



REGION 3

PHILADELPHIA, PA 19103

Report Title: Clean Air Act Inspection of Vitro Glass – Meadville
Inspection Date(s): 06/4/2024
Regulatory Program(s): MACT and Title V

Company Name: Vitro Meadville Flat Glass, LLC
Facility Name: Vitro Meadville Flat Glass, LLC
Facility Location: 5123 Victory Boulevard
Cochrannton, PA 16314

Latitude: 41.5315 **Longitude:** -80.20947
County/Parish: Crawford County

AFS/ICIS-Air Number: PA0001274
Permit Number: Title V OP 20-00145
327211

NAICS Code: **SIC:** 3211

DSB ID #: ECAD-5486

Facility Representatives:

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N/A

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Date

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Signature

Kristen Hall

Date

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I. Introduction

The United States Environmental Protection Agency (EPA) conducted a Clean Air Act (CAA) inspection at Vitro Meadville Flat Glass, LLC (Vitro or Facility) to verify compliance with applicable State and Federal regulations. The Pennsylvania Department of Environmental Protection (PADEP) was notified of the inspection on May 14, 2024, via email. On May 30, 2024, EPA notified the Facility of the planned inspection via phone and email. EPA emailed a list of records for review to Joline Donnell prior to the inspection (see Attachment 1). 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 5123 Victory Boulevard, Cochran, Pennsylvania, 16314. Vitro uses the float glass technique to manufacture flat glass for the automotive industry.

At the time of the inspection, Vitro was operating its air emission sources under PADEP Title V Operating Permit 20-00145 (TVOP). Vitro's TVOP was issued October 16, 2019, amended December 6, 2021, and has an expiration date of September 30, 2024.

Currently, Vitro is classified as a major source of criteria and hazardous air pollutants (HAP). The Facility is, or is potentially, subject to the following federal regulations:

- 40 CFR Part 63, Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters
- 40 CFR Part 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

B. Inspection Opening Conference

At 8:40 AM on June 4, 2024, EPA inspectors arrived at the Facility for a CAA Inspection and conducted a brief opening conference. Vitro was represented by Joline Donnell, EHS Manager; JP Moroney, Corporate Environmental Manager; David Girvan, Director Flat Technology; Darrell Jewell, Plant Manager; Tom Waterloo, Project Manager; and Tom Davis, EHS Specialist. The PADEP was not present for the inspection. EPA inspectors, Paul Arnold, Parmatma Adhikari 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, Vitro representatives did not claim any photos or documentation as CBI.

II. Site Activity/Process Description

Glass production has been occurring at the Cochran location since 1968, originally under PPG ownership. After a few changes in ownership, Vitro took ownership of the Cochran Plant in 2017. Vitro is publicly held and is headquartered in Mexico. The Facility is located on about 231 acres. Vitro is a non-union shop, and the number of employees fluctuates. Vitro operates one natural gas-fired, float glass process line, continuously, 8,760 hours per year. Vitro stated that the furnace has not been modified since commencing operation, but has undergone maintenance, which has included rebricking. Furnace #1 was last rebricked in 2015. Vitro has no scheduled shutdowns. Vitro performs hot repairs on an as needed basis. During EPA's visit, Vitro was operating at about 40% of plant capacity.

Vitro's TVOP lists two (2) glass furnaces and associated process lines, designated as Lines 1 and 2. However, Line 2 was deactivated in April 2020 and Line 2's natural gas line was severed, and capped, in June 2020. Line 1 is active.

Vitro accepts raw material by both rail (soda ash and dolomite) and road (salt cake, sand, cobalt, and selenium). Vitro unloads the incoming raw materials into silos. Vitro has six silos that accept raw materials and two silos that store cullet. All silos have particulate matter emissions controlled by dust collectors. The soda ash and sand silos have dedicated dust collectors, and the remaining silos are all controlled by a common dust collector.

Vitro combines the sand and other raw materials required to meet customer specifications. During blending, some elements, such as cobalt and selenium are added to obtain a desired glass color. Vitro commonly uses selenium, which provides glass tinting, on much of their flat glass products. Selenium and cobalt are HAP's. All raw materials are blended and fed into a hopper before being "pushed" into the Line 1 Furnace. The furnace generally operates around 2,800 degrees Fahrenheit (F) and has ten burners. The furnace's air emissions are exhausted through two stacks, each is continuously monitors Oxides of Nitrogen (NOx) via a Continuous Emissions Monitoring System (CEMS).

