Owens-Brockway Glass Container, Inc. – Plant 2

Title V Basis Statement
SW10-17-R1

July 13, 2021

Southwest Clean Air Agency
11815 NE 99th Street, Suite 1294
Vancouver, WA 98682-2322
Telephone: (360) 574-3058

PERMIT ENGINEER:	Clinton Lamoreaux, Air Quality Engineer
REVIEWED BY:	Paul T. Mairose, Chief Engineer Uri Papish, Executive Director

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I. GENERAL INFORMATION AND CERTIFICATION

Company Name	Owens-Brockway Glass Container, Inc.
Facility Name	Owens-Brockway Glass Container, Inc. – Plant 2
Facility Address	2310 North Hendrickson Dr. Kalama, WA 98625
Mailing Address	2310 North Hendrickson Dr. Kalama, WA 98625
Parent Company/Address	Owens-Brockway Glass Container, Inc. 2310 North Hendrickson Dr. Kalama, WA 98625
Standard Industrial Classification	3221
North American Industrial Classification System	327213
Aerometric Information Retrieval System Number	53-015-00147
Unified Business Identification	603-043-786
Responsible Official	Jacob A. Wendler, Plant Manager
Permit Engineer	Clinton Lamoreaux, Air Quality Engineer
Reviewed by	Paul T. Mairose, Chief Engineer Uri Papish, Executive Director

Basis for Title V Applicability:
This facility is an area source subject to 40 CFR 63.11448 et seq. Subpart SSSSSS "National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources." Subpart SSSSSS applies to any glass melting furnace that is continuous and that produces at least 45 Mg per year of glass (50 tpy) charged with arsenic, cadmium, chromium, lead, manganese, or nickel. The permittee's facility produces more than 45 Mg (50 tons) per year of glass charged with chromium oxide; therefore the permittee's glass melting furnace is subject to this rule. In accordance with 40 CFR 63.11449(e), owners or operators of area sources subject to Subpart SSSSSS are required to obtain a permit under 40 CFR part 70 or 71.

Facilitywide Potential To Emit Summary

Pollutant	Emissions (tons per year)
Nitrogen oxides	53.21
Carbon monoxide	12.97
Volatile organic compounds	25.31
Sulfur dioxide	26.35
Particulate Matter	20.01
PM_{10}	20.01
$PM_{2.5}$	19.76
Combined HAPs	3.29
CO_2 equivalent	40,439

Current Permitting Action:
This Title V Air Operating Permit is being issued in response to a Title V renewal application submitted in accordance with the deadline contained in Air Operating Permit SW10-17-R0-A. This Air Operating Permit issued in response to the renewal application has been updated as appropriate to reflect the issuance of Air Discharge Permit (ADP) 21-3455.

AOP SW10-17-R1 (renewal)

1. Permit Application Due: August 17, 2020
2. Permit Application Submitted: June 25, 2020
3. Permit Application Deemed Complete: July 14, 2020
4. Permit Application Sent to EPA: April 9, 2021
5. Draft Permit Issued: April 9, 2021
6. Proposed Permit Issued: May 17, 2021
7. Final Permit Issued: July 13, 2021
8. Renewal Permit Application Due: January 20, 2026
9. Permit Expiration: July 13, 2026

Attainment Area:
This facility is located in an area that is in attainment for all criteria pollutants.

Facility Description:
This facility manufactures glass bottles (primarily wine bottles) using a natural gas oxy-fuel fired glass melting furnace. Emissions are generated from raw material handling, the glass melt furnace, mold swabbing, hot end treatment, VOCs from the use of lubricating oils, small natural gas fired sources (e.g. gob heaters, shrink wrap heater), and two emergency generator engines. The facility began operation in July 2012 and reached full production rate in September 2012.

Raw Material Handling and Storage. The manufacturing process primarily uses the following raw materials: silica sand, soda ash, limestone, feldspar, gypsum, Melite-40 (iron aluminum silicate with traces of calcium, magnesium, carbon, and sulfur), and cullet (broken glass). Other additives may be incorporated to give desired special product qualities (e.g., color). Most raw materials are received in bulk by rail and truck from commercial suppliers using a single below-grade unloading hopper. A steel building with a concrete floor encloses the rail car or truck during the unloading operation. A number of small volume additives are received in large tote

bags. This material is transferred directly to small storage bins located inside the batch house area through the use of a freight elevator.

Cullet (rejected glass/bottles and/or offsite material) is stored in two different areas at the facility. Primary storage consists of a flat storage area near the batch house. Secondary storage consists of four storage silos adjacent to the raw material silos. Cullet is moved from flat storage to the reclaim system (surge hopper) via payloader. Cullet is moved from the surge hopper to the storage silos using a material elevator and conveyors similar to the raw material receiving system. All cullet goes through an inline jaw crusher to ensure proper material sizing.

The material elevator/conveyor systems associated with the raw material and cullet handling systems are totally enclosed. Dust collectors are installed at the base of each material elevator and at the top of the storage silos. The additive bins inside the batch house are commonly vented to a single dust collector. Many of the dust collectors discharge within building envelopes, and are not a significant source of emissions (majors scale #1, minors scales system, batch mixer, mixed batch conveyor, and cullet return dust collector). The remaining units discharge directly to the ambient air.

All of the silos exist as compartments within a single silo structure. Materials are conveyed to the top of the silo structure by the Raw Material Bucket Elevator (rated at 130 tons per hour at 100 lb/ft^3). Material is directed from the slide to the appropriate silo compartment by the revolving distributor. When a specific silo compartment is being filled, the dust collector associated witb that silo is activated.

A batch house is used to mix raw materials in the proper ratios for use in the melt furnace. Raw materials and cullet (scrap glass) are withdrawn from the storage silos/bins, weighed, and conveyed to a mechanical mixer. Mixed material is then conveyed to surge bins located above the melt furnace. The batch house as a whole is completely contained within a building envelope, so fugitive dust emissions from these operations are expected to be negligible.

Bottle Production. The facility manufactures glass containers (primarily wine bottles). Mixed raw materials are fed to an electrically boosted, oxy-fuel fired glass melting furnace, firing a mixture of natural gas/oxygen through six special flat-flame oxy-fuel burners. The furnace has 840 ft^2 of melting area and is capable of producing 275 tons per day of container glass. Waste gas from the furnace is exhausted through an air pollution control system and stack. The air pollution control system consists of a heat exchanger to cool the flue gas, a reactor or dry scrubber for the control of SO_2 emissions, and a baghouse for the control of filterable particulate matter.

After melting and conditioning in the furnace, molten glass exits the furnace through a gated throat and is distributed to one of two forehearths. A gob distributor at the end of each forehearth feeds glass into the associated bottle forming machines. A mixture of lubricating oil and water is sprayed continuously onto the gob sheer and immediately downstream to facilitate gob distribution. This activity produces steam and evaporated lubricating oil. Unevaporated material drains to the cullet water.

The gobs drop into metal molds used to form the bottle. To prevent the glass from adhering to the metal molds, the molds are periodically swabbed by hand with a mold release agent. The

mold release agent is primarily a mixture of organic compounds, sulfur, and graphite. When the mold release agent contacts the hot mold, the organic components flash and burn off and a solid lubricant film is left on the inside of the metal mold.

Formed bottles come out of the machines, are coated with a tin oxide coating in the hot end coating hoods, and travel through an electrically heated lehr for tempering. After exiting the lehr, the bottles are sprayed with a dilute aqueous solution of polyethylene wax to add lubricity. Each bottle is then inspected for defects. Acceptable bottles are conveyed to packaging machines where they are either packed into cardboard cases or packaged in bulk. Both case pack and bulk pack bottles are palletized at the end of the process, and then moved to the warehouse by forklift. Bottles rejected at the inspection stage are sent to the cullet flat storage area using a combination of conveyors and tip bins.

Other sources of combustion emissions are process heaters associated with the two forehearths (gob heaters) and the "heat-shrink" packaging unit. Packaging activities do not include any type of printing operation.

The facility is expected to operate continuously (24 hours per day, 7 days per week) for five to seven years. At the end of the five to seven year period, the furnace will be drained and re-bricked. Equipment associated with the process, including air pollution control equipment, will undergo major overhaul at this time if necessary.

Mold Repair. The molding equipment includes numerous components that experience significant wear in the course of routine operation. These components are periodically removed and reconditioned in the facility's Mold Shop. Part of the reconditioning process involves "building up" worn component surfaces by thermal spraying the affected areas. Thermal spraying is currently conducted with a nickel or a nickel based alloy that can contain up to 1% chromium. All thermal spraying is conducted at four DualDraw downdraft tables with integral HEPA filtration. The component surfaces are then machined down to the applicable physical dimensions.

Emergency Power Generation. Two diesel engine driven generators are used to generate emergency electrical power for essential equipment at the facility whenever utility service is interrupted. Operation of the generators for the purposes of maintenance checks and readiness testing is limited to no more than 100 hours per year each. These engines are allowed to operate as many hours as necessary to provide emergency power. Emissions from the diesel engines are minimized through the use of ultra low sulfur diesel ($\leq$ 0.0015% sulfur by weight) and the use of EPA Tier-certified engines.

II. EMISSIONS UNIT DESCRIPTIONS

EU #	Emission Generating Equipment	Emission Control Measure / Equipment
Material Handling and Maintenance		
EU-1	Raw Material Elevator	Fabric Filtration (Flex Kleen – 400 acfm) Process Enclosure
EU-2	Mixed Batch Elevator	Fabric Filtration (Flex Kleen – 400 acfm) Process Enclosure
EU-3	Mixed Batch Day Bins	Fabric Filtration (Flex Kleen – 400 acfm) Process Enclosure
EU-4	Cullet Elevator	Fabric Filtration (Flex Kleen – 400 acfm) Process Enclosure
EU-5	Silos #1– Sand	Fabric Filtration (Flex Kleen – 400 acfm) Process Enclosure
EU-6	Silo #2 and #3 – Soda Ash	Fabric Filtration (Flex Kleen – 400 acfm) Process Enclosure
EU-7	Silo #4 – Feldspar	Fabric Filtration (Flex Kleen – 400 acfm) Process Enclosure
EU-8	Silo #5 – Limestone	Fabric Filtration (Flex Kleen – 400 acfm) Process Enclosure
EU-9	Silo #6 – Cullet	Fabric Filtration (Flex Kleen – 400 acfm) Process Enclosure
EU-10	Silo #7 – Cullet	Fabric Filtration (Flex Kleen – 400 acfm) Process Enclosure
EU-11	Silo #8 – Cullet	Fabric Filtration (Flex Kleen – 400 acfm) Process Enclosure
EU-12	Silo #9 - Cullet	Fabric Filtration (Flex Kleen – 400 acfm) Process Enclosure
EU-13	Mold Shop	Mold Shop Ventilation System – Fabric Filtration (Donaldson Torit – 1,800 acfm), Downdraft Tables (4) (DualDraw – 5,000 acfm)
Natural Gas Fired Equipment		
EU-14	Glass Melt Furnace (40 MMBtu/hr Oxy-fuel, electric boost)	Oxy-fuel to minimize NO_x, Dry Scrubbing for acid gases, Baghouse for PM, Low Sulfur Fuel (Natural Gas)
EU-15	Forehearth Heater – Line 1 (2.55 MMBtu/hr)	Low Sulfur Fuel (Natural Gas)
EU-16	Forehearth Heater – Line 2 (2.55 MMBtu/hr)	Low Sulfur Fuel (Natural Gas)
EU-17	Shrink Wrap Packaging Heater (0.15 MMBtu/hr)	Low Sulfur Fuel (Natural Gas)
Emergency Generators		
EU-18	62 kW Emergency Generator Engine	Ultra Low Sulfur Diesel (≤ 0.0015% S) Limited Operation EPA Tier 2 Certification

EU #	Emission Generating Equipment	Emission Control Measure / Equipment
EU-19	515 kW Emergency Generator Engine	Ultra Low Sulfur Diesel (≤ 0.0015% S) Limited Operation EPA Tier 2 Certification
Tin Coating		
EU-20	East Hot End Coating Line	None
EU-21	West Hot End Coating Line	None
Other		
EU-22	Mold Swabbing	None
EU-23	Evaporative VOC Sources	Oil skimmer on cullet cooling water

EU-1 Raw Material Elevator

The Raw Material Bucket Elevator takes raw materials other than cullet from the unloading hopper to the distributor at the top of the raw material silos (Silos 1 – 5). The raw material elevator is rated at 130 tons per hour based on a material density of 100 pounds per cubic foot. Dust generated by the Raw Material Bucket Elevator is controlled by one Flex-Kleen model 58BVBS9 IIG baghouse (dust collector) rated at 400 acfm located at the base of the elevator. This baghouse is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester and exhausts vertically at a height of 15' above grade through a 5" diameter stack. The baghouse and exhaust is located between the silo structure and the main building.

