



August 24, 2022

Mr. Dan Smothers, Operations Manager  
Willamette Valley Company, LLC  
1830 Central Blvd  
Centralia, WA 98531

Subject: Final Air Discharge Permit for Replacement Drum Dryer, Cyclone and Grinder Baghouse

Dear Mr. Smothers:

A final determination to issue Air Discharge Permit 22-3537 (ADP 22-3537) has been completed for Air Discharge Permit (ADP) Application L-728 pursuant to Section 400-110(4) of the General Regulations for Air Pollution Sources of the Southwest Clean Air Agency (SWCAA). Public notice for ADP Application L-728 was published in the permit section of SWCAA's internet website on June 8, 2022. SWCAA did not receive a request for a public comment period in response to the public notice and has concluded that significant public interest does not exist for this determination. Therefore, a public comment period will not be provided for this permitting action. Electronic copies of ADP 22-3537 and the associated Technical Support Document are available for public review in the permit section of SWCAA's internet website (<http://www.swcleanair.gov/permits/adpfinal.asp>). Original copies are enclosed for your files.

This Air Discharge Permit may be appealed directly to the Pollution Control Hearings Board (PCHB) at P.O. Box 40903, Olympia, Washington 98504-0903 within 30 days of receipt as provided in RCW 43.21B.

If you have any comments, or desire additional information, please contact me or Wess Safford at (360) 574-3058, extension 126.

Sincerely,

Uri Papish  
Executive Director

UP:wls

Enclosure – Air Discharge Permit 22-3537 and Technical Support Document





**SWCAA**  
Southwest Clean Air Agency

**AIR DISCHARGE PERMIT**  
**22-3537**

**Issued: August 24, 2022**

Willamette Valley Company, LLC  
1830 Central Blvd, Centralia, WA 98531

SWCAA ID - 659

REVIEWED BY:

  
Clinton Lamoreaux, Chief Engineer



APPROVED BY:

  
Uri Papish, Executive Director

## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1. Equipment/Activity Identification	1
2. Approval Conditions	1
Emission Limits	2
Operating Limits and Requirements	4
Monitoring and Recordkeeping Requirements	6
Emission Monitoring and Testing Requirements	7
Reporting Requirements	7
3. General Provisions	8
Appendix A   Emission Testing Requirements Bark Dehydrator	
Appendix B   Emission Monitoring Requirements Bark Dehydrator	

**1. Equipment/Activity Identification**

<b>ID No.</b>	<b>Equipment/Activity</b>	<b>Control Measure/Equipment</b>
1	Bark Dehydrator (Natural Gas - 12.5 MMBtu/hr) (Wood - 10.0 MMBtu/hr)	Process Enclosure Cyclone (B&R Sheet Metal – 7' dia) Baghouse (Carothers – 20,000 acfm)
2	Wood Heater Fuel Bin	Process Enclosure, Baghouse (Pulse Jet Filter – 1,800 acfm)
3	Bark Grinder #1 (Pulvocron - 200hp)	Process Enclosure, Baghouse (Flex Kleen – 3,000 acfm)
4	Bark Grinder #2 (Pulvocron - 200hp)	Process Enclosure, Baghouse (Flex Kleen – 3,000 acfm)
5	Bark Grinder #3 (Pulvocron - 200hp)	Process Enclosure, Baghouse (Flex Kleen – 2,500 acfm)
6	Bark Grinder #4 (Pulvocron - 200hp)	Process Enclosure, Baghouse (Flex Kleen – 2,500 acfm)
7	Bark Grinder #5 (Pulvocron - 200hp)	Process Enclosure, Baghouse (KICE – 3,600 acfm)
8	Flour Blender (Munson Machinery)	Process Enclosure, Baghouse (Grinding & Sizing – 3,000 acfm)
9	Flour Transfer System	Process Enclosure, Baghouse (Carothers and Sons – 400 acfm)
10	Bark Aging and Storage	Aerobic Processing

**2. Approval Conditions**

The following tables detail the specific requirements of this permit. In addition to the requirements listed below, equipment at this facility may be subject to other federal, state, and local regulations. The permit requirement number is identified in the left-hand column. The text of the permit requirement is contained in the middle column. The emission unit, equipment, or activity to which the permit requirement applies is listed in the right-hand column.

