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Particulate Matter and Metals Emissions Test Report

PCC Structurals, Inc.
Large Parts Campus
Baghouse 8901
5001 SE Johnson Creek Blvd.
Milwaukie, Oregon 97222
Project No. M253113 Revision 1
July 29 through August 1, 2025

Particulate Matter and Metals Emissions Test Report

PCC Structurals, Inc.
Large Parts Campus
Baghouse 8901
5001 SE Johnson Creek Blvd.
Milwaukie, Oregon 97222
July 29 through August 1, 2025

Report Submittal Date
February 26, 2026

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Project No. M253113 Rev. 1

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Elmhurst, IL 60126
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STAR Certification Form
Revision: STARCERT-1.2
Revision Date: 9/3/2003

SOURCE TESTING AUDIT REPORT: CERTIFICATION FORM

Facility: PCC Structurals, Inc. Large Parts Campus **Permit #:26-1687 Test Dates:** 7/29/25-8/1/25

Emission Unit: Baghouse 8901 **Sampling Location:** Baghouse Inlet and Outlet

SECTION 1: TESTING PROGRAM CERTIFICATION INFORMATION

ITEM OF INQUIRY	Yes	No	EXPLANATION
A. Is the purpose(s) for the testing clearly defined within the test report?	X		
B. Did testing include all pollutants specified within the Source Test Plan (STP)?	X		
C. Were all issues within the Department's response to the STP fully addressed?	X		
D. Was the source operating within ±10% of normal maximum capacity?	X		
E. Are all appropriate operating conditions documented?	X		
F. Were there any test interruptions?	X		Pauses for plant personnel breaks and shift changes
G. Were there any variances or modifications to the STP? (if Yes; reply to i & ii)		X	
i. Were the variances or modifications approved by the Department?		X	
ii. Does the report include an evaluation of the impact the variances or modifications had on the test data?		X	

SECTION 2: SOURCE SAMPLING REPORT AUDITOR CERTIFICATION:

I hereby certify that to the best of my knowledge, the information provided within this source sampling audit report is complete and factual.

Name: Eric L. Ehlers Title: EVP, AET Field Operations

Signature: Eric L. Ehlers Date: 10/17/2025

SECTION 3: PERMITTEE REPRESENTATIVE CERTIFICATION:

I hereby certify that to the best of my knowledge, the information provided within this source sampling audit report is complete and factual.

Name: BRANDON M. HADZINSKY Title: DIVISION ENVIRONMENTAL ENGINEER

Signature: Brandon Hadzinsky Date: 10/17/2025

SECTION 4: DEPARTMENT REPRESENTATIVE:

The Oregon Department of Environmental Quality has evaluated the Source Sampling Audit Report and has determined that the information provided is sufficient for accepting the results originating from the testing program. Although no deficiencies were exposed by the Source Sampling Audit Report, additional errors and/or inconsistencies may be detected through additional Departmental review at a later date, which may lead to a retest or an enforcement action against the permittee.

Name: _____ Title: _____

Signature: _____ Date: _____

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1.0 EXECUTIVE SUMMARY

Mostardi Platt conducted a particulate matter (PM) and metals emissions test program for PCC Structurals, Inc. (PCC) at their Large Parts Campus (LPC) facility located at 5001 SE Johnson Creek Blvd. in Milwaukie, Oregon. Testing was performed to demonstrate removal efficiencies across each baghouse system as well as mass emission rates of particulate and several metals, including hexavalent chrome (Cr^{+6}), from the baghouse inlet and HEPA exhaust outlet.

The test locations, test dates, and test parameters are summarized below.

TEST INFORMATION		
Test Locations	**Test Dates**	**Test Parameters**
8901 Baghouse Inlet & Outlet	7/29/2025 – 7/30/2025	Aluminum (Al), Arsenic (As), Antimony (Sb), Beryllium (Be), Cadmium (Cd), Chromium (Cr), Cobalt (Co), Copper (Cu), Lead (Pb), Manganese (Mn), Mercury (Hg), Nickel (Ni), Phosphorus (P), Selenium (Se), Silver (Ag), Thallium (Tl), Vanadium (V), Zinc (Zn), and Hexavalent Chromium (Cr^{+6})
	7/31/2025 – 8/1/2025	Filterable Particulate Matter (FPM), Total Particulate Matter (TPM)

1.1 Revision History

This report has been revised to address the comments provided in the Oregon Department of Environmental Quality's (ODEQ) letter to the facility dated January 27, 2026. Revisions were made as follows:

Oregon Method 5: 1. Hexane and acetone blank values were updated.

EPA Method 29: 1. Blank corrections were calculated in accordance with Section 12.6.3 of Method 29. For front half blank corrections, the measured blank values were in the range of 0.0 to “A” µg, where A = 11.63 µg for 82.6mm diameter filters. Front half blank values of 6.72 µg (4.64 µg from the filter and 2.08 µg from the 0.1N HNO_3) were subtracted. The back half blank of 2.694 µg (2.08 µg from the 0.1N HNO_3 and 0.614 µg from the HNO_3/H_2O_2) exceeded 1 µg, so 1 µg was used for back half blank corrections.
2. Updated typo in data in data entry.
3. Updated moisture values to include the second silica gel impinger in the silica calculations and not the impinger content calculations they were defaulting to.

SW 846 Method 0061: 1 and 2: Moisture values were updated for the Method 0061 samples after the moisture corrections were conducted as discussed in Method 29, #3 above.
3. Blank corrections were revised to include only the volume of KOH initially charged and added during testing as needed.

For all methods, updated emission rate values are presented in Tables 3.1, 3.2, and 3.3; Updated summaries are presented in Sections 5.0; Updated laboratory data is presented in Appendix H. Updated impinger and run data is included in Appendix D.

2.0 PROCESS DESCRIPTION

Baghouse/HEPA 8901 (BH8901) controls emissions from ingot finishing operations in the Alloy Service Center, which include cutting and grinding activities.

2.1 Project Contact Information

Location	Address	Contact
Test Consultant	Maul Foster & Alongi, Inc. 6 Centerpointe Drive, Suite 360 Lake Oswego, OR 97035	Brian Eagle Senior Consultant (971) 713-3571 beagle@maulfoster.com
Test Facility	PCC Structurals, Inc. 5001 SE Johnson Creek Blvd. Milwaukie, OR 97222	Brandon Hadzinsky Division Environmental Affairs (503) 724-3036 Brandon.hadzinsky@pccstructurals.com
Test Company Representative	Mostardi Platt 5464 Stephanie Steet Las Vegas, NV 89122	Christopher S. Eldridge AET Lead, Pacific Northwest (630) 699-7690 celdridge@mp-mail.com

The test crew consisted of A. Ibarra Robles, A. Montez, E. Ehlers, D. Vasquez, J. Colston, R. Sollars, and C. Eldridge of Mostardi Platt.

Thomas Rhodes of the Oregon Department of Environmental Quality (ODEQ) observed a portion of the test program.

3.0 OVERVIEW OF TEST RESULTS

"ADL" refers to both fractions of the sample analyses were above the detection limit. "DLL" refers to one fraction of the sample analyses was below the detection limit. "BDL" refers to both fractions of the sample analyses were below the detection limit.

Method 29 blanks were subtracted at the inlet and outlet per Section 12.6.3 of the method; Method 0061 blanks were subtracted per Section 7.6.4; ODEQ Method 5 blanks were subtracted per Section 9.6, 9.8, and 9.10 of ODEQ Method 5 and 12.7 of USEPA Method 5. Reagent blanks were taken from the original reagent bottles on site for liquid solutions, filters were taken from the same lots of the sample filters. No additional blanks (proof, field, train, etc.) were collected.

Method 5 method detection limits are reported as method detection limits (MDL) in order to calculate outlet particulate matter more accurately and to quantify removal efficiency. Front half weights are based on the filter and probe wash combined.

Selected results of the test program are summarized below. A complete summary of emission test results follows the narrative portion of this report. Operating data was provided by PCC and is found in Appendix E.

3.1 8901 Baghouse System Run 1

Measured Parameter	Inlet Emission Rate lb/hr	Outlet Emission Rate lb/hr	Inlet Emission Factor lb/ton metal processed	Outlet Emission Factor lb/ton metal processed	Removal Efficiency %
Al	2.31E-03	2.45E-04	1.19E-03	1.26E-04	89.4%
Sb[1]	≤1.85E-06	≤1.73E-06	≤9.55E-07	≤8.94E-07	N/A
As[1]	≤3.49E-06	≤3.83E-06	≤1.80E-06	≤1.98E-06	N/A
Ba	1.52E-05	1.18E-05	7.87E-06	6.07E-06	22.4%
Be[2]	3.63E-07	≤1.21E-07	1.87E-07	≤6.22E-08	N/A
Cd[3]	5.78E-07	5.96E-07	2.98E-07	3.08E-07	N/A
Cr	6.06E-03	4.33E-06	3.13E-03	2.24E-06	99.9%
Co[4]	≤4.44E-03	≤1.43E-06	≤2.29E-03	≤7.39E-07	99.9%
Cu	4.07E-05	2.45E-05	2.10E-05	1.27E-05	39.8%
Pb	6.55E-06	5.73E-06	3.38E-06	2.96E-06	12.5%
Mn	3.94E-05	1.96E-05	2.03E-05	1.01E-05	50.3%
Hg[2]	≤3.49E-07	≤5.27E-07	≤1.80E-07	≤2.72E-07	N/A
Ni	1.92E-02	8.87E-05	9.91E-03	4.58E-05	99.5%
P	2.17E-04	6.03E-05	1.12E-04	3.11E-05	77.2%
Se[1]	≤1.47E-05	≤7.12E-06	≤7.59E-06	≤3.67E-06	N/A
Ag[1]	≤6.09E-06	≤9.49E-07	≤3.14E-06	≤4.90E-07	N/A
Tl[1]	≤6.00E-05	≤4.75E-06	≤3.10E-05	≤2.45E-06	N/A
V[2]	≤4.35E-06	4.60E-07	≤2.25E-06	2.38E-07	N/A
Zn	2.29E-04	3.82E-05	1.18E-04	1.97E-05	83.3%
Cr^{+6}	3.08E-06	1.14E-06	1.59E-06	5.90E-07	62.9%
FPM	4.74E-02	4.60E-03	2.77E-02	2.69E-03	90.3%
CPM	1.71E-02	4.68E-03	1.00E-02	2.73E-03	72.6%
TPM	6.46E-02	9.28E-03	3.77E-02	5.42E-03	85.6%

[1] Sample at inlet and outlet “DLL” or “BDL”, no removal efficiency calculated
[2] Inlet or outlet location were “DLL”, no removal efficiency calculated
[3] Emissions at inlet and outlet near DL, no removal efficiency calculated
[4] Emissions at inlet “DLL”, outlet “BDL”, inlet emissions minimal impact of DLL, removal efficiency calculated

3.2 8901 Baghouse System Run 2

Measured Parameter	Inlet Emission Rate lb/hr	Outlet Emission Rate lb/hr	Inlet Emission Factor lb/ton metal processed	Outlet Emission Factor lb/ton metal processed	Removal Efficiency %
Al	7.42E-04	1.76E-04	3.96E-04	9.37E-05	76.3%
Sb[5]	≤1.68E-06	≤1.71E-06	≤8.96E-07	≤9.14E-07	N/A
As[5]	≤3.24E-06	≤3.30E-06	≤1.73E-06	≤1.76E-06	N/A
Ba	6.64E-06	4.29E-06	3.54E-06	2.29E-06	35.4%
Be[5]	≤5.76E-07	≤1.15E-07	≤2.47E-07	≤6.12E-08	N/A
Cd[6]	1.65E-07	≤1.03E-07	8.79E-08	≤5.50E-07	N/A
Cr	2.63E-03	1.02E-05	1.40E-03	5.46E-06	99.6%
Co	4.40E-04	≤3.00E-06	2.35E-04	≤1.60E-06	99.3%
Cu	2.45E-05	8.85E-06	1.31E-05	4.72E-06	63.9%
Pb	1.89E-06	1.23E-06	1.01E-06	6.59E-07	34.9%
Mn[7]	2.87E-05	3.71E-05	1.53E-05	1.98E-05	N/A
Hg[5]	≤3.01E-07	≤3.43E-07	≤1.61E-07	≤1.83E-07	N/A
Ni	8.67E-03	6.72E-05	7.27E-03	3.58E-05	99.2%
P	6.55E-05	4.98E-05	3.49E-05	2.65E-05	24.0%
Se[5]	≤6.96E-06	≤7.08E-06	≤3.71E-06	≤3.77E-06	N/A
Ag[5]	≤4.48E-06	≤2.84E-06	≤2.39E-06	≤1.51E-06	N/A
Tl[5]	≤9.49E-06	≤4.72E-06	≤5.06E-06	≤2.52E-06	N/A
V[5]	≤3.65E-06	≤1.97E-07	≤1.94E-06	≤1.05E-07	N/A
Zn	1.07E-04	1.90E-05	5.73E-05	1.01E-05	82.2%
Cr^{+6}	2.92E-06	1.09E-06	1.56E-06	5.79E-07	62.8%
FPM	1.54E-01	1.10E-03	8.08E-02	5.81E-04	99.4%
CPM[7]	1.17E-02	1.24E-02	6.17E-03	6.50E-03	N/A
TPM	1.65E-01	1.35E-02	8.70E-02	7.08E-03	91.9%

[5] Sample at inlet and outlet “DLL” or “BDL”, no removal efficiency calculated
[6] Emissions at inlet near DL, outlet “DLL”, no removal efficiency calculated
[7] No removal demonstrated

3.3 8901 Baghouse System Average

Measured Parameter	Inlet Emission Rate lb/hr	Outlet Emission Rate lb/hr	Inlet Emission Factor lb/ton metal processed	Outlet Emission Factor lb/ton metal processed	Removal Efficiency %
Al	1.53E-03	2.10E-04	7.95E-04	1.10E-04	86.3%
Sb[8]	≤1.77E-06	≤1.72E-06	≤9.25E-07	≤9.04E-07	N/A
As[8]	≤3.37E-06	≤3.57E-06	≤1.76E-06	≤1.87E-06	N/A
Ba	1.09E-05	8.02E-06	5.70E-06	4.18E-06	26.4%
Be[9]	≤4.70E-07	≤1.18E-07	≤2.47E-07	≤6.17E-08	N/A
Cd[9]	3.71E-07	≤3.50E-07	1.93E-07	≤1.81E-07	N/A
Cr	4.35E-03	7.28E-06	2.27E-03	3.85E-06	99.8%
Co[10]	≤2.44E-03	≤2.21E-06	≤1.26E-03	≤1.17E-06	99.9%
Cu	3.26E-05	1.67E-05	1.70E-05	8.69E-06	48.8%
Pb	4.22E-06	3.48E-06	2.19E-06	1.81E-06	17.5%
Mn	3.41E-05	2.83E-05	1.78E-05	1.49E-05	47.8%
Hg[8]	≤3.25E-07	≤4.35E-07	≤1.70E-07	≤2.27E-07	N/A
Ni	1.39E-02	7.79E-05	7.27E-03	4.08E-05	99.4%
P	1.41E-04	5.50E-05	7.35E-05	2.88E-05	61.0%
Se[8]	≤1.08E-05	≤7.10E-06	≤5.65E-06	≤3.72E-06	N/A
Ag[8]	≤5.28E-06	≤1.89E-06	≤2.77E-06	≤1.00E-06	N/A
Tl[8]	≤3.47E-05	≤4.73E-06	≤1.80E-05	≤2.48E-06	N/A
V[9]	≤4.00E-06	≤3.29E-07	≤2.10E-06	≤1.71E-07	N/A
Zn	1.68E-04	2.86E-05	8.78E-05	1.49E-05	82.9%
Cr^{+6}	3.00E-06	1.11E-06	1.57E-06	5.84E-07	62.9%
FPM	1.00E-01	2.85E-03	5.43E-02	1.63E-03	97.2%
CPM	1.44E-02	8.52E-03	8.09E-03	4.62E-03	40.8%
TPM	1.15E-01	1.14E-02	6.23E-02	6.25E-03	90.1%

[8] Sample at inlet and outlet “DLL” or “BDL”, no removal efficiency calculated
[9] Minimum of one sample at inlet or outlet location were “DLL”, no removal efficiency calculated
[10] One fraction at inlet “DLL”, with minimum impact on total results

4.0 TEST METHODOLOGY

Emission testing was conducted following the United States Environmental Protection Agency (USEPA) methods specified in 40CFR60, Appendix A in addition the Mostardi Platt Quality Manual. Schematics of the test section diagrams and sampling trains used are included in Appendix A and B respectively. Calculation and nomenclature are included in Appendix C. Laboratory analysis for each test run are included in Appendix H. The electronic reference method test data is included in Appendix D.

The following methodologies were used during the test program:

4.1 Method 1 Sample and Velocity Traverse Determination

Test measurement points were selected in accordance with Method 1, 40 CFR, Part 60, Appendix A. The characteristics of each measurement location is summarized in the table below. A null-point pitot traverse was performed prior to testing to ensure the absence of cyclonic flow.

Sample Point Selection

Test Location	Stack Diameter	Upstream Diameters	Downstream Diameters	Test Parameters	Number of Sampling Points
BH8901 Inlet	12”	8.5	20	Cr^{+6}, Metals, TPM	12
BH8901 Outlet	12”	3.0	3.0	Cr^{+6}, Metals, TPM	24

4.2 Method 2 Volumetric Flow Rate Determination

Gas velocity was measured following Method 2, 40 CFR, Part 60, Appendix A, for purposes of calculating gas volumetric flow rate and emission rates on a lb/hr and lb/ton metal processed basis. An S-type pitot tube, as a component of the isokinetic sampling train, differential pressure gauge, thermocouple, and temperature readout were used to determine gas velocity at each sample point. All of the equipment used was calibrated in accordance with the specifications of the Method. Calibration data is presented in Appendix G of this report.

4.3 Method 29 Metals Determination

Metals concentrations and emission rates were determined in accordance with Method 29.

Impingers one and two were loaded with 100 mL each of 5% HNO_3/10% H_2O_2. The third impinger remained empty. The fourth and fifth impinger were loaded with 100mL of 10% H_2SO_4/5% $KMnO_4$. The sixth impinger was filled with silica gel. The impingers were weighed prior to and after each test run in order to determine moisture content of the stack gas. Impingers were recovered as proscribed in the method, with 0.1N HNO_3 used on impingers 1 and 2, 0.1N HNO_3 also used on impinger three (in a separate sample container), and 10% H_2SO_4/5% $KMnO_4$, DI water, and 8N HCl for impingers four and five.

Inlet samples utilized a heated Teflon flexible sampling line connection between the filter and impingers maintained at a temperature of 248°F +/- 25°F.

The filter media were Whatman quartz microfiber filters exhibiting a 99.97% efficiency on 0.3-micron DOP smoke particles in accordance with ASTM Standard Method D-2986-71.

Sample analysis was conducted by Alliance Technical Group for particle bound metals from the nozzle, probe, and filter catch, and analyzed for vapor phase metals from the impinger catch.

4.4 Method 0061 Cr^{+6} Determination

Hexavalent chromium (Cr^{+6}) concentrations were determined in accordance with SW-846 Method 0061. The sample was extracted isokinetically from the gas stream and passed through a 0.5N potassium hydroxide (KOH) solution, which was also recirculated through the first impinger to the sample nozzle. The sample train consisted of a glass nozzle, and five impingers. The first three impingers contained the KOH solution (150 mL in impinger one, approximately 75mL each in impingers two and three, the fourth impinger remained empty, and the fifth impinger contained silica gel to absorb any remaining moisture). Inlet samples were collected utilizing a Teflon flexible sampling line connection between the filter and impingers. The pH of the first impinger was checked and verified to be greater than 8.5. A post-test nitrogen purge was performed on the impinger train for thirty minutes at 10 liters/minute. Once this purge was complete, samples were filtered and recovered utilizing deionized water and stored in Nalgene sample containers.

4.5 Oregon Method 5 Particulate Matter Determination

Flue gas total particulate matter concentrations and emission rates were determined in accordance with Oregon Method 5. The probe and filter housing were maintained at a temperature of 248°F +/- 25°F. The back half of the sample train consisted of four impingers, the first two each containing 100mL of deionized water, the third remained empty, and the fourth contained approximately 200 grams of silica gel. Inlet samples utilized a heated Teflon flexible sampling line connection between the filter and impingers maintained at a temperature of 248°F +/- 25°F.The impingers were weighed prior to and after each test run in order to determine moisture content of the stack gas per USEPA Method 4 requirements.

Filterable particulate matter in the sample probe was recovered utilizing acetone; a minimum of three passes of the probe brush through the entire probe was performed, followed by a visual inspection of the acetone exiting the probe. If the acetone solution exiting the probe was clear, the wash is considered complete; if not, another pass of the brush through the probe was made and inspected until the solution is clear. The nozzle was then removed from the probe and cleaned in a similar manner, utilizing an appropriately sized nozzle brush. The filter housing was washed a minimum of three times with acetone and inspected for cleanliness, and the filter was placed in its corresponding petri dish. The acetone wash and the filter were labeled and marked, then analyzed off site at an approved laboratory.

The back half impinger catch was placed in a sample container. All sample-exposed surfaces between the filter and the fourth impinger were thoroughly rinsed with deionized (DI) water and placed into the impinger catch container. Following the water rinse, all sample-exposed surfaces were thoroughly rinsed with acetone and placed in a separate container. The organic and aqueous fractions were dried and the residues weighed. The back half catch was the sum of the impinger catch and the back half acetone rinse weights. The samples were analyzed off site according to the procedures in Oregon Method 5.

