

December 15, 2021

Mr. David Heller, Environmental Engineer  
Cardinal FG Company Winlock  
545 Avery Road West  
Winlock, WA 98596

Subject: Preliminary Air Discharge Permit for New Emergency Generator

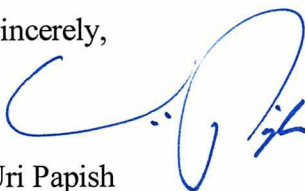
Dear Mr. Heller:

A preliminary determination to issue Air Discharge Permit 21-3497 (ADP 21-3497) has been completed for ADP Application L-723 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-723 was published in the permit section of SWCAA's internet website on November 10, 2021. To facilitate incorporation into the facility's Air Operating Permit, a 45-day public comment period will be provided prior to a final determination.

Electronic copies of ADP 21-3497 and the associated Technical Support Document are available for public review in the permit section of SWCAA's internet website (<http://www.swcleanair.org/permits/publiccomments.asp>). Original copies are enclosed for your files. Also enclosed is a copy of the newspaper notice that SWCAA will publish one time in the legal notice section of The Chronicle. The cost of this publication will be billed to Cardinal FG as prescribed in SWCAA 400-109(4). If you are not satisfied with this public notice, please contact SWCAA within three business days of receiving this letter. If you have any comments on this preliminary determination please notify SWCAA within the specified comment period. If no comments are received, your final Air Discharge Permit will be issued at the conclusion of the comment period.

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  
Attachment – ADP 21-3497 and Technical Support Document

Cc: U.S. EPA Region 10, Air Permits and Toxics Branch (via [R10\\_Air\\_Permits@epa.gov](mailto:R10_Air_Permits@epa.gov))





**AIR DISCHARGE PERMIT  
21-3497**

**Preliminary Date: December 15, 2021**

**DRAFT**

Facility Name: Cardinal FG Company Winlock  
Physical Location: 545 Avery Road West  
Winlock, WA 98596

SWCAA ID: 2175

REVIEWED BY: \_\_\_\_\_  
Clinton Lamoreaux, Acting 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	8
Reporting Requirements	9
3. General Provisions	11
Appendix A Emission Testing Requirements Glass Furnace / Annealing Lehr	
Appendix B CEMS Audit Requirements Glass Furnace / Annealing Lehr	
Appendix C Emission Testing Requirements Cullet Return Baghouse #1	
Appendix D Emission Testing Requirements Cullet Return Baghouse #2	
Appendix E Emission Testing Requirements EP Dust Baghouses	

## 1. Equipment/Activity Identification

ID No.	Generating Equipment/Activity	Control Measure/Equipment
1	Glass Furnace / Annealing Lehr	Selective Catalytic Reduction, Spray Dryer Electrostatic Precipitator Low Sulfur Fuel (Nat Gas)
2	Glass Cutting Operations	Restriction on Material Type and Use
3	Cullet Return System #1	Process Enclosure, Fabric Filtration (Donaldson – 41,500 acfm)
4	Cullet Return System #2	Process Enclosure, Fabric Filtration (Carothers/Son – 25,000 acfm)
5	EP Dust Collection System #1	Process Enclosure, Fabric Filtration (Nol-Tec – 1,500 acfm)
6	EP Dust Collection System #2	Process Enclosure, Fabric Filtration (Nol-Tec – 1,500 acfm)
7	Emergency Generator #1 (Caterpillar – 2,885 bhp)	Low Sulfur Fuel ( $\leq 0.0015\%$ by wt), Operating Limit ( $\leq 50$ hr/yr)
8	Emergency Generator #2 (Caterpillar – 2,937 bhp)	Low Sulfur Fuel ( $\leq 0.0015\%$ by wt), Operating Limit ( $\leq 35$ hr/yr)
9	Misc Burners/Space Heaters	Low Sulfur Fuel (Nat Gas)

## 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.

This Permit supersedes Air Discharge Permit 20-3409 in its entirety.

