



OCT 19 2011

Julia Bonardi  
Gallo Glass Company  
PO Box 1230  
Modesto, CA 95353

**Re: Proposed Authorities to Construct / Certificate of Conformity (Minor Mod)  
District Facility # N-1662  
Project # N-1103820**

Dear Ms. Bonardi:

Enclosed for your review is the District's analysis of your application for Authorities to Construct for the facility identified above. You have requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The Permits to Operate are being modified to require compliance with District Rule 4354 (Glass Melting Furnaces).

After addressing any EPA comments made during the 45-day comment period, the Authorities to Construct will be issued to the facility with a Certificate of Conformity. Prior to operating with modifications authorized by the Authorities to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Rupl Gill, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,

David Warner  
Director of Permit Services

DW:MS/st

Enclosures

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95356-8718  
Tel: (209) 557-6400 FAX: (209) 557-6475

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1990 E. Gettysburg Avenue  
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**San Joaquin Valley**  
AIR POLLUTION CONTROL DISTRICT



**HEALTHY AIR LIVING™**

OCT 19 2011

Gerardo C. Rios, Chief  
Permits Office  
Air Division  
U.S. EPA - Region IX  
75 Hawthorne St  
San Francisco, CA 94105

Re: **Proposed Authorities to Construct / Certificate of Conformity (Minor Mod)**  
**District Facility # N-1662**  
**Project # N-1103820**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for Gallo Glass Company, located at 605 S. Santa Cruz Avenue in Modesto, which has been issued a Title V permit. Gallo Glass Company is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. The Permits to Operate are being modified to require compliance with District Rule 4354 (Glass Melting Furnaces).

Enclosed is the engineering evaluation of this application, a copy of the current Title V permit, and proposed Authorities to Construct # N-1662-1-13, N-1662-2-14, N-1662-3-14 and N-1662-4-14 with Certificate of Conformity. After demonstrating compliance with the Authorities to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Rupi Gill, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,

David Warner  
Director of Permit Services

DW:MS/st

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# Authority to Construct Application Review

Facility Name: Gallo Glass Company  
Mailing Address: PO Box 1230  
Modesto, CA 95353

Date: October 5, 2011

Contact Person: John Neufeld  
Telephone: (209) 341-4532

Contact Person: Julia Bonardi  
Telephone: (209) 341-4298

Engineer: Mark Schonhoff

Application #: N-1662-1-13  
N-1662-2-14  
N-1662-3-14  
N-1662-4-14

Project #: N-1103820

Deemed Complete:

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## I. Proposal

The applicant is proposing to receive Authorities to Construct to bring the glass melting furnaces into compliance with the current version of District Rule 4354 (Glass Melting Furnaces). The modifications will consist of the following:

1. Authorize the replacement of the lime addition system nozzles. This modification is necessary for the compliance with the SOx limits of this rule.
2. Modify the SOx emission limits to the furnace battery rule level of:  
  
0.99 lb/ton of glass produced when 25 percent or more of the cullet is mixed color cullet or 0.81 lb/ton of glass produced when less than 25% of the cullet is mixed color cullet. These modifications are for compliance with section 5.3.5 of District Rule 4354.
3. Require a Continuous Emissions Monitoring System (CEMS) for SOx. This addition is for compliance with section 5.9.3 of District Rule 4354.
4. Require CO and VOC monitoring. This monitoring is required by section 5.9.2 of Rule 4354.
5. Place a glass production rate limit on each permit for compliance with section 6.1 of Rule 4354.

## II. Applicable Rules

- 2201 New and Modified Stationary Source Review Rule (4/21/11)
- 2520 Federally Mandated Operating Permits (6/21/01)
- 4001 New Source Performance Standards (4/14/99)
  - 40 CFR Part 60.290 - Standards of Performance for Glass Manufacturing Plants
- 4002 National Emission Standards for Hazardous Air Pollutants (5/20/04)
  - 40 CFR Part 63 Subpart SSSSSS – National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources
- 4101 Visible Emissions (11/15/01)
- 4102 Nuisance (12/17/92)
- 4201 Particulate Matter Concentration (12/17/92)
- 4354 Glass Melting Furnaces (9/16/2010)
- 4801 Sulfur Compounds (12/17/92)
- Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
- California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines
- 40 CFR Part 64 - Compliance Assurance Monitoring
- CH&SC 41700
- CH&SC 42301.6

## III. Project Location

605 S. Santa Cruz Avenue  
Modesto, CA

The equipment is not located within 1,000 feet of a K-12 school.

## IV. Process Description

The furnaces burn natural gas or LPG to melt cullet (crushed, recycled glass), sand, soda ash, limestone, and other raw materials. The molten glass is then pulled from the furnace and used to form bottles.

## V. Equipment Listing

### N-1662-1:

#### **Premodification Equipment Listing:**

GLASS FURNACE #1 WITH 10 MAXON GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED ELECTROSTATIC PRECIPITATOR AND SOX SCRUBBER.

**Post modification Equipment Listing:**

No Change.

**N-1662-2:**

**Premodification Equipment Listing:**

GLASS FURNACE #2 WITH 10 MAXON GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED ELECTROSTATIC PRECIPITATOR AND SOX SCRUBBER.

**Post modification Equipment Listing:**

No Change.

**N-1662-3:**

**Premodification Equipment Listing:**

GLASS FURNACE #3 WITH 10 MAXON GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (75 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED ELECTROSTATIC PRECIPITATOR AND SOX SCRUBBER.

**Post modification Equipment Listing:**

No Change.

**N-1662-4:**

**Premodification Equipment Listing:**

GLASS FURNACE #4 WITH 12 MAXON GAS/OXYGEN BURNERS AND ASSOCIATED FORMING EQUIPMENT (90 MMBTU/HR MAX HEAT CAPACITY). THIS FURNACE IS DUCTED THROUGH A STACK COMMON TO PERMIT UNITS N-1662-1, N-1662-2, N-1662-3 AND N-1662-4. THE FURNACES ARE SERVED BY A SHARED ELECTROSTATIC PRECIPITATOR AND SOX SCRUBBER.

**Post modification Equipment Listing:**

No Change.

## VI. Emission Control Technology Evaluation

No changes to the emission control systems will occur, therefore, an emission control technology evaluation is not necessary.

## VII. General Calculations

### A. Assumptions

Assumptions will be stated as they are made.

### B. Emission Factors

#### Premodification Emission Factors:

The following are from the current Permits to Operate

Permit Number	Emission Factors (lb/ton of glass produced)					
	NOx	CO	VOC	SOx	PM10	
					Normal Mode	ESP By-pass Mode
N-1662-1-12	1.5	0.04	0.25	2.35	0.49	0.71
N-1662-2-13	2.77	1.0	0.25	2.35	0.49	0.71
N-1662-3-13	2.48	0.01	0.25	2.35	0.49	0.71
N-1662-4-13	2.95	1.0	0.25	2.35	0.49	0.71

#### Postmodification Emission Factors:

The applicant has proposed to limit the SOx emissions utilizing the furnace battery allowance specified in section 5.3.5 of Rule 4354 because all of the furnaces may not be melting cullet that fall into the same mixed color category.

As it applies to emission factor calculations, section 5.3.5 requires that the air quality benefit factor of 10% that is specified in section 9.7.1 be applied.

Note: The applicant has proposed the combined furnace SOx emission limit allowed by section 5.3.5 of Rule 4354. This limit is lower than the single furnace limit of section 5.3.2. Once this option is chosen, it applies at all times, including times when only one furnace is operating.

The non-battery SOx limits are:

$EF_{\geq 25\% \text{ mixed color cullet}} = 1.1 \text{ lb/ton of glass produced}$

$EF_{<25\% \text{ mixed color cullet}} = 0.9 \text{ lb/ton of glass produced}$

The battery SOx limits are:

$EF_{\geq 25\% \text{ mixed color cullet}} = (1.1 \text{ lb/ton of glass produced})(1-0.1)$   
 $= 0.99 \text{ lb/ton of glass produced}$

$EF_{<25\% \text{ mixed color cullet}} = (0.9 \text{ lb/ton of glass produced})(1-0.1)$   
 $= 0.81 \text{ lb/ton of glass produced}$

Summary of Postmodification Emission Factors:

Permit Number	Emission Factors (lb/ton of glass produced)						
	NO <sub>x</sub>	CO	VOC	SO <sub>x</sub>		PM <sub>10</sub>	
				≥ 25% mixed color cullet	< 25% mixed color cullet	Normal Mode	ESP By-pass Mode
N-1662-1-13	1.5	0.04	0.25	0.99	0.81	0.49	0.71
N-1662-2-13	2.77	1.0	0.25	0.99	0.81	0.49	0.71
N-1662-3-13	2.48	0.01	0.25	0.99	0.81	0.49	0.71
N-1662-4-14	2.95	1.0	0.25	0.99	0.81	0.49	0.71

**C. Potential to Emit (PE)**

**1. Potential to Emit**

**Premodification:**

The following are the premodification potentials to emit and throughput ratings are from the Application Review document for project N-1100493.