5.0 TEST RESULT SUMMARIES

5.1 Baghouse Inlet Method 29 Summary

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Test Method: 29

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	76.1	74.9	75.5
Flue Gas Moisture, percent by volume	1.6%	1.7%	1.7%
Average Flue Pressure, in. Hg	29.62	29.62	29.62
Gas Sample Volume, dscf	365.930	363.260	364.595
Average Gas Velocity, ft/sec	78.289	77.442	77.866
Gas Volumetric Flow Rate, acfm	3,689	3,649	3,669
Gas Volumetric Flow Rate, dscfm	3,539	3,507	3,523
Gas Volumetric Flow Rate, scfm	3,596	3,566	3,581
Isokinetic Variance	101.3	101.5	101.4
Tons of metal processed	15.5	15.0	15.3
Aluminum (Al) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	1809.40	581.30	1195.35
ppb	155.56	50.34	102.95
ug/dscm	174.62	56.51	115.57
lb/hr	2.31E-03	7.42E-04	1.53E-03
lb/ton of metal processed	1.19E-03	3.96E-04	7.95E-04
Antimony (Sb) Emissions			
Detection Limit Qualifier	BDL	BDL	
ug of sample collected	≤ 1.45	≤ 1.32	≤ 1.38
ppb	≤ 0.03	≤ 0.03	≤ 0.03
ug/dscm	≤ 0.14	≤ 0.13	≤ 0.14
lb/hr	≤ 1.85E-06	≤ 1.68E-06	≤ 1.77E-06
lb/ton of metal processed	≤ 9.55E-07	≤ 8.96E-07	≤ 9.25E-07
Arsenic (As) Emissions			
Detection Limit Qualifier	BDL	BDL	
ug of sample collected	≤ 2.73	≤ 2.54	≤ 2.64
ppb	≤ 0.09	≤ 0.08	≤ 0.08
ug/dscm	≤ 0.26	≤ 0.25	≤ 0.26
lb/hr	≤ 3.49E-06	≤ 3.24E-06	≤ 3.37E-06
lb/ton of metal processed	≤ 1.80E-06	≤ 1.73E-06	≤ 1.76E-06
Barium (Ba) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	11.92	5.20	8.56
ppb	0.20	0.09	0.14
ug/dscm	1.15	0.51	0.83
lb/hr	1.52E-05	6.64E-06	1.09E-05
lb/ton of metal processed	7.87E-06	3.54E-06	5.70E-06
Beryllium (Be) Emissions			
Detection Limit Qualifier	ADL	DLL	
ug of sample collected	0.28	≤ 0.45	≤ 0.37
ppb	0.07	≤ 0.12	≤ 0.10
ug/dscm	0.03	≤ 0.04	≤ 0.04
lb/hr	3.63E-07	≤ 5.76E-07	≤ 4.70E-07
lb/ton of metal processed	1.87E-07	≤ 3.07E-07	≤ 2.47E-07
Cadmium (Cd) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	0.45	0.13	0.29
ppb	0.01	0.00	0.01
ug/dscm	0.04	0.01	0.03
lb/hr	5.78E-07	1.65E-07	3.71E-07
lb/ton of metal processed	2.98E-07	8.79E-08	1.93E-07

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Test Method: 29

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	76.1	74.9	75.5
Flue Gas Moisture, percent by volume	1.6%	1.7%	1.7%
Average Flue Pressure, in. Hg	29.62	29.62	29.62
Gas Sample Volume, dscf	365.930	363.260	364.595
Average Gas Velocity, ft/sec	78.289	77.442	77.866
Gas Volumetric Flow Rate, acfm	3,689	3,649	3,669
Gas Volumetric Flow Rate, dscfm	3,539	3,507	3,523
Gas Volumetric Flow Rate, scfm	3,596	3,566	3,581
Isokinetic Variance	101.3	101.5	101.4
Tons of metal processed	15.5	15.0	15.3
Chromium (Cr) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	4741.00	2057.20	3399.10
ppb	211.48	92.44	151.96
ug/dscm	457.54	199.99	328.77
lb/hr	6.06E-03	2.63E-03	4.35E-03
lb/ton of metal processed	3.13E-03	1.40E-03	2.27E-03
Cobalt (Co) Emissions			
Detection Limit Qualifier	DLL	ADL	
ug of sample collected	≤ 3469.09	344.64	≤ 1906.86
ppb	≤ 136.54	13.67	≤ 75.10
ug/dscm	≤ 334.79	33.50	≤ 184.15
lb/hr	≤ 4.44E-03	4.40E-04	≤ 2.44E-03
lb/ton of metal processed	≤ 2.29E-03	2.35E-04	≤ 1.26E-03
Copper (Cu) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	31.82	19.21	25.52
ppb	1.16	0.71	0.93
ug/dscm	3.07	1.87	2.47
lb/hr	4.07E-05	2.45E-05	3.26E-05
lb/ton of metal processed	2.10E-05	1.31E-05	1.70E-05
Lead (Pb) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	5.12	1.48	3.30
ppb	0.06	0.02	0.04
ug/dscm	0.49	0.14	0.32
lb/hr	6.55E-06	1.89E-06	4.22E-06
lb/ton of metal processed	3.38E-06	1.01E-06	2.19E-06
Manganese (Mn) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	30.79	22.51	26.65
ppb	1.30	0.96	1.13
ug/dscm	2.97	2.19	2.58
lb/hr	3.94E-05	2.87E-05	3.41E-05
lb/ton of metal processed	2.03E-05	1.53E-05	1.78E-05
Mercury (Hg) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 0.27	≤ 0.24	≤ 0.25
ppb	≤ 0.00	≤ 0.00	≤ 0.00
ug/dscm	≤ 0.03	≤ 0.02	≤ 0.03
lb/hr	≤ 3.49E-07	≤ 3.01E-07	≤ 3.25E-07
lb/ton of metal processed	≤ 1.80E-07	≤ 1.61E-07	≤ 1.70E-07

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Test Method: 29

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	76.1	74.9	75.5
Flue Gas Moisture, percent by volume	1.6%	1.7%	1.7%
Average Flue Pressure, in. Hg	29.62	29.62	29.62
Gas Sample Volume, dscf	365.930	363.260	364.595
Average Gas Velocity, ft/sec	78.289	77.442	77.866
Gas Volumetric Flow Rate, acfm	3,689	3,649	3,669
Gas Volumetric Flow Rate, dscfm	3,539	3,507	3,523
Gas Volumetric Flow Rate, scfm	3,596	3,566	3,581
Isokinetic Variance	101.3	101.5	101.4
Tons of metal processed	15.5	15.0	15.3
Nickel (Ni) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	14997.19	6792.59	10894.89
ppb	592.70	270.42	431.56
ug/dscm	1447.33	660.35	1053.84
lb/hr	1.92E-02	8.67E-03	1.39E-02
lb/ton of metal processed	9.91E-03	4.63E-03	7.27E-03
Phosphorus (P) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	169.76	51.30	110.53
ppb	12.71	3.87	8.29
ug/dscm	16.38	4.99	10.69
lb/hr	2.17E-04	6.55E-05	1.41E-04
lb/ton of metal processed	1.12E-04	3.49E-05	7.35E-05
Selenium (Se) Emissions			
Detection Limit Qualifier	DLL	BDL	
ug of sample collected	≤ 11.49	≤ 5.45	≤ 8.47
ppb	≤ 0.34	≤ 0.16	≤ 0.25
ug/dscm	≤ 1.11	≤ 0.53	≤ 0.82
lb/hr	≤ 1.47E-05	≤ 6.96E-06	≤ 1.08E-05
lb/ton of metal processed	≤ 7.59E-06	≤ 3.71E-06	≤ 5.65E-06
Silver (Ag) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 4.76	≤ 3.51	≤ 4.13
ppb	≤ 0.10	≤ 0.08	≤ 0.09
ug/dscm	≤ 0.46	≤ 0.34	≤ 0.40
lb/hr	≤ 6.09E-06	≤ 4.48E-06	≤ 5.28E-06
lb/ton of metal processed	≤ 3.14E-06	≤ 2.39E-06	≤ 2.77E-06
Thallium (Tl) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 46.90	≤ 7.43	≤ 27.17
ppb	≤ 0.53	≤ 0.09	≤ 0.31
ug/dscm	≤ 4.53	≤ 0.72	≤ 2.63
lb/hr	≤ 6.00E-05	≤ 9.49E-06	≤ 3.47E-05
lb/ton of metal processed	≤ 3.10E-05	≤ 5.06E-06	≤ 1.80E-05
Vanadium (V) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 3.40	≤ 2.86	≤ 3.13
ppb	≤ 0.16	≤ 0.13	≤ 0.14
ug/dscm	≤ 0.33	≤ 0.28	≤ 0.31
lb/hr	≤ 4.35E-06	≤ 3.65E-06	≤ 4.00E-06
lb/ton of metal processed	≤ 2.25E-06	≤ 1.94E-06	≤ 2.10E-06
Zinc (Zn) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	179.12	84.12	131.62
ppb	8.16	3.86	6.01
ug/dscm	17.29	8.18	12.74
lb/hr	2.29E-04	1.07E-04	1.68E-04
lb/ton of metal processed	1.18E-04	5.73E-05	8.78E-05

5.2 Baghouse Inlet Method 0061 Summary

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Test Method: 0061

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	76.9	75.7	76.3
Flue Gas Moisture, percent by volume	1.6%	1.7%	1.7%
Average Flue Pressure, in. Hg	29.62	29.55	29.59
Gas Sample Volume, dscf	368.194	368.315	368.255
Average Gas Velocity, ft/sec	77.107	77.153	77.130
Gas Volumetric Flow Rate, acfm	3,634	3,636	3,635
Gas Volumetric Flow Rate, dscfm	3,480	3,478	3,479
Gas Volumetric Flow Rate, scfm	3,537	3,539	3,538
Average $\%CO_2$ by volume, dry basis	0.0	0.0	0.0
Average $\%O_2$ by volume, dry basis	0.0	0.0	0.0
Isokinetic Variance	101.3	101.4	101.4
Tons of metal processed	15.5	15.0	15.3
Hexavalent Chromium (Cr+6) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	2.47	2.34	2.40
ppb	0.11	0.10	0.11
ug/dscm	0.24	0.22	0.23
lb/hr	3.08E-06	2.92E-06	3.00E-06
lb/ton metal processed	1.59E-06	1.56E-06	1.57E-06

5.3 Baghouse Inlet Oregon Method 5 Summary

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Test Method: ODEQ 5

Source Condition	Batch Process	Batch Process	
Date	7/31/25	8/1/25	
Start Time	6:05	6:05	
End Time	15:45	16:51	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	70.6	74.5	72.6
Flue Gas Moisture, percent by volume	1.0%	1.2%	1.1%
Average Flue Pressure, in. Hg	29.52	29.52	29.52
Gas Sample Volume, dscf	369.556	369.789	369.673
Average Gas Velocity, ft/sec	76.654	77.311	76.983
Gas Volumetric Flow Rate, acfm	3,612	3,643	3,628
Gas Volumetric Flow Rate, dscfm	3,512	3,506	3,509
Gas Volumetric Flow Rate, scfm	3,546	3,550	3,548
Isokinetic Variance	100.8	101.0	100.9
Tons of metal processed	13.7	15.2	14.5
Filterable Particulate Matter (ODEQ Method 5)			
grams collected	0.03774	0.12252	0.08013
grains/acf	0.0015	0.0049	0.0032
grains/dscf	0.0016	0.0051	0.0034
lb/hr	4.74E-02	1.54E-01	1.01E-01
lb/ton of metal processed	2.77E-02	8.09E-02	5.43E-02
Condensable Particulate Matter (ODEQ Method 5)			
grams collected	0.01363	0.00935	0.01149
grains/acf	0.0006	0.0004	0.0005
grains/dscf	0.0006	0.0004	0.0005
lb/hr	1.71E-02	1.17E-02	1.44E-02
lb/ton of metal processed	1.00E-02	6.17E-03	8.09E-03
Total Particulate Matter (ODEQ Method 5)			
grams collected	0.05137	0.13187	0.09162
grains/acf	0.0021	0.0053	0.0037
grains/dscf	0.0022	0.0055	0.0039
lb/hr	6.46E-02	1.65E-01	1.15E-01
lb/ton of metal processed	3.77E-02	8.70E-02	6.24E-02

5.4 Baghouse Outlet Method 29 Summary

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Outlet
Test Method: 29

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	82.0	80.5	81.3
Flue Gas Moisture, percent by volume	1.5%	0.9%	1.2%
Average Flue Pressure, in. Hg	30.06	30.06	30.06
Gas Sample Volume, dscf	321.649	341.910	331.780
Average Gas Velocity, ft/sec	68.677	72.789	70.733
Gas Volumetric Flow Rate, acfm	3,236	3,430	3,333
Gas Volumetric Flow Rate, dscfm	3,119	3,336	3,228
Gas Volumetric Flow Rate, scfm	3,168	3,367	3,268
Isokinetic Variance	101.0	100.4	100.7
Tons of metal processed	15.5	15.0	15.3
Aluminum (Al) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	191.07	136.37	163.72
ppb	18.69	12.55	15.62
ug/dscm	20.98	14.08	17.53
lb/hr	2.45E-04	1.76E-04	2.11E-04
lb/ton of metal processed	1.26E-04	9.39E-05	1.10E-04
Antimony (Sb) Emissions			
Detection Limit Qualifier	BDL	BDL	
ug of sample collected	≤ 1.35	≤ 1.33	≤ 1.34
ppb	≤ 0.03	≤ 0.03	≤ 0.03
ug/dscm	≤ 0.15	≤ 0.14	≤ 0.15
lb/hr	≤ 1.73E-06	≤ 1.72E-06	≤ 1.72E-06
lb/ton of metal processed	≤ 8.94E-07	≤ 9.16E-07	≤ 9.05E-07
Arsenic (As) Emissions			
Detection Limit Qualifier	DLL	BDL	
ug of sample collected	≤ 2.99	≤ 2.56	≤ 2.78
ppb	≤ 0.11	≤ 0.09	≤ 0.10
ug/dscm	≤ 0.33	≤ 0.26	≤ 0.30
lb/hr	≤ 3.83E-06	≤ 3.31E-06	≤ 3.57E-06
lb/ton of metal processed	≤ 1.98E-06	≤ 1.76E-06	≤ 1.87E-06
Barium (Ba) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	9.17	3.33	6.25
ppb	0.18	0.06	0.12
ug/dscm	1.01	0.34	0.68
lb/hr	1.18E-05	4.29E-06	8.02E-06
lb/ton of metal processed	6.07E-06	2.29E-06	4.18E-06
Beryllium (Be) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 0.09	≤ 0.09	≤ 0.09
ppb	≤ 0.03	≤ 0.03	≤ 0.03
ug/dscm	≤ 0.01	≤ 0.01	≤ 0.01
lb/hr	≤ 1.21E-07	≤ 1.15E-07	≤ 1.18E-07
lb/ton of metal processed	≤ 6.22E-08	≤ 6.13E-08	≤ 6.17E-08
Cadmium (Cd) Emissions			
Detection Limit Qualifier	ADL	DLL	
ug of sample collected	0.47	≤ 0.08	≤ 0.27
ppb	0.01	≤ 0.00	≤ 0.01
ug/dscm	0.05	≤ 0.01	≤ 0.03
lb/hr	5.96E-07	≤ 1.03E-07	≤ 3.50E-07
lb/ton of metal processed	3.08E-07	≤ 5.51E-08	≤ 1.81E-07

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Outlet
Test Method: 29

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	82.0	80.5	81.3
Flue Gas Moisture, percent by volume	1.5%	0.9%	1.2%
Average Flue Pressure, in. Hg	30.06	30.06	30.06
Gas Sample Volume, dscf	321.649	341.910	331.780
Average Gas Velocity, ft/sec	68.677	72.789	70.733
Gas Volumetric Flow Rate, acfm	3,236	3,430	3,333
Gas Volumetric Flow Rate, dscfm	3,119	3,336	3,228
Gas Volumetric Flow Rate, scfm	3,168	3,367	3,268
Isokinetic Variance	101.0	100.4	100.7
Tons of metal processed	15.5	15.0	15.3
Chromium (Cr) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	3.38	7.94	5.66
ppb	0.17	0.38	0.28
ug/dscm	0.37	0.82	0.60
lb/hr	4.33E-06	1.02E-05	7.29E-06
lb/ton of metal processed	2.24E-06	5.46E-06	3.85E-06
Cobalt (Co) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 1.12	≤ 2.33	≤ 1.72
ppb	≤ 0.05	≤ 0.10	≤ 0.07
ug/dscm	≤ 0.12	≤ 0.24	≤ 0.18
lb/hr	≤ 1.43E-06	≤ 3.00E-06	≤ 2.22E-06
lb/ton of metal processed	≤ 7.39E-07	≤ 1.60E-06	≤ 1.17E-06
Copper (Cu) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	19.11	6.87	12.99
ppb	0.79	0.27	0.53
ug/dscm	2.10	0.71	1.41
lb/hr	2.45E-05	8.86E-06	1.67E-05
lb/ton of metal processed	1.27E-05	4.73E-06	8.69E-06
Lead (Pb) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	4.47	0.96	2.71
ppb	0.06	0.01	0.03
ug/dscm	0.49	0.10	0.30
lb/hr	5.73E-06	1.24E-06	3.48E-06
lb/ton of metal processed	2.96E-06	6.59E-07	1.81E-06
Manganese (Mn) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	15.26	28.79	22.02
ppb	0.73	1.30	1.02
ug/dscm	1.67	2.97	2.32
lb/hr	1.96E-05	3.72E-05	2.84E-05
lb/ton of metal processed	1.01E-05	1.98E-05	1.50E-05
Mercury (Hg) Emissions			
Detection Limit Qualifier	DLL	DLL	
ug of sample collected	≤ 0.41	≤ 0.27	≤ 0.34
ppb	≤ 0.01	≤ 0.00	≤ 0.00
ug/dscm	≤ 0.05	≤ 0.03	≤ 0.04
lb/hr	≤ 5.27E-07	≤ 3.43E-07	≤ 4.35E-07
lb/ton of metal processed	≤ 2.72E-07	≤ 1.83E-07	≤ 2.27E-07

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Outlet
Test Method: 29

Source Condition	Batch Process		Batch Process		
Date	7/29/25		7/30/25		
Start Time	6:20		6:25		
End Time	16:32		16:45		
	Run 1		Run 2		Average
Stack Conditions					
Average Gas Temperature, °F	82.0		80.5		81.3
Flue Gas Moisture, percent by volume	1.5%		0.9%		1.2%
Average Flue Pressure, in. Hg	30.06		30.06		30.06
Gas Sample Volume, dscf	321.649		341.910		331.780
Average Gas Velocity, ft/sec	68.677		72.789		70.733
Gas Volumetric Flow Rate, acfm	3,236		3,430		3,333
Gas Volumetric Flow Rate, dscfm	3,119		3,336		3,228
Gas Volumetric Flow Rate, scfm	3,168		3,367		3,268
Isokinetic Variance	101.0		100.4		100.7
Tons of metal processed	15.5		15.0		15.3
Nickel (Ni) Emissions					
Detection Limit Qualifier	ADL		ADL		
ug of sample collected	69.14		52.03		60.59
ppb	3.11		2.20		2.66
ug/dscm	7.59		5.37		6.48
lb/hr	8.87E-05		6.72E-05		7.79E-05
lb/ton of metal processed	4.58E-05		3.58E-05		4.08E-05
Phosphorus (P) Emissions					
Detection Limit Qualifier	ADL		ADL		
ug of sample collected	46.99		38.60		42.79
ppb	4.00		3.09		3.55
ug/dscm	5.16		3.99		4.58
lb/hr	6.03E-05		4.98E-05		5.50E-05
lb/ton of metal processed	3.11E-05		2.66E-05		2.88E-05
Selenium (Se) Emissions					
Detection Limit Qualifier	BDL		BDL		
ug of sample collected	≤ 5.55	≤	5.49	≤	5.52
ppb	≤ 0.19	≤	0.17	≤	0.18
ug/dscm	≤ 0.61	≤	0.57	≤	0.59
lb/hr	≤ 7.12E-06	≤	7.09E-06	≤	7.10E-06
lb/ton of metal processed	≤ 3.67E-06	≤	3.78E-06	≤	3.73E-06
Silver (Ag) Emissions					
Detection Limit Qualifier	BDL		DLL		
ug of sample collected	≤ 0.74	≤	2.20	≤	1.47
ppb	≤ 0.02	≤	0.05	≤	0.03
ug/dscm	≤ 0.08	≤	0.23	≤	0.16
lb/hr	≤ 9.49E-07	≤	2.84E-06	≤	1.89E-06
lb/ton of metal processed	≤ 4.90E-07	≤	1.51E-06	≤	1.00E-06
Thallium (Tl) Emissions					
Detection Limit Qualifier	BDL		BDL		
ug of sample collected	≤ 3.70	≤	3.66	≤	3.68
ppb	≤ 0.05	≤	0.04	≤	0.05
ug/dscm	≤ 0.41	≤	0.38	≤	0.40
lb/hr	≤ 4.75E-06	≤	4.72E-06	≤	4.73E-06
lb/ton of metal processed	≤ 2.45E-06	≤	2.52E-06	≤	2.48E-06
Vanadium (V) Emissions					
Detection Limit Qualifier	ADL		DLL		
ug of sample collected	0.36	≤	0.15	≤	0.26
ppb	0.02	≤	0.01	≤	0.01
ug/dscm	0.04	≤	0.02	≤	0.03
lb/hr	4.60E-07	≤	1.97E-07	≤	3.29E-07
lb/ton of metal processed	2.38E-07	≤	1.05E-07	≤	1.71E-07
Zinc (Zn) Emissions					
Detection Limit Qualifier	ADL		ADL		
ug of sample collected	29.82		14.74		22.28
ppb	1.55		0.72		1.13
ug/dscm	3.27		1.52		2.40
lb/hr	3.82E-05		1.90E-05		2.86E-05
lb/ton of metal processed	1.97E-05		1.01E-05		1.49E-05

5.5 Baghouse Outlet Method 0061 Summary

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Outlet
Test Method: 0061

Source Condition	Batch Process	Batch Process	
Date	7/29/25	7/30/25	
Start Time	6:20	6:25	
End Time	16:32	16:45	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	83.9	83.2	83.6
Flue Gas Moisture, percent by volume	1.5%	0.9%	1.2%
Average Flue Pressure, in. Hg	30.06	30.08	30.07
Gas Sample Volume, dscf	483.595	492.150	487.873
Average Gas Velocity, ft/sec	76.855	76.438	76.647
Gas Volumetric Flow Rate, acfm	3,622	3,602	3,612
Gas Volumetric Flow Rate, dscfm	3,480	3,488	3,484
Gas Volumetric Flow Rate, scfm	3,533	3,519	3,526
Isokinetic Variance	99.2	100.7	100.0
Tons of metal processed	15.5	15.0	15.3
Hexavalent Chromium (Cr+6) Emissions			
Detection Limit Qualifier	ADL	ADL	
ug of sample collected	1.20	1.16	1.18
ppb	0.04	0.04	0.04
ug/dscm	0.09	0.08	0.09
lb/hr	1.14E-06	1.09E-06	1.11E-06
lb/ton metal processed	5.90E-07	5.79E-07	5.84E-07

5.6 Baghouse Outlet Oregon Method 5 Summary

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Outlet
Test Method: ODEQ 5

Source Condition	Batch Process	Batch Process	
Date	7/31/25	8/1/25	
Start Time	6:05	6:05	
End Time	15:45	16:51	
	Run 1	Run 2	Average
Stack Conditions			
Average Gas Temperature, °F	76.5	80.0	78.3
Flue Gas Moisture, percent by volume	1.1%	1.4%	1.3%
Average Flue Pressure, in. Hg	30.04	30.04	30.04
Gas Sample Volume, dscf	412.607	413.675	413.141
Average Gas Velocity, ft/sec	72.583	73.287	72.935
Gas Volumetric Flow Rate, acfm	3,420	3,454	3,437
Gas Volumetric Flow Rate, dscfm	3,341	3,343	3,342
Gas Volumetric Flow Rate, scfm	3,379	3,390	3,385
Isokinetic Variance	102.6	102.8	102.7
Tons of metal processed	13.7	15.2	14.5
Filterable Particulate Matter (ODEQ Method 5)			
grams collected	0.00424	0.00103	0.00264
grains/acf	0.0002	0.0000	0.0001
grains/dscf	0.0002	0.0000	0.0001
lb/hr	4.54E-03	1.10E-03	2.82E-03
lb/ton of metal processed	2.65E-03	5.81E-04	1.62E-03
Condensable Particulate Matter (ODEQ Method 5)			
grams collected	0.00437	0.01141	0.00789
grains/acf	0.0002	0.0004	0.0003
grains/dscf	0.0002	0.0004	0.0003
lb/hr	4.68E-03	1.22E-02	8.44E-03
lb/ton of metal processed	2.73E-03	6.42E-03	4.58E-03
Total Particulate Matter (ODEQ Method 5)			
grams collected	0.00861	0.01244	0.01053
grains/acf	0.0004	0.0004	0.0004
grains/dscf	0.0004	0.0004	0.0004
lb/hr	9.22E-03	1.33E-02	1.13E-02
lb/ton of metal processed	5.39E-03	7.00E-03	6.19E-03

6.0 CERTIFICATION

Mostardi Platt is pleased to have been of service to PCC Structurals, Inc. If you have any questions regarding this test report, please do not hesitate to contact us at 630-993-2100.

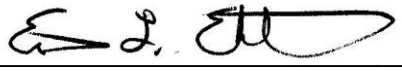
As the program manager, I hereby certify that this test report represents a true and accurate summary of emissions test results and the methodologies employed to obtain those results. The test program was performed in accordance with the test methods and the Mostardi Platt Quality Manual, as applicable.

