



## REGION 3

PHILADELPHIA, PA 19103

**Report Title:** Clean Air Act Inspection of Stoelzle Glass  
**Inspection Date(s):** 04/18/2024  
**Regulatory Program(s):** SIP

**Company Name:** Stoelzle Glass USA Inc.  
**Facility Name:** Stoelzle Glass  
**Facility Location:** 400 9<sup>th</sup> Street  
Monaca, PA 15061

**Latitude:** 40.69152 **Longitude:** -80.2808  
**County/Parish:** Beaver

**AFS/ICIS-Air Number:** PA000238606  
**Permit Number:** OP-04-00084  
**NAICS Code:** 327212 **SIC:** 3229  
**DSB ID #:** ECAD-61

| Facility Representatives:                              | Point of Contact                    |
|--------------------------------------------------------|-------------------------------------|
| Bob Ryder, Sr. Director of engineering, Stoelzle Glass | <input checked="" type="checkbox"/> |
| Phone: 724-773-3252 Email: bob.ryder@stoelzle .com     |                                     |
| See Attachment 2 for full list of attendees            | <input type="checkbox"/>            |

### EPA Inspectors:

Bruce Augustine, Environmental Scientist, 3ED21  
Phone: 215-814-2131 Email: augustine.bruce@epa.gov  
Paul Arnold, Environmental Engineer, 3ED21  
Phone: 215-814-2194 Email: arnold.paul@epa.gov  
Steve Ott, Air Inspector, 3ED21  
Phone: 215-814-2267 Email: ott.steve@epa.gov

### State/Local Inspectors:

Scott Beaudway, Air Quality Specialist, PADEP  
Phone: 412-417-7952 Email: sbeaudway@pa.gov

**EPA Lead Inspector**

**Signature**

**Bruce Augustine**

1600 John F Kennedy Blvd  
Philadelphia, PA 19103-2852

**Date**

**Supervisor**

**Signature**

**Kristen Hall**

**Date**

## Table of Contents

|                                             |    |
|---------------------------------------------|----|
| I. Introduction .....                       | 4  |
| A. Summary of the Facility.....             | 4  |
| B. Inspection Opening Conference.....       | 4  |
| II. Site Activity/Process Description ..... | 5  |
| III. Observations .....                     | 6  |
| IV. Records Review .....                    | 7  |
| V. Closing Conference .....                 | 9  |
| VI. List of Attachments .....               | 11 |

## **I. Introduction**

The United States Environmental Protection Agency (EPA) conducted a Clean Air Act (CAA) inspection at Stoelzle Glass USA (Stoelzle or Facility) to verify compliance with applicable State and Federal regulations. The Pennsylvania Department of Environmental Protection (PADEP) was notified of the inspection on April 2, 2024 via email. On April 15, 2024, EPA notified the Facility of the planned inspection via phone and email. EPA emailed a list of records for review to Bob Ryder, prior to the inspection (see Attachment 3). These records are listed in the Records Review section of the report.

The inspection included an evaluation of the Facility's processes and its compliance with the CAA. All information included in this report is the result of statements by the Facility representatives, materials shown to the inspectors by the Facility representatives, and/or documents provided by the Facility representatives to the inspectors at the time of, or subsequent to, the inspection. In addition, information gathered prior to the inspection from a review of EPA and State records may be included in Section A. Summary of the Facility.

## **A. Summary of the Facility**

The Facility is located at 400 9<sup>th</sup> Street, Monaca, PA 15061. Stoelzle produces glass for various products including candle jars, liquor bottles, and consumer products. The Facility began glass production at the site in the 1800's as Phoenix Glass and then as Anchor Hocking. The Facility was purchased by Stoelzle Glass in March 2021. Stoelzle is an Austrian based glass manufacturer with multiple sites in Europe. The Monaca, PA location is their only glass plant in the United States. Anchor still exists as its own company. Stoelzle's website is: <https://www.stoelzle.com/>.

The Facility received a Synthetic Minor Operating Permit (04-00084) from PADEP issued on November 17, 2020.

Stoelzle is classified as a synthetic minor source for nitrogen oxides (NO<sub>x</sub>) and a minor source for all other criteria pollutants and hazardous air pollutants. The Facility is subject to, or potentially subject to the following federal regulations:

- 40 C.F.R. Part 60, Subpart CC: New Source Performance Standards for Glass Manufacturing

## **B. Inspection Opening Conference**

At approximately 9:00AM on April 18, 2024, EPA inspectors arrived at the Facility for a CAA Inspection and conducted a brief opening conference. Stoelzle was represented by Bob Ryder, Chris Wild, and Bruce Baden, as well as, Susan Burkett of August Mack Environmental and Tom Muscenti of Trinity Consultants. Also, Scott Beaudway (PADEP) was present. EPA inspectors, Bruce Augustine, Paul Arnold and Steve Ott, presented their credentials and explained the purpose of the visit was to conduct a CAA inspection to determine compliance with their permit and any applicable regulations. Additionally, EPA

informed the facility representatives of their right to claim any confidential business information (CBI). At that time, Stoelzle did not claim any photos or documentation as CBI.

