MONTROSE
AIR QUALITY SERVICES

January 25, 2017 Project No. PROJ105427

Mr. Dave Kauth
Oregon Department of Environmental Quality
Northwestern Region – Portland Office
700 NE Multnomah St., Suite 600
Portland, OR 97232

Mr. Michael Eisele, P.E.
Oregon Department of Environmental Quality
Western Region – Salem Office
4026 Fairview Industrial Drive
Salem, OR 97302

Re: Source Testing: Bullseye Glass Co.
3722 SE 21st Ave
Portland, OR 97202

This correspondence is notice that Montrose Air Quality Services (MAQS) is to do source testing for the above-referenced facility, scheduled for March 26-29, 2017. This will serve as the Source Test Plan unless changes are requested prior to the start of testing.

1. **Sources to be Tested:** Multiple Glass Furnaces controlled by baghouse BHW

2. **Test Location:** Baghouse BHW Outlet

3. **Purpose of the Testing:** To demonstrate compliance with limits in 40 CFR 63 Subpart SSSSSS and OAR 340-244-9000. Chromium emissions data will be used for determining chromium usage allowance under the Colored Art Glass Manufacturing Facility Rules (OAR 340-244-9000 – 9090).

4. **Source Description:** Source description will be included in the final report.

5. **Pollutants to be Tested:** particulate matter (PM) and Metals[1].

6. **Test Methods to be Used:** Testing will be conducted in accordance with EPA methods in Title 40 Code of Federal Regulations Part 60 (40 CFR 60), Appendix A, from the Electronic Code of Federal Regulations (www.ecfr.gov), January, 2014; Oregon Department of Environmental Quality (ODEQ) methods in Source Sampling Manual Volume 1, April, 2015.

[1] Metals list to include As, Cd, Cr, Pb, Mn, Ni, Se, and Co

Round 1 – 40 CFR 63 Subpart SSSSSS

Flow Rate:	EPA Methods 1 and 2 (S-type pitot w/ isokinetic traverses)
CO_2 and O_2:	EPA Method 3A (NDIR and paramagnetic analyzers)
Moisture:	EPA Method 4 (incorporated w/ isokinetic sampling method)
PM:	EPA Method 5 (filterable PM; isokinetic sampling)
Metals[1]:	EPA Method 29 (isokinetic impinger technique with analysis by ICP, combined with EPA Method 5)

Round 2 – CAGM Rule OAR 340-244-9000

Flow Rate:	EPA Methods 1 and 2 (S-type pitot w/ isokinetic traverses)
CO_2 and O_2:	EPA Method 3A (NDIR and paramagnetic analyzers)
Moisture:	EPA Method 4 (incorporated w/ isokinetic sampling method)
PM:	ODEQ Method 5 (filterable and condensable PM; isokinetic impinger train technique)

7. **Continuous Analyzer Data Recording:** Data acquisition system (DAS) will be used. Strip chart records may be used as backup. One-minute averages of one-second readings are logged. Run averages, tabulated data and the graphic outputs from the DAS are included in the test reports.

8. **Continuous Analyzer Gas Sampling:** EPA Method 3A will be sampled at one point near the exhaust centroid because it is not done for a correction. Particulate and gas sampling will be simultaneous.

9. **Criteria Location:** It is assumed today, but it will be confirmed on or before the test day, that each test port location meets criteria in EPA Methods 1 and 2.

10. **Quality Assurance/Quality Control (QA/QC):** Method-specific quality assurance/quality control procedures must be performed to ensure that the data is valid for determining source compliance. Documentation of the procedures and results will be presented in the source test report for review. Omission of this critical information may result in rejection of the data, requiring a retest. This documentation will include at least the following:

    Continuous analyzer procedures: Field crews will operate the analyzers according to the test method requirements with additional data backup. On-site procedures include:

    EPA Method 3A:
    - Analyzer calibration error before initial run and after a failed system bias or drift test (within ± 2.0% of the calibration span of the analyzer for the low, mid, and high-level gases or 0.5 ppmv absolute difference)
    - System bias at low-scale (zero) and upscale calibration gases (within ± 5.0% of the calibration span or 0.5 ppmv absolute difference)
    - Drift check (within ±3.0% of calibration span for low, and mid or high-level gases, or 0.5 ppmv absolute difference)
    - System response time (during initial sampling system bias test)
    - Checks performed with EPA Protocol 1 or NIST traceable gases except zero gas
    - Zero gas meets the definition for zero air material as defined by 40 CFR 72.2

- Leak free sampling system
- Data acquisition systems record 10-second data points or one-minute averages of one second readings
- Purge time (≥ 2 times system response time and will be done before starting run 1, whenever the gas probe is removed and re-inserted into the stack, and after bias checks)
- Sample time (at least two times the system response time at each sample point)
- Sample flow rate (within approximately 10% of the flow rate established during system response time check)
- Interference checks for analyzers used will be included in the final test report
- Average concentration (run average ≤ calibration span for each run)

Manual equipment procedures: Field crews will operate the manual testing equipment according to the test method requirements. On-site procedures include:

- Operators will perform pre- and post-test leak checks on the sampling system and pitot lines.
- Thermocouples attached to the pitots and probes are calibrated in the field using EPA Alternate Method 11. A single-point calibration on each thermocouple system using a reference thermometer is performed. Thermocouples must agree within ±2°F with the reference thermometer. Also, prior to use, thermocouple systems are checked for ambient temperature before heaters are started.
- Nozzles are inspected for nicks or dents and pitots are examined before and after each use to confirm that they are still aligned.
- Pre- and post-test calibrations on the meter boxes will be included with the report, along with semi-annual calibrations of critical orifices, pitots, nozzles and thermocouples (sample box impinger outlet and oven, meter box inlet and outlet, and thermocouple indicators).
- Blank reagents are submitted to the laboratory with the samples. Liquid levels are marked on sample jars in the field and are verified by the laboratory.
- The Oregon Method 5, 7, and 17 minimum sample volume shall be the greater of 31.8 dscf or sufficient to ensure a minimum ISDL of one-half (1/2) the emission standard.