**Emission Limits**

No.	Emission Limits	Equipment/ Activity																												
1.	<p>Emissions from the Glass Furnace exhaust stack must not exceed the following in any consecutive 12-month period:</p> <table border="0"> <thead> <tr> <th data-bbox="253 338 367 369"><u>Pollutant</u></th> <th data-bbox="542 338 737 369"><u>Emission Limit</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="253 375 318 407">NO<sub>x</sub></td> <td data-bbox="558 375 691 407">245.00 tpy</td> </tr> <tr> <td data-bbox="253 413 298 445">CO</td> <td data-bbox="558 413 691 445">246.38 tpy</td> </tr> <tr> <td data-bbox="253 451 321 483">VOC</td> <td data-bbox="574 451 675 483">13.69 tpy</td> </tr> <tr> <td data-bbox="253 489 310 520">SO<sub>2</sub></td> <td data-bbox="558 489 691 520">114.19 tpy</td> </tr> <tr> <td data-bbox="253 527 407 558">PM<sub>10</sub> (total)</td> <td data-bbox="558 527 691 558">128.66 tpy</td> </tr> <tr> <td data-bbox="253 564 380 596">Ammonia</td> <td data-bbox="574 564 675 596">9.58 tpy</td> </tr> <tr> <td data-bbox="253 602 493 634">Hydrogen Fluoride</td> <td data-bbox="574 602 675 634">2.01 tpy</td> </tr> <tr> <td data-bbox="253 640 418 672">Sulfuric acid</td> <td data-bbox="574 640 675 672">6.98 tpy</td> </tr> <tr> <td data-bbox="253 678 354 709">Arsenic</td> <td data-bbox="558 678 691 709">165.6 lb/yr</td> </tr> <tr> <td data-bbox="253 716 383 747">Beryllium</td> <td data-bbox="574 716 675 747">0.03 lb/yr</td> </tr> <tr> <td data-bbox="253 753 380 785">Cadmium</td> <td data-bbox="558 753 691 785">216.4 lb/yr</td> </tr> <tr> <td data-bbox="253 791 440 823">Formaldehyde</td> <td data-bbox="558 791 691 823">159.7 lb/yr</td> </tr> <tr> <td data-bbox="253 829 337 861">Nickel</td> <td data-bbox="574 829 675 861">49.1 lb/yr</td> </tr> </tbody> </table> <p>Annual emissions of NO<sub>x</sub>, CO and SO<sub>2</sub> must be calculated from continuous monitoring data. Annual emissions of PM/PM<sub>10</sub>, VOC, fluorides and sulfuric acid must be calculated from recorded glass draw and the most recent emission test data. Annual emissions of all other pollutants must be calculated from recorded glass draw and applicable emission factors consistent with Section 6 of the Technical Support Document for this Permit.</p>	<u>Pollutant</u>	<u>Emission Limit</u>	NO <sub>x</sub>	245.00 tpy	CO	246.38 tpy	VOC	13.69 tpy	SO <sub>2</sub>	114.19 tpy	PM <sub>10</sub> (total)	128.66 tpy	Ammonia	9.58 tpy	Hydrogen Fluoride	2.01 tpy	Sulfuric acid	6.98 tpy	Arsenic	165.6 lb/yr	Beryllium	0.03 lb/yr	Cadmium	216.4 lb/yr	Formaldehyde	159.7 lb/yr	Nickel	49.1 lb/yr	1
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2.	<p>Emissions from the Glass Furnace exhaust stack must not exceed the emission rates listed below during normal furnace operation. Limits given in terms of lb/ton<sub>g</sub> do not apply during periods of hot hold.</p> <table border="0"> <thead> <tr> <th data-bbox="253 1199 367 1230"><u>Pollutant</u></th> <th colspan="2" data-bbox="737 1199 932 1230"><u>Emission Limit</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="253 1236 318 1268">NO<sub>x</sub></td> <td data-bbox="526 1236 805 1268">101.8 lb/hr (24-hr avg)</td> <td data-bbox="883 1236 1195 1268">1.63 lb/ton<sub>g</sub> (30-day avg)</td> </tr> <tr> <td data-bbox="253 1274 298 1306">CO</td> <td data-bbox="526 1274 805 1306">112.6 lb/hr (24-hr avg)</td> <td data-bbox="883 1274 1195 1306">1.8 lb/ton<sub>g</sub> (30-day avg)</td> </tr> <tr> <td data-bbox="253 1312 321 1344">VOC</td> <td data-bbox="542 1312 789 1344">3.1 lb/hr (1-hr avg)</td> <td data-bbox="883 1312 1162 1344">0.1 lb/ton<sub>g</sub> (1-hr avg)</td> </tr> <tr> <td data-bbox="253 1350 310 1381">SO<sub>2</sub></td> <td data-bbox="526 1350 805 1381">25.0 lb/hr (24-hr avg)</td> <td data-bbox="883 1350 1195 1381">0.8 lb/ton<sub>g</sub> (30-day avg)</td> </tr> <tr> <td data-bbox="253 1388 461 1419">PM<sub>10</sub> (filterable)</td> <td data-bbox="542 1388 789 1419">14.1 lb/hr (1-hr avg)</td> <td data-bbox="883 1388 1162 1419">0.45 lb/ton<sub>g</sub> (1-hr avg)</td> </tr> <tr> <td data-bbox="253 1425 407 1457">PM<sub>10</sub> (total)</td> <td data-bbox="542 1425 789 1457">29.4 lb/hr (1-hr avg)</td> <td data-bbox="883 1425 1162 1457">0.94 lb/ton<sub>g</sub> (1-hr avg)</td> </tr> </tbody> </table>	<u>Pollutant</u>	<u>Emission Limit</u>		NO <sub>x</sub>	101.8 lb/hr (24-hr avg)	1.63 lb/ton <sub>g</sub> (30-day avg)	CO	112.6 lb/hr (24-hr avg)	1.8 lb/ton <sub>g</sub> (30-day avg)	VOC	3.1 lb/hr (1-hr avg)	0.1 lb/ton <sub>g</sub> (1-hr avg)	SO <sub>2</sub>	25.0 lb/hr (24-hr avg)	0.8 lb/ton <sub>g</sub> (30-day avg)	PM <sub>10</sub> (filterable)	14.1 lb/hr (1-hr avg)	0.45 lb/ton <sub>g</sub> (1-hr avg)	PM <sub>10</sub> (total)	29.4 lb/hr (1-hr avg)	0.94 lb/ton <sub>g</sub> (1-hr avg)	1							
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3.	<p>Emissions from the Glass Furnace exhaust stack must not exceed the emission rate listed below during periods of SCR system maintenance. Emission rates of all other pollutants must comply with limitations for normal furnace operation.</p> <table border="0"> <thead> <tr> <th data-bbox="253 1581 367 1612"><u>Pollutant</u></th> <th data-bbox="558 1581 753 1612"><u>Emission Limit</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="253 1619 318 1650">NO<sub>x</sub></td> <td data-bbox="526 1619 805 1650">415.6 lb/hr (24-hr avg)</td> </tr> </tbody> </table>	<u>Pollutant</u>	<u>Emission Limit</u>	NO <sub>x</sub>	415.6 lb/hr (24-hr avg)	1																								
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4.	<p>Emissions from the Glass Furnace exhaust stack must not exceed the emission rates listed below during periods of ESP/Spray Dryer maintenance. Emission rates of all other pollutants must comply with limitations for normal furnace operation.</p> <table border="0"> <thead> <tr> <th data-bbox="253 1780 367 1812"><u>Pollutant</u></th> <th data-bbox="558 1780 753 1812"><u>Emission Limit</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="253 1818 310 1850">SO<sub>2</sub></td> <td data-bbox="526 1818 805 1850">103.1 lb/hr (24-hr avg)</td> </tr> <tr> <td data-bbox="253 1856 461 1887">PM<sub>10</sub> (filterable)</td> <td data-bbox="542 1856 789 1887">15.6 lb/hr (1-hr avg)</td> </tr> </tbody> </table>	<u>Pollutant</u>	<u>Emission Limit</u>	SO <sub>2</sub>	103.1 lb/hr (24-hr avg)	PM <sub>10</sub> (filterable)	15.6 lb/hr (1-hr avg)	1																						
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No.	Emission Limits	Equipment/ Activity						
5.	<p>Visible emissions from the glass furnace exhaust stack must not exceed the values listed below for more than 3 minutes in any one-hour period as determined by a Certified Observer in accordance with SWCAA Method 9.</p> <table border="0" data-bbox="251 338 917 443"> <tr> <td style="text-align: center;"><u>Operating Condition</u></td> <td style="text-align: center;"><u>Opacity Limit</u></td> </tr> <tr> <td>Normal operation</td> <td>10%</td> </tr> <tr> <td>Hot fan transition</td> <td>20%</td> </tr> </table> <p>Hot fan transition is the change in lead fan status between the two furnace hot fans. The transition period begins when a reduction in lead fan load is initiated and ends not more than 30 minutes after fan load adjustment ceases.</p>	<u>Operating Condition</u>	<u>Opacity Limit</u>	Normal operation	10%	Hot fan transition	20%	1
<u>Operating Condition</u>	<u>Opacity Limit</u>							
Normal operation	10%							
Hot fan transition	20%							
6.	<p>Emissions from glass cutting operations must not exceed the following in any consecutive 12-month period:</p> <table border="0" data-bbox="251 684 738 758"> <tr> <td style="text-align: center;"><u>Pollutant</u></td> <td style="text-align: center;"><u>Emission Limit</u></td> </tr> <tr> <td>VOC</td> <td>43.90 tpy</td> </tr> </table> <p>Annual emissions must be calculated from recorded material consumption using mass balance methodology.</p>	<u>Pollutant</u>	<u>Emission Limit</u>	VOC	43.90 tpy	2		
<u>Pollutant</u>	<u>Emission Limit</u>							
VOC	43.90 tpy							
7.	<p>Combined emissions from Cullet Return Baghouse #1 must not exceed the following:</p> <table border="0" data-bbox="251 919 941 993"> <tr> <td style="text-align: center;"><u>Pollutant</u></td> <td style="text-align: center;"><u>Emission Limit</u></td> </tr> <tr> <td>PM/PM<sub>10</sub> (filterable)</td> <td>0.005 gr/dscf, 1.9 lb/hr, 8.32 tpy</td> </tr> </table> <p>Annual emissions must be calculated from rated/tested airflow, actual hours of operation and the most recent emission test data consistent with Section 6 of the Technical Support Document for this Permit.</p>	<u>Pollutant</u>	<u>Emission Limit</u>	PM/PM <sub>10</sub> (filterable)	0.005 gr/dscf, 1.9 lb/hr, 8.32 tpy	3		
<u>Pollutant</u>	<u>Emission Limit</u>							
PM/PM <sub>10</sub> (filterable)	0.005 gr/dscf, 1.9 lb/hr, 8.32 tpy							
8.	<p>Combined emissions from Cullet Return Baghouse #2 must not exceed the following:</p> <table border="0" data-bbox="251 1192 958 1266"> <tr> <td style="text-align: center;"><u>Pollutant</u></td> <td style="text-align: center;"><u>Emission Limit</u></td> </tr> <tr> <td>PM/PM<sub>10</sub> (filterable)</td> <td>0.005 gr/dscf, 1.07 lb/hr, 4.69 tpy</td> </tr> </table> <p>Annual emissions must be calculated from rated/tested airflow, actual hours of operation and the most recent emission test data consistent with Section 6 of the Technical Support Document for this Permit.</p>	<u>Pollutant</u>	<u>Emission Limit</u>	PM/PM <sub>10</sub> (filterable)	0.005 gr/dscf, 1.07 lb/hr, 4.69 tpy	4		
<u>Pollutant</u>	<u>Emission Limit</u>							
PM/PM <sub>10</sub> (filterable)	0.005 gr/dscf, 1.07 lb/hr, 4.69 tpy							
9.	<p>Combined emissions from EP Dust Baghouses #1 and #2 must not exceed the following:</p> <table border="0" data-bbox="251 1465 958 1539"> <tr> <td style="text-align: center;"><u>Pollutant</u></td> <td style="text-align: center;"><u>Emission Limit</u></td> </tr> <tr> <td>PM/PM<sub>10</sub> (filterable)</td> <td>0.005 gr/dscf, 0.13 lb/hr, 0.56 tpy</td> </tr> </table> <p>Annual emissions must be calculated from rated airflow, actual hours of operation, and maximum emission concentration consistent with the methodology in Section 6 of the Technical Support Document for this Permit.</p>	<u>Pollutant</u>	<u>Emission Limit</u>	PM/PM <sub>10</sub> (filterable)	0.005 gr/dscf, 0.13 lb/hr, 0.56 tpy	5-6		
<u>Pollutant</u>	<u>Emission Limit</u>							
PM/PM <sub>10</sub> (filterable)	0.005 gr/dscf, 0.13 lb/hr, 0.56 tpy							
10.	<p>Visible emissions from approved dust collectors must not exceed 0% for more than 3 minutes in any one-hour period as determined in accordance with SWCAA Method 9 (Appendix A of SWCAA 400).</p>	3-6						