Once the raw material batch is melted to form molten glass, the top twelve inches of molten glass is pushed, from the furnace, onto a bed of molten tin. This float glass process results in a sheet of glass that is very smooth, very clear and has an even thickness. The glass that Vitro produces is usually between 1.6mm and 6.0mm thick. The glass is formed and sent through the annealing process where it slowly cools to 350 degrees F. A thin coating of adipic acid is added to the surface of the glass in the "W" Booth. Emissions from the W Booth are controlled by a wet scrubber before being vented to the atmosphere. The rough and imperfect edges of the glass sheet require trimming by the edge trimmer. PM emissions from the edge trimmer are controlled by Dust Collector #2. The glass then undergoes final prep for offsite shipping which includes being cleaned by an air knife and final packing.

Vitro has three boilers. All three are natural gas fired. Two are Orr & Sembover Boilers (Boilers 1 & 2), originally rated at 25 MMBtu and installed in 1968. The third boiler (Boiler #4) is also an Orr &

Sembower Boiler, it was originally rated at 2.8 MMBtu when it was installed in 1968. Vitro stated that the primary function of Boilers 1 & 2 is to provide comfort heat during the colder months of November through April and, generally, are not used to provide process heat/steam for any manufacturing process, however Vitro reports both boilers as subject to MACT Subpart DDDDD. Boiler #4 serves as a backup boiler that operates, periodically, during the warmer weather months of May through October. Vitro stated that the plant usually does not require any of the three boilers, for any process, because the glass furnace, and associated process line, usually provides an excess of plant heat.

Vitro has two fire pumps (340 HP and 29 HP) and three emergency generators (2,200 HP, 300 HP, 1,200 HP). All five engines are diesel-fired. Both fire pumps, and all three emergency generators are subject to 40 CFR Part 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

The opening conference concluded at 9:30 AM.

III. Observations

EPA inspectors were led on a walkthrough of the Facility at 9:35 AM by Joline Donnell, JP Moroney, David Girvan, Darrell Jewell, Tom Waterloo, and Tom Davis of Vitro. EPA inspectors noted photos would be taken during the Facility walkthrough (Attachment 2).

Raw materials (including, but not limited to soda ash, dolomite, salt cake, sand, cobalt, and selenium) enter the plant, via truck and rail, and are stored in one of six silos (Photo 6). The particulate matter (PM) from the silos is controlled by four different dust collectors (DC). The sand silo and the soda ash silo each have a dedicated dust collector (Photos 7 & 8). The remaining silos have PM emissions controlled by the Train Shed DC (Photo 8). The TVOP has no pressure drop operating ranges for any of the DCs. From the silos, raw materials are conveyed, via a covered bridge, to the furnace hopper where it is pushed into the furnace (Photo 12). Vitro has one furnace which operates, continuously, at a temperature range from 2,100 to 3,000 degrees F. Emissions from the furnace vent through two stacks, designated as the North and South Stacks (Photos 1 & 10). Both stacks have NO_x CEMs and the observed emission rates were 50 ppm for the North Stack and 21 ppm for the South Stack. After melting, the molten glass was observed leaving the furnace and the entering the tin bath (Photo 13). After the tin bath, the molten glass began forming into a sheet of glass and continued, nonstop, to the annealing and trimming processes (Photos 14-16). The trimmer process has PM emissions controlled by DC #2. The glass sheet is then cut horizontally to customer specifications. Next, adipic acid was added to the surface of the glass in the “W” Booth. Emissions from the W Booth were controlled by a wet scrubber. The wet scrubber pressure drop was observed operating at 0.5 inches (inlet) and 0.9 inches (outlet). The TVOP contains no wet scrubber pressure drop operating ranges.

Once the glass was fully cooled, the glass was packed and prepared for offsite shipping. There were no emission sources in this area.

During the Facility walkthrough, EPA observed the following emergency generators and fire pumps (none were observed operating).

- Emergency generator trailer (Photos 1 & 2)
- Furnace Line 1 emergency generator (Photos 4 & 5)
- Line 1 emergency generator (Photo 25)
- The 340 HP fire pump (Photos 21 & 21)
- The 29 HP fire pump (Photo 22)

During the Facility walkthrough, EPA observed the following boilers (none were observed operating).

- Boilers 1 & 2 (Photo 18)
- Boiler 4 (Photo 19)

The walkthrough concluded around 12:00 PM.