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-2 Mixed Batch Elevator

The Batch Mixer is located below the silos and discharges to a surge hopper which in turn discharges to Mixed Batch Conveyor 1. The Mixed Batch Bucket Elevator takes mixed material from Mixed Batch Conveyor 1 to Mixed Batch Conveyor 2 which feeds the two Mixed Batch Day Bins inside the main building.

Dust generated by the Mixed Batch Bucket Elevator is controlled by one Flex-Kleen model 58BVBS9 IIG baghouse (dust collector) rated at 400 acfm. This baghouse is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester and exhausts vertically at a height of 12' above grade through a 5" diameter stack. The baghouse and exhaust is located on the northwest side of the silo structure.

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-3 Mixed Batch Day Bins

The two Mixed Batch Day Bins are located in the northeast end of the main building and each have a capacity of approximately 40 tons. The Mixed Batch Day Bins are fed by Mixed Batch Conveyor 2.

Dust generated at the top of the Mixed Batch Day Bins is controlled by one Flex-Kleen model 58BVBS9 IIG baghouse (dust collector) rated at 400 acfm. This baghouse is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester and exhausts through the wall of the rooftop

enclosure at a height of 82′ above grade through a 5″ diameter stack. The baghouse is located with the transfer from Mixed Batch Conveyor 2 to the Mixed Batch Day Bins in a rooftop enclosure above the Mixed Batch Day Bins on the roof of the main furnace building.

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-4 Cullet Elevator
The Cullet Bucket Elevator takes cullet from the fully enclosed cullet crusher located off the ground near the base of the silo structure, to the distributor at the top of the cullet silos (Silos 6 – 9). The Cullet Bucket Elevator has a rated capacity of 50 tons per hour based on a material density of 100 pounds per cubic foot.

Dust generated by the Cullet Elevator is controlled by one Flex-Kleen model 58BVBS9 IIG baghouse (dust collector), serial number 11796, rated at 400 acfm. This baghouse is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester and exhausts vertically at a height of 20′ above grade through a 5″ diameter stack. The baghouse and exhaust is located on the north side of the silo structure.

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-5 Silo #1
Silo #1 has a capacity of 27,000 cubic feet and is used to store sand. The silo is vented through a Flex Kleen model 58BVBS9 IIG baghouse rated at 400 acfm. The baghouse is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester and exhausts at a height of approximately 122′ above grade through a 5″ diameter stack. The baghouse and exhaust is located approximately in the center on the top of the silo structure.

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-6 Silos #2 & #3
Silos #2 & #3 each have a capacity of 6,000 cubic feet and are used to store soda ash (Na_2CO_3). The silos are vented together through a Flex Kleen model 58BVBS9 IIG baghouse (dust collector) rated at 400 acfm. This baghouse is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester and exhausts vertically at a height of approximately 122′ above grade through a 5″ diameter stack. The baghouse is located on the top of the silo structure, near the southwest edge.

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-7 Silo #4
Silo #4 has a capacity of 4,100 cubic feet and is used to store feldspar. The silo is vented through a Flex Kleen model 58BVBS9 IIG baghouse (dust collector) rated at 400 acfm. This baghouse is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester and exhausts

vertically at a height of approximately 122′ above grade. The baghouse is located on the top of the silo structure, near the south-southwest edge.

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-8 Silo #5
Silo #5 has a capacity of 8,100 cubic feet and is used to store limestone. The silo is vented through a Flex Kleen model 58BVBS9 IIG baghouse (dust collector) rated at 400 acfm. This baghouse is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester and exhausts vertically at a height of approximately 122′ above grade through a 5″ diameter stack. The baghouse is located on the top of the silo structure, near the east edge.

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-9 Silo #6
Silo #6 has a capacity of 5,900 cubic feet and is used to store cullet. The silo is vented through a Flex Kleen model 58BVBS9 IIG baghouse (dust collector) rated at 400 acfm. This unit is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester and exhausts vertically at a height of approximately 122′ above grade through a 5″ diameter stack. The baghouse is located on the top of the silo structure, near the northeast edge.

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-10 Silo #7
Silo #7 has a capacity of 5,900 cubic feet and is used to store cullet. The silo is vented through a Flex Kleen model 58BVBS9 IIG baghouse (dust collector) rated at 400 acfm. This baghouse is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester and exhausts vertically at a height of approximately 122′ above grade through a 5″ diameter stack. The baghouse is located on the top of the silo structure, near the north edge (immediately to the east of the Silo #8 exhaust).

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-11 Silo #8
Silo #8 has a capacity of 5,900 cubic feet and is used to store cullet. The silo is vented through a Flex Kleen model 58BVBS9 IIG baghouse rated at 400 acfm. This baghouse is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester and exhausts vertically at a height of approximately 122′ above grade. The baghouse is located on the top of the silo structure, near the north edge (immediately to the west of the Silo #7 exhaust).

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-12 Silo #9

Silo #9 has a capacity of 5,900 cubic feet and is used to store cullet. The silo is vented through a Flex Kleen model 58BVBS9 IIG baghouse rated at 400 acfm. This unit is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester and exhausts vertically at a height of approximately 122′ above grade through a 5″ diameter stack. The exhaust is located on the top of the silo structure, near the west edge.

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-13 Mold Shop Ventilation System

The mold shop is located in the northeast quarter of the main building. Reconditioning of worn parts, including thermal spraying operations, are conducted in the Mold Shop. All thermal spraying is conducted at the four DualDraw downdraft tables with integral HEPA filtration. Dust generated by miscellaneous activities is collected by the Mold Shop Ventilation System with a maximum total rated airflow of 1,800 acfm. The Mold Shop Ventilation System uses a cartridge-style filter system to control particulate matter. The Mold Shop Ventilation System and the downdraft tables discharge within the main building. The main building enclosure is well ventilated with wall louvers and a roof peak vent to draw heat out of the building. It is assumed that emissions from the Mold Shop Ventilation System are all exhausted directly to the ambient air through the roof peak vent.

Mold Shop Ventilation System

Make / Model:	Donaldson Torit / DFO3-3 QS
Rated Airflow:	1,800 acfm
Filter Description:	570 ft^2 of filter area in 3 Ultra-Web filter cartridges, MERV 15
Exhaust Description:	Exhausts at a height of 15′ above grade within the main building enclosure
Initial Operation:	2008

Downdraft Tables (4)

Make / Model:	DualDraw / BG3096-IN
Rated Airflow:	5,000 acfm
Filter Description:	MERV 8 pre-filter followed by HEPA final filter
Exhaust Description:	Out the back of the unit, within the Mold Shop
Initial Operation:	2 installed in 2020, 2 installed in 2021

Mold Shop Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: None

EU-14 Glass Melt Furnace

The glass melt furnace has a rated capacity of 275 tons per day. The actual production rate may be limited by the type of bottles being produced. Mixed raw materials are fed into the oxy-fuel fired glass melting furnace, firing a mixture of natural gas and oxygen through six flat-flame oxy-fuel burners. Fuel and oxygen are mixed in the furnace. The electrical elements include one 3,600 kVA melter booster and one 80 kVA throat booster. The natural gas-fired oxy-burners have a maximum heat input of 40 MMBtu/hr.

The furnace exhaust gases flow through an air pollution control system consisting of a quench section, dry scrubber in the form of a rotary reaction chamber, and a baghouse before being exhausted through a stack at 100 feet above grade. Air is drawn through the system using a fan downstream of the baghouse. A bypass duct is installed to bypass gas past the dry scrubber and baghouse when necessary (e.g. for maintenance events). The air pollution control system was provided by Luhr Filter GmbH & Co. Water and ambient air are introduced into the glass melt furnace exhaust stream to reduce the temperature from 2,669°F to 482°F upstream of the dry scrubber.

The dry scrubber consists of a rotary reaction chamber where trona or sodium sesquicarbonate contacts the exhaust gases to reduce emissions of acid gases (primarily SO_2) upstream of the baghouse. The resulting solid material is captured in the baghouse and recycled to the melt furnace.

After melting and conditioning in the furnace, molten glass exits the furnace through a throat and is distributed to one of two forehearths. A gob distributor at the end of each forehearth feeds glass into the associated bottle forming machines. Formed bottles come out of the machines and travel through one of two electrically heated lehrs for tempering. Each bottle is then inspected for defects. Acceptable bottles are conveyed to packaging machines where they are either packed into cardboard cases or packaged in bulk. Both case pack and bulk pack bottles are palletized at the end of the process and then moved to the warehouse by forklift. Bottles rejected at the inspection stage are sent to the cullet flat storage area using a combination of conveyors and tip bins.

Dry Scrubber / Rotary Reaction Chamber Details

Reagent Usage:	up to 61 lb/hr
Inlet Flow Rate:	22,876 acfm
Inlet Temperature:	446°F

Baghouse Details

Make / Model:	Luhr Filter GmbH & Co. / DWF 3.2/4.0/2.5/68/48
Number of Bags:	860 "flat" bags
Filter Area:	8,342 ft^2
Inlet Flow Rate:	24,616 acfm
Inlet Temperature:	437 °F
Air to Cloth Ratio:	~ 3:1
Bag Material:	PTFE (polytetrafluorethylene fibers), needled felt

Stack Description

Height:	100 feet above grade
Diameter:	39.25" inside diameter (measured by Clint Lamoreaux 6/12/2012 prior to erection)
Exhaust Flow Rate:	24,126 acfm
Exhaust Temperature:	417 °F
Location:	Penetrates the main building roof north of the melt furnace at approximately 46°1'56.44"N, 122°51'53.41"W

Important Dates: July 4, 2012 – begin heating furnace

July 13, 2012 – first raw materials fed to furnace
July 17, 2012 – first glass poured
~September 24, 2012 – achieved highest pull rate (245 tpd) on "antique green" color

Applicable NSPS/NESHAP/MACT: 40 CFR 60 Subpart CC
40 CFR 63 Subpart SSSSSS

EU-15 Forehearth Heater – Line 1 (Gob Heater)
Forehearth Heater – Line 1 utilizes one natural gas fired burner array with a rated heat input of 2.55 MMBtu/hr. The unit exhausts out of the roof vents on the northeast end of the building.

Make / Model:	Custom Built
Initial Operation:	2012
Applicable NSPS/NESHAP/MACT:	None

EU-16 Forehearth Heater – Line 2 (Gob Heater)
Forehearth Heater – Line 2 utilizes one natural gas fired burner array with a rated heat input of 2.55 MMBtu/hr. The unit exhausts out of the roof vents on the northeast end of the building.

Make / Model:	Custom Built
Initial Operation:	2012
Applicable NSPS/NESHAP/MACT:	None

EU-17 Shrink Wrap Packaging Heater
The Shrink Wrap Packaging Heater consists of one natural gas fired process heater with a rated heat input of 0.15 MMBtu/hr. This unit is integral to the pallet shrink wrap unit. The unit exhausts out of the roof vents near the southwest end of the building.

