY OF MEMPHIS
(Bk 1659, Pg 269)
ZONING: RU-1
CITY OF MEMPHIS & SHELBY COUNTY
(Bk 1620, Pg 597)
ZONING: RU-1(H)

LANDSCAPE REQUIREMENTS

WATKINS STREETSCAPE
TYPE C TREES @ 30' OC

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER		REMARKS
	14	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	2" CAL	B&B		MATCHING
SOD	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**	**SPACING**	**REMARKS**
	4,297 SF	CYNODON DACTYLON 'TIFWAY 419'	BERMUDA SOD	SOD			WEED AND PEST FREE

D1 PLANTING PLAN
1"= 40'

NORTH

GRAPHIC SCALE: 1" = 40'
40 0 40

A2H ENGINEERS ARCHITECTS PLANNERS

A2H, INC.
3009 DAVIES PLANTATION ROAD
LAKELAND, TN 38002
P. 901.372.0404
WWW.A2H.COM

MEMPHIS URBAN WOOD, LLC

CHELSEA-WATKINS BIOMASS FACILITY

1230 NORTH WATKINS
MEMPHIS, TN 38108

LAND USE CONTROL BOARD

REVISIONS

PROJECT NO.	DATE
23156	OCTOBER 6, 2023
DRAWN	CHECKED

PLANTING PLAN

L1.0

Memphis Urban Wood Planned Development
Proposed Outline Plan Conditions
October 5, 2023

1. Use Permitted
    A. Any use permitted by right in the Employment (EMP) District including the following specifically permitted uses:
        1. Outdoor storage
        2. Container storage

    B. The following uses are strictly prohibited:
        1. Payday Loans
        2. Pawn shop
        3. Tattoo, palmist, psychic, or medium
        4. Vapor shop
        5. Drive-in theater
        6. Campground
        7. Undertaking establishment
        8. Adult entertainment
        9. Manufacture of chemical, cosmetic, drug, soap, paints, abrasive products, fabricated metal products
        10. Tavern, cocktail lounge, or night club

2. Bulk Regulations
    A. The development shall comply with the bulk requirements of the Employment (EMP) District.

3. Access, Parking and Circulation
    A. Existing curb cuts to N. Watkins shall be utilized.
    B. Curb cuts shall be approved by the City Engineer.
    C. Sight distances and geometry requirements for public streets shall comply with the Unified Development Code.
    D. All required parking shall be illustrated on the final plat.
    E. Adequate queuing space in accordance with the Unified Development Code shall be provided between any gatehouse/guardhouse and entry/exit points.