No.	Emission Limits	Equipment/ Activity										
11.	<p>Emissions from Emergency Generator #1 must not exceed the following:</p> <table border="0"> <thead> <tr> <th data-bbox="251 268 365 296"><u>Pollutant</u></th> <th data-bbox="537 268 732 296"><u>Emission Limit</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="251 302 316 329">NO<sub>x</sub></td> <td data-bbox="537 302 776 329">40.6 lb/hr, 1.01 tpy</td> </tr> <tr> <td data-bbox="251 336 300 363">CO</td> <td data-bbox="537 336 760 363">4.2 lb/hr, 0.10 tpy</td> </tr> <tr> <td data-bbox="251 369 321 396">VOC</td> <td data-bbox="537 369 760 396">1.1 lb/hr, 0.03 tpy</td> </tr> <tr> <td data-bbox="251 403 326 430">PM<sub>10</sub></td> <td data-bbox="537 403 760 430">0.9 lb/hr, 0.02 tpy</td> </tr> </tbody> </table> <p>Annual emissions must be calculated from actual hours of operation and applicable emission factors consistent with the methodology found in Section 6 of the Technical Support Document for this Permit.</p>	<u>Pollutant</u>	<u>Emission Limit</u>	NO <sub>x</sub>	40.6 lb/hr, 1.01 tpy	CO	4.2 lb/hr, 0.10 tpy	VOC	1.1 lb/hr, 0.03 tpy	PM <sub>10</sub>	0.9 lb/hr, 0.02 tpy	7
<u>Pollutant</u>	<u>Emission Limit</u>											
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CO	4.2 lb/hr, 0.10 tpy											
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PM <sub>10</sub>	0.9 lb/hr, 0.02 tpy											
12.	<p>Emissions from Emergency Generator #2 must not exceed the following:</p> <table border="0"> <thead> <tr> <th data-bbox="251 651 365 678"><u>Pollutant</u></th> <th data-bbox="537 651 732 678"><u>Emission Limit</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="251 684 316 711">NO<sub>x</sub></td> <td data-bbox="537 684 776 711">35.4 lb/hr, 0.62 tpy</td> </tr> <tr> <td data-bbox="251 718 300 745">CO</td> <td data-bbox="537 718 760 745">1.9 lb/hr, 0.03 tpy</td> </tr> <tr> <td data-bbox="251 751 321 779">VOC</td> <td data-bbox="537 751 760 779">0.7 lb/hr, 0.01 tpy</td> </tr> <tr> <td data-bbox="251 785 326 812">PM<sub>10</sub></td> <td data-bbox="537 785 760 812">0.2 lb/hr, 0.01 tpy</td> </tr> </tbody> </table> <p>Annual emissions must be calculated from actual hours of operation and applicable emission factors consistent with the methodology found in Section 6 of the Technical Support Document for this Permit.</p>	<u>Pollutant</u>	<u>Emission Limit</u>	NO <sub>x</sub>	35.4 lb/hr, 0.62 tpy	CO	1.9 lb/hr, 0.03 tpy	VOC	0.7 lb/hr, 0.01 tpy	PM <sub>10</sub>	0.2 lb/hr, 0.01 tpy	8
<u>Pollutant</u>	<u>Emission Limit</u>											
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PM <sub>10</sub>	0.2 lb/hr, 0.01 tpy											
13.	<p>Visible emissions from diesel engine exhaust must not exceed 10% opacity for more than 3 minutes in any one-hour period as determined by a Certified Observer in accordance with SWCAA Method 9 (SWCAA 400, Appendix A). This limit does not apply during periods of cold start-up.</p>	7-8										
14.	<p>Combined emissions from operation of Miscellaneous Burners and Space Heaters must not exceed the following:</p> <table border="0"> <thead> <tr> <th data-bbox="251 1234 365 1262"><u>Pollutant</u></th> <th data-bbox="537 1234 732 1262"><u>Emission Limit</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="251 1268 316 1295">NO<sub>x</sub></td> <td data-bbox="537 1268 760 1295">1.9 lb/hr, 3.00 tpy</td> </tr> <tr> <td data-bbox="251 1302 300 1329">CO</td> <td data-bbox="537 1302 760 1329">1.6 lb/hr, 2.51 tpy</td> </tr> <tr> <td data-bbox="251 1335 326 1362">PM<sub>10</sub></td> <td data-bbox="537 1335 760 1362">0.14 lb/hr, 0.23 tpy</td> </tr> </tbody> </table> <p>Annual emissions must be calculated from actual fuel consumption and applicable emission factors consistent with the methodology found in Section 6 of the Technical Support Document for this Permit.</p>	<u>Pollutant</u>	<u>Emission Limit</u>	NO <sub>x</sub>	1.9 lb/hr, 3.00 tpy	CO	1.6 lb/hr, 2.51 tpy	PM <sub>10</sub>	0.14 lb/hr, 0.23 tpy	9		
<u>Pollutant</u>	<u>Emission Limit</u>											
NO <sub>x</sub>	1.9 lb/hr, 3.00 tpy											
CO	1.6 lb/hr, 2.51 tpy											
PM <sub>10</sub>	0.14 lb/hr, 0.23 tpy											
15.	<p>Visible emissions from Miscellaneous Burners and Space Heaters must not exceed 0% opacity for more than 3 minutes in any one-hour period as determined by a Certified Observer in accordance with SWCAA Method 9 (SWCAA 400, Appendix A).</p>	9										

