



DEC 19 2013

Mr. Xiaosong Wang  
Pilkington North America, Inc.  
500 East Louise Ave  
Lathrop, CA 95330

**Re: Notice of Minor Title V Permit Modification**  
**District Facility # N-477**  
**Project # N-1131551**

Dear Mr. Wang:

Enclosed is the District's analysis of your application for minor Title V permit modification for the facility identified above. You proposed a Title V minor permit modification to modify Permit(s) to Operate (PTOs) N-477-10-8 of the facility's current Title V operating permit. The facility proposes to modify the PTO to show compliance with District Rule 4354.

Enclosed is the engineering evaluation with the following attachments: proposed modified Title V PTO(s) N-477-10-14, application, and previous Title V permit. This project will be finalized after the 45-day EPA comment period.

If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner  
Director of Permit Services

Enclosures

cc: Gerardo C. Rios, EPA (w/enclosure) via email

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

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**Northern Region**  
4800 Enterprise Way  
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# **TITLE V APPLICATION REVIEW**

Minor Modification  
Project #: N-1131551

Engineer: Tim Bush  
Date: December 16, 2013

Facility Number: N-477  
Facility Name: Pilkington North America, Inc  
Mailing Address: 500 E Louise Ave  
Lathrop, CA 95330

Contact Name: Kyle Sword  
Phone: (717) 255-1159

Responsible Official: Kyle Sword  
Title: Plant Manager

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## **I. PROPOSAL**

Pilkington North America, Inc is proposing a Title V minor permit modification to permit to operate N-477-10-8 of the Title V operating permit. Pilkington North America, Inc requests to list District Rule 4354 Tier 2 emission limits and Tier 4 early enhance option emission limits on the permit in units of pounds of emissions per ton of glass pulled on the permit.

The purpose of this evaluation is to identify all applicable requirements, determine if the facility will comply with the applicable requirements and to provide the legal and factual basis for the proposed revisions.

## **II. FACILITY LOCATION**

500 East Louise Ave  
Lathrop, CA

## **III. EQUIPMENT DESCRIPTION**

**N-477-10-14:** 200 MMBTU/HR GLASS MELTING FURNACE WITH ECLIPSE COMBUSTION MODEL WRSP10.XX LOW NOX BURNERS AND 3R NOX EMISSIONS CONTROL SYSTEM

#### **IV. SCOPE OF EPA AND PUBLIC REVIEW**

This change to a Title V permit is considered to be a minor modification and, as such, requires no public review.

#### **V. APPLICABLE REQUIREMENTS**

District Rule 2520, Federally Mandated Operating Permits (Adopted June 21, 2001)

#### **VI. DESCRIPTION OF PROPOSED MODIFICATIONS**

Because compliance with District Rule 4354 Tier 2 NO<sub>x</sub> emission limits may not be enforceable with the current hourly and monthly emission limits, Pilkington North America, Inc has proposed that the Rule limits, listed in pounds of NO<sub>x</sub> per ton of glass pulled, are listed on the permit. Similarly, the emission limits for CO and VOC on the current permit are based on hourly emission limits. Therefore, the Rule limits for SO<sub>x</sub>, PM<sub>10</sub>, CO and VOC, listed in pounds per ton of glass pulled, will be added to the permit.

The following changes will be made to the permit:

##### N-477-10-14

Permit conditions 19 and 22 on the proposed Permit to Operate were modified to include the Tier 2 NO<sub>x</sub> emission limits in units of pounds of NO<sub>x</sub> per ton of glass pulled. These conditions also incorporate the idling provisions by inserting "except during periods of idling and shutdown."

Permit conditions 20 and 23 on the proposed Permit to Operate were added to include the Tier 4 NO<sub>x</sub> early enhanced option emission limits in units of pounds of NO<sub>x</sub> per ton of glass pulled. The Tier 4 NO<sub>x</sub> early enhanced option emission limits are more stringent than the Tier 2 NO<sub>x</sub> emission limits referenced on the current permit. Since the current hourly and daily emission limits are no longer realistic at Tier 4 NO<sub>x</sub> early enhanced emission limits, they were removed from the conditions. These conditions also incorporate the idling and shutdown provisions by inserting "except during periods of idling and shutdown."

Permit condition 25 of the proposed permit was added to define a rolling three hour average.

Permit condition 26 on the proposed Permit to Operate was modified to replace "one calendar year" with "rolling 12-month period."

Permit conditions 27 and 28 on the proposed Permit to Operate were modified to include the Rule CO and VOC emission limits in pounds per ton of glass produced respectively. These conditions also incorporate the idling and shutdown provisions by inserting "except during periods of idling and shutdown."

Permit conditions 30, 32, and 33 on the proposed Permit to Operate were added to include the Rule PM10 and SOx emission limits in pounds per ton of glass produced. These conditions also incorporate the idling and shutdown provisions by inserting "except during periods of idling and shutdown."

Permit condition 34 was added to the proposed permit to define idling per Rule 4354.

Permit condition 35 was added to the proposed permit to define a shutdown per Rule 4354.

Permit condition 36 was added to the proposed permit to specify the utilization of the emission control system during periods of idling per or shutdown operation per Rule 4354.

Permit condition 37 was added to the proposed permit to specify the notification requirements for an idling or shutdown event per Rule 4354.

Permit condition 38 was added to the proposed permit to specify the emissions during periods of idling per Rule 4354.

Permit condition 50 on the proposed permit was modified to include SOx emissions.

Permit condition 51 was added to the proposed permit to specify the averaging requirements for PM10 per Rule 4354.

Permit condition 52 was added to the proposed permit to specify source testing requirements per Rule 4354.

Permit conditions 60, 61, and 62 were added to the proposed permit to specify alternate monitor requirements for CO, VO SOx and PM10 per Rule 4354.

Permit condition 65 of the proposed Permit to Operate was modified to include emission rates in pounds per ton of glass pulled as an entry in the daily operating log.

Permit condition 67 of the proposed permit was added for the record keeping requirements for emission rates in pound per ton for NO<sub>x</sub>, CO, and VOC.

Permit condition 68 of the proposed permit was added for the record keeping requirements for the batch throughput in tons/day, emission rate in pound per ton for SO<sub>x</sub>, and emission rate in pound per ton for PM<sub>10</sub>.

Permit condition 74 of the proposed permit was retained because the request for a permit shield was public noticed during the permit renewal. Also, as shown below compliance with the requirements of District Rule 4354 is expected.

Permit condition 79 of the proposed permit was modified to state the permittee shall show compliance with the enhanced option emission limits at the specified date listed in Rule 4354.

## VII. COMPLIANCE

In accordance with Rule 2520, 3.20, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
  - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
  - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

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

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

### **District Rule 4354 Glass Melting Furnaces**

This rule is applicable to any glass melting furnace. The glass melting furnace in this project is subject to District Rule 4354 requirements.