Audit Sample Requirement: The EPA Stationary Source Audit Sample Program was restructured and promulgated on September 30, 2010 and was made effective 30 days after that date. The Standard requires that the Facility or their representative must order audit samples if they are available, with the exception of the methods listed in 40 CFR 60, 60.8(g)(1). The TNI website is referred to for a list of available accredited audit Providers and audits (www.nelac-institute.org/ssas/). If samples are not available from at least two accredited Providers they are not required. Currently, accredited Providers offer audit samples for EPA Methods 6, 7, 8, 12, 13A, 13B, 26, 26A, 29 and 101A. Audit samples will be ordered for EPA Method 29.

11. **Number of Sampling Replicates and their Duration:**

- EPA Methods 5/29: 3 runs of three to five hours each. All runs to occur during a sixteen hour production cycle.
- ODEQ Method 5: 3 runs of three to five hours each. All runs to occur during a sixteen hour production cycle.

12. **Reporting Units for Results:** Results will be expressed as concentrations (ppmv, μg/dscm, or gr/dscf), as rates (lb/hr), and on a production basis (lb/ton glass).

13. **Emission Factors or Limits:**

Filterable PM:	0.2 lb/ton of glass produced (Subpart SSSSSS)
Metal HAPS:	0.02 lb/ton of glass produced (Subpart SSSSSS)
Particulate Matter:	0.0005 gr/dscf (OAR 340-244-9070(1)(b)(A))

14. **Montrose AQS. Contact:** Thomas Rhodes
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Fax (503) 255-0505
E-mail trhodes@montrose-env.com

15. **Consultant:** John Browning
(503) 212-2515
Cell (503) 412-9842
E-mail jbrowning@bridgeh2o.com

16. **Source Site Personnel:** Dan Schwoerer
(503) 232-8887
Fax (503) 238-9963
E-mail danschwoerer@bullseyeglass.com

17. **Regulatory Contacts:** Dave Kauth
(503) 229-5053
Fax (503) 229-6945
Email davis.george@deq.state.or.us

Michael Eisele
(503) 378-5070
Fax (503) 378-4196
E-mail Eisele.Michael@deq.state.or.us

18. **Applicable Process/Production/Control Information:** Operating data that characterize the sources are considered to be:

- Type and quantity of material being processed – 600 to 1,550 pounds of batch materials in multiple furnaces using raw materials containing As, Cd, Cr+3, Pb, Mn, Ni, Se and Co. Cullet will not be used during the source test.
- Furnace temperature – Furnace to be regulated between the temperature of 2,100^{0}F and 2,575^{0}F as per usual production parameters.

- Baghouse pressure drop – Pressure readings will be tracked during the testing cycle
- All normally recorded process information

Process/Production/Control information is to be gathered for each test run by the Source Site Personnel and provided to Montrose Air Quality Services for inclusion in the report.

The source must operate at the rate specified in the Permit during testing. Rates not in agreement with those stipulated in the Permit can result in test rejection for application to determine compliance or emission factor verification. Imposed process limitations could also result from atypical rates.

If the Permit does not specify a process rate for testing, we recommend a normal maximum rate.

19. **Source Test Audit Report:** Source Test Audit Report forms will be submitted along with the source test report for this testing.

20. **Plant Entry & Safety Requirements:** The test team will follow internal safety policies and abide by any site specific safety and entry requirements.

21. **Responsibilities of Test Personnel:** The test team will consist of one Project Manager and up to two Technicians.

22. **Tentative Test Schedule:**

    March 26: Mobilize and begin Round 1 testing at 5pm
    March 27: Complete Round 1 testing
    March 28: Begin Round 2 testing at 5pm
    March 29: Complete Round 2 testing and demobilize

23. **Other Considerations:** None known

24. **Additional Information:** Please see attached Source Test Plan Addendum prepared by Bullseye Glass Co.

25. **Administrative Notes:** Unless notified prior to the start of testing, this test plan is considered to be approved for compliance testing of this source. A letter acknowledging receipt of this plan and agreement on the content (or changes as necessary) would be appreciated.

    The Department will be notified of any changes in source test plans prior to testing. It is recognized that significant changes not acknowledged, which could affect accuracy and reliability of the results, could result in test report rejection.

    Source test reports will be prepared by Montrose Air Quality Services and will include all results and example calculations, field sampling and data reduction procedures, laboratory analysis reports, and QA/QC documentation. Source test reports will be submitted to you within 45 days of the completion of the field work, unless another deadline is agreed upon. Bullseye Glass should

send one (1) hardcopy of the completed source test report to you at the address above.

We respectfully request that any initial questions or comments relating to this test plan or the source test report be provided in writing should be directed to me with copy made to Bullseye's air quality consultant Mr. John Browning.

Sincerely,

Thomas Rhodes, QSTI
District Manager
Montrose Air Quality Services - Portland

For information on Montrose Air Quality Services and Montrose Environmental, go to www.montrose-env.com

cc: Dan Schwoerer, Bullseye Glass Co.
John Browning, Bridgewater Group

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