

Administrative Amendment 5-31-17

Statement of Basis for Ardagh Glass, Inc.

Purpose of this Statement of Basis

This document summarizes the legal and factual basis for the permit conditions in the air operating permit for Ardagh Glass, Inc. (previously known as Saint-Gobain Containers, Inc.) to be issued under the authority of the Washington Clean Air Act, Chapter 70.94 Revised Code of Washington, Chapter 173-401 of the Washington Administrative Code and Puget Sound Clean Air Agency Regulation I, Article 7. Unlike the permit, this document is not legally enforceable. It includes references to the applicable statutory or regulatory provisions that relate to emissions to the atmosphere of Ardagh Glass, Inc. In addition, this statement of basis provides a description of activities and a compliance history for Ardagh Glass, Inc.

Source Description

Ardagh Glass Inc (Ardagh) is a major glass manufacturing plant.

Ardagh is subject to the requirement to obtain an air operating permit because it is a “major source” as defined in the federal and state operating permit regulations (Title V of the federal Clean Air Act Amendments of 1990 and its implementing regulation 40 CFR Part 70, and RCW 70.94.161 and its implementing regulation, Chapter 173-401 WAC). A major source has the potential to emit more than 100 tons per year of any criteria pollutant (such as CO, SO₂, NO_x, VOC, particulate matter, etc.) or 10 tons per year or more of any single hazardous air pollutant listed in Section 112(b) of the federal Clean Air Act (such as hydrochloric acid), or 25 tons per year or more of any combination of hazardous air pollutants.

Ardagh emits more than 100 tons per year of NO_x and SO₂ (see Emission Inventory) and, therefore, is required to obtain an air operating permit.

There are four steps in manufacturing this glass: (1) preparation of raw material, (2) melting in a furnace, (3) forming, and (4) finishing.

Preparation of Raw Material

The major raw materials consist of sand, soda ash, and limestone, along with lesser quantities of colorants and refining agents. The materials are received by rail or truck and unloaded into storage silos until needed. Recycled glass, called cullet, from both its own process (rejects) and purchased from recycling centers and other outside sources, is also a major raw material. These batch materials, in carefully weighted proportions, are thoroughly mixed and conveyed to storage bins above specially designed feeders located near the glass melting furnaces.

Melting in a Furnace

The mixed batch is continuously fed into one end of the furnace. As material enters the melting furnace through the feeder, it floats on the top of the molten glass already in the furnace. Each furnace is essentially a refractory box constructed of high temperature resistant refractory, which heats the new material to a molten state at temperatures in excess of 2500°F. At these temperatures, chemical reactions occur over several hours to form molten glass. The refining process (removal of trapped gases and bubbles) and homogenization of the glass take place both during and after melting.

Forming

Nearly bubble-free glass is continuously distributed from the furnace to the forehearths by means of the distributor. Glass flows through shallow refractory channels called "forehearths" to the forming machines where bottles and jars are made.

Finishing

Following the forming process, the containers are heat-treated and annealed (removal of unwanted stress areas in the glass) in an oven called a "lehr." The containers are then inspected, packed, and shipped to customers. This process normally operates 24 hours per day, 7 days per week.

Equipment

Glass Melting Furnaces

The Seattle Plant has five glass melting furnaces: No. 1 is an all-electric furnace; No. 4 is an end-port regenerative furnace; and No. 2, No. 3 and No. 5 furnaces are oxy-fuel fired.

Glass Melting Furnaces No. 1, 2, 3, and 5 have two 36-inch wide natural gas fired forehearths each. Furnace No. 4 has a single 48-inch wide natural gas fired forehearth.

Glass Melting Furnaces No. 2 through No. 5 use natural gas or propane with additional energy input from electricity delivered through electrodes immersed in the glass. They are also permitted to burn a limited amount of ultra-low sulfur diesel during periods of natural gas curtailment

Glass Melting Furnace No. 1 is a "cold top" all-electric furnace; the energy input for melting and refining the glass is supplied by resistance electric heating through electrodes immersed in the glass. In this furnace melter, a batch cover is maintained over the surface of the glass in order to retain heat loss from the glass. Glass Melting Furnace No. 1 processes include batch feeders, melter, and refiner that feed two 36-inch wide fuel fired forehearths. The batch cover is reported by Saint-Gobain to minimize particulate matter escaping into the atmosphere and acts to retain the volatile materials associated with the melting of raw materials. Saint-Gobain does not have any reported emissions from this electric furnace.

Glass Melting Furnace No. 1

The New Source Performance Standards of 40 CFR 60, Subpart CC do not apply to Glass Melting Furnace No. 1 because it is an all-electric melter and is exempt per 40 CFR 60.290(c).

Glass Melting Furnace No. 1 was installed in 1985 and is rated at 160 ton/day. It vents through the roof and normally has no visible emissions, but is capable of emitting visible emissions during upset conditions.

Glass Melting Furnaces Nos. 2, 3, 4, and 5

During the review of the project and permitting history for the glass melting furnaces, it was discovered that the Standards of Performance for New Stationary Sources (40 CFR 60, Subpart CC) for Glass Manufacturing Plants had been triggered for Glass Melting Furnaces No. 2, No. 3, and No. 5. These NSPS regulations do not apply to Furnace No. 4 because that unit has not been modified during the relevant time period, as defined in 40 CFR 60, Subpart CC. The conversion to oxy-fuel (completed on Furnaces No. 2, No. 3, and No. 5) required better sealing of the furnaces, replacing the ambient air supply with ducting for combustion oxygen and replacement of the burner for oxy-fuel. The oxygen is purchased from another company located next to Ardagh. In addition to converting the combustion air supply, the furnaces received the same re-bricking and routine refurbishing as is normally done in starting a new furnace campaign. The actual oxy-fuel conversion did not require significant additional materials compared with the changes normally experienced during a routine re-bricking of a conventional furnace.

The oxy-fuel fired Furnaces Nos. 2, 3 and 5 are designed so that an atmosphere with a high percentage of oxygen is used in the combustion process instead of air, which is only 20% oxygen. In the oxy/fuel-fired furnaces, there is no reversal cycle for preheating. Since there is no preheating process, air which is 80% nitrogen is eliminated from the furnace. This greatly reduces levels of nitrogen oxides as compared to regenerative furnaces. Natural gas fuel flow rates and oxygen/fuel ratios are computer controlled to maintain proper furnace temperatures and efficient combustion of the fuel.

Glass Melting Furnace No. 4 is a regenerative end-port furnace (not oxy/fueled-fired). Glass Melting Furnace No. 4 processes include batch feeders, melter, and refiner, feeding 48-inch wide fuel-fired forehearth. In this regenerative furnace, combustion products are exhausted through one of two chambers containing refractory brick for reclamation of heat. Air used in the combustion process alternately passes through each of these chambers where it is preheated and then passes into the furnace to be mixed with the fuel for combustion. Approximately every 20 minutes, the direction of the firing is reversed, with the previously heated chamber now used to preheat the combustion air, with the hot combustion products passing through the cooler side to again heat the refractory packing. The exhaust gases then exit to the atmosphere. Fuel flow rates and air/fuel ratios are automatically controlled to maintain proper furnace temperatures and efficient combustion.

Glass Melting Furnace No. 4 (installed 1969) is rated at 430 ton/day; however, typical pull rates of 130 to 140 ton/day have been observed during source tests.

Saint-Gobain reported the 2005 glass production for Glass Melting Furnaces Nos. 2, 3, 4, and 5 was 237513 tons. This does not include Glass Melting Furnace No. 1, as reporting is not required in the annual emission statement.

Glass Container Forming Machines and Mold Swabbing Emissions

There are 9 glass forming I.S. machines. Each of the glass melting furnaces (except Furnace No. 4) has two eight-section forming machines. Furnace No. 4 has on ten-section forming machine. Glass containers are created by allowing molten glass (globs) from the melting furnaces to drop into a metal mold. Each mold requires periodic lubrication to prevent the hot molten glass globs from sticking or freezing to the bottle molding surfaces. The lubrication liquid is a mold release agent that is periodically re-applied by hand (called mold swabbing) to the bottle molding surfaces. The manual mold swabbing occurs "on the fly" during the few seconds between the release of a newly formed glass bottle and before a new molten glob drops into the prepared mold. The mold swabbing material forms a lubricant film between the metal of the mold and the hot glass globs. If release agents were not used, the molten glass globs would stick to the metal molds before solidifying as a glass bottle resulting in defects and rejected containers.

The Puget Sound Clean Air Agency requested additional information for the operating permit application in letters dated February 10, 1999 and March 11, 1999. Saint-Gobain responded in a May 26, 1999 letter titled, "Ball-Foster Glass Container Co., - Seattle, WA Title V Permit." That letter indicated that the I.S. machine operator uses a variety of hand-held swabbing tools or brushes, known as finger swabs and mold swabs. To apply the swabbing compound, the swabs are dipped into the liquid swabbing compound and "rolled" to remove as much excess liquid as possible. As a new glob enters the freshly swabbed mold, the liquid swabbing compound is instantly flashed off and a quick puff of oily mist rises above the I.S. machine. Puget Sound Clean Air Agency inspections have found that most of this cloud of oily mist appears to exhaust as emissions through the roof monitors above the machines while some material appears to escape through other general openings in the forming buildings as fugitive emissions.

Saint-Gobain's May 26, 1999 letter indicated that the operators are trained to minimize the use of mold swabbing liquid because excess swabbing compound transfers to the next formed bottles and results in an unacceptable rejection rate and increased emissions.

Saint-Gobain's May 26, 1999 letter indicated that the facility uses two swabbing compounds: Kleenmold 170 and Kleenmold 197. In 1998, the plant used 36,620 lbs. (18.3 tons) of Kleenmold 170 and 21,140 lbs. (10.6 tons) of Kleenmold 197, for a total of 57,760 lbs. The total mold swabbing compound for 1998 was estimated to be 28.9 tons. The Kleenmold 170 and Kleenmold 197 mold swabbing lubricant oils are described in their material safety data sheets as a petroleum hydrocarbon. Their ingredients are listed as: petroleum-based severely hydrated lubricating oil; fatty acids; tallow; calcium salts; sulfured fatty oil esters; graphite oil additive; and sulfur. The mold swabbing compound is a black oily liquid with added graphite with a flash point of 320°F. The compound contains essentially no chemicals that volatilize at room temperatures. The May 26, 1999 letter did not mention how representative the year of 1998 was for the use of mold swabbing compound.

Puget Sound Clean Air Agency inspections have verified that the mold swabbing compounds appear to either "flash-off" from the glowing glass globs or be volatilized by the high temperature as a white oily mist from the forming machines.

Saint-Gobain's May 26, 1999 swabbing letter to Puget Sound Clean Air Agency provides an attempt to estimate the fate of the mold swabbing compound and associated emissions. Saint-Gobain judges that about 75% of the mold swabbing compound for 1998 is petroleum-based lubricating oils that become partially combusted or volatilized at temperatures greater than 800°F and escape from the mold swabbing machine buildings primarily from the roof monitors. The 1998 annual mold swabbing usage was 28.9 tons. Saint-Gobain estimated about 75% of the mold swabbing compound ($75\% * 29 = 22$ tons/year) could be associated with partially volatilized materials.

Saint-Gobain's May 26, 1999 letter indicates these emissions are composed of oily mist and other materials associated with products of incomplete combustion such as soot and tars. Saint-Gobain estimates half of the volatile mold swabbing compound ($50\% * 22 = 11$ tons/year) may be emitted from the roof monitor vents above the mold swabbing machines. The letter did not address the fate of the remaining 11 tons per year from the forming machines.

Presumably this remaining 11 tons per year of partially or volatilized materials either escapes the building from general openings other than the roof monitor vents, or is trapped inside the building on walls, floors or equipment. Puget Sound Clean Air Agency inspections of the mold swabbing areas have found some oils on walls and equipment in the mold swabbing buildings, but the observed amounts do not appear to account for the total of the remaining 11 tons per year.

Saint-Gobain's May 26, 1999 letter also does not address the fate of the remaining 25% of the mold swabbing compound ($25\% * 29 = 7$ tons/year) which Saint-Gobain judged to not become combusted or volatilized. This estimated fraction might represent the non-petroleum materials, such as graphite or sulfur.

Saint-Gobain's May 26, 1999 swabbing letter concludes that the emission estimates for mold swabbing operations are not easily quantifiable and that it was unaware of any method to quantify these emissions with any adequate degree of accuracy.

Saint-Gobain's 2005 mission statement included an estimate of 7.4 tons of PM10 emissions from the mold swabbing operations.

Saint-Gobain's August 11, 2000 report, titled "*Ball Foster Container Co., L.L.C., Mold Swabbing Survey*," was part of the settlement agreement dated May 2, 2000 with the Puget Sound Clean Air Agency. This report summarized the mold swabbing practices at the Seattle plant and compares the operations with five other similar glass manufacturing plants. This report found there were:

- 1) No control technology or product substitution available;
- 2) No quantitative methods being used in the industry to determine emissions; and

- 3) No permit limits or other regulatory requirements issued to the other sources.

Hot End Treatment Hoods

The hot end treatment hoods are designed to be a closed-loop system that can deposit a thin uniform layer of a tin oxide over each container. Organotin compound is applied as a surface coating to newly formed glass containers to make them resistant to scratches and breakage. The coating is applied in the Forming Department while the containers move along on a conveyor passing through a specially designed hood. Blower motors on the hood keep the organotin compound in constant circulation providing a coating efficiency ranging from 25 to 35%.

Gas Fired Annealing Lehrs

After the glass container is formed and treated with the tin coating, it passes through an annealing lehr. This process reduces the strains and stresses from the forming process and makes the product ready for use. Gas-fired annealing lehrs are in Shop No. 41.

Batch Handling System Dust Collectors

Batch handling system dust collectors control dust generated from material handling. The major raw materials of sand, soda ash, limestone, glass cullet, and other minor ingredients are received by truck or rail. These materials are unloaded onto conveyors and transferred to storage silos by bucket elevator. The materials are individually weighed and conveyed to a mixer where they are mixed thoroughly. Following the mix cycle, the batch is transferred by conveyor and bucket elevator to storage bins above the glass furnace and charged into the furnace as needed.

Sulfur Application Process

The sulfur treatment process occurs in Shop No. 22 (currently unused) and is a very small limited application that is used for hardening a glass surface to resist chemical attack. The process involves subjecting the interior surface of the glass containers to a flammable gas and then exposing this heated surface to sulfur dioxide gas. The sulfur dioxide gas is controlled by a scrubber.

Mold Shop Operations

In the glass forming process, metal molds are used to shape the container. As bottles are made from these molds, they become chipped, coated with scale and carbon, and start to lose tolerance. In the process of mold repair, metal-working operations, such as grinding, machining, welding, and polishing, restore the molds to the required conditions and tolerances necessary for the production of quality glassware. The dust from these metal-working operations is collected by two cyclones and a high efficiency baghouse.

Styrofoam Labeling Line

This operation (currently unused) involves the application of a pre-labeled styrofoam protective cover to the outer surface of a glass container. The bottles are called "plasti-shield" containers. The labels are cut from a roll and applied to the bottles using a small amount of heat.