**N-1662-1:**

Rated Throughput – 21.67 tons/hr (520.1 tons/day)

**Daily:**

NO<sub>x</sub> = 780.1 lb/day  
 CO = 20.8 lb/day  
 VOC = 130.0 lb/day  
 SO<sub>x</sub> = 1,222.2 lb/day  
 PM<sub>10</sub> = 369.3 lb/day

**Quarterly PM<sub>10</sub> Emissions:**

Quarter 1 = 22,936 lb/qtr  
 Quarter 2 = 23,190 lb/qtr  
 Quarter 3 = 23,445 lb/qtr  
 Quarter 4 = 23,445 lb/qtr

**Annual:**

NO<sub>x</sub> = 423,192 lb/yr  
 CO = 7,593 lb/yr  
 VOC = 47,457 lb/yr  
 SO<sub>x</sub> = 446,099 lb/yr  
 PM<sub>10</sub> = 93,016 lb/yr

**N-1662-2:**

Rated Throughput – 14.67 tons/hr (352.1 tons/day)

**Daily:**

NO<sub>x</sub> = 975.3 lb/day  
CO = 352.1 lb/day  
VOC = 88.0 lb/day  
SO<sub>x</sub> = 827.4 lb/day  
PM<sub>10</sub> = 250.0 lb/day

**Quarterly PM10 Emissions:**

Quarter 1 = 15,527 lb/qtr  
Quarter 2 = 15,699 lb/qtr  
Quarter 3 = 15,872 lb/qtr  
Quarter 4 = 15,872 lb/qtr

**Annual:**

NO<sub>x</sub> = 529,086 lb/yr  
CO = 128,509 lb/yr  
VOC = 32,127 lb/yr  
SO<sub>x</sub> = 301,997 lb/yr  
PM<sub>10</sub> = 62,970 lb/yr

**N-1662-3:**

Rated Throughput – 14.67 tons/hr (352.1 tons/day)

**Daily:**

NO<sub>x</sub> = 873.2 lb/day  
CO = 3.5 lb/day  
VOC = 88.0 lb/day  
SO<sub>x</sub> = 827.4 lb/day  
PM<sub>10</sub> = 250.0 lb/day

**Quarterly PM10 Emissions:**

Quarter 1 = 15,527 lb/qtr  
Quarter 2 = 15,699 lb/qtr  
Quarter 3 = 15,872 lb/qtr  
Quarter 4 = 15,872 lb/qtr

**Annual:**

NO<sub>x</sub> = 473,698 lb/yr

CO = 1,285 lb/yr

VOC = 32,127 lb/yr

SO<sub>x</sub> = 301,997 lb/yr

PM<sub>10</sub> = 62,970 lb/yr

**N-1662-4:**

Rated Throughput – 26.58 tons/hr (637.9 tons/day)

**Daily:**

NO<sub>x</sub> = 1,881.9 lb/day

CO = 637.9 lb/day

VOC = 159.5 lb/day

SO<sub>x</sub> = 1,499.1 lb/day

PM<sub>10</sub> = 452.9 lb/day

**Quarterly PM10 Emissions:**

Quarter 1 = 28,132 lb/qtr

Quarter 2 = 28,445 lb/qtr

Quarter 3 = 28,757 lb/qtr

Quarter 4 = 28,758 lb/qtr

**Annual:**

NO<sub>x</sub> = 1,020,902 lb/yr

CO = 232,841 lb/yr

VOC = 58,210 lb/yr

SO<sub>x</sub> = 547,176 lb/yr

PM<sub>10</sub> = 114,092 lb/yr

## Postmodification Potential to Emit:

### Daily Postmodification Potentials to Emit

There will be no changes to the throughputs or to the emission factors for NO<sub>x</sub>, CO, VOC or PM<sub>10</sub>. Therefore, the postmodification potentials to emit of these pollutants are equal to their premodification levels.

The emission limits for SO<sub>x</sub> must be reduced to the Rule 4354 levels, therefore, the postmodification SO<sub>x</sub> emissions must be calculated. The permits will not specify the mixed color cullet content of the process material, therefore, the worst case SO<sub>x</sub> emission factor will be utilized (0.99 lb/ton for cullet with a mixed color content of 25% or greater).

No changes to the quarterly PM<sub>10</sub> emissions will occur, therefore, they will not be shown here.

### N-1662-1-13

Rated Throughput: 520.1 tons/day

#### Daily:

NO<sub>x</sub> = 780.1 lb/day

CO = 20.8 lb/day

VOC = 130.0 lb/day

SO<sub>x</sub> = (0.99 lb/ton)(520.1 tons/day) = 514.9 lb/day

PM<sub>10</sub> = 369.3 lb/day

#### Annual:

NO<sub>x</sub> = 423,192 lb/yr

CO = 7,593 lb/yr

VOC = 47,457 lb/yr

SO<sub>x</sub> = (0.99 lb/ton)(520.1 tons/day)(365 days/yr) = 187,938 lb/yr

PM<sub>10</sub> = 93,016 lb/yr

**N-1662-2-14**

Rated Throughput: 352.1 tons/day

**Daily:**

$\text{NO}_x = 975.3 \text{ lb/day}$

$\text{CO} = 352.1 \text{ lb/day}$

$\text{VOC} = 88.0 \text{ lb/day}$

$\text{SO}_x = (0.99 \text{ lb/ton})(352.1 \text{ tons/day}) = 348.6 \text{ lb/day}$

$\text{PM}_{10} = 250.0 \text{ lb/day}$

**Annual:**

$\text{NO}_x = 529,086 \text{ lb/yr}$

$\text{CO} = 128,509 \text{ lb/yr}$

$\text{VOC} = 32,127 \text{ lb/yr}$

$\text{SO}_x = (0.99 \text{ lb/ton})(352.1 \text{ tons/day})(365 \text{ days/yr}) = 127,231 \text{ lb/yr}$

$\text{PM}_{10} = 62,970 \text{ lb/yr}$

**N-1662-3-14**

Rated Throughput: 352.1 tons/day

**Daily:**

$\text{NO}_x = 873.2 \text{ lb/day}$

$\text{CO} = 3.5 \text{ lb/day}$

$\text{VOC} = 88.0 \text{ lb/day}$

$\text{SO}_x = (0.99 \text{ lb/ton})(352.1 \text{ tons/day}) = 348.6 \text{ lb/day}$

$\text{PM}_{10} = 250.0 \text{ lb/day}$

**Annual:**

$\text{NO}_x = 473,698 \text{ lb/yr}$

$\text{CO} = 1,285 \text{ lb/yr}$

$\text{VOC} = 32,127 \text{ lb/yr}$

$\text{SO}_x = (0.99 \text{ lb/ton})(352.1 \text{ tons/day})(365 \text{ days/yr}) = 127,231 \text{ lb/yr}$

$\text{PM}_{10} = 62,970 \text{ lb/yr}$

**N-1662-4-14**

Rated Throughput: 637.9 tons/day

**Daily:**

NO<sub>x</sub> = 1,881.9 lb/day

CO = 637.9 lb/day

VOC = 159.5 lb/day

SO<sub>x</sub> = (0.99 lb/ton)(637.9 tons/day) = 631.5 lb/day

PM<sub>10</sub> = 452.9 lb/day

**Annual:**

NO<sub>x</sub> = 1,020,902 lb/yr

CO = 232,841 lb/yr

VOC = 58,210 lb/yr

SO<sub>x</sub> = (0.99 lb/ton)(637.9 tons/day)(365 days/yr) = 230,505 lb/yr

PM<sub>10</sub> = 114,092 lb/yr

**D. Increase in Permitted Emissions (IPE)**

**1. Quarterly IPE**

**N-1662-1-13:**

There will be a change only in the potential to emit of SO<sub>x</sub>.