IV. Records Review

EPA inspectors requested records in the May 30, 2024, email to Joline Donnell (see Attachment 1).

Vitro has a short-term Oxides of Sulfur (SO_x) limit (55.7 pounds/hour), and a long-term SO_x limit (244 tons/year, on a 12-month rolling period). Vitro demonstrates compliance with the TVOP's SO_x limits via stack testing. In May 2021, Vitro conducted a Line 1 SO_x stack test, which resulted in an emission rate of 21.7 pounds of SO_x/hr.

Vitro has a short-term total suspended particulate (TSP) limit (55.7 pounds/hour), and a long-term TSP limit (244 tons/year, on a 12-month rolling period). Vitro demonstrates compliance with the TVOP's TSP limits via stack testing. In March 2023, Vitro conducted a Line 1 TSP stack test, which resulted in an emission rate of 37.3 pounds of TSP/hr.

Vitro has a short-term Oxides of Nitrogen (NO_x) limit (7 pounds/ton of pulled glass), and a long-term NO_x limit (766.5 tons/year, on a 12-month rolling period). Vitro demonstrates compliance with the TVOP's TSP limits via CEMs. EPA observed the CEMs display while the furnace was operating, the observed emission rates were 50 ppm for the North Stack and 21 ppm for the South Stack.

Table 1: ANNUAL EMISSIONS REPORTED IN PADEP ANNUAL EMISSION STATEMENTS

YEAR	NO _x	VOC	TSP	SO _x	Selenium
2019*	1,701	20.5	323	245	12.5
2020	567	10.4	187	211.6	8.83
2021	234	9	163	145	10.9
2022	208	9.3	173.5	145	12.81
2023	225	9	168.6	145.5	14.7

*2019 was the last year that both Lines 1 & 2 were operating. In April 2020, Line 2 was deactivated. Prior to 2020, Vitro TVOP emission limits were NO_x – 1,857.22 tons/year, SO_x – 313.49 tons/year and TSP – 298.94 tons/year.

The TVOP requires monthly inspections of the silo bin vent area. EPA reviewed the bin vent inspection records from January 2019 – December 2023.

Vitro is, or is potentially, subject to 40 CFR Part 63, subpart DDDDD and 40 CFR Part 63, subpart ZZZZ.

- 40 CFR Part 63, subpart DDDDD requires the following records.
 - i. A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that you submitted.
 - 1. *Initial Notification was not provided during inspection.*
 - ii. Records of the total hours per calendar year that alternative fuel is burned and the total hours per calendar year that the unit operated during periods of gas curtailment or gas supply emergencies.
 - 1. *N/A.*
 - iii. Fuel delivery records certifying No. 2 and lighter oil - 500 ppm (0.05%).
 - 1. *N/A, the boilers fire only natural gas.*
 - iv. Any performance or compliance reports or tests.
 - 1. *Reports reviewed for the period of July 2020 through May 2024.*
 - v. Records of each tune-up conducted at each unit since January 2020.
 - 1. *Tune-up records reviewed for the years 2019, 2021, 2023 & 2024.*
 - vi. Copy of the one-time energy assessment performed by a qualified energy assessor.
 - 1. *Performed on 1/19/2016. All boilers were rated near optimal performance.*
- 40 CFR Part 63, subpart ZZZZ requires the following records.
 - i. Initial notification
 - a. *Initial notification was mailed August 25, 2010.*
 - ii. Compliance reports/practices.
 - a. *EPA reviewed the 2022 maintenance/service reports for all internal combustion engines.*
 - iii. Type of fuel combusted.
 - a. *Number 2 Diesel and lighter – 500 ppm.*

V. Closing Conference

After the records review, EPA inspectors, Joline Donnell, JP Moroney, David Girvan, Darrell Jewell, Tom Waterloo, and Tom Davis 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 3:30 PM.

The following has been identified as a potential issue during the inspection. It is an issue that requires either further investigation by EPA or additional information or explanation by Vitro.

- It was not clear if the emergency generators observed onsite matched with the emergency generators listed in the TVOP. It was unclear if some were removed during the deactivation of Line 2, or if some were reassigned to back up Line 1.