Review of Permit Application

An air operating permit application was received from Saint-Gobain on June 6, 1995. On August 1, 1995, the Puget Sound Clean Air Agency determined that Saint-Gobain's operating permit application was incomplete and requested additional information be submitted within 60 days. On October 17, 1995, the Puget Sound Clean Air Agency sent a second notice of incompleteness. Saint-Gobain submitted additional information on November 14, 1995. On November 20, 1995, the application was acknowledged to meet the requirements of WAC 173-401-500(7) and determined to be complete.

On February 10, 1999 and March 11, 1999, the Puget Sound Clean Air Agency requested additional information, pursuant to WAC 173-401-500(4). Saint-Gobain submitted this information in letters dated March 9, 1999 and March 19, 1999. On March 23, 1999, the Puget Sound Clean Air Agency agreed to extend the deadline for additional information to May 31, 1999. On April 23, 1999, Saint-Gobain submitted a report. On May 4, 1999, the Puget Sound Clean Air Agency indicated the submitted information was not complete and extended the deadline for additional information to May 31, 1999. Saint-Gobain submitted the additional information May 26, 1999, which satisfied the request for additional information.

An air operating permit renewal application was received from Saint-Gobain on May 19, 2006.

Compliance History

This compliance history for Argdagh (formerly known as Saint-Gobain) covers the time period June 2, 2002 through December 31, 2006. The Puget Sound Clean Air Agency has inspected the facility annually. As of January 1, 2007, the only outstanding enforcement issues involve failed source tests. Ardagh will be installing a cloud chamber scrubber on glass furnace No. 5 to control particulate matter, PM10, and sulfur dioxide emissions. If this novel technology proves successful based on the results of a 2-year pilot study, additional cloud chamber scrubbers may be installed in accordance with the compliance schedule attached to the operating permit.

Saint-Gobain is required to submit monitoring reports to the Agency, including the annual emission reports. During the period of initial permit issuance the company failed to submit several reports. These notices of violation were resolved under the December 31, 2003 consent decree signed by the Agency and Saint-Gobain.

The table below shows a history of violations in chronological order from the present back to the initial permit issuance date of June 6th, 2002. It lists each notice of violation (NOV) number, the date of violation, a brief description, and the status. The status indicates that the enforcement action was closed, a civil penalty was paid, or a settlement agreement resolving the violation was executed with the Puget Sound Clean Air Agency, known as a Consent Decree and Assurance of Discontinuance. Since 2002, Saint-Gobain has had the following categories of violations:

- Failing to Meet COMS Opacity Limit;
- Failing to Meet COMS Data Recovery and QA Requirements;
- Failing Source Tests;
- Failing to Submit Accurate and Complete Reports; and
- Other.

On December 31, 2003, Saint-Gobain and the Puget Sound Clean Air Agency signed a Consent Decree (CV03-3601) resolving Civil Penalty Nos. 9684, 9685, 9686, 9687, 9699, and 9700 and all violations occurring prior to October 31, 2003. The total amount of these civil penalties was \$171,109. Saint-Gobain agreed to pay \$41,509 to the Agency and to spend \$129,600 on a supplemental environmental project which involved paying for diesel retrofit devices on school buses in the Seattle School District fleet. The Consent Decree was entered by the United States District Court, Western District of Washington, in case number CV03-3601FDB.

Consent Decree CV03-3601 resolved Notice of Violation Nos. 3-001661, 3-001662, 3-001664, 3-001665, 3-000306, 3-001528, 3-001669, 3-001670, 3-001671, 3-001667, 3-001668, 3-001531, 3-001532, 3-001533, 3-001672, 3-001673, 3-001674, 3-001675, 3-001676, 3-001678, 3-001534, 3-001679. It also resolved Written Warning Nos. 2-006638, 2-006639, 2-006642, 2-000492, 2-000498, 2-001665, 2-006647, 2-007001, 2-000500, 2-007002, and 2-006648.

Consent Decree CV03-3601 included stipulated penalties of \$1,000.00 per day for failing to conduct quarterly source tests, continuing to operate until a passing source test is conducted, failing to submit complete deviation reports, and failing to submit complete semi-annual and annual compliance certifications (\$2,000.00 per day after 30 days).

Consent Decree CV03-3601 resulted in amendments to the air operating permit. The predictive correlation equation for particulate emissions was replaced with a requirement to perform quarterly source tests. Order of Approval No. 8244 (dated 6/14/01) replaced the individual furnace pound per hour limits in Order of Approval No. 5256 (dated 12/22/94) with a combined hourly furnace limit. The notices of violation issued for violating the individual furnace pound per hour limits were closed upon EPA's approval of Order of Approval No. 8244 as an amendment to the State Implementation Plan on September 30, 2004.

Failing to Meet COMS Opacity Limit

Saint-Gobain continuously monitors opacity from the glass furnaces per Regulation I, Section 9.04(b)(3). Since June 6, 2002, the continuous opacity monitors have recorded many opacity levels over the 20% opacity for 6 minutes in any one hour period. But none exceeded the supplemental significance threshold in EPA's High Priority Violations (HPV) Policy. The HPV Policy is incorporated in Puget Sound Clean Air Agency's civil penalty policy for CEMS, which assesses civil penalties for emissions exceeding 25% opacity for > 3% of the actual equipment

operating time during the month. Written Warnings are issued and closed for emissions that exceeded the standard but not the supplemental significance threshold.

Written Warnings	Month of Violation	Description
WW 2-002069	November '06	Furnace No. 3 > 20% 6 min 11/4, 11/6, 11/28 Furnace No. 5 > 20% 6 min 11/3
WW 2-001401	October '06	Furnace No. 5 > 20% 6 min 10/01
WW 2-007501	September '06	Furnace No. 3 > 20% 6 min 9/05, 9/09, 9/25
WW 2-002059	August '06	Furnace No. 4 > 20% 6 min 8/23/06
WW 2-007500	July '06	Furnace No. 3 > 20% 6 min 7/15, # 5 7/28
WW 2-007495	June '06	Furnace No. 4 > 20% 6 min 8/11/06
WW 2-007488	April '06	Furnace No. 4 > 20% 6 min 4/20/06
WW 2-002054	March '06	Furnace No. 5 > 20% 6 min
WW 2-002051	February '06	Furnace No. 4 > 20% 6 min 2/17, 2/5, 2/4 and 2/23
WW 2-007191	December '05	Furnace No. 3 > 20% 6 min Furnace No. 5 > 20% 6 min
WW-2-007150	November '05	Furnace No. 4 > 20% 6 min
WW 2-007475	October '05	Furnace No. 3 > 20% 6 min 10/01 Furnace No. 5 > 20% 6 min 10/05
WW 2-007147	September '05	Furnace No. 2 (S) > 20% 6 min Furnace No. 3 > 20% 6 min Furnace No. 5 > 20% 6 min
WW 2-007140	June '05	> 20% 6 min
WW 2-007139	May '05	> 20% 6 min
WW 2-007029	April '05	> 20% 6 min
WW 2-007028	March '05	Furnace No. 2 (S) > 20% 6 min Furnace No. 3 > 20% 6 min Furnace No. 5 > 20% 6 min
WW 2-007024	February '05	Furnace No. 5 > 20% 6 min Furnaces Nos. 3, 4 and 5 < 95% data recovery
WW 2-000349	January 2005	Furnace No. 3 > 20% 6 min Furnace No. 5 > 20% 6 min
WW 2-007468	November '04	Furnace No. 2 > 20% 6 min Furnace No. 3 > 20% 6 min Furnace No. 5 > 20% 6 min
WW 2-007466	October '04	Furnace No. 2 > 20% 6 min Furnace No. 3 > 20% 6 min Furnace No. 5 > 20% 6 min
WW 2-007461	September '04	Furnace No. 2 > 20% 6 min Furnace No. 3 > 20% 6 min Furnace No. 4 > 20% 6 min Furnace No. 5 > 20% 6 min
WW 2-007460	August '04	Furnace No. 2 > 20% 6 min Furnace No. 4 > 20% 6 min Furnace No. 5 > 20% 6 min
WW 2-007124	July '04	> 20% 6 min
WW 2-007457	June '04	> 20% 6 min
WW 2-007118	May '04	Furnace No. 2 > 20% 6 min Furnace No. 3 > 20% 6 min
WW 2-007020	April '04	Furnace No. 2 > 20% 6 min Furnace No. 5 > 20% 6 min

Written Warnings	Month of Violation	Description
WW 2-007017	March '04	Furnace No. 3 > 20% 6 min Furnace No. 5 > 20% 6 min
WW 2-007014	February '04	> 20% 6 min
WW 2-007115	January '04	Furnace No. 2 > 20% 6 min Furnace No. 4 > 20% 6 min Furnace No. 5 > 20% 6 min
WW 2-007113	December '03	> 20% 6 min
WW-2-007107	November '03	Furnace No. 5 > 20% 6 min
WW-2-007001	June '03	Furnace No. 2 > 20% 6 min Furnace No. 5 > 20% 6 min
WW 2-006649	September '03	Furnace No. 3 > 20% 6 min 9/13 Furnace No. 5 > 20% 6 min 9/6
WW 2-006642	October '02	Furnace No. 3 > 20% 6 min

Failing to Meet COMS Data Recovery and QA Requirements

Ardagh (formerly known as Saint-Gobain) violated Regulation I, Section 12.03(b), which requires at least 95% valid COMS data recovery each month. They also violated Regulation I, Section 12.03(c), which requires Saint-Gobain to follow the EPA’s “Recommended Quality Assurance Procedures for Opacity COMS”. At this time, all of these violations have been closed based on letters from Saint-Gobain describing repairs to the continuous opacity monitoring systems or a demonstration that the lost data could not have been reasonably prevented.

NOV or WW	Month of Violation	Description	Status
NOV 3-000350	October '06	Furnace No. 5: < 95% data recovery	Consent Decree (C07-0409) on 3/27/07
NOV 3-002209	August '06	Furnaces Nos. 3 and 5: < 95% data recovery	Closed per 10/30/06 corrective action letter
NOV 3-000349	July '06	Furnace No. 5: < 95% data recovery	Consent Decree (C07-0409) on 3/27/07
NOV 3-001138	January '06	Furnace No. 2 (S): < 95% data recovery	Consent Decree (C07-0409) on 3/27/07
WW 2-000492	December '02	Furnace No. 5: < 95% data recovery	Consent Decree (CV03-3601) on 12/31/03
WW 2-006639	August '02	< 95% data recovery	Consent Decree (CV03-3601) on 12/31/03
WW 2-006638	August '02	< 95% data recovery	Consent Decree (CV03-3601) on 12/31/03

Failing Source Tests

Saint-Gobain operated glass furnaces after failing source tests. The Agency issued Notices of Violation for the period of time after failing a test until the next passing test. (As of February 1, 2007, the Agency has not received the test report for the December 5, 2006 source test.) The Agency is currently negotiating a settlement agreement with Saint-Gobain to resolve all outstanding enforcement actions for failed source tests.

NOV or WW	Dates of Violation	Description	Status
NOV 3-001146	09/30/06-12/06/06	Furnace No. 2 (N) > 0.05 gr/dscf on 9/29/06	Consent Decree (C07-0409) on 3/27/07
NOV 3-001145	9/29/2006	Furnace No. 2 (N) > 0.05 gr/dscf	Consent Decree (C07-0409) on 3/27/07
NOV 3-001144	9/30/06-12/06/06	Furnace No. 2 (S) > 0.05 gr/dscf on 9/29/06	Consent Decree (C07-0409) on 3/27/07
NOV 3-001143	9/29/2006	Furnace No. 2 (S) > 0.05 gr/dscf	Consent Decree (C07-0409) on 3/27/07
NOV 3-001142	09/30/06-12/06/06	Furnace No. 5 > 0.5 lb/ton on 09/29/06	Consent Decree (C07-0409) on 3/27/07
NOV 3-001141	9/29/2006	Furnace No. 5 > 0.5 lb PM 10/ton on 09/29/06	Consent Decree (C07-0409) on 3/27/07
NOV 3-001140	09/30/06-12/06/06	>17.5 lb PM10/hr on 09/29/06	Consent Decree (C07-0409) on 3/27/07
NOV 3-001139	9/29/2006	>17.5 lb PM10/hr	Consent Decree (C07-0409) on 3/27/07
NOV 3-000347	5/02/06-09/28/06	>17.5 lb PM10/hr on 2/10/06	Consent Decree (C07-0409) on 3/27/07
NOV 3-000346	5/02/06-09/28/06	>17.5 lb PM10/hr on 12/20/05	Consent Decree (C07-0409) on 3/27/07
NOV 3-000345	4/1/06-9/28/06	Furnace No. 5 > 0.5 lb/ton on 12/20/05	Consent Decree (C07-0409) on 3/27/07
NOV 3-000344	4/1/06-9/28/06	Furnace No. 2 (N) > 0.05 gr/dscf on 12/20/06	Consent Decree (C07-0409) on 3/27/07
NOV 3-000343	4/1/06 -9/28/06	Furnace No. 2 (N) > 0.05 gr/dscf on 12/20/06	Consent Decree (C07-0409) on 3/27/07
NOV 3-000341	12/21/05-03/31/06	Furnace No. 2 (S) > 0.05 gr/dscf on 12/20/05	Consent Decree (C07-0409) on 3/27/07
NOV 3-000340	12/21/05-03/31/06	Furnace No. 2 (N) > 0.05 gr/dscf on 12/20/05	Consent Decree (C07-0409) on 3/27/07
NOV 3-000338	12/21/05-03/31/06	Furnace No. 5 > 0.5 lb/ton 6/24/05-9/21/05. Failure to retest per 3/06 deviation report	Consent Decree (C07-0409) on 3/27/07
NOV 3-000337	12/21/05-5/01/06	>17.5 lb PM10/hr on 12/20/05	Consent Decree (C07-0409) on 3/27/07
NOV 3-000333	12/20/05	Furnace No. 2 (S) > 0.05 gr/dscf	Consent Decree (C07-0409) on 3/27/07
NOV 3-000331	12/20/05	Furnace No. 5 > 0.5 lb/ton	Consent Decree (C07-0409) on 3/27/07