PE<sub>1SO<sub>x</sub></sub>: 446,099 lb/yr

PE<sub>2SO<sub>x</sub></sub>: 187,938 lb/yr

IPE<sub>SO<sub>x</sub></sub> = 187,938 lb/yr – 446,099 lb/yr = -258,161 lb/yr (-64,540.25 lb/qtr)

The emission profile for this ATC will include the following:

	NO <sub>x</sub> (lb)	SO <sub>x</sub> (lb)	PM <sub>10</sub> (lb)	CO (lb)	VOC (lb)
Annual PE	423,192	187,938	93,016	7,593	47,457
Daily PE	780.1	514.9	369.3	20.8	130.0
Δ PE (Qtr 1)	0	-64,540	0	0	0
Δ PE (Qtr 2)	0	-64,540	0	0	0
Δ PE (Qtr 3)	0	-64,540	0	0	0
Δ PE (Qtr 4)	0	-64,541	0	0	0

**N-1662-2-14:**

There will be a change only in the potential to emit of SOx.

PE1<sub>SOx</sub>: 301,997 lb/yr  
 PE2<sub>SOx</sub>: 127,231 lb/yr

$$IPE_{SOx} = 127,231 \text{ lb/yr} - 301,997 \text{ lb/yr} = -174,766 \text{ lb/yr} (-43,691.5 \text{ lb/qtr})$$

The emission profile for this ATC will include the following:

	NOx (lb)	SOx (lb)	PM10 (lb)	CO (lb)	VOC (lb)
Annual PE	529,086	127,231	62,970	128,509	32,127
Daily PE	975.3	348.6	250.0	352.1	88.0
Δ PE (Qtr 1)	0	-43,691	0	0	0
Δ PE (Qtr 2)	0	-43,691	0	0	0
Δ PE (Qtr 3)	0	-43,692	0	0	0
Δ PE (Qtr 4)	0	-43,692	0	0	0

**N-1662-3-14:**

There will be a change only in the potential to emit of SOx.

PE1<sub>SOx</sub>: 301,997 lb/yr  
 PE2<sub>SOx</sub>: 127,231 lb/yr

$$IPE_{SOx} = 127,231 \text{ lb/yr} - 301,997 \text{ lb/yr} = -174,766 \text{ lb/yr} (-43,691.5 \text{ lb/qtr})$$

The emission profile for this ATC will include the following:

	NOx (lb)	SOx (lb)	PM10 (lb)	CO (lb)	VOC (lb)
Annual PE	473,698	127,231	62,970	1,285	32,127
Daily PE	873.2	348.6	250.0	3.5	88.0
Δ PE (Qtr 1)	0	-43,691	0	0	0
Δ PE (Qtr 2)	0	-43,691	0	0	0
Δ PE (Qtr 3)	0	-43,692	0	0	0
Δ PE (Qtr 4)	0	-43,692	0	0	0

**N-1662-4-14:**

There will be a change only in the potential to emit of SOx.

PE1<sub>SOx</sub>: 547,176 lb/yr

PE2<sub>SOx</sub>: 230,505 lb/yr

$$IPE_{SOx} = 230,505 \text{ lb/yr} - 547,176 \text{ lb/yr} = -316,671 \text{ lb/yr} (-79,167.75 \text{ lb/qtr})$$

The emission profile for this ATC will include the following:

	NOx (lb)	SOx (lb)	PM10 (lb)	CO (lb)	VOC (lb)
Annual PE	1,020,902	230,505	114,092	232,841	58,210
Daily PE	1,881.9	631.5	452.9	637.9	159.5
Δ PE (Qtr 1)	0	-79,167	0	0	0
Δ PE (Qtr 2)	0	-79,168	0	0	0
Δ PE (Qtr 3)	0	-79,168	0	0	0
Δ PE (Qtr 4)	0	-79,168	0	0	0

**2. Adjusted Increase in Permitted Emissions (AIPE)**

AIPE is used to determine whether or not Best Available Control Technology (BACT) is required for modified units.

$$AIPE = PE2 - HAPE$$

Where: PE2 is the post project PE, in lb/day  
HAPE is the Historically Adjusted Potential to Emit, in lb/day.

$$\text{Where: } HAPE = PE1(EF2/EF1)$$

Where: PE1 is the pre-project PE, in lb/day  
EF1 is the pre-project emission factor  
EF2 is the post-project emission factor

Note: If EF2 is greater than EF1, then EF2/EF1 is set to 1

As previously shown, there will not be an increase in the potential to emit or in the emission factor for any pollutant from any of the units currently under consideration. Therefore, AIPE is zero for all pollutants from all of the emission units.

## E. Facility Emissions

### 1. Pre Project Stationary Source Potential to Emit (SSPE1)

SSPE1 calculations are in Appendix C of this document. As can be seen, the facility emissions are over the offset threshold for all pollutants without consideration of ERC quantities. Therefore, inclusion of ERC's in the SSPE1 balance is not necessary.

Facilities N-1662 and N-2360 are the same Stationary Source as defined in Rule 2201, therefore, the potential to emit of the permit unit at facility N-2360 will be included in the SSPE balances.

Permit #	SSPE1 (lb/yr)				
	NOx	CO	VOC	SOx	PM10
N-1662-1-12	423,192	7,593	47,457	446,099	93,016
N-1662-2-13	529,086	128,509	32,127	301,997	62,970
N-1662-3-13	473,698	1,285	32,127	301,997	62,970
N-1662-4-13	1,020,902	232,841	58,210	547,176	114,092
N-1662-5-2	0	0	0	0	1,840
N-1662-6-5	0	0	0	0	27,156
N-1662-7-2	0	0	0	0	114
N-1662-8-9	1,199	1,890	78	1,552	11,570
N-1662-10-2	5,994	1,297	488	2	171
N-1662-11-2	5,994	1,297	488	2	171
N-1662-12-2	5,994	1,297	488	2	171
N-1662-13-4	483	813	6	1	4
N-1662-14-6	0	0	0	0	112,524
N-1662-15-0	324	1,350	27	26	108
N-2360-1-6	324	1,350	27	26	108
<b>Total w/o ERC's</b>	<b>2,467,190</b>	<b>379,522</b>	<b>171,523</b>	<b>1,598,880</b>	<b>486,985</b>

## 2. Post Project Stationary Source Potential to Emit (SSPE2)

SSPE2 (lb/yr)					
Permit #	NOx	CO	VOC	SOx	PM10
N-1662-1-13	423,192	7,593	47,457	187,938	93,016
N-1662-2-14	529,086	128,509	32,127	127,231	62,970
N-1662-3-14	473,698	1,285	32,127	127,231	62,970
N-1662-4-14	1,020,902	232,841	58,210	230,505	114,092
N-1662-5-2	0	0	0	0	1,840
N-1662-6-5	0	0	0	0	27,156
N-1662-7-2	0	0	0	0	114
N-1662-8-9	1,199	1,890	78	1,552	11,570
N-1662-10-2	5,994	1,297	488	2	171
N-1662-11-2	5,994	1,297	488	2	171
N-1662-12-2	5,994	1,297	488	2	171
N-1662-13-4	483	813	6	1	4
N-1662-14-6	0	0	0	0	112,524
N-1662-15-0	324	1,350	27	26	108
N-2360-1-6	324	1,350	27	26	108
Total w/o ERC's	2,467,190	379,522	171,523	674,516	486,985

## 3. Stationary Source Increase in Permitted Emissions (SSIPE)

$$\text{SSIPE} = \text{SSPE2} - \text{SSPE1}$$

The SSPE1 and SSPE2 balances are from sections VII.E.1 and VII.E.2 of this document.

	SSPE2 (lb/yr)	SSPE1 (lb/yr)	SSIPE (lb/yr)
NOx	2,467,190	2,467,190	0
CO	379,522	379,522	0
VOC	171,523	171,523	0
SOx	674,516	1,598,880	0
PM10	486,985	486,985	0

## 4. Baseline Emissions

Baseline Emissions will not be utilized during the processing of these applications. Therefore, Baseline Emission calculations are not necessary.

## F. Major Source Determination

The Major Source thresholds, the facility potentials to emit and whether or not the facility is a Major Source are presented on the following table. The Major Source thresholds are from Section 3.24.1.

Pollutant	Threshold (lb/yr)	Facility PE (lb/yr)	Major Source
NOx	20,000	2,467,190	Yes
CO	200,000	379,522	Yes
VOC	20,000	171,523	Yes
SOx	140,000	674,516	Yes
PM10	140,000	486,985	Yes

## G. Major Modification Determination

### **SB-288 Major Modification:**

The purpose of SB-288 Major Modification calculations is to determine the following:

If Best Available Control Technology (BACT) is triggered for a new or modified emission unit that results in a Major Modification (District Rule 2201, §4.1.3); and

If a public notification is triggered (District Rule 2201, §5.4.1).

The proposed modifications are solely for compliance with District Rule 4354 and there will not be an increase in the production capacity of any of the units. Therefore, per Case 3 of draft District Policy "*Implementation of Rule 2201 (as amended on 12/18/08 and effective on 6/10/10) for SB288 Major Modifications and Federal Major Modifications*", the emissions increases are presumed to be zero. Therefore, this permitting action is not an SB-288 Major Modification.