#### Section 5.1: NOx Emission Limits

Section 5.1.1 of this rule lists Tier 2, Tier 3, and Tier 4 NOx emission requirements for flat glass manufacturing operations. Pursuant to Section 7.2.2.3 of this rule, the glass furnace must be in full compliance with the Tier 4 NOx emission limits of 3.4 lb-NOx/ton of glass pulled (Block 24-hour average) and 2.9 lb-NOx/ton of glass pulled (Rolling 30-day limit) by January 1, 2014 if choosing the Tier 4 enhanced option. Permit conditions limiting NOx emissions were presented earlier in this evaluation. Permit conditions 19, 20, 22, and 23 show compliance with these requirements.

#### Section 5.2: CO and VOC Emission Limits

Section 5.2.1 of this rule lists CO and VOC emission limits for flat glass manufacturing operations. Pilkington's furnace is an oxygen-assisted unit. The applicable emission limits are: 0.9 lb-CO/ton of glass pulled and 0.10 lb-VOC/ton of glass pulled, each on a rolling three hour average. Permit conditions 27 and 28 show compliance with these requirements.

#### Section 5.3: SOx Emission Limits

Section 5.3.2 of this rule lists SOx emission limitations. Effective January 1, 2014, the furnace must meet SOx emission limits of 1.7 lb-SOx/ton of glass produced (Block 24-hour average) and 1.2 lb-SOx/ton of glass produced (30-day rolling average). Permit conditions 32 and 33 show compliance with these requirements.

Section 5.4: PM10 emission limits

Section 5.4.1 of this rule lists PM10 emission limitations. Effective on January 1, 2014, the glass furnace must meet a PM10 emissions limit of 0.70 lb-PM10/ton of glass pulled on a block 24-hour average. Permit condition 30 shows compliance with these requirements.

Section 5.5: Start-up Requirements

Sections 5.5.1 through 5.5.7 list furnace start-up requirements for start-ups associated with a furnace rebuild.

Section 5.5.1 states that the operator must submit a request for start-up exemption to the APCO, ARB, and EPA in conjunction with or in advance of an application for an Authority to Construct associated with a furnace rebuild. Pilkington submitted this request in conjunction with District Project N-1082218. Therefore, this requirement has been satisfied.

Section 5.5.2 states that the operator must submit to the APCO, ARB, and EPA any information necessary to determine the appropriate length of start-up exemption. Pilkington submitted this information in conjunction with District Project N-1082218.

Section 5.5.3 states that the start-up exemption shall begin upon activation of the primary combustion system. This requirement was included on the Authority to Construct permits issued through District Project N-1121257 and N-1130822.

Section 5.5.4 states that the approved length of start-up exemption shall be determined by the APCO, ARB, and EPA at the time of ATC issuance, but in any case shall not exceed 104 days if using a typical NOx control system, or 208 days if using an innovate NOx control system that meets the requirements of Section 5.5.4.2. This requirement was included on the Authority to Construct permits issued through District Projects N-1121257 and N-1130822.

Section 5.5.5 states that, during the startup period, the stoichiometric ratio of the primary furnace combustion system must not exceed 5% excess oxygen. This requirement was included on the Authority to Construct permits issued through District Project N-1121257 and N-1130822.

Section 5.5.6 states that the emission control system must be in operation as soon as technologically feasible during start-up to minimize emissions. This requirement was included on the Authority to Construct permits issued through District Project N-1121257 and N-1130822.

Section 5.5.7 states that notifications must be performed and records kept in accordance with Section 6.7. Compliance with this requirement is expected.

Section 5.6: Shutdown

Section 5.6 lists the following shutdown requirements for glass furnaces:

1. The duration of shutdown, as measured from the time the furnace operations drop below the idle threshold to when all emissions from the furnace cease, must not exceed 20 days;
2. The emission control system must be in operation whenever technologically feasible during shutdown to minimize emissions; and
3. Notifications must be performed and records kept in accordance with Section 6.7.

Conditions 35, 36, 37, and 64 on the proposed permit show compliance with the requirement of the rule.

Section 5.7: Idling Requirements

Section 5.7.1 states that the emission control system shall be in operation whenever technologically feasible during idling to minimize emissions. Conditions 34 and 35 on the proposed permit show compliance with this requirement.

Section 5.7.2 states that the emissions of NO<sub>x</sub>, CO, VOC, SO<sub>x</sub>, and PM<sub>10</sub> during idling shall not exceed the amount as calculated using the following equation:

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

Where,

$E_{i,max}$  = maximum daily emissions of pollutant i during idling, in pounds of pollutant per day.

$E_i$  = Applicable emission limit for pollutant i, in pounds pollutant per ton.

Capacity = Furnace's permitted glass production capacity in tons glass produced per day.

Conditions 38 on the proposed permit shows compliance with these requirement.

Section 5.7.3 states that notifications must be performed and records kept in accordance with Section 6.7. Condition 37 on the proposed permit ensures compliance with the rule.

#### Section 5.8 Compliance Determination

This section states that any source test result, CEMS, or alternate emission monitoring method averaged value exceeding the applicable emission limits in Section 5.1, Section 5.2, Section 5.3, or Section 5.4 will constitute a violation of the rule. Condition 53 on the proposed permit ensures compliance with the rule.

#### Section 5.9: Monitoring Requirements

Section 5.9.1 lists NO<sub>x</sub> emission monitoring requirements. The operator of any glass melting furnace must implement a NO<sub>x</sub> CEMS that meets the requirements of Section 6.6. The applicant is proposing the use of a NO<sub>x</sub> CEMS on this furnace and compliance with this requirement is expected. Permit conditions outlining the CEMS requirements were included earlier in this evaluation.

Section 5.9.2.1 requires each furnace subject to Table 2 CO limits to implement the use of a CO CEMS that meets the requirements of Section 6.6.1. Section 5.9.2.3 states that in lieu of installing and operating a CEMS for CO, an operator may propose an alternate monitoring scheme for CO. Pilkington previously received approval of an alternate monitoring scheme for CO in District Project N-1082218.

Based on source test, the permittee established a correlation between excess oxygen (%) in the flue gas and compliance with CO emission limit of this permit. CO emissions shall be monitored by utilizing the following equation:  $CO \text{ (lb/hr)} = 0.545 \times (20.9 - \text{measured excess Oxygen } \%)$ .

Excess oxygen (%) in the flue gas shall be measured continuously. The measured excess oxygen (%) shall be averaged over 30 -consecutive-minutes to demonstrate excess oxygen (%). The averaged reading shall be recorded every hour.

Permit conditions 60 and 61 on proposed permit ensure compliance.

Section 5.9.2.2 requires each furnace subject to Table 2 VOC limits to implement the use of a VOC CEMS that meets the requirements of Section 6.6.1. Section 5.9.2.3 states that in lieu of installing and operating a CEMS for VOC, the operator may propose an alternate monitoring scheme for VOC's. Pilkington previously received approval of an alternate monitoring scheme for VOC's in District Project N-1082218.