Initial Operation:	2008
Applicable NSPS/NESHAP/MACT:	None

EU-18 62 kW Emergency Generator Engine
The emergency generator engine is used to drive a Kohler emergency generator that provides power to plant emergency lighting and the server room in the event of a power interruption. The following equipment details were available:

Engine Make / Model:	John Deere / 4045TF270E
Engine Serial Number:	PE4045T668179
Fuel:	Diesel
Horsepower Rating:	99 bhp at full standby load
Engine Built:	April 26, 2007
Generator Set Make / Model:	Kohler / 60REOZJB
Generator Set Output:	62 kW (standby)
Certification:	The engine is EPA certified Tier 2
Exhaust Description:	Exhausts vertically approximately 7 feet above ground level through 3.86" diameter stack at 1,004°F, 550 acfm
Location:	Southwest end of parking lot (46°1'55.86"N, 122°51'59.66"W)

Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: 40 CFR 60 Subpart IIII
40 CFR 63 Subpart ZZZZ

EU-19 515 kW Emergency Generator Engine

The emergency generator engine is used to drive a Kohler emergency generator that provides emergency power to plant 480 volt utilities in the event of a power interruption. The following equipment details were available:

Engine Make / Model:	Kohler / D500 16.1B65 (engine is also labeled Volvo Penta / TAD1641GE)
Engine Serial Number:	Kohler (D16*028263*C3*A), Volvo Penta (2016028263)
Fuel:	Diesel
Horsepower Rating:	757 bhp at full standby load
Engine Built:	2008 model year (no nameplate or other documentation gives actual build date)
Generator Set Make / Model:	Kohler / 500REOZVB
Generator Set Output:	515 ekW (Standby)
Certification	The engine is EPA certified Tier 2
Exhaust Description:	Exhausts vertically approximately 8 feet above ground level through ~10″ diameter stack at 893°F, 3,899 acfm
Location:	In corner between the main building, raw material unloading area and silo structure (46°1'55.90"N, 122°51'52.22"W)

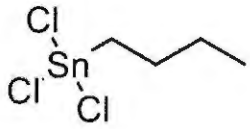
Initial Operation: 2008
Applicable NSPS/NESHAP/MACT: 40 CFR 60 Subpart IIII
40 CFR 63 Subpart ZZZZ

EU-20 East Hot End Coating Line

Monobutyltin trichloride (MBTT) is vaporized in a fume hood through which hot containers (hot from initial forming) pass through. The MBTT is pumped into the fume hood through metal tubing, and vaporized by the heat from the passing bottles. Fans mounted on the hoods pass the MBTT vapor past the bottles several times to enhance coating efficiency. When the MBTT ($C_4H_9Cl_3Sn$) contacts the bottle, the MBTT decomposes and a thin layer of tin (as SnO_2) is deposited on the surface of the bottle. Other decomposition products include HCl and CO. Vapors and decomposition products are exhausted from the hood into the building headspace above the coating line and furnace through a vertical vent approximately 6″ in diameter. The building headspace is passively vented out of roof vents approximately 19.39 meters above grade. Due to the heat from the glass melt furnace, the passive vent rate is relatively high.

The MBTT is fed to the coating process from barrels. The barrels sit on a scale, so the amount of MBTT used over a given time period can be determined. It is estimated that approximately 1/3 of the tin contained in the MBTT is deposited on the bottles. An unquantified portion of the tin is deposited in the hood as evidenced by the material that must be cleaned from the hood periodically. Approximately 220 pounds per month of MBTT could be used in each hot end coating line.

Make: Certincoat
Manufactured: 2011
Serial Number: C3S 124
Applicable NSPS/NESHAP/MACT: None

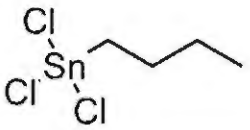


Structure of MBTT

EU-21 West Hot End Coating Line
Monobutyltin trichloride (MBTT) is vaporized in a fume hood through which hot containers (hot from initial forming) pass through. The MBTT is pumped into the fume hood through metal tubing, and vaporized by the heat from the passing bottles. Fans mounted on the hoods pass the MBTT vapor past the bottles several times to enhance coating efficiency. When the MBTT ($C_4H_9Cl_3Sn$) contacts the bottle, the MBTT decomposes and a thin layer of tin (as SnO_2) is deposited on the surface of the bottle. Other decomposition products include HCl and CO. Vapors and decomposition products are exhausted from the hood into the building headspace above the coating line and furnace through a vertical vent approximately 6″ in diameter. The building headspace is passively vented out of roof vents approximately 19.39 meters above grade. Due to the heat from the glass melt furnace, the passive vent rate is relatively high.

The MBTT is fed to the coating process from barrels. The barrels sit on a scale, so the amount of MBTT used over a given time period can be determined. It is estimated that approximately 1/3 of the tin contained in the MBTT is deposited on the bottles. An unquantified portion of the tin is deposited in the hood as evidenced by the material that must be cleaned from the hood periodically. Approximately 220 pounds per month of MBTT could be used in each hot end coating line.

Make: Certincoat
Manufactured: 2011
Serial Number: C3S 123
Applicable NSPS/NESHAP/MACT: None



Structure of MBTT

EU-22 Mold Swabbing
To prevent the glass from adhering to the metal molds, the molds are periodically swabbed by hand with a mold release agent. The mold release agent is primarily a mixture of organic compounds, sulfur, and graphite. When the mold release agent contacts the hot mold, the organic components flash and burn off and a solid lubricant film is left on the inside of the metal

mold. Particulate matter from this activity is fugitive in nature and vents to ambient air through the roof vents at a height of 20.49 meters.

EU-23 Evaporative VOC Sources

Evaporative VOC sources include lubricating oils and hydraulic oils used at the facility and not recovered. Excess lubricating oils and hydraulic fluids that are not otherwise collected will ultimately drain into the cullet cooling water in the basement. The facility collects excess oil from the cullet cooling water system using an oil skimmer. Oil that makes it into the cullet cooling water system that is not removed by the oil skimmer is stripped in the direct contact Cullet Cooling Water Tower or evaporated at other points within the system. Waste oil is collected and sent off-site for disposal. Annual emissions are assumed to be the difference between oil purchases and oil wastes sent off-site.

SWCAA has determined that this category includes scoop lubricants. The scoops are short (a couple of feet long) curved troughs that transfer the hot gob falling from the sheers to the appropriate delivery trough feeding a mold. Scoop lubricants are mixed into a solution consisting primarily of water and sprayed continuously onto the scoops to lubricate the hot gob. Although there is brief contact with the hot gob, SWCAA believes that this process does not produce significant particulate matter due to burning of the scoop lubricant. SWCAA has observed that there is excess liquid draining off the bottom of the scoop and no smoke was noticeable by SWCAA during an observation on June 30, 2015.

III. EXPLANATION OF INSIGNIFICANT EMISSIONS UNIT DETERMINATIONS

Each emission unit listed as insignificant in the permit has been reviewed by SWCAA to confirm its status. Emission units were determined to be insignificant as follows:

IEU-1 Cullet Crusher

One Pennsylvania Crusher model DT 9x16 jaw crusher rated at 45 tons per hour is used to crush cullet prior to storage in the silos. The crusher is fully enclosed and cannot be a source of fugitive emissions unless the enclosure is compromised. Cullet is not a non-metallic mineral subject to 40 CFR 60 Subpart OOO; therefore, there are no federal standards that apply to the unit.

IEU-2 Maintenance Welding

Maintenance welding may be conducted at various locations in the facility and the Mold Shop (not including "spray welding"). Routine welding in the Mold and Maintenance Shops are vented through a Donaldson Torit model 2-2 cartridge collector rated at 1,000 cfm. Emissions from this discharge point are less than 0.1 ton/yr, well below the 0.75 ton PM_{10}/yr threshold of WAC 173-401-530(4)(e) without the use of any control device, so this unit/activity is considered insignificant. Based on a conservative estimate that no more than 2,000 lb of electrode is used annually and the highest value emission factor of 82 lb/1,000 lb from EPA AP-42 Table 12.19-1, the annual uncontrolled emissions are calculated to be:

2,000 lb electrode * (82 lb fume /1,000 lb electrode) * (1 ton/2,000 lb) = 0.08 tons/yr

IEU-3 Bad Batch Chute

The Bad Batch Chute is expected to be used approximately once per month. Approximately 8,000 lbs of glass will flow down the chute, with water to control dust generation, in about 3 minutes. The unit is fully enclosed. Even if the enclosure was compromised, the use of water should eliminate the possibility of generating significant emissions.

IEU-4 Mixed Batch Conveyor

Dust generated by the Mixed Batch Conveyor is controlled by a Flex-Kleen model 58BVBS9 IIG baghouse rated at 400 acfm. The baghouse is equipped with 9 filter bags (64.8 ft^2) made of 16 oz/yd^2 polyester. This unit is considered insignificant because it exhausts to a fully enclosed area (not ambient air).

IEU-5 Cullet Return Dust Collector

A Donaldson Torrit CPC-8 dust collector rated at 2,140 – 5,360 cfm collects dust from the cullet return conveyors and exhausts into the basement. This unit does not have a direct exhaust to ambient air and generation of particulate matter from this activity is considered insignificant.

IEU-6 Silo #10

Silo #10 is used to store trona or sodium sesquicarbonate for the dry scrubbing system. The silo has a storage capacity of 1,483 cubic feet, and is passively vented through a fabric filter. The filter is a Luhr Filter GmbH & Co. silo ventilation filter model #DF1.1/1.0/1.0/80/12 with 258 ft^2 (24m^2) of polyester needled felt bags. Air is exhausted through the silo during loading and when approximately 50 cubic feet of fluidizing air are discharged into the silo several times per hour. The silo and the vent are both located inside the building envelope. Due to the small quantity of potential gas flow through the filter and the fact that the unit vents into the workspace in the building, potential particulate matter emissions are expected to be negligible.

$$\frac{8{,}760 \text{ hours per year}}{\text{year}} * \frac{50 \text{ cubic feet}}{\text{minute}} * \frac{6 \text{ minutes}}{\text{hour}} * \frac{0.005 \text{ grains}}{\text{standard cu ft}} * \frac{1 \text{ pound}}{7{,}000 \text{ grains}} = \frac{2 \text{ pounds}}{\text{year}}$$

IEU-7 Raw Material Delivery

Raw materials other than cullet are delivered by belly-dump trucks to below-grade receiving pits in a drive-through structure adjacent the silo structure. Delivery is via choked flow with approximately 1 vertical foot of material exposed to the ambient air. Based on the design and observations of this activity at this facility by SWCAA personnel, no measurable dust will be generated. Any emissions from this activity would be fugitive and classified as insignificant in accordance with WAC 173-401-530(1)(d).

IEU-8 Cold End Treatment

A dilute (e.g. 0.5 – 1%) emulsion of polyethylene wax is sprayed onto the bottles before packaging. Overspray is contained within the packaging end of the building. The coating provides lubricity so the bottles can be moved smoothly through high speed handling equipment. The solution is sprayed on while the bottles are still warm to allow the polyethylene wax to "cure." This unit is considered insignificant in accordance with WAC 173-401-530(1)(a) because PM_{10} emissions are believed to be insignificant and far below the 0.75 ton per year threshold, although quantification is not possible.

IEU-9 Cooling Towers
The following cooling towers are used at the facility:

Cullet Cooling Water Tower – This tower is a direct-contact single-cell cooling tower for the cullet cooling water and is located along the northeast wall of the building.

Make / Model:	Evapco / USS 19-811
Serial Number:	7626772
Recirculation Capacity:	400 gallons per minute
Design Drift:	< 0.001%
Airflow:	60,300 cfm
Exhaust Diameter:	~8′
Cycles of Concentration:	Not applicable – the cullet cooling water is used directly

Air Compressor Coolant Cooling Tower – This tower provides closed circuit (non-contact) cooling for the compressors.

Make / Model:	Evapco / ATW 153-3I-2
Serial Number:	7325861
Recirculation Capacity:	800 gallons per minute
Design Drift:	< 0.001%
Airflow:	83,180 cfm
Exhaust Diameter:	Two fans, 7′ each

Electrode Cooling Tower – This tower provides closed circuit cooling (non-contact) for the furnace electrodes.

Make / Model:	Evapco / ATW 36-3F-2
Serial Number:	7328892
Recirculation Capacity:	200 gallons per minute
Design Drift:	< 0.001%
Airflow:	20,400 cfm
Exhaust Diameter:	Two fans, 3.5′ each

Maximum potential PM_{10} emissions from these units were calculated using an iterative approach to determine the dissolved solids content that would produce the greatest amount of PM_{10}. Higher levels of dissolved solids will theoretically increase the average particle size. Using data from "Calculating Realistic PM_{10} Emissions from Cooling Towers, Abstract No. 216 Session No. AS-1b, J. Reisman and G. Frisbie, Greyston Environmental Consultants, Inc.", a water density of 1 g/cm^3 and a solids density of 2.2 g/cm^3, the following maximum PM_{10} emissions were calculated:

Drift from Cooling Towers					
Cooling Tower	Recirculation gpm	Design Drift (%)	Final TDS (ppm)	PM_{10} Fraction %	PM_{10} Emissions lb/yr
Cullet Cooling Water Tower	400	0.001%	3,918	39%	27
Air Compressor Coolant Cooling Tower	800	0.001%	3,918	39%	54
Electrode Cooling Tower	200	0.001%	3,918	39%	13
				Total =	94

Emissions from these discharge points are well below the 0.75 ton PM_{10}/yr threshold of WAC 173-401-530(4)(e); therefore these units are considered insignificant. The Air Compressor Coolant Cooling Tower and the Electrode Cooling tower would also be classified as insignificant under WAC 173-401-533(2)(m) because they are non-contact towers with a recirculation capacity less than 10,000 gpm that do not use chromium-based corrosion inhibitors.