### **Federal Major Modification:**

The proposed modifications are solely for compliance with District Rule 4354 and there will not be an increase in the production capacity of any of the units. Therefore, per Case 3 of draft District Policy "*Implementation of Rule 2201 (as amended on 12/18/08 and effective on 6/10/10) for SB288 Major Modifications and Federal Major Modifications*", the emissions increases are presumed to be zero. Therefore, this permitting action is not a Federal Major Modification.

## VIII. Compliance

### Rule 2201 New and Modified Stationary Source Review Rule

#### Rule Applicability Determination:

The following is a list of each proposed permitting action and a discussion regarding whether that aspect of the permitting action is subject to this rule:

1. Authorize the replacement of the lime addition system nozzles. This modification is necessary for the compliance with the SO<sub>x</sub> limits of this rule.

This is a structural change to the permit units and will result in the SO<sub>x</sub> emission limit change discussed in #2 below. Therefore, this portion of the permitting action is subject to Rule 2201.

2. Modify the SO<sub>x</sub> emission limits to the level specified in Rule 4354.

As discussed in item 1 above, this aspect of the permitting action is a Modification as defined in this rule. Therefore, this portion of the permitting action is subject to Rule 2201.

3. Require a Continuous Emissions Monitoring System (CEMS) for SO<sub>x</sub>. This addition is for compliance with section 5.9.3 of District Rule 4354.

This aspect of the permitting action does not meet any of the Rule 2201, section 3.24 criteria required to be a Modification. Therefore, this portion of the permitting action is not subject to Rule 2201.

4. Require CO and VOC monitoring. This monitoring is required by section 5.9.2 of Rule 4354.

This aspect of the permitting action does not meet any of the Rule 2201, section 3.24 criteria required to be a Modification. Therefore, this portion of the permitting action is not subject to Rule 2201.

5. Place a glass production rate limit on the permit for each furnace for compliance with section 6.1 of Rule 4354

The units have implied throughput limits that are equal to their current rating and since that rating will not be increased by any means, including de-bottlenecking, there will not be an increase in rating. Therefore, since the throughput limits are being placed on the permits for compliance with Rule 4354, this portion of the permitting action does not meet the Rule 2201, section 3.24 definition of Modification. Therefore, this portion of the permitting action is not subject to Rule 2201.

## **A. BACT**

### **1. BACT Applicability**

The only portion of this permitting action that is subject to Rule 2201 is the modification of an emission control technique (lime system) solely for the purpose of compliance with the SO<sub>x</sub> limit of Rule 4354. Therefore, this permitting action is exempt from BACT per section 4.2.3 of this rule.

## **B. OFFSETS**

The only portion of this permitting action that is subject to Rule 2201 is the modification of an emission control technique (lime system) solely for the purpose of compliance with the SO<sub>x</sub> limit of Rule 4354. Therefore, this permitting action is exempt from offsets per section 4.6.8 of this rule.

## **C. PUBLIC NOTIFICATION**

### **1. Applicability**

District Rule 2201 section 5.4 requires a public notification for the affected pollutants from the following types of projects:

- a. New Major Sources
- b. Major Modifications
- c. New emission units with a PE > 100 lb/day of any one pollutant (IPE Notifications)
- d. Modifications with SSPE1 below an offset threshold and SSPE 2 above an offset threshold on a pollutant by pollutant basis (Existing Facility Offset Threshold Exceedence Notification)
- e. New stationary sources with SSPE2 exceeding offset thresholds (New Facility Offset Threshold Exceedence Notification)
- f. Any permitting action with a SSIPE exceeding 20,000 lb/yr for any one pollutant. (SSIPE Notice)

#### **a. New Major Source Notice Determination:**

The facility is not new, therefore, a New Major Source Determination notice is not required.

#### **b. Major Modification Notice:**

As shown in section VII.G of this document, this modification is neither an SB-288 Major Modification or a Federal Major Modification. Therefore, a Major Modification notice is not required.

**c. PE Notification:**

A notification is required for each new emission unit with the potential to emit more than 100 pounds per day of any one affected pollutant.

This project does not include any new emission units, therefore, a public notice is not required.

**d. Existing Facility Offset Threshold Exceedence Notification**

The SSPE of no pollutant will go from below to above an offset threshold. Therefore, a public notification is not required.

**e. New Facility Offset Threshold Exceedence Notification**

The facility is not new, therefore, a notification is not required.

**f. SSIPE Notification:**

A notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/yr of any affected pollutant. As shown in section VII.E.3 of this document, the SSIPE of each pollutant will be less than 20,000 pounds per year. An SSIPE notification is not required.

**2. Public Notice**

As shown above, a public notification is not required.

**D. DAILY EMISSION LIMITS**

**N-1662-1-13**

The NO<sub>x</sub> emissions shall not exceed 1.5 lb/ton of glass produced. This performance based limit is to enforce the NO<sub>x</sub> emission reductions granted by emission reduction credit certificate N-106-2.

The CO emissions shall not exceed 0.04 lb/ton of glass produced. This performance based limit is to enforce the CO emission reductions granted by emission reduction credit certificate N-106-3.

The VOC emissions shall not exceed 0.25 lb/ton of glass produced.

The combined SO<sub>x</sub> emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average).

The combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average).

The PM10 emissions, except during electrostatic precipitator bypass episodes, shall not exceed 0.49 lb/ton of glass produced.

The PM10 emissions, during electrostatic precipitator bypass episodes, shall not exceed 0.71 lb/ton of glass produced.

The current permit to Operate currently includes the following condition (#42):

NOx, CO and VOC emissions during idling shall not exceed the emissions limits as calculated in Section 5.4.2 of District Rule 4354 (2/21/02). [District Rule 4354, 5.4.2] Y

That condition will be replaced with the following NOx, CO, VOC, SOx and PM10 limits, which reflect the requirements of the current version of Rule 4354. See section VIII (Rule 4354 Compliance) of this document for the calculation of these limits.

During furnace idling, NOx emissions shall not exceed 2,080.4 pounds in any one day.

During furnace idling, CO emissions shall not exceed 520.1 pounds in any one day.

During furnace idling, VOC emissions shall not exceed 130.0 pounds in any one day.

During furnace idling, SOx emissions shall not exceed 572.1 pounds in any one day when producing glass with equal to or greater than 25% by weight color cullet.

During furnace idling, SOx emissions shall not exceed 468.1 pounds in any one day when producing glass with less than 25% by weight color cullet.

During furnace idling, PM10 emissions shall not exceed 260.1 pounds in any one day.

#### **N-1662-2-14**

The NOx emissions shall not exceed 2.77 lb/ton of glass produced. This performance based limit is to enforce the NOx emission reductions granted by emission reduction credit certificate N-54-2.

The CO emissions shall not exceed 1.0 lb/ton of glass produced.

The VOC emissions shall not exceed 0.25 lb/ton of glass produced.

The combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average).

The combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average).

The PM10 emissions, except during electrostatic precipitator bypass episodes, shall not exceed 0.49 lb/ton of glass produced.

The PM10 emissions, during electrostatic precipitator bypass episodes, shall not exceed 0.71 lb/ton of glass produced.

The current permit to Operate currently includes the following condition (#42):

NOx, CO and VOC emissions during idling shall not exceed the emissions limits as calculated in Section 5.4.2 of District Rule 4354 (2/21/02). [District Rule 4354, 5.4.2] Y

That condition will be replaced with the following NOx, CO, VOC, SOx and PM10 limits, which reflect the requirements of the current version of Rule 4354. See section VIII (Rule 4354 Compliance) of this document for the calculation of these limits.

During furnace idling, NOx emissions shall not exceed 1,408.4 pounds in any one day.

During furnace idling, CO emissions shall not exceed 352.1 pounds in any one day.

During furnace idling, VOC emissions shall not exceed 88.0 pounds in any one day.

During furnace idling, SOx emissions shall not exceed 387.3 pounds in any one day when producing glass with equal to or greater than 25% by weight color cullet.

During furnace idling, SOx emissions shall not exceed 316.9 pounds in any one day when producing glass with less than 25% by weight color cullet.

During furnace idling, PM10 emissions shall not exceed 176.1 pounds in any one day.

#### **N-1662-3-14**

The NOx emissions shall not exceed 2.48 lb/ton of glass produced. This performance based limit is to enforce the NOx emission reductions granted by emission reduction credit certificate N-56-2.