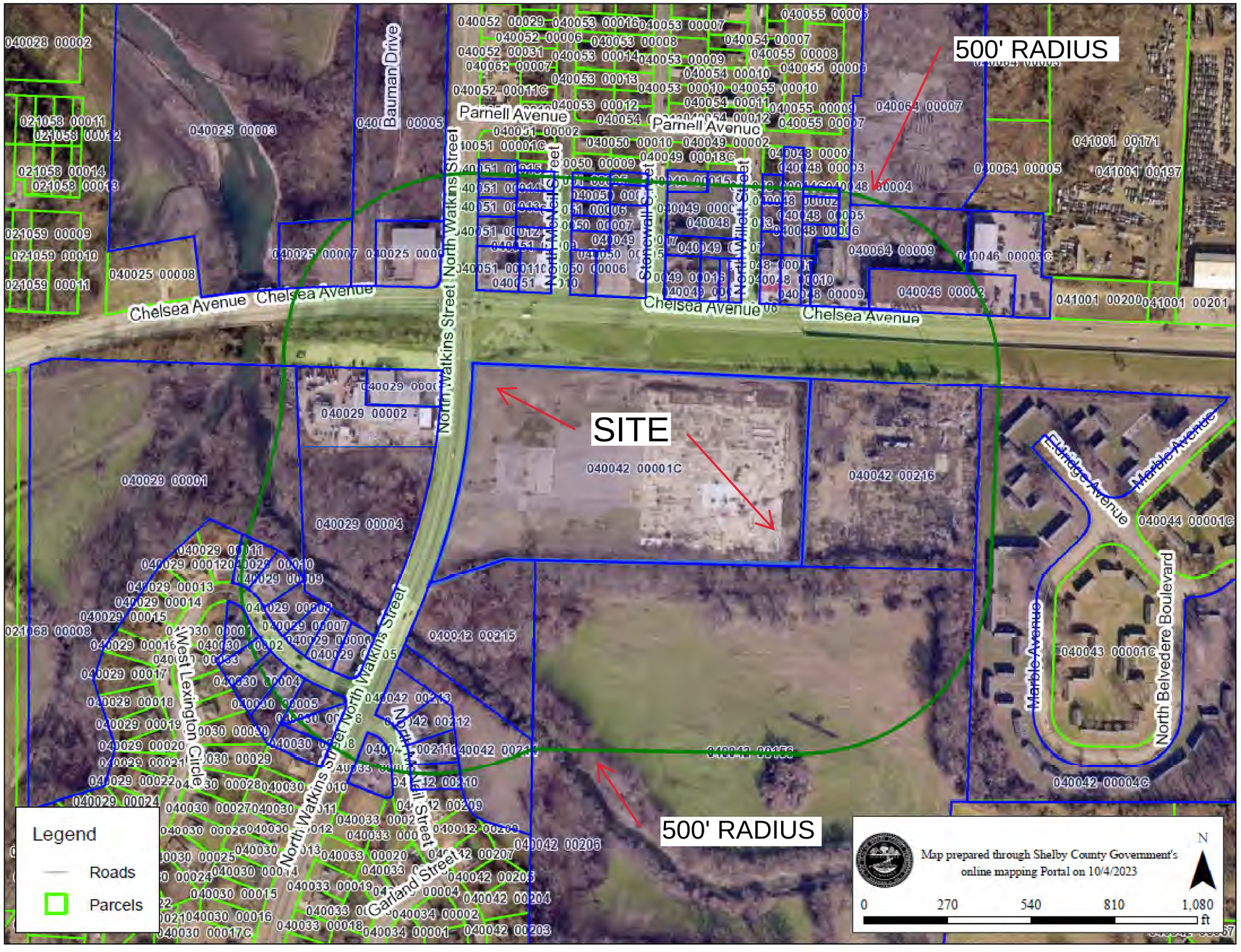
4. Landscaping
    A. Landscaping shall be provided as illustrated on the Concept Plan
    B. Dumpsters shall be enclosed on all four sides with wood, brick or other solid materials by the Department of Planning and Development.
    C. Lighting shall be directed so as to not glare onto residential property or onto traffic on N. Watkins Street.

5. Signs
    A. Signage shall be in conformance with the EMP District regulations.

6. The Land Use Control Board may modify the bulk, access, parking, landscaping, and sign requirements if equivalent alternatives are presented, provided, however, any adjacent property

owner who is dissatisfied with the modifications of the Land Use Control Board hereunder may, within ten days of such action, file a written appeal to the Director of the Division of Planning and Development, to have such action reviewed by the appropriate Governing Bodies.

7. Any final plan shall include:
    A. The outline pan conditions.
    B. The location and dimensions of all buildings, parking areas, drives, loading spaces and facilities, required landscaping, and signage.
    C. The number of parking spaces.
    D. The location and ownership of any easement
    E. The 100 year flood elevation
    F. Fire hydrants in accordance with the requirements of the Memphis Fire Department.