IEU-10 62 kW Emergency Generator Engine Fuel Storage Tank

This fuel storage tank has a capacity of less than 1,100 gallons. Storage tanks not greater than 1,100 gallons capacity containing a material with a vapor pressure of less than or equal to 550 mmHg are defined in WAC 173-401-533(2)(b) to be insignificant emission units.

IEU-11 515 kW Emergency Generator Engine Fuel Storage Tank

This fuel storage tank has a capacity of less than 1,100 gallons. Storage tanks not greater than 1,100 gallons capacity containing a material with a vapor pressure of less than or equal to 550 mmHg are defined in WAC 173-401-533(2)(b) to be insignificant emission units.

IV. EXPLANATION OF SELECTED PERMIT PROVISIONS AND GENERAL TERMS AND CONDITIONS

P12. Unavoidable Excess Emissions

SWCAA 400-107 establishes criteria and procedures for determining when excess emissions are considered unavoidable. Emissions that meet the requirements to be classified as unavoidable are still considered excess emissions and are reportable but are excused and not subject to penalty. Notification of excess emissions is required as soon as possible and must occur by the next business day following the excess emissions event.

The provisions of SWCAA 400-107 do not apply to federal standards such as NESHAP/MACT standards. Such federal standards often have specific, and often more restrictive, affirmative defense provisions that only apply to malfunctions. In addition, the U.S. Court of Appeals for the D.C. Circuit in *NRDC v. EPA* (No. 10-1371) determined that EPA lacked the authority to provide an affirmative defense against suits for violations of federal standards. It holds that if EPA lacks the authority to provide this affirmative defense, state and local agencies likewise lack the same authority over federal Clean Air Act requirements. On May 22, 2015 EPA issued a SIP call to 36 states, including Washington, to modify affirmative defense provisions consistent with the *NRDC v. EPA* decision.

G2. Chemical Accident Prevention

Part 68 requires risk management plans be developed for the substances and thresholds listed in 40 CFR 68.130. The permittee uses no substance listed in 40 CFR 68.130, therefore this standard currently does not apply to this facility.

G13. Portable Sources

SWCAA 400-110(6) establishes procedures for approving the operation of portable sources of air emissions that locate temporarily at project sites. These requirements are general standards, and apply to all portable sources of air contaminants. Common equipment subject to these conditions include emergency generators, engine-powered pumps, rock crushers, concrete batch plants, and hot mix asphalt plants that operate for a short time period at a site to fulfill the needs of a specific contract. Portable sources exempt from registration under SWCAA 400-101 are exempt from SWCAA 400-110 and not subject to the portable sources requirements. Among those categories listed in SWCAA 400-101 that are exempt are operations with potential to emit less than 1 ton per year of all criteria pollutants other than $PM_{2.5}$, and less than 0.5 tons per year of $PM_{2.5}$.

V. EXPLANATION OF OPERATING TERMS AND CONDITIONS

Req. 1-8 General Standards for Maximum Emissions

SWCAA 400-040 establishes maximum emission standards for various air contaminants. These requirements are general standards, and apply to all sources of air contaminants. Therefore, these requirements apply to all emission units at the source, both EU and IEU. Pursuant to WAC 401-530(2)(c), the permit does not contain any testing, monitoring, recordkeeping, or reporting requirements for IEUs except those specifically identified by the underlying requirements.

Requirement 6 is a sulfur dioxide standard that is applicable to all emission units with the potential to emit sulfur dioxide. At this facility the combustion units are the only ones with the capacity to produce sulfur dioxide. None of the combustion units at this facility have a reasonable chance of generating sulfur dioxide in excess of the emission standard so no additional monitoring was added to assure compliance. For the diesel engines, fuel sulfur content monitoring assures compliance by a wide margin. For the Glass Melt Furnace, ingredient monitoring, source testing and control equipment monitoring assures compliance by a wide margin.

For the diesel engines, the maximum allowed diesel fuel sulfur content in the permit is 0.0015%. Maximum SO_2 emissions from burning 0.0015% sulfur diesel:

$$\left(\frac{0.0015\text{ lb S}}{100\text{ lbs fuel}}\right)\left(\frac{7.206\text{ lbs fuel}}{1\text{ gallon fuel}}\right)\left(\frac{1\text{ gallon fuel}}{0.138\text{ MMBtu}}\right)\left(\frac{64\text{ lbs SO}_2}{32\text{ lbs S}}\right)\left(\frac{\text{MMBtu}}{9{,}190\text{ dscf}}\right)\left(\frac{20.9-7\%\text{ O}_2}{20.9\%\text{ O}_2}\right)\left(\frac{1\text{ lbmol SO}_2}{64\text{ lbs SO}_2}\right)\left(\frac{385\text{ ft}^3\text{ SO}_2}{\text{lbmol SO}_2}\right)$$
$$= \left(\frac{0.68\text{ ft}^3\text{ SO}_2}{10^6\text{ ft}^3\text{ Exhaust}}\right) = 0.68\text{ ppm @ 7\% O}_2$$

Maximum SO_2 emissions from burning natural gas (applicable to the shrink wrap packing heater and as a minor component of SO_2 from the Glass Melt Furnace and forehearth) can be calculated assuming a maximum sulfur content of 20 gr/100 scf. This concentration far exceeds the expected

sulfur content of approximately 0.5 gr/100scf. 20 gr/100 scf is the maximum sulfur tariff for most pipelines and matches the maximum sulfur included under the definition of "natural gas" in 40 CFR 72.

$$\left(\frac{20\text{ gr}}{100\text{ ft}^3\text{ nat. gas}}\right)\left(\frac{1\text{ ft}^3\text{ nat. gas}}{1{,}020\text{ Btu}}\right)\left(\frac{64\text{ lbs SO}_2}{32\text{ lbs S}}\right)\left(\frac{1\text{ lb}}{7{,}000\text{ gr}}\right)\left(\frac{10^6\text{ Btu}}{8{,}710\text{ dscf}}\right)\left(\frac{20.9-7\%\text{ O}_2}{20.9\%\text{ O}_2}\right)\left(\frac{1\text{ lbmol SO}_2}{64\text{ lbs SO}_2}\right)\left(\frac{385\text{ ft}^3\text{ SO}_2}{\text{lbmol SO}_2}\right)$$
$$=\left(\frac{26\text{ ft}^3\text{ SO}_2}{10^6\text{ ft}^3\text{ Exhaust}}\right)=26\text{ ppm @ 7\% O}_2$$

For the Glass Melt Furnace, the primary source of SO_2 comes from ingredients in the glass rather than straight fuel combustion, but natural gas combustion is associated with these emissions. Both CO_2 and SO_2 are emitted from the raw materials, heat is supplied by electricity and natural gas burned with nearly pure O_2, then the gas stream is diluted with air upstream of the emission control system. In this context, the most stringent way to interpret this limitation would be to treat the SO_2 emissions as if they all originate from the combustion of natural gas, and correct the exhaust gas to 12% CO_2, not accounting for CO_2 evolved from the raw materials (which would further dilute the SO_2). As shown below, even in this circumstance, uncontrolled SO_2 emissions are well below the 1,000 ppm SO_2 standard.

Uncontrolled SO_2 Emissions: 2.0 lb/ton glass
Maximum Operations: 275 tons per day, 40 MMBtu/hr of natural gas firing
If we treat natural gas as 100% CH_4, then for every 1 cubic foot of natural gas burned, 1 cubic foot of CO_2 is generated. $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$

$$\text{SO}_2\text{ emissions}=\left(\frac{2.0\text{ lbs }SO_2}{\text{ton glass}}\right)\left(\frac{275\text{ tons glass}}{24\text{ hours}}\right)\left(\frac{385\text{ ft}^3\text{ SO}_2}{64\text{ lbs SO}_2}\right)=138\frac{\text{ft}^3}{\text{hour}}$$

Exhaust Flow corrected to 12 % CO_2

$$=\left(\frac{40*10^6\text{ Btu}}{1\text{ hour}}\right)\left(\frac{1\text{ ft}^3\text{ nat. gas}}{1{,}020\text{ Btu}}\right)\left(\frac{1\text{ ft}^3\text{ CO}_2\text{ generated}}{1\text{ ft}^3\text{ nat. gas burned}}\right)\left(\frac{100\text{ ft}^3\text{ Exhaust Gas}}{12\text{ ft}^3\text{ CO}_2}\right)$$
$$=326{,}797\frac{\text{ft}^3}{\text{hour}}$$

$$\text{SO}_2\text{ concentration}=\frac{\text{SO}_2\text{ emissions}}{\text{Exhaust flow}}=\frac{138\ \frac{\text{ft}^3}{\text{hour}}}{326{,}797\ \frac{\text{ft}^3}{\text{hour}}}=422\text{ ppm}$$

No specific monitoring was specified for Requirement 7 because there are no specific monitoring requirements that can be used to encompass the whole range of potential concealment and masking scenarios. The permittee is required to certify compliance with all terms and conditions of the permit, including these prohibited items, at least annually. The permittee must make a reasonable inquiry to determine if concealment or masking has occurred during the reporting period in order to certify compliance.

Req. 9 Emission Standards for Combustion and Incineration Units

SWCAA 400-050 establishes maximum emission standards for selected emissions from combustion and incineration units. These requirements apply to all combustion and incineration units at the

source, both EUs and IEUs. Pursuant to WAC 401-530(2)(c), the permit does not contain any testing, monitoring, recordkeeping, or reporting requirements for IEUs except those specifically identified by the requirements as applying to IEUs. The relevant combustion units identified by emission point are EU-14, EU-15, EU-16, EU-17, EU-18, and EU-19.

Req. 10 Emission Standards for General Process Units

SWCAA 400-060 establishes maximum particulate matter emission standards for general process units. These requirements apply to all general process units at the source, both EUs and IEUs. A General Process Unit is an emissions unit 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. This would include the cullet crusher if it were not fully enclosed, and includes the Glass Melt Furnace. Pursuant to WAC 401-530(2)(c), the permit does not contain any testing, monitoring, recordkeeping, or reporting requirements for IEUs except those specifically identified by the requirements as applying to IEUs.

Req. 11, 12 PM_{10} Emissions from Material Handling and Mold Shop Baghouses

Short-term concentration limits and annual emission limits were established for each material handling baghouse and the Mold Shop baghouse. Because these are relatively small baghouses with relatively small potential emissions, no source emissions testing was required for these units. Annual emissions must be calculated consistent with Section 6 of the Technical Support Document for ADP 21-3455. Consistent with the calculation methodology of Section 6, unless there are new source test results, emissions must be calculated assuming that each unit vents at its maximum rated airflow with an exhaust emission concentration of 0.005 gr/dscf.

Req. 13 Ni and Cr Emissions from Thermal Spraying

Annual emission limits were established for nickel and hexavalent chromium emissions from thermal spraying activities. Annual emissions must be calculated consistent with Section 6 of the Technical Support Document for ADP 21-3455. This methodology uses a fume emission factor of 11% (up to 11% of the metal sprayed could be emitted as fume), and assumes that 0.0062 pounds of hexavalent chromium fume are generated for every pound of chromium sprayed. SWCAA assumed a combined capture and control efficiency of 99%; therefore this efficiency must be used unless a different efficiency is demonstrated through source emission testing. Monthly equipment inspections as required by M2 and M3 combined with monitoring of material usage as required by M16 provides a reasonable assurance of compliance with the permitted emission limits.

Req. 14 Glass Melt Furnace Emission Limits

Short-term limits were provided in both lb/ton glass (to represent BACT), and lb/hr (to protect ambient air quality). Particulate matter limits also are found in 40 CFR 60.292 and Table 1 of 40 CFR 63 Subpart SSSSSS. Both of these federal rules limit particulate matter to no more than 0.1 g/kg glass (0.2 lb/ton glass). This is less stringent than the 0.09 lb/ton glass limit provided in ADP 21-3455, therefore only the limit from ADP 21-3455 was listed.