ADP 22-3537 supersedes ADP 21-3459 in its entirety.

**Emission Limits**

Req. No.	Emission Limits	Equipment/ Activity ID No.																																			
1.	<p>Emissions from the Bark Dehydrator must not exceed the following:</p> <table><tr><th>Pollutant</th><th>Emission Limit</th></tr><tr><td>NO<sub>x</sub></td><td>21.46 tpy</td></tr><tr><td>CO</td><td>10.95 tpy</td></tr><tr><td>SO<sub>2</sub></td><td>1.10 tpy</td></tr><tr><td>PM/PM<sub>10</sub> (filterable)</td><td>7.51 tpy</td></tr><tr><td>PM<sub>2.5</sub> (filterable)</td><td>6.23 tpy</td></tr></table> <p>Annual emissions must be calculated from actual fuel consumption, hours of operation and the most recent emission test data consistent with the methodology found in Section 6 of the Technical Support Document for this Permit.</p>	Pollutant	Emission Limit	NO <sub>x</sub>	21.46 tpy	CO	10.95 tpy	SO <sub>2</sub>	1.10 tpy	PM/PM <sub>10</sub> (filterable)	7.51 tpy	PM <sub>2.5</sub> (filterable)	6.23 tpy	1																							
Pollutant	Emission Limit																																				
NO <sub>x</sub>	21.46 tpy																																				
CO	10.95 tpy																																				
SO <sub>2</sub>	1.10 tpy																																				
PM/PM <sub>10</sub> (filterable)	7.51 tpy																																				
PM <sub>2.5</sub> (filterable)	6.23 tpy																																				
2.	<p>Emissions of volatile organic compounds and toxic air pollutants from the Bark Dehydrator must not exceed the following:</p> <table><tr><th rowspan="2">Pollutant</th><th colspan="2">Emission Limit</th></tr><tr><th>lb/hr (1-hr avg)</th><th>tons per year</th></tr><tr><td>VOCs</td><td>9.52</td><td>41.71</td></tr><tr><td>Formaldehyde</td><td>0.014</td><td>0.060</td></tr><tr><td>Acetaldehyde</td><td>0.09</td><td>0.38</td></tr><tr><td>Propionaldehyde</td><td>0.17</td><td>0.75</td></tr><tr><td>Methanol</td><td>1.05</td><td>4.61</td></tr><tr><td>Acetic Acid</td><td>7.06</td><td>30.91</td></tr><tr><td>Acrolein</td><td>0.017</td><td>0.076</td></tr><tr><td>Formic Acid</td><td>0.95</td><td>4.17</td></tr><tr><td>Propionic Acid</td><td>0.17</td><td>0.76</td></tr><tr><td>Other TAPs not listed above</td><td>--</td><td>Must not exceed respective SQER</td></tr></table> <p>Compliance with the hourly emission limits is determined from the average of three one-hour long test runs using EPA Method 320 in accordance with Appendix A of this permit.</p> <p>Annual emissions must be calculated from the results of the most recent representative source emissions test and the amount of bark dried consistent with the methodology found in Section 6 of the Technical Support Document for this Permit.</p>	Pollutant	Emission Limit		lb/hr (1-hr avg)	tons per year	VOCs	9.52	41.71	Formaldehyde	0.014	0.060	Acetaldehyde	0.09	0.38	Propionaldehyde	0.17	0.75	Methanol	1.05	4.61	Acetic Acid	7.06	30.91	Acrolein	0.017	0.076	Formic Acid	0.95	4.17	Propionic Acid	0.17	0.76	Other TAPs not listed above	--	Must not exceed respective SQER	1
Pollutant	Emission Limit																																				
	lb/hr (1-hr avg)	tons per year																																			
VOCs	9.52	41.71																																			
Formaldehyde	0.014	0.060																																			
Acetaldehyde	0.09	0.38																																			
Propionaldehyde	0.17	0.75																																			
Methanol	1.05	4.61																																			
Acetic Acid	7.06	30.91																																			
Acrolein	0.017	0.076																																			
Formic Acid	0.95	4.17																																			
Propionic Acid	0.17	0.76																																			
Other TAPs not listed above	--	Must not exceed respective SQER																																			