The CO emissions shall not exceed 0.01 lb/ton of glass produced. This performance based limit is to enforce the CO emission reductions granted by emission reduction credit certificate N-56-3.

The VOC emissions shall not exceed 0.25 lb/ton of glass produced.

The combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average).

The combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average).

The PM10 emissions, except for during electrostatic precipitator bypass episodes, shall not exceed 0.49 lb/ton of glass produced.

The PM10 emissions, during electrostatic precipitator bypass episodes, shall not exceed 0.71 lb/ton of glass produced.

The current permit to Operate currently includes the following condition (#42):

NOx, CO and VOC emissions during idling shall not exceed the emissions limits as calculated in Section 5.4.2 of District Rule 4354 (2/21/02). [District Rule 4354, 5.4.2] Y

That condition will be replaced with the following NOx, CO, VOC, SOx and PM10 limits, which reflect the requirements of the current version of Rule 4354. See section VIII (Rule 4354 Compliance) of this document for the calculation of these limits.

During furnace idling, NOx emissions shall not exceed 1,408.4 pounds in any one day.

During furnace idling, CO emissions shall not exceed 352.1 pounds in any one day.

During furnace idling, VOC emissions shall not exceed 88.0 pounds in any one day.

During furnace idling, SOx emissions shall not exceed 387.3 pounds in any one day when producing glass with equal to or greater than 25% by weight color cullet.

During furnace idling, SOx emissions shall not exceed 316.9 pounds in any one day when producing glass with less than 25% by weight color cullet.

During furnace idling, PM10 emissions shall not exceed 176.1 pounds in any one day.

## **N-1662-4-14**

The NOx emissions shall not exceed 2.95 lb/ton of glass produced. This performance based limit is to enforce the NOx emission reductions granted by emission reduction credit certificate N-107-2.

The CO emissions shall not exceed 1.0 lb/ton of glass produced.

The VOC emissions shall not exceed 0.25 lb/ton of glass produced.

The combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with equal to or greater than 25% by weight color cullet, shall not exceed 0.99 lb/ton of glass produced (over a rolling 30 day average).

The combined SOx emissions from permit units N-1662-1, N-1662-2, N-1662-3 and N-1662-4, while producing glass with less than 25% by weight mixed color cullet, shall not exceed 0.81 lb/ton of glass produced (over a rolling 30 day average).

The PM10 emissions, except for during electrostatic precipitator bypass episodes, shall not exceed 0.49 lb/ton of glass produced.

The PM10 emissions, during electrostatic precipitator bypass episodes, shall not exceed 0.71 lb/ton of glass produced.

As shown in section VIII (Rule 4354 Compliance) of this document, Rule 4354 would allow up to 2,551 lb/day of NOx emission during furnace idle periods. However, the current PTO allows only 1,888.0 lb/day. The currently permitted value will be retained.

During furnace idling, NOx emissions shall not exceed 1,888 pounds in any one day.

The Current PTO allows up to 640 lb/day of CO and up to 160 lb/day of VOC to be emitted during furnace idle episodes. As shown in section VIII (Rule 4354 Compliance) of this document, Rule 4354 allows only up to 637.9 lb/day of CO and 159.5 lb/day of VOC to be emitted during furnace idle periods. Therefore, the CO and VOC limits will be modified to the following:

During furnace idling, CO emissions shall not exceed 637.9 pounds in any one day.

During furnace idling, VOC emissions shall not exceed 159.5 pounds in any one day.

The permits do not currently include SOx and PM10 limits during furnace idling episodes, therefore, the following conditions will be included on the ATC and the PTO. See section VIII (Rule 4354 Compliance) of this document for the calculation of these limits.

During furnace idling, SOx emissions shall not exceed 701.7 pounds in any one day while producing glass with equal to or greater than 25% by weight color cullet.

During furnace idling, SOx emissions shall not exceed 574.1 pounds in any one day while producing glass with less than 25% by weight color cullet.

During furnace idling, PM10 emissions shall not exceed 319.0 pounds in any one day.

## **E. Compliance Assurance**

### **1. Source Testing**

The facility showed compliance with all of the emission limits that will be included on these Authorities to Construct during the previous source test (5/13/2011), therefore, an initial source test is not required. Annual NOx, CO, VOC, SOx and PM10 testing may continue on its current schedule.

Note: These ATC's will allow the modification of the lime addition system to replace the injection nozzles. Per the applicant, this modification will allow more reliable compliance with the SOx emission limits. Such a modification does not require initial source testing.

### **2. Monitoring**

Refer to section VIII (Rule 4354 Compliance) for a discussion of the monitoring requirements.

### **3. Record Keeping**

Refer to section VIII (Rule 4354 Compliance) for a discussion of the Rule 4354 record keeping requirements.

To verify compliance with the throughput limits of these permits, records of the daily throughputs will be required.

### **4. Reporting**

As they apply to the equipment currently under consideration, only 40 CFR Part 64 (Compliance Assurance Monitoring) requires reporting. To ensure compliance with section 64.9 (Reporting and Record Keeping Requirements), the following condition will be placed on the ATC and PTO for each unit:

The facility operator shall submit the specific power monitoring reports required by 40 CFR Part 64.9.

## **Rule 2520 Federally Mandated Operating Permits**

The sole purpose of this permitting action is to comply with the requirements of District Rule 4354. Such a modification is a Minor Modification to the Title V permit. The applicant has proposed to receive the Authorities to Construct with Certificates of Conformity in accordance with the requirements of 40 CFR 70.6(c), 70.7 and 70.8. Therefore, the 45-day EPA comment period will be satisfied prior to the issuance of the ATC. The following two federally enforceable conditions will be placed on the Authorities to Construct:

- This Authority to Construct serves as a written Certificate of Conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c) [District Rule 2201] Y
- The permittee may construct or modify the equipment as authorized by this Authority to Construct at this time. Prior to operating with the modifications authorized by this Authority to Construct, the District shall receive an application for an Administrative Permit Amendment. [District Rule 2520, 5.3.4] Y

In accordance with Rule 2520, the application meets the procedural requirements of section 11.4 by including:

- A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs and
- The source's suggested draft permit (appendix A) and
- Certification by a responsible official (appendix D) that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used.

Per section 5.3.2 of this rule, the applicant must submit an application for an Administrative Amendment to the Title V permit prior to operating with the requested changes.

## **Rule 4001 New Source Performance Standards**

40 CFR Part 60 Subpart CC Section 60.290(b) states that the requirements of this subpart apply to any facility that commenced construction or underwent a modification after June 15, 1979. The units were installed prior to June 15, 1979 and have not undergone modifications as defined in section 60.2 since installation.

The units have undergone cold rebricking since installation but per section 60.14, such repairs are not considered modifications.

None of the furnaces currently under consideration are subject to this subpart.

## Rule 4002 National Emission Standards for Hazardous Air Pollutants

### 40 CFR Part 63 Subpart SSSSSS – National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources

This subpart applies to Area Sources of HAP emissions and includes furnace emission limits, source testing, monitoring, notification and record keeping requirements. It is not currently known whether or not the facility is a Major or Area Source of HAP emissions, but as shown below, the furnaces currently under consideration comply with this subpart even though they may not be required to.

#### Emission Limits:

Per section 63.11450(a)(1), which applies to equipment started up before December 26, 2007 applies to each of the units currently under consideration and limits the emissions to those specified in section 63.11451. Section 63.4451 refers to Table 1 of this subpart for emission limits. Table 1 limits the Metal HAP emissions to 0.02 lb/ton of glass produced. The following table shows the HAP emissions from the furnace battery. Those emissions were determined during the required initial source test.

Pollutant	Metal HAP Emission Rate (lb/hr)
Arsenic	0.104
Cadmium	0.00208
Chromium	0.00225
Lead	0.0695
Manganese	0.0000971
Nickel	0.0000929
Total	0.178

The throughputs during the source test were reported to be:

Furnace ID	Throughput (tons/hr)
N-1662-1 (furnace 1)	18.596
N-1662-2 (furnace 2)	13.012
N-1662-3 (furnace 3)	13.274
N-1662-4 (furnace 4)	19.146
Total	64.028

$$\text{Metal HAP Rate} = (0.178 \text{ lb/hr}) / (64.028 \text{ tons/hr}) = 0.00278 \text{ lb/ton}$$

Furnaces 1, 2, 3 and 4 were shown to comply with the emission limit of this rule.

#### Source Testing:

The furnaces are subject to the emission limits of Table 1 of this subpart, therefore, per section 63.11452(a), a performance test was required. The required test was performed.

**Monitoring:**

Per section 63.11454(b)(1), monitoring of secondary voltage and secondary electrical current to the ESP must be conducted. Per section 63.11454(a)(7)(i), this monitoring is required when the furnace is being charged with one or more of the glass manufacturing metal HAPs. As required by the current permits, such monitoring is conducted at all times.