VI. List of Attachments

- Attachment 1: Email correspondence to Joline Donnell of records requested to review during inspection
- Attachment 2: Photo and Video Log
- Attachment 3: Sign-in sheet

Vitro Meadville



6/4/2024

Photo 1 – Line 1 Stacks

Vitro Meadville



Photo 2 – Mobile generator hour
meter

Vitro Meadville



Photo 3 – Mobile generator plate

Vitro Meadville

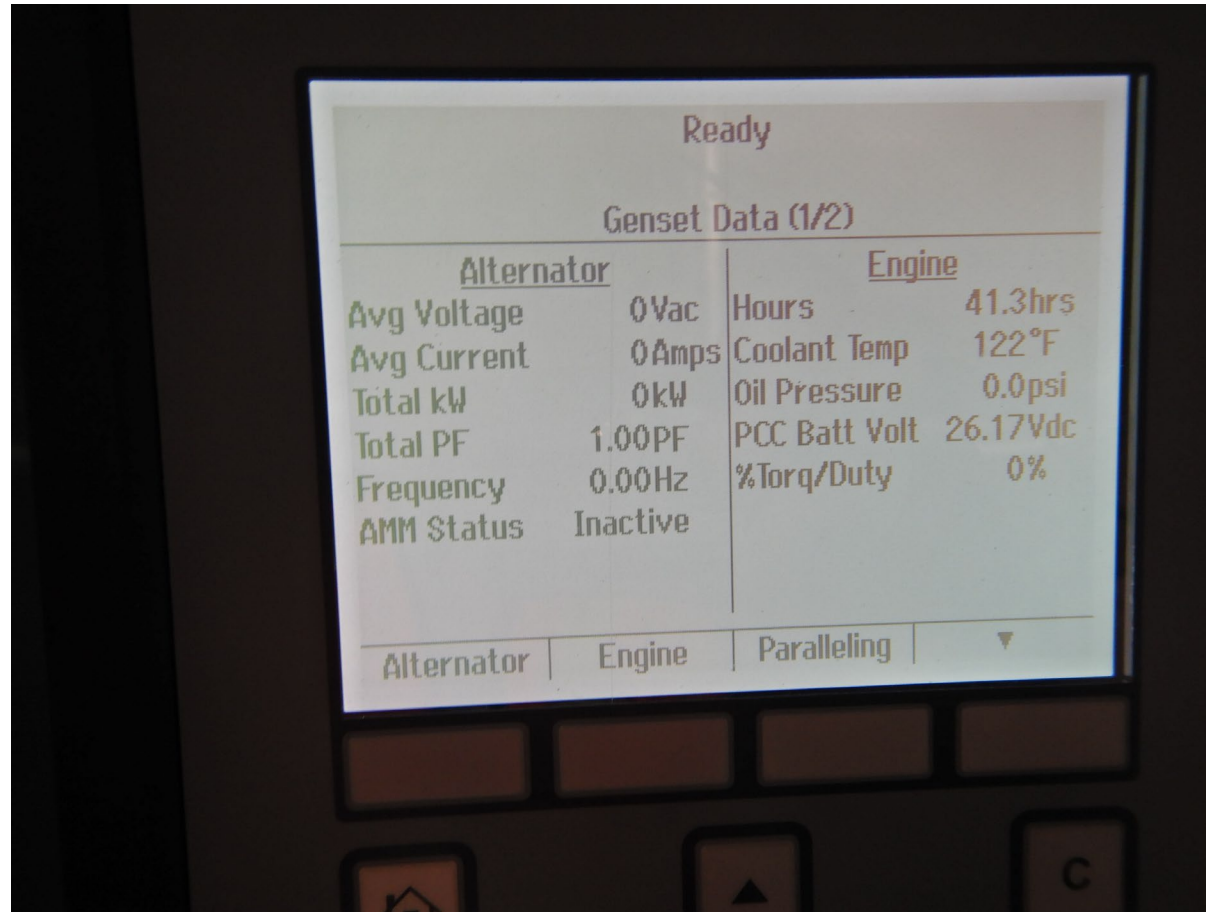


Photo 4 – Line 1 emergency generator
hour meter

Vitro Meadville



Photo 5 – Line 1 emergency generator plate

Vitro Meadville



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Photo 6 – Silos of raw materials