Req. No.	Emission Limits	Equipment/ Activity ID No.																														
3.	<p>Emission rates from the Bark Dehydrator must not exceed the following:</p> <table><tr><td><u>Pollutant</u></td><td><u>Emission Limit (1-hr avg)</u></td></tr><tr><td>NO<sub>x</sub></td><td>0.49 lb/MMBtu</td></tr><tr><td>CO</td><td>0.25 lb/MMBtu</td></tr><tr><td>PM/PM<sub>10</sub> (filterable)</td><td>0.010 gr/dscf (while firing wood heater)</td></tr><tr><td>PM/PM<sub>10</sub> (filterable)</td><td>0.005 gr/dscf (while firing natural gas heater)</td></tr></table> <p>The NO<sub>x</sub> and CO emission limits identified above for wood combustion do not apply during periods of start-up and shutdown. A startup period begins with the introduction of fuel to the wood heater, and ends with the attainment of a steady combustion zone temperature of 1,000°F. A shutdown period begins with the initiation of shutdown procedures, and ends with cessation of operation. In no event, must applicability of the NO<sub>x</sub> and CO emission limits be suspended for greater than 1 hour during each startup or shutdown period.</p> <p>Compliance with the hourly emission limits is determined from the average of three one-hour long test runs in accordance with Appendix A of this permit.</p>	<u>Pollutant</u>	<u>Emission Limit (1-hr avg)</u>	NO <sub>x</sub>	0.49 lb/MMBtu	CO	0.25 lb/MMBtu	PM/PM <sub>10</sub> (filterable)	0.010 gr/dscf (while firing wood heater)	PM/PM <sub>10</sub> (filterable)	0.005 gr/dscf (while firing natural gas heater)	1																				
<u>Pollutant</u>	<u>Emission Limit (1-hr avg)</u>																															
NO <sub>x</sub>	0.49 lb/MMBtu																															
CO	0.25 lb/MMBtu																															
PM/PM <sub>10</sub> (filterable)	0.010 gr/dscf (while firing wood heater)																															
PM/PM <sub>10</sub> (filterable)	0.005 gr/dscf (while firing natural gas heater)																															
4.	Visible emissions from the Bark Dehydrator must not exceed 5% opacity for more than 3 minutes in any one-hour period as determined by a Certified Observer in accordance with SWCAA Method 9.	1																														
5.	<p>Emissions of PM/PM<sub>10</sub> from the Wood Heater Fuel Bin Baghouse, Bark Grinder Baghouses, Flour Blender Baghouse, and Packaging Baghouse must not exceed:</p> <table><tr><td></td><td colspan="2">Emission Limit</td></tr><tr><td><u>Baghouse</u></td><td><u>gr/dscf (1-hr avg)</u></td><td><u>tons per year</u></td></tr><tr><td>Wood Heater Fuel Bin</td><td>0.005</td><td>0.34</td></tr><tr><td>Bark Grinder #1</td><td>0.005</td><td>0.56</td></tr><tr><td>Bark Grinder #2</td><td>0.005</td><td>0.56</td></tr><tr><td>Bark Grinder #3</td><td>0.005</td><td>0.47</td></tr><tr><td>Bark Grinder #4</td><td>0.005</td><td>0.47</td></tr><tr><td>Bark Grinder #5</td><td>0.005</td><td>0.68</td></tr><tr><td>Flour Blender</td><td>0.005</td><td>0.56</td></tr><tr><td>Packaging</td><td>0.005</td><td>0.08</td></tr></table> <p>Compliance with the hourly emission limits is determined from the average of three one-hour long test runs in accordance with Appendix A of this permit.</p> <p>Annual emissions must be calculated from actual hours of operation consistent with the methodology found in Section 6 of the Technical Support Document for this Permit.</p>		Emission Limit		<u>Baghouse</u>	<u>gr/dscf (1-hr avg)</u>	<u>tons per year</u>	Wood Heater Fuel Bin	0.005	0.34	Bark Grinder #1	0.005	0.56	Bark Grinder #2	0.005	0.56	Bark Grinder #3	0.005	0.47	Bark Grinder #4	0.005	0.47	Bark Grinder #5	0.005	0.68	Flour Blender	0.005	0.56	Packaging	0.005	0.08	2-9
	Emission Limit																															
<u>Baghouse</u>	<u>gr/dscf (1-hr avg)</u>	<u>tons per year</u>																														
Wood Heater Fuel Bin	0.005	0.34																														
Bark Grinder #1	0.005	0.56																														
Bark Grinder #2	0.005	0.56																														
Bark Grinder #3	0.005	0.47																														
Bark Grinder #4	0.005	0.47																														
Bark Grinder #5	0.005	0.68																														
Flour Blender	0.005	0.56																														
Packaging	0.005	0.08																														
6.	Visible emissions from approved equipment must not exceed 0% opacity for more than 3 minutes in any one hour period as determined using SWCAA Method 9 (See Appendix A of SWCAA 400).	2-9																														