A2H ENGINEERS ARCHITECTS PLANNERS

PUBLIC NOTIFICATION VICINITY MAP

MEMPHIS URBAN WOOD FACILITY

23156

10-5-2023

TAX SALE 219 GP
1779 KIRBY PKWY #
GERMANTOWN TN 38138

LINCOLN HOLDINGS LLC
PO BOX 186 #
HERNANDO MS 38632

MEMPHIS & SHELBY FLOOD CONTROL
GENERAL DELIVERY #
MEMPHIS TN 38101

VANNUCCI MAE D REVOCABLE TRUST
1941 BURNHAM AVE #
MEMPHIS TN 38127

UPH 127 LP
5099 OLD SUMMER RD #
MEMPHIS TN 38122

ALEXANDER ANNIE E AND LAKESHA ALEXANDER
1162 N MCNEIL ST #
MEMPHIS TN 38107

MRB PROPERTIES AND INVESTMENTS LLC
5600 PLEASANT VIEW RD #
MEMPHIS TN 38134

CHANDLER JAMES R
1223 N WATKINS #
MEMPHIS TN 38108

CITY OF MEMPHIS
GENERAL DELIVERY #
MEMPHIS TN 38101

MCGHEE MAKELE
5100 POPLAR AVE #
MEMPHIS TN 38137

MITCHELL PARTNERS LLC
1580 CHELSEA AVE #
MEMPHIS TN 38108

MITCHELL & SONS INC
1580 CHELSEA AVE #
MEMPHIS TN 38108

CITY OF MEMPHIS
GENERAL DELIVERY #
MEMPHIS TN 38101

MEMPHIS & SHELBY FLOOD CONTROL
1567 FRAYSER BLVD #
MEMPHIS TN 38127

MEMPHIS & SHELBY FLOOD CONTROL
GENERAL DELIVERY #
MEMPHIS TN 38101

MEMPHIS & SHELBY FLOOD CONTROL
GENERAL DELIVERY #
MEMPHIS TN 38101

CITY OF MEMPHIS
GENERAL DELIVERY #
MEMPHIS TN 38101

MEMPHIS & SHELBY FLOOD CONTROL
GENERAL DELIVERY #
MEMPHIS TN 38101

HERNANDEZ LUIS M & SUSANA N
2705 MENDOTA CV #
MEMPHIS TN 38133

BUTLER PATRICK S
2501 JENWOOD ST #
MEMPHIS TN 38134

BUTLER PATRICK S
2501 JENWOOD ST #
MEMPHIS TN 38134

TATUM MATTIE
1298 N WILLETT ST #
MEMPHIS TN 38108

HOLY VISION TEMPLE
875 CROCKETT ST #
MEMPHIS TN 38107

UPH 127 LP
5099 OLD SUMMER RD #
MEMPHIS TN 38122

SUDDUTH CYNTHIA D
1526 CHELSEA AVE #
MEMPHIS TN 38108

SUDDUTH CYNTHIA D
1526 CHELSEA AVE #
MEMPHIS TN 38108

PERKINS AUGUSTA B
1526 CHELSEA AVE #
MEMPHIS TN 38108

HOLY VISION TEMPLE
875 CROCKETT PL #
MEMPHIS TN 38107

TAP TRUST
579 N 3RD ST #
MEMPHIS TN 38105

MARSHALL WILLOLA & RODERICK
2784 MOUNTAIN TERRACE ST #
MEMPHIS TN 38127

MT ZION BAPTIST CHURCH
1280 STONEWALL ST #
MEMPHIS TN 38108

MT ZION BAPTIST CHURCH
1280 STONEWALL ST #
MEMPHIS TN 38108

CITY OF MEMPHIS
GENERAL DELIVERY #
MEMPHIS TN 38101

BUILT BY HER DESIGN AND
CONSTRUCTION LLC
PO BOX 25021 #
MEMPHIS TN 38125

RUSSELL SHEREESE
8243 CRIMSON CRK #
CORDOVA TN 38016

SWAIN RYAN
1320 2ND STREET RD #
EATON CO 80615

EQUITY TRUST CO CUSTODIAN FBO