Based on source test, the permittee established a correlation between minimum excess oxygen (%) in the flue gas and compliance with CO and VOC emission limits of

this permit. VOC emissions shall be monitored by utilizing the following equation:  $VOC (lb/hr) = 0.00578 \times (20.9 - \text{measured excess Oxygen } \%)$ .

Excess oxygen (%) in the flue gas shall be measured continuously. The measured excess oxygen (%) shall be averaged over 30 -consecutive-minutes to demonstrate excess oxygen (%). The averaged reading shall be recorded every hour.

Permit conditions 60 and 61 on proposed permit ensure compliance.

Section 5.9.3.1 requires each furnace, subject to Section 5.3, to implement a SOx CEMS that meets the requirements of Section 6.6.1 and that is approved, in writing, by the APCO and EPA. Section 5.9.3.2 states that in lieu of installing and operating a CEMS for SOx, the operator may propose an alternate monitoring scheme for SOx. Pilkington has established that almost all of the SOx emissions are from melting batch materials, and melting cullet does not result in SOx emissions. For the last 3 annual stack tests (2010, 2012, 2013), the measured average SOx emission rate is 1.61 lbs/ton, with the average batch material usage of 403.8 tons/day. Pilkington has established that a batch usage to below 150 tons/day, which will ensure that the SOx emissions are well below 0.8 lbs/ton of glass.

Condition 62 on the proposed permit ensures compliance.

Section 5.9.4.1 requires the operators to propose key system operating parameter(s) and frequency of monitoring and recording of those parameters, for PM10 monitoring. For the last three annual stack tests (2010, 2011, 2012) on the Pilkington Lathrop glass melting furnace, the average measured PM10 emission rate is 0.66 lb/ton, which is less than the Rule limit of 0.7 lb/ton. The melting of batch material results in more filterable PM10 emissions due to carryovers and more condensable PM10 due to fusion loss than melting cullet. Pilkington proposes to limit batch usage to below 150 tons per day in order to insure that the PM10 emissions are below 0.7 lb PM10/ton. Condition 62 on the proposed permit ensures compliance.

#### Section 6.1: Permitted Glass Production Capacity and Fuel Use Capacity

Section 6.1 states that on and after October 1, 2009, each glass melting furnace permit shall include the furnace's permitted glass production capacity in tons of glass pulled per day as a permit condition. Condition 7 on the proposed permit ensures compliance with the rule.

#### Section 6.2: Operation Records

Section 6.2 lists recordkeeping requirements that apply through December 31, 2010. This date has passed; therefore, Section 6.2 requirements are not applicable.

### Section 6.3: Operation Records

Section 6.3.1 states that the applicant shall keep daily records of the following items:

- 6.3.1.1: Total hours of operation;
- 6.3.1.2: The quantity of glass pulled from each furnace;
- 6.3.1.3: NOx emission rate in lb/ton of glass pulled;
- 6.3.1.4: CO emission rate in lb/ton of glass pulled, if a CEMS is used;
- 6.3.1.5: VOC emission rate in lb/ton of glass pulled, if a CEMS is used;
- 6.3.1.6: SOx emission rate in lb/ton of glass pulled, if a CEMS is used;
- 6.3.1.7: PM10 emission rate in lb/ton of glass pulled, if a CEMS is used;
- 6.3.1.8: For container glass furnaces that are oxy-fuel fired:
  - 6.3.1.8.1: The weight of mixed color mix cullet used;
  - 6.3.1.8.2: The total amount of cullet used by weight; and
  - 6.3.1.8.3: The ratio expressed in percent of mixed color mix weight to total cullet weight

The applicant is proposing to keep the appropriate records for the applicable items of the items listed above. Conditions 64, 65, and 66 on the proposed permit ensure compliance with the rule.

Section 6.3.2 states that for pollutants monitored using an approved parametric monitoring arrangement, operators shall record the operating values of the key system operating parameters at the approved recording frequency. Conditions 62, 63, 64 and 67 ensure compliance with the rule.

Section 6.3.3 requires operators to keep the following records:

- 6.3.3.1: Source tests and source test results
- 6.3.3.2: The acceptable range for each approved key system operating parameter, as established during source test;
- 6.3.3.3: Maintenance and repair; and
- 6.3.1.4: Malfunction.

The applicant is proposing to keep the appropriate records for the items listed above. Condition 62 on the proposed permit ensures compliance with the rule.

Section 6.3.4 requires the operator to retain records specified in Sections 6.3.1 through 6.3.3 for a period of five years; make the records available on site during normal

business hours to the APCO, ARB, or EPA; and submit the records to the APCO, ARB, or EPA upon request. Conditions on facility permit N-477-0-3 ensure compliance with the rule.

Section 6.4: Compliance Source Testing

Section 6.4.1 requires each glass melting furnace or a furnace battery to be source tested at least once every calendar year, but not more than every 18 months and not sooner than every 6 months to demonstrate compliance with the applicable requirements of Section 5.0. Condition 48 on the proposed permit ensures compliance with the rule.

Section 6.4.2 requires the source test conditions to be representative of normal operations, but not less than 60 percent of the permitted glass production capacity. Condition 47 on the proposed permit ensures compliance with the rule.

Section 6.4.3 requires operators using alternate monitoring systems to, during the source test, monitor and record, at a minimum, all operating data for each parameter, fresh feed rate, and flue gas flow rate and submit that data with the test report. Conditions 60, 61, and 62 ensure compliance with the rule.

Section 6.4.4 requires states that the arithmetic average of three 30-consecutive minute source test runs must be used to determine compliance with the NO<sub>x</sub>, CO, VOC, and SO<sub>x</sub> emission limits. Condition 50 of the proposed permit ensures compliance with the rule.

Section 6.4.5 requires states that the arithmetic average of three 60-consecutive minute source test runs must be used to determine compliance with the PM<sub>10</sub> emission limits. Condition 51 on the proposed permit ensures compliance with the rule.

Section 6.4.6 states that for a given pollutant, if two of the three runs individually demonstrate emission above the applicable limit, the test cannot be used to demonstrate compliance for the furnace, even if the averaged emissions of all three test runs is less than the applicable limit. Condition 52 on the proposed permit ensures compliance with the rule.