**Operating Limits and Requirements**

<b>Req. No.</b>	<b>Operating Limits and Requirements</b>	<b>Equipment/ Activity ID No.</b>
7.	Reasonable precautions must be taken at all times to prevent and minimize fugitive emissions from plant operations.	Facility-wide
8.	The permittee must use recognized good practice and procedures to reduce odors to a reasonable minimum.	Facility-wide
9.	Wet suppression techniques must be used as necessary to minimize fugitive emissions from haul roads, storage piles, and material processing.	Facility-wide
10.	Each pollution control device/measure must be in use whenever the associated production equipment is in operation. Control devices must be operated and maintained in accordance with the manufacturer's specifications and operated in a manner that minimizes emissions.	1-10
11.	Emission units identified in this Permit must be maintained and operated in total and continuous conformity with the conditions identified in this Permit. SWCAA reserves the right to take any and all appropriate action to maintain the conditions of this Permit, including directing the facility to cease operations until corrective action can be completed.	1-10
12.	Each baghouse must be equipped with a differential pressure gauge capable of continuously measuring differential pressure across filtration media in the baghouse.	1-9
13.	The Bark Dehydrator must only be fired on natural gas or clean, dry wood. Wood fuel must not contain any paint, preservatives, or non-wood contaminants. Wood fuel must be stored in an enclosed manner to minimize water absorption. Maximum moisture content of wood fuel must not exceed 15% by weight. For the purposes of this requirement, wood fuel includes a mixture of wood and bark.	1
14.	The Bark Dehydrator process heaters (natural gas, wood) must not be operated concurrently.	1
15.	The Bark Dehydrator wood-fired heater must be equipped with a temperature gauge capable of continuously measuring combustion zone temperature in the heater.	1
16.	The combustion zone temperature of the Bark Dehydrator wood-fired heater must be maintained at, or above, 1,000°F. This requirement does not apply during periods of start-up or shutdown.	1
17.	Exhaust gases from the Bark Dehydrator baghouse must be discharged vertically at a minimum of 30' above ground level. Any device that obstructs or prevents vertical discharge is prohibited. The dehydrator baghouse exhaust stack must be configured to allow emission testing pursuant to EPA reference test methodology.	1

Req. No.	Operating Limits and Requirements	Equipment/ Activity ID No.						
18.	<p>Corrective action must be taken within 7 days if emission monitoring results for the Bark Dehydrator wood-fired heater indicate emission concentrations in excess of the levels listed below. Corrective action includes, but is not limited to, service by maintenance personnel or retesting for each pollutant of concern using a reference test method. Corrective action must be pursued until observed emission concentrations no longer exceed the levels listed below.</p> <table><tr><th>Pollutant</th><th>Corrective Action Threshold</th></tr><tr><td>NO<sub>x</sub></td><td>59 ppmvd @ 18% O<sub>2</sub> (1-hr avg)</td></tr><tr><td>CO</td><td>50 ppmvd @ 18% O<sub>2</sub> (1-hr avg)</td></tr></table>	Pollutant	Corrective Action Threshold	NO <sub>x</sub>	59 ppmvd @ 18% O <sub>2</sub> (1-hr avg)	CO	50 ppmvd @ 18% O <sub>2</sub> (1-hr avg)	1
Pollutant	Corrective Action Threshold							
NO <sub>x</sub>	59 ppmvd @ 18% O <sub>2</sub> (1-hr avg)							
CO	50 ppmvd @ 18% O <sub>2</sub> (1-hr avg)							
19.	Exhaust air from approved equipment must be discharged vertically into the ambient air above the level of the building roof. Any device that obstructs or prevents vertical discharge is prohibited.	7-9						
20.	Bark pH must be at least 4.0 prior to processing. This pH limit applies on a 1-hour average basis.	10						
21.	<p>Bark storage and aging piles or windrows must not exceed 11 feet in height above ground surface.</p> <p>Every bark storage and aging pile or windrow must be turned at least once during the aging process.</p> <p>Temperature within bark storage and aging piles and windrows must be maintained at a temperature of no greater than 160°F. If the results of temperature sampling indicate the temperature within any individual windrow is exceeding 160°F, the permittee must turn that pile within 7 days and confirm within 24 hours of turning that the pile temperature is no greater than 160°F. Exceeding 160°F is not a permit violation, but failure to take corrective action within 7 days is a permit violation.</p> <p>If the above requirements are not met, the pH of the bark must be measured hourly prior to introduction to the dryer, and no bark with a pH of less than 4.0 may be processed.</p> <p>The above requirements do not apply to bark stored onsite for less than 6 weeks.</p>	10						
22.	The windrow or pile temperature must be maintained at no more than 160°F for at least seven days prior to processing.	10						
23.	If emission test results indicate that a compound not listed in Condition 2 comprises more than 5% of the total VOC content as measured during the test, the Permittee must take action to identify the compound, quantify emissions, and compare those emissions to any applicable SQER listed in WAC 173-460 (as in effect August 21, 1998).	10						