NOV or WW	Dates of Violation	Description	Status
NOV 3-000332	9/23/05-12/19/05	Furnace No. 5 > 0.5 lb/ton on 9/22 and 12/20/05	Consent Decree (C07-0409) on 3/27/07
NOV 3-000330	12/20/2005	Furnace No. 2 (N) > 0.05 gr/dscf	Consent Decree (C07-0409) on 3/27/07
NOV 3-000329	12/20/2005	>17.5 lb PM10/hr	Consent Decree (C07-0409) on 3/27/07
NOV 3-000321	6/25/05-9/21/05	>17.5 lb PM10/hr on 6/22/05-6/24/05	Consent Decree (C07-0409) on 3/27/07
NOV 3-001137	6/24/05-9/21/05	Furnace No. 5 > 0.5 lb/ton 6/24/05-9/21/05	Consent Decree (C07-0409) on 3/27/07
NOV 3-001136	9/22/2005	Furnace No. 5 > 0.5 lb/ton.	Consent Decree (C07-0409) on 3/27/07
NOV 3-001134	6/24/2005	Furnace No. 2 (S) > 0.05 gr/dscf	Consent Decree (C07-0409) on 3/27/07
NOV 3-001132	6/23/2005	Furnace No. 5 > 0.05 gr/dscf	Consent Decree (C07-0409) on 3/27/07
NOV 3-001131	6/23/2005	Furnace No. 5 > 0.5 lb/ton	Consent Decree (C07-0409) on 3/27/07
NOV 3-001133	6/22/2005	Furnace No. 3 > 0.05 gr/dscf	Consent Decree (C07-0409) on 3/27/07
NOV 3-001130	6/22-6/24	>17.5 lb PM10/hr	Consent Decree (C07-0409) on 3/27/07
NOV 3-001126	11/24/04-01/24/05	>17.5 lb PM10/hr on 11/23/04	Consent Decree (C07-0409) on 3/27/07
NOV 3-001122	11/23/04	>17.5 lb PM10/hr	Consent Decree (C07-0409) on 3/27/07
NOV 3-001254	9/17/04-11/22/04	>17.5 lb PM10/hr on 9/16/04	Consent Decree (C07-0409) on 3/27/07
NOV 3-001116	5/29/04-9/15/04	Furnace No. 5 > 0.5 lb/ton	Consent Decree (C07-0409) on 3/27/07
NOV 3-001114	9/13/04 -9/16/04	>17.5 lb PM10/hr	Consent Decree (C07-0409) on 3/27/07
NOV 3-001113	9/16/04	Furnace No. 5 > 0.5 lb/ton	Consent Decree (C07-0409) on 3/27/07
NOV 3-001107	5/28/04	Furnace No. 5 > 0.5 lb/ton on 5/28/04	Consent Decree (C07-0409) on 3/27/07
NOV 3-001108	3/24/04-5/27/04	Furnace No. 5 > 0.5 lb/ton	Consent Decree (C07-0409) on 3/27/07
NOV 3-001109	5/28/2004	Furnace No. 5 > 2.8 lb PM10/hr on 5/28	Consent Decree (C07-0409) on 3/27/07
NOV 3-001106	3/25/04-5/26/04	Furnace No. 2 >1.6 lb SO ₂ /ton	Consent Decree (C07-0409) on 3/27/07
NOV 3-001102	3/24/04	Furnace No. 2 >1.6 lb SO ₂ /ton	Consent Decree (C07-0409) on 3/27/07
NOV 3-001104	3/23/04	Furnace No. 5 >2.8 lb PM10/hr	Consent Decree (C07-0409) on 3/27/07
NOV 3-001103	3/23/04	Furnace No. 5 >0.5 lb PM10/ton	Consent Decree (C07-0409) on 3/27/07

NOV or WW	Dates of Violation	Description	Status
NOV 3-001101	12/12/03-3/23/04	Furnace No. 2 >1.6 lb SO ₂ /ton on 12/11/03 and 3/24/04.	Consent Decree (C07-0409) on 3/27/07
NOV 3-001693	11/7/03-12/8/03	Furnace No. 5 >0.5 lb/ton	Consent Decree (C07-0409) on 3/27/07
NOV 3-001692	11/06/03-12/10/03	Furnace No. 2 >1.6 lb SO ₂ /ton on 11/05/03 and 12/11/03.	Consent Decree (C07-0409) on 3/27/07
NOV 3-001690	12/11/2003	Furnace No. 2 >1.6 lb SO ₂ /ton	Consent Decree (C07-0409) on 3/27/07
NOV 3-001691	12/9/03	Furnace No. 5 >2.8 lb PM10/hr	Consent Decree (C07-0409) on 3/27/07
NOV 3-001685	11/6/2003	Furnace No. 5 > 0.5 lb/ton on 11/06/03	Consent Decree (C07-0409) on 3/27/07
NOV 3-001686	9/12/03-11/05/03	Furnace No. 5 > 0.5 lb/ton	Consent Decree (C07-0409) on 3/27/07
NOV 3-001684	11/05/03	Furnace No. 2 >1.6 lb SO ₂ /ton	Consent Decree (C07-0409) on 3/27/07
NOV 3-001683	11/5/03, 11/6/03	Furnace 2 > 3.0 lb PM10/hr Furnace No. 3 > 7.0 lb PM10/hr OR Furnace No. 5 >2.8 lb PM10/hr	Consent Decree (C07-0409) on 3/27/07
NOV 3-001681	9/11/2003	Furnace No. 5 > 0.5 lb/ton	Consent Decree (C07-0409) on 3/27/07
NOV 3-001680	9/10/03, 9/11/03	Furnace No. 2 > 3.0 lb PM10/hr Furnace No. 5 >2.8 lb PM10/hr	Case Closure Letter sent 11/3/03
NOV 3-001679	5/09/03-7/16/03	Furnace No. 3 >0.05 gr/dscf on 5/08	CP 9700 issued 11/20/03 Paid \$16,000 on 1/21/04 Consent Decree (CV03-3601) on 12/31/03
NOV 3-001676	5/8/2003	Furnace No. 5 > 2.8 lb PM10/hr Furnace No. 4 > 4.7 lb PM10/hr	Consent Decree (CV03-3601) on 12/31/03
NOV 3-001675	5/5/2003	Furnace No. 3 >0.05 gr/dscf on 5/08	CP 9699 issued 11/20/03 Paid \$1,000 on 1/21/04 Consent Decree (CV03-3601) on 12/31/03
NOV 3-001669	3/21/03	Furnace No. 5 > 2.8 lb PM10/hr Furnace No. 2 > 3.0 lb PM10/hr	Consent Decree (CV03-3601) on 12/31/03

NOV or WW	Dates of Violation	Description	Status
NOV 3-001664	10/8/02-10/9/02	Furnace No. 5 > 2.8 lb PM10/hr Furnace No. 2 > 3.0 lb PM10/hr on 10/8 and 10/9/03	Consent Decree (CV03- 3601) on 12/31/03
NOV 3-001661	3/14 - 5/27/02 6/26 - 8/27/02 3/14 - 8/27/02	Furnace No. 5 > Furnace No. 2 > on 3/13/02	Consent Decree (CV03- 3601) on 12/31/03

Failing to Perform Source Tests

Ardagh (formerly known as Saint-Gobain) failed to perform source tests. Notices of violation and written warnings issued during calendar years 2002 and 2003 for failing to schedule a source test based on the predictive equations (derived from previous particulate source tests). They were closed on December 31, 2003 under a consent decree that replaced the predictive equations in the air operating permit with a requirement for quarterly source tests. Notices of violation have also been issued for failing to retest within 60 days of failing a simultaneous PM10 test.

NOV or WW	Dates of Violation	Description	Status
NOV 3-000336	4/10/06-4/29/06	Failure to retest within 60 days after receipt of 2/10/06 simultaneous test failure	Consent Decree (C07-0409) on 3/27/07
WW 2-000500	June '03	Causing or allowing the sum of the daily predictive equation results in lbs of PM10/hr to exceed the 17.5 lb of PM10/hr limit for greater than seven consecutive days during June 2003, without scheduling a source test within 30 days Exceeding the daily predictive monitoring equation limits for furnaces no. 2, 3 and 5 during June 2003 for greater than seven consecutive days without scheduling a source test within 30 days	Consent Decree (CV03-3601) on 12/31/03
WW 2-006647	May-'03	Causing or allowing the sum of daily predictive equation results in lbs of PM10/hr to exceed the 17.5 lbs of PM10/hr limit for greater than seven consecutive days Exceeding the predicted particulate concentration action level of 0.05 g/dscf, the 3.0 lbs of PM10/hr limit, and the 0.50 lbs of PM10/ton of glass produced limit on furnace No. 2 for the period from May 1, 2003, through and including May 31, 2003, without scheduling a source test Exceeding the predicted particulate concentration action level of 0.05 g/dscf on furnace No. 3 on May 1, 3 - 24, and 26 - 31, 2003, which exceeded seven consecutive days without scheduling a source test Exceeding the predicted particulate concentration action level of 0.05 g/dscf on furnace No. 4 on May 1, 2003, through and including May 31, 2003, which exceeded seven consecutive days without scheduling a source test	Consent Decree (CV03-3601) on 12/31/03

NOV or WW	Dates of Violation	Description	Status
NOV 3-001674	April '03	<p>Causing or allowing the sum of daily predictive equation results in lbs of PM10/hr to exceed the 17.5 lbs of PM10/hr limit for greater than 7 consecutive days</p> <p>Exceeding the predicted particulate concentration action level of 0.05 g/dscf, the 3.0 lbs of PM10/hr limit, and the 0.50 lbs of PM10/ton of glass produced limit on furnace No. 2 for the period from April 1, 2003, through and including April 30, 2003, except April 14, 2003, which included a period exceeding seven consecutive days during the month of April 2003, without scheduling a source test</p> <p>Exceeding the predicted particulate concentration action level of 0.05 g/dscf and the 4.70 lbs of PM10/hr limit on furnace No. 4 for the period from April 1, 2003, through and including April 30, 2003, which exceeded seven consecutive days without scheduling a source test</p> <p>Exceeding the predicted particulate 2.80 lbs of PM10/hr limit on glass furnace No. 5 for the period from April 21, 2003, through and including April 30, 2003, which exceeded seven consecutive days without scheduling a source test</p>	Consent Decree (CV03-3601) on 12/31/03
NOV 3-001671	March '03	<p>Causing or allowing the sum of daily predictive equation results in lbs of PM10/hr to exceed the 17.5 lb of PM10/hr limit for greater than seven consecutive days during March '03 without scheduling a source test by 4/8/03</p> <p>Exceeding the predicted particulate concentration action level (0.05 g/dscf), the 3.0 lbs of PM10/hr limit, and the 0.5 lbs of PM10/ton limit on furnace No. 2 for a period greater than 7 consecutive days during March '03, without scheduling a source test</p> <p>Exceeding the predicted particulate concentration action level (0.05 g/dscf) and the 4.7 lbs of PM10/hr limit on furnace No. 4 for greater than 7 consecutive days during March '03, without scheduling a source test</p> <p>Exceeding the predicted particulate lbs of PM10/hr limit on furnace No. 5 for a period greater than 7 consecutive days during March '03, without scheduling a source test</p>	Consent Decree (CV03-3601) on 12/31/03

NOV or WW	Dates of Violation	Description	Status
NOV 3-001668	February '03	<p>Causing or allowing the sum of the daily predictive equation results in lbs of PM10/hr to exceed the 17.5 lb of PM10/hr limit for greater than seven consecutive days during February '03, without scheduling a source test by March 31, 2003</p> <p>Exceeding the predicted particulate concentration action level (0.05 g/dscf), the 3.0 lbs of PM10/hr limit, and the 0.50 lbs of PM10/ton of glass produced limit on furnace No. 2 for a period greater than seven consecutive days during February 2003, without scheduling a source test</p> <p>Exceeding the predicted particulate concentration action level (0.05 g/dscf) and the 4.7 lbs of PM10/hr limit on glass furnace No. 4 for a period greater than seven consecutive days during February 2003, without scheduling a source test</p>	Consent Decree (CV03-3601) on 12/31/03
WW 2-000492	December '02	Causing or allowing daily predictive equation results to exceed emission limits	Consent Decree (CV03-3601) on 12/31/03
NOV 3-001665	November '02	Causing or allowing daily predictive equation results to exceed emission limits	Consent Decree (CV03-3601) on 12/31/03

Failing to Submit Accurate and Complete Reports

Argdah (formerly known as Saint-Gobain) reported the failure to conduct quarterly stack tests in the March and June deviation reports respectively. The Agency anticipates these Notices of Violation will be resolved in a pending consent decree.

NOV or WW	Date of Violation	Description	Status
NOV 3-002207	June 30, '06	Failure to conduct 2nd quarter '06 source tests	Consent Decree (C07-0409) on 3/27/07
NOV 3-002210	August 31, '06	Failure to submit deviation report for not conducting 1 st or 2 nd quarter source test and not retesting within 60 days for compliance with PM10 cap	Consent Decree (C07-0409) on 3/27/07
NOV 3-000348	July 31, '06	Failure to submit deviation report for not conducting 2 nd quarter source test and not retesting for compliance with PM10 cap	Consent Decree (C07-0409) on 3/27/07
NOV 3-000342	May 31, '06	Failure to submit deviation report for not conducting 1 st quarter source test and not retest for compliance with PM10 cap	Consent Decree (C07-0409) on 3/27/07
NOV 3-002203	April 30, '06	Failure to submit deviation report for not conducting 1 st quarter source test and not retesting for compliance with PM10 cap	Consent Decree (C07-0409) on 3/27/07
NOV 3-000339	March 31, '06	Failure to conduct 1st quarter '06 source test	Consent Decree (C07-0409) on 3/27/07
NOV 3-001699	September '04	Failure to conduct 2nd quarter mold swab visual emission observation	Consent Decree (C07-0409) on 3/27/07

NOV or WW	Date of Violation	Description	Status
WW 2-007461	September '04	Incorrectly reported lb/hr stack test results as deviations	Consent Decree (C07-0409) on 3/27/07
WW 2-007021	April '04	Failure to report cause of deviations for 3/23/04 and 3/24/04 failing source tests	Case Closure Letter sent 5/25/05
NOV 3-001695	January '04	Failure to submit deviation report for Furnace Nos. 2,4 and 5 >20% opacity 6 min	Consent Decree (C07-0409) on 3/27/07
NOV 3-001696	July 1, '03 - December 31, '03	Late excess emission, NSPS summary, and semiannual reports. Opacity >UCL furn 2,3, and 5	Consent Decree (C07-0409) on 3/27/07
WW 2-007114	July 1, '03- December 31, '03	Late semiannual report Failure to submit source test plan for 11/3/03 and 12/8/03 tests	Consent Decree (C07-0409) on 3/27/07
NOV 3-001534	June '03	Failing to report all 6-minute periods during which the average opacity exceeded the corresponding 99-percent upper confidence level for glass furnaces Nos. 2, 3, and 5 by submitting only the highest 6-minute opacity value per furnace for each 24-hour period over the UCL	Consent Decree (CV03-3601) on 12/31/03
NOV 3-001694	December '03	Failure to report lack of source test plan and 2 weeks notice prior to 12/8/03 as permit deviation	Consent Decree (C07-0409) on 3/27/07

NOV or WW	Date of Violation	Description	Status
NOV 3-001534	June '03	Failing to report all 6-minute periods during which the average opacity exceeded the corresponding 99-percent upper confidence level for glass furnaces Nos. 2, 3, and 5 by submitting only the highest 6-minute opacity value per furnace for each 24-hour period over the UCL	Consent Decree (CV03-3601) on 12/31/03
NOV 3-001678	May '03	Failing to report all 6-minute periods during which the average opacity exceeded the corresponding 99-percent upper confidence level for glass furnaces Nos. 2, 3, and 5 by submitting only the highest 6-minute opacity value per furnace for each 24-hour period over the UCL	Consent Decree (CV03-3601) on 12/31/03
NOV 3-001673	April '03	Failing to report all 6-minute periods during which the average opacity exceeded the corresponding 99-percent upper confidence level for glass furnaces Nos. 2, 3, and 5 by submitting only the highest 6-minute opacity value per furnace for each 24-hour period over the UCL	CP 9686 Paid \$4,609 Consent Decree (CV03-3601) on 12/31/03
NOV 3-001670	March '03	Failing to report all of the 6-minute periods during which the average opacity exceeded the corresponding 99 percent upper confidence level for glass furnaces No. 2, 3, and 5 by submitting only the highest 6-minute opacity value per furnace for each 24 hour period	Consent Decree (CV03-3601) on 12/31/03