Vitro Meadville



6/4/2024

Photo 7 – Soda Ash dust collector

Vitro Meadville



6/4/2024

Photo 8 – Silo common dust collector

Vitro Meadville



6/4/2024

Photo 9 – Sand silo dust collector

Vitro Meadville



6/4/2024

Photo 10 – Line 1 stacks close up

Vitro Meadville



6/4/2024

Photo 11 – Gallery dust collector

Vitro Meadville



6/4/2024

Photo 12 – Furnace hopper & pusher

Vitro Meadville



6/4/2024

Photo 13 – Furnace & Tin bed

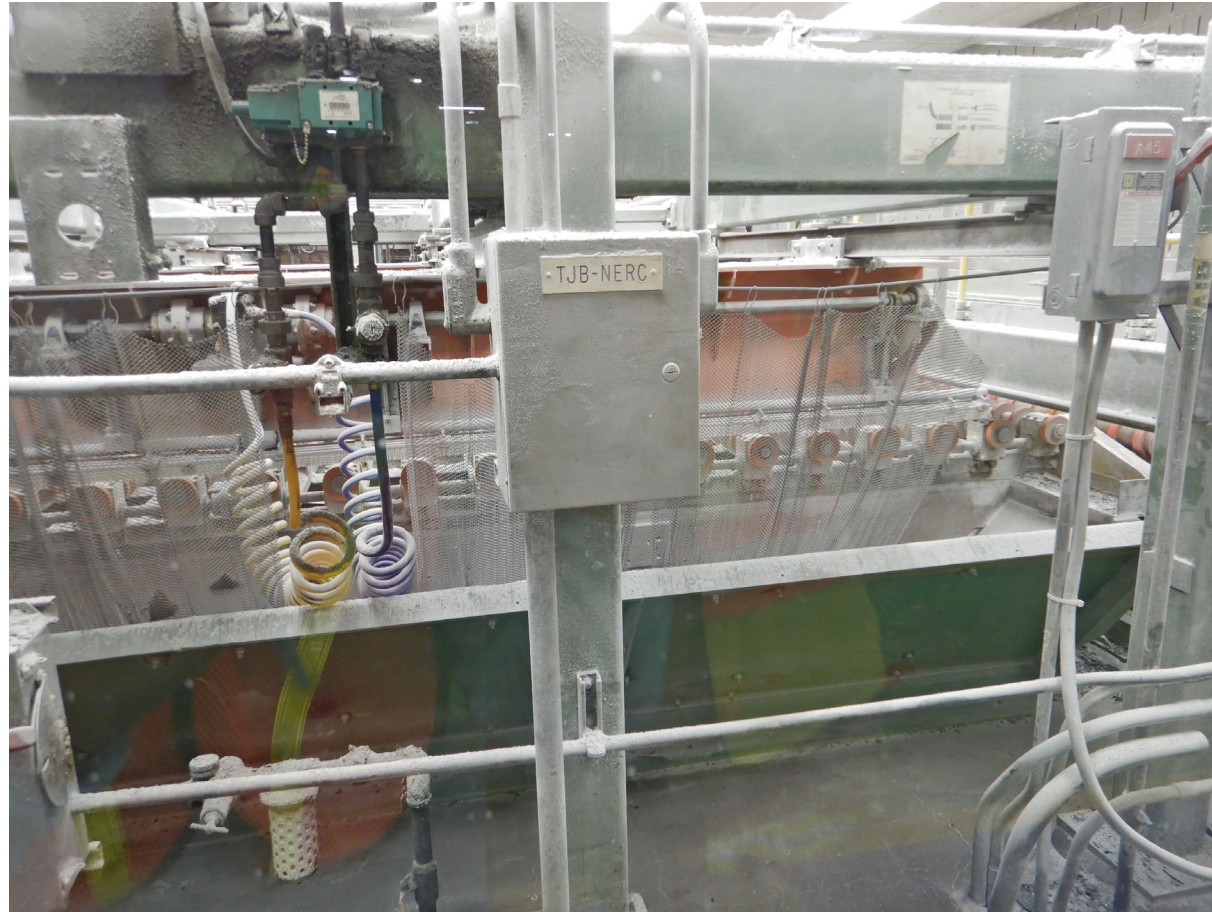
Vitro Meadville



6/4/2024

Photo 14 – Glass after annealing

Vitro Meadville



6/4/2024

Photo 1 – Edge trimmer

Vitro Meadville



6/4/2024

Photo 16 – Edge trimer retake

Vitro Meadville



6/4/2024

Photo 17 – Lucor dust collector

Vitro Meadville



Vitro Meadville



6/4/2024

Photo 19 – Boiler #4 plate

Vitro Meadville



Vitro Meadville



Photo 21 – 340 HP fire pump plate
retake

Vitro Meadville



Vitro Meadville



Photo 23 – 29 HP Fire pump hour
meter

Vitro Meadville