MOSTARDI PLATT



Program Manager

Christopher S. Eldridge



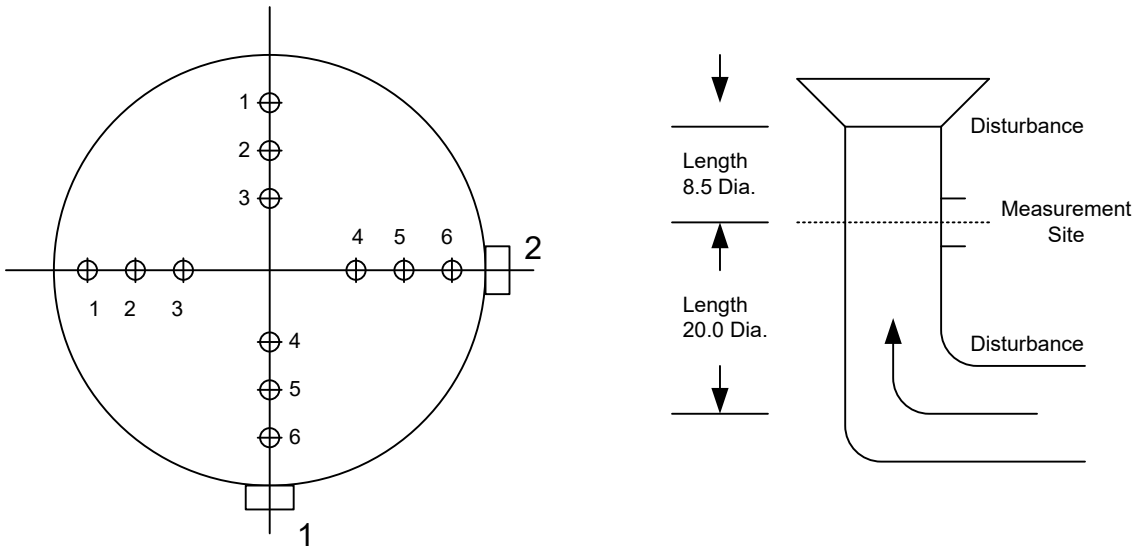
Quality Assurance

Eric L. Ehlers

APPENDICES

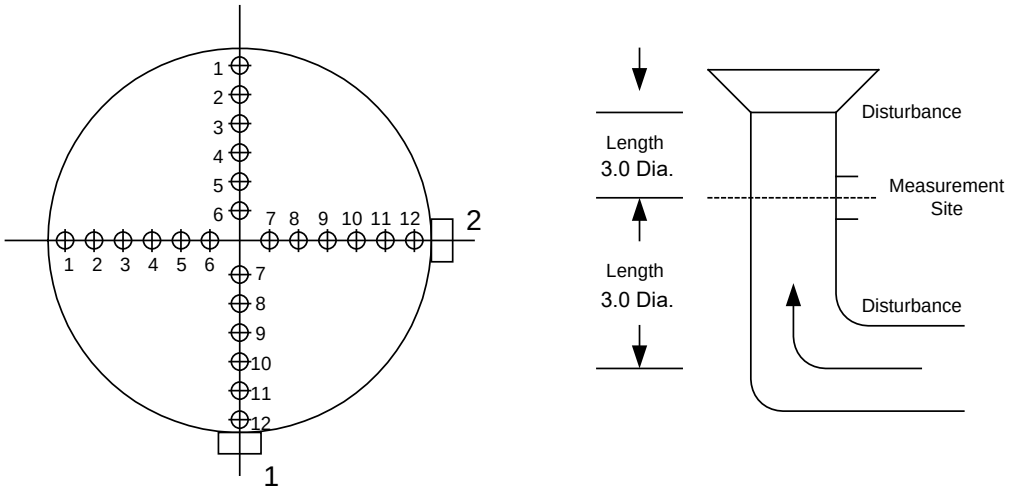
Appendix A - Test Section Diagrams

EQUAL AREA TRAVERSE FOR ROUND DUCTS



Job:	PCC Structurals, Inc. Large Parts Campus Milwaukie, Oregon
Test Location:	BH8901 Inlet
Duct Diameter:	1.0 Foot
Duct Area:	0.785 Square Feet
No. Points Across Diameter:	6
No. of Ports:	2
Port Length:	4.0 Inches

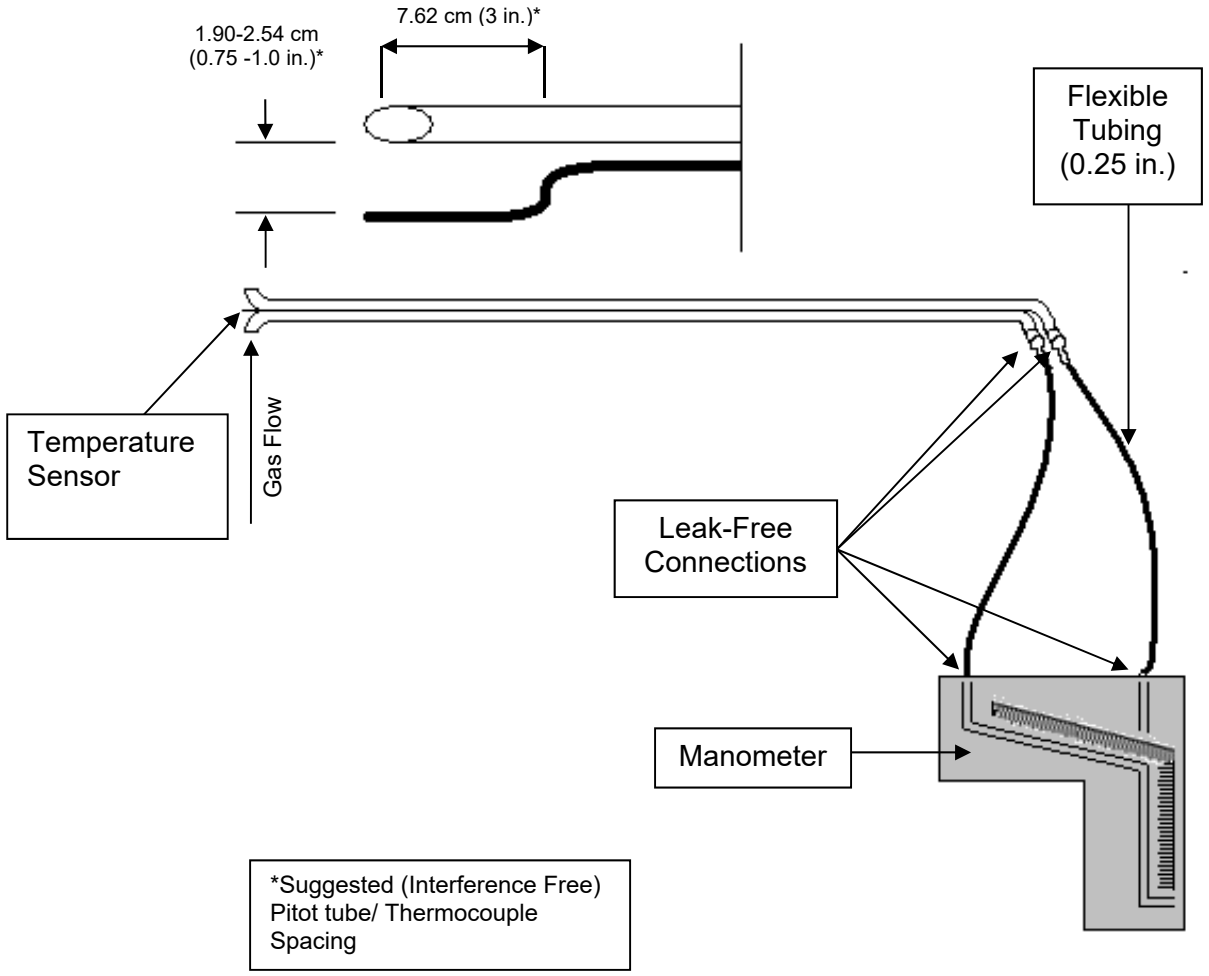
EQUAL AREA TRAVERSE FOR ROUND DUCTS



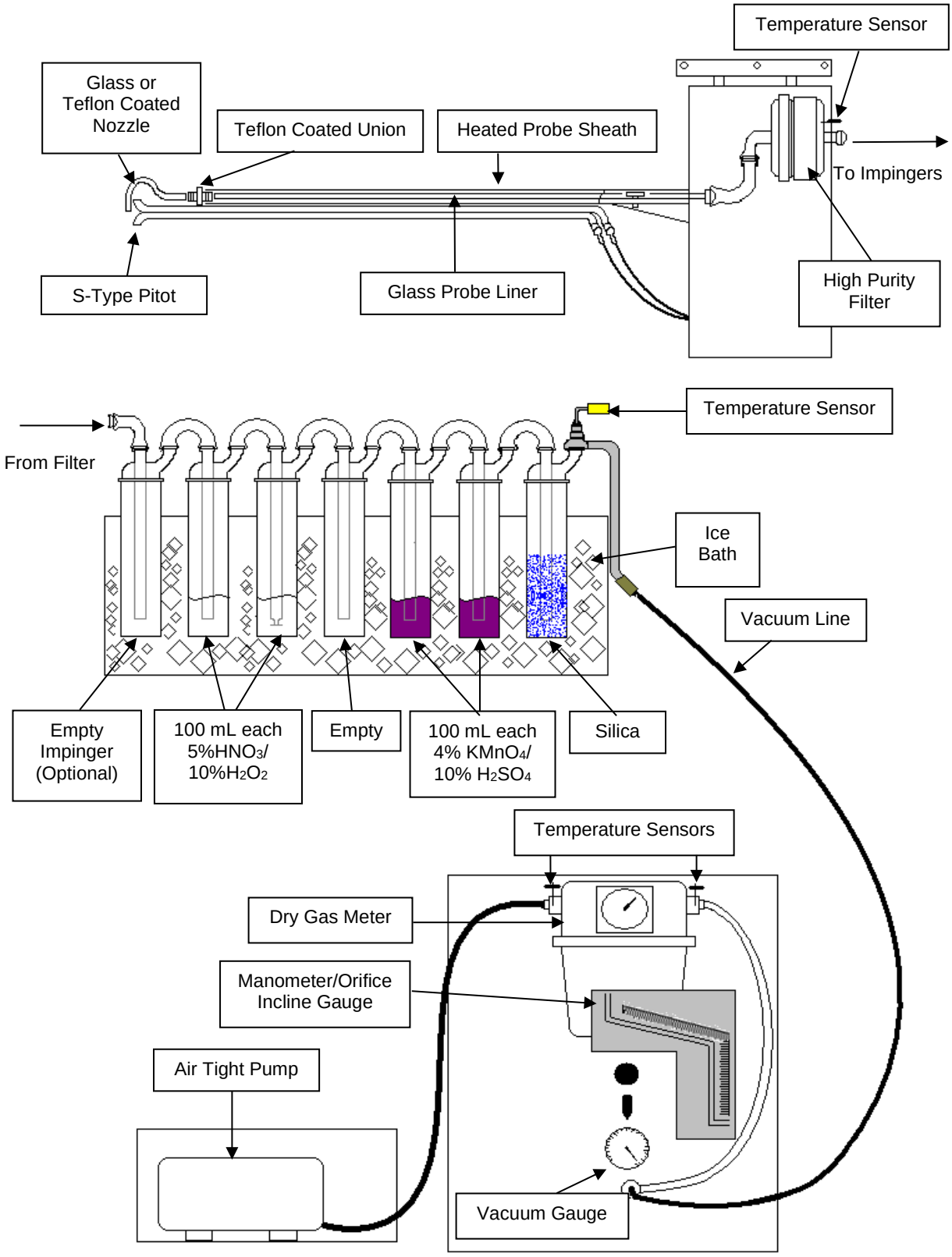
Project:	PCC Structurals, Inc. Large Parts Campus Milwaukie, Oregon
Unit:	BH8901 Outlet
Stack Diameter:	1.0 Foot
Stack Area:	0.785 Square Feet
No. Points Across Diameter:	12
No. of Ports:	2
Port Length:	3.0 Inches

Appendix B - Sample Train Diagrams

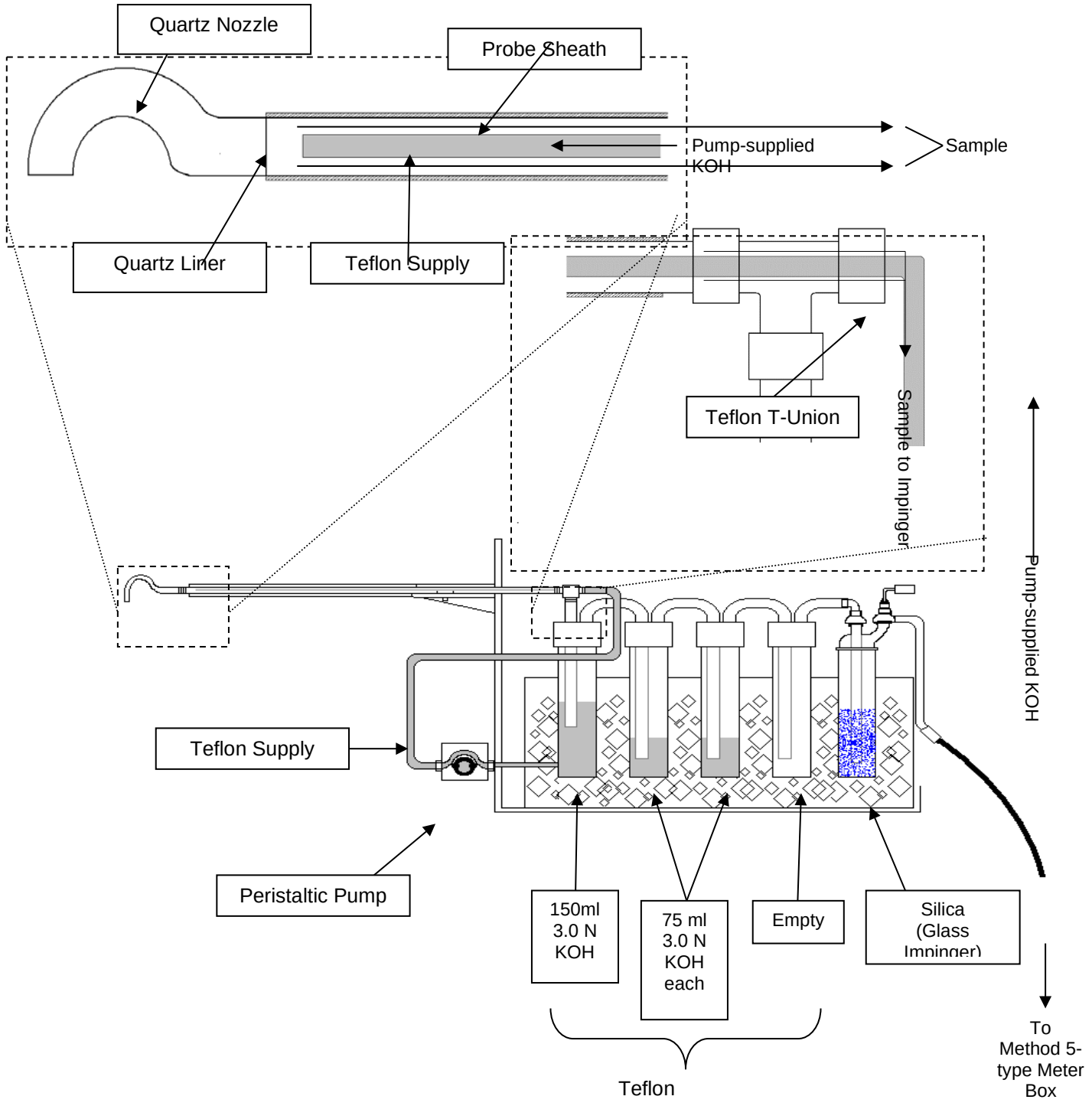
USEPA Method 2 – Type S Pitot Tube Manometer Assembly



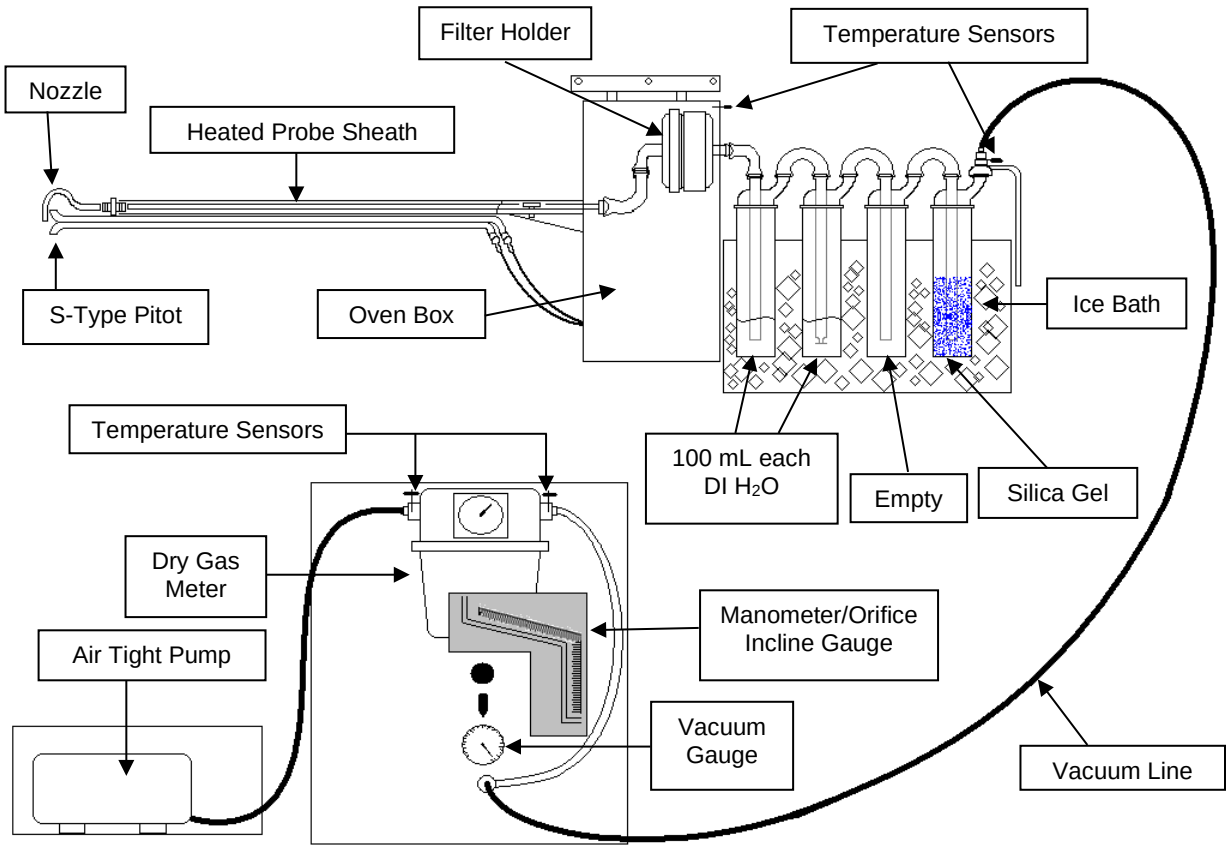
USEPA Method 29- Metals Sample Train Diagram (with Hg)



Method 0061- Hexavalent Chromium Sampling Train



Oregon Method 5- Particulate Matter Sample Train Diagram



Appendix C - Calculation Nomenclature and Formulas

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Run: 1
Date: 7/29/2025
Method: 29
Source Condition: Batch

Dry Molecular Weight

Md = 29.000

Wet Molecular Weight

Ms = Md x (1-Bws) + (18.0 x Bws)

Md = 29.000 Bws = 0.016

Ms = 28.823

Meter Volume at Standard Conditions

$$Vm(std) = 17.636 \times Y \times Vm \times \frac{(Pbar + DH/13.6)}{Tm}$$

Y = 0.991 Vm = 376.042 Pbar = 30.0
DH = 1.9 Tm = 542.0

Vm(std) = 365.930

Volume of Water Vapor Condensed

Vw(std) = 0.0471 x (net H_2O gain)

Net H_2O = 126.7

Vw(std) = 5.968

Moisture Content

$$Bws = \frac{Vw(std)}{Vw(std) + Vm(std)}$$

Vw(std) = 5.968 Vm(std) = 365.930

Bws = 0.016

Client:	**PCC Structurals, Inc.**
Facility:	**Large Parts Campus Facility - Milwaukie, OR**
Test Location:	**Baghouse 8901 Inlet**
Run:	**1**
Date:	**7/29/2025**
Method:	**29**
Source Condition:	**Batch**

Average Duct Velocity

$$Vs = 85.49 \times Cp \times \text{Sqrt DP (avg)} \times (Ts\ (avg) + 460 / (Ps \times Ms))^{1/2}$$

Cp =	**0.840**	**Ts (avg) =**	**76.1**	**Sqrt DP (avg):**	**1.376**
Ps =	**29.62**	**Ms =**	**28.823**		

Vs = 78.289

Volumetric Flow Rate (Actual Basis)

$$Q = Vs \times A \times 60$$

Vs =	**78.289**	**A =**	**0.785**

Q = 3,689

Volumetric Flow Rate (Standard Basis)

$$Qstd = 17.636 \times Q \times \frac{Ps}{Ts\ (avg) + 460}$$

Q =	**3,689**	**Ps =**	**29.62**	**Ts (avg) =**	**76.1**

Qstd = 3,596

Volumetric Flow Rate (Standard Dry Basis)

$$Qstd(dry) = Qstd \times (1-Bws)$$

Qstd =	**3,596**	**Bws =**	**0.016**

Qstd(dry) = 3,539

Isokinetic Variation:

$$\%ISO = \frac{0.0945 \times (Ts + 460) \times Vm(std)}{Vs \times \theta \times An \times Ps \times (1-Bws)}$$

Ts =	**76.1**	**Vm(std) =**	**365.930**	**Vs =**	**78.289**
An =	**0.0001670**	**θ =**	**480**	**Ps =**	**29.62**
Bws =	**0.016**				

%ISO = 101.3

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Run: 1
Date: 7/29/2025
Method: 29
Source Condition: Batch

Aluminum (Al) Concentration:

$$\mu g/m^3 = \frac{\mu g \text{ of Aluminum (Al)}}{Vm(std) \times 0.02832\ m^3/ft^3}$$

μg= 1809.40 Vm(std) = 365.930

μg/m³= 174.62

Aluminum (Al) Emission Rate:

$$\text{lb of Aluminum (Al)} = \frac{\mu g \text{ of sample} \times 10^{-6}\ grams/\mu g}{453.6\ grams/lb}$$

lb of Aluminum (Al) = 3.99E-06 dscfm = 3,539

$$\text{Emission Rate lb/hr} = \frac{\text{lb of Aluminum (Al)}}{Vm(std)} \times \text{dscfm} \times 60\ min/hr$$

Emission Rate lb/hr = 2.31E-03

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Run: 1
Date: 7/31/2025
Method: ODEQ 5
Source Condition: Batch Process

Dry Molecular Weight

Md = 29.000

Wet Molecular Weight

Ms = Md x (1-Bws) + (18.0 x Bws)

Md = 29.000 Bws = 0.010

Ms = 28.894

Meter Volume at Standard Conditions

$$Vm(std) = 17.636 \times Y \times Vm \times \frac{(Pbar + DH/13.6)}{Tm}$$

Y = 0.991 Vm = 377.858 Pbar = 29.92
DH = 1.95 Tm = 537.6

Vm(std) = 369.556

Volume of Water Vapor Condensed

$Vw(std) = 0.0471 \times (\text{net } H_2O \text{ gain})$

Net H_2O = 76.4

Vw(std) = 3.598

Moisture Content

$$Bws = \frac{Vw(std)}{Vw(std) + Vm(std)}$$

Vw(std) = 3.598 Vm(std) = 369.556

Bws = 0.010

Client:	**PCC Structurals, Inc.**
Facility:	**Large Parts Campus Facility - Milwaukie, OR**
Test Location:	**Baghouse 8901 Inlet**
Run:	**1**
Date:	**7/31/2025**
Method:	**ODEQ 5**
Source Condition:	**Batch Process**