**Notification:**

The notification date has passed. Prior to the initial source test, the District received a source test protocol and performance test results. Therefore, the notification requirements were met.

**Record Keeping:**

This section requires that various records be kept. Those records include the duration of start-ups and shutdowns, maintenance, excess emissions, CEMS calibrations, parametric monitoring system exceedences, nature of any malfunctions, inspections of duct work and control device operating conditions during the inspection, any corrective action taken.

Such records are kept.

**Rule 4101 Visible Emissions**

As long as the equipment is properly maintained and operated, the visible emissions are not expected to exceed 20% opacity for a period or periods aggregating more than 3 minutes in any one hour. Compliance with the provisions of this rule is expected.

**Rule 4102 Nuisance****A. California Health & Safety Code 41700 (Risk Management Review)**

There will not be an increase in glass production, fuel usage or in any emission factor. Therefore, no increase in the emissions of hazardous air pollutant (HAP) emissions will occur and there will not be an increase in health risk. A Risk Management Review is not required.

**B. Toxics BACT (T-BACT)**

There will not be an increase in HAP emissions, therefore, T-BACT is not required.

## Rule 4201 Particulate Matter Concentration

This rule limits the particulate matter concentration to 0.1 gr/dscf.

The worst case particulate matter emission concentration will occur during operation with the ESP by-passed. Compliance with the requirements of this rule was shown during the processing of the applications for project N-1052540 utilizing source test data. During the source tests, the units were utilizing the oxy-fuel system, which will result in the worst case particulate matter emission concentration because the exhaust stream will not include the inert portions of air that would increase the flow rate.

Continued compliance is expected.

## Rule 4202 Particulate Matter – Emission Rate

The purpose of this rule is to limit the TSP emission rate based on the throughput of the operation. The equation used to calculate the maximum allowable emission rate is:

$$E_{\max} = 17.31P^{0.16}, \text{ where } P > 30 \text{ tons/hr}$$

$$E_{\max} = 3.59P^{0.62}, \text{ where } P \leq 30 \text{ tons/hr}$$

Where: E = Maximum allowable emissions in lb/hr  
P = Process weight in tons/hr

### N-1662-1-13 (furnace 1):

Throughput: 21.67 tons/hr  
PE: (21.67 tons/hr)(0.71 lb/ton) = 15.4 lb/hr

$$E_{\max} = 3.59(21.67)^{0.62} = 24.2 \text{ lb/hr}$$

The PM10 emissions are much less than applicable total particulate matter limit ( $E_{\max}$ ) calculated above. Compliance with total particulate matter limit is expected.

### N-1662-2-14 (furnace 2):

### N-1662-3-14 (furnace 3):

The throughput capacity and the potentials to emit of PM are the same for each of these units, therefore, the following applies to all of these furnaces.

Throughput: 14.67 tons/hr  
PE: (14.67 tons/hr)(0.71 lb/ton) = 10.4 lb/hr

$$E_{\max} = 3.59(14.67)^{0.62} = 19.0 \text{ lb/hr}$$

The PM10 emissions are much less than applicable total particulate matter limit ( $E_{\max}$ ) calculated above. Compliance with total particulate matter limit is expected.

**N-1662-4-14 (furnace 4):**

Throughput: 26.58 tons/hr  
PE: (26.58 tons/hr)(0.71 lb/ton) = 18.9 lb/hr

$$E_{max} = 3.59(26.58)^{0.62} = 27.4 \text{ lb/hr}$$

The PM10 emissions are much less than applicable total particulate matter limit ( $E_{max}$ ) calculated above. Compliance with total particulate matter limit is expected.

**Rule 4354 Glass Melting Furnaces**

**Emission Limits:**

**NOx Emission Limits:**

Section 5.1.1 of this rule includes three emission levels that become increasingly stringent (Tier 2, Tier 3 and Tier 4). The facility is currently subject to the Tier 2 limit of 4.0 lb per ton of glass produced (over a 24 hour averaging period). The Tier 3 limit of 1.5 lb per ton of glass produced limit will not come into effect until 2014. The following table shows the proposed emission limits and whether compliance with the limit is expected. Per section 5.1.1, the emission limit does not apply during periods of start-up, shutdown or idling.

Permit Number	NOx (lb/ton of glass produced)	Compliant
N-1662-1-13	1.5	Yes
N-1662-2-14	2.77	Yes
N-1662-3-14	2.48	Yes
N-1662-4-14	2.95	Yes

As can be seen, the proposed NOx emission limits are less than the Tier 2 limit of 4.0 lb per ton of glass pulled, therefore, compliance is expected.

Note: The permits include a furnace battery NOx limit of 3.6 lb/ton of glass pulled. This limit complies with section 9.2, which states that such a limit may be as high as the applicable tier limit with a 10% air quality benefit factor applied.

Tier 2 Limit: 4.0 lb/ton of glass produced  
Air Quality Benefit Factor: 10%

$$\text{Emission Limit: } (4.0 \text{ lb/ton})(1-0.1) = 3.6 \text{ lb/ton}$$

Compliance with the furnace battery limit is expected also.

**CO and VOC Emission Limits:**

Section 5.2.1 includes CO and VOC limits. The CO limit is 1.0 lb per ton of glass produced and the VOC limit is 0.25 lb per ton of glass pulled. The table below shows the proposed emission limits and whether compliance with the limits is expected. Per

section 5.2.1, these emission limits do not apply during periods of start-up, shutdown or idling.

Permit Number	Emission limits (lb per ton of glass produced)		Compliant
	CO	VOC	
N-1662-1-13	0.04	0.25	Yes
N-1662-2-14	1.0	0.25	Yes
N-1662-3-14	0.01	0.25	Yes
N-1662-4-14	1.0	0.25	Yes

**SOx Emission Limits:**

The applicant has requested to limit the SOx emissions utilizing the furnace battery allowance specified in section 5.3.5 of Rule 4354 because all of the furnaces will not be melting cullet that fall into the same mixed cullet content category.

As it applies to emission factor calculations, section 5.3.5 requires that the air quality benefit factor specified in section 9.7.1 be applied.

The non-battery SOx limit are:

$$EF_{\geq 25\% \text{ mixed color cullet}} = 1.1 \text{ lb/ton of glass produced}$$

$$EF_{<25\% \text{ mixed color cullet}} = 0.9 \text{ lb/ton of glass produced}$$

The furnace battery SOx limits are:

$$EF_{\geq 25\% \text{ mixed color cullet}} = (1.1 \text{ lb/ton of glass produced})(1-0.1) = 0.99 \text{ lb/ton of glass produced}$$

$$EF_{<25\% \text{ mixed color cullet}} = (0.9 \text{ lb/ton of glass produced})(1-0.1) = 0.81 \text{ lb/ton of glass produced}$$

The Authorities to Construct and the Permits to Operate will include the above furnace battery limits, therefore, compliance is expected.

**PM10 Emission Limits:**

Section 5.4.1 limits the PM10 emissions to 0.50 lb per ton of glass produced. The table below shows the proposed emission limits and whether compliance with the limits is expected. Per section 5.4.1, the emission limits do not apply during periods of start-up, shutdown or idling and per section 5.10, these limits do not apply during routine maintenance of the electrostatic precipitator. The PM10 emissions from each unit is currently, and will continue to be 0.71 lb per ton of glass produced during by-pass episodes, which include periods of start-up, shutdown and idling.

Permit Number	PM10 (lb per ton of glass produced)	Compliant
N-1662-1-13	0.49	Yes
N-1662-2-14	0.49	Yes
N-1662-3-14	0.49	Yes
N-1662-4-14	0.49	Yes

**Idling Requirements:**

Section 5.7.2 states that the NOx, CO, VOC, SOx and PM10 emissions during idling shall not exceed the amount calculated utilizing the following equation:

$$E_{i, \max} = E_i \times \text{Capacity}$$

Where:  $E_{i, \max}$  is the maximum daily emissions of pollutant i during idling, in lb/day

$E_i$  is the applicable emission limit from Table 1, Table 2, Table 3 or Table 4 for pollutant I, in lb/ton of glass produced.

Capacity is the maximum daily capacity of the furnace, in tons of glass produced.

The following tables show  $E_i$ , the furnace capacity and  $E_{i, \max}$ .

Note: The air quality benefit factor utilized in the non-idle emission factor calculations does not apply to idling emission limits.