Photo 24 – 340 HP Fire pump hour
meter

Vitro Meadville



Photo 1 – Line 1 emergency generator
hour meter

Vitro Meadville



Photo 26 – Mill use emergency generator plate

6/4/2024

Vitro Meadville

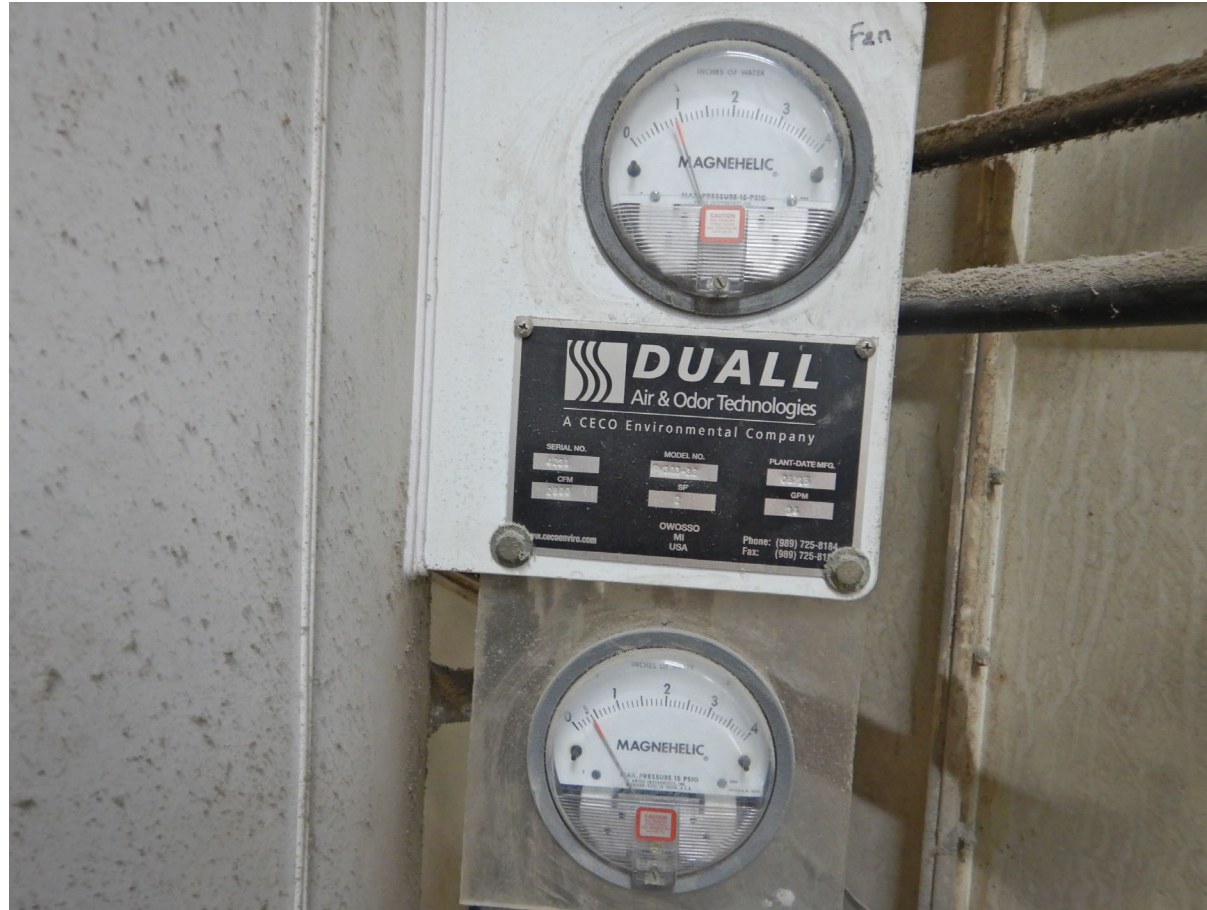


Photo 27 – Wet scrubber pressure
gauges

Facility:

VITROGLAS

Date: 06/04/2024

[illegible]

From: [Arnold, Paul](#)
To: jdonnell@vitro.com
Cc: [Adhikari, Parmatma](#); [Ott, Steven](#)
Subject: June 4, 2024 CAA Inspection
Date: Thursday, May 30, 2024 3:03:00 PM

Good Afternoon Joline,

As I discussed with you today, EPA plans to conduct a Clean Air Act (CAA) Inspection of the Vitro Glass Plant located at 5123 Victory Boulevard, Cochran, PA 16314, on June 4, 2024 at 8:30 AM. PADEP has been notified and a representative(s) from that office may attend. To help expedite the inspection, please provide answers to the following questions upon our arrival. If you have any questions or concerns, please contact me.