Annual emissions must be calculated in accordance with the methodology found in Section 6 of the Technical Support Document for ADP 21-3455. The relevant portion of Section 6 is reproduced below:

Emissions from the Glass Melt Furnace include criteria air pollutants from the combustion of natural gas, and the generation of particulate matter and sulfur dioxide from the molten glass. Particulate matter may include crystalline silica from the handling of silica sand, and iron chromite ($FeCr_2O_4$). The silica sand is expected to be melted in the furnace without releasing significant amounts of particulate matter. Any chromium not incorporated into the glass is expected to be emitted in its trivalent form at less than the Small Quantity Emission Rate found in WAC 173-460 of 175 pounds per year. The Glass Melt Furnace baghouse is expected to provide a high level of control for particulate phase pollutants. The dry scrubbing system is expected to provide approximately 75% control of SO_2 emissions on average. Potential annual emissions were calculated using the assumption that the furnace will fire at full rate (40 MMBtu/hr of natural gas), producing glass at its rated capacity of 275 tons per day, for 8,760 hours per year.

Glass Melt Furnace

		CaO Content = 10%
Gas Firing Rate =	40 MMBtu/hr	Na_2O Content = 13%
Capacity =	275 tons per day	* During bypass operations SO_X, HCl, HF, PM, chromium and lead are uncontrolled.
Throughput (normal ops.) =	98,725 tons per year	
Throughput (bypass) =	1,650 tons per year	
Natural Gas Consumption =	350,400 MMBtu	

Pollutant	Normal Ops. lb/ton glass	Bypass lb/ton glass	lb/MMBtu	Normal Ops. tpy	Bypass tpy	Total tpy
NO_X	1	6.2		49.4	0.825	50.19
CO	0.2			9.9	0.165	10.04
VOC	0.2			9.9	0.165	10.04
SO_X as SO_2	0.5	2.0		24.7	1.65	26.33
PM (filterable)	0.09	1.0		4.4	0.825	5.27
PM (total)	0.27	1.5		13.3	1.2375	14.57
PM_{10}	0.27	1.5		13.3	1.2375	14.57
$PM_{2.5}$	0.27	1.5		13.3	1.2375	14.57
Benzene			2.1E-06	3.5E-04	5.9E-06	3.6E-04
Formaldehyde			7.4E-05	1.3E-02	2.12E-04	1.3E-02
HCl	0.0400	0.16		2.0	0.132	2.11
HF	0.0110	0.044		0.5	0.0363	0.58
Chromium (II & III)	5.4E-04	6.0E-03		2.7E-02	4.9E-03	3.1E-02
Lead	7.2E-04	8.0E-03		3.5E-02	6.6E-03	4.2E-02
CO_2 from combustion			116.98	20,158	337	20,494
CH_4 from combustion			0.0022	0.380	0.0063	0.39
N_2O from combustion			0.0002	0.038	0.0006	0.04
CO_2 from limestone, soda ash				16,854	282	17,136
Total CO_2e				37,032	619	37,651

Emission factors for benzene and formaldehyde are from AP-42 Section 1.4 (7/98). Uncontrolled emission factors for HCl, HF, chromium (II & III), and lead are from a document from the European

Commission titled "Integrated Pollution Prevention and Control (IPPC) Reference Document on Best Available Techniques in the Glass Manufacturing Industry - December 2001". Control percentages for HCl and HF are assumed to mirror the control efficiency of the system for SO_2. Control efficiencies for chromium and lead are assumed to mirror the control efficiency for filterable PM. This likely overestimates controlled emissions of particle phase pollutants because the PM control efficiency does not account for removal of reagent added by the rotary reactor. Greenhouse gas emission factors are based on combustion emission factors from 40 CFR 98, and a mass balance for CO_2 emitted from carbonate raw materials.

Emissions must be calculated using the emission factors identified above unless CEMS data is available or new emission factors are developed through source testing.

During original permitting, very little information was available to quantify emissions of toxic air pollutants from the Glass Melt Furnace, including emissions of hydrogen chloride, hydrogen fluoride, and lead, however there was some information to suggest that emissions of these pollutants might exceed the SQER listed in WAC 173-460. Because of this, ADP 21-3455 requires quantification (through source emissions testing), and requires that emissions of these pollutants not cause an exceedance of their respective ASIL listed in WAC 173-460 (as in effect August 21, 1998). Based on the emission factors presented in Section 6, no ASIL will be exceeded. A wide margin of compliance is expected because dispersion modeling predicted that the ASILs for HCl, HF, and Pb would not be exceeded at emission rates of 10.53 tons per year, 2.90 tons per year, and 0.21 tons per year respectively. These emission rates are well above the maximum emissions predicted in Section 6 of the Technical Support Document for ADP 21-3455 (reproduced above).

Req. 15 Forehearth Heaters and Shrink Wrap Packaging Heater Emission Limits

Annual emissions must be calculated in accordance with the methodology found in Section 6 of the Technical Support Document for ADP 21-3455. The relevant portion of Section 6 is reproduced below:

All PM is assumed to be $PM_{2.5}$.

Forehearth Heaters (each)

Heat Input Rating =	2.55	MMBtu/hr
Natural Gas Heat Content =	1,020	Btu/scf
Natural Gas Heat Content =	1,026	Btu/scf for 40 CFR 98 GHG emission factors
Fuel Consumption =	21.900	MMscf/yr
Fuel Consumption =	21.772	MMscf/yr (calculated using 40 CFR 98 gas heat capacity)

Pollutant	Emission Factor lb/MMscf	Emission Factor lb/MMBtu	Emissions lb/yr	Emissions tpy	Emission Factor Source
VOC	5.5	0.0054	120	0.060	AP-42 Sec. 1.4 (7/98)
NOx	100	0.0980	2,190	1.10	AP-42 Sec. 1.4 (7/98)
CO	84	0.0824	1,840	0.92	AP-42 Sec. 1.4 (7/98)
$PM/PM_{10}/PM_{2.5}$	7.6	0.0075	166	0.083	AP-42 Sec. 1.4 (7/98)
SO_X as SO_2	0.6	5.88E-04	13	0.0066	AP-42 Sec. 1.4 (7/98)
Benzene	0.0021	2.06E-06	0.05	2.3E-05	AP-42 Sec. 1.4 (7/98)
Formaldehyde	0.075	7.35E-05	1.6	8.2E-04	AP-42 Sec. 1.4 (7/98)

Greenhouse Gases	kg/MMBtu	GWP	lb/MMBtu	lb/MMscf	tpy, CO_2e	
CO_2	53.06	1	116.98	120,019	1,307	40 CFR 98
CH_4	0.001	25	0.055	56.55	1	40 CFR 98
N_2O	0.0001	298	0.066	67.41	1	40 CFR 98
Total GHG - CO_2e			117.098	120,143	1,308	

Shrink Wrap Heater

Heat Input Rating =	0.15	MMBtu/hr
Natural Gas Heat Content =	1,020	Btu/scf
Natural Gas Heat Content =	1,026	Btu/scf for 40 CFR 98 GHG emission factors
Fuel Consumption =	1.288	MMscf/yr
Fuel Consumption =	1.281	MMscf/yr (calculated using 40 CFR 98 gas heat capacity)

Pollutant	Emission Factor lb/MMscf	Emission Factor lb/MMBtu	Emissions lb/yr	Emissions tpy	Emission Factor Source
VOC	5.5	0.0054	7	0.0035	AP-42 Sec. 1.4 (7/98)
NOx	100	0.0980	129	0.064	AP-42 Sec. 1.4 (7/98)
CO	84	0.0824	108	0.054	AP-42 Sec. 1.4 (7/98)
$PM/PM_{10}/PM_{2.5}$	7.6	0.0075	10	0.005	AP-42 Sec. 1.4 (7/98)
SO_X as SO_2	0.6	5.88E-04	1	0.00039	AP-42 Sec. 1.4 (7/98)
Benzene	0.0021	2.06E-06	0.00	1.4E-06	AP-42 Sec. 1.4 (7/98)
Formaldehyde	0.075	7.35E-05	0.1	4.8E-05	AP-42 Sec. 1.4 (7/98)

Greenhouse Gases	kg/MMBtu	GWP	lb/MMBtu	lb/MMscf	tpy, CO_2e	
CO_2	53.06	1	116.98	120,019	77	40 CFR 98
CH_4	0.001	25	0.055	56.55	0.04	40 CFR 98
N_2O	0.0001	298	0.066	67.41	0.04	40 CFR 98
Total GHG - CO_2e			117.098	120,143	77	

Emissions must be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing.

Req. 16 - 18 Visible Emissions Limits

ADP 21-3455 includes visible emission limits for every emission unit at the facility during normal operation. During startup, shutdown, and approved maintenance of the Glass Melt Furnace exhaust stack and startup of the emergency generator engines, the general opacity limit of SWCAA 400-040(1) (see Req.-1) applies.

Req. 19 Hot End Coating Lines Emission Limits

Organic tin and hydrogen chloride emission limits were included in ADP 21-3455 to comply with Washington state toxics rules. Emissions must be calculated using a material balance approach with the assumption that one third of the tin utilized is deposited on surfaces unless other measurements are available.

In the hot end coating lines, monobutyltin trichloride (MBTT) is vaporized in a fume hood through which the bottles, which are hot from initial forming, pass through. The MBTT is pumped into the fume hood through metal tubing, and vaporized by the heat from the passing bottles. When the MBTT ($C_4H_9Cl_3Sn$) contacts the bottle, the MBTT decomposes and a thin layer of tin (as SnO_2) is deposited on the surface of the bottle. Other MBTT decomposition products include HCl and CO. Unreacted MBTT, HCl, and CO are emitted from the process.

Hot End Coating Lines	MBTT ($C_4H_9Cl_3Sn$) Application
Mwt. MBTT =	282.19
Mwt. Sn =	118.69
Mwt. Butyl Fraction =	58 (assumes forms butane or similar)
Amount Applied =	7,984 lb/year
Partition =	66.67% emitted un-reacted
Sn Emitted =	2,239 lb/year as Sn
Potential Decomposition Products (CO and HCl) from Reacted MBTT	
Amount Reacted =	2,661 lb/yr
Moles Reacted =	9.43 lb-moles/yr
Potential CO =	1,056 lb/yr (assumes all C forms CO)
Potential HCl =	1,032 lb/yr (assumes all Cl forms HCl)

Req. 20 Mold Swabbing Emission Limits

Annual emissions must be calculated in accordance with the methodology found in Section 6 of the Technical Support Document for ADP 21-3455. The relevant portion of Section 6 is reproduced below:

The mold release agent is primarily a mixture of organic compounds, sulfur, and graphite. When the mold release agent contacts the hot mold, the organic components flash and burn off and a solid lubricant film is left on the inside of the metal mold. The mold release agents contain approximately 5% graphite which is expected to remain on the mold surface. The remainder of the material "burns off", forming mist and smoke. SWCAA has assumed that for every 100 pounds of mold release agent used, 90 pounds of particulate matter is formed. Because the mold release agent is a heavy oil/grease, SWCAA has assumed that negligible VOCs are formed. Using this assumption, 2.58 tons of PM resulted from mold swabbing in calendar year 2013. Because molds are swabbed by hand, the amount of mold release agent used is likely more variable than if the process was conducted by machine. SWCAA has conservatively assumed that increased use of mold swabbing materials could result in the formation of up to 4.0 tons per year of particulate matter. Annual PM emissions are assumed to be equal to 90% of the mass of mold swabbing compound used or purchased during the calendar year. Purchase records may be used to calculate annual emissions when use records are not available.

Req. 21 Evaporative VOC Emission Limits

Annual emissions must be calculated in accordance with the methodology found in Section 6 of the Technical Support Document for ADP 21-3455. The relevant portion of Section 6 is reproduced below:

Potential emissions are assumed to be 12.0 tons per year (130% of the calendar year 2013 emissions estimate). Annual emissions are assumed to be the difference between oil use or purchases and oil wastes sent off-site. Purchase records may be used to calculate annual emissions when use records are not available.

Req. 22 Emission Control Device Operation

With certain exceptions for the Glass Melt Furnace dry scrubber and baghouse, all emission control devices must be operated when the equipment served by that control device is in operation. The Glass Melt Furnace cannot be "turned off"; therefore some allowances were made in the federal rules and in ADP 21-3455 for bypassing of these control devices when necessary to conduct maintenance. At a minimum, these control devices must be bypassed annually to conduct the inspections required by 40 CFR 53.11455(d)(1) and Condition 34 of ADP 21-3455. This inspection is considered an element of routine maintenance.

Req. 23, 24 Mold Shop and Thermal Spraying Emission Control Requirements

These two requirements from ADP 21-3455 are related to the control of fumes and particulate matter generated in the Mold Shop, including fumes from the thermal spraying of nickel and chromium containing products. The minimum levels of filtration required assures that emissions of nickel and chromium products will not cause an exceedance of the applicable Acceptable Source Impact Levels from WAC 173-460 (versions as in effect August 21, 1998 or December 23, 2019). Compliance with this requirement must be confirmed by inspection of the filtration equipment as described in M2 and M3.