**Idling Emissions for unit N-1662-1-13:**

Pollutant	Capacity (tons/day)	$E_i$ (lb/ton of glass produced)	$E_{i, \max}$ (lb/day)
NOx	520.1	4.0 (Table 1)	2,080.4
CO		1.0 (Table 2)	520.1
VOC		0.25 (Table 2)	130.0
SOx ≥ 25.0% Colored Cullet		1.1 (Table 3)	572.1
SOx < 25.0% Colored Cullet		0.90 (Table 3)	468.1
PM10		0.50 (Table 4)	260.1

**Idling Emissions for unit N-1662-2-14 and N-1662-3-14:**

Pollutant	Capacity (tons/day)	$E_i$ (lb/ton of glass produced)	$E_{i, \max}$ (lb/day)
NOx	352.1	4.0 (Table 1)	1,408.4
CO		1.0 (Table 2)	352.1
VOC		0.25 (Table 2)	88.0
SOx ≥ 25.0% Colored Cullet		1.1 (Table 3)	387.3
SOx < 25.0% Colored Cullet		0.90 (Table 3)	316.9
PM10		0.50 (Table 4)	176.1

### Idling Emissions for unit N-1662-4-14:

Pollutant	Capacity (tons/day)	E <sub>i</sub> (lb/ton of glass produced)	E <sub>i, max</sub> (lb/day)
NOx	637.9	4.0 (Table 1)	2,551.6
CO		1.0 (Table 2)	637.9
VOC		0.25 (Table 2)	159.5
SOx ≥ 25.0% Colored Cullet		1.1 (Table 3)	701.7
SOx < 25.0% Colored Cullet		0.90 (Table 3)	574.1
PM10		0.50 (Table 4)	319.0

### Monitoring Requirements:

#### **NOx Monitoring:**

Section 5.9.1 requires that NOx be monitored utilizing an Continuous Emissions Monitoring System (CEMS). The applicant currently monitors the NOx from the furnace battery utilizing such a device and has proposed to continue to do so. Battery monitoring is allowed by this section.

#### **CO and VOC Monitoring:**

Section 5.9.2.1 requires the use of a CO CEMS and section 5.9.2.2 requires the use of a VOC CEMS. However, section 5.5.2.3 allows the option of monitoring key system parameters instead. The application is proposing to monitor key system parameters as allowed by section 5.9.2.2. A discussion of the proposal is below.

Cullet and other ingredients enter the furnace and are heated by a series of natural gas fired burners. At the end of the furnace opposite of the molten glass exit (front), foam that negatively impacts glass quality sometimes forms. It has been found that operating the burner at the front of the furnace in a slightly fuel rich fashion is effective in reducing or eliminating formation of the foam.

As a result of the burner operating in a rich condition, the exhaust includes unburned natural gas, which combusts at the flue temperature. The facility operator has stated that this combustion causes control of the VOC and CO to levels that comply with District Rule 4354. The operator further stated that maintaining the fuel to oxygen ratio at 1:1.75 or above (1 part fuel to 1.75 parts O<sub>2</sub>) will maintain the exhaust gas stoichiometry such that this combustion will continue to occur. Because of the nature of oxy-fuel furnaces, this ratio is very quickly precisely controllable. To ensure that the CO and VOC emission levels may be directly correlated to the air to fuel ratio, it will be verified during source testing.

To ensure compliance with the requirements of this section, the following conditions will be placed on each Authority to Construct and Permit to Operate.

The fuel to oxygen ratio shall be maintained within the range shown by the most recent source test to result in compliance with the CO and VOC limits of this

permit. The acceptable range of the oxygen to fuel ratio shall be established during the initial source test and during each subsequent annual source test.

The oxygen to fuel ratio shall be continuously monitored and recorded.

**SOx Monitoring:**

The applicant is proposing to comply with the SOx monitoring requirements by installing and operating a SOx CEMS as allowed by section 5.9.3.1. A single CEMS will be utilized to monitor the total SOx emissions from the furnace battery as allowed by section 5.9.3.3.

**PM10 Monitoring:**

Section 5.9.4.1 requires that the applicant monitor and record key system operating parameters to satisfy the PM10 monitoring requirements. The permits currently require monitoring and recording of the specific power of the electrostatic precipitator. Specific power is a measure of the voltage and current supplied to the electrostatic precipitator. The District has previously approved the monitoring and recording of this key system operating parameter, therefore, further discussion is not necessary.

**Routine Maintenance of Add-On Emission Control Systems:**

Per section 5.10, the emission limits of section 5.1 through 5.4 do not apply during periods of routine maintenance of add-on control devices if:

The combined duration of routine maintenance of all add-on controls does not exceed 144 hours per calendar year; and

Routine maintenance is conducted in a manner consistent with good air pollution control practices for minimizing emissions.

The current Permits to Operate limit the annual ESP by-pass duration to 144 hours per year and to minimize the amount of material that must be discarded due to low quality, the facility must properly operate the furnaces during ESP by-pass episodes.

**Administrative Requirements:**

**Permitted Glass Production Capacity:**

Section 6.1 requires that the permit for each furnace include its production capacity. To comply with this requirement, the following capacities will be placed on the Authorities to Construct and the Permits to Operate:

N-1662-1-13:	520.1 tons/day
N-1662-2-14:	352.1 tons/day
N-1662-3-14:	352.1 tons/day
N-1662-4-14:	637.9 tons/day

## **Record Keeping**

### **Sections 6.2.1 and 6.2.2:**

December 31, 2011 has passed, therefore, sections 6.2.1 and 6.2.2 are no longer in effect.

### **Section 6.3.1:**

To ensure compliance with the applicable record keeping requirements of this section, the following conditions will be placed on the Authorities to Construct and the Permits to Operate:

A daily record of the hours of operation, the amount of glass pulled from the furnace (in tons), the NO<sub>x</sub> emissions (in lb/ton of glass pulled), the SO<sub>x</sub> emissions (in lb/ton of glass pulled), the weight of mixed color mix cullet used, the total amount of cullet used (by weight) and the ratio of the mixed color cullet weight to the total cullet weight (in percent).

### **Section 6.3.2:**

CO, VOC and PM<sub>10</sub> will be monitored using an approved parametric monitoring arrangement. Therefore, the permit will include the following record keeping conditions.

The air to fuel ratio of each burner shall be continuously monitored and recorded.

The specific power of the electrostatic precipitator shall be continuously monitored and recorded.

### **Section 6.3.3:**

This section requires records of source tests, source test results, the acceptable range for each approved key system operating parameter established during the source test. To ensure compliance, the following condition will be included on each Authority to Construct and Permit to Operate.

The facility operator shall keep records of all source tests, all source test results, all maintenance and repair and all malfunctions. Records of the acceptable range for the air to fuel ratio & the specific power, which were established during source testing shall also be kept.

### **Section 6.3.4:**

This section requires that all records be retained for at least 5 years and requires that they be made available, during normal business hours, to the District, ARB and the EPA and that they be submitted to the same agencies upon request. The Authorities to Construct and the Permits to Operate will include such a condition.

## Source Testing Requirements:

Although the facility showed compliance with all applicable emission limits during the previous source test, the acceptable ranges for the key operating parameters to be monitored for CO, VOC and PM10 compliance were not established. Therefore, the ATC's will include conditions requiring the source testing necessary to establish these parameters.

## California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that all project specific emission unit(s) are exempt from Best Available Control Technology (BACT) requirements. Furthermore, the District conducted a Risk Management Review and concludes that potential health impacts are less than significant.

Issuance of permits for emissions units not subject to BACT requirements and with health impact less than significant is a matter of ensuring conformity with applicable District rules and regulations and does not require discretionary judgment or deliberation. Thus, the District concludes that this permitting action constitutes a ministerial approval. Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

## **Greenhouse Gas (GHG) Significance Determination**

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project. The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

## **40 CFR Part 64 – Compliance Assurance Monitoring (CAM)**

### **General CAM Applicability:**

For a unit to be subject to CAM, all of the following must be true:

1. The facility must be a Major Source
2. The unit must have an emission limit that is complied with utilizing a control device
3. The uncontrolled emissions from the unit must be in excess of the Major Source threshold.

### **CAM Requirements:**

The facility is a Major Source for NO<sub>x</sub>, CO, VOC, SO<sub>x</sub> and PM<sub>10</sub> and the uncontrolled emissions of each pollutant from each emission unit is in excess of the Major Source threshold. Therefore, each pollutant may be subject to CAM. Below is a CAM discussion for each pollutant.

#### **NO<sub>x</sub>:**

NO<sub>x</sub> is controlled utilizing oxy-fuel firing. Such a control technique does not meet the Part 64.1 definition of control device. Therefore, none of the units is subject to CAM for NO<sub>x</sub>.