### Operating Limits and Requirements

No.	Operating Limits and Requirements	Equipment/ Activity
16.	<p>Reasonable precautions must be taken at all times to prevent and minimize fugitive emissions from plant operations.</p>	Facility-wide

No.	Operating Limits and Requirements	Equipment/ Activity
17.	The permittee must use recognized good practice and procedures to reduce odors to a reasonable minimum.	Facility-wide
18.	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.	1-9
19.	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.	1-9
20.	The Glass Furnace must fire only natural gas as defined in 40 CFR 60.41b.	1
21.	Glass Furnace glass draw rate (24-hour avg) must not be greater than 1.11 times the lowest glass draw rate during the most recent emission test in which all criteria pollutants cited in Appendix A were tested.	1
22.	The Glass Furnace must be equipped with an ESP and Spray Dryer for control of SO <sub>2</sub> and PM emissions. The ESP/Spray Dryer combination must be operated during normal Glass Furnace operation.	1
23.	The Glass Furnace must be equipped with a selective catalytic reduction (SCR) system guaranteed by the manufacturer to achieve a minimum NO <sub>x</sub> emission control efficiency of 80%. The SCR system must be certified and operated during normal Glass Furnace operation.	1
24.	The Glass Furnace ESP, Spray Dryer and SCR system may each be shut down for up to five days annually for routine maintenance. Maintenance of each system may be done independently. Process emissions may by-pass the affected control system during the maintenance period. SCR system equipment maintenance must only occur during the period from May to October.	1
25.	SO <sub>2</sub> use in the annealing Lehr must not exceed 0.25 lb/tong, averaged monthly.	1
26.	Circulation air must be drawn through the hood located between the tin bath and Lehr at all times of glass production. Air collected in the hood must be routed to the Glass Furnace combustion air header and exhausted through the associated emission control system.	1
27.	Lubricant used in glass cutting operations must meet the specifications given in ASTM D-235 for Type 3C mineral spirits. Alternative lubricants may be used if approved in advance by SWCAA.	2
28.	Lubricant used for glass cutting must contain less than 1% benzene by weight.	2
29.	All containers for VOC containing materials must be kept securely closed with a lid in place except when in active use. Open containers for storage, transfer or disposal of VOC containing materials are prohibited. In addition, all VOC containing materials used to clean and/or flush handling equipment or distribution lines during clean up must be collected and stored in a closed container.	2