NOV or WW	Date of Violation	Description	Status
NOV 3-001667	February '03	Failing to report all of the 6-minute periods during which the average opacity exceeded the corresponding 99 percent upper confidence level for glass furnaces No. 2, 3, and 5 by submitting only the highest 6-minute opacity value per furnace for each 24 hour period	Consent Decree (CV03-3601) on 12/31/03
WW 2-006648	January 1, '03 – June 30, '03 June 6 '02 - June 30, '03	Submitting a semi-annual compliance status certification for the period January 1, 2003 through June 30, 2003 with certain deficiencies, and submitting an annual compliance status certification for the period June 6, 2002 through June 30, 2003 with certain deficiencies	Consent Decree (CV03-3601) on 12/31/03
WW 2-006639	August '02 September '02	Failing to submit the daily predicted emission rate calculation values Causing or allowing the operation of glass furnace No. 4 in excess of the particulate concentration action level	Consent Decree (CV03-3601) on 12/31/03
WW 2-007002	June 6, '02- December 31, '02	Submitting a semi-annual compliance status certification with certain deficiencies	Consent Decree (CV03-3601) on 12/31/03
NOV 3-001533	June '02 - December '02	Failing to maintain equipment in good working order and allowing visible emissions from malfunctioning baghouse serving furnace No. 1	CP 9685 Paid \$13,500 on 1/21/04 Consent Decree (CV03-3601) on 12/31/03
NV 3-001532	October '02 - December '02	Failing to conduct quarterly inspections of the facility for visible emissions for the fourth quarter 2002	CP 9684 \$2000 on 1/21/04 Consent Decree (CV03-3601) on 12/31/03

NOV or WW	Date of Violation	Description	Status
NOV 3-001531	August '02 - May '03	Failing to submit monthly deviation reports for the period August 2002 through May 2003	Consent Decree (CV03-3601) on 12/31/03
WW 2-000498	May 22, '03	Failing to sign the semi-annual AOP certification report dated 3/22/03	Consent Decree (CV03-3601) on 12/31/03
NV 3-001672	April 29, '03 – May 22, '03	Failing to submit a semi-annual deviation report to the Agency on or before 1/30/03	CP 9687 Paid \$134,000 on 1/21/04 Consent Decree (CV03-3601) on 12/31/03
NOV 3-001528	January 31, '03	Failing to submit a semi-annual deviation report to the agency on or before 1/30/03	CP 9687 Paid \$134,000 on 1/21/04 Consent Decree (CV03-3601) on 12/31/03
NOV 3-00306	January 31, '03	Failing to submit semi-annual deviation report to the Agency on or before January 30, 2003	CP 9687 Paid \$134,000 on 1/21/04 Consent Decree (CV03-3601) on 12/31/03
NOV 3-001662	July 30, '02- August 26, '02	Failing to perform daily predictive calculations Failing to report monthly deviations Failing to use the opacity data from a performance test to determine the opacity value corresponding to the 99% upper confidence level of normal distribution of average opacity values	Consent Decree (CV03-3601) on 12/31/03
WW 2-006642	October '02	Failing to submit the daily predicted emission rate calculation values Causing or allowing daily predictive equation results to exceed emission limits	Consent Decree (CV03-3601) on 12/31/03

Other

Saint-Gobain experienced a natural gas curtailment during January, 2005 and burned oil in Furnace Nos. 5, 3 and 2 during this time without an order of approval from the Agency. In response to enforcement actions, Saint-Gobain submitted notices of construction to burn oil in the furnaces during natural gas curtailments. These applications were approved by the Agency and the notices of violation were closed.

NOV or WW	Date of Violation	Description	Status
NOV 3-000335	2/17/06-2/18/06	Burned oil in Furnace Nos. 2, 3 and 5 without an Order of Approval	Consent Decree (C07-0409) on 3/27/07
NOV 3-001125	January 4, '05- January 6, '05	Burned oil in Furnace No. 5 without an Order of Approval	Consent Decree (C07-0409) on 3/27/07
NOV 3-001124	January 4, '05- January 6, '05	Burned oil in Furnace No. 3 without an Order of Approval	Consent Decree (C07-0409) on 3/27/07
NOV 3-001123	January 4, '05- January 6, '05	Burned oil in Furnace No. 2 without an Order of Approval	Consent Decree (C07-0409) on 3/27/07
WW 2-001665	May 15, 2003	Causing or allowing fugitive emissions from Tank 3 batch conveyer with no control measures	Consent Decree (CV03-3601) on 12/31/03

Emission Inventory

The annual emissions reported to the Puget Sound Clean Air Agency by Argdah (formerly known as Saint-Gobain) for 2005 are shown below. The annual emissions from the glass melting furnaces are calculated from source test data for each furnace.

lbs/2005	CO	NO ₂	PM ₁₀	PM _{2.5}	SO ₂	VOC
Glass Furnace No. 2	14614	94992	32882	29923	114721	14614
Glass Furnace No. 3	14217	54023	57578	52396	122974	14217
Glass Furnace No. 4	5137	436631	15924	14491	34417	5137
Glass Furnace No. 5	13543	45369	44692	40669	94800	13543
Hot and Cold End Treatment	0	0	11550	11550	0	41580
Mold Swabbing	0	0	14700	14700	0	0
Non-Furnace Diesel	4040	18760	1320	1320	1240	1540
Non-Furnace Natural Gas	7620	9080	700	700	60	500
Baghouses	0	0	1395	881	0	0
Printing	0	0	0	0	0	300
TOTAL	59171	658856	180741	166629	368213	91431

Explanation of Applicable Requirements

Applicable requirements are listed in several sections of this operating permit as outlined below. The permit only lists the requirements that Puget Sound Clean Air Agency has determined to be within the scope of the definition of “applicable requirements” under the operating permit program. Argdah (formerly known as Saint-Gobain) is legally responsible for complying with all applicable requirements of the operating permit and other requirements that do not fit the definition of “applicable requirements” found in Chapter 173-401 Washington Administrative Code (WAC).

Applicable requirements that are not ongoing are not included in the permit because they are not in effect during the term of the permit (a.k.a. “obsolete”). However, these requirements are addressed in this statement of basis.

Applicable Requirements

Argdah (formerly known as Saint-Gobain) is subject to all the requirements listed in all the tables contained in Section I of the permit. Section I.A contains the requirements that are applicable facility-wide. The Puget Sound Clean Air Agency did not repeat the facility-wide requirements listed in Section I.A in Section I.B, unless the monitoring method was specific to the listed emission unit. If the Enforceable Requirement listed in Section I.A is duplicative of the Enforceable Requirement in Section I.B, then only the monitoring and recordkeeping method specified in Section I.B shall be required for the specific emission units, and the monitoring and recordkeeping method specified in Section I.A shall not apply to that unit or units.

The tables list the citation for the “applicable requirement” in the second column. The third column (Date) contains the adoption or effective date of the requirement. In some cases, the effective dates of the federally enforceable requirement and the state-only requirement may be different because only rules approved by EPA through Sections 110, 111, and 112 of the federal Clean Air Act are federally enforceable and either the state has not submitted the regulation to the EPA or the EPA has not approved it.

The first column is used as an identifier for the requirement, and the fourth (Requirement Paraphrase) column paraphrases the requirement. The first and fourth columns are for information only and are not enforceable conditions of this permit. The actual enforceable requirement is embodied in the requirement cited in the second and third columns.

The fifth column (Monitoring, Maintenance & Recordkeeping Method) identifies the methods described in Section II of the permit. Following these methods is an enforceable requirement of this permit. The sixth column (Emission Standard Period) identifies the averaging time for the emission standard and/or the minimum length of one reference method run. Section V.N.1 of the permit identifies the number of separate runs for determining compliance using the reference method. The last column (Reference Test Method) identifies the reference method associated with an applicable emission limit that is to be used if and when a source test is required. In some cases where the applicable requirement does not cite a test method, one has been added.

The permit identifies a specific method and the adoption date. Puget Sound Clean Air Agency Regulation I, Section 3.07(a) states that testing for compliance must follow the current EPA-approved methods unless specific methods have been adopted by the Puget Sound Clean Air Agency Board of Directors. WAC 173-400-105(4) allows either EPA 40 CFR 60 Appendix A or procedures in Ecology's "*Source Test Manual – Procedures for Compliance Testing as of July 12, 1990.*" These three requirements may conflict if the current method is not listed in the permit. However, EPA seldom significantly changes the Reference Methods and the current method could be used as credible evidence of an emission violation. Finally, major changes in the Reference Test Method may necessitate reopening the permit.

In the event of conflict or omission between the information contained in the fourth and sixth columns and the actual statute or regulation cited in the second column, the requirements and language of the actual statute or regulation cited shall govern. For more information regarding any of the requirements cited in the second and third columns, refer to the actual requirements cited.

Recently amended Puget Sound Clean Air Agency Regulations. The Puget Sound Clean Air Agency Board of Directors has recently amended several sections of its regulations. These amended sections are listed as State/Puget Sound Clean Air Agency enforceable requirements in the permit. The versions of the regulations that are in the SIP are listed as federally enforceable requirements. The amended versions will be (or in some cases have been) forwarded to EPA as SIP amendments. Upon approval of the SIP changes, the revised versions of the regulations will be federally enforceable and the old version will no longer apply.

Section I.A (Facility-Wide)

1. Requirements I.A.1 and I.A.2 - 20% General Opacity

I.A.1 and I.A.2: Both Puget Sound Clean Air Agency Regulation I, Section 9.03 and WAC 173-400-040(1) rules contain a 20% opacity standard not to be exceeded for more than three minutes in an hour. The 20% opacity standard applies facility-wide; however, several emission units have different monitoring methods and are explained below. The glass melting furnaces have specific opacity standards that are explained under Emission Unit 1, Glass Melting Furnaces.

Regulation I, Section 9.03 (March 11, 1999) will be superseded by Regulation I, Section 9.03 (March 25, 2004) upon its adoption into the SIP; however, the levels of the standards are the same.

The monitoring method for plant-wide visual emission monitoring is based on visual inspections once per quarter of general emission points at Saint-Gobain, with the source taking corrective action within 24 hours or using the opacity reference test method to determine opacity if any visible emissions are noted. The Puget Sound Clean Air Agency has determined that the monitoring should be quarterly for the reasons listed below.

- 1) Initial compliance. There have been no notices of violation (NOVs) issued by the Puget Sound Clean Air Agency during the last ten years for failure to meet this plant-wide visual emission requirement of Regulation I, Section 9.03. Saint-Gobain is presumed to be able to

comply with this facility-wide visual opacity requirement (see Compliance History). Therefore, the Puget Sound Clean Air Agency concludes that this facility-wide visual inspection frequency will assure continued compliance with the opacity requirements.

- 2) Margin of compliance. Because no plant-wide visual opacity violations have been observed by the Puget Sound Clean Air Agency, this Agency concludes that the margin for opacity compliance is large enough to justify visual inspections at this frequency. By following this monitoring frequency, Saint-Gobain will take corrective action before a violation occurs. Recording of visible emissions is not necessarily a deviation of the opacity requirements. However, failure to take timely corrective action, as defined by the monitoring method, is a deviation of the specific permit term. Taking corrective action does not relieve Saint-Gobain from the obligation to comply with the opacity requirement itself.
- 3) Variability of process and emissions. The general equipment operates on a relatively constant production rate, both during a per-shift basis and during a per-hour basis, so emissions can be expected to be relatively constant during the time period of the emission standard, except for mold swabbing which is handled below.
- 4) Environmental impacts of problems. Observed visual opacity is generally related to emissions of particulate matter or finely divided liquid droplets. If opacity problems are observed, operations or maintenance problems are the most likely cause and must be addressed quickly by following and upgrading the O&M Plan to avoid emissions that would have a significant environmental impact. Based on emission estimates reported by Saint-Gobain, the plant-wide emissions of PM10 are about 90 tons per year.
- 5) Technical considerations. Saint-Gobain is required to perform quarterly self-inspections. By following this inspection frequency, following a good O&M Plan, and by making corrections and modifications to this Plan, Saint-Gobain will likely avoid catastrophic failure of the air pollution generating or controlling equipment which is the main cause of opacity standard deviations at Saint-Gobain. Catastrophic failure of specific air pollution generating equipment is the most likely source of an opacity standard deviation at Saint-Gobain. Additional monitoring procedures for specific emission units are specified in the operating permit.

2. Requirements I.A.3 and I.A.4 - Particulate

I.A.3: Section 9.09 applies to all equipment used in a manufacturing process.

I.A.4: WAC 173-400-060 (September 20, 1993) will be superseded by the February 10, 2005 version of WAC 173-400-060 upon its adoption into the SIP. The federally enforceable and the current versions contain the same emission limit of 0.10 gr/dscf and apply to all general process units (i.e., units using a procedure or a combination of procedures for the purpose of causing a change in material by either chemical or physical means, excluding combustion).

For these facility-wide requirements, the monitoring method is based on visual inspections once per quarter of general air pollution generating equipment at Saint-Gobain not covered by Emissions Unit Specific Applicable Requirements (I.A.2), with Saint-Gobain taking corrective action within 24 hours of the initial observation until there are no visible emissions or,

alternatively, recording the opacity using the reference test method, or shutting down the unit or activity until it can be repaired. Because particulate and opacity are, in general, physically related, the particulate monitoring for this requirement is the same as opacity (Requirements I.A.1 and I.A.2).

3. Requirement I.A.5 - General SO₂

I.A.5: Both Puget Sound Clean Air Agency Regulation I, Section 9.07 and WAC 173-400-040(6) are equivalent requirements (SO₂ emissions not to exceed 1000 ppm), except for the second paragraph of the WAC 173-400-040(6) which is not in the Puget Sound Clean Air Agency regulation. That paragraph, which is not federally enforceable, allows for exceptions to this requirement if the source can demonstrate that there is no feasible method of reducing the SO₂ concentrations to 1000 ppm. Since Puget Sound Clean Air Agency rules do not allow the exception, the second paragraph does not apply to Saint-Gobain. Emission Unit 1 (see Requirements EU 1.15-1.18, Orders of Approval No. 5193, 5289 and 9322, and 9369) also contains SO₂ emission limits for the glass melting furnaces.

The activities at Saint-Gobain that can contribute to sulfur emissions include facility-wide burning of pipeline quality natural gas, glass melting furnace raw materials and the sulfur treatment process.