**Monitoring and Recordkeeping Requirements**

<b>Req. No.</b>	<b>Monitoring and Recordkeeping Requirements</b>	<b>Equipment/ Activity ID No.</b>
24.	All air quality related complaints, including odor complaints, received by the permittee and the results of any subsequent investigation or corrective action must be recorded for each occurrence.	Facility-wide
25.	With the exception of data logged by a computerized data acquisition system, each record required by this Permit must include the date and the name of the person making the record entry. If a control device or process is not operating during a specific time period, a record must be made to that effect.	1-10
26.	All records required by this Permit must be kept for a minimum period of no less than three years and must be maintained in a form readily available for inspection by SWCAA representatives.	1-10
27.	Excess emissions and upset conditions must be recorded for each occurrence.	1-10
28.	<p>The permittee must monitor and record the following information:</p> <p>(a) Differential pressure across filter media      Recorded daily in each baghouse</p> <p>(b) Combustion zone temperature in the      Recorded daily when in operation Energy Unlimited process heater</p> <p>(c) Wood and natural gas fuel consumption      Recorded monthly for the Bark Dehydrator</p> <p>(d) Hours of baghouse operation      Recorded monthly for each unit</p> <p>(e) Results of wood fuel analyses      Recorded for each analysis (heat/moisture/nitrogen contents)</p> <p>(f) Filter changes/maintenance activities      Recorded for each occurrence.</p>	1-9
29.	The temperature of the bark storage and aging piles and windrows must be determined and recorded at least twice per week at representative locations in each windrow or pile subject to Condition 21. Data availability must be at least 95% in any calendar year.	10
30.	<p>The pH of bark being processed must be measured and recorded at least once per week prior to introduction to the dryer. For bark that is stored onsite for more than 6 weeks without temperature monitoring, or for bark for which conformance with the management requirements of Condition 21 cannot be assured, the pH must be measured and recorded at least once per hour prior to introduction to the dryer.</p> <p>If additional samples are collected over a 60 minute period, the results may be averaged for comparison with the pH limitation in this Permit.</p>	10

**Emission Monitoring and Testing Requirements**

<b>Req. No.</b>	<b>Emission Monitoring and Testing Requirements</b>	<b>Equipment/ Activity ID No.</b>
31.	The Bark Dehydrator must be emission tested while firing each of the approved fuels (natural gas, wood) no later than October 2023 and every five years thereafter no later than the end of October of the year in which testing is due. An alternative test schedule may be approved by SWCAA. Tests conducted more than three months before the required due date will not satisfy the periodic source emission testing requirement without prior approval from SWCAA. Emission testing must be conducted in accordance with Appendix A of this Permit.	1
32.	The Bark Dehydrator must be emission monitored while firing each of the approved fuels no later than October 2021. Subsequent emission monitoring while firing each of the approved fuels must be conducted on a 12-month cycle, no later than the end of October each year. Emission monitoring must be performed in accordance with Appendix B of this Permit. Emission monitoring is not required in any year when emission testing is conducted in accordance with this Permit.	1