## **II. Site Activity/Process Description**

Stoelzle is a private company that produces glass containers using a soda-lime recipe. The Facility is located on approximately 17 acres with 450,000ft<sup>2</sup> under roof. The Facility operates 24hrs/7day a week and has 350-400 full time employees. The main raw material is sand with soda ash, limestone and feldspar being the other main raw materials. There are additional raw materials used in smaller amounts, such as colorants. The majority of the raw materials arrive via railcar and are stored in silos. About 40-50% of the products are spirits bottles for the liquor market. Most of the glass produced is clear glass while some green is also made in one of the production lines.

Raw materials are transferred from the railcar via conveyor to one of the storage silos. Emissions from the silos are controlled with dust collectors. Although the glass furnace is continuously fed raw material, Stoelzle produces raw material batches that weigh approximately 1.5 tons. Raw materials are sent from the silos to a mixing drum to homogenize the batch. The mixed batch is then conveyed in an elevator to the batch bins before being charged in the furnace. In addition to the raw material, Stoelzle uses 35% cullet or recycled glass in their batch. Cullet melts faster than raw material and allows the facility to offset raw material purchases. Raw material enters the furnace melt zone where a molten layer of glass constantly moves across the furnace before exiting to the refiner and forehearth. The refined glass exits the forehearth and then is sent to one of five production lines. The production lines cut the molten glass into gobs that enter the forming machines. The gobs are dropped into molds where air is blown to form the product. The glass then goes to the annealing lehr for controlled cooling. Finally, the products go through inspection and packaging and shipping.

Stoelzle operates a single natural gas fired regenerative furnace to produce molten glass with a capacity of 300ton/day of glass production. The furnace is equipped with two gas-oxy burners (one on each side). There are three burners per port with only two being used at this time. The burners fire alternately on each side of the furnace and alternate every 20 minutes. The furnace is also equipped with 2500kVA of electric boost using 14 electrodes (7 on each side) placed in the molten glass bath. The electric boost provides extra heating to reduce natural gas consumption.

In 2012, a Tri-Mer ceramic activated dust filtration (CADF) system was installed on the furnace to control particulate matter (PM), NO<sub>x</sub>, and sulfur dioxides (SO<sub>2</sub>). The CADF is equipped with a ceramic filter bed for PM removal, a selective catalytic reduction (SCR) system with ammonia injection for NO<sub>x</sub> reduction, and dry sorbent injection for SO<sub>2</sub> control. At the same time as the CADF installation, the Facility increased the capacity of the furnace from 245 to 285 ton/day. The permit for this project also changed the Facility from a Title V major source to a synthetic minor source for NO<sub>x</sub> with an annual limit of 99.0 tons. The ceramic filter system has three filter beds each containing 270 filters. Stoelzle indicated that since 2019, they have changed about 25 filters. They also stated that they only inject a 29% aqueous ammonia solution when duct temperatures reach 500°F. They indicated that they are

currently injecting approximately 4galNH<sub>3</sub>/hr. The Facility conducts a stack test each permit term to demonstrate compliance with the SO<sub>2</sub> and PM limits in the permit. A NO<sub>x</sub> continuous emission monitoring system (CEMS) was installed in 2012 to continuously monitor NO<sub>x</sub> emissions.

Source 110 in the permit is listed as Miscellaneous Natural Gas Sources (Boilers/Heaters). Stoelzle indicated that this includes two hot water boilers and two space heaters. All of the sources are natural gas fired and used for comfort heat/hot water. The Facility has one natural gas fired emergency generator that is used to provide backup powers to the pumps used for water recirculation. Stoelzle stated that the quench and shock Lehr (Source 104) and decorative Lehr (Source 119) have been removed from the site. Also, the permit lists seven Lehrs in Source 105 when there are only five onsite.

The opening conference concluded at 10:25AM.

### **III. Observations**

EPA inspectors were led on a walkthrough of the Facility at 10:35AM by the same Stoelzle representatives present at the opening conference. Scott Beaudway of PADEP was also present for the walkthrough. EPA inspectors noted photos would be taken during the Facility walkthrough (Attachment 3).

EPA observed the mold shop where old container molds and new molds are stored. Stoelzle doesn't manufacture the molds but does maintenance on the molds used in the glass forming machines and helps potential customers design the molds. There is a dust collector in the mold shop and a pressure drop of 0.6"WC was observed during the inspection.