SO₂ from Facility-Wide Burning of Pipeline Quality Natural Gas

“Natural gas” means a mixture of gaseous hydrocarbons, with at least 80 percent methane (by volume), and of pipeline quality, such as the gas sold or distributed by any utility company regulated by the Washington Utilities and Transportation Commission. Natural gas may also be referred to as “pipeline quality natural gas.” Saint-Gobain receives the same natural gas as all of the other natural gas consumers, private and industrial, in the Northwest. According to Section 1.4-3 of AP-42, natural gas contains approximately 2000 grains of sulfur per million cubic feet, which is equivalent to approximately 3.4 parts of sulfur per million cubic feet of natural gas, as shown in the following calculation:

$$\frac{2,000 \text{ gr } S}{1,000,000 \text{ ft}^3 \text{ nat. gas}} \times \frac{1 \text{ lb}}{7000 \text{ gr}} \times \frac{385 \frac{\text{ft}^3}{\text{mole } S}}{32 \frac{\text{lb}}{\text{mole } S}} = 3.44 \times 10^{-6} \frac{\text{ft}^3 S}{\text{ft}^3 \text{ nat. gas}} \equiv 3.44 \text{ ppm } dv S$$

According to *Perry's Chemical Engineer's Handbook*, each cubic foot of natural gas requires approximately 10 cubic feet of air for combustion, yielding approximately 11 cubic feet of combustion exhaust gases, consisting mostly of nitrogen, water vapor, and carbon dioxide. The sulfur in the natural gas will almost all be converted to sulfur dioxide, with each cubic foot of sulfur producing the same volume of sulfur dioxide. Since each cubic foot of natural gas contains 3.44×10^{-6} cubic feet of sulfur, each cubic foot of stack exhaust will contain approximately:

$$3.44 \times 10^{-6} \frac{\text{ft}^3 S}{\text{ft}^3 \text{ nat. gas}} \times \frac{1 \text{ ft}^3 \text{ SO}_2}{1 \text{ ft}^3 S} \times \frac{1 \text{ ft}^3 \text{ nat. gas}}{11 \text{ ft}^3 \text{ stack exhaust}} = 0.313 \times 10^{-6} \frac{\text{ft}^3 \text{ SO}_2}{\text{ft}^3 \text{ stack exhaust}}$$

The burning of natural gas generates about 0.31 ppmdv SO₂. This estimated value is less than one-tenth of one percent of the 1,000 ppm SO₂ standard.

Therefore, on a facility-wide basis, it is reasonable to assume that the combustion of natural gas will not exceed the 1,000 ppm SO₂ limits in Puget Sound Clean Air Agency Regulation I, Section 9.07 and WAC 173-400-040(6).

Sulfur Treatment Process

The sulfur treatment process (not currently used) uses SO₂ gas to treat glassware to provide a chemical resistance product. The sulfur treatment process uses between 4-7 lbs SO₂/hr. Some of the SO₂ is adsorbed onto the surface of glassware in treatment. The Notice of Construction Application shows the maximum potential SO₂ concentration cannot exceed 860 ppm at 7 lbs SO₂/hr. Therefore, no monitoring for Requirement I.A.5 plant-wide is required.

The emissions of SO₂ from the glass melting furnaces are covered under the specific emission units.

The remaining federally enforceable requirements in Section I.A do not contain Emission Standard Reference Test Methods or an Emission Standard Period. The Puget Sound Clean Air Agency has determined they are not necessary for these requirements. The Puget Sound Clean Air Agency will use the results of monitoring and observations, the review of operation and maintenance procedures and other information available to determine compliance with these requirements.

4. Requirement I.A.6 - Emissions That May Be Environmentally Detrimental or Cause a Nuisance

I.A.6: WAC 173-400-040(5) (September 9, 1993) will be superseded by WAC 173-400-040(5) (February 10, 2005) upon adoption into the SIP.

Ardagh (formerly known as Saint-Gobain) handles or processes materials that have a potential to cause fugitive dust emissions that may be environmentally detrimental or cause a nuisance. However, except for railcar unloading activities, the materials are handled or processed inside buildings that are totally enclosed and all the roadways and parking lots are paved. At least since 1986, the Puget Sound Clean Air Agency has not issued any NOVs for fugitive dust emissions from the plant grounds, nor have complaints been received for problems that were environmentally detrimental or that caused a nuisance. (A written warning was issued for fugitive emissions from a batch conveyor on May 15, 2003.) Therefore, the monitoring method specifies visual inspections once per quarter of the facility to monitor for fugitive emissions. The monitoring method is based on visual inspections with Saint-Gobain taking corrective action within 24 hours, if any fugitive dust emissions are noted.

The Puget Sound Clean Air Agency has determined that the monitoring should be once per quarter for the following reasons:

- 1) Initial compliance. Saint-Gobain has not been the subject of nuisance complaints and is considered to comply with this requirement.

- 2) Margin of compliance. Saint-Gobain handles and processes tons of dry dusty materials daily and, therefore, has significant potential to cause general fugitive dust emissions as well as potential visible source emissions that can be an environmental nuisance. Although all the roadways and parking lots are paved within the Saint-Gobain plant boundary and all significant emission points are operated correctly, some potential remains for the generation of air contaminant emissions in sufficient quantities to be injurious or unreasonably interfere with enjoyment of life and property. However, the margin for compliance is considered to be large enough that this frequency is justified.
- 3) Variability of process and emissions. Because the manufacturing process is relatively constant, it is unlikely that the variability of the process itself will cause emissions leading to environmentally detrimental problems or cause nuisances while the plant is normally operating.
- 4) Environmental impacts of problems. While there may be significant potential environmental impacts of emissions that may be environmentally detrimental or potentially can cause a nuisance, fugitive dust is primarily composed of large particles that tend to settle out of the air quickly enough that it is generally not carried beyond the property line.
- 5) Technical considerations. It is very likely that emissions from equipment that may cause a nuisance will be identified by this visual inspection monitoring frequency during plant operations and by workers during their normal course of work.

5. Requirement I.A.7 - Deposition of Particulate

I.A.7: WAC 173-400-040(2) (December 23, 2000) is not federally enforceable and prohibits the emission of particulate matter from Saint-Gobain to be deposited beyond the property line in sufficient quantity as to unreasonably interfere with the use and enjoyment of the property upon which the material is deposited. The monitoring method is based on responding to complaints and general inspections of the facility to identify any particulate emissions or deposition of particulate that may unreasonably interfere with the use and enjoyment of property and correcting any problems identified as a result of the inspection or investigation. Receiving complaints does not necessarily mean Saint-Gobain is in violation of this requirement, but triggers action by Saint-Gobain to prevent a violation. There have been no complaints or compliance issues for particulate being deposited on property.

6. Requirement I.A.8 - Odor

I.A.8: WAC 173-400-040(4) (December 23, 2000) is not federally enforceable and addresses odors. The monitoring method is based on responding to complaints and general inspections of Saint-Gobain to identify emissions of odor-bearing contaminants and correcting any problems identified as a result of the inspection or investigation. Receiving complaints does not necessarily mean Saint-Gobain is in violation of this requirement, since the regulation does not prohibit the emission of odors, but prohibits the emission of odors if recognized good practice and procedures are not employed to control emissions. Complaints will trigger action by Saint-

Gobain to investigate and prevent a violation. There have been no complaints or compliance issues for odor issues from this source.

10. Requirement I.A.9 – Reasonable Precautions for Fugitive Dust

I.A.10: Puget Sound Clean Air Agency Regulation I, Section I 9.15(a) (March 11, 1999) states that it shall be unlawful for any person to cause or allow visible emissions of fugitive dust unless reasonable precautions are employed to minimize the emissions. Reasonable precautions include, but are not limited to, the following:

- 1) The use of control equipment, enclosures, and wet (or chemical) suppression techniques, as practical, and curtailment during high winds;
- 2) Surfacing roadways and parking areas with asphalt, concrete, or gravel;
- 3) Treating temporary, low-traffic areas (e.g., construction sites) with water or chemical stabilizers, reducing vehicle speeds, constructing pavement or rip rap exit aprons, and cleaning vehicle undercarriages before they exit to prevent the track-out of mud or dirt onto paved public roadways; or
- 4) Covering or wetting truck loads or allowing adequate freeboard to prevent the escape of dust-bearing materials.

Puget Sound Clean Air Agency Regulation I, Section 9.15(a) and WAC 173-400-040(8) require the use of reasonable precautions to minimize fugitive dust emissions; WAC 173-400-040(3) addresses fugitive emissions in nonattainment areas. Recording of fugitive dust emissions is not necessarily a violation of the requirement, since the requirement does not prohibit fugitive dust emissions, but prohibits fugitive dust unless reasonable precautions are employed. Reasonable precautions are employed for all sources of dust at Saint-Gobain. Since facility-wide Saint-Gobain satisfies the four criteria above, Saint-Gobain will generally be able to comply with this standard while complying with the other requirements in the permit. However, because there is a potential for generating fugitive dust, the monitoring method specifies facility inspections once per quarter to monitor for fugitive emissions. The monitoring method is based on visual inspections with Saint-Gobain taking corrective action within 24 hours, if any fugitive dust emissions are noted. The monitoring method is consistent with Puget Sound Clean Air Agency's "*Agency Policy on Fugitive Dust Controls, March 1995*," which specifies reasonable precautions that must be taken to prevent fugitive dust emissions, but does not necessarily define BACT for all processes.

11. Requirement I.A.10 - Maintain Equipment

I.A.10: Puget Sound Clean Air Agency Regulation I, Section 9.20 requires Saint-Gobain to maintain equipment in good working order. Section 9.20(a) applies to sources that received a Notice of Construction Order of Approval under Puget Sound Clean Air Agency Regulation I, Article 6. Section 9.20(b) applies to equipment not subject to Section 9.20(a). Section II.A. Monitoring, Maintenance and Recordkeeping Procedures of the permit identifies the minimum

monitoring criteria for maintaining equipment in good working order. The section identifies both facility-wide criteria and specific criteria for the emission units and activities. In addition, the facility-wide inspections provide monitoring of the general effectiveness of Saint-Gobain's O&M Plan. The Puget Sound Clean Air Agency chose to list all of Section II.A as the monitoring method because many parts of Section II.A apply to several emission units and activities. Where there are specific monitoring requirements for specific emission units, the Puget Sound Clean Air Agency has listed them in Section II.A.2. The Puget Sound Clean Air Agency has determined that following the requirements of Section II of the permit provides sufficient monitoring criteria to certify that the equipment has been maintained in good working order. However, the Puget Sound Clean Air Agency reserves the right to evaluate the maintenance of each piece of equipment to determine if it has been maintained in good working order.

12. Requirement I.A.11 - O&M Plan

I.A.11: Puget Sound Clean Air Agency Regulation 1, Section 7.09(b) (September 10, 1998) requires Saint-Gobain to develop and implement an O&M Plan to assure continuous compliance with Puget Sound Clean Air Agency Regulations I, II, and III. This requirement specifies that the O&M Plan shall reflect good industrial practice, but does not define how to determine good industrial practice. To clarify the requirement, the Puget Sound Clean Air Agency has added that, in most instances, following the manufacturer's operations manual or equipment operational schedule, minimizing emissions until repairs can be completed and taking measures to prevent recurrence of the problem may be considered good industrial practice. This language is consistent with a Washington Department of Ecology requirement in WAC 173-400-101(4). The Puget Sound Clean Air Agency has also added language establishing criteria for determining if good industrial practice is being used. These criteria include monitoring results, opacity observations, review of operations and maintenance procedures, and inspections of the emission unit or equipment. The Puget Sound Clean Air Agency added this wording in response to Washington State court decision, *Longview Fibre Co. v. DOE*, 89 Wn. App. 627 (1998), which held that similar wording was not vague and gave sufficient notice of prohibited conduct.

Puget Sound Clean Air Agency Regulation I, Section 7.09(b) also requires Saint-Gobain to promptly correct any defective equipment. However, the underlying requirement in most instances does not define "promptly," hence for significant emission units and applicable requirements that Saint-Gobain has a reasonable possibility of violating or that a violation would cause an air quality problem, the Puget Sound Clean Air Agency added clarification that "promptly" usually means within 24 hours. For many insignificant emission units and for equipment not listed in the permit, "promptly" cannot be defined, because the emission sources and suitable pollution control techniques vary widely, depending on the contaminant sources and the pollution control technology employed. However, the permit identifies a means by which to identify if Saint-Gobain is following good industrial practice.

As described in Section V.Q, Saint-Gobain must report to the Puget Sound Clean Air Agency any instances where it failed to promptly repair any defective equipment. In addition, Saint-Gobain has the right to claim certain problems were a result of an emergency (Section V.S) or unavoidable (Section V.T).

Following these requirements demonstrates that Saint-Gobain has properly implemented the O&M Plan, but it does not prohibit the Puget Sound Clean Air Agency or EPA from taking any necessary enforcement action to address violations of the underlying applicable requirements after proper investigation.

13. Requirement I.A.13 - HCl Emissions

I.A.13: Puget Sound Clean Air Agency Regulation I, Section 9.10(a) (June 9, 1988) specifies that HCl emissions shall not exceed 100 ppm (dry), corrected to 7% O₂ for combustion sources. Since Saint-Gobain burns only pipeline-grade natural gas that contains no chlorine, and because the amount of chlorine in the raw materials is negligible, the general HCl emissions are incapable of exceeding this standard. Therefore, there is no requirement for monitoring.

14. Requirement I.A.14 - Emissions That May be Environmentally Detrimental or Cause a Nuisance

I.A.14: RCW 70.94.040 is similar to Puget Sound Clean Air Agency Regulation I, Section 9.11 and is not a federally enforceable requirement.

Section I.B. (Emission Unit Specific Applicable Requirements)

Section I.B. of the permit lists applicable requirements that are specific to an emission unit or activity. The Generally Applicable Requirements of Section I.A. apply to all the emission units listed in Section I.B. and are not repeated in this section. Monitoring Methods and Reference Methods are also identified if they are different from, or in addition to, those listed in Section I.A.

All generally applicable requirements apply to the specific emission units. To simplify the permit, the Puget Sound Clean Air Agency did not repeat these requirements for each unit unless a specific monitoring requirement applied. Federally enforceable requirements that are specific to the operations are listed.

15. Requirements EU 1.1 and EU 1.2 - Glass Melting Furnaces No. 2, No. 3, No. 4 and No. 5, 20% Visual Opacity

EU 1.1 and EU 1.2: Both Puget Sound Clean Air Agency Regulation I, Section 9.03 and WAC 173-400-040(1) contain a three-minute 20% visible opacity standard that applies facility-wide at this source. Both these rules are enforced by performing EPA Method 9 for visual opacity as determined external to the stack.

EU 1.2: The WAC 173-400-040(1) (September 20, 1993 and December 20, 2005) rules contain a 20% visual opacity standard that applies to the emissions of Glass Melting Furnaces No. 2, No. 3, No. 4 and No. 5. While the December 10, 2005 version will supersede the September 20, 1993 version upon adoption into the SIP, both versions have the same wording.

The monitoring method for these visible opacity standards for Glass Melting Furnaces No. 2, No. 3, No. 4 and No. 5 is quarterly reference method opacity observations conducted during the particulate testing of the furnaces.

16. Requirement EU 1.3 - Glass Melting Furnaces 20% In-stack Opacity Standard

EU 1.3: The rule specifically covers the opacity from glass furnaces and establishes a six-minute 20 % average opacity requirement. The monitoring method follows Regulation I, Sections 9.04(b)(3), 12.01 and 12.03, (April 9, 1998) and contains monitoring specification, quality assurance procedures, and data recovery requirements.