Average Duct Velocity

$$Vs = 85.49 \times Cp \times \text{Sqrt DP (avg)} \times (Ts\ (avg) + 460 / (Ps \times Ms))^{1/2}$$

Cp = 0.840 Ts (avg) = 70.6 Sqrt DP (avg): 1.354
Ps = 29.52 Ms = 28.894

Vs = 76.654

Volumetric Flow Rate (Actual Basis)

$$Q = Vs \times A \times 60$$

Vs = 76.654 A = 0.785

Q = 3,612

Volumetric Flow Rate (Standard Basis)

$$Qstd = 17.636 \times Q \times \frac{Ps}{Ts\ (avg) + 460}$$

Q = 3,612 Ps = 29.52 Ts (avg) = 70.6

Qstd = 3,546

Volumetric Flow Rate (Standard Dry Basis)

$$Qstd(dry) = Qstd \times (1-Bws)$$

Qstd = 3,546 Bws = 0.010

Qstd(dry) = 3,512

Isokinetic Variation:

$$\%ISO = \frac{0.0945 \times (Ts + 460) \times Vm(std)}{Vs \times \theta \times An \times Ps \times (1-Bws)}$$

Ts = 70.6 Vm(std) = 369.556 Vs = 76.654
An = 0.0001709 θ = 480 Ps = 29.52
Bws = 0.010

%ISO = 100.8

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Run: 1
Date: 7/31/2025
Method: ODEQ 5
Source Condition: Batch Process

PM Concentration:

This example represents the filterable fraction. For other fractions, use the obtained mn for that particulate fraction.

$$Co = \frac{m_n \times 15.43}{Vm(std)}$$

m_n (g) = 0.03774 Vm(std) = 369.556

Co = 0.0016 gr/dscf

PM Emission Rate:

$$\text{Emission Rate lb/hr} = \frac{Co}{7{,}000} \times Qstd(dry) \times 60$$

Co = 0.0016 Qstd(dry) = 3,512

Emission Rate lb/hr = 0.047 lb/hr

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Run: 1
Date: 7/29/2025
Method: 0061
Source Condition: Batch

Dry Molecular Weight

Md = 29.000

Wet Molecular Weight

Ms = Md x (1-Bws) + (18.0 x Bws)

Md = 29.000 Bws = 0.016

Ms = 28.824

Meter Volume at Standard Conditions

$$Vm(std) = 17.636 \times Y \times Vm \times \frac{(Pbar + DH/13.6)}{Tm}$$

Y = 1.006 Vm = 375.972 Pbar = 30.0
DH = 2.0 Tm = 546.8

Vm(std) = 368.194

Client:	**PCC Structurals, Inc.**
Facility:	**Large Parts Campus Facility - Milwaukie, OR**
Test Location:	**Baghouse 8901 Inlet**
Run:	**1**
Date:	**7/29/2025**
Method:	**0061**
Source Condition:	**Batch**

Average Duct Velocity

$$Vs = 85.49 \times Cp \times \text{Sqrt DP (avg)} \times (Ts\ (avg) + 460 / (Ps \times Ms))^{1/2}$$

Cp =	**0.840**	**Ts (avg) =**	**76.9**	**Sqrt DP (avg):**	**1.354**
Ps =	**29.62**	**Ms =**	**28.824**		

Vs = 77.107

Volumetric Flow Rate (Actual Basis)

$$Q = Vs \times A \times 60$$

Vs =	**77.107**	**A =**	**0.785**

Q = 3,634

Volumetric Flow Rate (Standard Basis)

$$Qstd = 17.636 \times Q \times \frac{Ps}{Ts\ (avg) + 460}$$

Q =	**3,634**	**Ps =**	**29.62**	**Ts (avg) =**	**76.9**

Qstd = 3,537

Volumetric Flow Rate (Standard Dry Basis)

$$Qstd(dry) = Qstd \times (1-Bws)$$

Qstd =	**3,537**	**Bws =**	**0.016**

Qstd(dry) = 3,480

Isokinetic Variation:

$$\%ISO = \frac{0.0945 \times (Ts + 460) \times Vm(std)}{Vs \times \theta \times An \times Ps \times (1-Bws)}$$

Ts =	**76.9**	**Vm(std) =**	**368.194**	**Vs =**	**77.107**
An =	**0.0001709**	**θ =**	**480**	**Ps =**	**29.62**
Bws =	**0.016**				

%ISO = 101.3

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Run: 1
Date: 7/29/2025
Method: 0061
Source Condition: Batch

Hexavalent Chromium (Cr+6) Concentration:

$$\mu g/m^3 = \frac{\mu g \text{ of Hexavalent Chromium (Cr+6)}}{Vm(std) \times 0.02832\ m^3/ft^3}$$

μg= 2.09 Vm(std) = 368.194

μg/m³= 0.20

Hexavalent Chromium (Cr+6) Emission Rate:

$$\text{lb of Hexavalent Chromium (Cr+6)} = \frac{\mu g \text{ of sample} \times 10^{-6}\ grams/\mu g}{453.6\ grams/lb}$$

lb of Hexavalent Chromium (Cr+6) = 4.60E-09 dscfm = 3,480

$$\text{Emission Rate lb/hr} = \frac{\text{lb of Hexavalent Chromium (Cr+6)}}{Vm(std)} \times dscfm \times 60\ min/hr$$

Emission Rate lb/hr = 2.61E-06

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Volumetric Flow Nomenclature

A =	Cross-sectional area of stack or duct, ft2
Bws =	Water vapor in gas stream, proportion by volume
Cp =	Pitot tube coefficient, dimensionless
Md =	Dry molecular weight of gas, lb/lb-mole
Ms =	Molecular weight of gas, wet basis, lb/lb-mole
Mw =	Molecular weight of water, 18.0 lb/lb-mole
Pbar =	Barometric pressure at testing site, in. Hg
Pg =	Static pressure of gas, in. Hg (in. H2O/13.6)
DH=	Static pressure of gas, in.H2O
Ps =	Absolute pressure of gas, in. Hg = Pbar + Pg
Pstd =	Standard absolute pressure, 29.92 in. Hg
Acfm =	Actual volumetric gas flow rate
Scfm=	Volumetric gas flow rate, corrected to standard conditions
Dscfm =	Standard volumetric flow rate, corrected to dry conditions
R =	Ideal gas constant, 21.85 in. Hg-ft3/°R-lb-mole
Ts =	Average stack gas temperature, °F
Tm =	Average dry gas meter temperature, oF
Tstd =	Standard absolute temperature, 528°R
vs =	Gas velocity, ft/sec
Vm(std)=	Volume of gas sampled, corrected to standard conditions, scf
Vw(std) =	Volume of water vapor in gas sample, corrected to standard conditions, scf
Vlc=	Volume of liquid collected
Y =	Dry gas meter calibration factor
Δp =	Velocity head of gas, in. H2O
K1 =	17.647 °R/in. Hg
%EA =	Percent excess air
%CO2 =	Percent carbon dioxide by volume, dry basis
%O2 =	Percent oxygen by volume, dry basis
%N2 =	Percent nitrogen by volume, dry basis
0.264 =	Ratio of O2 to N2 in air, v/v
0.28 =	Molecular weight of N2 or CO, divided by 100
0.32 =	Molecular weight of O2 divided by 100
0.44 =	Molecular weight of CO2 divided by 100
13.6 =	Specific gravity of mercury (Hg)

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Volumetric Air Flow Calculations

$$Vm\ (std) = 17.647 \times Vm \times \left[\frac{\left(P_{bar} + \left[\frac{DH}{13.6}\right]\right)}{(460 + Tm)}\right] \times Y$$

$$Vw\ (std) = 0.0471 \times Vlc$$

$$Bws = \left[\frac{Vw\ (std)}{Vw\ (std) + Vm\ (std)}\right]$$

$$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + [0.28 \times (100 - \%CO_2 - \%O_2)]$$

$$Ms = Md \times (1 - Bws) + (18 \times Bws)$$

$$Vs = \sqrt{\frac{(Ts + 460)}{Ms \times Ps}} \times \sqrt{DP} \times Cp \times 85.49$$

$$Acfm = Vs \times Area\ (of\ stack\ or\ duct) \times 60$$

$$Scfm = Acfm \times 17.647 \times \left[\frac{Ps}{(460 + Ts)}\right]$$

$$Scfh = Scfm \times 60\frac{min}{hr}$$

$$Dscfm = Scfm \times (1 - Bws)$$

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Isokinetic Nomenclature

A = Cross-sectional area of stack or duct, square feet
A_n = Cross-sectional area of nozzle, square feet
B_{ws} = Water vapor in gas stream, by volume
C_a = Acetone blank residue concentration, g/g
C_{acf} = Concentration of particulate matter in gas stream at actual conditions, gr/acf
C_p = Pitot tube coefficient
C_s = Concentration of particulate matter in gas stream, dry basis, corrected to standard conditions, gr/dscf
IKV = Isokinetic sampling variance, must be 90.0 % ≤ IKV ≤ 110.0%
M_d = Dry molecular weight of gas, lb/lb-mole
M_s = Molecular weight of gas, wet basis, lb/lb-mole
M_w = Molecular weight of water, 18.0 lb/lb-mole
m_a = Mass of residue of acetone after evaporation, grams
P_{bar} = Barometric pressure at testing site, inches mercury
P_g = Static pressure of gas, inches mercury (inches water/13.6)
P_s = Absolute pressure of gas, inches mercury = $P_{bar} + P_g$
P_{std} = Standard absolute pressure, 29.92 inches mercury
Q_{acfm} = Actual volumetric gas flow rate, acfm
Q_{sd} = Dry volumetric gas flow rate corrected to standard conditions, dscfh
R = Ideal gas constant, 21.85 inches mercury cubic foot/°R-lb-mole
T_m = Dry gas meter temperature, °R
T_s = Gas temperature, °R
T_{std} = Absolute temperature, 528°R
V_a = Volume of acetone blank, ml
V_{aw} = Volume of acetone used in wash, ml
W_a = Weight of residue in acetone wash, grams
m_n = Total amount of particulate matter collected, grams
V_{1c} = Total volume of liquid collected in impingers and silica gel, ml
V_m = Volume of gas sample as measured by dry gas meter, dcf
$V_{m(std)}$ = Volume of gas sample measured by dry gas meter, corrected to standard conditions, dscf
v_s = Gas velocity, ft/sec
$V_{w(std)}$ = Volume of water vapor in gas sample, corrected to standard conditions, scf
Y = Dry gas meter calibration factor
ΔH = Average pressure differential across the orifice meter, inches water
Δp = Velocity head of gas, inches water
ρ_a = Density of acetone, 0.7855 g/ml (average)
ρ_w = Density of water, 0.002201 lb/ml
θ = Total sampling time, minutes
K_1 = 17.647 °R/in. Hg
K_2 = 0.04707 ft^3/ml
K_4 = 0.09450/100 = 0.000945
K_p = Pitot tube constant, $85.49 \frac{ft}{sec}\left[\frac{(lb/lb-mole)(in.\ Hg)}{(°R)(in.\ H_2O)}\right]^{1/2}$
%EA = Percent excess air
$\%CO_2$ = Percent carbon dioxide by volume, dry basis
$\%O_2$ = Percent oxygen by volume, dry basis
%CO = Percent carbon monoxide by volume, dry basis
$\%N_2$ = Percent nitrogen by volume, dry basis
0.264 = Ratio of O_2 to N_2 in air, v/v
28 = Molecular weight of N_2 or CO
32 = Molecular weight of O_2
44 = Molecular weight of CO_2
13.6 = Specific gravity of mercury (Hg)

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Isokinetic Calculation Formulas

1. $V_{w(std)} = V_{lc}\left(\frac{\rho_w}{M_w}\right)\left(\frac{RT_{std}}{P_{std}}\right) = K_2 V_{lc}$

2. $V_{m(std)} = V_m Y \left(\frac{T_{std}}{T_m}\right)\left(\frac{(P_{bar} + (\frac{\Delta H}{13.6}))}{P_{std}}\right) = K_1\, V_m\, Y \frac{(P_{bar} + (\frac{\Delta H}{13.6}))}{T_m}$

3. $B_{ws} = \frac{V_{w(std)}}{(V_{m(std)} + V_{w(std)})}$

4. $M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2)$

5. $M_s = M_d(1 - B_{ws}) + 18.0(B_{ws})$

6. $C_a = \frac{m_a}{V_a \rho_a}$

7. $W_a = C_a V_{aw} \rho_a$

8. $C_{acf} = 15.43 K_i\left(\frac{m_n P_s}{V_{w(std)} + V_{m(std)}\, T_s}\right)$

9. $C_S = (15.43\ \text{grains/gram})\,(m_n / V_{m(std)})$

10. $v_s = K_p C_p \sqrt{\frac{\Delta P\, T_s}{P_s M_s}}$

11. $Q_{acfm} = v_s A(60_{sec/min})$

12. $Q_{sd} = (3600_{sec/hr})(1 - B_{ws})\, v_s \left(\frac{T_{std} P_s}{T_s P_{std}}\right) A$

13. $E\,(\text{emission rate, lbs/hr}) = Q_{std}\left(C_s / 7000\ \text{grains/lb}\right)$

14. $IKV = \frac{T_s V_{m(std)} P_{std}}{T_{std} v_s \theta A_n P_s 60(1 - B_{ws})} = K_4 \frac{T_s V_{m(std)}}{P_s v_s A_n \theta (1 - B_{ws})}$

15. $\%EA = \left(\frac{\%O_2 - (0.5\,\%CO)}{0.264\,\%N_2 - (\%O_2 - 0.5\,\%CO)}\right) \times 100$

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Moisture Calculations

$$V_{wc(std)} = \frac{(V_f - V_i)\rho_w RT_{std}}{P_{std}M_w} = 0.04707(V_f - V_i)$$

$$V_{wsg(std)} = \frac{(W_f - W_i)\rho_w RT_{std}}{P_{std}M_w} = 0.04715(W_f - W_i)$$

$$V_{m(std)} = 17.64\, V_m Y \frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}$$

$$B_{ws} = \frac{V_{wc(std)} + V_{wsg(std)}}{V_{wc(std)} + V_{wsg(std)} + V_{m(std)}}$$

Where:

B_{ws} = Water vapor in gas stream, proportion by volume
M_w = Molecular weight of water, 18.015 lb/lb-mole
P_{bar} = Barometric pressure at the testing site, in. Hg
P_{std} = Standard absolute pressure, 29.92 in. Hg
R = Ideal gas constant, 0.048137 (in. Hg)(ft^3)/(g-mole)(°R) = [21.8348(in. Hg)(ft^3)/(lb-mole)(°R)]/453.592 g-mole/lb-mole
T_m = Absolute average dry gas meter temperature, °R
T_{std} = Standard absolute temperature, 528 °R
V_f = Final volume of condenser water, ml
V_i = Initial volume of condenser water, ml
V_m = Dry gas volume measured by dry gas meter, dcf
$V_{m(std)}$ = Dry gas volume measured by dry gas meter, corrected to standard conditions, scf
$V_{wc(std)}$ = Volume of condensed water vapor, corrected to standard conditions, scf
$V_{wsg(std)}$ = Volume of water vapor collected in silica gel, corrected to standard conditions, scf
W_f = Final weight of silica gel, g
W_i = Initial weight of silica gel, g
Y = Dry gas meter calibration factor
ΔH = Average pressure exerted on dry gas meter outlet by gas sample bag, in. H_2O
ρ_w = Density of water, 0.9982 g/ml
13.6 = Specific gravity of mercury (Hg)
17.64 = T_{std}/P_{std}
0.04707 = ft^3/ml 0.04715 = ft^3/g

MOSTARDI PLATT

Trace Metal (Including Mercury) Sample Calculations

Concentration

$$\frac{\mu g}{m^3} = \frac{\mu g\ of\ trace\ metal}{dscf\ volume\ sampled \times 0.02832 \frac{m^3}{ft^3}}$$

Emission Rate

$$\frac{\mu g\ of\ sample \times \frac{1 \times 10^{-6} grams}{\mu g}}{453.6\ gr/lb} = lbs\ of\ trace\ metal$$

$$\frac{lbs\ of\ trace\ metal}{V_m(std)sample} \times dscfm \times 60 \frac{min}{hr} = lbs\ of\ trace\ metal/hr$$

Appendix D - Reference Method Test Data

Client:	PCC Structurals, Inc.
Facility:	Large Parts Campus Facility - Milwaukie, OR
Test Location:	Baghouse 8901 Inlet
Project #:	M253113
Test Method:	29
Test Engineer:	AIR
Test Technician:	JSC

	Run 1	**Run 2**
Meter ID:	CM43	CM43
Pitot ID:	1883	1883
Nozzle Diameter (Inches):	0.175	0.175
Meter Calibration Date:	7/2/2025	7/2/2025
Meter Calibration Factor (Y):	0.991	0.991
Meter Orifice Setting (Delta H):	1.826	1.826
Nozzle Kit ID Number and Material:	Glass #23 (573)	Glass #23 573

Leak Checks

Pre Pitot Leak Check	**0.0**	**@**	**4.3**	**"H_2O**	**0.0**	**@**	**5.2**	**"H_2O**
Post Pitot Leak Check	**0.0**	**@**	**5.2**	**"H_2O**	**0.0**	**@**	**6.0**	**"H_2O**
Pre Nozzle Leak Check	**0.000**	**@**	**8**	**"Hg**	**0.000**	**@**	**9**	**"Hg**
Post Nozzle Leak Check	**0.000**	**@**	**12**	**"Hg**	**0.000**	**@**	**15**	**"Hg**

Pitot Tube Coefficient:	0.840
Probe Length (Feet):	3.0
Probe Liner Material:	Glass
Sample Plane:	Horizontal
Port Length (Inches):	4.00
Port Size (Diameter, Inches):	4.00
Port Type:	Nipple
Duct Shape:	Circular
Diameter (Feet):	1.00
Duct Area (Square Feet):	0.785
Upstream Diameters:	8.5
Downstream Diameters:	20.0
Number of Ports Sampled:	2
Number of Points per Port:	6
Minutes per Point:	40.0
Minutes per Reading:	10.0
Total Number of Traverse Points:	12
Test Length (Minutes):	480
Train Type:	Hot Box
Source Condition:	Batch Process
Moisture Balance ID:	S10-07
# of Runs	2

Method 1 and 2 Cyclonic Flow Check Data

Project Number	M253113	**Source Condition:**	Batch Process
Client:	PCC Structurals, Inc.	**Run No.:**	1
Facility:	Large Parts Campus Facility - Milwaukie, OR	**Date:**	7/29/2025
Location:	Baghouse 8901 Inlet	**Start Time:**	5:15
Pitot ID:	1883	**End Time:**	5:45
Pitot Coefficient:	0.840	**RM Testers:**	AIR
Probe Length:	3	**Port Length:**	4.00

Port	Point	DP (in. H_2O)	Sqrt. DP	Temp (^oF)	Yaw Angle (o)	DP (in. H2O) at Null Point Angle	Velocity (V)	Port	Point	DP (in. H_2O)	Sqrt. DP	Temp (^oF)	Yaw Angle (o)	DP (in. H2O) at Null Point Angle	Velocity (V)
A	1	1.90	1.3784	65.0	0.0	0.00	77.85	B	1	1.90	1.3784	65.0	0.0	0.00	77.85
A	2	1.90	1.3784	65.0	2.0	0.00	77.85	B	2	1.80	1.3416	65.0	2.0	0.00	75.77
A	3	2.00	1.4142	65.0	3.0	0.00	79.87	B	3	1.90	1.3784	65.0	2.0	0.00	77.85
A	4	2.00	1.4142	65.0	4.0	0.00	79.87	B	4	1.90	1.3784	65.0	1.0	0.00	77.85
A	5	2.10	1.4491	65.0	2.0	0.00	81.84	B	5	2.00	1.4142	65.0	0.0	0.00	79.87
A	6	2.00	1.4142	65.0	1.0	0.00	79.87	B	6	2.00	1.4142	65.0	3.0	0.00	79.87

Average Yaw Angle 1.7 ^{o}

Run 1 - Method 29

Client: PCC Structurals, Inc. | **Date: 7/29/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:20**

Test Location: Baghouse 8901 Inlet | **End Time: 16:32**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.93	in. H_2O	Static Pressure	-5.50	in. H_2O
Meter Temperature, Tm:	82.0	°F	Flue Pressure (Ps):	29.62	in. Hg. abs.
Sqrt ΔP:	1.376	in. H_2O			
Stack Temperature, Ts:	76.1	°F			
Meter Volume, Vm:	376.042	ft^3			
Meter Volume, Vmstd:	365.930	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	5.968	wscf	Gas Weight wet, Ms:	28.823	lb/lb mole
Isokinetic Variance:	101.3	%I			
			Gas Velocity, Vs:	78.289	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,689	acfm
Nozzle Diameter:	0.175	in inches	Volumetric Flow:	3,539	dscfm
Barometric Pressure:	30.02	in Hg	Volumetric Flow:	3,596	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	3507.6	ml	Silica Initial Wt.	1688.7	grams
Final Impinger Content:	3588.4	ml	Silica Final Wt.	1734.6	grams
Impinger Difference:	80.8	ml	Silica Difference:	45.9	grams

Total Water Gain: 126.7 | Moisture, Bws: 0.016 | **Supersaturation Value, Bws: 0.031**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
1-1	6:20:00	2.00	2.03	233.509	68	72	72	5	250	250	57
1-1	6:30:00	2.00	2.04	241.486	65	73	73	5	260	260	57
1-1	6:40:00	2.00	2.05	249.484	65	74	74	5	260	260	59
1-1	6:50:00	2.00	2.05	257.494	65	75	75	5	260	260	60
1-2	7:00:00	2.10	2.14	265.527	68	75	75	5	260	260	43
1-2	7:10:00	2.10	2.15	273.736	67	76	76	5	260	260	40
1-2	7:20:00	2.10	2.15	281.964	66	76	76	5	260	260	40
1-2	7:30:00	2.10	2.16	290.197	65	76	76	5	260	260	40
1-3	7:40:00	1.90	1.95	298.445	65	76	76	5	260	260	40
1-3	7:50:00	1.90	1.95	306.284	66	77	77	5	260	260	41
1-3	8:00:00	1.90	1.95	314.131	66	77	77	5	260	260	41
1-3	8:10:00	1.90	1.94	321.982	68	77	77	5	260	260	44
1-4	8:20:00	2.00	2.05	329.816	66	77	77	5	260	260	50
1-4	8:30:00	2.00	2.05	337.867	67	77	77	5	260	260	53
1-4	8:40:00	2.00	2.05	345.912	68	77	77	5	260	260	56
1-4	8:50:00	2.00	2.05	353.954	68	78	78	5	260	260	58
1-5	9:00:00	1.80	1.84	362.006	68	78	78	5	260	260	60
1-5	9:10:00	1.80	1.84	369.347	69	79	79	5	260	260	63
1-5	9:20:00	1.80	1.84	377.294	70	79	79	5	260	260	66
1-5	9:30:00	1.80	1.84	384.937	70	79	79	5	260	260	66
1-6	9:40:00	1.70	1.74	392.564	71	80	80	5	260	260	64
1-6	9:50:00	1.70	1.74	400.009	72	80	80	5	260	260	63
1-6	10:00:00	1.70	1.74	407.423	72	81	81	5	260	260	63
1-6	10:10:00	1.70	1.74	414.859	73	81	81	5	260	260	62
	10:20:00			422.288							
2-1	12:00:00	2.10	2.12	423.271	78	79	79	5	260	260	62
2-1	12:10:00	2.10	2.12	431.468	78	80	80	5	260	260	63
2-1	12:20:00	2.10	2.11	439.673	82	81	81	5	260	260	64
2-1	12:30:00	2.10	2.12	447.862	80	82	82	5	260	260	64
2-2	12:40:00	1.80	1.82	456.087	80	83	83	5	260	260	50
2-2	12:50:00	1.80	1.82	463.713	80	84	84	5	260	260	49
2-3	13:00:00	1.80	1.83	471.346	79	85	85	5	260	260	50
2-3	13:10:00	1.80	1.82	479.008	83	85	85	5	260	260	55
2-4	13:20:00	1.90	1.91	486.637	85	86	86	5	260	260	60
2-4	13:30:00	1.90	1.92	494.475	85	87	87	5	260	260	61
	13:40:00			502.331							
2-5	13:50:00	1.80	1.82	502.331	84	87	87	5	260	260	62
2-5	14:00:00	1.80	1.82	509.993	84	87	87	5	260	260	64
2-6	14:10:00	1.90	1.92	517.642	85	88	88	5	260	260	63
2-6	14:20:00	1.90	1.92	525.513	85	88	88	5	260	260	63
	14:30:00			533.381							
2-6	14:40:00	1.90	1.91	533.381	88	89	89	5	260	260	64
2-6	14:50:00	1.90	1.91	541.253	90	89	89	5	260	260	61