The EPA inspection team proceeded to observe the new automated decorating machine that places painted labels onto certain products. The machine was installed within the last few years and EPA request a copy of the request for permit determination that was sent to PADEP. This source is not in the existing SM permit.

EPA then observed the silo building that contains 14 raw material silos. The largest silo can store 100 tons of sand while the smallest is rated at 23 tons and stores dolomite. PM emissions from each of the silos is controlled using a dust collector. Adjacent to the silos, the EPA inspection team observed cullet piles. Most of the cullet is generated onsite while a small amount is purchased from outside sources. The railcar unloading rack was observed. No railcars were being unloaded at the time of the inspection, however, railcars were located on the rail spur. Railcars unload from the bottom of the railcar into a pit where the material is then conveyed to the silos.

The EPA inspection team observed the diesel fired fire suppression boiler. The boiler is rated at 240HP and the nameplate indicated it was built in June 1979. The hour meter on the boiler was 114.7 hours.

The Facility has a stack on the roof for the glass furnace that is out of service. The stack was used to vent furnace gases prior to the installation of the CADF system and new stack. Stoelzle indicated that no sources vent to the stack and it is not listed in the permit.

Stoelzle has an API separator to remove oil from used process water. Stoelzle uses water to cool the glass forming machines in the process and this water is routed to the separator. The API separator has two influent tanks where material first enters the process. The water is then sent to two secondary tanks and then a clarifier that is equipped with a skimmer. The water is sent to the clean water tanks for use while the oil goes to a used oil tank for disposal offsite.

The EPA inspection team observed the Kohler emergency generator. A nameplate could not be located on the unit and Stoelzle indicated they would provide that information. The hour meter on the generator was observed to be 54.7 hours.

EPA observed the ammonia injection location on the ductwork of the CADF system. At the bottom of the ceramic filter boxes EPA observed magnehelic gauges with the following pressure drops: A 10.24"WC; B 9.46"WC; C 9.05" WC. EPA entered the CEMS control room and observed the NH<sub>3</sub> injection rate during the inspection as 0.5 gal/hr. The NOx CEMS was also observed and the 1 min average NOx emission rate was 0.915 lb/ton and the 30-day rolling average was 1.12 lb/ton (Permit limit 1.36 lb/ton). The 30 day average glass pull was 202.6 ton/day (Permit limit 300 ton/day) and the instantaneous glass pull during the inspection was 225 ton/day. The bottom melter temperature of the furnace during the inspection was 2300-2400°F and the furnace was combusting approximately 3000scfm of natural gas. The excess oxygen in the furnace was 1.3% while the permit limit is 4.5%. Operators indicated that two of the three electric boost electrodes were operating (250kVA each or 500kVA total).

The EPA inspection team then proceeded to the glass forming machine production lines. There are five production lines and Lines 1, 3, and 6 were operating during the inspection while Line 5 was running samples. Adjacent to the production area, Stoelzle operates two Safety Kleen cold parts washers. The parts washers use Premium Gold Solvent.

After exiting the glass forming machines, the glass is control cooled in natural gas fired annealing lehrs. After the lehr, a lubricity spray is applied and EPA requested the MSDS sheet for the spray. EPA then walked through the inspection and packaging areas and emission sources were observed in this area.

The walkthrough concluded at 12:19PM and EPA took a break before resuming the inspection.

#### **IV. Records Review**

The records review commenced after EPA returned to the Facility at 1:02PM. EPA inspectors reviewed documents requested in the April 16, 2024 email to Bob Ryder (see Attachment 1). Records were provided prior to and after the inspection by Mr. Ryder. Below are the records requested and what was provided:

1. Provide a plot plan of the Facility and a detailed description of the process. The plot plan and the process description should clearly indicate all process units and emission points.

*Stoelzle indicated that a plot plan that includes the factory floor, lower level, and main floor would be provided.*

2. Provide the potential to emit (ton/yr) for NO<sub>x</sub>, SO<sub>2</sub>, VOC, and hazardous air pollutants. For each PTE, provide the calculations and emission factors used to estimate the emissions.

*Stoelzle provided the potential to emit that was included in the most recent 2019 permit application to PADEP. Stoelzle indicated that they would also provide the request for permit determination for the 2022 new decorating machine project. Also, EPA inquired about the bypass stack at the Facility. Stoelzle stated that there is a "T" in the main stack that can open when the CADF system is not operational. An alarm is received when the "T" is open.*

3. Provide a list of authorizations for expenditure greater than \$100,000 since 2015. This list should include a brief description of the project and the total amount authorized.

*Stoelzle provided a list of capital expenditures back to 2022. A second spreadsheet with capital projects from 2015-2021 was provided after the inspection.*

4. Provide copies of the annual emission statement submitted to PADEP for calendar years 2020-2023. The emission statement should include the calculations and emission factors used to calculate emissions.