Glass Melting Furnaces No. 2, No. 3, No. 4 and No. 5 all must meet the opacity limit of 20% for any consecutive 6-minute period. Per Regulation I, Section 9.04(e), this requirement does not apply to furnaces equipped with wet scrubbers. Order of Approval No. 9528 specifies the scrubber parameter monitoring that will apply to Furnace No. 5 upon startup of the cloud chamber scrubber. Additionally, the visual opacity requirement in Regulation I, Section 9.03 applies to furnaces with wet scrubbers.

17. Requirements EU 1.4 and EU 1.5 - Particulate Emissions Standard

EU 1.4 limits particulate emissions to 0.05 grain per dry standard cubic foot (gr/dscf) from equipment used in a manufacturing process. EU 1.5: WAC 173-400-060 limits particulate emissions to 0.1 gr/dscf from general process units (i.e., units using a procedure or a combination of procedures for the purpose of causing a change in material by either chemical or physical means, excluding combustion). The State Implementation Plan (SIP) identifies the effective date of WAC 173-400-060 as March 22, 1991; however, the version that was in effect on August 20, 1993 became effective on February 10, 2005.

The required monitoring methods include: quarterly Glass Furnace emission tests, annual simultaneous Glass Furnace emission tests, and continuous opacity monitoring readings. This monitoring will provide more frequent means for compliance assurance than the indirect parametric equations that were initially followed (see Modification 1 at end). In addition, Furnaces No. 2, 3 and 5 triggered the requirements of 40 CFR 60, Subpart CC for glass furnaces when the oxy-fuel conversion was initiated and include monitoring (see EU 1.12 below).

19. Requirement EU 1.6 - Glass Melting Furnaces No. 2, No. 3, No. 4 and No. 5 (Order of Approval No. 8244) Simultaneous PM10 Limit

EU 1.8: Order of Approval No. 8244 (June 14, 2001) limits the PM10 emissions from Glass Melting Furnaces No. 2, No. 3, No. 4 and No. 5. Puget Sound Clean Air Agency Order of Approval No. 8244 (June 14, 2001), Condition No. 10 states:

"This Order of Approval No. 8244, issued to amend limits, hereby supersedes and cancels Order of approval No. 5256 dated December 22, 1994 and will become effective at such time that the EPA adopts this version into the SIP."

Upon the adoption of Order of Approval No. 8244 into the SIP, it will replace Order of Approval No. 5256 (EU 1.7) as a SIP requirement.

This Order of Approval contains a total mass emission rate (lb/hr) standard for the total emissions from all Glass Melting Furnaces (No. 2, No. 3, No. 4, and No. 5) and requires simultaneous source testing of all operating furnaces using Puget Sound Clean Air Agency Reference Method 5 (II A.2(e)).

20. Requirement EU 1.7 through EU 1.10 - Glass Melting Furnaces No. 2 through 5 (Orders of Approval Nos. 9369, 9322, 5289, and 5193) PM10

EU 1.7-EU 1.10: Orders of Approval Nos. 9369 (April 20, 2006), 9322 (April 20, 2006), 5289 (January 24, 1994) and No. 5193 (January 24, 1994) limit the PM10 emissions from Glass Melting Furnaces No. 2 and 5 (0.5 lb/ton of glass).

These Orders of Approval have standards for mass emission rates (0.5 lb/ton of glass Furnaces No. 2-5) that apply to glass melting.

The monitoring method identified for Requirements EU 1.5 and EU 1.6 (quarterly source testing) will also provide adequate data assuring compliance with these Best Available Control Technology (BACT) derived limits included in these Orders of Approval.

21. Requirements EU 1.11 through EU 1.18 - Glass Melting Furnaces No. 2 through 5, Orders of Approval Nos. 9369, 9322, 5289 and No. 5193, for NO_x and SO₂

EU 1.11 – EU 1.14: Orders of Approval Nos. 9369 (April 20, 2006), 9322 (April 20, 2006), 5289 (January 24, 1994) and No. 5193 (January 24, 1994) limit the NO_x emissions from Glass Melting Furnaces Nos. 2 and 5 (3.8 lb NO_x/ton of glass). The limit for Furnace Nos. 2 and 5 apply to both gas and oil firing.

EU 1.15 – EU 1.18: Orders of Approval Nos. 9369 (April 20, 2006), 9322 (April 20, 2006), 5289 (January 24, 1994) and No. 5193 (January 24, 1994) limit the SO₂ emissions from Glass Melting Furnaces No. 2 and 5 (1.6 lb SO₂/ton of glass). The limit for Furnace Nos. 2 and 5 apply to both gas and oil firing.

NO_x

The source test conducted on May 17-20, 1994 found the maximum NO_x emissions from all the glass melting furnaces combined operating at maximum capacity would potentially exceed 100 tons per year.

Saint Gobain Glass Furnaces Maximum NO _x Emissions								
Glass Melting Furnace	Capacity ton/day As tested (Rated)	Stack Flows dscfm	NO _x Lb/hr	NO _x Lb/ton glass	Order of Approval No.	NO _x lb/ton Limit	NO _x ton/yr 8760 hr	
No. 2	144.6 (195)	22,784	5.85	0.971	5289(5)(b)	3.8	25.62	
No. 3	166.8 (160)	21,633	5.29	0.761			23.17	
No. 4	131.3 (430)	21,355	79.3	14.595			347.33	
No. 5	130.7 (205)	12,183	4.08	0.749	5193(5)(b)	3.8	17.87	
Annual NO _x rate at tested production (without No. 4 Furnace)								66.66
Annual NO _x rate adjusted to maximum production (without No. 4 Furnace)								
Annual NO _x rate at tested production (with No. 4 Furnace)								413.99
Annual NO _x rate adjusted to maximum production (with No. 4 Furnace)								

Order of Approval No. 5289, Condition No. 5(b) limits NO_x emissions from Glass Melting Furnace No. 2 to 3.8 lb/tons of glass produced. The source test measured 0.97 lb/hr. This is 25.5% of the limit.

Order of Approval No. 5193, Condition No. 5(b) limits NO_x emissions from Glass Melting Furnace No. 5 to 3.8 lb/tons of glass produced. The source test measured 0.75 lb/ton. This is 19.7 % of the limit.

Because the emission of NO_x from the oxy-furnaces is significantly low compared with the limit, the Puget Sound Clean Air Agency determined that no further testing is required in the permit and good operations and maintenance will assure compliance.

SO₂ Emissions from Glass Melting Furnaces

Although, the source test conducted May 17-20, 1994 found the SO₂ emissions from the glass melting furnaces could potentially exceed 100 tons per year, the SO₂ generated from the sulfur compounds used in the manufacturing of glass cannot exceed either the 1000 ppm emission standard or the 1.6 lb/ton of glass standard.

Saint Gobain Glass Furnaces Maximum SO ₂ Emissions									
Glass Melting Furnace	Capacity ton/day As tested (Rated)	Stack Flows dscfm	SO ₂ ppm	SO ₂ lb/hr	SO ₂ lb/ton glass	S lb/ton glass	SO ₂ ton/yr	Max SO ₂ ton/yr	
No. 2	144.6 (195)	11,061	N Stack 67.9	5.96	0.989	0.49	26.1	35.2	
			S Stack 42.1						
No. 3	166.8 (160)	21,633	21.8	4.70	0.676	0.34	20.6	20.6	
No. 4	131.3 (430)	21,355	19.4	4.06	0.744	0.37	17.8	58.3	
No. 5	130.7 (205)	12,183	66.7	8.09	1.486	0.74	35.4	55.5	
Annual SO ₂ rate at tested production								100	
Annual SO ₂ rate adjusted to maximum production									170

This source test shows that to exceed the 1000 ppm SO₂ general standard, there would need to be more than 15 times the amount of sulfur in the cullet. However, the emissions for Glass Furnace No. 2 and No. 5 are within 62% and 93% respectively of the 1.6 pounds SO₂ per ton of glass

BACT requirement. Because the sulfur emissions are significantly close to the standard, the Puget Sound Clean Air Agency determined that testing by the reference method would be done biannually.

22. Requirement EU 1.19 through EU 1.21 - NSPS 40 CFR 60 Subpart CC Glass Melting Furnaces

During the review of the initial operating permit application the Agency determined that the conversion of Glass Melting Furnaces Nos. 2, 3 and 5 to oxy-fuel fired furnaces triggered the applicability of NSPS, 40 CFR 60, Subpart CC.

A memorandum outlines the reasons the NSPS is applicable due to the oxy-fuel conversions and why PSD permitting was not applicable. To summarize the memorandum, the NSPS was triggered due to an increase in particulate emissions for these furnaces during the oxy-fuel projects. The memorandum also details required reporting requirements for excess emissions for exceeding the opacity trigger value established by 40 CFR 60.293(c) that is associated with the NSPS particulate standard.

40 CFR 60.7 covers the semiannual reporting of excess emissions, which is different from the existing opacity monitoring report frequency identified for EU 1.3. This difference is consistent with each of the underlying requirements. Saint Gobain is free to submit the NSPS excess emission reports on a monthly basis with the other opacity monitoring reports, if it so chooses. However, the reports must follow the reporting as required by each of those underlying requirements. These excess emission reports shall contain the elements as outlined in 40 CFR 60.7(c)(1) through (4) and 40 CFR 60.7(d)(1) and (2) (following V.Q.2 Reporting). These specific citations are noted because the details of a summary report and the additional information required with an excess emission report under the NSPS program are different from the continuous opacity monitoring reports Saint Gobain has historically submitted to demonstrate compliance with other visible emission limitations for these furnaces.

Section 60.293(a) states that a source with a modified process is not subject to the provisions of 40 CFR 60.292 (including limits of Table CC-1 - Emission Rates), providing the affected facility complies with the provisions of Section 60.293. If Furnaces No. 2, 3, and 5 were not classified as modified processes under Subpart CC, the particulate emission limitation for these furnaces would be 0.20 lb/ton (0.26 lb/ton for oil firing). The conversion of these furnaces to oxy-fuel firing operations was previously reviewed and the conclusion was they represented modified processes as defined by this regulation. That meant the applicable emission limitation for these furnaces is identified in **Section 60.293(b)(1)**, and that the NSPS standard is 1.0 lb/ton (0.5 g/kg) of glass produced. Sections 60.293(b)(2) and (3) are not applicable to these furnaces unless they use add-on pollution controls. Note Order of Approval No. 9528 (issued 3/07) permits the installation of a control device (cloud chamber scrubber) for Glass Furnaces No. 5. Upon startup of the scrubber, the more stringent limits in 40 CFR 60.292 will apply.

The distinction between these two NSPS emission limitations is important and requires understanding of the required monitoring, recordkeeping, and reporting associated with them. Sources subject to Section 60.292 are only required to complete an initial performance test and submit maintenance activity scheduling reports for the emission control equipment. The modified-process requirements in this rule (Section 60.293) generally reflect furnace installations

without additional emission control equipment. For this type of glass furnace, the rule requires a performance test, the installation of a continuous opacity monitoring system and the establishment of a 99% upper confidence level opacity value based on the performance test. The monitoring and reporting requirements are intended to be indications of operational control and maintenance indicative of compliance with the emission limitation. Without add-on emission control equipment, the scrutiny increases on the compliance status of the affected unit.

Section 60.293(c) requires the installation, calibration, maintenance and operation of a continuous opacity measurement for the affected furnaces. Section 60.293(c)(1) through (5) also describes the procedures for establishing a 6-minute opacity value that corresponds to the 99% Upper Confidence Level (UCL) of a normal distribution of average opacity values. The source is required to report as excess emissions all opacity values exceeding the established UCL opacity value.

EPA's Applicability Determination Index, Control Number 9800010 (01/20/98) addresses the question of interpreting the UCL opacity as it relates to the NSPS particulate standard. EPA notes that opacity values exceeding the UCL value, "..... could, in some instances, constitute credible evidence that the source is not being operated and maintained consistent with good air pollution control practices or that it is in violation of other NSPS requirements, such as the numerical particulate limit." Also, the Federal Register: September 11, 1996 (Volume 61, Number 177) [Proposed Rules] [Page 47840-47852] available from GPO Access [www.access.gpo.gov] contains background information and details EPA's reasoning behind modifying the upper confidence level from 97.5% to 99% in 40 CFR 60. 293(c)(4). This is the criteria for reporting excess emissions as measured by the continuous opacity monitoring system. EPA indicates that the revision from 97.5% to 99% upper confidence level was done to reduce the probability of reporting opacity levels which do not correspond to excess particulate emissions.

These two citations clearly show that EPA considers the UCL opacity value a useful compliance monitoring tool linking continuing particulate emissions from a glass furnace with continuously monitored opacity which is based on glass furnace operations, opacity and particulate emissions occurring during a performance tests.

60.293(c) reads as follows: *"The owner or operator of an affected facility that is subject to emission limits specified under paragraph (b) of this section shall:*

- (1) Install, calibrate, maintain, and operate a continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the affected facility.*
- (2) During the performance test required to be conducted by § 60.8, conduct continuous opacity monitoring during each test run.*
- (3) Calculate 6-minute opacity averages from 24 or more data points equally spaced over each 6-minute period during the test runs.*
- (4) Determine, based on the 6-minute opacity averages, the opacity value corresponding to the 99 percent upper confidence level of a normal distribution of average opacity values.*

(5) For the purposes of Sec. 60.7, report to the Administrator as excess emissions all of the 6-minute periods during which the average opacity, as measured by the continuous monitoring system installed under paragraph (c)(1) of this section, exceeds the opacity value corresponding to the 99 percent upper confidence level determined under paragraph (c)(4) of this section."

60.293(d) allows the source to use an alternative monitoring approach (e.g., a continuous particulate monitoring device, or operational parameters rather than direct opacity monitoring) by applying to the Puget Sound Clean Air Agency for possible approval. Related to this is Saint-Gobain's operating permit Section II.A.2(b) Glass Melting Furnace Particulate Monitoring, that requires quarterly testing for particulate for Glass Melting Furnaces No. 2, No. 3, No. 4 and No. 5 (as discussed above for EU 1.4 and EU 1.5). The monitoring included in the permit for particulate emission requirements, is not an approved alternative approach for the NSPS excess emission reporting requirement.

60.293(d) reads as follows:

(1) After receipt and consideration of written application, the Administrator may approve alternative continuous monitoring systems for the measurement of one or more process or operating parameters that is or are demonstrated to enable accurate and representative monitoring of an emission limit specified in paragraph (b)(1) of this section.

(2) After the Administrator approves an alternative continuous monitoring system for an affected facility, the requirements of paragraphs (c) (1) through (5) of this section will not apply for that affected facility.

Section 60.293(e) allows the source to re-determine the opacity trigger value for excess emission reports determined following 40 CFR 60.293(c).

As mentioned, the NSPS is silent concerning re-determining the UCL opacity value. Apparently, the UCL opacity value (40 CFR 60.293(f)) determined during a compliance test, would remain in effect as a compliance monitoring parameter for the particulate standard of 40 CFR 60.293(b)(1) until: (1) there is a significantly change in the operation of a glass furnace, or (2) if there is significant change in opacity values measured by the continuous opacity monitoring (COM) system representing a significant change in furnace operation from that which existed during a compliance test.