Run 1 - Method 29

Client: PCC Structurals, Inc. — **Date: 7/29/25**

Facility: Large Parts Campus Facility - Milwaukie, OR — **Start Time: 6:20**

Test Location: Baghouse 8901 Inlet — **End Time: 16:32**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.93	in. H_2O	Static Pressure	-5.50	in. H_2O
Meter Temperature, Tm:	82.0	°F	Flue Pressure (Ps):	29.62	in. Hg. abs.
Sqrt ΔP:	1.376	in. H_2O			
Stack Temperature, Ts:	76.1	°F			
Meter Volume, Vm:	376.042	ft^3			
Meter Volume, Vmstd:	365.930	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	5.968	wscf	Gas Weight wet, Ms:	28.823	lb/lb mole
Isokinetic Variance:	101.3	%I			
			Gas Velocity, Vs:	78.289	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,689	acfm
Nozzle Diameter:	0.175	in inches	Volumetric Flow:	3,539	dscfm
Barometric Pressure:	30.02	in Hg	Volumetric Flow:	3,596	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	3507.6	ml	Silica Initial Wt.	1688.7	grams
Final Impinger Content:	3588.4	ml	Silica Final Wt.	1734.6	grams
Impinger Difference:	80.8	ml	Silica Difference:	45.9	grams

Total Water Gain: 126.7 — Moisture, Bws: 0.016 — **Supersaturation Value, Bws: 0.031**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
2-5	15:00:00	2.00	2.02	549.097	87	90	90	5	260	260	58
2-5	15:10:00	2.00	2.02	557.184	88	90	90	5	260	260	56
	15:20:00			565.273							
2-4	15:32:00	1.80	1.82	565.273	88	91	91	5	260	260	60
2-4	15:42:00	1.80	1.82	572.561	88	91	91	5	260	260	61
2-3	15:52:00	1.70	1.72	580.649	87	91	91	5	260	260	63
2-3	16:02:00	1.70	1.72	588.116	87	91	91	5	260	260	64
2-2	16:12:00	1.70	1.72	595.581	88	92	92	5	260	260	65
2-2	16:22:00	1.70	1.72	603.067	88	92	92	5	260	260	63
	16:32:00			610.534							
Total	8:00:00			376.042		82.0	82.0				
Average			1.93		76.1	82.0		5			
Min			1.72		65.0	72.0		5			
Max			2.16		90.0	92.0		5			

Impinger Weight Sheet - Run 1

Client:	**PCC Structurals, Inc.**
Facility:	**Large Parts Campus Facility - Milwauki**
Test Location:	**Baghouse 8901 Inlet**
Project #:	**M253113**
Date:	**7/29/2025**
Test Method:	**29**
Weighed/Measured By:	**RICHS**
Balance ID:	**S10-07**

Scale Calibration Check Date: **7/29/2025**

Scale Calibration Check (see QS-6.05C for procedure)
must be within ± 0.5g of certified mass

Certified Weight, grams	Result, grams
250	250.0
500	500.0
750	750.0

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
HNO3/H2O2	733.5	758.5	-25.0
HNO3/H2O2	713.8	644.5	69.3
Empty	612.1	598.5	13.6
KMnO4/H2SO4	765.5	753.4	12.1
KMnO4/H2SO4	763.5	752.7	10.8
Silica Gel	895.0	868.7	26.3
Silica Gel	839.6	820.0	19.6
	3,588.4 **Liquid Final**	3,507.6 **Liquid Initial**	80.8 **Liquid Gain**
	1,734.6 **Silica Final**	1,688.7 **Silica Initial**	45.9 **Silica Gain**

Run 2 - Method 29

Client: PCC Structurals, Inc. | **Date: 7/30/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:25**

Test Location: Baghouse 8901 Inlet | **End Time: 16:45**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.89	In. H_2O	Static Pressure	-5.50	in. H_2O
Meter Temperature, Tm:	81.1	°F	Flue Pressure (Ps):	29.62	in. Hg. abs.
Sqrt ΔP:	1.363	In. H_2O			
Stack Temperature, Ts:	74.9	°F			
Meter Volume, Vm:	372.657	ft^3			
Meter Volume, Vmstd:	363.260	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	6.109	wscf	Gas Weight wet, Ms:	28.818	lb/lb mole
Isokinetic Variance:	101.5	%I			
			Gas Velocity, Vs:	77.442	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,649	acfm
Nozzle Diameter:	0.175	in inches	Volumetric Flow:	3,507	dscfm
Barometric Pressure:	30.02	in Hg	Volumetric Flow:	3,566	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	3503.6	ml	Silica Initial Wt.	1695.6	grams
Final Impinger Content:	3591.6	ml	Silica Final Wt.	1737.3	grams
Impinger Difference:	88.0	ml	Silica Difference:	41.7	grams

Total Water Gain: 129.7 | Moisture, Bws: 0.017 | **Supersaturation Value, Bws: 0.029**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
1-1	6:25:00	1.80	1.83	610.911	67	72	72	5	260	260	52
1-1	6:35:00	1.80	1.83	618.488	67	72	72	5	260	260	48
1-1	6:45:00	1.80	1.83	626.056	67	73	73	5	260	260	48
1-1	6:55:00	1.80	1.83	633.642	68	74	74	5	260	260	48
1-2	7:05:00	1.70	1.73	641.237	68	75	75	5	260	260	49
1-2	7:15:00	1.70	1.74	648.629	68	76	76	5	260	260	50
1-2	7:25:00	1.70	1.74	656.034	68	77	77	5	260	260	51
1-2	7:35:00	1.70	1.74	663.456	68	77	77	5	260	260	52
1-3	7:45:00	1.90	1.94	670.873	69	77	77	5	260	260	53
1-3	7:55:00	1.90	1.94	678.708	69	78	78	5	260	260	54
1-3	8:05:00	1.90	1.94	686.554	69	78	78	5	260	260	54
1-3	8:15:00	1.90	1.94	694.407	69	78	78	5	260	260	55
	8:25:00			702.253							
1-4	9:00:00	1.80	1.84	702.253	70	78	78	5	260	260	57
1-4	9:10:00	1.80	1.84	709.894	71	79	79	5	260	260	60
1-4'	9:20:00	1.80	1.84	717.536	71	79	79	5	260	260	61
1-4'	9:30:00	1.80	1.84	725.179	71	80	80	5	260	260	61
1-5	9:40:00	1.80	1.84	732.837	71	80	80	5	260	260	61
1-5	9:50:00	1.80	1.84	740.483	71	80	80	5	260	260	62
1-5'	10:00:00	1.80	1.84	748.145	72	81	81	5	260	260	63
1-5'	10:10:00	1.80	1.84	755.810	72	81	81	5	260	260	63
1-6	10:20:00	2.00	2.04	763.467	73	81	81	5	260	260	65
1-6	10:30:00	2.00	2.04	771.533	73	81	81	5	260	260	64
1-6'	10:40:00	2.00	2.04	779.608	73	81	81	5	260	260	63
1-6'	10:50:00	2.00	2.04	787.675	73	81	81	5	260	260	60
	11:00:00			795.743							
2-1	11:45:00	1.70	1.70	796.371	81	79	79	5	260	260	58
2-1	11:55:00	1.70	1.72	803.737	76	79	79	5	260	260	58
2-1'	12:05:00	1.70	1.72	811.126	77	80	80	5	260	260	60
2-1'	12:15:00	1.70	1.72	818.524	77	81	81	5	260	260	62
2-2'	12:25:00	1.80	1.82	825.938	78	82	82	5	260	260	63
2-2'	12:35:00	1.80	1.83	833.569	78	83	83	5	260	260	64
2-2'	12:45:00	1.80	1.83	841.216	78	83	83	5	260	260	65
2-2'	12:55:00	1.80	1.83	848.867	79	84	84	5	260	260	66
2-3'	13:05:00	2.00	2.03	856.518	79	84	84	5	260	260	66
2-3'	13:15:00	2.00	2.03	864.588	79	84	84	5	260	260	64
	13:25:00			872.653							
2-3'	13:45:00	2.00	2.03	872.653	80	84	84	5	260	260	60
2-3'	13:55:00	2.00	2.03	880.726	80	84	84	5	260	260	61
2-4'	14:05:00	1.90	1.92	888.783	80	84	84	5	260	260	62
	14:15:00			896.645							
2-4'	14:55:00	1.90	1.92	896.645	80	84	84	5	260	260	63
2-4'	15:05:00	1.90	1.92	904.514	81	85	85	5	260	260	64

Run 2 - Method 29

Client: PCC Structurals, Inc. | **Date: 7/30/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:25**

Test Location: Baghouse 8901 Inlet | **End Time: 16:45**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.89	In. H_2O	Static Pressure	-5.50	in. H_2O
Meter Temperature, Tm:	81.1	°F	Flue Pressure (Ps):	29.62	in. Hg. abs.
Sqrt ΔP:	1.363	In. H_2O			
Stack Temperature, Ts:	74.9	°F			
Meter Volume, Vm:	372.657	ft^3			
Meter Volume, Vmstd:	363.260	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	6.109	wscf	Gas Weight wet, Ms:	28.818	lb/lb mole
Isokinetic Variance:	101.5	%I			
			Gas Velocity, Vs:	77.442	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,649	acfm
Nozzle Diameter:	0.175	in inches	Volumetric Flow:	3,507	dscfm
Barometric Pressure:	30.02	in Hg	Volumetric Flow:	3,566	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	3503.6	ml	Silica Initial Wt.	1695.6	grams
Final Impinger Content:	3591.6	ml	Silica Final Wt.	1737.3	grams
Impinger Difference:	88.0	ml	Silica Difference:	41.7	grams

Total Water Gain: 129.7 | Moisture, Bws: 0.017 | **Supersaturation Value, Bws: 0.029**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
2-4'	15:15:00	1.90	1.93	912.376	81	86	86	5	260	260	64
2-5'	15:25:00	1.90	1.93	920.253	81	86	86	5	260	260	62
2-5'	15:35:00	1.90	1.93	928.137	81	86	86	5	260	260	63
2-5'	15:45:00	1.90	1.93	936.011	82	87	87	5	260	260	63
2-5'	15:55:00	1.90	1.93	943.898	82	87	87	5	260	260	61
2-6'	16:05:00	2.00	2.03	951.782	82	87	87	5	260	260	60
2-6'	16:15:00	2.00	2.03	959.873	81	87	87	5	260	260	60
2-6'	16:25:00	2.00	2.04	967.965	81	88	88	5	260	260	60
2-6'	16:35:00	2.00	2.04	976.083	81	88	88	5	260	260	60
	16:45:00			984.196							
Total	8:00:00			372.657		81.1	81.1				
Average			1.89		74.9	81.1		5			
Min			1.70		67.0	72.0		5			
Max			2.04		82.0	88.0		5			

Impinger Weight Sheet - Run 2

Client:	**PCC Structurals, Inc.**
Facility:	**Large Parts Campus Facility - Milwauki**
Test Location:	**Baghouse 8901 Inlet**
Project #:	**M253113**
Date:	**7/30/2025**
Test Method:	**29**
Weighed/Measured By:	**RICHS**
Balance ID:	**S10-07**

Scale Calibration Check Date: **7/29/2025**

Scale Calibration Check (see QS-6.05C for procedure)
must be within ± 0.5g of certified mass

Certified Weight, grams	Result, grams
250	250.0
500	500.0
750	750.0

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
HNO3/H2O2	728.3	761.2	-32.9
HNO3/H2O2	716.2	648.3	67.9
Empty	610.0	592.2	17.8
KMnO4/H2SO4	770.9	751.9	19.0
KMnO4/H2SO4	766.2	750.0	16.2
Silica Gel	902.1	870.5	31.6
Silica Gel	835.2	825.1	10.1
	3,591.6 **Liquid Final**	3,503.6 **Liquid Initial**	88.0 **Liquid Gain**
	1,737.3 **Silica Final**	1,695.6 **Silica Initial**	41.7 **Silica Gain**

Client:	PCC Structurals, Inc.
Facility:	Large Parts Campus Facility - Milwaukie, OR
Test Location:	Baghouse 8901 Inlet
Project #:	M253113
Test Method:	0061
Test Engineer:	JSC
Test Technician:	AEIR

	Run 1	**Run 2**
Meter ID:	CM53	CM53
Pitot ID:	025	025
Nozzle Diameter (Inches):	0.177	0.177
Meter Calibration Date:	7/10/2025	7/10/2025
Meter Calibration Factor (Y):	1.006	1.006
Meter Orifice Setting (Delta H):	1.829	1.829
Nozzle Kit ID Number and Material:	Glass #23 (799)	Glass #23 (799)

Leak Checks

Pre Pitot Leak Check	**0.0**	**@**	**4.1**	**"H_2O**	**0.0**	**@**	**3.5**	**"H_2O**
Post Pitot Leak Check	**0.0**	**@**	**3.7**	**"H_2O**	**0.0**	**@**	**3.7**	**"H_2O**
Pre Nozzle Leak Check	**0.019**	**@**	**13**	**"Hg**	**0.002**	**@**	**14**	**"Hg**
Post Nozzle Leak Check	**0.015**	**@**	**11**	**"Hg**	**0.000**	**@**	**11**	**"Hg**

Pitot Tube Coefficient:	0.840
Probe Length (Feet):	3.0
Probe Liner Material:	Glass
Sample Plane:	Horizontal
Port Length (Inches):	4.00
Port Size (Diameter, Inches):	4.00
Port Type:	Nipple
Duct Shape:	Circular
Diameter (Feet):	1.00
Duct Area (Square Feet):	0.785
Upstream Diameters:	8.5
Downstream Diameters:	20.0
Number of Ports Sampled:	2
Number of Points per Port:	6
Minutes per Point:	40.0
Minutes per Reading:	10.0
Total Number of Traverse Points:	12
Test Length (Minutes):	480
Train Type:	Hot Box
Source Condition:	Batch Process
Moisture Balance ID:	S10-07
# of Runs	2

Method 1 and 2 Cyclonic Flow Check Data

Project Number	M253113	**Source Condition:**	Batch Process
Client:	PCC Structurals, Inc.	**Run No.:**	1
Facility:	Large Parts Campus Facility - Milwaukie, OR	**Date:**	7/29/2025
Location:	Baghouse 8901 Inlet	**Start Time:**	5:30
Pitot ID:	025	**End Time:**	5:50
Pitot Coefficient:	0.840	**RM Testers:**	JSC/AEIR
Probe Length:	3	**Port Length:**	4.00

Port	Point	DP (in. H_2O)	Sqrt. DP	Temp (^oF)	Yaw Angle (o)	DP (in. H2O) at Null Point Angle	Velocity (V)	Port	Point	DP (in. H_2O)	Sqrt. DP	Temp (^oF)	Yaw Angle (o)	DP (in. H2O) at Null Point Angle	Velocity (V)
A	1	1.65	1.2845	65.0	1.0	0.00	72.60	B	1	1.80	1.3416	65.0	1.0	0.00	75.83
A	2	1.80	1.3416	64.0	2.0	0.00	75.75	B	2	1.70	1.3038	66.0	0.0	0.00	73.76
A	3	1.70	1.3038	64.0	1.0	0.00	73.62	B	3	1.80	1.3416	65.0	1.0	0.00	75.83
A	4	1.95	1.3964	65.0	0.0	0.00	78.92	B	4	2.00	1.4142	65.0	3.0	0.00	79.93
A	5	2.00	1.4142	65.0	2.0	0.00	79.93	B	5	1.90	1.3784	65.0	4.0	0.00	77.90
A	6	1.90	1.3784	65.0	1.0	0.00	77.90	B	6	1.95	1.3964	65.0	1.0	0.00	78.92

Average Yaw Angle 1.4 °

Run 1 - Method 0061

Client: PCC Structurals, Inc. | **Date: 7/29/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:20**

Test Location: Baghouse 8901 Inlet | **End Time: 16:32**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.97	in. H_2O	Static Pressure	-5.50	in. H_2O
Meter Temperature, Tm:	86.8	°F	Flue Pressure (Ps):	29.62	in. Hg. abs.
Sqrt ΔP:	1.354	in. H_2O			
Stack Temperature, Ts:	76.9	°F			
Meter Volume, Vm:	375.972	ft^3			
Meter Volume, Vmstd:	368.194	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	0.000	wscf	Gas Weight wet, Ms:	28.824	lb/lb mole
Isokinetic Variance:	101.3	%I			
			Gas Velocity, Vs:	77.107	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,634	acfm
Nozzle Diameter:	0.177	in inches	Volumetric Flow:	3,480	dscfm
Barometric Pressure:	30.02	in Hg	Volumetric Flow:	3,537	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	0.0	ml	Silica Initial Wt.	0.0	grams	
Final Impinger Content:	0.0	ml	Silica Final Wt.	0.0	grams	
Impinger Difference:	0.0	ml	Silica Difference:	0.0	grams	
Total Water Gain:	0.0		Moisture, Bws:	0.016	**Supersaturation Value, Bws:**	**0.031**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Impinger Exit Temp °F
1-1	6:20:00	1.90	2.04	627.750	66	75	75	4	55
1-1	6:30:00	1.90	2.04	635.630	65	76	76	4	55
1-1	6:40:00	1.90	2.05	643.533	65	78	78	4	57
1-1	6:50:00	1.90	2.05	651.465	65	79	79	4	58
1-2	7:00:00	1.85	2.00	659.412	66	80	80	4	59
1-2	7:10:00	1.85	2.00	667.260	68	81	81	5	59
1-2	7:20:00	1.85	2.00	675.108	66	81	81	5	60
1-2	7:30:00	1.85	2.00	682.971	67	82	82	5	60
1-3	7:40:00	2.00	2.17	690.842	66	83	83	5	59
1-3	7:50:00	2.00	2.17	699.407	68	83	83	5	59
1-3	8:00:00	2.00	2.17	707.238	68	83	83	5	59
1-3	8:10:00	2.00	2.16	715.428	70	84	84	5	60
1-4	8:20:00	1.80	1.95	723.618	68	84	84	5	59
1-4	8:30:00	1.80	1.95	731.402	68	84	84	5	59
1-4	8:40:00	1.80	1.95	739.187	69	84	84	5	59
1-4	8:50:00	1.80	1.95	746.964	69	85	85	5	60
1-5	9:00:00	1.75	1.90	754.755	70	85	85	5	60
1-5	9:10:00	1.75	1.90	762.430	69	85	85	5	60
1-5	9:20:00	1.75	1.90	770.112	71	86	86	5	60
1-5	9:30:00	1.75	1.90	777.794	71	86	86	5	60
1-6	9:40:00	1.70	1.83	785.476	73	86	86	5	62
1-6	9:50:00	1.70	1.83	793.033	74	87	87	5	62
1-6	10:00:00	1.70	1.83	800.597	74	87	87	5	61
1-6	10:10:00	1.70	1.83	808.161	74	87	87	5	62
	10:20:00			815.735					
2-1	12:00:00	2.00	2.13	817.253	78	85	85	5	66
2-1	12:10:00	2.00	2.13	825.191	79	84	84	6	63
2-1	12:20:00	2.00	2.11	833.518	83	84	84	6	65
2-1	12:30:00	2.00	2.13	841.609	80	85	85	7	65
2-2	12:40:00	1.80	1.91	849.738	81	86	86	7	61
2-2	12:50:00	1.80	1.91	857.456	81	86	86	7	61
2-3	13:00:00	1.70	1.81	865.175	81	87	87	7	56
2-3	13:10:00	1.70	1.80	872.690	86	88	88	7	57
2-4	13:20:00	1.80	1.91	880.184	85	89	89	7	55
2-4	13:30:00	1.80	1.92	887.916	84	91	91	7	57
	13:40:00			895.684					
2-5	13:50:00	1.70	1.82	895.684	84	92	92	7	59
2-5	14:00:00	1.70	1.82	903.247	84	92	92	7	55
2-6	14:10:00	1.85	1.97	910.809	86	92	92	7	56
2-6	14:20:00	1.85	1.97	918.684	85	92	92	7	58
	14:30:00			926.556					
2-6	14:40:00	1.85	1.96	926.556	90	92	92	7	59
2-6	14:50:00	1.85	1.95	934.402	91	93	93	7	58

Run 1 - Method 0061

Client: PCC Structurals, Inc. **Date:** 7/29/25
Facility: Large Parts Campus Facility - Milwaukie, OR **Start Time:** 6:20
Test Location: Baghouse 8901 Inlet **End Time:** 16:32
Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.97	in. H_2O	Static Pressure	-5.50	in. H_2O
Meter Temperature, Tm:	86.8	°F	Flue Pressure (Ps):	29.62	in. Hg. abs.
Sqrt ΔP:	1.354	in. H_2O			
Stack Temperature, Ts:	76.9	°F			
Meter Volume, Vm:	375.972	ft^3			
Meter Volume, Vmstd:	368.194	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	0.000	wscf	Gas Weight wet, Ms:	28.824	lb/lb mole
Isokinetic Variance:	101.3	%I			
			Gas Velocity, Vs:	77.107	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,634	acfm
Nozzle Diameter:	0.177	in inches	Volumetric Flow:	3,480	dscfm
Barometric Pressure:	30.02	in Hg	Volumetric Flow:	3,537	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	0.0	ml	Silica Initial Wt.	0.0	grams
Final Impinger Content:	0.0	ml	Silica Final Wt.	0.0	grams
Impinger Difference:	0.0	ml	Silica Difference:	0.0	grams

Total Water Gain: 0.0 Moisture, Bws: 0.016 **Supersaturation Value, Bws: 0.031**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Impinger Exit Temp °F
2-5	15:00:00	1.85	1.97	942.241	87	94	94	7	57
2-5	15:10:00	1.85	1.97	950.151	88	95	95	7	57
	15:20:00			958.054					
2-4	15:32:00	1.90	2.02	958.877	88	94	94	7	59
2-4	15:42:00	1.90	2.03	966.872	88	95	95	7	57
2-3	15:52:00	1.80	1.92	974.881	88	95	95	7	57
2-3	16:02:00	1.80	1.92	982.676	88	95	95	7	57
2-2	16:12:00	1.80	1.92	990.472	88	95	95	7	57
2-2	16:22:00	1.80	1.92	998.267	88	95	95	7	57
	16:32:00			1006.063					
Total	8:00:00			375.972		86.8	86.8		
Average			1.97		76.9	86.8		6	
Min			1.80		65.0	75.0		4	
Max			2.17		91.0	95.0		7	