#### **CO:**

CO is not controlled utilizing a control device as defined in Part 64.1. Therefore, none of the units is subject to CAM for CO.

#### **VOC:**

VOC is not controlled utilizing a control device as defined in Part 64.1. Therefore, none of the units is subject to CAM for VOC.

#### **SO<sub>x</sub>:**

This permitting action includes the installation of a CEMS for SO<sub>x</sub>, therefore, per Part 64.2(b)(vi), each unit is exempt from CAM for SO<sub>x</sub>.

**PM10:**

The facility currently monitors and records the specific power of the electrostatic precipitator (ESP). Specific power is a measure of the voltage and current supplied to the ESP plates. Since the effectiveness of the ESP could depend on its actual operation and maintenance, the section 64.2(v)(vi) exemption does not apply and the furnaces are subject to CAM for PM10.

The current Permits to Operate include the following conditions, which will ensure compliance with CAM requirements:

The specific power of the electrostatic precipitator shall be at least 70 milliwatts/acfm except during the bypass episodes allowed by this permit. [40 CFR Part 64] Y

Devices used to measure primary and secondary voltage and current shall be maintained in accordance with the manufacturer's specifications. [40 CFR Part 64] Y

The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Y

The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Y

**California Health & Safety Code 42301.6 (School Notice)**

The equipment will not be located within 1,000 feet of a K-12 school, therefore, a school notice is not required.

**IX. Recommendation**

Issue Authorities to Construct with the conditions on the attached draft Authorities to Construct after successful completion of the required COC notice.

**X. Billing Information**

**Premodification:**

Permit #	Description	Fee Schedule
N-1662-1	75 MMBtu/hr	3020-1-H
N-1662-2	75 MMBtu/hr	3020-1-H
N-1662-3	75 MMBtu/hr	3020-1-H
N-1662-4	90 MMBtu/hr	3020-2-H

**Post modification:**

No Change.

## **Appendices**

- Appendix A: Draft ATC
- Appendix B: Current PTO
- Appendix C: SSPE1 Calculations
- Appendix D: TV-009 Form

## **Appendix A**

### **Draft Authorities to Construct**

## **Appendix B**

### **Current Permits to Operate**

## **Appendix C**

### **SSPE1 Calculations**

**N-1662-5-2:**

From the Application Review document for Stanislaus County APCD application 5-027-05 (9/26/78), the potential to emit of PM10 is 0.21 lb/hr. Assuming an operating schedule of 8,760 hr/yr, the annual potential to emit is 1,840 lb/yr.

**N-1662-6-5:**

From the Application Review document for project N-970323, the potential to emit of PM10 is 74.4 lb/day. Assuming an operating schedule of 365 days/yr, the annual potential to emit is 27,156 lb.

**N-1662-7-2:**

From the Application Review document for the application for Stanislaus County APCD application 5-027-07, the potential to emit of PM10 is 0.013 lb/hr. Assuming an operating schedule of 8,760 hr/yr, the annual potential to emit is 114 lb/yr.

**N-1662-8-9:**

From the Application Review document for project N-1074121:

PE<sub>NOx</sub>: 1,199 lb/yr  
PE<sub>CO</sub>: 1,890 lb/yr  
PE<sub>VOC</sub>: 78 lb/yr  
PE<sub>SOx</sub>: 1,552 lb/yr  
PE<sub>PM10</sub>: 11,570 lb/yr

**N-1662-10-2, N-1662-11-2 and N-1662-12-2 (same for each):**

The NOx, CO, and VOC factors were derived from the values in Table 3.3-1 of EPA document AP-42 and the PM10 factor is from District guidance document GEAR 11d. The SOx emission factor is from District guidance document GEAR 11d and is for diesel fuel with a sulfur content of 15 ppmw.

NOx: 14.0 g/bhp-hr  
CO: 3.03 g/bhp-hr  
VOC: 1.14 g/bhp-hr  
SOx: 0.0051 g/bhp-hr  
PM10: 0.4 g/bhp-hr

Rating: 971.1 Bhp  
Op Hours: 200/yr (PTO)

NOx = (14 g/bhp-hr)(971.1 bhp)(200 hr/yr)(lb/453.6 g) = 5,994 lb/yr  
CO = (3.03 g/bhp-hr)(971.1 bhp)(200 hr/yr)(lb/453.6 g) = 1,297 lb/yr  
VOC = (1.14 g/bhp-hr)(971.1 bhp)(200 hr/yr)(lb/453.6 g) = 488 lb/yr  
SOx = (0.0051 g/bhp-hr)(971.1 bhp)(200 hr/yr)(lb/453.6 g) = 2 lb/yr  
PM10 = (0.4 g/bhp-hr)(971.1 bhp)(200 hr/yr)(lb/453.6 g) = 171 lb/yr

**N-1662-13-4:**

The NO<sub>x</sub>, CO, VOC and PM<sub>10</sub> emission factors below are from Table 3.2-3 of EPA document AP-42 and the SO<sub>x</sub> factor is from District Policy APR-1720.

NO<sub>x</sub>: 2.21 lb/MMBtu  
CO: 3.72 lb/MMBtu  
VOC: 0.0296 lb/MMBtu  
SO<sub>x</sub>: 0.00285 lb/MMBtu  
PM<sub>10</sub>: 0.019 lb/MMBtu

Engine Rating: 95 bhp  
Op Hours: 200/yr (PTO)  
BSFC: 11,500 Btu/bhp-hr (typical for natural gas fired units)

NO<sub>x</sub> = (2.21 lb/MMBtu)(95 bhp)(200 hr/yr)(11,500 Btu/bhp-hr) = 483 lb/yr  
CO = (3.72 lb/MMBtu)(95 bhp)(200 hr/yr)(11,500 Btu/bhp-hr) = 813 lb/yr  
VOC = (0.0296 lb/MMBtu)(95 bhp)(200 hr/yr)(11,500 Btu/bhp-hr) = 6 lb/yr  
SO<sub>x</sub> = (0.00285 lb/MMBtu)(95 bhp)(200 hr/yr)(11,500 Btu/bhp-hr) = 1 lb/yr  
PM<sub>10</sub> = (0.019 lb/MMBtu)(95 bhp)(200 hr/yr)(11,500 Btu/bhp-hr) = 4 lb/yr

**N-1662-14-6:**

From the current PTO:

Receiving and Storage Throughput: 2,275 tons/day  
Receiving and Storage Emission Limit: 0.1 lb/ton

Storage Silo Transfer Throughput: 1,224 tons/day  
Storage Silo Transfer Emission Limit: 0.066 lb/ton

$PE_{PM10} = [(2,275 \text{ tons/day})(0.1 \text{ lb/ton}) + (1,224 \text{ tons/day})(0.066 \text{ lb/ton})](365 \text{ days/yr}) = 112,524 \text{ lb/yr}$

**N-1662-15-0:**

From the current PTO:

Fuel Limit:  $9 \times 10^9$  Btu/yr (9,000 MMBtu/yr)

EF<sub>NO<sub>x</sub></sub>: 0.036 lb/MMBtu  
EF<sub>CO</sub>: 0.15 lb/MMBtu  
EF<sub>VOC</sub>: 0.003 lb/MMBtu  
EF<sub>SO<sub>x</sub></sub>: 0.00285 lb/MMBtu  
EF<sub>PM<sub>10</sub></sub>: 0.012 lb/MMBtu

PE<sub>NO<sub>x</sub></sub>: (0.036 lb/MMBtu)(9,000 MMBtu/yr) = 324 lb/yr  
PE<sub>CO</sub>: (0.15 lb/MMBtu)(9,000 MMBtu/yr) = 1,350 lb/yr

$PE_{VOC}: (0.003 \text{ lb/MMBtu})(9,000 \text{ MMBtu/yr}) = 27 \text{ lb/yr}$   
 $PE_{SOx}: (0.00285 \text{ lb/MMBtu})(9,000 \text{ MMBtu/yr}) = 26 \text{ lb/yr}$   
 $PE_{PM10}: (0.012 \text{ lb/MMBtu})(9,000 \text{ MMBtu/yr}) = 108 \text{ lb/yr}$

**N-2360-1-6:**

The annual fuel usage limits and emission factors for this unit are identical to those of unit N-1662-15-0. Therefore, the potentials to emit are identical also.

$PE_{NOx}: 324 \text{ lb/yr}$   
 $PE_{CO}: 1,350 \text{ lb/yr}$   
 $PE_{VOC}: 27 \text{ lb/yr}$   
 $PE_{SOx}: 26 \text{ lb/yr}$   
 $PE_{PM10}: 108 \text{ lb/yr}$

**Appendix D  
TV-009 Form**