MARIA E
16171 BRENT CIR #
HUNTINGTON BEACH CA 92647

MORGAN APRIL L
1718 CARLYLE RD #
MEMPHIS TN 38127

FISHER TAWANDA E
1446 ALTA VISTA AVE #
MEMPHIS TN 38127

R S HARRIS LLC
PO BOX 17039 #
MEMPHIS TN 38187

HARRIS R S
PO BOX 17039 #
MEMPHIS TN 38187

JONES LOUISE N AND ROLAND G HAYES
1277 N MCNEIL ST #
MEMPHIS TN 38108

JONES LOUISE N
1277 N MCNEIL ST #
MEMPHIS TN 38108

TOARMINA MICHAEL J AND STEPHEN D
1486 CHELSEA AVE #
MEMPHIS TN 38108

HARRIS R S
PO BOX 17039 #
MEMPHIS TN 38187

HARRIS R S
PO BOX 17039 #
MEMPHIS TN 38187

HARRIS R S
PO BOX 17039 #
MEMPHIS TN 38187

HARRIS R S
BOX 17039 #
MEMPHIS TN 38187

HARRIS R S
PO BOX 17039 #
MEMPHIS TN 38187

Z COMMERCIAL PROPERTIES LLC
3666 JACKSON AVE #
MEMPHIS TN 38108

Z COMMERCIAL PROPERTIES LLC
3666 JACKSON AVE #
MEMPHIS TN 38108

CITY OF MEMPHIS & CO OF SHELBY
GENERAL DELIVERY #
MEMPHIS TN 38101

LAWSON MHP MEMPHIS TN LLC
1507 16TH AVE #
NASHVILLE TN 37212

ASK1 CORP
658 STRATFORD RD #
MEMPHIS TN 38122

LAWSON MHP MEMPHIS TN LLC
1507 16TH AVE #
NASHVILLE TN 37212

CTY OF MPHS & SHELBY CO CYP CR
125 N MAIN ST #
MEMPHIS TN 38103

CHANDLER JAMES R
1223 N WATKINS #
MEMPHIS TN 38108

HONG KYONG BOK & ANNA BOK SIM
1239 N WATKINS #
MEMPHIS TN 38108

CITY OF MPHS FLOOD CON LAND
GENERAL DELIVERY #
MEMPHIS TN 38101

TWI JV1 LLC
1471 GENESIS CIR #
MEMPHIS TN 38106

ARIJE WESLEY
9211 S RIVEREDGE DR #
CORDOVA TN 38018

SMALL EARNEST
3348 HOMEWOOD DR #
MEMPHIS TN 38128

ABUSHAER MUHAMAAD
7915 DEERVIEW CT #
BURR RIDGE IL 60527

WALLACE PHIL
3209 AUSTIN PAEY HWY #
MEMPHIS TN 38128

WALLACE PHIL
3209 AUSTIN PEAY HWY #
MEMPHIS TN 38128

SPILLMAN JASON & DAWN
1876 MARQUETTE RD #
CHULA VISTA CA 91913

BROWN LEXINGTON GP
1779 KIRBY PKWY #
MEMPHIS TN 38138

TWI JV1 LLC
1471 GENESIS CIR #
MEMPHIS TN 38106

ARIJE WESLEY
9211 S RIVEREDGE DR #
CORDOVA TN 38018

EL-TAYECH GHASSAN
2145 LITTLEMORE DR #
CORDOVA TN 38016

WALLACE PHIL
1143 N WATKINS #
MEMPHIS TN 38107

STEELE LUELLA AND ANTHONY STEELE (RS)
1135 N WATKINS ST #
MEMPHIS TN 38107

Shelby County Tennessee

Shelandra Y Ford

Shelby County Register

As evidenced by the instrument number shown below, this document has been recorded as a permanent record in the archives of the Office of the Shelby County Register.