Section 6.5: Test Methods

Section 6.5 states that Compliance with the requirements of 5.0 shall be determined in accordance with the following source test procedures or their equivalents approved by the EPA, ARB, and the APCO:

<b>Pollutant/Parameter to be Measured</b>	<b>Test Methods</b>
Oxides of Nitrogen	EPA Method 7E, EPA Method 19, or ARB Method 100
Carbon Monoxide (ppmv)	EPA Method 10 or ARB Method 100
Volatile Organic Compounds (ppmv)	EPA Method 25A expressed in terms of carbon, or ARB Method 100. EPA Method 18 or ARB method 422 shall be used to determine emissions of exempt compounds.
Stack Gas Oxygen, Carbon Dioxide, Excess Air, and Dry Molecular Weight	EPA Method 3 or 3A, or ARB Method 100
Stack Gas Velocity or Volumetric Flow Rate	EPA Method 2
Oxides of Sulfur	EPA Method 6C, EPA Method 8, or ARB Method 100
Sulfur Content of Liquid Fuel	ASTM D 6248-99 or ASTM D5433-99
Filterable PM10	EPA Method 5; EPA Method 201; or EPA Method 201A. An operator choosing EPA Method 5 shall count all PM as PM10.
Condensable PM10	EPA Method 202

Conditions 54, 55, 56, 57, 58, and 59 on the proposed permit ensure compliance with the rule.

Section 6.6: Emission Monitoring Systems

Section 6.6.1 states that an approved CEMS must comply with all of the following requirements:

1. Code of Federal Regulations title 40 CFR Part 51;
2. 40 CFR Part 60.7 (Notification and Recordkeeping);
3. 40 CFR Part 60.13 (Monitoring Requirements);
4. 40 CFR Part 60 Appendix B (Performance Specifications);
5. 40 CFR Part 60 Appendix F (Quality Assurance Procedures);
6. and the applicable sections of District Rule 1080 (Stack Monitoring).

The NO<sub>x</sub> CEMS is expected to comply with the above requirements.

Section 6.6.2 states that an approved alternate emissions monitoring method must be capable of determining the furnace emissions on an hourly basis and must comply with the following requirements:

1. 40 CFR 64 (Compliance Assurance Monitoring); and
2. 40 CFR 60.13 (Monitoring Requirements).

The proposed CO, VOC, SO<sub>x</sub>, and PM<sub>10</sub> alternate monitoring schemes will comply with the above requirements.

Section 6.7: Notification and Records for Start-up, Shutdown, and Idling

Section 6.7.1 states that the operator of any glass melting furnace claiming an exemption under Section 4.4 must notify the APCO by telephone at least 24 hours before initiating idling, shutdown, or start-up. The notification must include the date and time for the start of the exempt operation, reason for performing the operation, and an estimated completion date. Conditions 12, 37, and 64 on the proposed permit ensure compliance with the rule.

Section 6.8: Records for Exempt Furnaces

Section 6.8 of this rule applies to exempt furnaces. The furnace in this project is not exempt. Therefore, the requirements of Section 6.8 are not applicable.

Conclusion:

Compliance with all of the requirements of District Rule 4354 is expected.

## VIII. ATTACHMENTS

- A. Proposed Modified Title V Operating Permit No. N-477-10-14
- B. Emissions Increases
- C. Application
- D. Previous Title V Operating Permit No.'s N-477-10-8

# ATTACHMENT A

Proposed Modified Title V Operating Permit No.  
(N-477-10-14)

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-477-10-14

EXPIRATION DATE: 08/31/2016

**EQUIPMENT DESCRIPTION:**

200 MMBTU/HR GLASS MELTING FURNACE WITH ECLIPSE COMBUSTION MODEL WRSP10.XX LOW NOX BURNERS AND 3R NOX EMISSIONS CONTROL SYSTEM

## PERMIT UNIT REQUIREMENTS

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1. The particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
2. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101, by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and San Joaquin County Rule 401] Federally Enforceable Through Title V Permit
3. The Pilkington 3R NOx control system shall be operated with a minimum control efficiency of 31.5% (on a 24-hour average) at all times, except for a period of time necessary to establish a baseline NOx emission rate for the purpose of determining the NOx control equipment efficiency. Uncontrolled NOx emissions may be generated up to 16 hours per month (maximum of 4 hours per 24 hour period) when establishing the baseline NOx emissions rate. [District NSR Rule] Federally Enforceable Through Title V Permit
4. The furnace fill rate shall not exceed 750 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
5. When firing on LPG, the daily fuel usage rate shall not exceed 64,066 gallons. [District NSR Rule] Federally Enforceable Through Title V Permit
6. When firing on natural gas, the daily fuel usage rate shall not exceed 5,942,875 cubic feet. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The glass pull rate shall not exceed 630 tons per day. [District Rules 4354, 6.1] Federally Enforceable Through Title V Permit
8. The facility shall not use commercial arsenic as a raw material in the production process. [40 CFR 61 Subpart N] Federally Enforceable Through Title V Permit
9. All equipment, facilities, or systems installed or used to achieve compliance with the terms and conditions of the Federal Prevention of Significant Deterioration permit shall at all times be maintained in good working order and be operated as efficiently as possible to minimize air pollutant emissions. [40 CFR 52.21] Federally Enforceable Through Title V Permit
10. The exhaust stack shall be equipped with a continuous emissions monitoring system (CEMS) for NOx, O2 and stack gas flow rate, and a continuous opacity monitoring system (COMS). Both the CEMS and COMS shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rule 1080 and 40 CFR 52.21] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

11. The operator shall report any violation of NOx emission standards indicated by the NOx CEMS or any violation of opacity standards as indicated by the COMS to the APCO within 96 hours. [District Rule 1080] Federally Enforceable Through Title V Permit
12. The operator shall notify the APCO no later than eight hours after the detection of a breakdown of the CEMS or COMS. The operator shall inform the APCO of the intent to shut down the CEMS or COMS at least 24 hours prior to the event. [District Rule 1080] Federally Enforceable Through Title V Permit
13. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
14. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
15. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
16. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
17. Cylinder gas audits (GGAs) of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
18. The owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F (CGAs and RATAs) and if applicable 40 CFR Part 75, Appendix B (linearity and RATAs) at least once every four calendar quarters and annually within 30 days of the anniversary date of the initial test. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
19. Until 1/1/14, except during periods of idling and shutdown, NOx emissions (referenced as NO2) shall not exceed either of the following limits: 241.5 pounds per hour on a block 24-hour average or 9.2 pounds per ton of glass pulled on a block 24-hour average. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
20. Effective 1/1/14, except during periods of idling and shutdown, NOx emissions (referenced as NO2) shall not exceed 3.4 pounds per ton of glass pulled on a block 24-hour average. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
21. A block 24-hour average is defined as the arithmetic average of hourly emission rates of a furnace as measured over 24 one-hour periods, daily, from 12:00 AM to 11:59 PM, excluding periods of system calibration. [District Rule 4354] Federally Enforceable Through Title V Permit
22. Until 1/1/14, except during periods of idling and shutdown, NOx emissions (referenced as NO2) shall not exceed either of the following limits: 4,410 pounds per day on a rolling 30-day average or 7.0 pounds per ton of glass pulled on a rolling 30-day average. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
23. Effective 1/1/14, except during periods of idling and shutdown, NOx emissions (referenced as NO2) shall not exceed 2.9 pounds per ton of glass pulled on a rolling 30-day average. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE  
These terms and conditions are part of the Facility-wide Permit to Operate.