**Reporting Requirements**

<b>Req. No.</b>	<b>Reporting Requirements</b>	<b>Equipment/ Activity ID No.</b>
33.	All air quality related complaints received by the permittee must be reported to SWCAA within three days of receipt. Complaint reports must include the following information: (a) Date and time of the complaint; (b) Name of the complainant; (c) Nature of the complaint; and (d) Description of corrective action taken in response to complaint (if any).	Facility-wide
34.	An annual emissions inventory report must be submitted in accordance with SWCAA 400-105(1). In addition to the emissions information required under SWCAA 400-105(1), each annual report must include an estimate of annual emission quantities for each TAP compound listed in the Technical Support Document for this Permit.	1-10
35.	Excess emissions must be reported to SWCAA as follows: (a) As soon as possible, but no later than 12 hours after discovery for emissions that represent a potential threat to human health or safety; (b) As soon as possible, but no later than 48 hours after discovery for emissions which the permittee wishes to claim as unavoidable pursuant to SWCAA 400-107(1); and (c) No later than 30 days after the end of the month of discovery for all other excess emissions.	1-10

<b>Req. No.</b>	<b>Reporting Requirements</b>	<b>Equipment/ Activity ID No.</b>
36.	The following emission-related information must be reported to SWCAA by March 15 <sup>th</sup> for the previous calendar year: (a) The quantity of natural gas used by the natural gas fired heater; (b) The quantity of wood burned in the wood-fired heater (MMBtu); (c) The number of hours each baghouse operated; (d) The amount of unaged bark product produced; (e) The amount of aged bark product produced; and (f) Air emissions of criteria air pollutants, volatile organic compounds, toxic air pollutants (TAPs), and hazardous air pollutants (HAPs).	1-10
37.	Emission test results must be reported to SWCAA in writing within 45 days of test completion.	1
38.	Emission monitoring results must be reported to SWCAA in writing within 15 days of completion.	1

### 3. General Provisions

<b>Req. No.</b>	<b>General Provisions</b>
A.	For the purpose of ensuring compliance with this ADP, duly authorized representatives of the Southwest Clean Air Agency must be permitted access to the Permittee's premises and the facilities being constructed, owned, operated and/or maintained by the Permittee for the purpose of inspecting said facilities. These inspections are required to determine the status of compliance with this ADP and applicable regulations and to perform or require such tests as may be deemed necessary.
B.	The provisions, terms, and conditions of this ADP bind the Permittee, its officers, directors, agents, servants, employees, successors and assigns, and all persons, firms, and corporations acting under or for the Permittee.
C.	The requirements of this ADP survive any transfer of ownership of the source or any portion thereof.
D.	This ADP must be posted conspicuously at or be readily available near the source.
E.	This ADP will be invalidated, in whole or in part, if construction or installation of any new or modified equipment has not commenced within eighteen (18) months from date of issuance, if construction is discontinued for a period of eighteen (18) months or more without prior SWCAA approval, or if construction is not completed within a reasonable time.
F.	This ADP does not supersede requirements of other Agencies with jurisdiction and further, this ADP does not relieve the Permittee of any requirements of any other governmental Agency. In addition to this ADP, the Permittee may be required to obtain permits or approvals from other agencies with jurisdiction.
G.	Compliance with the terms of this ADP does not relieve the Permittee from the responsibility of compliance with SWCAA General Regulations for Air Pollution Sources, previously issued Regulatory Orders, RCW 70A.15, Title 173 WAC or any other applicable emission control requirements, nor from the resulting liabilities and/or legal remedies for failure to comply.

<b>Req. No.</b>	<b>General Provisions</b>
H.	If any provision of this ADP is held to be invalid, all unaffected provisions of the ADP will remain in effect and be enforceable.
I.	No change in this ADP will be made or be effective except as may be specifically set forth by written order of the Southwest Clean Air Agency upon written application by the Permittee for the relief sought.
J.	The Southwest Clean Air Agency may, in accordance with RCW 70A.15, impose such conditions as are reasonably necessary to assure the maintenance of compliance with the terms of this ADP, the Washington Clean Air Act, and the applicable rules and regulations adopted under the Washington Clean Air Act.