21064891

05/27/2021 - 02:39:00 PM

4 PGS	
CHRISTINAM 2235210 - 21064891	
VALUE	226221.00
MORTGAGE TAX	0.00
TRANSFER TAX	837.02
RECORDING FEE	20.00
DP FEE	2.00
REGISTER'S FEE	1.00
TOTAL AMOUNT	860.02

SHELANDRA Y FORD
REGISTER OF DEEDS SHELBY COUNTY TENNESSEE

1075 Mullins Station, Suite W165 ~ Memphis, Tennessee 38134 (901) 222-8100
Website: www.register.shelby.tn.us Email: register@shelbycountytn.gov

IN THE CHANCERY COURT FOR THE THIRTIETH JUDICIAL DISTRICT, SHELBY COUNTY, TENNESSEE

The STATE OF TENNESSEE in its own behalf and for the use and benefit of SHELBY COUNTY and, if applicable, the INCORPORATED MUNICIPALITIES OF ARLINGTON, BARTLETT, COLLIERVILLE, GERMANTOWN, LAKELAND, MEMPHIS and MILLINGTON, TENNESSEE,

Plaintiffs

v.

DELINQUENT TAXPAYERS as shown on the 2017 REAL PROPERTY DELINQUENT TAX RECORDS of the SHELBY COUNTY TRUSTEE and the UNITED STATES OF AMERICA,

Defendants

TX-2019-III
Tax Sale 1703

DECREE CONFIRMING SALE, DIVESTING AND VESTING TITLE, TAX SALE 1703
RE: PARENT PARCEL NO. 0400420000001C PARCEL NO. 0400420000001C,
LOCATION: 1230 N WATKINS

This cause came to be heard before the Honorable JoeDae L. Jenkins, Chancellor, Part III of the Shelby County Chancery Court upon application of Plaintiffs for a Decree Confirming Tax Sale 1703, Divesting and Vesting Title.

The Clerk and Master filed a Clerk and Master's Report of Tax Sale, hereafter "Report", on March 24, 2021. It satisfactorily appearing to the Court that said Report has been on file for more than ten (10) working days and upon the entire record herein,

IT IS THEREFORE ORDERED, ADJUDGED and DECREED by the Court that

1. Said report is confirmed in all things as to Parent Parcel 0400420000001C, Parcel No(s). 0400420000001C, Property Location: 1230 N WATKINS.
   Lot No. 18-20; Acre(s): 10.129
   Lot Size: 0 x 0
   Legal Description recorded in the Shelby County Register's Office: WD 13088704

   Further described as:

Part of Lots 14, 18, 19, and 20, of the Thomas A Parran Subdivision, in Memphis, Shelby County, Tennessee, and being more particularly described as follows:

Beginning at the intersection point of the south line of the Union Railway right-of-way with the easterly line of Watkins Street; thence eastwardly along the south line of said Union Railway right-of-way line a distance of 898.56 feet to a point; thence southwardly perpendicular to the said south line of the Union Railway right-of-way a distance of 467.7 feet, more or less to a point, said point being in the southerly line of Lot 20 of said Thomas A Parran Subdivision; thence westwardly along the southerly line of Lots 18, 19 and 20 of said subdivision a distance of 761.86 feet, more or less to a point; thence southwestwardly with a deflection angle of 19° E 14' a distance of 230.0 feet, more or less to a point in the easterly line of Watkins Street; thence northwardly along the easterly line of Watkins Street a distance of 552.50 feet, more or less to the point of beginning.

Being the same property as described in Instrument No. 13088704. The above description is the same as found in prior deed of record as a boundary line survey was not done at the time of this conveyance.