24. A rolling 30-day average is defined as the arithmetic average of the daily emission rates of a furnace over a contiguous 30-day period, excluding periods of system calibration. [District Rule 4354] Federally Enforceable Through Title V Permit
25. A rolling average is defined as the arithmetic average of the emission rates of a furnace over a contiguous period, excluding periods of system calibration. For rolling three hour averages, the averaged emissions are hourly emissions and the contiguous period is three hours. [District Rule 4354] Federally Enforceable Through Title V Permit
26. NOx emissions (referenced as NO2) shall not exceed 1,533,000 pounds during any rolling 12-month period. [District Rule 2201]
27. Except during periods of idling and shutdown, CO emissions shall not exceed either of the following limits: 567.0 pounds during any one day or 0.9 pounds per ton of glass pulled on a 3-hour rolling average. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
28. Except during periods of idling and shutdown, VOC emissions shall not exceed either of the following limits: 21.0 pounds during any one day or 0.1 pounds per ton of glass pulled on a 3-hour rolling average. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
29. Particulate Matter emissions shall not exceed 30.0 pounds per hour. [District Rule 2201 and 40 CFR 52.21] Federally Enforceable Through Title V Permit
30. Effective 1/1/14, except during periods of idling and shutdown, PM10 emissions shall not exceed 0.7 pounds per ton of glass pulled on a block 24-hour average. [District Rule 4354] Federally Enforceable Through Title V Permit
31. SOx emissions (referenced as SO2) shall not exceed 88.0 pounds per hour. [District NSR Rule and 40 CFR 52.21] Federally Enforceable Through Title V Permit
32. Effective 1/1/14, except during periods of idling and shutdown, SOx emissions (referenced as SO2) shall not exceed 1.7 pounds per ton of glass pulled on a block 24-hour average. [District Rule 4354] Federally Enforceable Through Title V Permit
33. Effective 1/1/14, except during periods of idling and shutdown, SOx emissions (referenced as SO2) shall not exceed 1.2 pounds per ton of glass pulled on a rolling 30-day average. [District Rule 4354] Federally Enforceable Through Title V Permit
34. Idling is defined as the operation of the furnace at less than 25 percent of the permitted production capacity or fuel use capacity as stated on the Permit to Operate. [District Rule 4354] Federally Enforceable Through Title V Permit
35. The duration of a furnace shutdown shall not exceed 20 days, measured from the time furnace operations drop below the idle threshold to when all emissions from the furnace cease. [District Rule 4354]
36. The emission control system shall be in operation whenever technologically feasible during idling and shutdown to minimize emissions. [District Rule 4354] Federally Enforceable Through Title V Permit
37. The emission limitations of District Rule 4354 shall not apply during periods of idling and shutdown, as defined by District Rule 4354. The permittee shall notify the District at least 24 hours prior to initiating idling of the glass furnace and this notification shall include: The date and time of the start of the exempt operation, reason for performing the operation, and an estimated completion date. The permittee shall notify the District by telephone within 24 hours after completion of the operation and shall maintain operating records and/or support documentation necessary to claim exemption. [District Rule 4354] Federally Enforceable Through Title V Permit
38. NOx, CO, VOC, SOx, and PM10 emissions during idling shall not exceed the amount as calculated using the following equation: NOx, CO, VOC, SOx, or PM10 (lb/day) = Applicable emission limit (lb/ton) x Furnace permitted production capacity (tons/day). [District Rule 4354] Federally Enforceable Through Title V Permit
39. Saltcake or Gypsum may be used as a batch constituent as a source of sulfate. [District NSR Rule] Federally Enforceable Through Title V Permit
40. When using gypsum, the emissions of oxides of sulfur (referenced as SO2) shall not exceed 30 pounds per hour when the gypsum usage is less than or equal to 10.7 pounds per 1,000 pounds of sand in the batch. [District NSR Rule and 40 CFR 52.21] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

41. If gypsum usage exceeds 10.7 lb/1000 lb of sand in the batch, the maximum allowable emissions shall be determined by following equation:  $S_{MAX} = (6.3 * GYPRATE) - 39.5$ ; where  $S_{MAX}$  = allowable SO<sub>x</sub> (referenced as SO<sub>2</sub>) and  $GYPRATE$  = gypsum usage (lb/1000 lb sand). [District NSR Rule and 40 CFR 52.21] Federally Enforceable Through Title V Permit
42. When using saltcake, the emissions of oxides of sulfur (referenced as SO<sub>2</sub>) shall not exceed 30 pounds per hour when the saltcake usage is less than or equal to 8 pounds per 1000 pounds of sand in the batch. [District NSR Rule] Federally Enforceable Through Title V Permit
43. If saltcake usage exceeds 8 lb/1000 lb of sand in the batch, the maximum allowable emissions shall be determined by the following equation:  $S_{MAX} = (8.5 * SLTRATE) - 39.5$ ; where  $S_{MAX}$  = allowable SO<sub>x</sub> (referenced as SO<sub>2</sub>) and  $SLTRATE$  = saltcake usage (lb/1000 lb sand). [District NSR Rule] Federally Enforceable Through Title V Permit
44. The maximum allowable emission rate for Particulate Matter shall be determined by the following equations:  $E = 3.59 * P^{0.62}$  for  $P < 30$  tons/hour or  $17.31 * P^{0.16}$  for  $P > 30$  tons/hour. [District Rule 4202] Federally Enforceable Through Title V Permit
45. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [San Joaquin County Rule 407 and District Rule 4801] Federally Enforceable Through Title V Permit
46. Source testing to measure NO<sub>x</sub>, CO, VOC, PM, and SO<sub>2</sub> emissions shall be conducted at least once every calendar year under all applicable permitted operating scenarios (low gypsum, high gypsum, low salt cake, high salt cake) and during periods of high furnace fill rate. [District Rules 1081, 2520 §9.3.2 and 4354] Federally Enforceable Through Title V Permit
47. Source test conditions shall be representative of normal operations, but not less than 60% of either the maximum pull rate or furnace's maximum fuel use capacity. [District Rule 4354] Federally Enforceable Through Title V Permit
48. Source testing prior to or after the anniversary of the previous test is allowed as long as the proposed source test date falls within 6 to 18 month period from the anniversary date of the previous source test. [District Rule 4354] Federally Enforceable Through Title V Permit
49. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
50. For NO<sub>x</sub>, CO, VOC and SO<sub>x</sub> source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of the three runs individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the furnace, even if the averaged emissions of all three test runs is less than the applicable limit. [District Rule 4354] Federally Enforceable Through Title V Permit
51. For source testing purposes, the arithmetic average of three 60-consecutive-minute test runs shall be used to determine compliance with PM<sub>10</sub> emission limits. [District Rule 4354]
52. For source testing purposes, if two of the three runs individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the furnace, even if the averaged emissions of all three test runs is less than the applicable limit. [District Rule 4354]
53. Any source testing result, CEMS, or alternate monitoring method averaged value exceeding the applicable emission limits of Section 5.1, Section 5.2, Section 5.3, or Section 5.4 shall constitute a violation of the Rule 4354. [District Rule 4354]
54. Source testing to measure NO<sub>x</sub> emissions shall be conducted using EPA Method 7E, EPA Method 19, or CARB Method 100. Other test methods may be substituted as approved by the District and EPA. [District Rules 1081 and 4354 §6.5.1] Federally Enforceable Through Title V Permit
55. Source testing to measure CO emissions shall be conducted using EPA Method 10, or CARB Method 100. Other test method may be substituted as approved by the District and EPA. [District Rule 4354] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