60.293(e) reads as follows:

(e) An owner or operator may redetermine the opacity value corresponding to the 99 percent upper confidence level as described in paragraph (c)(4) of this section if the owner or operator:

(1) Conducts continuous opacity monitoring during each test run of a performance test that demonstrates compliance with an emission limit of paragraph (b) of this section,

(2) Recalculates the 6-minute opacity averages as described in paragraph (c)(3) of this section, and

(3) Uses the redetermined opacity value corresponding to the 99 percent upper confidence level for the purposes of paragraph (c)(5) of this section.

60.293(f) reads as follows:

(f) Test methods and procedures as specified in § 60.296 shall be used to determine compliance with this section except that to determine compliance for any glass melting furnace using modified-processes and fired with either a gaseous fuel or a liquid fuel containing less than 0.50 weight percent sulfur, Method 5 shall be used with the probe and filter holder heating system in the sampling train set to provide a gas temperature of 120 ± 14 °C (248 ± 25 °F).

For this source and the emission units subject to 40 CFR 60, Subpart CC, this Agency interprets that 60.293(e) allows Saint Gobain to reset the UCL to satisfy the NSPS regulatory requirement (once the original value has been properly established) if it completes a new performance test satisfying all of the NSPS provisions for performance testing, and includes notification as specified in Subpart CC and 40 CFR 60.8.

23. Requirements EU 1.22 - State O&M Rule

EU 1.22: RCW 70.94.152(7) (1996) has not been adopted in the SIP and is not federally enforceable.

24. Requirements EU 1.23 through EU 1.28 – Fuel Oil

Per Order of Approval Nos. 9322, 9369 and 9377, Glass Furnace Nos. 2 through 5 are permitted to burn no more than 52,000 gal/yr of ultra low sulfur diesel in each furnace during periods when natural gas is curtailed. Natural gas curtailments are rare and typically occur on very cold winter days when the demand for gas peaks. The gas supplier (Puget Sound Energy) offers reduced rates to customers that are willing to curtail gas use during these periods.

No monitoring was specified in the Orders of Approval. Section II.A.2(k) of the operating permit requires Saint-Gobain to obtain records from the fuel oil supplier documenting that each purchase of diesel meets the requirements for ultra low sulfur diesel (<0.0015% or 15 ppm by weight sulfur). And Saint-Gobain is required to keep records of the amount of diesel burned in glass furnaces 2-5 each calendar year.

25. Requirement EU 1.29 – Cloud Chamber Scrubber

These are the requirements from Order of Approval No. 9528, which permits the installation of a cloud chamber scrubber on Furnace No. 5. The Order requires Saint-Gobain to investigate the relationships between SO₂ CEMS data and the furnace and scrubber operating parameter data to determine ‘if-and-how’ the furnace operating parameters affect the scrubber inlet concentrations, and ‘if-and-how’ the scrubber operating parameters affected the outlet concentrations. A report documenting the results of this investigation is required within 26 months of startup of the scrubber.

26. Requirements EU 2.1 - Baghouses

This emission unit consists of the following baghouses:

No. 1 Dalamatic baghouse (west side of furnace), controlling the batch conveyor system for Glass Melting Furnace No. 5;

- No. 2 Serbaco Row Pulse Jet 36-10-TR baghouse rated at 3000 cfm, controlling the loading/unloading area;
- No. 3 Mikro-Pulsaire baghouse (west side of main silo) controlling the silo weighing and storage system;
- No. 4 Mikro-Pulsaire baghouse (south end of yard) controlling the batch tank for Glass Melting Furnace No. 2 Conveyor System;
- No. 5 Mikro-Pulsaire baghouse (north end of yard) controlling the batch tank for Glass Melting Furnace No. 2 Conveyor System 5;
- No. 6 Baghouse (roof above Glass Melting Furnace No. 2) controlling the batch conveyor system for Glass Melting Furnace No. 2;
- No. 7 LMC Model #24-F5D baghouse (batch bin roof) controlling the batch conveyor system for Glass Melting Furnace No. 1 (installed June 2003);
- No. 8 Dusty Dustless baghouse (south end of furnace) controlling the batch conveyor system for Glass Melting Furnace No. 5;
- No. 9 Dusty Dustless baghouse (top of furnace) controlling the batch conveyor system for Glass Melting Furnace No. 5; and
- No. 10 Dust collector baghouse rated at 17,000 cfm controlling metal grinding in the Mold Shop.

The monitoring method is based on quarterly visual inspections of the baghouses and quarterly inspection of the interiors of the baghouses (except the Flex-Kleen baghouses) for evidence of malfunctions, such as leakage of particulate matter to the clean side and torn or missing bags. The Puget Sound Clean Air Agency has determined that the monitoring should be quarterly for the reasons listed below.

- 1) Initial compliance. No violations have been issued regarding these baghouses and no emissions have been observed.
- 2) Margin of compliance. There is a large margin of compliance because a small amount of visible emissions from a baghouse will clearly indicate operation and maintenance needs to be improved.
- 3) Variability of process and emissions. These baghouses operate on a constant, per-shift basis and a per-hour basis, so emissions can be expected to be relatively constant on an hourly basis during facility operations. This equipment is designed to control opacity emissions if maintained in accordance with a good O&M Plan. The most significant variable affecting emissions would, therefore, be the degree to which Saint-Gobain follows its O&M Plan and performs daily inspections.
- 4) Environmental impacts of problems. Observed opacity from a baghouse is generally related to the quantity of particulate matter being emitted. If opacity problems are observed from these relatively small baghouses, there will likely be only a small risk of environmental

impacts and damage from particulate matter emissions.

- 5) Technical considerations. This monitoring method is based on the fact that particulate emissions and opacity emissions are related, and increases in opacity emissions indicate increases in particulate emissions. Generally, when emissions are below 5% from a baghouse, the particulate emissions will be less than 0.01 gr/dscf.

27. Requirement EU 3.1 - Centrifugal Exhauster Opacity

EU 3.1: This emission unit consists of the centrifugal exhauster.

Puget Sound Clean Air Agency Order of Approval No. 5542, Condition No. 4 (August 22, 1994) requires that the opacity shall not exceed 10% for 3 minutes in any one hour.

The monitoring method is based on quarterly visual inspections of the centrifugal exhauster emissions, with Saint-Gobain taking corrective actions within 24 hours or using the opacity reference test method to determine opacity if any visible emissions are noted. The Puget Sound Clean Air Agency has determined that the monitoring should be quarterly for the reasons listed below.

- 1) Initial compliance. The centrifugal exhauster has not been the subject of any violations and has not been observed to have any emissions.
- 2) Margin of compliance. There is a large margin of compliance because a small amount of visible emission from a centrifugal exhauster will clearly indicate operation and maintenance needs to be improved.
- 3) Variability of process and emissions. The centrifugal exhauster operations are constant, on a per-shift basis and a per-hour basis, so emissions can be expected to be relatively constant on an hourly basis during facility operations. This process generally does not generate significant opacity emissions while normally operating and being maintained in accordance with a good O&M Plan. The most significant variable affecting emissions would, therefore, be the degree to which Saint-Gobain follows its O&M Plan and performs daily inspections.
- 4) Environmental impacts of problems. Observed opacity from an exhaust is generally related to the quantity of particulate matter being emitted. If opacity problems are observed from this operation, there will likely be only a small risk of environmental impacts and damage from particulate matter emissions.
- 5) Technical considerations. This monitoring method is based on the fact that particulate emissions and opacity emissions are related, and increases in opacity emissions indicate increases in particulate emissions. Generally, when emissions are below 5% opacity, the particulate emissions will be less than 0.01 gr/dscf.

28. Requirements EU 4.1, EU 4.2 and EU 4.3 - Glass Mold Forming Machine Building Monitor Opacity

EU 4.1 and EU 4.2: Both Puget Sound Clean Air Agency Regulation I, Section 9.03 and WAC 173-400-040(1) standards are three minute 20% opacity as measured from outside the building roof monitoring vents. The current and the federally enforceable version of the respective regulations are the same for this source.

The monitoring method is based on quarterly opacity readings using reference method 9A.

- 1) Initial compliance. There have been no notices of violation issued in the last ten years for failure to meet this requirement. Saint-Gobain is presumed to be able to comply with this opacity requirement (see Compliance History).
- 2) Margin of compliance. Some visible emissions have been observed from mold swabbing operations. Therefore, the Puget Sound Clean Air Agency has determined there is a moderate potential to cause violations of this requirement.
- 3) Variability of process and emissions. The glass forming process is a relatively consistent operation during a per-shift basis and a per-hour basis. The application of the mold swabbing compound onto the glass forming molds occurs periodically after approximately the same number of containers and is repeated every 15-20 minutes. The emissions occurring at the glass forming mold machines primarily tend to occur during the initial period of applying the compound. The emissions escaping the building (mostly from the roof monitors) are relatively constant on an hourly basis during facility operations, because of the large volume of the mold forming buildings. The most significant variable affecting emissions would, therefore, be the degree to which Saint-Gobain follows its O&M Plan while applying mold swabbing compounds.
- 4) Environmental impacts of problems. Based on information that Saint-Gobain provided, the emissions from mold swabbing operations are not toxic. However, observed emissions are generally related to the quantity of particulate matter being emitted. If opacity problems are observed, there will be an increased risk of environmental impacts and damage from particulate matter emissions. Significant environmental impacts are expected to be avoided by discovering problems quickly and making updated adjustments to the O&M Plan.
- 5) Technical considerations. This monitoring method is based on the fact that some visible emissions may be expected from the current mold swabbing operations. However, the opacity is required to meet the 20% opacity limit. Therefore, this permit requires quarterly reference method testing to verify visual emissions do not exceed the standard.

Section I.B.1 through I.B.4

The Puget Sound Clean Air Agency has issued Notice of Construction (NOC) Orders of Approval to Argdah (formerly known as Saint-Gobain). Each NOC approval contains at least one condition that requires Saint-Gobain to do something one-time, and one-time only. The Puget Sound Clean Air Agency has determined that some of the approval conditions are now informational statements that have been satisfied and, therefore, do not meet the criteria of being applicable requirements. Therefore, they are not listed in the air operating permit, but are listed in the following table.

- RCW 70.94.152(7) is similar to Puget Sound Clean Air Agency Regulation I, Section 9.20(a) and is listed separately here because it is not a federally enforceable requirement.
- Orders of Approval Nos. 62 through No. 2210 in the table below includes a general provision, but does not contain any specific conditions. The general provision has been complied with in all cases.
- Order of Approval No. 2121 was superseded by Order of Approval No. 2121A.
- Orders of Approval No. 3264 through No. 5542 include Conditions No. 1, No. 2 and No. 3.
 - Approval Condition No. 1 requires the applicant to install the approved equipment according to the specifications submitted to the Puget Sound Clean Air Agency. This requirement has been complied with in all cases and verified by an Agency inspector.
 - Approval Conditions No. 2 and No. 3 inform the applicant that the approval does not relieve it of any requirement of any other agency, and that an O&M Plan is required. These requirements are informational only.
- Order of Approval No. 7442 included Conditions No. 1 and No. 2.
 - Approval Condition No. 1 requires the applicant to install the approved equipment according to the specifications submitted to the Puget Sound Clean Air Agency. This requirement has been complied with in all cases and verified by an Agency inspector.
 - Approval Condition No. 2 informs the applicant that the approval does not relieve it of any requirement of any other agency. This requirement is informational only.

The following table lists all Orders of Approval that are obsolete and not included in the permit:

Order No	Approval Date	Notice of Construction Orders of Approval Summary	General	Specific	Status of Approval
62	1/07/69	Glass Melting Furnace No. 5	Yes	None	Satisfied Obsolete
1182	4/15/74	Two Dusty-Dustless shaker Model 36J baghouses at 900 cfm, for No. 1 & No. 3 batch conveyor transfer points	Yes	None	Satisfied Obsolete
1453	5/27/95	Two 115 ton/day lehr annealing refractory ovens Model No. 566, 618,000 Btu/hr each. Firing natural gas to relieve stress in glass containers. (Temporarily supplemented with 250 kW electricity)	Yes	None	Satisfied Obsolete
1608	5/25/76	One plasti-shield labeling machine No. 43, with 1 MMBtu/hr eclipse natural gas burner for shrinking styrofoam labels on bottles	Yes	None	Satisfied Obsolete
1656	1/10/77	One No. 2 Glass Furnace, all electric forehearths 165 ton/day Emhart K-36B. Replaces old No. 2 and No. 3 Furnaces. Although not listed in this approval language, the application included two Flex-Kleen 58BV9 baghouses for the control of emissions from the raw material handling system and storage bins for this furnace Order of Approval No. 5289 does not contain information on this baghouse, and it was not in the equipment list	Yes	None	Satisfied Replaced by Order of Approval No. 5289
2210	2/02/81	One CP Inc baghouse at 1927 cfm and 88 ft ² cloth area replacing smaller baghouse	Yes	None	Satisfied Obsolete
3264	7/14/89	Upgrade Glass Melting Furnace No. 4 with electric boost	1, 2 & 3	None	Satisfied Obsolete
3265	7/14/89	Upgrade Glass Melting Furnace No. 5 with electric boost	1, 2 & 3	None	Satisfied Replaced by Order of Approval No. 5193
3450	3/27/90	Increase electric boost capacity in No. 3 Glass Melting Furnace from 1000 KVA to 2000 KVA	1, 2 & 3	None	Satisfied Replaced by Order of Approval No. 4546
4040	8/06/91	One Serbaco Row Pulse Jet 36-10-TR baghouse at 3000 cfm to control raw material unloading	1, 2 & 3	None	Satisfied Obsolete
4546	7/14/92	Modification of Glass Melting Furnace No. 3 including conversion to 100% oxygen-fuel fired at 6000 cfm (400F)	1, 2 & 3	None	Satisfied Obsolete
4546	7/14/92	4. Saint-Gobain Containers shall conduct a source test to verify its emission estimates for emission banking (ref Reg. I Section 6.08) in accordance with Puget Sound Clean Air Agency's requirements for source tests		Yes	Satisfied ERC expired

Order No	Approval Date	Notice of Construction Orders of Approval Summary	General	Specific	Status of Approval
4547	7/14/92	One Mold Shop dust collection system at 17000 cfm	1, 2 & 3	None	Satisfied Obsolete
4767	12/4/92	Sulfur application process controlled with a scrubber NOC application shows the maximum SO ₂ concentration to be 860 ppm and, therefore, unable to exceed the 1000 ppm SO ₂ limit	1, 2 & 3	None	Satisfied Obsolete
5256	12/22/94	Limit PM10 emissions			Canceled and superseded by Order of Approval No. 8244
7445	10/2/98	Limit PM10 emissions	1 & 2		Canceled 5/30/2000

Monitoring, Maintenance and Recordkeeping Procedures

Ardagh (formerly known as Saint-Gobain) must follow the procedures contained in Section II of the permit, Monitoring, Maintenance and Recordkeeping Procedures. Failure to follow a requirement in Section II may not necessarily be a violation of the underlying applicable emission standard in Section I. However, not following a requirement of Section II is a violation of Section II, and Saint-Gobain must report such violations, as well as violations or deviations from any other permit condition, as a deviation under Section V.Q(2) of the permit. In addition, all information collected as a result of implementing Section II can be used as credible evidence under Section V.N.2 of the permit. Reporting a permit deviation and taking corrective action does not relieve Saint-Gobain from its obligation to comply with the underlying applicable requirement.