*Stoelzle provided copies of the AMIS emission statements sent to PADEP for calendar years 2020-2023.*

5. For each glass furnace located at the Facility, provide:
  - a. The capacity of the furnace to produce glass (ton/hr and ton/yr);
  - b. The types of glass produced in the furnace (soda-lime, borosilicate, etc.);
  - c. Identify the type of furnace (container, flat, pressed and blown, fiberglass, etc.);
  - d. The fuel(s) combusted in the furnace;
  - e. Any combustion or post-combustion techniques installed to reduce the emission of any pollutant to the atmosphere or increase furnace efficiency. This includes, but is not limited to, electric boost, oxygen staging, baghouse, SNCR. Identify the year each technique was installed at each furnace.

*Stoelzle provided a spreadsheet with the relevant information for the single glass furnace at the Facility.*

6. For each furnace located at the Facility, provide the following records for January 1, 2022-April 15, 2024:
  - a. The hours of operation on a monthly basis;
  - b. The hours any control system was bypassed monthly and the reason for the bypass;
  - c. Glass production (tons) on a 30 day rolling average basis;
  - d. Oxygen monitoring records (please have these available for review but do not provide copies);
  - e. Fuel combustion (MMscf) monthly;
  - f. Operating temperatures (please have these available for review but do not provide copies);
  - g. Ammonia injection rate;

- h. Any periods the CADF was bypassed and the reason for the bypass;
- i. SO<sub>2</sub> sorbent injection volume.

*Multiple spreadsheets and pdf's with the requested material were provided prior to the inspection. This information is under review.*

- 7. Provide copies of the most recent stack test for each pollutant (including ammonia).

*Stoelzle provided a copy of a 12/4/2019 stack test conducted by Montrose for PM, SO<sub>2</sub>, and NH<sub>3</sub> at the glass furnace stack.*

- 8. Provide copies of NO<sub>x</sub> CEMS data (ppm and lb/hr) and the 30 day NO<sub>x</sub> rolling average since January 1, 2022.

*A spreadsheet was provided with daily CEMS data and the 30 day rolling average from January 2022 until the inspection.*

- 9. Provide the dates the furnace was operated in idle mode since January 1, 2022, and provide dates of the last cold repair of the furnace.

*Stoelzle provided notification letters to PADEP for periods where the furnace was in idle mode from January 2022 through the inspection.*

- 10. Provide records of pressure drop readings across the baghouse from January 1, 2022 – April 1, 2024.

*Pressure drop records were provided as a pdf of scanned recorded sheets for the timeline requested.*

## **V. Closing Conference**

After the records review, EPA inspectors, Stoelzle representatives and PADEP had a brief closing conference to ask additional questions and discuss observations. The EPA inspectors noted that the investigation is on-going, and any areas of concern identified in the final report do not necessarily reflect a violation or deviation, rather, they are areas that will require further investigation. EPA also noted that they would issue an inspection report within in 60 days, with a copy to the State. Simultaneously, EPA will perform a detailed review of records and may have additional questions. The inspection concluded at 1:50PM.

The following have been identified as potential issues during the inspection. They are issues that require either further investigation by EPA or additional information or explanation by Stoelzle Glass.

- The Facility has indicated that the glass furnace (Source 103) is not subject to the requirements of 40 C.F.R. Part 60, Subpart CC because the furnace was constructed prior to June 15, 1979. However, the furnace has undergone multiple cold repairs and modifications since it was constructed. For example, in 1989 the facility added oxygen burning along with other combustion efficiency measures. These changes most likely increased the furnaces' capacity to

produce glass. These changes also likely resulted an increase in the emission rate of PM from the furnace. The furnace capacity has also been increased several times without listing a capital project. These increases in production may have occurred following cold repairs. The current permit limit for PM is 0.47lb/ton<sup>1</sup> which is higher than the NSPS Subpart CC limit of 0.1g/kg (0.2lb/ton) for pressed and blown glass using a soda-lime recipe. Stoelzle and PADEP should re-evaluate the applicability of NSPS Subpart CC to the furnace.

- As part of the records request for the inspection, EPA requested pressure drop records from January 1, 2022 through April 15, 2024. Stoelzle provided pdf copies of monthly pressure drop recordings completed by maintenance personnel. While reviewing the 2023 and 2024 records, EPA noticed that the values for several months repeat over several months. It is very unlikely that pressure drop across a dust collector would be the exact same value for multiple months, let alone multiple dust collectors. EPA would like to discuss this with Stoelzle to determine if there is an issue with the dust collectors or the monitoring/record keeping.

---

<sup>1</sup> Limit is for PM10 (filterable and condensable)

## **VI. List of Attachments**

- Attachment 1: Email correspondence to Bob Ryder of records requested to review during inspection
- Attachment 2: List of Attendees
- Attachment 3: Photograph Log