56. Source testing to measure VOC emissions shall be conducted using EPA Method 25 A, EPA Method 18 or ARB Method 422. Other test method may be substituted as approved by the District and EPA. [District Rule 4354] Federally Enforceable Through Title V Permit
57. Source testing to measure Particulate Matter and SOx emissions shall be conducted using CARB combined Methods 5/202 and 6C. Other test methods may be substituted as approved by the District and EPA. [District Rule 1081 and 40 CFR 52.21] Federally Enforceable Through Title V Permit
58. Stack gas oxygen, excess air, and dry molecular weight shall be determined using EPA Method 3 or 3A, or CARB Method 100. Other test methods may be substituted as approved by the District and EPA. [District Rules 1081 and 4354 §6.5.1] Federally Enforceable Through Title V Permit
59. Stack gas velocity and volumetric flow rate shall be determined using EPA Method 2. Other test methods may be substituted as approved by the District and EPA. [District Rules 1081 and 4354 §6.5.1] Federally Enforceable Through Title V Permit
60. Effective 1/1/14, CO and VOC emissions shall be monitored by utilizing the following equations: CO (lb/hr) = 0.545 x (20.9 - measured excess Oxygen %); VOC (lb/hr) = 0.00578 x (20.9 - measured excess Oxygen %). [District Rule 4354]
61. Effective 1/1/14, excess oxygen (%) in the flue gas shall be measured continuously. The measured excess oxygen (%) shall be averaged over 60 -consecutive-minutes to demonstrate excess oxygen (%). The averaged reading shall be recorded every hour. [District Rule 4354] Federally Enforceable Through Title V Permit
62. Effective 1/1/14 PM10 and SOx emissions shall be monitored by recording batch throughput in tons/day. [District Rule 4354] Federally Enforceable Through Title V Permit
63. A daily log showing the date and duration of periods when the NOx control equipment is not operated shall be kept on site at all times. [District NSR Rule] Federally Enforceable Through Title V Permit
64. Records shall be maintained and shall include: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEMS that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080] Federally Enforceable Through Title V Permit
65. The operator shall maintain an operating log that includes on a daily basis; the hours of operation of the furnace, type and quantity of fuel used in the furnace, quantity of glass pulled, and emission rates in lb/ton of glass pulled as required. This information shall be on-site during normal business hours and submitted to the APCO, ARB, or EPA upon request. [District Rule 4354] Federally Enforceable Through Title V Permit
66. The permittee shall maintain records of the following: a.) type of glass produced; b.) NOx emissions, in pounds per hour, on a block 24-hour average; c.) SOx and PM emissions, in pounds per hour, based on a block 24-hour average; d.) CO and VOC emissions, in pounds per day; e.) NOx emissions, in pounds per day, on a rolling 30-day average; f.) cumulative NOx emissions, in pounds per calendar year, updated at least monthly. [District Rules 2201 and 4354] Federally Enforceable Through Title V Permit
67. The permittee shall keep the following daily records: 1) The NOx emission rate in lb/ton of glass pulled (block 24-hr average), 2) The NOx emission rate in lb/ton of glass pulled (rolling 30-day average), 3) The CO emission rate in lb/ton of glass pulled (rolling 3-hr average), 4) The VOC emission rate in lb/ton of glass pulled (rolling 3-hr average), 5) throughput of batch (tons/day), and 6) The quantity of glass pulled from the furnace (tons/day). [District Rule 4354] Federally Enforceable Through Title V Permit
68. Effective 1/1/14, the permittee shall keep the following daily records: 1) The SOx emission rate in lb/ton of glass pulled (block 24-hr average), 2) The SOx emission rate in lb/ton of glass pulled (rolling 30-day average), and 3) The PM10 emission rate in lb/ton of glass pulled (block 24-hr average). [District Rule 4354] Federally Enforceable Through Title V Permit
69. When applicable, daily records of natural gas or LPG usage shall be maintained. [District Rule 2520 §9.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

70. Daily records of furnace fill rate shall be maintained. [District Rule 2520 §9.3.2] Federally Enforceable Through Title V Permit
71. Monthly records of salt cake and gypsum content per 1,000 lb of sand in each batch shall be maintained. [District Rule 2520 §9.3.2] Federally Enforceable Through Title V Permit
72. The permittee shall submit a written report including copies of any Equipment Breakdown reports and/or pertinent variance decisions to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080 and 40 CFR 52.21] Federally Enforceable Through Title V Permit
73. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, San Joaquin County Rule 404, District Rule 4202 and San Joaquin County Rule 405. A permit shield is granted from these requirements. [District Rule 2520 §13.2] Federally Enforceable Through Title V Permit
74. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4354. A permit shield is granted from these requirements. [District Rule 2520 §13.2] Federally Enforceable Through Title V Permit
75. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4801 and San Joaquin County Rule 407. A permit shield is granted from these requirements. [District Rule 2520 §13.2] Federally Enforceable Through Title V Permit
76. The requirements of District Rule 4301 and San Joaquin County Rule 408 were determined to not apply to this unit because the unit does not utilize indirect heat transfer. A permit shield is granted from these requirements. [District Rule 2520 §13.2] Federally Enforceable Through Title V Permit
77. The requirements of 40 CFR 60, Subpart CC were determined to not apply to this unit because the unit was constructed prior to the effective date in the regulation and not been modified (according to the definition of "modified" in the regulation). A permit shield is granted from these requirements. [District Rule 2520 §13.2] Federally Enforceable Through Title V Permit
78. The requirements of 40 CFR 61, Subpart N were determined to not apply to this unit because the unit does not use commercial arsenic. A permit shield is granted from these requirements. [District Rule 2520 §13.2] Federally Enforceable Through Title V Permit
79. Permittee shall be in full compliance with enhanced option NOx limits by January 1, 2014. [District Rule 4354, 7.2.1] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

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# ATTACHMENT B

Emissions Increases

	SSIPE (lb/yr)				
	NOx	VOC	CO	SOx	PM10
N-477-10-14	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