No.	Operating Limits and Requirements	Equipment/ Activity												
30.	The permittee must provide safe access and sampling ports for source testing of each exhaust stack after the final pollution control device. Safe access will consist of permanently constructed platforms on the stacks. The sampling ports will meet the requirements of 40 CFR, Part 60, Appendix A Method 1. Other arrangements may be acceptable if approved by SWCAA prior to installation.	1, 3-4												
31.	The permittee must install and maintain a pressure gauge capable of continuously monitoring the differential pressure across the filtration media in each approved dust collector.	4-6												
32.	Operation of Emergency Generator #1 for the purpose of maintenance and testing must not exceed 50 hr/yr. This limit does not apply to periods of emergency service.	7												
33.	Operation of Emergency Generator #2 for the purpose of maintenance and testing must not exceed 35 hr/yr. This limit does not apply to periods of emergency service.	8												
34.	Emergency generator diesel engines must be fired on #2 diesel or better. Maximum fuel sulfur content must not exceed 0.0015% by weight. Any fuel other than #2 diesel must be approved by SWCAA in writing prior to use.	7-8												
35.	Emergency generator diesel engines must be equipped with a non-resettable hour meter to record hours of operation.	7-8												
36.	The permittee must test only one emergency generator at any given time.	7-8												
37.	Emergency generator testing must not occur during any glass furnace control equipment maintenance period.	7-8												
38.	<p>Exhaust gases from process equipment must be discharged vertically at the minimum height listed below for each unit. Rain caps that inhibit vertical discharge are prohibited.</p> <table border="0" data-bbox="251 1207 1071 1423"> <thead> <tr> <th data-bbox="251 1207 747 1239"><u>Emission Unit</u></th> <th data-bbox="763 1207 1071 1239"><u>Minimum Height</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="251 1245 747 1276">Glass Furnace</td> <td data-bbox="763 1245 1071 1276">175' above ground level</td> </tr> <tr> <td data-bbox="251 1283 747 1314">Cullet Return Baghouse #1</td> <td data-bbox="763 1283 1071 1314">100' above ground level</td> </tr> <tr> <td data-bbox="251 1320 747 1352">Cullet Return Baghouse #2</td> <td data-bbox="763 1320 1071 1352">32.5' above ground level</td> </tr> <tr> <td data-bbox="251 1358 747 1390">Emergency Generator #1</td> <td data-bbox="763 1358 1071 1390">58' above ground level</td> </tr> <tr> <td data-bbox="251 1396 747 1428">Emergency Generator #2</td> <td data-bbox="763 1396 1071 1428">58' above ground level</td> </tr> </tbody> </table>	<u>Emission Unit</u>	<u>Minimum Height</u>	Glass Furnace	175' above ground level	Cullet Return Baghouse #1	100' above ground level	Cullet Return Baghouse #2	32.5' above ground level	Emergency Generator #1	58' above ground level	Emergency Generator #2	58' above ground level	1, 3-4, 7-8
<u>Emission Unit</u>	<u>Minimum Height</u>													
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Cullet Return Baghouse #2	32.5' above ground level													
Emergency Generator #1	58' above ground level													
Emergency Generator #2	58' above ground level													

### Monitoring and Recordkeeping Requirements

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
39.	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
40.	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.	1-9

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
41.	All records required by this Permit must be kept for a minimum period of no less than five years and must be maintained in a form readily available for inspection by SWCAA representatives.	1-9
42.	Excess emissions and upset conditions must be recorded for each occurrence.	1-9
43.	<p>The permittee must monitor and record the following information for the Glass Furnace:</p> <ul style="list-style-type: none"> <li>(a) Hours of operation;</li> <li>(b) Hourly glass draw (tons);</li> <li>(c) Hourly fuel consumption (MMBtu);</li> <li>(d) Hourly exhaust stack flowrate (scfm);</li> <li>(e) Hourly CEMS data for NO<sub>x</sub>, CO, and SO<sub>2</sub> (lbs);</li> <li>(f) Emission rate of NO<sub>x</sub>, CO and SO<sub>2</sub> on a production basis (lb/ton<sub>g</sub>) for each 24-hour period;</li> <li>(g) Monthly emission rate of VOC and PM (tons);</li> <li>(h) Monthly visible emission observations/data;</li> <li>(i) CEMS calibration and audit results;</li> <li>(j) Excess emissions, deviations from permit conditions, CAM excursions, and upset conditions;</li> <li>(k) Date and time of each hot fan transition;</li> <li>(l) Date and duration of each ESP/Spray Dryer maintenance period;</li> <li>(m) Date and duration of each SCR system maintenance period;</li> <li>(n) Date and time of each startup, shutdown and hot hold period; and</li> <li>(o) Maintenance and repair activities.</li> </ul>	1
44.	<p>The permittee must monitor and record the following information for the Annealing Lehr:</p> <ul style="list-style-type: none"> <li>(a) Beginning and ending weights of each SO<sub>2</sub> gas cylinder (lbs);</li> <li>(b) Monthly net consumption of SO<sub>2</sub> in the annealing lehr (lbs);</li> <li>(c) Monthly consumption of SO<sub>2</sub> in the annealing lehr on a production basis (lb/ton<sub>g</sub>); and</li> <li>(d) Date and duration of each instance when the air circulation hood was not exhausted to the glass furnace combustion air header.</li> </ul>	1
45.	<p>The permittee must monitor and record the following information for glass cutting operations:</p> <ul style="list-style-type: none"> <li>(a) Type and ASTM classification of each glass cutting lubricant used;</li> <li>(b) Vendor certification of composition for each type of glass cutting lubricant used;</li> <li>(c) Benzene content of each type of glass cutting lubricant used; and</li> <li>(d) Monthly consumption of each type of glass cutting lubricant (lbs).</li> </ul>	2
46.	<p>The permittee must monitor and record the following information for each material handling dust collector:</p> <ul style="list-style-type: none"> <li>(a) Monthly hours of operation;</li> <li>(b) Pressure drop across filtration media recorded weekly; and</li> <li>(c) Each occurrence of maintenance and repair activity.</li> </ul>	3-6

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
47.	<p>The permittee must monitor and record the following information for each emergency generator:</p> <ul style="list-style-type: none"> <li>(a) Monthly hours of nonemergency engine operation;</li> <li>(b) Monthly hours of emergency engine operation;</li> <li>(c) Certification of fuel sulfur content for each fuel shipment; and</li> <li>(d) Each occurrence of maintenance and repair activity.</li> </ul>	7-8
48.	<p>The permittee must monitor and record the following information for burner and space heater operation:</p> <ul style="list-style-type: none"> <li>(a) Combined monthly fuel consumption (MMBtu); and</li> <li>(b) Each maintenance and repair activity.</li> </ul>	9