Pre-inspection questions:

Provide records of the following records upon EPA's arrival to the EPA CAA inspection of Vitro Glass beginning 6/4/2024. Records can be provided during the onsite visit and/or via a secure file sharing site of Vitro's choice or EPA can provide a link to a secure file sharing site. Any material that is being claimed as **Confidential Business Information (CBI)** should be clearly marked as such.

1. Provide a plot plan of the Facility. The plot plan should identify each production process unit/area, emission controls and exhaust stack locations.
2. Provide a detailed process description of the facility. This should include a description of each production process unit to include but not limited to, the furnace(s); finished product area and emission controls.
3. For the GM furnaces provide the date(s) of the last rebricking, if applicable.
4. For Glass Melting Furnace 8-1
 - a. Short term (7 pounds/ton of pulled glass), and long term (766.5 tons/year, on a 12-month rolling period), NOx emissions.
 - b. Short term (55.7 pounds/hour), and long term (244 tons/year, on a 12-month rolling period) SOx emissions.
 - c. Short term (41 pounds/hour) and long term (166 tons/year, on a 12-month rolling period) TSP emissions.
5. For Glass Melting Furnace 8-2
 - a. Short term (7 pounds/ton of pulled glass), and long term (26.75 tons/year, on a 12-month rolling period), NOx emissions.
 - b. SOx emission concentration of 500 PPMV
 - c. TSP emission concentration of 0.04 grain/dscf.
6. A list of all combustion sources at the Facility such as furnaces, boilers, water pumps and/or engines.

- a. For each boiler or engine identified, provide:
 - i. Date of installation;
 - ii. Type of fuel(s) combusted;
 - iii. Maximum heat input rating (MMBtu, HP or kW/hr);
 - b. Type of fuel combusted, fuel usage, monthly, for any combustion equipment at the Facility (boilers, emergency generators, fire pumps, etc.) since January 2020.
 - c. Records of each tune-up conducted at each unit since January 2020.
7. For Boilers 1-4.
 - a. Part 63 subpart DDDDD
 - i. A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that you submitted.
 - ii. records of the total hours per calendar year that alternative fuel is burned and the total hours per calendar year that the unit operated during periods of gas curtailment or gas supply emergencies.
 - iii. Fuel delivery records certifying No. 2 and lighter oil - 500 ppm (0.05%).
 - iv. Any performance or compliance reports or tests.
 - v. Records of each tune-up conducted at each unit since January 2020.
 - vi. Copy of the one-time energy assessment performed by a qualified energy assessor.
8. Provide copies of the emission statements submitted to PADEP for the years 2020-2023. These emission statements shall include the emission factors used to determine emissions and the derivation of each factor (stack test, CEMS, AP-42, etc.).
9. Annual emissions calculations, from January 1, 2020, through December 31, 2023, including but not limited to:
 - a. Monthly rolling emissions (in tn/yr) of VOCs, PM, NO_x, SO_x, and HAPs (individual and combined) for each process unit and facility wide along with supporting calculations for (lbs/hr).
10. Annual emission statements submitted to PADEP, from 2019- 2023.
11. Provide a list of all control devices onsite. The list should include:
 - a. The make/model.
 - b. Date of installation.
 - c. The pollutant(s) controlled.
 - d. Each source, or emission point, being controlled.
 - e. The capture and control efficiency for each control.
 - f. Parametric emission limits (pressure drop records etc.)
12. Silos
 - a. Identify each silo and associated control device.
 - b. monthly inspections of the bin vent area.
13. Water pumps (340 HP, 29 HP & 235 HP?)

- a. Subpart ZZZZ
 - i. Initial notification
 - ii. Compliance reports/practices
 - iii. Type of fuel combusted
- 14. Copies of any stack tests conducted on any production process units, engines, furnaces, or boilers to determine emission rate, control efficiency, or for compliance demonstrations, etc. conducted at the Facility since 2014.

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