# ATTACHMENT C

Application

# San Joaquin Valley Air Pollution Control District

www.valleyair.org

## Permit Application For:

ADMINISTRATIVE AMENDMENT   
  MINOR MODIFICATION   
  SIGNIFICANT MODIFICATION

1. PERMIT TO BE ISSUED TO: <p style="text-align: center; margin: 0;">Pilkington North America, Inc.</p>	
2. MAILING ADDRESS:  STREET/P.O. BOX: <u>500 East Louise Ave.</u>  CITY: <u>Lathrop</u> STATE: <u>CA</u> 9-DIGIT ZIP CODE: <u>95330</u>	
3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:  STREET: <u>500 East Louise Ave.</u> CITY <u>Lathrop</u>  _____ ¼ SECTION _____ TOWNSHIP _____ RANGE _____	INSTALLATION DATE:
4. GENERAL NATURE OF BUSINESS: <b>Float glass manufacturing</b>	
5. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE (include Permit #'s if known, and use additional sheets if necessary)  This application requests modification to our Title V permit for Permit Unit: N-477-10-8 to include District Rule 4354 Tier 2 NOx limits in units of pound per ton of glass produced rather than pound per unit time.	
6. TYPE OR PRINT NAME OF APPLICANT:  <b>Kyle Sword</b>	TITLE OF APPLICANT:  <b>Plant Manager</b>
7. SIGNATURE OF APPLICANT: _____ DATE: <u>5/6/13</u>  <i>Murt Cliné for Kyle Sword</i>	PHONE: (209) 858 6331 FAX: (209) 858 2024 EMAIL: Kyle.Sword@nsg.com

**RECEIVED**  
For APCD Use Only

DATE STAMP <p style="text-align: center; font-size: 1.2em;">MAY 07 2013</p> <p style="text-align: center;">SJVAPCD</p>	FILING FEE RECEIVED: \$ <u>0</u> CHECK#: _____  DATE PAID: _____
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N1131551

N-477



# ATTACHMENT D

Previous Title V Operating Permit No. N-  
477-10-8

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-477-10-8

EXPIRATION DATE: 08/31/2016

## EQUIPMENT DESCRIPTION:

200 MMBTU/HR GLASS MELTING FURNACE WITH ECLIPSE COMBUSTION MODEL WRSP10.XX LOW NOX BURNERS AND 3R NOX EMISSIONS CONTROL SYSTEM

## PERMIT UNIT REQUIREMENTS

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1. The particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
2. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101, by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and San Joaquin County Rule 401] Federally Enforceable Through Title V Permit
3. The Pilkington 3R NOx control system shall be operated with a minimum control efficiency of 31.5% (on a 24-hour average) at all times, except for a period of time necessary to establish a baseline NOx emission rate for the purpose of determining the NOx control equipment efficiency. Uncontrolled NOx emissions may be generated up to 16 hours per month (maximum of 4 hours per 24 hour period) when establishing the baseline NOx emissions rate. [District NSR Rule] Federally Enforceable Through Title V Permit
4. The furnace fill rate shall not exceed 750 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
5. When firing on LPG, the daily fuel usage rate shall not exceed 64,066 gallons. [District NSR Rule] Federally Enforceable Through Title V Permit
6. When firing on natural gas, the daily fuel usage rate shall not exceed 5,942,875 cubic feet. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The glass pull rate shall not exceed 630 tons per day. [District Rules 4354, 6.1] Federally Enforceable Through Title V Permit
8. The facility shall not use commercial arsenic as a raw material in the production process. [40 CFR 61 Subpart N] Federally Enforceable Through Title V Permit
9. All equipment, facilities, or systems installed or used to achieve compliance with the terms and conditions of the Federal Prevention of Significant Deterioration permit shall at all times be maintained in good working order and be operated as efficiently as possible to minimize air pollutant emissions. [40 CFR 52.21] Federally Enforceable Through Title V Permit
10. The exhaust stack shall be equipped with a continuous emissions monitoring system (CEMS) for NOx, O2 and stack gas flow rate, and a continuous opacity monitoring system (COMS). Both the CEMS and COMS shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rule 1080 and 40 CFR 52.21] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

11. The operator shall report any violation of NO<sub>x</sub> emission standards indicated by the NO<sub>x</sub> CEMS or any violation of opacity standards as indicated by the COMS to the APCO within 96 hours. [District Rule 1080] Federally Enforceable Through Title V Permit
12. The operator shall notify the APCO no later than eight hours after the detection of a breakdown of the CEMS or COMS. The operator shall inform the APCO of the intent to shut down the CEMS or COMS at least 24 hours prior to the event. [District Rule 1080] Federally Enforceable Through Title V Permit
13. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
14. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
15. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
16. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
17. Cylinder gas audits (GGAs) of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
18. The owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F (CGAs and RATAs) and if applicable 40 CFR Part 75, Appendix B (linearity and RATAs) at least once every four calendar quarters and annually within 30 days of the anniversary date of the initial test. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
19. NO<sub>x</sub> emissions (referenced as NO<sub>2</sub>) shall not exceed 241.5 pounds per hour on a block 24-hour average. [District Rules 2201 and 4354]
20. A block 24-hour average is defined as the arithmetic average of hourly NO<sub>x</sub> emission rates of a furnace as measured over 24 one-hour periods, daily, from 12:00 AM to 11:59 PM, excluding periods of system calibration. [District Rule 4354]
21. NO<sub>x</sub> emissions (referenced as NO<sub>2</sub>) shall not exceed 4,410 pounds per day on a rolling 30-day average. [District Rules 2201 and 4354]
22. A rolling 30-day average is defined as the arithmetic average of the daily emission rates of a furnace over a contiguous 30-day period, excluding periods of system calibration. [District Rule 4354]
23. NO<sub>x</sub> emissions (referenced as NO<sub>2</sub>) shall not exceed 1,533,000 pounds during any one calendar year. [District Rule 2201]
24. CO emissions shall not exceed 567.0 pounds during any one day. [District Rule 2201]
25. VOC emissions shall not exceed 21.0 pounds during any one day. [District Rule 2201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