### Emission Monitoring and Testing Requirements

No.	Emission Monitoring and Testing Requirements	Equipment/ Activity
49.	The permittee must conduct periodic emission testing of the Glass Furnace as described in Appendix A of this Permit.	1
50.	<p>The permittee must install and maintain a CEMS to measure the emission rate of NO<sub>x</sub>, CO and SO<sub>2</sub> from the Glass Furnace exhaust stack. Each CEMS must be maintained and certified in accordance with Appendix B of this Permit.</p> <p>Hourly emission rates must be calculated based on monitored emission concentration and exhaust flowrate. Hourly emission averages must be based on discrete clock hours (block average). 24-hr average emission concentrations must be defined as the average emission concentration during each of the most recent 24 operating hours excluding startup/shutdown periods. Production basis emission rates must be determined by dividing the mass of monitored emissions by the monitored weight of glass draw.</p>	1
51.	On a monthly basis, the permittee must monitor and record visible emissions from the exhaust stack of the Glass Furnace in accordance with SWCAA Method 9. Visible emissions data must be collected for a minimum of 20 minutes. If any individual opacity reading is in excess of applicable limits, visible emissions data must be collected for an additional 20 minutes. A maximum of 60 minutes is required by this requirement. A continuous monitoring method may be used in lieu of Method 9 observations.	1
52.	The permittee must conduct periodic emission testing of Cullet Return Baghouse #1 as described in Appendix C of this Permit.	3
53.	The permittee must conduct periodic emission testing of Cullet Return Baghouse #2 as described in Appendix D of this Permit.	4

No.	Emission Monitoring and Testing Requirements	Equipment/ Activity
54.	<p>If SWCAA issues a Notice of Violation for excess visible emissions from an EP Dust baghouse, the affected baghouse may subsequently be required to perform an emission test and/or periodic emission testing. If such emission testing is required, the affected baghouse must be emission tested no later than 60 days following the source's receipt of the Notice of Violation. Under this provision, routine periodic emission testing of the affected baghouse is limited to a maximum frequency of once every 60 months. All emission testing must be conducted in accordance with Appendix E of this Permit.</p> <p>Nothing in this requirement restricts SWCAA's authority under SWCAA 400-106 to order or conduct emission testing.</p>	5-6

### Reporting Requirements

No.	Reporting Requirements	Equipment/ Activity
55.	<p>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:</p> <ul style="list-style-type: none"> <li>(a) Date and time of the complaint;</li> <li>(b) Name of the complainant;</li> <li>(c) Nature of the complaint; and</li> <li>(d) Description of corrective action taken in response to complaint (if any).</li> </ul>	Facility-wide
56.	<p>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.</p>	Facility-wide
57.	<p>Excess emissions and all other deviations from permit requirements must be reported to SWCAA as follows:</p> <ul style="list-style-type: none"> <li>(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;</li> <li>(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</li> <li>(c) No later than 30 days after the end of the month of discovery for all other excess emissions.</li> </ul>	1-9

No.	Reporting Requirements	Equipment/ Activity
58.	<p>The permittee must notify SWCAA at least seven days in advance of the use of any new material, which results in the emission of toxic or hazardous air pollutants not previously emitted. In response to the notification, SWCAA may require that a written report be submitted with the following:</p> <ul style="list-style-type: none"> <li>(a) A description of the proposed change(s) in materials with an SDS for each new material,</li> <li>(b) The date the change(s) is (are) to be made,</li> <li>(c) The change(s) in emissions of VOCs, HAPs and TAPs occurring as a result of the change, and</li> <li>(d) A summary of any applicable requirement(s) that would apply as a result of the change(s).</li> </ul> <p>If the proposed emission rate of a new TAP exceeds the applicable SQER and/or other emission limits established by this Permit or otherwise circumvents an applicable requirement, New Source Review may be required prior to making the proposed change.</p>	1-9
59.	<p>The permittee must provide written notification to SWCAA at least 10 calendar days prior to by-passing the Glass Furnace SCR system or ESP/Spray Dryer for purposes of routine maintenance. Notification must, at a minimum, include the following information:</p> <ul style="list-style-type: none"> <li>(a) Date maintenance is to commence;</li> <li>(b) Schedule of planned maintenance activity; and</li> <li>(c) List of measures employed to minimize emissions.</li> </ul>	1
60.	Emission test results must be reported to SWCAA in writing within 45 days of test completion.	1, 3-6
61.	The initial start-up of approved emission units must be reported to SWCAA in writing within 10 days of commencing operation.	8
62.	<p>The permittee must report the information listed below to SWCAA no later than 30 days after the end of each calendar quarter. The respective reporting period is the previous calendar quarter.</p> <ul style="list-style-type: none"> <li>(a) Hours of operation for each emission unit;</li> <li>(b) Hourly Glass Furnace fuel consumption (MMBtu);</li> <li>(c) Hourly glass draw (tons);</li> <li>(d) Hourly emissions data from each CEMS (lbs, lb/ton<sub>g</sub>);</li> <li>(e) Glass Furnace visible emission observations/data;</li> <li>(f) Results of all CEMS calibrations and audits conducted during the reporting period;</li> <li>(g) Identification of any periods during which required CEMS or CAM data is not available and an explanation of why the data is missing;</li> <li>(h) Monthly SO<sub>2</sub> consumption in the Annealing Lehr (lbs, lb/ton<sub>g</sub>);</li> <li>(i) Monthly consumption of each type of glass cutting lubricant (lbs);</li> <li>(j) Monthly hours of nonemergency engine operation;</li> <li>(k) Monthly hours of emergency engine operation;</li> <li>(l) Monthly fuel consumption by miscellaneous burners and space heaters (MMBtu); and</li> <li>(m) A summary of air emissions from each emission unit in terms consistent with applicable emission limits.</li> </ul>	1-9

**3. General Provisions**

No.	General Provisions
A.	For the purpose of ensuring compliance with this Permit, 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 Permit and applicable regulations and to perform or require such tests as may be deemed necessary.
B.	The provisions, terms and conditions of this Permit 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 Permit survive any transfer of ownership of the source or any portion thereof.
D.	This Permit must be posted conspicuously at or be readily available near the source.
E.	This Permit will be invalid if construction has not commenced within eighteen (18) months from date of issuance, if construction is discontinued for a period of eighteen (18) months or more, or if construction is not completed within a reasonable time.
F.	This Permit does not supersede requirements of other Agencies with jurisdiction and further, this Permit does not relieve the permittee of any requirements of any other governmental Agency. In addition to this Permit, the permittee may be required to obtain permits or approvals from other agencies with jurisdiction.
G.	Compliance with the terms of this Permit does not relieve the permittee from the responsibility of compliance with SWCAA General Regulations for Air Pollution Sources, previously issued Regulatory Orders, RCW 70.15A, Title 173 WAC or any other applicable emission control requirements, nor from the resulting liabilities and/or legal remedies for failure to comply.
H.	If any provision of this Permit is held to be invalid, all unaffected provisions of the Permit will remain in effect and be enforceable.
I.	No change in this Permit 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 70.15A impose such conditions as are reasonably necessary to assure the maintenance of compliance with the terms of this Permit, the Washington Clean Air Act, and the applicable rules and regulations adopted under the Washington Clean Air Act.