A standard Puget Sound Clean Air Agency Notice of Construction (NOC) Approval Condition No. 1 requires that the equipment, device, or process be installed according to plans and specifications submitted to the Puget Sound Clean Air Agency. Once the equipment is installed, the Puget Sound Clean Air Agency requires certification by the applicant that the installation was as approved; this is usually done with a Notice of Completion. Normally within six months to a year after receiving a Notice of Completion, a Puget Sound Clean Air Agency inspector verifies by inspection that the equipment was installed as specified and in accordance with the Approval Order. While the Notice of Completion is a one-time requirement that has been completed by Saint-Gobain, Saint-Gobain cannot change the approved equipment in such a manner that requires an NOC without first obtaining an NOC approval which is addressed in Section IV.A of the permit. In most cases, once Saint-Gobain has filed the Notice of Completion and a Puget Sound Clean Air Agency inspector has verified that the equipment was installed according to the Approval Order, the Puget Sound Clean Air Agency considers NOC Condition No. 1 an obsolete condition. However, in some cases in the permit the Puget Sound Clean Air Agency has identified a need to specify that the equipment cannot be altered in such a manner that requires an NOC approval.

The permit requires Saint-Gobain to conduct quarterly facility-wide inspections. These inspections are to include checking for prohibited activities under Section III of the permit and activities that require additional approval under Section IV of the permit, as well as checking for any “nuisance” odor-bearing contaminants. The Puget Sound Clean Air Agency determined the frequency of these inspections after considering the potential for emissions, the lack of federally required monitoring, Saint-Gobain's in-house training practices and similar factors. If problems are identified, Saint-Gobain has the responsibility to not only correct the specific problem, but also to adjust the work practices and training to prevent future problems.

In determining the appropriate monitoring frequencies for monitoring identified in Section II.A of the permit, the Puget Sound Clean Air Agency considered several factors, including the following:

- Saint-Gobain’s compliance history and the likelihood of violating the applicable requirement;
- The complexity of the emission unit including the variability of emissions over time;
- The likelihood that the monitoring would detect a compliance problem;
- The likely environmental impacts of a deviation;
- Whether add-on controls are necessary for the unit to meet the emission limit;
- Other measures that Saint-Gobain may have in place to identify problems;
- The type of monitoring, process, maintenance, or control equipment data already available for the emissions unit;
- The technical and economic considerations associated with the range of possible monitoring methods; and
- The type of monitoring found on similar emissions units.

Specific Monitoring

Appendix B(2) contains EPA Quality Assurance Procedures for opacity continuous emission monitors:

Prohibited Activities

Some of the requirements Argdagh (formerly known as Saint-Gobain) identified in the operating permit application are included in Section III as prohibited activities. Puget Sound Clean Air Agency has listed these activities in this section to highlight that they cannot occur at the facility. Since these activities are prohibited, routine monitoring of parameters is not appropriate;

however, the permit does require Saint-Gobain to look for such activities during a routine facility-wide inspection.

Puget Sound Clean Air Agency Regulation I, Section 9.13 and WAC 173-400-040(7) contain similar requirements addressing concealment and masking of emissions. Although both requirements apply, the permit language has been simplified by grouping these requirements together.

Activities Requiring Additional Approval

Some of the requirements Argdah (formerly known as Saint-Gobain) identified in the operating permit application are included in Section IV as activities that require additional approval. For new source review, the permit language has been simplified. Chapter 173-460 WAC and Puget Sound Clean Air Agency Regulation I, Article 6 New Source Review Programs require approval to construct, install, establish, or modify an air contaminant source. All these requirements apply, but the language in these requirements has been incorporated into one section to simplify the permit language. WAC 173-400-110 does not apply within Puget Sound Clean Air Agency's jurisdiction because the rule exempts areas that have a local program that is incorporated into the state implementation plan.

Standard Terms and Conditions

Some of the requirements Argdah (formerly known as Saint-Gobain) identified in the operating permit application are included in Section V, Standard Terms and Conditions. This provided an easier mechanism for describing requirements that are more general in nature. This section also contains the standard terms and conditions specifically listed in WAC 173-401-620.

Section V.Q(2) of the permit requires Saint-Gobain to report deviations of the permit to the Puget Sound Clean Air Agency, normally within 30 days after the end of the month. Section V.Q.1 of the permit requires that a responsible official certify all required reports at least once every six months. Saint-Gobain may submit the certification with the report or certify all the reports submitted in the previous six months. For example, if Saint-Gobain detected a deviation in January, it must report the deviation to Puget Sound Clean Air Agency in February. A responsible official must certify the report according to WAC 173-401-520 at the time the report is submitted or any other time within six months of submitting the report.

If Saint-Gobain does not detect any deviations to report for a six-month period, then Saint-Gobain shall report that there were no deviations during the six-month period.

Basis for Inapplicable Requirements

Argdah (formerly known as Saint-Gobain) requested the replacement of the existing list of inapplicable requirements (in the existing permit) to be replaced with a large list of potentially inapplicable requirements. In the draft renewal permit document, the Agency kept any existing inapplicable requirement (from the existing permit) on the list if it was requested again in the

renewal application. If an existing inapplicable requirement was not requested again in the renewal application, then it was deleted from the list. New inapplicable requirement requests that had not been previously identified in the existing permit were not added at this time.

Insignificant Emission Units

Insignificant emission units are listed in Section IX.I.A of Saint-Gobain's air operating permit. The permit shield applies to all requirements so identified:

- Lube oil storage tanks;
- Shear spray storage and delivery systems;
- Hydraulic fluid storage tanks;
- Vehicle maintenance;
- Internal combustion engines for propelling or powering a vehicle;
- Welding equipment;
- Cleaning and sweeping of streets and paved surfaces;
- Roadways;
- Portable kerosene, grease and oil drums;
- Truck wash;
- Window air conditioners;
- Bathroom vents;
- Fuel and exhaust emissions from vehicles in parking lots;
- Staff vehicles;
- Shot blasting unit;
- Air compressor;
- Safety-kleen station;
- Difluoroethane tanks
- Diesel tanks;
- Annealing lehrs and Metal mold ovens (<5 MMBtu/hr natural gas)
- Printers (< 2 gal/day);
- Space heaters using propane, kerosene, or natural gas generating <5 MMBtu/hr;
- Surface coating (containing <1% VOC);
- Calibration gases (for equipment).

Ardagh (formerly known as Saint-Gobain) requested to designate “chute cleaning” as an insignificant emission unit based on emissions but provided no basis for this designation. Accordingly, the request was denied.

Public Comments and Responses

Responses to Saint-Gobain comment letter dated April 4, 2007.

Draft AOP Comment 1

Page 30, Section II.A.1(a) – Saint-Gobain requests that the Agency clarify the applicability of this section of the permit. In particular, we request that the section clearly state that it is not applicable to Emission Unit #1 and Emission Unit #4. Both of these emission units have specific visual opacity monitoring requirements (*see* Sections II.A.2(i) and (j) on page 40). The general

language of Section II.A.1(a), however, could cause it to be construed to apply to these units as well. As we understand this is not the Agency’s intent, we request the Agency add the following sentence to the end of the section: “This Section does not apply to Emission Unit #1 or Emission Unit #4.”

Response - This change was made.

Draft AOP Comment 2

Page 31, Section II.A.2(a) – This section requires a continuous opacity monitoring (COM) system on each glass furnace that burns fuel. Order No. 9528, however, authorizes Saint-Gobain to remove the COM from Furnace No. 5 once the Tri-Mer Cloud Chamber Scrubber equipment is installed on that furnace. We therefore request that the Agency revise this section to read as follows:

“Saint-Gobain shall not cause or allow the operation of any glass furnace (rated at greater than 1 ton per hour, that burns fuel) unless it is equipped with a continuous opacity monitoring system, except furnace No. 5 after the Tri-Mer Cloud Chamber Scrubber equipment is installed pursuant to Order No. 9528.”

Response - This change was made.

Draft AOP Comment 3

Page 67, Section IX – Saint-Gobain requested that the Agency add the following emission units to the list of Insignificant Emission Units and Activities (IEU).

Unit	Basis for IEU Designation	Comment
Standby IC Engines	WAC 173-401-530(4)	Four emergency generators are used at the Seattle Plant. These are used for emergency backuy power only and are operated less than 500 hours per year. Their actual emissions are below the threshold levels set forth in the cited WAC section. The emissions calculation is attached as Exhibit A to this letter.
Diesel Tanks (≤20,000 gallons)	WAC 173-401-522(2)(t)	The plant utilizes a portable 18,000-gallon tank to store diesel for use during natural gas curtailment. This equipment is used exclusively to pump, load, unload or store high boiling point organic materials, with an initial boiling point of not less than 150°C or vapor

Unit	Basis for IEU Designation	Comment
		pressure not more than 5 mm Hg at 21°C. The vapor pressure of diesel fuel is approximately 0.4 mm Hg to 0.5 mm Hg at 21°C.
Abrasive Blast Cabinets	WAC 173-401-530(4)(e)	The plant has three abrasive blast cabinets. Emissions from each cabinet are below the PM10 insignificant threshold of 0.75 tpy. The emissions calculation is attached as Exhibit B to this letter.
Ovens for heating metal molds	WAC 173-401-533(2)(e)	The ovens are combustion sources of less than five million Btu/hr and use natural gas exclusively.
Annealing lehrs	WAC 173-401-533(2)(e)	The lehrs are combustion sources of less than five million Btu/hr and use natural gas exclusively.

Response - The IEU designations for the annealing lehrs, ovens for heating metal molds were made. The diesel storage tank IEU designation was made pursuant to WAC 173-401-533(2)(t), not WAC 173-401-522(2)(t). The requests for IEU designations based on emission thresholds per WAC 173-401-530(4) (e.g. Standby IC Engines and Abrasive Blast Cabinets) have not been included at this time because the information submitted with the request was incomplete. Both of those requests were made on the basis of emission calculations for criteria pollutant thresholds provided in WAC 173-401-530(4)(a)-(e), but did not include any evaluation of the toxic air contaminant thresholds provided in WAC 173-401-530(4)(p) and (q). The Agency requested additional information from the source to explain the factors used and to address the toxic air contaminant thresholds, too. That additional information has not been received yet and the Agency is proceeding with the processing of this permit without that inclusion in order to meet the renewal date for the permit of June 6, 2007. For the IC engines, additional information will not likely change this conclusion. Nitric oxide (NO) is classified as a toxic air contaminant in WAC 173-460 and the IEU threshold for this pollutant is 0.5 ton/yr (per WAC 173-401-530(4)(q)). The criteria pollutant emission calculations for the engines were projecting emissions for NOx of 2 tons/yr. Since a large portion of NOx emissions from combustion sources is in the form of NO, those calculations would be above the threshold for NO and not be eligible for designation as a IEU.

Statement of Basis Comment 1

Page 12, Lists – References to “Pending settlement agreement” in the lists beginning on page 12 should be changed to “Consent Decree C07-0409 RSM on 3/27/07.” The consent decree

resolving the outstanding NOV's and civil penalties was filed on that date, and entered by the court on April 4, 2007.

Response - This change was made. Additional edits were made to the compliance history to correct the citations for a previous consent decree and to reconcile all of the enforcement actions which are covered by the new consent decree.

Statement of Basis Comment 2

Page 26, Applicable Requirements – We request that the Agency include a reference to the language included in the prefaces to Section I.A and I.B of the permit by adding the following to the end of the paragraph:

If the Enforceable Requirement listed in Section I.A. is duplicative of the Enforceable Requirement in Section I.B, then the only monitoring requirement and recordkeeping method specified in Section I.B shall be required for the specific emission units, and the monitoring and recordkeeping method specified in Section I.A shall not apply to that unit or units.

Response – This change was made.

Statement of Basis Comment 3

Page 51, Insignificant Emission Units – This section should be revised to reflect the additional insignificant units discussed above.

Response – Some of these changes were made. See response to “Draft AOP Comment 3” above for more details.

AOP Modification 1

Order of Approval No. 9901

On 10/29/08, Saint-Gobain submitted a Notice of Construction application requesting to modify Order of Approval Nos. 9322 (furnaces 3&5), 9369 (furnace 2) and 9397 (furnace 4) in order to increase the allowable amount of ultra low sulfur diesel (ULSD) to be fired during periods of natural gas curtailment from 7 days to 31 days per year.

The conditions existing Order of Approval AOP terms EU 1.26, 1.27 and 1.28 limit oil combustion per furnace to no more than 52,000 gallons per year, roughly the equivalent of 7 days per year. If Saint-Gobain were to burn oil for 8 or more days per year as requested, they would be in violation of the existing AOP. Therefore, a significant modification is required and the change cannot be implemented until the AOP is modified.

Over the past 20 years, the maximum number of days per year of natural gas curtailment was 6. In this context, no increase in actual emissions associated with this request. The emission

increase (*if any*) associated with burning oil 31 days per year should be <1 ton per year of PM, SO₂, CO and VOC, <5.8 ton/yr for NO_x, and 2 lb/yr for total metal HAP. (The average of the test data for furnaces 2, 3 and 5 indicates no change in NO_x emissions when burning oil.)

Order of Approval No. 9901 doesn't change the existing emission limits or the rated capacity of the furnaces. Oil use would continue to be limited to ULSD during periods of natural gas curtailment.

Compliance Schedule Update

The renewed operating permit was issued on June 6, 2007 with a compliance schedule included as an attachment to the permit. That compliance schedule was consistent and parallel with a consent decree filed in U.S. District Court (Western District of Washington at Seattle) documenting an agreement between this Agency and Saint-Gobain Containers, Inc. As a part of that agreement, Saint-Gobain was to install an emission control device (Cloud Chamber Scrubber) on Furnace No. 5 and operate it to demonstrate its capabilities for emission control. That installation and startup had a schedule included in the agreement. Saint-Gobain encountered technical challenges during the installation and initial startup efforts with the equipment. Twice Saint-Gobain requested and received extensions on the schedule. The last extension required the Cloud Chamber Scrubber to be installed and in operational service by September 30, 2009. Both extensions were filed in court and with this modification, the compliance schedule is being updated to reflect those agreements and progress to date with the compliance schedule elements.

Public Comments and Responses

Response to Eric Nickols' (Nickols Realty) comment letter dated October 15, 2009.

AOP Modification 1 Comment 1

Mr. Eric Nickols of Nickols Realty in Bellevue commented: "To whom it may concern, I approve of allowing the permit allowing Saint-Gobain to use ULSD fuel."

Response – Comment acknowledged.

AOP Administrative Amendment – November 13, 2013

On September 16, 2013, we received a request for an administrative amendment to change the Responsible Official to Michael Gibbons.

Response – Change made.

AOP Administrative Amendment – May 13, 2014

On April 28, 2014, we received a request for an administrative amendment to change the facility name to from Saint-Gobain Containers, Inc. to Ardagh Glass, Inc.

Response – Change made.

AOP Administrative Amendment – May 31, 2017

On February 7, 2017, we received a request to change the Responsible Official to Ben Michaelson.

Response – Change made.