Run 2 - Method 0061

Client: PCC Structurals, Inc. | **Date: 7/30/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:25**

Test Location: Baghouse 8901 Inlet | **End Time: 16:45**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.96	In. H_2O	Static Pressure	-5.50	in. H_2O
Meter Temperature, Tm:	82.8	°F	Flue Pressure (Ps):	29.55	in. Hg. abs.
Sqrt ΔP:	1.355	In. H_2O			
Stack Temperature, Ts:	75.7	°F			
Meter Volume, Vm:	374.218	ft^3			
Meter Volume, Vmstd:	368.315	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	0.000	wscf	Gas Weight wet, Ms:	28.813	lb/lb mole
Isokinetic Variance:	101.4	%I			
			Gas Velocity, Vs:	77.153	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,636	acfm
Nozzle Diameter:	0.177	in inches	Volumetric Flow:	3,478	dscfm
Barometric Pressure:	29.95	in Hg	Volumetric Flow:	3,539	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	0.0	ml	Silica Initial Wt.	0.0	grams
Final Impinger Content:	0.0	ml	Silica Final Wt.	0.0	grams
Impinger Difference:	0.0	ml	Silica Difference:	0.0	grams

Total Water Gain: 0.0 Moisture, Bws: 0.017 **Supersaturation Value, Bws: 0.030**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Impinger Exit Temp °F
1-1	6:25:00	1.80	1.91	6.847	69	72	72	4	50
1-1	6:35:00	1.80	1.91	14.461	69	72	72	4	45
1-1	6:45:00	1.80	1.91	22.075	69	73	73	5	44
1-1	6:55:00	1.80	1.91	29.704	69	73	73	5	43
1-2	7:05:00	1.70	1.80	37.332	70	74	74	5	44
1-2	7:15:00	1.70	1.81	44.753	70	75	75	5	44
1-2	7:25:00	1.70	1.81	52.187	70	76	76	5	44
1-2	7:35:00	1.70	1.81	59.635	70	76	76	5	44
1-3	7:45:00	2.00	2.13	67.084	70	77	77	5	45
1-3	7:55:00	2.00	2.13	75.178	70	77	77	5	44
1-3	8:05:00	2.00	2.14	83.271	70	79	79	5	45
1-3	8:15:00	2.00	2.14	91.395	70	79	79	5	45
	8:25:00			99.519					
1-4	9:00:00	1.80	1.92	99.519	72	79	79	5	46
1-4	9:10:00	1.80	1.92	107.212	72	79	79	5	44
1-4	9:20:00	1.80	1.92	114.904	72	80	80	5	45
1-4	9:30:00	1.80	1.93	122.611	72	81	81	5	47
1-5	9:40:00	1.75	1.87	130.332	72	81	81	5	46
1-5	9:50:00	1.75	1.88	137.945	72	82	82	5	46
1-5	10:00:00	1.75	1.87	145.573	72	81	81	5	46
1-5	10:10:00	1.75	1.87	153.186	75	82	82	5	47
1-6	10:20:00	1.90	2.03	160.791	74	82	82	5	47
1-6	10:30:00	1.90	2.03	168.724	75	83	83	5	48
1-6	10:40:00	1.90	2.04	176.664	74	84	84	5	47
1-6	10:50:00	1.90	2.03	184.625	74	83	83	5	46
	11:00:00			192.572					
2-1	11:45:00	1.60	1.69	194.933	79	82	82	5	53
2-1	11:55:00	1.60	1.70	202.178	77	83	83	5	49
2-1	12:05:00	1.60	1.70	209.451	77	83	83	5	51
2-1	12:15:00	1.60	1.71	216.723	77	85	85	5	50
2-2	12:25:00	1.75	1.87	224.022	78	85	85	5	52
2-2	12:35:00	1.75	1.87	231.649	78	86	86	5	52
2-2	12:45:00	1.75	1.87	239.289	79	86	86	5	51
2-2	12:55:00	1.75	1.87	246.923	80	87	87	5	53
2-3	13:05:00	1.90	2.03	254.563	80	87	87	5	53
2-3	13:15:00	1.90	2.03	262.524	79	88	88	5	53
	13:25:00			270.507					
2-3	13:45:00	1.90	2.03	270.507	80	87	87	5	56
2-3	13:55:00	1.90	2.03	278.468	80	87	87	5	53
2-4	14:05:00	2.00	2.13	286.429	80	86	86	5	54
	14:15:00			294.582					
2-4	14:55:00	2.00	2.13	294.582	81	86	86	5	55
2-4	15:05:00	2.00	2.13	302.880	81	86	86	5	56

Run 2 - Method 0061

Client: PCC Structurals, Inc. | **Date: 7/30/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:25**

Test Location: Baghouse 8901 Inlet | **End Time: 16:45**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.96	In. H_2O	Static Pressure	-5.50	in. H_2O
Meter Temperature, Tm:	82.8	°F	Flue Pressure (Ps):	29.55	in. Hg. abs.
Sqrt ΔP:	1.355	In. H_2O			
Stack Temperature, Ts:	75.7	°F			
Meter Volume, Vm:	374.218	ft^3			
Meter Volume, Vmstd:	368.315	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	0.000	wscf	Gas Weight wet, Ms:	28.813	lb/lb mole
Isokinetic Variance:	101.4	%I			
			Gas Velocity, Vs:	77.153	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,636	acfm
Nozzle Diameter:	0.177	in inches	Volumetric Flow:	3,478	dscfm
Barometric Pressure:	29.95	in Hg	Volumetric Flow:	3,539	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	0.0	ml	Silica Initial Wt.	0.0	grams
Final Impinger Content:	0.0	ml	Silica Final Wt.	0.0	grams
Impinger Difference:	0.0	ml	Silica Difference:	0.0	grams

Total Water Gain: 0.0 Moisture, Bws: 0.017 **Supersaturation Value, Bws: 0.030**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Impinger Exit Temp °F
2-4	15:15:00	2.00	2.13	310.950	81	86	86	5	57
2-5	15:25:00	1.85	1.97	319.018	82	89	89	5	57
2-5	15:35:00	1.85	1.98	326.888	82	90	90	5	56
2-5	15:45:00	1.85	1.98	334.772	81	90	90	5	58
2-5	15:55:00	1.85	1.98	342.663	82	91	91	5	58
2-6	16:05:00	2.00	2.14	350.562	82	92	92	5	58
2-6	16:15:00	2.00	2.15	358.789	82	91	91	5	58
2-6	16:25:00	2.00	2.14	367.002	82	91	91	5	58
2-6	16:35:00	2.00	2.14	375.214	82	91	91	5	58
	16:45:00			383.426					
Total	8:00:00			374.218		82.8	82.8		
Average			1.96		75.7	82.8		5	
Min			1.69		69.0	72.0		4	
Max			2.15		82.0	92.0		5	

Client:	PCC Structurals, Inc.							
Facility:	Large Parts Campus Facility - Milwaukie, OR							
Test Location:	Baghouse 8901 Inlet							
Project #:	M253113							
Test Method:	ODEQ 5							
Test Engineer:	JSC							
Test Technician:	AEIR							
	Run 1				**Run 2**			
Meter ID:	CM43				CM43			
Pitot ID:	1883				1883			
Filter ID:	22792				22721			
Filter Pre-Weight (grams):	0.48057				0.47634			
Nozzle Diameter (Inches):	0.177				0.177			
Meter Calibration Date:	7/2/2025				7/2/2025			
Meter Calibration Factor (Y):	0.991				0.991			
Meter Orifice Setting (Delta H):	1.826				1.826			
Nozzle Kit ID Number and Material:	Glass #23 (799)				Glass #23 (799)			
	Leak Checks							
Pre Pitot Leak Check	**0.0**	**@**	**3.8**	**"H_2O**	**0.0**	**@**	**3.5**	**"H_2O**
Post Pitot Leak Check	**0.0**	**@**	**4.0**	**"H_2O**	**0.0**	**@**	**4.1**	**"H_2O**
Pre Nozzle Leak Check	**0.008**	**@**	**17**	**"Hg**	**0.000**	**@**	**15**	**"Hg**
Post Nozzle Leak Check	**0.000**	**@**	**14**	**"Hg**	**0.001**	**@**	**13**	**"Hg**
Pitot Tube Coefficient:	0.840							
Probe Length (Feet):	3.0							
Probe Liner Material:	Glass							
Sample Plane:	Horizontal							
Port Length (Inches):	4.00							
Port Size (Diameter, Inches):	4.00							
Port Type:	Nipple							
Duct Shape:	Circular							
Diameter (Feet):	1.00							
Duct Area (Square Feet):	0.785							
Upstream Diameters:	8.5							
Downstream Diameters:	20.0							
Number of Ports Sampled:	2							
Number of Points per Port:	6							
Minutes per Point:	40.0							
Minutes per Reading:	10.0							
Total Number of Traverse Points:	12							
Test Length (Minutes):	480							
Train Type:	Hot Box							
Source Condition:	Batch Process							
Moisture Balance ID:	S10-07							
# of Runs	2							

Run 1 - Method ODEQ 5

Client: PCC Structurals, Inc. | **Date: 7/31/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:05**

Test Location: Baghouse 8901 Inlet | **End Time: 15:45**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.95	in. H_2O	Static Pressure	-5.50	in. H_2O
Meter Temperature, Tm:	77.6	°F	Flue Pressure (Ps):	29.52	in. Hg. abs.
Sqrt ΔP:	1.354	in. H_2O			
Stack Temperature, Ts:	70.6	°F			
Meter Volume, Vm:	377.858	ft^3			
Meter Volume, Vmstd:	369.556	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	3.598	wscf	Gas Weight wet, Ms:	28.894	lb/lb mole
Isokinetic Variance:	100.8	%I			
			Gas Velocity, Vs:	76.654	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,612	acfm
Nozzle Diameter:	0.177	in inches	Volumetric Flow:	3,512	dscfm
Barometric Pressure:	29.92	in Hg	Volumetric Flow:	3,546	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	2150.7	ml	Silica Initial Wt.	894.1	grams
Final Impinger Content:	2181.2	ml	Silica Final Wt.	940.0	grams
Impinger Difference:	30.5	ml	Silica Difference:	45.9	grams

Total Water Gain: 76.4 | Moisture, Bws: 0.010 | **Supersaturation Value, Bws: 0.026**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
1-1	6:05:00	1.90	2.01	984.833	67	69	69	2	260	260	59
1-1	6:15:00	1.90	1.99	992.748	71	69	69	2	260	260	61
1-1	6:25:00	1.90	2.01	1000.634	68	70	70	2	260	260	58
1-1	6:35:00	1.90	2.01	1008.557	67	71	71	2	260	260	51
1-2	6:45:00	1.80	1.91	1016.502	66	72	72	2	260	260	51
1-2	6:55:00	1.80	1.92	1024.257	66	73	73	2	260	260	54
1-2	7:05:00	1.80	1.92	1032.027	66	74	74	2	260	260	55
1-2	7:15:00	1.80	1.92	1039.811	66	75	75	2	260	260	55
1-3	7:25:00	2.00	2.14	1047.610	66	75	75	2	260	260	54
1-3	7:35:00	2.00	2.14	1055.831	66	76	76	2	260	260	56
1-3	7:45:00	2.00	2.14	1064.068	66	76	76	2	260	260	56
1-3	7:55:00	2.00	2.15	1072.304	66	77	77	2	260	260	57
	8:05:00			1080.555							
1-4	8:15:00	1.90	2.04	1080.555	66	77	77	2	260	260	50
1-4	8:25:00	1.90	2.04	1088.598	66	76	76	2	260	260	52
1-4	8:35:00	1.90	2.04	1096.625	67	77	77	2	260	260	53
1-4	8:45:00	1.90	2.04	1104.660	67	77	77	2	260	260	54
1-5	8:55:00	1.75	1.87	1112.695	67	77	77	2	260	260	57
1-5	9:05:00	1.75	1.87	1120.407	68	77	77	2	260	260	57
1-5	9:15:00	1.75	1.87	1128.111	68	77	77	2	260	260	60
1-5	9:25:00	1.75	1.87	1135.815	68	77	77	2	260	260	58
1-6	9:35:00	1.80	1.93	1143.519	68	78	78	2	260	260	59
1-6	9:45:00	1.80	1.93	1151.347	68	78	78	2	260	260	58
1-6	9:55:00	1.80	1.92	1159.175	69	78	78	2	260	260	60
1-6	10:05:00	1.80	1.92	1166.995	69	78	78	2	260	260	60
	10:15:00			1174.816							
2-1	10:42:00	1.70	1.81	1175.315	71	77	77	2	260	260	56
2-1	10:52:00	1.70	1.81	1182.887	71	77	77	2	260	260	56
2-1	11:02:00	1.70	1.81	1190.458	71	78	78	2	260	260	58
2-1	11:12:00	1.70	1.79	1198.044	77	78	78	2	260	260	60
2-2	11:22:00	1.80	1.91	1205.588	73	79	79	2	260	260	62
2-2	11:32:00	1.80	1.91	1213.393	73	79	79	2	260	260	62
	11:42:00			1221.199							
2-2	12:00:00	1.80	1.92	1221.199	72	79	79	2	260	260	54
2-2	12:10:00	1.80	1.92	1229.012	72	79	79	2	260	260	50
2-3	12:20:00	1.90	2.02	1236.825	72	79	79	2	260	260	47
2-3	12:30:00	1.90	2.02	1244.852	75	80	80	2	260	260	49
2-3	12:40:00	1.90	2.02	1252.871	73	79	79	2	260	260	48
2-3	12:50:00	1.90	2.02	1260.890	73	80	80	2	260	260	48
2-4	13:00:00	1.80	1.91	1268.925	73	79	79	2	260	260	47
2-4	13:10:00	1.80	1.91	1276.730	73	79	79	2	260	260	47
2-4	13:20:00	1.80	1.91	1284.536	74	80	80	2	260	260	47
2-4	13:30:00	1.80	1.91	1292.349	74	80	80	2	260	260	46

Run 1 - Method ODEQ 5

Client: PCC Structurals, Inc. **Date:** 7/31/25
Facility: Large Parts Campus Facility - Milwaukie, OR **Start Time:** 6:05
Test Location: Baghouse 8901 Inlet **End Time:** 15:45
Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.95	in. H_2O	Static Pressure	-5.50	in. H_2O
Meter Temperature, Tm:	77.6	°F	Flue Pressure (Ps):	29.52	in. Hg. abs.
Sqrt ΔP:	1.354	in. H_2O			
Stack Temperature, Ts:	70.6	°F			
Meter Volume, Vm:	377.858	ft^3			
Meter Volume, Vmstd:	369.556	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	3.598	wscf	Gas Weight wet, Ms:	28.894	lb/lb mole
Isokinetic Variance:	100.8	%I			
			Gas Velocity, Vs:	76.654	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,612	acfm
Nozzle Diameter:	0.177	in inches	Volumetric Flow:	3,512	dscfm
Barometric Pressure:	29.92	in Hg	Volumetric Flow:	3,546	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	2150.7	ml	Silica Initial Wt.	894.1	grams
Final Impinger Content:	2181.2	ml	Silica Final Wt.	940.0	grams
Impinger Difference:	30.5	ml	Silica Difference:	45.9	grams

Total Water Gain: 76.4 Moisture, Bws: 0.010 **Supersaturation Value, Bws: 0.026**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
2-5	13:40:00	1.90	2.02	1300.161	74	81	81	2	260	260	46
2-5	13:50:00	1.90	2.02	1308.203	74	81	81	2	260	260	46
	14:00:00			1316.245							
2-5	14:45:00	1.90	2.02	1316.245	75	81	81	2	260	260	49
2-5	14:55:00	1.90	2.02	1324.279	76	81	81	2	260	260	42
2-6	15:05:00	1.75	1.85	1332.306	78	82	82	2	260	260	43
2-6	15:15:00	1.75	1.86	1340.009	78	83	83	2	260	260	42
2-6	15:25:00	1.75	1.86	1347.726	78	84	84	2	260	260	42
2-6	15:35:00	1.75	1.86	1355.458	78	84	84	2	260	260	42
	15:45:00			1363.190							
Total	8:00:00			377.858		77.6	77.6				
Average			1.95		70.6	77.6		2			
Min			1.79		66.0	69.0		2			
Max			2.15		78.0	84.0		2			

Impinger Weight Sheet - Run 1

Client:	**PCC Structurals, Inc.**	**Scale Calibration Check Date:**	**7/31/2025**
Facility:	**Large Parts Campus Facility - Milwauki**	**Scale Calibration Check (see QS-6.05C for procedure)**	
Test Location:	**Baghouse 8901 Inlet**	**must be within ± 0.5g of certified mass**	
Project #:	**M253113**	**Certified Weight, grams**	**Result, grams**
Date:	**7/31/2025**	**250**	**250.0**
Test Method:	**ODEQ 5**		
Weighed/Measured By:	**RICHS**	**500**	**500.0**
Balance ID:	**S10-07**		
		750	**750.0**

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
DI Water	709.7	730.0	-20.3
DI Water	792.6	775.0	17.6
Empty	678.9	645.7	33.2
Silica Gel	940.0	894.1	45.9
	2,181.2 **Liquid Final**	2,150.7 **Liquid Initial**	30.5 **Liquid Gain**
	940.0 **Silica Final**	894.1 **Silica Initial**	45.9 **Silica Gain**

Run 2 - Method ODEQ 5

Client: PCC Structurals, Inc. **Date:** 8/1/25
Facility: Large Parts Campus Facility - Milwaukie, OR **Start Time:** 6:05
Test Location: Baghouse 8901 Inlet **End Time:** 16:51
Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.96	In. H_2O	Static Pressure	-5.50	in. H_2O
Meter Temperature, Tm:	78.1	°F	Flue Pressure (Ps):	29.52	in. Hg. abs.
Sqrt ΔP:	1.360	In. H_2O			
Stack Temperature, Ts:	74.5	°F			
Meter Volume, Vm:	378.487	ft^3			
Meter Volume, Vmstd:	369.789	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	4.644	wscf	Gas Weight wet, Ms:	28.864	lb/lb mole
Isokinetic Variance:	101.0	%I			
			Gas Velocity, Vs:	77.311	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,643	acfm
Nozzle Diameter:	0.177	in inches	Volumetric Flow:	3,506	dscfm
Barometric Pressure:	29.92	in Hg	Volumetric Flow:	3,550	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	2083.0	ml	Silica Initial Wt.	860.2	grams
Final Impinger Content:	2124.8	ml	Silica Final Wt.	917.0	grams
Impinger Difference:	41.8	ml	Silica Difference:	56.8	grams
Total Water Gain:	98.6		Moisture, Bws: 0.012	**Supersaturation Value, Bws:**	**0.029**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
1-1	6:05:00	2.00	2.09	366.702	70	67	67	2	260	260	53
1-1	6:15:00	2.00	2.10	374.769	68	67	67	2	260	260	56
1-1	6:25:00	2.00	2.11	382.852	66	68	68	2	260	260	58
1-1	6:35:00	2.00	2.11	390.965	66	69	69	2	260	260	58
1-2	6:45:00	1.90	2.01	399.094	66	70	70	2	260	260	58
	6:55:00			407.032							
1-2	7:30:00	1.90	2.02	407.032	65	72	72	2	260	260	46
1-2	7:40:00	1.90	2.02	415.007	67	72	72	2	260	260	45
1-2	7:50:00	1.90	2.02	422.968	66	73	73	2	260	260	47
1-3	8:00:00	2.00	2.13	430.950	66	74	74	2	260	260	47
1-3	8:10:00	2.00	2.13	439.156	67	74	74	2	260	260	48
1-3	8:20:00	2.00	2.13	447.354	67	74	74	2	260	260	48
1-3	8:30:00	2.00	2.13	455.551	67	75	75	2	260	260	49
1-4	8:40:00	1.85	1.97	463.764	67	75	75	2	260	260	47
	8:50:00			471.663							
1-4	9:15:00	1.85	1.97	471.663	67	74	74	2	260	260	44
1-4	9:25:00	1.85	1.97	479.547	69	75	75	2	260	260	45
1-4	9:35:00	1.85	1.97	487.431	68	76	76	2	260	260	47
1-5	9:45:00	1.70	1.81	495.338	69	76	76	2	260	260	46
1-5	9:55:00	1.70	1.81	502.910	69	77	77	2	260	260	46
1-5	10:05:00	1.70	1.81	510.496	70	77	77	2	260	260	45
1-5	10:15:00	1.70	1.81	518.075	70	77	77	2	260	260	46
1-6	10:25:00	1.75	1.87	525.653	70	78	78	2	260	260	47
1-6	10:35:00	1.75	1.86	533.357	70	78	78	2	260	260	46
1-6	10:45:00	1.75	1.86	541.054	72	78	78	2	260	260	45
1-6	10:55:00	1.75	1.85	548.750	75	78	78	2	260	260	45
	11:05:00			556.418							
2-1	11:10:00	1.90	2.02	557.058	73	79	79	2	260	260	47
2-1	11:20:00	1.90	2.02	565.077	74	79	79	2	260	260	46
2-1	11:30:00	1.90	2.02	573.089	73	80	80	2	260	260	48
	11:40:00			581.124							
2-1	12:10:00	1.90	1.98	581.124	82	78	78	2	260	260	54
2-2	12:20:00	2.00	2.11	589.062	76	78	78	2	260	260	49
2-2	12:30:00	2.00	2.11	597.251	77	79	79	2	260	260	49
2-2	12:40:00	2.00	2.11	605.448	77	79	79	2	260	260	50
2-2	12:50:00	2.00	2.11	613.645	78	80	80	2	260	260	50
2-3	13:00:00	1.80	1.90	621.850	78	81	81	2	260	260	51
2-3	13:10:00	1.80	1.91	629.648	78	82	82	2	260	260	51
	13:20:00			637.461							
2-3	14:14:00	1.80	1.90	637.461	80	81	81	2	260	260	55
2-3	14:24:00	1.80	1.89	645.245	81	81	81	2	260	260	49
	14:34:00			653.021							
2-4	14:51:00	1.75	1.84	653.021	81	82	82	2	260	260	55
2-4	15:01:00	1.75	1.84	660.703	82	83	83	2	260	260	51

Run 2 - Method ODEQ 5

Client: PCC Structurals, Inc. | **Date: 8/1/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:05**

Test Location: Baghouse 8901 Inlet | **End Time: 16:51**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.96	In. H_2O	Static Pressure	-5.50	in. H_2O
Meter Temperature, Tm:	78.1	°F	Flue Pressure (Ps):	29.52	in. Hg. abs.
Sqrt ΔP:	1.360	In. H_2O			
Stack Temperature, Ts:	74.5	°F			
Meter Volume, Vm:	378.487	ft^3			
Meter Volume, Vmstd:	369.789	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	4.644	wscf	Gas Weight wet, Ms:	28.864	lb/lb mole
Isokinetic Variance:	101.0	%I			
			Gas Velocity, Vs:	77.311	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,643	acfm
Nozzle Diameter:	0.177	in inches	Volumetric Flow:	3,506	dscfm
Barometric Pressure:	29.92	in Hg	Volumetric Flow:	3,550	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	2083.0	ml	Silica Initial Wt.	860.2	grams
Final Impinger Content:	2124.8	ml	Silica Final Wt.	917.0	grams
Impinger Difference:	41.8	ml	Silica Difference:	56.8	grams