**Air Discharge Permit 21-3497 - Appendix A**  
**Emission Testing Requirements**  
**Glass Furnace / Annealing Lehr**

**1. Introduction:**

The purpose of this testing is to quantify emissions of PM, VOC, and TAPs from the glass furnace exhaust stack and to demonstrate compliance with the requirements of this permit.

**2. Testing Requirements:**

a. **Test Schedule.** Emission testing must be conducted according to the schedule below. Emission testing conducted more than three months prior to a scheduled due date will not satisfy the periodic source emission testing requirement unless prior written approval is obtained from SWCAA.

<u>Constituent</u>	<u>Test Schedule</u>
PM/PM <sub>10</sub> ( <i>total</i> )	Initial test conducted within 60 days of achieving maximum melt rate, but not later than 180 days after initial startup. Periodic testing conducted at least once every 12 months thereafter.
VOC	Initial test conducted within 60 days of achieving maximum melt rate, but not later than 180 days after initial startup. Periodic testing conducted at least once every 36 months thereafter.
Sulfuric acid	Initial test conducted within 60 days of achieving maximum melt rate, but not later than 180 days after initial startup. Only initial testing is required.
Total fluoride	Initial test conducted within 60 days of achieving maximum melt rate, but not later than 180 days after initial startup. Only initial testing is required.

b. **Test Plan.** A comprehensive test plan must be submitted to SWCAA for review and approval at least 14 calendar days prior to each test. SWCAA personnel must be informed at least 7 calendar days prior to testing so that a representative may be present during testing.

c. **Test Location.** Sampling must be conducted at the glass furnace exhaust stack

d. **Test Methods.** At least three (3) test runs of the specified minimum duration must be performed for each constituent listed below. Compliance must be demonstrated by averaging the results of the individual sampling runs.

<u>Constituent</u>	<u>Test Method or Equivalent</u>	<u>Minimum Test Duration</u>
Stack gas velocity	EPA Methods 1 and 2	N/A
O <sub>2</sub> and CO <sub>2</sub>	EPA Method 3 or 3A	N/A
Moisture	EPA Method 4	60 minutes
Filterable PM/PM <sub>10</sub>	EPA Method 5 or 201A	Sample >100 dscf
Condensable PM/PM <sub>10</sub>	EPA Method 202	Sample >100 dscf
VOC	EPA Method 25 or 25A or 25B	60 minutes
Sulfuric acid	EPA Method 8 or NCASI 8A	60 minutes
Total fluoride	EPA Method 26A	60 minutes

**Air Discharge Permit 21-3497 - Appendix A**  
**Emission Testing Requirements**  
**Glass Furnace / Annealing Lehr**

**3. Source Operation:**

- a. **Operating Capacity.** 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 the following:
  - Furnace heat input (MMBtu)
  - Weight of glass draw (tons)
  - Field power in each field of the glass furnace ESP (kW)
  - Contemporaneous furnace adjustments

**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. Unless otherwise directed by SWCAA, test reports must be provided in hard copy (paper) and an electronic format approved by SWCAA. Each test report must, at a minimum, 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 identification of SWCAA personnel who observed test,
  - (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,
  - (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. **Reported Units.** Test results must be presented in units of parts per million by volume (ppmv – gaseous pollutants), grains per dry standard cubic feet (gr/dscf- PM), pounds per hour (lb/hr) and pounds per ton of glass draw (lb/T<sub>G</sub>). VOC results must be reported on an "as propane" basis. Concentration values must be corrected to 7% excess oxygen.

**5. Changes to Testing Requirements:**

The emission test 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 to the testing schedule. Upon review of the request, SWCAA will inform the Permittee in writing of any approved modifications.



**Air Discharge Permit 21-3497 - Appendix B**  
**CEMS Audit Requirements**  
**Glass Furnace / Annealing Lehr**

**1. Introduction:**

The purpose of the following requirements is to demonstrate the accuracy and proper operation of the CEMS for NO<sub>x</sub>, CO and SO<sub>2</sub>.

**2. Performance Requirements:**

CEMS in use at the facility must satisfy the requirements of the performance specifications listed below. The Relative Accuracy Test Audit (RATA) required for each CEMS must be conducted during simultaneous test periods.

a. **NO<sub>x</sub>.** The continuous monitoring system for the emission rate of NO<sub>x</sub> from the exhaust stack of the glass furnace must be installed and maintained in accordance with the requirements and specifications found in the following regulations:

- 40 CFR 60 Appendix B, Performance Specification 6
- 40 CFR 60 Appendix F

b. **CO.** The continuous monitoring system for the emission rate of CO from the exhaust stack of the glass furnace must be installed and maintained in accordance with the requirements and specifications found in the following regulations:

- 40 CFR 60 Appendix B, Performance Specification 6
- 40 CFR 60 Appendix F

c. **SO<sub>2</sub>.** The continuous monitoring system for the emission rate of SO<sub>2</sub> from the exhaust stack of the glass furnace must be installed and maintained in accordance with the requirements and specifications found in the following regulations:

- 40 CFR 60 Appendix B, Performance Specification 6
- 40 CFR 60 Appendix F

d. **RATA/RAA/Audit Reports.** Quarterly audit results must be submitted to SWCAA as part of each quarterly report. RATA results must be submitted to SWCAA within 45 days of test completion.

**Air Discharge Permit 21-3497 - Appendix C**  
**Emission Testing Requirements**  
**Cullet Return Baghouse #1**

**1. Introduction:**

The purpose of this testing is to quantify emissions from Cullet Return Baghouse #1 and demonstrate compliance with the requirements of this permit.

**2. Testing Requirements:**

- a. **Test Schedule.** Cullet Return Baghouse #1 must be emission tested no later than March 2022. Periodic testing must be conducted every 36 months thereafter, no later than the end of March. Emission testing conducted more than three months prior to a scheduled due date will not satisfy the periodic source emission testing requirement unless prior written approval is obtained from SWCAA.
- b. **Test Plan.** A comprehensive test plan must be submitted to SWCAA for review and approval at least 14 calendar days prior to each test. SWCAA personnel must be informed at least 7 calendar days prior to testing so that a representative may be present during testing.
- c. **Test Location.** Sampling must be conducted at the exhaust stack of Cullet Return Baghouse #1.
- d. **Test Methods.** A minimum of 3 test runs must be performed for each constituent listed below to ensure the data are representative. Compliance must be demonstrated by averaging the results of the individual sampling runs.