Req. 25, 26, 33 Stack Height, Stack Orientation, and Fuel Prohibitions

No specific monitoring was specified for these requirements from ADP 21-3455 because a capital project would be necessary to change either the exhaust stack or the fuel source for the burners. The permittee is required to certify compliance with all terms and conditions of the permit, including these prohibited items, at least annually. The permittee must make a reasonable inquiry to determine if the Glass Melt Furnace exhaust stack or burner fuel sources were modified during the reporting period in order to certify compliance

Req. 27, 28 Glass Melt Furnace Emission Control System

These requirements come from 40 CFR 63 Subpart SSSSSS, except that ADP 21-3455 requires operation of the baghouse leak detector at all times, not just when the Glass Melt Furnace is being charged with applicable metal HAP.

Req. 29 - 32 Glass Melt Furnace Operation Requirements

These requirements from ADP 21-3455 are intended to minimize emissions from the Glass Melt Furnace. Because the Glass Melt Furnace cannot be turned off to minimize emissions if there is a malfunction with the control equipment, routine spare parts must be maintained on-site to minimize the amount of time emissions would be partially or entirely uncontrolled.

Req. 34 - 38 Emergency Generator Engine Requirements

These requirements all relate to operation of the emergency generator engines and cover the operating requirements imposed by 40 CFR 60 Subpart IIII and ADP 21-3455. The permit allows the use of "#2 diesel or better" by the Emergency Generator Engines. In this case, "or better" includes road-grade diesel fuel with a lower sulfur content, biodiesel, and mixtures of biodiesel and road-grade diesel that meet the definition of "diesel" and contain no more than 0.0015% sulfur by weight.

VI. EXPLANATION OF MONITORING AND RECORDKEEPING TERMS AND CONDITIONS

Note that because this facility is not a major source, Compliance Assurance Monitoring (CAM) requirements of 40 CFR 64 are not applicable to any emission units at this facility.

M1. General Recordkeeping

This section is taken directly from ADP 21-3455 and WAC 173-401-615(2) and contains the general recordkeeping requirements that apply to monitoring requirements. Recordkeeping requirements were separated into Sections (a) through (g) to organize the requirements.

M2. Visual Equipment Inspection

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the general requirements drawn from SWCAA 400 and specific requirements drawn from ADP 21-3455. With the exception of the requirements drawn from ADP 21-3455, no specific monitoring or recordkeeping is established by SWCAA 400 to determine the compliance status of any specific emission unit with the standards listed. Consequently, SWCAA has implemented monitoring and recordkeeping requirements under the "gap filling" provisions of WAC 173-401-615.

M2 requires a survey of EU-1 through EU-14 to identify potential visible emissions. All of these emission units utilize fabric filtration systems to control particulate matter emissions. If emissions are not apparent during the initial survey, it is unlikely that the source is violating particulate matter or opacity standards and it is not necessary to perform a formal Method 9 opacity observation. Excess visible emissions from the remaining emission units are unlikely and/or are only addressed by generally applicable requirements; therefore opacity observations have only been required when indicated by a compliant or if otherwise unusual emissions are observed.

M3. General Pollution Control Equipment Inspection

This monitoring requirement is used to provide, in combination with other monitoring requirements, a reasonable assurance of compliance with the general requirements drawn from SWCAA 400 and the specific requirements from ADP 21-3455 and 40 CFR 63 Subpart SSSSSS that rely on, or specifically require, proper operation of emission control devices. With the exception of the Glass Melt Furnace (EU-14), no specific monitoring or recordkeeping was established by SWCAA 400 or ADP 21-3455. Consequently, SWCAA has implemented monitoring and recordkeeping requirements under the "gap filling" provisions of WAC 173-401-615 for those requirements. M3 is designed to assure compliance through a combination of periodic facility inspections, use of reasonable precautions and good work practices, and prompt corrective action whenever necessary.

M4. Complaint Monitoring

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the general requirements drawn from SWCAA 400 and a specific odor nuisance requirement from ADP 21-3455. SWCAA 400 does not directly establish any specific regime of monitoring or recordkeeping for these requirements. Consequently, for these rules SWCAA has implemented monitoring and recordkeeping requirements under the "gap filling" provisions of WAC 173-401-615. M4 is designed to assure compliance through prompt complaint response and corrective action whenever necessary.

M5. Glass Melt Furnace Source Emissions Testing Requirements

This monitoring requirement is used to provide, in combination with other monitoring requirements, a reasonable assurance of compliance with particulate matter emission limits from 40 CFR 60 Subpart CC, 40 CFR 63 Subpart SSSSSS, and SWCAA 400 and the emission limits for a number of pollutants provided in ADP 21-3455.

For the Glass Melt Furnace, the level of SO_2 (and other acid gases) and PM (including metals) emissions will be primarily influenced by how well the dry scrubber and baghouse are operating. For this reason, the annual source emissions test for particulate matter is augmented with continuous monitoring of the exhaust with a bag leak detection monitor (see Req-27, M8, and M9), monthly visual inspections of the exhaust and control equipment (see M2 and M3), and an annual inspection of the baghouse (see M8). This combination of monitoring is expected to provide a reasonable assurance that the PM and metals emission limits are met at all times.

Uncontrolled SO_2 emissions are expected to be relatively consistent due to the consistent glass recipes; therefore the primary factor impacting SO_2 emissions is how well the combination of dry scrubber and baghouse (which provides additional contact between the scrubbing reagent and the acid gases) are operating. Mechanical factors that impact mixing of the reagent and contact between the gas and solid phase in the dry scrubber are expected to change only slowly with time as parts wear, and therefore the annual source emissions test should provide a reasonable assurance that this factor is accounted for. The potential for short-term variation in emission control is addressed by the requirement found in M8 to monitor the amount of reagent fed to the dry scrubber each hour.

NO_X emissions are primarily controlled through the use of oxygen rather than air for combustion; therefore the oxygen concentration monitoring in M7 is the primary method of assuring the NO_X emission limits are met. The annual source emissions test serves as a backup assurance that this control is effective and that combustion patterns haven't changed, or air leakage developed, that could otherwise influence NO_X emissions.

Because the furnace provides a hot area with a significant residence time, carbon monoxide emissions should remain relatively low unless fuel rich zones develop. O_2 to fuel ratio and excess O_2 monitoring is required in M7. The annual source emissions test serves as a backup assurance that this control is effective and that combustion patterns haven't changed or other failures haven't occurred that would influence CO emissions (e.g. a faulty O_2 to fuel ratio measurement).

The 30 day pretest notification requirements under 40 CFR 60.8 and the 60 day pretest notification requirements of 40 CFR 63.7 for "initial" testing after reconstruction have been modified to 10 business days consistent with the requirements of ADP 21-3455. This is within SWCAA's authority as the "Administrator" of the applicable regulations (40 CFR 60 Subpart CC and 40 CFR 63 Subpart SSSSSS). In SWCAA's experience, 10 business days is entirely adequate to allow SWCAA time to review a test protocol. Longer time periods tend to cause the actual sampling date to be unnecessarily delayed.

M6. Monitoring of Material Handling & Maintenance Baghouses

This monitoring requirement is used to provide, in combination with other monitoring requirements, a reasonable assurance of compliance with the particulate matter emission limits for the material handling and maintenance baghouses. The monthly inspections required in M2 and M3 are the primary methods of assuring the baghouses continue to operate properly. The number of hours each unit operates is used to calculated annual emissions. The emission potentials of these baghouses are too small to warrant additional monitoring.

M7. Glass Melt Furnace Operations Monitoring

This monitoring requirement comes directly from ADP 21-3455 and is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with emission limitations and operating requirements for the Glass Melt Furnace. Production and fuel consumption is used to calculate annual emissions as described in requirement explanations above. Oxygen monitoring is used to assure stoichiometric excess to minimize CO emissions, and oxygen purity to minimize NO_X emissions.

M8. Glass Melt Furnace Emission Control Equipment Monitoring

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with emission limits other than NO_X and CO, and the emission control and monitoring requirements from 40 CFR 63 Subpart SSSSSS and ADP 21-3455. Monitoring and inspection of the dry scrubber and fabric filter system assures that this equipment for the control of SO_2, PM (including metals), and acid gases is operating properly.

M9. Glass Melt Furnace Bag leak Detector Setup and Alarm Response

This monitoring requirement is used to provide, in combination with other monitoring requirements, a reasonable assurance of compliance with the particulate matter emission limits for the Glass Melt Furnace. Most of the requirements come directly from 40 CFR 63 Subpart SSSSSS. The baghouse leak detector has been operating since the furnace was brought on-line.

At the time of permit issuance, the baghouse leak detector is a triboelectric type probe with remote logging and alarm for which all of the setup requirements have been completed. The setup requirements would need to be reviewed again if the leak detector was replaced with a new make or model. The site-specific monitoring plan has been submitted and was most recently modified on October 30, 2015.

M10. 40 CFR 63 Subpart SSSSSS (Glass Melt Furnace) General Recordkeeping

This monitoring requirement is entirely from 40 CFR 63 Subpart SSSSSS and contains the recordkeeping that is used to document compliance with reporting and logging requirements of Subpart SSSSSS.

M11. Forehearth Heaters and Shrink Wrap Packaging Heater Monitoring

This monitoring requirement requires logging of the fuel usage by the Forehearth Heaters and the Shrink Wrap Packaging Heater in order to calculate emissions. In addition, maintenance and repair activities that may impact emissions must be recorded so that facility and SWCAA personnel can review whether emissions from the units might have changed, and provide background information in the event excess emissions are observed.

M12. Emergency Generator Engine Monitoring

This monitoring requirement is used to provide a reasonable assurance of compliance with all of the specific requirements relating to operation of the emergency generator engines. Condition 31 of ADP 21-3455 prohibits operating the emergency generator engines at the same time for maintenance checks and readiness testing to minimize the possibility of a significant adverse impact on nearby air quality. No specific monitoring was included in ADP 21-3455 to demonstrate compliance with this requirement; therefore a requirement to document the operating schedules for these units was added under the "gap-filling" provisions of WAC 173-401-615.

M13. Hot End Coating Lines Monitoring

This monitoring requirement is used to provide a reasonable assurance of compliance with the emission limits for the Hot End Coating Lines. Containers of monobutyltin trichloride are set on a scale during use, allowing the facility to confirm the usage rate. By weighing the container before usage, daily, and after disconnection from the feed system, daily and annual emissions of monobytultin trichloride, HCl, and CO can be calculated using the material balance approach described in the explanation for Req-19.

M14. Mold Swabbing Monitoring

This monitoring requirement is used to provide a reasonable assurance of compliance with the emission limits for Mold Swabbing. The permittee is allowed to use purchase records rather than directly track the amount of mold swabbing compounds used to calculate annual emissions because it is unlikely that large quantities of mold swabbing materials will be stockpiled. However, if they are, the permittee will need to account for any remaining inventory at the end of a year to calculate annual emissions using purchase records.

M15. Evaporative VOC Monitoring

This monitoring requirement is used to provide a reasonable assurance of compliance with the evaporative VOC emission limit using a mass balance approach. Maintenance activities that can impact fugitive emissions, such as modifications to the cullet water skimmer or lubricant spray systems, must be recorded to allow investigation of excess emissions if they occur.

M16. Mold Shop Thermal Spraying Monitoring

This monitoring requirement is used to provide a reasonable assurance of compliance with the annual emissions limits related to thermal spraying in the Mold Shop. Emissions are calculated as described in the explanation for Req-13 above, using the material usage records provided by this monitoring requirement.

VII. EXPLANATION OF REPORTING TERMS AND CONDITIONS

R1. Deviations from Permit Conditions

The permittee is required to report all permit deviations promptly. This reporting requirement is taken directly from WAC 173-401-615(3), SWCAA 400-107, and Conditions 42 and 43 of ADP 21-3455. The permittee is required to report all permit deviations no later than 30 days following the end of the month during which the deviation is discovered. Permit deviations associated with excess emissions must be reported to SWCAA as soon as possible if the permittee to claim the emissions as unavoidable. SWCAA may request a full report of any deviation if determined necessary. All deviations are also reported in each semi-annual report.

R2. Complaint Reports

The permittee is required to report all air quality related complaints to SWCAA within three business days of receipt to ensure prompt complaint response.