Total Water Gain: 98.6 | Moisture, Bws: 0.012 | **Supersaturation Value, Bws: 0.029**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
2-4	15:11:00	1.75	1.84	668.392	82	83	83	2	260	260	51
2-4	15:21:00	1.75	1.85	676.080	82	84	84	2	260	260	52
2-5	15:31:00	1.85	1.95	683.783	82	84	84	2	260	260	52
2-5	15:41:00	1.85	1.94	691.704	86	85	85	2	260	260	53
2-5	15:51:00	1.85	1.93	699.909	89	85	85	2	260	260	53
2-5	16:01:00	1.85	1.93	707.493	89	85	85	2	260	260	53
2-6	16:11:00	1.70	1.79	715.377	86	86	86	2	260	260	54
2-6	16:21:00	1.70	1.80	722.969	84	87	87	2	260	260	53
2-6	16:31:00	1.70	1.79	730.589	86	88	88	2	260	260	56
2-6	16:41:00	1.70	1.80	738.029	84	87	87	2	260	260	52
	16:51:00			745.829							
Total	8:00:00			378.487		78.1	78.1				
Average			1.96		74.5	78.1		2			
Min			1.79		65.0	67.0		2			
Max			2.13		89.0	88.0		2			

Impinger Weight Sheet - Run 2

Client:	**PCC Structurals, Inc.**	**Scale Calibration Check Date:**	**7/31/2025**
Facility:	**Large Parts Campus Facility - Milwauki**	**Scale Calibration Check (see QS-6.05C for procedure)**	
Test Location:	**Baghouse 8901 Inlet**	**must be within ± 0.5g of certified mass**	
Project #:	**M253113**	**Certified Weight, grams**	**Result, grams**
Date:	**8/1/2025**	**250**	**250.0**
Test Method:	**ODEQ 5**		
Weighed/Measured By:	**RICHS**	**500**	**500.0**
Balance ID:	**S10-07**		
		750	**750.0**

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
DI Water	713.0	728.3	-15.3
DI Water	741.9	707.4	34.5
Empty	669.9	647.3	22.6
Silica Gel	917.0	860.2	56.8
	2,124.8 **Liquid Final**	2,083.0 **Liquid Initial**	41.8 **Liquid Gain**
	917.0 **Silica Final**	860.2 **Silica Initial**	56.8 **Silica Gain**

Client:	PCC Structurals, Inc.
Facility:	Large Parts Campus Facility - Milwaukie, OR
Test Location:	Baghouse 8901 Outlet
Project #:	M253113
Test Method:	29
Test Engineer:	DV
Test Technician:	RICHS

	Run 1	**Run 2**
Meter ID:	CM7	CM7
Pitot ID:	4032	4032
Nozzle Diameter (Inches):	0.175	0.175
Meter Calibration Date:	7/2/2025	7/2/2025
Meter Calibration Factor (Y):	1.016	1.016
Meter Orifice Setting (Delta H):	1.509	1.509
Nozzle Kit ID Number and Material:	Glass Set #1 (#23)	Glass Set #1 (#23)

Leak Checks

Pre Pitot Leak Check	**0.0**	**@**	**4.5**	**"H_2O**	**0.0**	**@**	**4.0**	**"H_2O**
Post Pitot Leak Check	**0.0**	**@**	**4.8**	**"H_2O**	**0.0**	**@**	**4.3**	**"H_2O**
Pre Nozzle Leak Check	**0.000**	**@**	**15**	**"Hg**	**0.000**	**@**	**15**	**"Hg**
Post Nozzle Leak Check	**0.000**	**@**	**15**	**"Hg**	**0.000**	**@**	**16**	**"Hg**

Pitot Tube Coefficient:	0.840
Probe Length (Feet):	3.0
Probe Liner Material:	Glass
Sample Plane:	Horizontal
Port Length (Inches):	3.00
Port Size (Diameter, Inches):	3.00
Port Type:	Nipple
Duct Shape:	Circular
Diameter (Feet):	1.00
Duct Area (Square Feet):	0.785
Upstream Diameters:	3.0
Downstream Diameters:	3.0
Number of Ports Sampled:	2
Number of Points per Port:	12
Minutes per Point:	20.0
Minutes per Reading:	10.0
Total Number of Traverse Points:	24
Test Length (Minutes):	480
Train Type:	Anderson Box
Source Condition:	Batch Process
Moisture Balance ID:	S10-07
# of Runs	2

Run 1 - Method 29

Client: PCC Structurals, Inc. | **Date: 7/29/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:20**

Test Location: Baghouse 8901 Outlet | **End Time: 16:32**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.27	in. H_2O	Static Pressure	2.20	in. H_2O
Meter Temperature, Tm:	87.2	°F	Flue Pressure (Ps):	30.06	in. Hg. abs.
Sqrt ΔP:	1.210	in. H_2O			
Stack Temperature, Ts:	82.0	°F			
Meter Volume, Vm:	327.314	ft^3			
Meter Volume, Vmstd:	321.649	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	5.035	wscf	Gas Weight wet, Ms:	28.830	lb/lb mole
Isokinetic Variance:	101.0	%I			
			Gas Velocity, Vs:	68.677	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,236	acfm
Nozzle Diameter:	0.175	in inches	Volumetric Flow:	3,119	dscfm
Barometric Pressure:	29.90	in Hg	Volumetric Flow:	3,168	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	3647.0	ml	Silica Initial Wt.	1781.1	grams
Final Impinger Content:	3704.6	ml	Silica Final Wt.	1830.4	grams
Impinger Difference:	57.6	ml	Silica Difference:	49.3	grams

Total Water Gain: 106.9 | Moisture, Bws: 0.015 | **Supersaturation Value, Bws: 0.037**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
1-1	6:20:00	1.10	0.92	322.735	68	64	62	5	249	249	62
1-1	6:30:00	1.10	0.92	328.454	68	64	62	5	250	251	62
1-2	6:40:00	1.00	0.84	334.172	68	66	62	4	249	251	61
1-2	6:50:00	1.00	0.84	339.634	69	67	62	4	250	250	61
1-3	7:00:00	1.10	0.93	345.097	69	75	64	3	250	250	60
1-3	7:10:00	1.10	0.93	350.880	70	71	65	3	251	249	60
1-4	7:20:00	1.20	1.02	356.642	70	74	67	3	250	250	61
1-4	7:30:00	1.20	1.02	362.688	70	74	68	3	250	250	61
1-5	7:40:00	1.40	1.19	368.741	71	75	69	4	250	250	60
1-5	7:50:00	1.40	1.19	375.284	72	76	69	4	252	250	60
1-6	8:00:00	2.20	1.87	381.827	72	77	71	3	249	250	59
1-6	8:10:00	2.20	1.87	390.052	73	78	72	3	251	250	58
1-7	8:20:00	2.00	1.71	398.285	72	80	73	4	250	249	58
1-7	8:30:00	2.00	1.71	406.165	73	82	75	3	252	250	58
1-8	8:40:00	1.40	1.20	414.066	73	82	75	3	253	249	58
1-8	8:50:00	1.40	1.20	420.677	74	82	76	3	249	251	58
1-9	9:00:00	1.20	1.03	427.267	74	84	77	3	248	250	60
1-9	9:10:00	1.20	1.03	433.425	74	84	78	3	251	250	60
1-10	9:20:00	1.10	0.94	439.568	75	84	78	3	250	251	61
1-10	9:30:00	1.10	0.94	445.444	76	84	78	3	249	250	62
1-11	9:40:00	1.00	0.86	451.368	77	85	80	3	249	251	62
1-11	9:50:00	1.00	0.86	456.976	78	86	81	3	252	251	62
1-12	10:00:00	1.00	0.86	462.589	78	87	82	3	251	251	63
1-12	10:10:00	1.00	0.86	468.212	79	90	82	3	249	250	63
	10:20:00			473.845							
2-1	12:00:00	1.20	1.02	477.625	84	86	86	3	249	250	60
2-1	12:10:00	1.20	1.02	483.769	84	89	86	3	249	250	57
2-2	12:20:00	1.10	0.94	489.928	86	90	87	3	250	251	56
2-2	12:30:00	1.10	0.94	495.825	86	93	88	3	251	250	57
2-3	12:40:00	2.00	1.71	501.744	86	94	91	3	249	250	58
2-4	12:50:00	2.00	1.71	509.753	89	97	92	3	250	248	60
2-5	13:00:00	2.00	1.72	517.770	86	97	93	3	250	252	60
2-6	13:10:00	2.20	1.90	525.816	87	99	94	3	248	250	61
2-7	13:20:00	2.20	1.89	534.269	91	100	95	3	253	250	61
2-8	13:30:00	2.00	1.72	542.707	90	102	97	3	251	250	64
	13:40:00			550.789							
2-9	13:50:00	1.50	1.29	550.789	91	102	98	3	248	251	64
2-10	14:00:00	1.50	1.29	557.789	91	103	98	3	250	252	63
2-11	14:10:00	1.50	1.29	564.794	93	105	100	3	248	249	62
2-12	14:20:00	1.50	1.29	571.823	93	106	101	3	250	249	63
	14:30:00			578.841							
2-12	14:40:00	1.60	1.37	578.841	97	103	101	3	250	249	56
2-11	14:50:00	1.60	1.37	586.057	96	103	100	3	252	248	58

Run 1 - Method 29

Client: PCC Structurals, Inc. | **Date: 7/29/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:20**

Test Location: Baghouse 8901 Outlet | **End Time: 16:32**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.27	in. H_2O	Static Pressure	2.20	in. H_2O
Meter Temperature, Tm:	87.2	°F	Flue Pressure (Ps):	30.06	in. Hg. abs.
Sqrt ΔP:	1.210	in. H_2O			
Stack Temperature, Ts:	82.0	°F			
Meter Volume, Vm:	327.314	ft^3			
Meter Volume, Vmstd:	321.649	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	5.035	wscf	Gas Weight wet, Ms:	28.830	lb/lb mole
Isokinetic Variance:	101.0	%I			
			Gas Velocity, Vs:	68.677	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,236	acfm
Nozzle Diameter:	0.175	in inches	Volumetric Flow:	3,119	dscfm
Barometric Pressure:	29.90	in Hg	Volumetric Flow:	3,168	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	3647.0	ml	Silica Initial Wt.	1781.1	grams
Final Impinger Content:	3704.6	ml	Silica Final Wt.	1830.4	grams
Impinger Difference:	57.6	ml	Silica Difference:	49.3	grams

Total Water Gain: 106.9 | Moisture, Bws: 0.015 | **Supersaturation Value, Bws: 0.037**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
2-10	15:00:00	1.50	1.29	593.272	96	105	101	3	250	250	60
2-9	15:10:00	2.00	1.72	600.276	95	107	101	3	251	249	60
	15:20:00			608.386							
2-8	15:32:00	2.00	1.73	608.386	95	108	103	3	250	250	62
2-7	15:42:00	2.00	1.73	616.518	95	109	103	3	250	249	56
2-6	15:52:00	1.80	1.56	624.657	95	110	103	3	250	251	55
2-5	16:02:00	1.60	1.39	632.385	95	112	104	3	249	250	56
2-4	16:12:00	1.50	1.30	639.690	96	112	105	3	250	249	57
2-3	16:22:00	1.50	1.30	646.763	96	111	105	3	250	252	57
	16:32:00			653.829							
Total	8:00:00			327.314		89.9	84.6				
Average			1.27		82.0	87.2		3			
Min			0.84		68.0	62.0		3			
Max			1.90		97.0	112.0		5			

Impinger Weight Sheet - Run 1

Client:	**PCC Structurals, Inc.**
Facility:	**Large Parts Campus Facility - Milwauki**
Test Location:	**Baghouse 8901 Outlet**
Project #:	**M253113**
Date:	**7/29/2025**
Test Method:	**29**
Weighed/Measured By:	**RICHS**
Balance ID:	**S10-07**

Scale Calibration Check Date: **7/29/2025**

Scale Calibration Check (see QS-6.05C for procedure)
must be within ± 0.5g of certified mass

Certified Weight, grams	Result, grams
250	250.0
500	500.0
750	750.0

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
HNO3/H2O2	754.5	774.7	-20.2
HNO3/H2O2	785.8	739.5	46.3
Empty	700.2	631.3	68.9
KMnO4/H2SO4	743.2	722.6	20.6
KMnO4/H2SO4	720.9	778.9	-58.0
Silica Gel	929.1	909.4	19.7
Silica Gel	901.3	871.7	29.6
	3,704.6 **Liquid Final**	3,647.0 **Liquid Initial**	57.6 **Liquid Gain**
	1,830.4 **Silica Final**	1,781.1 **Silica Initial**	49.3 **Silica Gain**

Run 2 - Method 29

Client: PCC Structurals, Inc. | **Date: 7/30/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:25**

Test Location: Baghouse 8901 Outlet | **End Time: 16:45**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.42	In. H_2O	Static Pressure	2.20	in. H_2O
Meter Temperature, Tm:	85.8	°F	Flue Pressure (Ps):	30.06	in. Hg. abs.
Sqrt ΔP:	1.286	In. H_2O			
Stack Temperature, Ts:	80.5	°F			
Meter Volume, Vm:	346.891	ft^3			
Meter Volume, Vmstd:	341.910	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	3.151	wscf	Gas Weight wet, Ms:	28.900	lb/lb mole
Isokinetic Variance:	100.4	%I			
			Gas Velocity, Vs:	72.789	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,430	acfm
Nozzle Diameter:	0.175	in inches	Volumetric Flow:	3,336	dscfm
Barometric Pressure:	29.90	in Hg	Volumetric Flow:	3,367	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	3643.9	ml	Silica Initial Wt.	1597.3	grams
Final Impinger Content:	3676.9	ml	Silica Final Wt.	1631.2	grams
Impinger Difference:	33.0	ml	Silica Difference:	33.9	grams

Total Water Gain: 66.9 Moisture, Bws: 0.009 **Supersaturation Value, Bws: 0.035**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
1-1	6:25:00	1.50	1.25	656.910	73	64	63	3	251	249	41
1-1	6:35:00	1.50	1.25	663.563	73	67	64	3	249	252	44
1-2	6:45:00	1.50	1.26	670.241	73	71	65	3	250	249	45
1-2	6:55:00	1.60	1.35	676.950	73	73	65	3	250	248	44
1-3	7:05:00	1.80	1.52	683.891	74	75	67	3	249	251	46
1-3	7:15:00	1.80	1.52	691.277	73	75	69	3	250	253	42
1-4	7:25:00	1.60	1.35	698.682	75	77	69	3	250	249	43
1-4	7:35:00	1.60	1.36	705.664	74	78	70	3	250	249	43
1-5	7:45:00	2.00	1.69	712.665	74	78	70	3	248	252	43
1-5	7:55:00	2.00	1.70	720.494	74	80	71	3	248	249	45
1-6	8:05:00	2.10	1.79	728.344	75	82	72	3	249	250	43
1-6	8:15:00	2.10	1.80	736.402	74	84	74	3	249	250	46
	8:25:00			744.499							
1-7	9:00:00	2.20	1.86	744.499	76	77	75	3	248	249	51
1-7'	9:10:00	2.20	1.87	752.725	76	82	76	3	250	250	47
1-8	9:20:00	2.00	1.70	760.997	77	84	77	3	250	251	49
1-8'	9:30:00	2.00	1.71	768.898	76	85	77	3	249	251	49
1-9	9:40:00	1.50	1.28	776.814	76	85	77	3	249	251	50
1-9'	9:50:00	1.60	1.37	783.669	77	86	78	3	248	250	50
1-10	10:00:00	1.50	1.28	790.754	78	88	80	3	249	251	52
1-10'	10:10:00	1.50	1.29	797.636	78	89	81	3	252	251	53
1-11	10:20:00	1.20	1.03	804.529	78	90	82	3	250	250	55
1-11'	10:30:00	1.20	1.03	810.705	79	90	83	3	249	250	55
1-12	10:40:00	1.60	1.37	816.882	79	88	82	3	250	251	55
1-12'	10:50:00	1.60	1.37	823.995	80	88	82	3	251	248	57
	11:00:00			831.101							
2-1	11:45:00	1.50	1.28	831.310	81	84	82	3	249	251	40
2-1'	11:55:00	1.50	1.28	838.160	82	88	84	3	250	251	45
2-2	12:05:00	1.80	1.55	845.040	82	93	87	3	251	251	44
2-2'	12:15:00	1.80	1.55	852.632	83	96	90	3	250	249	47
2-3'	12:25:00	2.00	1.73	860.258	83	99	92	3	249	252	47
2-3'	12:35:00	2.00	1.74	868.333	83	101	93	3	250	250	48
2-4'	12:45:00	1.80	1.56	876.430	84	100	94	3	251	252	50
2-4'	12:55:00	1.80	1.56	884.105	85	99	93	3	250	250	51
2-5'	13:05:00	1.80	1.56	891.759	85	99	95	3	251	250	49
2-5'	13:15:00	1.80	1.56	899.427	85	99	96	3	252	250	50
	13:25:00			907.101							
2-6'	13:45:00	2.00	1.72	907.101	86	94	92	3	252	251	50
2-6'	13:55:00	2.00	1.72	915.119	86	95	91	3	250	250	50
2-7'	14:05:00	1.60	1.37	923.136	86	95	91	3	251	250	50
	14:15:00			930.306							
2-7'	14:55:00	1.60	1.37	930.306	85	92	89	3	252	250	52
2-8'	15:05:00	1.60	1.37	937.452	86	94	89	3	250	249	59

Run 2 - Method 29

Client: PCC Structurals, Inc. | **Date: 7/30/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:25**

Test Location: Baghouse 8901 Outlet | **End Time: 16:45**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.42	In. H_2O	Static Pressure	2.20	in. H_2O
Meter Temperature, Tm:	85.8	°F	Flue Pressure (Ps):	30.06	in. Hg. abs.
Sqrt ΔP:	1.286	In. H_2O			
Stack Temperature, Ts:	80.5	°F			
Meter Volume, Vm:	346.891	ft^3			
Meter Volume, Vmstd:	341.910	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	3.151	wscf	Gas Weight wet, Ms:	28.900	lb/lb mole
Isokinetic Variance:	100.4	%I			
			Gas Velocity, Vs:	72.789	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,430	acfm
Nozzle Diameter:	0.175	in inches	Volumetric Flow:	3,336	dscfm
Barometric Pressure:	29.90	in Hg	Volumetric Flow:	3,367	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	3643.9	ml	Silica Initial Wt.	1597.3	grams
Final Impinger Content:	3676.9	ml	Silica Final Wt.	1631.2	grams
Impinger Difference:	33.0	ml	Silica Difference:	33.9	grams

Total Water Gain: 66.9 | Moisture, Bws: 0.009 | **Supersaturation Value, Bws: 0.035**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
2-8'	15:15:00	1.60	1.37	944.603	86	94	89	3	250	250	60
2-9'	15:25:00	1.50	1.29	951.527	86	97	90	3	250	248	60
2-9'	15:35:00	1.50	1.29	958.703	86	99	91	3	248	251	61
2-10'	15:45:00	1.40	1.21	965.671	87	101	92	3	253	250	60
2-10'	15:55:00	1.30	1.12	972.414	88	103	95	3	251	250	60
2-11'	16:05:00	1.20	1.04	978.936	88	103	95	3	252	250	62
2-11'	16:15:00	1.20	1.04	985.202	88	104	97	3	248	251	60
2-12'	16:25:00	1.20	1.04	991.484	88	103	96	3	250	251	57
2-12'	16:35:00	1.20	1.03	997.756	88	100	96	3	251	250	54
	16:45:00			1004.010							
Total	8:00:00			346.891		88.9	82.7				
Average			1.42		80.5	85.8		3			
Min			1.03		73.0	63.0		3			
Max			1.87		88.0	104.0		3			

Impinger Weight Sheet - Run 2

Client:	**PCC Structurals, Inc.**
Facility:	**Large Parts Campus Facility - Milwauki**
Test Location:	**Baghouse 8901 Outlet**
Project #:	**M253113**
Date:	**7/30/2025**
Test Method:	**29**
Weighed/Measured By:	**RICHS**
Balance ID:	**S10-07**

Scale Calibration Check Date: **7/29/2025**

Scale Calibration Check (see QS-6.05C for procedure)
must be within ± 0.5g of certified mass

Certified Weight, grams	Result, grams
250	250.0
500	500.0
750	750.0

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
HNO3/H2O2	749.0	746.8	2.2
HNO3/H2O2	792.5	770.0	22.5
Empty	669.2	650.0	19.2
KMnO4/H2SO4	736.2	735.0	1.2
KMnO4/H2SO4	730.0	742.1	-12.1
Silica Gel	901.2	855.2	46.0
	3,676.9 **Liquid Final**	3,643.9 **Liquid Initial**	33.0 **Liquid Gain**
	901.2 **Silica Final**	855.2 **Silica Initial**	46.0 **Silica Gain**

Client:	PCC Structurals, Inc.
Facility:	Large Parts Campus Facility - Milwaukie, OR
Test Location:	Baghouse 8901 Outlet
Project #:	M253113
Test Method:	0061
Test Engineer:	EE
Test Technician:	RICHS

	Run 1	**Run 2**
Meter ID:	CM23	CM23
Pitot ID:		
Nozzle Diameter (Inches):	0.205	0.205
Meter Calibration Date:	7/16/2025	7/16/2025
Meter Calibration Factor (Y):	1.003	1.003
Meter Orifice Setting (Delta H):	1.863	1.863
Nozzle Kit ID Number and Material:	Glass #5	Glass #5

Leak Checks

Pre Pitot Leak Check	**0.0**	**@**	**3.6**	**"H_2O**	**0.0**	**@**	**3.7**	**"H_2O**
Post Pitot Leak Check	**0.0**	**@**	**4.4**	**"H_2O**	**0.0**	**@**	**3.3**	**"H_2O**
Pre Nozzle Leak Check	**0.012**	**@**	**12**	**"Hg**	**0.004**	**@**	**10**	**"Hg**
Post Nozzle Leak Check	**0.004**	**@**	**10**	**"Hg**	**0.002**	**@**	**10**	**"Hg**

Pitot Tube Coefficient:	0.840
Probe Length (Feet):	3.0
Probe Liner Material:	Glass
Sample Plane:	Horizontal
Port Length (Inches):	3.25
Port Size (Diameter, Inches):	3.00
Port Type:	Nipple
Duct Shape:	Circular
Diameter (Feet):	1.00
Duct Area (Square Feet):	0.785
Upstream Diameters:	3.0
Downstream Diameters:	3.0
Number of Ports Sampled:	2
Number of Points per Port:	12
Minutes per Point:	20.0
Minutes per Reading:	10.0
Total Number of Traverse Points:	24
Test Length (Minutes):	480
Train Type:	Anderson Box
Source Condition:	Batch Process
Moisture Balance ID:	S10-07
# of Runs	2

Run 1 - Method 0061

Client: PCC Structurals, Inc. | **Date: 7/29/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:20**

Test Location: Baghouse 8901 Outlet | **End Time: 16:32**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	3.61	in. H_2O	Static Pressure	2.20	in. H_2O
Meter Temperature, Tm:	94.3	°F	Flue Pressure (Ps):	30.06	in. Hg. abs.
Sqrt ΔP:	1.352	in. H_2O			
Stack Temperature, Ts:	83.9	°F			
Meter Volume, Vm:	502.047	ft^3			
Meter Volume, Vmstd:	483.595	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	5.181	wscf	Gas Weight wet, Ms:	28.883	lb/lb mole
Isokinetic Variance:	98.8	%I			
			Gas Velocity, Vs:	76.790	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,619	acfm
Nozzle Diameter:	0.205	in inches	Volumetric Flow:	3,492	dscfm
Barometric Pressure:	29.90	in Hg	Volumetric Flow:	3,530	scfm