## Appendix A Emission Testing Requirements Bark Dehydrator

### 1. Introduction:

The purpose of this testing is to quantify emissions from the Bark Dehydrator and demonstrate compliance with the requirements of this Permit and applicable air quality regulations.

### 2. Testing Requirements:

- a. **Test plan.** A comprehensive test plan must be submitted to SWCAA for review and approval at least 10 business days prior to each test. SWCAA personnel must be informed at least 5 business days prior to testing so that a representative may be present during testing.
- b. **Test Location.** All sampling must be performed at the exhaust stack of the Bark Dehydrator baghouse.
- c. **Test runs/Reference test methods.** The Bark Dehydrator must be emission tested while firing each of the approved fuels (natural gas, wood) no later than October 2023 and no later than the end of October every five years thereafter. Tests conducted more than three months before the required due date will not satisfy the periodic source emission testing requirement without prior approval from SWCAA. Compliance must be demonstrated by averaging the results of the individual sampling runs.

For each fuel (natural gas and wood), three sampling runs must be conducted using the methods and test durations specified below unless an alternative is approved in writing by SWCAA in advance of the emission testing. At least three test runs must be conducted while drying aged bark.

<u>Constituent</u>	<u>Reference Test Method</u>	<u>Minimum Test Run Duration</u>
Flow rate, temperature	EPA Methods 1 and 2	N/A
O <sub>2</sub> , CO <sub>2</sub> content	EPA Method 3 or 3A	60 minutes
Moisture content	EPA Method 4	60 minutes
Filterable particulate matter	EPA Method 5	60 minutes
Condensable particulate matter	EPA Method 202	60 minutes
NO <sub>x</sub>	EPA Method 7E	60 minutes
CO	EPA Method 10	60 minutes
Total VOCs <sup>1</sup>	EPA Method 320	60 minutes
Speciated VOCs <sup>2</sup>	EPA Method 320	60 minutes
Visible Emissions	SWCAA Method 9	60 minutes <sup>3</sup>
Fuel heat content (wood)	ASTM E870 or equivalent	N/A
Fuel moisture content (wood)	ASTM D4442 or equivalent	N/A
Fuel nitrogen content (wood)	ASTM D5373, E778 or equivalent	N/A

<sup>1</sup> Note, SWCAA may require the use of Method 25 in addition to Method 320 in a specific test program. Total VOCs must be determined by summing the individually measured VOCs, including at a minimum the speciated VOCs identified in footnote 2.

<sup>2</sup> Speciated VOCs must include, at a minimum, formaldehyde, acetaldehyde, propionaldehyde, methanol, phenol, acetic acid, acrolein, formic acid, propionic acid, and phenol.

<sup>3</sup> If no visible emissions are observed during the first 15 minutes of each test run, observations may cease.

## Appendix A Emission Testing Requirements Bark Dehydrator

### 3. Source Operation:

- a. **Source operations.** Source operations during the emissions test must be representative of maximum intended operating conditions.
- b. **Record of production parameters.** Production related parameters and equipment operating conditions must be recorded during emissions testing to correlate operating conditions with emissions. All recorded production parameters must be documented in the test results report. Recorded parameters must, at a minimum, include:
  - (1) Process startups and shutdowns;
  - (2) Calculated heat input to the heater for each test run;
  - (3) Combustion zone temperature (wood heater);
  - (4) Dry bark throughput;
  - (5) pH of bark being dried;
  - (6) Initial bark moisture content;
  - (7) Final product moisture content;
  - (8) Dryer inlet temperature; and
  - (9) Dryer outlet temperature.

### 4. Reporting Requirements:

- a. **Test Report.** A final emission test report must be prepared and submitted to SWCAA within 45 calendar days of test completion and, at a minimum, must contain the following information:
  - (1) Description of the source including manufacturer, model number and design capacity of the equipment, and the location of the sample ports or test locations;
  - (2) Time and date of the test and identification and qualifications of the personnel involved, including SWCAA personnel who observed the testing;
  - (3) Summary of results, reported in units and averaging periods consistent with the application emissions standard or unit;
  - (4) Summary of control system or equipment operating conditions;
  - (5) Summary of production related parameters as noted in 3(b) above;
  - (6) A description of the test methods or procedures used including all field data, quality assurance/quality control procedures and documentation;
  - (7) A description of the analytical procedures used including all laboratory data, quality assurance/quality control procedures and documentation;
  - (8) Copies of field data and example calculations;
  - (9) Chain of custody information;
  - (10) Calibration documentation;
  - (11) Discussion of any abnormalities associated with the results; and
  - (12) A statement signed by the senior management official of the testing firm certifying the validity of the source test report.
- b. **Test Results.** Test results must be reported in the following units, at a minimum:

CO and NO <sub>x</sub> :	ppmvd, lb/MMBtu, lb/hr
PM:	gr/dscf, lb/hr
VOC:	lb/hr and lb/ton bark product
Speciated Organics / TAPs:	ppm, lb/hr, lb/ton bark product

**Appendix A**  
**Emission Testing Requirements**  
**Bark Dehydrator**

**5. Changes to Testing Requirements:**

Emission testing must be conducted as specified in the sections above. The Permittee may submit a written request to SWCAA for approval of minor modifications to the requirements above or the testing schedule. Upon review of the request and in accordance with EPA delegation, SWCAA will inform the Permittee in writing of any approved modifications.

## **Appendix B**

### **Emission Monitoring Requirements**

### **Bark Dehydrator**

#### **1. Introduction:**

The purpose of periodically monitoring exhaust gases from the Bark Dehydrator is to minimize emissions and provide a reasonable assurance that the unit is operating properly. Periodic monitoring may be conducted with an electrochemical cell combustion analyzer, analyzers used for reference method testing, or other analyzers pre-approved by SWCAA.

#### **2. Monitoring Procedure:**

- a. Monitoring must be conducted to determine emission concentrations of the constituents listed below. Sampling for the wood-fired heater must be performed at a point between the heater exhaust and the drying chamber of the dehydrator. Sampling for the natural gas fired heater must be performed at the exhaust stack of the Bark Dehydrator baghouse.

##### Constituents to be Measured

Carbon Monoxide (CO)

Nitrogen Oxides (NO<sub>x</sub>)

Oxygen (O<sub>2</sub>)

- b. Source operation during testing must be representative of maximum intended operating conditions.
- c. Alternative testing methodologies must be pre-approved by SWCAA.

#### **3. Minimum Quality Assurance/Quality Control Measures:**

- a. The analyzer(s) response to span gas of a known concentration must be determined before and after testing. No more than 12 hours may elapse between span gas response checks. The results of the analyzer response must not be valid if the pre and post response check results vary by more than 10% of the known span gas value.
- b. The CO and NO<sub>x</sub> span gas concentrations must be no less than 50% and no more than 200% of the emission concentration corresponding to the permitted emission limit. Ambient air may be used to zero the CO and NO<sub>x</sub> cells/analyzer(s) and span the oxygen cell/analyzer.
- c. Sampling must consist of at least 1 test consisting of at least 5 minutes of data collection following a "ramp-up phase." The "ramp-up phase" ends when analyzer readings have stabilized (less than 5% per minute change in emission concentration). Emission concentrations must be recorded at least once every 30 seconds during the data collection phase. All test data collected following the ramp-up phase(s) must be reported to SWCAA.



**Appendix B**  
**Emission Monitoring Requirements**  
**Bark Dehydrator**

**4. Reporting:**

- a. All monitoring results must be recorded at the facility and reported to SWCAA in writing within 15 calendar days of completion. The following information must be included in the report:
  - (1) Time and date of the performance monitoring;
  - (2) Identification of the personnel involved;
  - (3) A summary of results, reported in units consistent with the applicable emission standard or limit;
  - (4) A summary of equipment operating conditions;
  - (5) A description of the evaluation methods or procedures used including all field data, quality assurance/quality control procedures and documentation; and
  - (6) Analyzer response check documentation and calibration gas certificates.
- b. Reported monitoring results must be adjusted to reflect analyzer response to the zero and span gas and corrected to 18.0% oxygen if the measured oxygen is less than or equal to 18.0%, and uncorrected for oxygen if the measured oxygen concentration is greater than 18.0%.

**5. Changes to Monitoring Requirements:**

Emission monitoring must be conducted as specified in the sections above. The Permittee may submit a written request to SWCAA for approval of minor modifications to the requirements above or the monitoring schedule. Upon review of the request and in accordance with EPA delegation, SWCAA will inform the Permittee in writing of any approved modifications.