R3. Semi-annual Reports

The permittee is required to provide a semi-annual report on the status of all monitoring records and provide a certification of all reports that were not already certified. The certification must be consisted with WAC 173-401-520 which reads:

"This certification and any other certification required under this chapter shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete."

R4. Annual Compliance Certification

The permittee is required to report and certify compliance with all permit terms and conditions on an annual basis. Annual compliance certification is required by WAC 173-401-630(5) for all requirements.

R5. Emission Inventory Reports

The permittee is required to report an inventory of emissions from the source on an annual basis. Annual reporting of emissions inventory is required under SWCAA 400-105 to be submitted to SWCAA by March 15th for the previous calendar year unless an extension is approved by SWCAA. SWCAA's Executive Director may extend the submittal date to April 15th (the deadline in WAC 173-400-105).

R6. Source Test Plans and Reports

The permittee is required to notify SWCAA in advance of all required source testing so that SWCAA personnel may be present during testing. The 30 day pretest notification requirements under 40 CFR 60.8 and the 60 day pretest notification requirements of 40 CFR 63.7 for "initial" testing after reconstruction have been modified to 10 business days consistent with the requirements of ADP 21-3455. This is within SWCAA's authority as the "Administrator" of the applicable regulations (40 CFR 60 Subpart CC and 40 CFR 63 Subpart SSSSSS). In SWCAA's experience, 10 business days is entirely adequate to allow SWCAA time to review a test protocol. Longer time periods tend to cause the actual sampling date to be unnecessarily delayed.

The permittee must also report test results within 45 days of test completion to allow timely review by SWCAA. Operating conditions are also to be included in all test reports to relate emissions to the method of operation. Source testing described in monitoring requirement M5 is subject to this reporting requirement.

R7. Episodic Reports

This section describes the reports that must be submitted on a timeline related to an activity at the facility rather than a regular schedule. These activities include startups, emission control system bypasses, use of new materials, and melt furnace reconstruction.

VIII. EXPLANATION OF FUTURE REQUIREMENTS

No new requirements are anticipated in the future.

IX. EXPLANATION OF OBSOLETE REQUIREMENTS

1. Obsolete Regulatory Orders/Permits

The following Air Discharge Permits have been issued for this facility and are no longer in effect.

Air Discharge Permit	Application #	Date Issued	Description
07-2718	CO-822	3/27/07	Initial approval to construct a facility to produce between 120 and 180 million wine bottles per year.
09-2888	CO-868	8/28/09	Approval for two emergency generator engines (one unpermitted, one different than originally permitted), eight silo vents, one bin vent, and vents from the bad batch chute and the quench conveyor. The quench conveyor system and other portions of the plant are sources of fugitive VOC emissions from the evaporation of oils used in the process. ADP 09-2888 superseded ADP 07-2718.
11-2968	CO-904	5/9/2011	Approval for replacement of the failed glass melting furnace with a new electrically boosted oxy-fuel fired glass melting furnace. ADP 11-2968 superseded ADP 09-2888.
15-3131	CO-928	7/14/2015	Belated approval of two hot end coating lines, mold swabbing, exhausting the Mixed Batch Day Bins Dust Collector to ambient air, increasing the evaporative VOC emission limit, and addressing alternative monitoring of the Glass Melt Furnace exhaust O_2 content at low production rates. ADP 15-3131 superseded ADP 11-2968. ADP 15-3131 was superseded by ADP 20-3420 issued June 25, 2020.
20-3420	CO-1029	6/25/2020	Approval for spray welding and installation of two new downdraft tables for spray welding in the Mold Shop. ADP 20-3420 was superseded by ADP 21-3455 issued March 4, 2021 for the installation of two additional downdraft tables in the Mold Shop so that all spray welding will be conducted at the downdraft tables.

X. RESPONSE TO COMMENTS

Response to Public Comments
No comments have been received from the public.

Response to EPA Comments
No comments have been received from the US Environmental Protection Agency.

XI. FACILITY HISTORY

This facility was originally constructed with a cold-top electric glass melting furnace. The original furnace began heating on October 7, 2008, and began melting glass on October 15, 2008. On January 4, 2009, before achieving normal production, the glass furnace experienced a leak and was shut down. The furnace was re-built and re-heated beginning May 11, 2009. This new furnace was shut down on September 13, 2009 before achieving the quality of glass desired, when the owner was unable to secure funding for continuing operation. The glass furnace was not drained during this shutdown. This furnace was replaced with the current oxy-fuel glass furnace that began operation in July 2012.

Permit/Regulatory Order Actions
The following table lists each Air Discharge Permit and Consent Order(s) issued for this facility. Permits or Orders in bold contain no active requirements. The requirements may have been superseded, may have been of limited duration, or the equipment may have been removed.

Order/Permit Number	App. #	Date Issued	Description
07-2718	CO-822	3/27/07	Initial approval to construct a facility to produce between 120 and 180 million wine bottles per year.
09-2888	CO-868	8/28/09	Permittee submitted ADP Application CO-868 requesting approval for two emergency generator engines (one unpermitted, one different than originally permitted), eight silo vents, one bin vent, and vents from the bad batch chute and the quench conveyor. The quench conveyor system and other portions of the plant may be sources of fugitive VOC emissions from the evaporation of oils used in the process.
11-2968	CO-904	5/9/2011	Replacement of the failed glass melting furnace with a new electrically boosted oxy-fuel fired glass melting furnace.
15-313I	CO-928	7/14/2015	Approval to operate Hot End Coating Lines, mold swabbing, exhausting the Mixed Batch Day Bins Dust Collector to ambient air, and monitoring of the Glass Melt Furnace exhaust oxygen content at low production rates.

Order/Permit Number	App. #	Date Issued	Description
20-3420	CO-1029	6/26/2020	This permitting action addresses thermal spraying of nickel or a nickel based alloy containing up to 1% chromium to build up metal when reconditioning components in the Mold Shop.
21-3455	CO-1036	3/4/2021	Installation of two additional downdraft tables equipped with HEPA filtration in the Mold Shop to control emissions from spray welding.

Title V Permit Actions

Air Operating Permit SW10-17-R0 (original Title 5 permit)
Final Permit Issued: February 17, 2016

Air Operating Permit SW10-17-R0-A (Administrative Amendment)
Final Permit Issued: October 20, 2016

Compliance History
The following Notices of Violation (NOV) or Notice of Correction (NOC) were issued during the last permit term (February 17, 2016 to present).

NOV/NOC#	Violation Date	Notes
6106	1/1/2016 – 4/14/2016	Excess organic tin and hydrochloric acid emissions from the hot end coating lines.
10108	11/24/2019	The glass melt furnace emission control system was bypassed for approximately 30 minutes due to a cooling water line break in a batch charger.

XII. EXPLANATION OF APPENDICES

Appendix A contains the methods by which visible emissions from the permittee's operations are to be evaluated when performing required monitoring.

Appendix B contains the Site Specific Monitoring plan for the Glass Melt Furnace baghouse.

Appendix A
Applicable Requirement Review

Air Discharge Permit 21-3455		
Requirement	**Title V Permit Location**	**Comments**
1 (PM_{10} limits for raw material and cullet baghouses)	Req-11	
2 (PM_{10} limits for Mold Shop ventilation)	Req-12	
3 (Ni and Cr^{+6} limits for thermal spraying)	Req-13	
4 (glass furnace emission limits)	Req-14	
5 (Forehearth Heaters and Shrink Wrap Packaging Heaters emission limits)	Req-15	
6 (visible emission limits for equipment other than Glass Melt Furnace and generators)	Req-16	
7 (visible emissions limit for Glass Melt Furnace)	Req-17	
8 (visible emissions limit for Emergency Generator Engines)	Req-18	
9 (emission limits for Hot End Coating Lines)	Req-19	
10 (PM emission limit for mold swabbing)	Req-20	
11 (VOC emission limit for evaporative sources)	Req-21	
12 (fugitive emissions)	Req-3	
13 (odors)	Req-4	
14 (pollution control equipment operation)	Req-22	
15 (informational condition requiring compliance with permit)	—	This condition is informational in nature and not a separately enforceable requirement or one for which a compliance certification is appropriate.
16 (filter differential pressure gauges)	M6	

Air Discharge Permit 21-3455		
Requirement	**Title V Permit Location**	**Comments**
17 (Mold Shop filtration requirements)	Req-23	
18 (thermal spraying filtration requirement)	Req-24	
19 (Melt Furnace stack height)	Req-25	
20 (fuel requirement for glass melt furnace, forehearth heaters and shrink wrap packaging heaters)	Req-26	
21 (baghouse leak detector requirements)	Req-27	
22 (control system inspection)	Req-28	
23 (control system spare parts)	Req-29	
24 (minimum O_2 purity)	Req-30	
25 (requirement to maintain excess O_2)	Req-31	
26 (scrubbing system reagent feed rate)	Req-32	
27 (vertical dispersion)	Req-33	
28 (emergency generator fuel quality)	Req-34	
29 (emergency generator operation limits)	Req-35	
30 (emergency generator operation limits)	Req-36	
31 (prohibition on concurrent non-emergency operation of emergency generators)	Req-37	
32 (record details)	Introductory paragraph to Section VII	
33 (5 year record retention requirement)	Introductory paragraph to Section VII	

Air Discharge Permit 21-3455		
Requirement	**Title V Permit Location**	**Comments**
34 (Glass Melt Furnace control system inspection)	M8(a)	
35(a) (filter operation hours)	M6(a)	
35(b) (raw material records)	M7(a)	
35(c) (natural gas consumption records)	M7(b), M11(a)	
35(d) (glass production rate records)	M7(c)	
35(e) (glass production quantity records)	M7(d)	
35(f) (O_2 monitoring)	M7(e)	
35(g) (O_2/fuel ratio monitoring)	M7(f)	
35(h) (O_2 purity monitoring)	M7(g)	
35(i) (scrubber reagent monitoring)	M8(b)	
35(j) (leak detector output logging)	M8(c)	
35(k) (glass melt furnace inspection logs)	M8(d)	
35(l) (glass melt furnace control system outage logging)	M8(e)	
35(m) (leak detector monitoring system inspection results logging)	M8(f)	
36(a) (Mold Shop thermal spraying inspections)	M3	
36(b) (thermal spraying material usage)	M16	
36(c) (generator usage logging)	M12(b)	
36(d) (generator fuel sulfur content)	M12(c)	
36(e) (monobutyltin trichloride usage monitoring)	M13(a)	

Air Discharge Permit 21-3455		
Requirement	**Title V Permit Location**	**Comments**
36(f) (mold swabbing material usage)	M14(a)	
36(g) (VOC containing material usage)	M15(a)	
37 (maintenance logs)	M6(b), M7(h), M8(g), M11(b), M12(a), M13(b), M14(b), M15(b), M16(b)	
38 (excess emission records)	M1(b)	
39 (complaints)	M4, R2	
40 (emission testing)	M5	
41 (shutdown and startup reporting)	R7(a)	
42 (excess emission reporting)	R1	
42 (deviation reporting)	R1	
44 (complaint reporting)	R2	
45 (emission test report due date)	R6	
46 (prenotification of control system outage)	R7(b)	
47 (site-specific monitoring plan)	R7(e)	
48 (notice of compliance status)	R7(d)	
49 (new materials)	R7(c)	
50 (emission inventory)	R5	
Appendix A (emission testing requirements)	M5, R6	

40 CFR 60 Subpart CC		
Requirement	**Title V Permit Location**	**Comments**
60.290	—	Applicability. Describes facilities to which the rule applies, is not an applicable requirement in itself.

40 CFR 60 Subpart CC		
Requirement	**Title V Permit Location**	**Comments**
60.291	—	Definitions
60.292	Req-14	Applicable requirements for PM. The application limit of 0.2 lb/ton glass (calculated in accordance with 60.296) is much less stringent than the NSR limit of 0.09 lb/ton glass, so only the NSR limit is shown in Req-14.
60.293	—	PM standards for furnaces "with modified-process." "With modified-process" means using any technique designed to minimize emissions without the use of add-on pollution controls. This facility does not use such a modified-process for PM.
60.296	M5	Test methods and procedures. Applies only to initial testing following a furnace re-build. States that compliance based on equation $E = (c_s Q_{sd} - A)/P$, where A is a factor that subtracts 227 g/hr from the emission rate ($c_s Q_{sd}$) before dividing by the production rate (P). The emission limit in 60.292 is much less stringent than the NSR limit even before making this correction, so this detail was not included in the permit. This section allows for an increased probe and filter temperature, which is less stringent than the NSR requirement to use unmodified Method 5, therefore this detail was not included in the permit.

CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines		
Requirement	**Title V Permit Location**	**Comments**
60.4200	—	"Am I subject to this subpart?" Informational.
60.4201	—	"What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?"
60.4202	—	"What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?"
60.4203	—	"How long must my engines meet the emission standards if I am a manufacturer of stationary CI internal combustion engines?"
60.4204	—	"What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?" No non-emergency engines at this facility.

CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines		
Requirement	**Title V Permit Location**	**Comments**
60.4205	—	"What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?" Section (b) states that 2007 model year and later emergency engines must comply with 40 CFR 60.4202 as applicable. This applies to both emergency generator engines. Compliance is met through engine certification and proper operation and maintenance. Both engines are Tier 2 EPA certified which meets this requirement. No active requirements in this section.
60.4206	—	"How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?" Informational. No exemption or modification of any other requirement in this section.
60.4207	Req-34	"What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?"
60.4208	—	"What is the deadline for importing or installing stationary CI ICE produced in previous model years?"
60.4209	—	"What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?" No requirements for a non-emergency engine without a diesel particulate filter.
60.4210	—	"What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?"
60.4211	Req-35, Req-38	"What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?" The engines in question are EPA certified to the appropriate standard (Tier 2 in this case), so the only remaining compliance requirement is to operate the engine properly. For emergency engines, this includes a 100 hour per year limit on operation for maintenance checks and readiness testing.
60.4212	—	"What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?" No testing requirements for these engines.
60.4213	—	"What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?" The engines at facility have displacement much less than 30 liters per cylinder and are not subject to any testing requirements.

CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines		
Requirement	**Title V Permit Location**	**Comments**
60.4214	—	"What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?" There are no notification requirements applicable to these engines.
60.4215	—	"What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?"
60.4216	—	"What requirements must I meet for engines used in Alaska?"
60.4217	—	"What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?" This facility does not have approval to utilize special fuels.
60.4218	—	"What parts of the General Provisions apply to me?" Refers to Table 8.
60.4219	—	"What definitions apply to this subpart?" Informational.
Table 1	—	"Emission Standards for Stationary Pre-2007 Model Year Engines With a Displacement of <10 Liters per Cylinder and 2007-2010 Model Year Engines >2,237 KW (3,000 HP) and With a Displacement of <10 Liters per Cylinder" Informational listing of the emission standards. There are no pre-2007 engines at this facility.
Table 2	—	"Emission Standards for 2008 Model Year and Later Emergency Stationary CI ICE <37 KW (50 HP) With a Displacement of <10 Liters per Cylinder." No engine in this category at the facility.
Table 3	—	"Certification Requirements for Stationary Fire Pump Engines." No engine in this category at the facility.
Table 4	—	"Emission Standards for Stationary Fire Pump Engines." No engine in this category at the facility.
Table 5	—	"Labeling and Recordkeeping Requirements for New Stationary Emergency Engines." Not a requirement for the owner/operator.
Table 6	—	"Optional 3-Mode Test Cycle for Stationary Fire Pump Engines." Not a requirement for the owner/operator.
Table 7	—	"Requirements for Performance Tests for Stationary CI ICE With a Displacement of ≥30 Liters per Cylinder." No engine in this category at the facility.
Table 8	—	"Applicability of General Provisions to Subpart IIII." Table 8 was not listed directly in the permit, rather the individual General Provisions were independently identified.
Applicable General Requirements Identified by Table 8		
60.1	—	General applicability of the General Provisions
60.2	—	Definitions
60.3	—	Units and abbreviations

CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines		
Requirement	**Title V Permit Location**	**Comments**
60.4	—	Address. Informational.
60.5	—	Determination of construction or modification
60.6	—	Review of plans
60.7	—	Notification and Recordkeeping. There are no notification requirements applicable to these engines.
60.8	—	Performance tests. No performance tests are required.
60.9	—	Availability of information. Informational
60.10	—	State Authority. Informational.
60.11	P1	Compliance with standards and maintenance requirements. No active requirements, however the credible evidence provision was included in P1.
60.12	Req-7	Circumvention
60.13	—	Monitoring requirements. Only applies to stationary CI ICE with a displacement of ≥30 liters per cylinder.
60.14	—	Modification. Modification is subject to New Source Review.
60.15	—	Reconstruction. Reconstruction is subject to New Source Review.
60.16	—	Priority list
60.17	—	Incorporations by reference
60.18	—	General control device requirements. No control devices.
60.19	—	General notification and reporting requirements. There are no notification requirements applicable to this engine.

40 CFR 63 Subpart SSSSSS		
Requirement	**Title V Permit Location**	**Comments**
63.11448	—	Applicability. Describes which facilities to which the rule applies, is not an applicable requirement in itself.
63.11449	—	"What parts of my plant does this subpart cover?" Informational.
63.11450	—	Compliance dates. Compliance is required upon startup for this facility.
63.11451	Req-14	Compliance standards. States that applicable facilities must comply with emission limit Table 1. This is applicable to this facility. The Table 1 limit is 0.2 lb/ton glass produced (3-hr block avg.), which is much higher than the NSR limit of 0.09 lb/ton glass (1-hour average) so only the NSR limit is listed.

40 CFR 63 Subpart SSSSSS		
Requirement	**Title V Permit Location**	**Comments**
63.11452	M5, R7(d)	What are the performance test requirements for new and existing sources? For the purposes of this requirement SWCAA assumed that each furnace rebuild would constitute reconstruction and therefore the furnace would be "new" such that an initial source test was required. This testing is required by SWCAA's NSR permit regardless of whether the furnace rebuild constitutes "reconstruction" under 40 CFR 63.
63.11453(a)	R7(d)	Notice of Compliance Status submittal requirements.
63.11453(b)	M5	Requirement to inspect the baghouse and conduct initial performance testing in accordance with 63.11452. No additional requirements in this section.
63.11453(c)	M9	Baghouse leak detection requirements
63.11453(d)	—	Requirements for furnaces using an ESP. Not applicable because a baghouse is used at this facility.
63.11453(e)	—	Requirements for furnaces using something other than a baghouse or ESP. Not applicable because a baghouse is used at this facility.
63.11454(a)	M8	Monitoring system requirements
63.11454(b)	—	ESP monitoring requirements. Not applicable because a baghouse is used at this facility.
63.11454(c)	M8	Requirement to monitor baghouse inlet temperature.
63.11454(d)	—	ESP monitoring requirements. Not applicable because a baghouse is used at this facility.
63.11454(e)	M9	Baghouse leak detection requirements – reference to comply with 63.11453(c).
63.11454(f)	—	Request for alternative monitoring requirements for facilities not utilizing ESP or fabric filter. Not applicable because a baghouse is used at this facility.
63.11455(a)	—	General requirement to comply at all times except during startup, shutdown, and malfunction. This applies only to the PM emission limit, which is less stringent than the NSR emission limit in the permit. In addition, there is no exception to the NSR limit during malfunction.
63.11455(b)	Req-22	General duty to operate in accordance with good air pollution control practices.
63.11455(c) – introductory paragraph	M8	
63.11455(c)(1)	—	ESP monitoring requirements. Not applicable because a baghouse is used at this facility.
63.11455(c)(2)	—	ESP monitoring requirements. Not applicable because a baghouse is used at this facility.

40 CFR 63 Subpart SSSSSS		
Requirement	**Title V Permit Location**	**Comments**
63.11455(c)(3)	M8	Requirement to monitor fabric filter inlet temperature as per 63.11454(a). Reiterates the requirement of 63.11454(c)(1).
63/11455(c)(4)	M8, M9	Requirement to comply with 63.11454(e), which is a requirement to use a bag leak detector, in accordance with 63.11454(a). Is a reiteration of these requirements.
63.11455(c)(5)	—	Requirements for furnaces using something other than a baghouse or ESP. Not applicable because a baghouse is used at this facility.
63.11455(c)(6)	M10	Requirement to keep records as per 63.11457 for each monitoring system (bag leak detector and inlet temperature).
63.11455(d)(1)	M8(a)	Glass melt furnace emission control system inspection requirements.
63.11455(d)(2)	—	ESP inspection requirements. Not applicable because a baghouse is used at this facility.
63.11455(d)(3)	M10	Requirement to record glass melt furnace emission control equipment inspection as per 63.11457(c). This recordkeeping is also required by 63.11457(a)(5). The records must be in a "logbook," either written or electronic. Any records readily available for review would constitute a "logbook," so the term was not used in the permit.
63.11455(d)(4)	Req-28	Requirement to immediately correct control device problems.
63.11455(e)	—	Statement that recordkeeping is the method of demonstrating continuous compliance with emission limits for facilities that do not need emission control equipment to comply with emission limits. This facility uses control equipment to comply with emission limits therefore this does not apply.
63.11456(a)	—	Initial notification requirements. This is an existing facility for which initial notifications have been completed. The facility is already subject to the requirements for a "new" source so such notification would not be useful. Rebricking is not expected to constitute reconstruction such that an initial notification is required. While this subpart is silent on the issue, 40 CFR 60 Subpart CC and 40 CFR 61 Subpart N specifically exclude rebricking from the definition of reconstruction for glass furnaces.

40 CFR 63 Subpart SSSSSS		
Requirement	**Title V Permit Location**	**Comments**
63.11456(b)	R7(d)	Notification of Compliance Status submittal. SWCAA incorporated a requirement to submit a Notification of Compliance Status after each "initial" source test following each furnace rebuilding event in the NSR permit. For the purposes of this requirement SWCAA assumed that each furnace rebuild would constitute reconstruction and therefore the furnace would be "new" such that an initial source test was required. This testing is required by SWCAA's NSR permit regardless of whether the furnace rebuild constitutes "reconstruction" under 40 CFR 63.
63.11457(a)	M10	Recordkeeping requirements. Sections (a)(1 – 7) are applicable and included in M10. 63.11457(a)(8) which applies to alternative monitoring methods or test procedures was not included because no alternatives have been approved.
63.11457(b)	M10	Record maintenance requirements.
63.11457(c)	M10	Equipment maintenance and inspection records requirements.
63.1457(d)	M10	Requirement to maintain records for five years, with at least the two years of records available onsite.
63.11458	—	"What General Provisions apply to this subpart?" Informational. This section references the requirements listed in Table 2.
63.11459	—	"What definitions apply to this subpart?" There are no applicable requirements in this section.
63.11460	—	"Who implements and enforces this subpart?" Informational. There are no applicable requirements in this section.
Table 1	Req-14	PM emission limit
Applicable General Requirements Identified by Table 2		
63.1	—	Applicability
63.2	—	Definitions
63.3	—	Units and Abbreviations
63.4	Req-7	Prohibited Activities
63.5	—	Construction/Reconstruction. Reconstruction as defined in 40 CFR 63 is not anticipated.
63.6(a), (b)(1)-(b)(5), (b)(7), (c)(1), (c)(2), (c)(5), (e)(1), (f), (g), (i), (j)	Req-22	The only active requirement in this section is the general duty to operate in accordance with good air pollution control practices as required by 40 CFR 63.6(e).
63.7	M5	Performance Testing Requirements

40 CFR 63 Subpart SSSSSS		
Requirement	**Title V Permit Location**	**Comments**
63.8(a)(1), (a)(2), (b), (c)(1)-(c)(4), (c)(7)(i)(B), (c)(7)(ii), (c)(8), (d), (e)(1), (e)(4), (f)	M8, M9	Monitoring Requirements. The active requirements in this section are the operation and maintenance requirements, and the quality control program requirements for the bag leak detector and baghouse temperature monitoring. The relevant quality control program is a portion of the site-specific monitoring plan.
63.9(a), (b)(1)(i)-(b)(2)(v), (b)(5), (c), (d), (h)-(j)	R7	The only active applicable requirement in this section is the Notification of Compliance Status required by SWCAA's NSR permit regardless of whether rebricking of the furnace constitutes "reconstruction" under 40 CFR 63.
63.10(a), (b)(1), (b)(2)(i)-(b)(2)(xii)	M10	Recordkeeping and reporting requirements.
63.10(b)(2)(xiv), (c), (f)	M10	Documentation for Initial Notification and Notification of Compliance Status and CMS recordkeeping
63.12	—	State Authority and Delegation.
63.13	—	Addresses.
63.14	—	Incorporation by Reference.
63.15	—	Availability of Information.
63.16	—	Performance Track Provisions.