<u>Constituent</u>	<u>Test Method or Equivalent</u>	<u>Minimum Test Duration</u>
Flow rate, temperature	EPA Method 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 or ODEQ Method 4	60 minutes
Filterable PM/PM <sub>10</sub>	EPA Method 5 or 201A	Sample >100 dscf

**3. Source Operation:**

- a. **Operating Capacity.** 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 the following:
  - Process startups and shutdowns
  - Differential pressure across filter media

**Air Discharge Permit 21-3497 - Appendix C**  
**Emission Testing Requirements**  
**Cullet Return Baghouse #1**

**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. Unless otherwise directed by SWCAA, test reports must be provided in hard copy (paper) and an electronic format approved by SWCAA. The test report must, at a minimum, 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 identification of SWCAA personnel who observed test,
  - (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,
  - (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. **Reported Units.** Test results must be presented in units of pounds per hour (lb/hr) and grains per dry standard cubic feet (gr/dscf). No oxygen correction is required.

**5. Changes to Testing Requirements:**

The emission test 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 to the testing schedule. Upon review of the request, SWCAA will inform the Permittee in writing of any approved modifications.

**Air Discharge Permit 21-3497 - Appendix D**  
**Emission Testing Requirements**  
**Cullet Return Baghouse #2**

**1. Introduction:**

The purpose of this testing is to quantify emissions from Cullet Return Baghouse #2 and demonstrate compliance with the requirements of this permit.

**2. Testing Requirements:**

- a. **Testing Schedule.** Cullet Return Baghouse #2 must be emission tested no later than March 2024. Periodic testing must be conducted every 60 months thereafter, no later than the end of March. Emission testing conducted more than three months prior to a scheduled due date will not satisfy the periodic source emission testing requirement unless prior written approval is obtained from SWCAA.
- b. **Test plan.** A comprehensive test plan must be submitted to SWCAA for review and approval at least 14 calendar days prior to each test. SWCAA personnel must be informed at least 7 calendar days prior to testing so that a representative may be present during testing.
- c. **Test Location.** Sampling must be conducted at the exhaust stack of Cullet Return Baghouse #2.
- d. **Test Methods.** A minimum of three (3) test runs must be performed for each constituent listed below to ensure the data are representative. Compliance must be demonstrated by averaging the results of the individual sampling runs.

<u>Constituent</u>	<u>Reference Test Method</u>	<u>Minimum Test Duration</u>
Flow rate, temperature	EPA Method 1 and 2	N/A
O <sub>2</sub> , CO <sub>2</sub>	EPA Method 3 or 3A	60 minutes
Moisture	EPA Method 4 or ODEQ Method 4	60 minutes
PM/PM <sub>10</sub>	EPA Method 5 or 17	60 minutes
Opacity	SWCAA Method 9	20 minutes

**3. Source Operation:**

- a. **Operating Capacity.** Source operations during the emissions test must be representative of maximum intended operating capacity.
- 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 the following:
  - Process startups and shutdowns
  - Differential pressure across filter media

**Air Discharge Permit 21-3497 - Appendix D**  
**Emission Testing Requirements**  
**Cullet Return Baghouse #2**

**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. Unless otherwise directed by SWCAA, test reports must be provided in hard copy (paper) and an electronic format acceptable to SWCAA. The test report must, at a minimum, 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 identification of SWCAA personnel who observed test,
  - (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,
  - (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. **Reported Units.** Test results must be presented in units of pounds per hour (lb/hr) and grains per dry standard cubic feet (gr/dscf). No oxygen correction is required.

**5. Changes to Testing Requirements:**

The emission test 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 to the testing schedule. Upon review of the request, SWCAA will inform the Permittee in writing of any approved modifications.

**Air Discharge Permit 21-3497 - Appendix E**  
**Emission Testing Requirements**  
**EP Dust Baghouses**

**1. Introduction:**

The purpose of this testing is to quantify emissions from EP Dust baghouses with identified excess visible emissions and demonstrate compliance with the requirements of this Permit.

**2. Testing Requirements:**

- a. **Testing schedule.** Each affected baghouse required by SWCAA to emission test due to excess visible emissions, must be emission tested no later than 60 days following the source’s receipt of the associated Notice of Violation. Periodic emission testing may also be required with a frequency not to exceed once every 60 months. Alternate testing schedules may be implemented if approved in writing by SWCAA in advance of the regularly scheduled test.
- b. **Test plan.** A comprehensive test plan must be submitted to SWCAA for review and approval at least 14 calendar days prior to each test. SWCAA personnel must be informed at least 7 calendar days prior to testing so that a representative may be present during testing.
- c. **Test Location.** Sampling must be conducted at the exhaust stack of the EP Dust Baghouse.
- d. **Test Methods.** A minimum of three (3) test runs must be performed for each constituent listed below to ensure the data are representative. Compliance must be demonstrated by averaging the results of the individual sampling runs.

<u>Constituent</u>	<u>Reference Test Method</u>	<u>Minimum Test Run Duration</u>
Stack gas velocity, flow rate	EPA Methods 1 and 2	N/A
O <sub>2</sub> , CO <sub>2</sub>	EPA Method 3 or 3A	60 minutes
Moisture	EPA Method 4 or ODEQ Method 4	60 minutes
PM/PM <sub>10</sub>	EPA Method 5 or 17	60 minutes
Opacity	SWCAA Method 9	20 minutes

**3. Source Operation:**

- a. **Operating Capacity.** 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 the following:
  - Process startups and shutdowns

**Air Discharge Permit 21-3497 - Appendix E**  
**Emission Testing Requirements**  
**EP Dust Baghouses**

**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. Unless otherwise directed by SWCAA, test reports must be provided in hard copy (paper) and an electronic format acceptable to SWCAA. The test report must, at a minimum, 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 identification of SWCAA personnel who observed test,
  - (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,
  - (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. All test results must be presented in units of pounds per hour (lb/hr) and grains per dry standard cubic feet (gr/dscf). No oxygen correction is required.

**5. Changes to Testing Requirements:**

The emission test 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 to the testing schedule. Upon review of the request, SWCAA will inform the Permittee in writing of any approved modifications.