26. Particulate Matter emissions shall not exceed 30.0 pounds per hour. [District Rule 2201 and 40 CFR 52.21] Federally Enforceable Through Title V Permit
27. SOx emissions (referenced as SO<sub>2</sub>) shall not exceed 88.0 pounds per hour. [District NSR Rule and 40 CFR 52.21] Federally Enforceable Through Title V Permit
28. Saltcake or Gypsum may be used as a batch constituent as a source of sulfate. [District NSR Rule] Federally Enforceable Through Title V Permit
29. When using gypsum, the emissions of oxides of sulfur (referenced as SO<sub>2</sub>) shall not exceed 30 pounds per hour when the gypsum usage is less than or equal to 10.7 pounds per 1,000 pounds of sand in the batch. [District NSR Rule and 40 CFR 52.21] Federally Enforceable Through Title V Permit
30. If gypsum usage exceeds 10.7 lb/1000 lb of sand in the batch, the maximum allowable emissions shall be determined by following equation:  $S_{MAX} = (6.3 * GYPRATE) - 39.5$ ; where  $S_{MAX}$  = allowable SOx (referenced as SO<sub>2</sub>) and  $GYPRATE$  = gypsum usage (lb/1000 lb sand). [District NSR Rule and 40 CFR 52.21] Federally Enforceable Through Title V Permit
31. When using saltcake, the emissions of oxides of sulfur (referenced as SO<sub>2</sub>) shall not exceed 30 pounds per hour when the saltcake usage is less than or equal to 8 pounds per 1000 pounds of sand in the batch. [District NSR Rule] Federally Enforceable Through Title V Permit
32. If saltcake usage exceeds 8 lb/1000 lb of sand in the batch, the maximum allowable emissions shall be determined by the following equation:  $S_{MAX} = (8.5 * SLTRATE) - 39.5$ ; where  $S_{MAX}$  = allowable SOx (referenced as SO<sub>2</sub>) and  $SLTRATE$  = saltcake usage (lb/1000 lb sand). [District NSR Rule] Federally Enforceable Through Title V Permit
33. The maximum allowable emission rate for Particulate Matter shall be determined by the following equations:  $E = 3.59 * P^{0.62}$  for  $P < 30$  tons/hour or  $17.31 * P^{0.16}$  for  $P > 30$  tons/hour. [District Rule 4202] Federally Enforceable Through Title V Permit
34. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [San Joaquin County Rule 407 and District Rule 4801] Federally Enforceable Through Title V Permit
35. Source testing to measure NO<sub>x</sub>, CO, VOC, PM, and SO<sub>2</sub> emissions shall be conducted at least once every calendar year under all applicable permitted operating scenarios (low gypsum, high gypsum, low salt cake, high salt cake) and during periods of high furnace fill rate. [District Rules 1081, 2520 §9.3.2 and 4354]
36. Source test conditions shall be representative of normal operations, but not less than 60% of either the maximum pull rate or furnace's maximum fuel use capacity. [District Rule 4354]
37. Source testing prior to or after the anniversary of the previous test is allowed as long as the proposed source test date falls within 6 to 18 month period from the anniversary date of the previous source test. [District Rule 4354]
38. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
39. For NO<sub>x</sub>, CO and VOC source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of the three runs individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the furnace, even if the averaged emissions of all three test runs is less than the applicable limit. [District Rule 4354]
40. Source testing to measure NO<sub>x</sub> emissions shall be conducted using EPA Method 7E, EPA Method 19, or CARB Method 100. Other test methods may be substituted as approved by the District and EPA. [District Rules 1081 and 4354 §6.5.1] Federally Enforceable Through Title V Permit
41. Source testing to measure CO emissions shall be conducted using EPA Method 10, or CARB Method 100. Other test method may be substituted as approved by the District and EPA. [District Rule 4354]
42. Source testing to measure VOC emissions shall be conducted using EPA Method 25 A, EPA Method 18 or ARB Method 422. Other test method may be substituted as approved by the District and EPA. [District Rule 4354]

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43. Source testing to measure Particulate Matter and SOx emissions shall be conducted using CARB combined Methods 5/202 and 6C. Other test methods may be substituted as approved by the District and EPA. [District Rule 1081 and 40 CFR 52.21] Federally Enforceable Through Title V Permit
44. Stack gas oxygen, excess air, and dry molecular weight shall be determined using EPA Method 3 or 3A, or CARB Method 100. Other test methods may be substituted as approved by the District and EPA. [District Rules 1081 and 4354 §6.5.1] Federally Enforceable Through Title V Permit
45. Stack gas velocity and volumetric flow rate shall be determined using EPA Method 2. Other test methods may be substituted as approved by the District and EPA. [District Rules 1081 and 4354 §6.5.1] Federally Enforceable Through Title V Permit
46. A daily log showing the date and duration of periods when the NOx control equipment is not operated shall be kept on site at all times. [District NSR Rule] Federally Enforceable Through Title V Permit
47. Records shall be maintained and shall include: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEMS that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080] Federally Enforceable Through Title V Permit
48. The operator shall maintain an operating log that includes on a daily basis; the hours of operation of the furnace, type and quantity of fuel used in the furnace, quantity of glass pulled, and NOx emission rates in lb/ton of glass pulled. This information shall be on-site during normal business hours and submitted to the APCO, ARB, or EPA upon request. [District Rule 4354]
49. The permittee shall maintain records of the following: a.) type of glass produced; b.) NOx emissions, in pounds per hour, on a block 24-hour average; c.) SOx and PM emissions, in pounds per hour, based on a daily average; d.) CO and VOC emissions, in pounds per day; e.) NOx emissions, in pounds per day, on a rolling 30-day average; f.) cumulative NOx emissions, in pounds per calendar year, updated at least monthly. [District Rules 2201 and 4354]
50. When applicable, daily records of natural gas or LPG usage shall be maintained. [District Rule 2520 §9.3.2] Federally Enforceable Through Title V Permit
51. Daily records of furnace fill rate shall be maintained. [District Rule 2520 §9.3.2] Federally Enforceable Through Title V Permit
52. Monthly records of salt cake and gypsum content per 1,000 lb of sand in each batch shall be maintained. [District Rule 2520 §9.3.2] Federally Enforceable Through Title V Permit
53. The permittee shall submit a written report including copies of any Equipment Breakdown reports and/or pertinent variance decisions to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080 and 40 CFR 52.21] Federally Enforceable Through Title V Permit
54. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, San Joaquin County Rule 404, District Rule 4202 and San Joaquin County Rule 405. A permit shield is granted from these requirements. [District Rule 2520 §13.2] Federally Enforceable Through Title V Permit
55. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4354. A permit shield is granted from these requirements. [District Rule 2520 §13.2] Federally Enforceable Through Title V Permit
56. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4801 and San Joaquin County Rule 407. A permit shield is granted from these requirements. [District Rule 2520 §13.2] Federally Enforceable Through Title V Permit

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57. The requirements of District Rule 4301 and San Joaquin County Rule 408 were determined to not apply to this unit because the unit does not utilize indirect heat transfer. A permit shield is granted from these requirements. [District Rule 2520 §13.2] Federally Enforceable Through Title V Permit
58. The requirements of 40 CFR 60, Subpart CC were determined to not apply to this unit because the unit was constructed prior to the effective date in the regulation and not been modified (according to the definition of "modified" in the regulation). A permit shield is granted from these requirements. [District Rule 2520 §13.2] Federally Enforceable Through Title V Permit
59. The requirements of 40 CFR 61, Subpart N were determined to not apply to this unit because the unit does not use commercial arsenic. A permit shield is granted from these requirements. [District Rule 2520 §13.2] Federally Enforceable Through Title V Permit
60. Permittee shall submit an Authority to Construct application for compliance with early enhanced option NOx limits by June 1, 2012, and be in full compliance with enhanced option NOx limits by January 1, 2014. [District Rule 4354, 7.2.1] Federally Enforceable Through Title V Permit

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