2. That all right, title and interest in said property is hereby divested out of TAYLOR ROBERT J, his/her/their unknown heirs or assigns, and is vested in TAX SALE 219 GP, subject to the right of the defendants and all other persons having an interest in said properties to redeem the same within 180 DAYS from the date of the entry of this Decree Confirming Sale, Divesting and Vesting Title. Pursuant to TCA §67-5-2701, for the purpose of redemption interest runs from the date the funds were received in the Registry of the Court, i.e. March 18, 2021.
3. That upon application of TAX SALE 219 GP, a Writ of Possession will issue at the cost of TAX SALE 219 GP to place said in possession of said property.
4. The final bid for the property and thus the value of this transaction for purposes of registration is $226,221.00.
5. That, from the total of funds received ($227,081.02), the Clerk and Master shall distribute the proceeds of sale as follows: First, to the Shelby County Trustee: the delinquent taxes, interest, penalties, costs and fees cited in the Report ($38,506.46); Second, such City of MEMPHIS taxes which may be due to the Treasurer, City of MEMPHIS ($180,154.71); Third, to the Clerk and Master the commission on the sale of Properties ($6,589.83); Fourth, to the Register of Deeds the fee ($860.02) for registration of the Property Title in the Purchaser at Sale (TAX SALE 219 GP).

6. That the Clerk and Master shall retain, subject to the rightful claims, the balance remaining after the payment of the above, that amount being ($970.00), and one year after the redemption period is complete, and after sending notice to the owner of record, shall forward unclaimed excess proceeds of sale to the State of Tennessee as Unclaimed Funds.
7. That upon disbursement of the sale proceeds as provided in Item 5, above, the judgment is satisfied and all liens are discharged as provided by law.
8. This Order is declared to be a final judgment pursuant to Rule 54.02 of the Tennessee Rules of Civil Procedure, the Court expressly determining that there is no just reason for delay and expressly directing that this order be entered as a final judgment as to the claims adjudicated. Any outstanding costs are assessed to the delinquent owner(s) of the parcel(s) subject to this Order.

JoeDae L. Jenkins, Chancellor
Date: 04-29-2021

A TRUE COPY-ATTEST
W. Aaron Hall, Clerk & Master
By _____ D.C. & M.

Prepared and Approved for Entry

Gregory S. Gallagher (BPR No. 7274)
John B. Turner, Jr. (BPR No. 18258)
County Delinquent Tax Attorneys
Shelby County Trustee's Office
157 Poplar Avenue, 3rd Floor
Memphis, TN 38103
(901) 222-0292

Reviewed by Shelby County Chancery Court
Clerk and Master

Certificate of Service

I, D. Holzemer, hereby certify that the following parties at interest are being served a copy of this Order via U. S. Mail, postage prepaid at the following address as provided by the Shelby County Trustee as address of record for owners/equity interest and for purchaser at sale from the Clerk and Master's Records

- TAX SALE 219 GP, 1779 KIRBY PKWY, 1-347, MEMPHIS, TN 38138
- ROBERT J TAYLOR, TR. FOR BURCH PORTER & JOHNSON, 130 N COURT AVE, MEMPHIS, TN 38103
- ROBERT J TAYLOR, 1519 UNION AVE # 219, MEMPHIS, TN 38104
- CAVALRY SPVI LLC, C/O CHRISTOPHER CONNER, 250 HIGH ST #5059, MARYVILLE, TN 37802
- FIRST METRO FINANCIAL SVCS, C/O STONE HIGGS & DREXLER, 200 JEFFERSON AVE #1000, MEMPHIS, TN 38103
- CAPITAL ONE BANK USA, C/O NATHAN & NATHAN, 2215 1ST AVENUE SOUTH, BIRMINGHAM, AL 35233
- BRIDGE CAPITAL THRIFT & LOAN LLC, C/O GREG ZISKIND, 8046 N BROTHER BLVD #103, BARTLETT, TN 38133
- CREDIT ACCEPTANCE CORP, C/O PAUL MENDELSON, 799 ESTATE PL #17235, MEMPHIS, TN 38120

Dylan M Holzemer DCM

- Send Tax Bills To: **TAX SALE 219 GP, 1779 KIRBY PKWY, 1-347, MEMPHIS, TN 38138**