MOISTURE DETERMINATION

Total Water Gain: | Moisture, Bws: 0.015 | **Supersaturation Value, Bws: 0.039**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Impinger Exit Temp °F
1-1	6:20:00	2.10	4.10	550.849	68	70	68	2	62
1-1	6:30:00	2.00	3.90	561.560	73	78	68	3	61
1-2	6:40:00	1.80	3.50	571.820	73	81	70	3	63
1-2	6:50:00	1.80	3.50	582.470	73	83	70	3	63
1-3	7:00:00	2.00	3.90	591.220	75	84	73	3	63
1-3	7:10:00	2.00	3.90	603.180	75	84	73	3	66
1-4	7:20:00	1.80	3.50	614.910	75	85	74	3	62
1-4	7:30:00	1.90	3.70	624.220	75	86	74	3	62
1-5	7:40:00	2.00	3.90	635.710	74	87	76	3	58
1-5	7:50:00	2.10	4.10	646.720	74	86	76	3	56
1-6	8:00:00	2.00	3.90	657.870	74	87	77	3	58
1-6	8:10:00	2.00	3.90	669.030	74	87	77	3	58
1-7	8:20:00	1.90	3.70	680.340	75	89	80	3	61
1-7	8:30:00	1.90	3.70	690.720	75	90	81	3	61
1-8	8:40:00	2.00	3.90	701.610	76	91	83	3	60
1-8	8:50:00	2.00	3.90	712.280	76	92	83	3	59
1-9	9:00:00	1.80	3.50	722.770	76	93	84	3	61
1-9	9:10:00	1.80	3.50	733.250	77	93	85	3	62
1-10	9:20:00	1.60	3.10	742.960	77	94	86	3	63
1-10	9:30:00	1.60	3.10	753.220	78	94	87	3	64
1-11	9:40:00	1.70	3.30	763.020	78	94	88	3	64
1-11	9:50:00	1.70	3.30	772.000	78	94	88	3	65
1-12	10:00:00	1.60	3.10	781.360	78	94	88	3	66
1-12	10:10:00	1.60	3.10	791.230	77	94	88	3	66
	10:20:00			800.508					
2-1	12:00:00	1.70	3.40	811.212	86	93	93	5	60
2-1	12:10:00	1.70	3.40	821.120	86	96	93	5	57
2-2	12:20:00	1.80	3.60	830.590	87	102	95	5	55
2-2	12:30:00	1.70	3.40	841.500	89	103	96	5	55
2-3	12:40:00	1.60	3.20	852.350	89	105	98	5	57
2-4	12:50:00	1.80	3.60	862.230	89	106	99	5	59
2-5	13:00:00	1.80	3.60	872.800	89	107	100	5	59
2-6	13:10:00	1.80	3.60	882.634	89	107	100	5	60
2-7	13:20:00	1.80	3.60	893.560	94	108	101	5	61
2-8	13:30:00	1.80	3.60	904.510	92	108	102	5	62
	13:40:00			915.111					
2-9	13:50:00	1.80	3.60	915.111	91	109	102	5	64
2-10	14:00:00	1.90	3.80	925.080	91	109	103	5	64
2-11	14:10:00	1.70	3.40	936.360	95	110	103	5	62
2-12	14:20:00	1.80	3.60	947.200	93	111	104	5	61
	14:30:00			956.876					
2-12	14:40:00	1.90	3.80	957.276	96	106	104	5	65
2-11	14:50:00	1.90	3.80	966.180	96	106	104	5	60

Run 1 - Method 0061

Client: PCC Structurals, Inc. | **Date: 7/29/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:20**

Test Location: Baghouse 8901 Outlet | **End Time: 16:32**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	3.61	in. H_2O	Static Pressure	2.20	in. H_2O
Meter Temperature, Tm:	94.3	°F	Flue Pressure (Ps):	30.06	in. Hg. abs.
Sqrt ΔP:	1.352	in. H_2O			
Stack Temperature, Ts:	83.9	°F			
Meter Volume, Vm:	502.047	ft^3			
Meter Volume, Vmstd:	483.595	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	5.181	wscf	Gas Weight wet, Ms:	28.883	lb/lb mole
Isokinetic Variance:	98.8	%I			
			Gas Velocity, Vs:	76.790	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,619	acfm
Nozzle Diameter:	0.205	in inches	Volumetric Flow:	3,492	dscfm
Barometric Pressure:	29.90	in Hg	Volumetric Flow:	3,530	scfm

MOISTURE DETERMINATION

Moisture, Bws: 0.015 **Supersaturation Value, Bws: 0.039**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Impinger Exit Temp °F
2-10	15:00:00	1.80	3.60	978.330	96	109	104	5	62
2-9	15:10:00	1.90	3.80	987.020	96	111	104	5	62
	15:20:00			1000.150					
2-8	15:32:00	1.90	3.80	1000.150	97	114	106	5	62
2-7	15:42:00	1.90	3.80	1011.450	96	115	106	5	62
2-6	15:52:00	1.80	3.60	1022.020	96	115	106	5	57
2-5	16:02:00	1.90	3.80	1033.030	96	117	107	5	56
2-4	16:12:00	1.80	3.60	1043.870	96	116	107	5	56
2-3	16:22:00	1.60	3.20	1054.330	96	117	107	5	57
	16:32:00			1064.000					
Total	8:00:00			502.047		98.1	90.4		
Average			3.61		83.9	94.3		4	
Min			3.10		68.0	68.0		2	
Max			4.10		97.0	117.0		5	

Run 2 - Method 0061

Client: PCC Structurals, Inc. | **Date: 7/30/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:25**

Test Location: Baghouse 8901 Outlet | **End Time: 16:45**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	3.53	In. H_2O	Static Pressure	2.00	in. H_2O
Meter Temperature, Tm:	89.9	°F	Flue Pressure (Ps):	30.08	in. Hg. abs.
Sqrt ΔP:	1.347	In. H_2O			
Stack Temperature, Ts:	83.2	°F			
Meter Volume, Vm:	506.453	ft^3			
Meter Volume, Vmstd:	492.150	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	5.181	wscf	Gas Weight wet, Ms:	28.582	lb/lb mole
Isokinetic Variance:	103.2	%I			
			Gas Velocity, Vs:	76.863	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,622	acfm
Nozzle Diameter:	0.205	in inches	Volumetric Flow:	3,404	dscfm
Barometric Pressure:	29.93	in Hg	Volumetric Flow:	3,539	scfm

MOISTURE DETERMINATION

Moisture, Bws: 0.009 **Supersaturation Value, Bws: 0.038**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Impinger Exit Temp °F
1-1	6:25:00	1.90	3.70	64.710	76	66	65	7	55
1-1	6:35:00	1.80	3.50	75.120	76	70	65	7	58
1-2	6:45:00	2.10	4.10	84.920	76	74	67	7	64
1-2	6:55:00	2.10	4.10	96.180	76	77	68	7	67
1-3	7:05:00	1.70	3.30	107.930	77	81	70	6	58
1-3	7:15:00	1.80	3.50	117.750	76	81	71	6	50
1-4	7:25:00	2.00	3.90	127.850	77	83	72	7	51
1-4	7:35:00	2.00	3.90	138.970	77	85	74	7	50
1-5	7:45:00	1.70	3.30	150.700	77	85	74	6	50
1-5	7:55:00	1.80	3.50	160.920	77	85	75	6	52
1-6	8:05:00	1.80	3.50	170.710	77	86	76	6	52
1-6	8:15:00	1.70	3.30	181.840	77	88	78	6	52
	8:25:00			191.966					
1-7	9:00:00	2.00	3.90	191.966	79	87	82	7	49
1-7	9:10:00	2.00	3.90	203.440	79	90	82	7	52
1-8	9:20:00	2.00	3.90	214.630	79	91	83	7	53
1-8	9:30:00	2.00	3.90	225.520	79	92	83	6	54
1-9	9:40:00	1.90	3.70	236.890	79	92	84	6	54
1-9	9:50:00	2.00	3.90	247.160	79	93	84	6	54
1-10	10:00:00	1.80	3.50	258.330	81	96	86	6	58
1-10	10:10:00	1.90	3.70	268.220	82	96	87	6	59
1-11	10:20:00	1.90	3.70	279.650	81	97	89	6	57
1-11	10:30:00	1.80	3.50	289.950	81	96	88	6	57
1-12	10:40:00	1.80	3.50	301.060	82	95	88	6	57
1-12	10:50:00	1.80	3.50	311.450	82	95	87	6	57
	11:00:00			321.820					
2-1	11:45:00	1.80	3.50	322.090	84	86	86	7	62
2-1	11:55:00	1.70	3.30	332.590	86	91	87	6	60
2-2	12:05:00	1.70	3.30	342.830	88	95	88	6	63
2-2	12:15:00	1.70	3.30	353.330	88	97	89	6	64
2-3	12:25:00	1.80	3.50	363.350	86	100	93	7	66
2-3	12:35:00	1.80	3.50	374.120	86	102	95	7	67
2-4	12:45:00	1.70	3.30	384.500	86	103	96	7	67
2-4	12:55:00	1.70	3.30	394.510	88	104	98	7	64
2-5	13:05:00	2.00	3.90	404.890	88	105	99	7	62
2-5	13:15:00	1.90	3.70	415.630	87	105	99	7	59
	13:25:00			425.789					
2-6	13:45:00	1.90	3.70	425.789	88	96	96	7	61
2-6	13:55:00	2.00	3.90	437.210	89	96	96	7	54
2-7	14:05:00	1.80	3.50	448.650	89	99	94	7	56
	14:15:00			458.756					
2-7	14:55:00	1.60	3.10	458.756	88	91	91	6	55
2-8	15:05:00	1.70	3.30	468.520	88	94	91	6	56

Run 2 - Method 0061

Client: PCC Structurals, Inc. | **Date: 7/30/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:25**

Test Location: Baghouse 8901 Outlet | **End Time: 16:45**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	3.53	In. H_2O	Static Pressure	2.00	in. H_2O
Meter Temperature, Tm:	89.9	°F	Flue Pressure (Ps):	30.08	in. Hg. abs.
Sqrt ΔP:	1.347	In. H_2O			
Stack Temperature, Ts:	83.2	°F			
Meter Volume, Vm:	506.453	ft^3			
Meter Volume, Vmstd:	492.150	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	5.181	wscf	Gas Weight wet, Ms:	28.582	lb/lb mole
Isokinetic Variance:	103.2	%I			
			Gas Velocity, Vs:	76.863	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,622	acfm
Nozzle Diameter:	0.205	in inches	Volumetric Flow:	3,404	dscfm
Barometric Pressure:	29.93	in Hg	Volumetric Flow:	3,539	scfm

MOISTURE DETERMINATION

Moisture, Bws: 0.009 **Supersaturation Value, Bws: 0.038**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Impinger Exit Temp °F
2-8	15:15:00	1.80	3.50	478.500	88	99	92	7	59
2-9	15:25:00	1.80	3.50	489.200	88	101	92	7	60
2-9	15:35:00	1.70	3.30	499.750	89	103	93	7	61
2-10	15:45:00	1.60	3.10	510.270	89	105	95	6	63
2-10	15:55:00	1.60	3.10	520.590	90	107	96	6	67
2-11	16:05:00	1.70	3.30	530.830	90	108	97	6	64
2-11	16:15:00	1.70	3.30	541.120	90	108	99	6	59
2-12	16:25:00	1.60	3.10	551.280	90	107	99	6	58
2-12	16:35:00	1.60	3.10	561.230	90	107	99	6	58
	16:45:00			571.433					
Total	8:00:00			506.453		93.5	86.2		
Average			3.53		83.2	89.9		6	
Min			3.10		76.0	65.0		6	
Max			4.10		90.0	108.0		7	

Client:	PCC Structurals, Inc.	
Facility:	Large Parts Campus Facility - Milwaukie, OR	
Test Location:	Baghouse 8901 Outlet	
Project #:	M253113	
Test Method:	ODEQ 5	
Test Engineer:	ASM1	
Test Technician:	DV	
	Run 1	**Run 2**
Meter ID:	CM7	CM7
Pitot ID:	4032	4032
Filter ID:	22790	22762
Filter Pre-Weight (grams):	0.47948	0.47833
Nozzle Diameter (Inches):	0.190	0.190
Meter Calibration Date:	7/2/2025	7/2/2025
Meter Calibration Factor (Y):	1.016	1.016
Meter Orifice Setting (Delta H):	1.509	1.509
Nozzle Kit ID Number and Material:	Glass set #5 (848)	Glass set #5 (848)

Leak Checks

Pre Pitot Leak Check	**0.0**	**@**	**4.5**	**"H_2O**	**0.0**	**@**	**3.8**	**"H_2O**
Post Pitot Leak Check	**0.0**	**@**	**4.0**	**"H_2O**	**0.0**	**@**	**4.0**	**"H_2O**
Pre Nozzle Leak Check	**0.000**	**@**	**15**	**"Hg**	**0.000**	**@**	**14**	**"Hg**
Post Nozzle Leak Check	**0.000**	**@**	**15**	**"Hg**	**0.000**	**@**	**15**	**"Hg**

Pitot Tube Coefficient:	0.840
Probe Length (Feet):	3.0
Probe Liner Material:	Glass
Sample Plane:	Horizontal
Port Length (Inches):	3.00
Port Size (Diameter, Inches):	3.00
Port Type:	Nipple
Duct Shape:	Circular
Diameter (Feet):	1.00
Duct Area (Square Feet):	0.785
Upstream Diameters:	3.0
Downstream Diameters:	3.0
Number of Ports Sampled:	2
Number of Points per Port:	12
Minutes per Point:	20.0
Minutes per Reading:	10.0
Total Number of Traverse Points:	24
Test Length (Minutes):	480
Train Type:	Anderson Box
Source Condition:	Batch Process
Moisture Balance ID:	S10-07
# of Runs	2

Run 1 - Method ODEQ 5

Client: PCC Structurals, Inc. | **Date: 7/31/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:05**

Test Location: Baghouse 8901 Outlet | **End Time: 15:45**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.96	in. H_2O	Static Pressure	2.00	in. H_2O
Meter Temperature, Tm:	78.2	°F	Flue Pressure (Ps):	30.04	in. Hg. abs.
Sqrt ΔP:	1.286	in. H_2O			
Stack Temperature, Ts:	76.5	°F			
Meter Volume, Vm:	412.385	ft^3			
Meter Volume, Vmstd:	412.607	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	4.668	wscf	Gas Weight wet, Ms:	28.877	lb/lb mole
Isokinetic Variance:	102.6	%I			
			Gas Velocity, Vs:	72.583	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,420	acfm
Nozzle Diameter:	0.190	in inches	Volumetric Flow:	3,341	dscfm
Barometric Pressure:	29.89	in Hg	Volumetric Flow:	3,379	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	2057.0	ml	Silica Initial Wt.	837.3	grams
Final Impinger Content:	2099.8	ml	Silica Final Wt.	893.6	grams
Impinger Difference:	42.8	ml	Silica Difference:	56.3	grams

Total Water Gain: 99.1 | Moisture, Bws: 0.011 | **Supersaturation Value, Bws: 0.031**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
1-1	6:05:00	1.50	1.72	4.735	74	62	61	4	257	250	45
1-1	6:15:00	1.50	1.73	12.553	74	65	62	4	251	250	48
1-2	6:25:00	1.50	1.73	20.400	74	67	62	4	244	249	49
1-2	6:35:00	1.50	1.74	28.263	72	69	63	4	240	250	45
1-3	6:45:00	1.80	2.10	36.643	72	71	64	4	252	251	47
1-3	6:55:00	1.80	2.10	45.471	72	73	65	4	253	250	45
1-4	7:05:00	2.00	2.34	54.324	72	73	66	4	255	251	48
1-4	7:15:00	2.00	2.34	63.664	72	74	67	4	265	249	49
1-5	7:25:00	2.10	2.46	73.022	72	74	68	4	230	251	52
1-5	7:35:00	2.10	2.47	82.621	72	77	68	4	230	251	55
1-6	7:45:00	2.00	2.35	92.246	72	74	69	4	270	249	54
1-6	7:55:00	2.00	2.35	101.622	72	75	69	4	269	250	55
	8:05:00			111.007							
1-7	8:15:00	1.80	2.11	111.007	72	71	69	4	269	251	54
1-7	8:25:00	1.80	2.11	119.878	72	72	69	4	253	251	55
1-8	8:35:00	1.60	1.88	128.756	72	75	70	4	262	251	50
1-8	8:45:00	1.60	1.89	137.157	72	76	71	4	242	249	49
1-9	8:55:00	1.50	1.77	145.575	73	80	72	4	262	252	49
1-9	9:05:00	1.50	1.76	153.756	73	78	72	4	267	249	51
1-10	9:15:00	1.50	1.77	161.321	74	79	73	4	238	249	51
1-10	9:25:00	1.50	1.77	170.094	74	78	73	4	255	248	51
1-11	9:35:00	1.20	1.42	178.260	74	78	74	4	235	251	51
1-11	9:45:00	1.20	1.42	185.570	74	80	74	4	260	250	52
1-12	9:55:00	1.20	1.42	192.894	74	80	75	4	230	251	52
1-12	10:05:00	1.20	1.42	200.225	75	81	75	4	246	250	52
	10:15:00			207.555							
2-1	10:42:00	1.60	1.89	207.555	76	81	77	4	249	250	51
2-1	10:52:00	1.60	1.89	216.029	77	82	77	4	241	249	56
2-2	11:02:00	1.50	1.77	224.501	77	83	78	4	238	251	58
2-2	11:12:00	1.50	1.76	232.720	81	84	79	4	246	250	60
2-3	11:22:00	1.50	1.76	240.922	81	84	79	4	245	251	60
2-3	11:32:00	1.50	1.77	249.125	79	84	80	4	244	250	61
	11:42:00			257.352							
2-4	12:00:00	1.60	1.89	257.352	78	81	79	4	249	250	60
2-4	12:10:00	1.60	1.89	265.825	77	83	79	4	255	252	62
2-5	12:20:00	1.80	2.13	274.322	78	84	79	4	246	252	63
2-5	12:30:00	1.80	2.13	283.333	80	87	80	4	251	250	65
2-6	12:40:00	2.00	2.37	292.361	79	88	81	4	254	250	62
2-6	12:50:00	2.00	2.38	301.903	79	89	82	4	252	250	50
2-7	13:00:00	2.00	2.37	308.612	80	88	83	4	257	249	50
2-7	13:10:00	2.00	2.38	315.932	80	90	83	4	256	250	48
2-8	13:20:00	2.10	2.49	324.422	80	88	83	4	251	249	50
2-8	13:30:00	2.10	2.49	332.325	81	87	83	4	261	250	49

Run 1 - Method ODEQ 5

Client: PCC Structurals, Inc. — **Date: 7/31/25**

Facility: Large Parts Campus Facility - Milwaukie, OR — **Start Time: 6:05**

Test Location: Baghouse 8901 Outlet — **End Time: 15:45**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.96	in. H_2O	Static Pressure	2.00	in. H_2O
Meter Temperature, Tm:	78.2	°F	Flue Pressure (Ps):	30.04	in. Hg. abs.
Sqrt ΔP:	1.286	in. H_2O			
Stack Temperature, Ts:	76.5	°F			
Meter Volume, Vm:	412.385	ft^3			
Meter Volume, Vmstd:	412.607	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	4.668	wscf	Gas Weight wet, Ms:	28.877	lb/lb mole
Isokinetic Variance:	102.6	%I			
			Gas Velocity, Vs:	72.583	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,420	acfm
Nozzle Diameter:	0.190	in inches	Volumetric Flow:	3,341	dscfm
Barometric Pressure:	29.89	in Hg	Volumetric Flow:	3,379	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	2057.0	ml	Silica Initial Wt.	837.3	grams
Final Impinger Content:	2099.8	ml	Silica Final Wt.	893.6	grams
Impinger Difference:	42.8	ml	Silica Difference:	56.3	grams

Total Water Gain: 99.1 — Moisture, Bws: 0.011 — **Supersaturation Value, Bws: 0.031**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
2-9	13:40:00	2.00	2.37	346.512	80	88	83	4	230	251	49
2-9	13:50:00	2.00	2.37	352.112	80	87	84	4	260	250	47
	14:00:00			369.241							
2-10	14:45:00	1.50	1.78	369.214	82	89	84	4	244	250	55
2-10	14:55:00	1.50	1.78	377.486	82	92	85	4	241	251	55
2-11	15:05:00	1.50	1.78	385.788	84	94	87	4	254	249	56
2-11	15:15:00	1.40	1.67	394.105	84	96	88	4	239	251	56
2-12	15:25:00	1.20	1.43	402.162	85	96	89	4	240	251	60
2-12	15:35:00	1.20	1.43	409.620	85	97	90	4	239	250	57
	15:45:00			417.093							
Total	8:00:00			412.385		80.9	75.5				
Average			1.96		76.5	78.2		4			
Min			1.42		72.0	61.0		4			
Max			2.49		85.0	97.0		4			

Impinger Weight Sheet - Run 1

Client:	**PCC Structurals, Inc.**
Facility:	**Large Parts Campus Facility - Milwauki**
Test Location:	**Baghouse 8901 Outlet**
Project #:	**M253113**
Date:	**7/31/2025**
Test Method:	**ODEQ 5**
Weighed/Measured By:	**RICHS**
Balance ID:	**S10-07**

Scale Calibration Check Date: **8/1/2025**

Scale Calibration Check (see QS-6.05C for procedure)
must be within ± 0.5g of certified mass

Certified Weight, grams	Result, grams
250	250.0
500	500.0
750	750.0

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
DI Water	686.1	730.0	-43.9
DI Water	771.5	707.5	64.0
Empty	642.2	619.5	22.7
Silica Gel	893.6	837.3	56.3
	2,099.8 Liquid Final	2,057.0 Liquid Initial	42.8 Liquid Gain
	893.6 Silica Final	837.3 Silica Initial	56.3 Silica Gain

Run 2 - Method ODEQ 5

Client: PCC Structurals, Inc. | **Date: 8/1/25**

Facility: Large Parts Campus Facility - Milwaukie, OR | **Start Time: 6:05**

Test Location: Baghouse 8901 Outlet | **End Time: 16:51**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.99	In. H_2O	Static Pressure	2.00	in. H_2O
Meter Temperature, Tm:	83.0	°F	Flue Pressure (Ps):	30.04	in. Hg. abs.
Sqrt ΔP:	1.293	In. H_2O			
Stack Temperature, Ts:	80.0	°F			
Meter Volume, Vm:	417.132	ft^3			
Meter Volume, Vmstd:	413.675	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	5.770	wscf	Gas Weight wet, Ms:	28.849	lb/lb mole
Isokinetic Variance:	102.8	%I			
			Gas Velocity, Vs:	73.287	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,454	acfm
Nozzle Diameter:	0.190	in inches	Volumetric Flow:	3,343	dscfm
Barometric Pressure:	29.89	in Hg	Volumetric Flow:	3,390	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	2019.9	ml	Silica Initial Wt.	816.6	grams
Final Impinger Content:	2106.8	ml	Silica Final Wt.	852.2	grams
Impinger Difference:	86.9	ml	Silica Difference:	35.6	grams
Total Water Gain:	122.5		Moisture, Bws: 0.014	**Supersaturation Value, Bws:**	**0.034**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
1-1	6:05:00	1.50	1.73	419.785	72	62	60	4	225	242	50
1-1	6:15:00	1.50	1.73	427.745	72	66	61	4	238	251	50
1-2	6:25:00	1.60	1.86	435.742	71	69	62	4	249	251	53
1-2	6:35:00	1.60	1.87	444.042	71	71	63	4	228	256	50
1-3	6:45:00	1.80	2.10	452.364	71	72	64	4	231	251	51
	6:55:00			461.209							
1-3'	7:30:00	1.80	2.10	461.209	71	67	65	4	251	248	47
1-4	7:40:00	2.00	2.33	470.021	71	69	65	4	229	249	46
1-4'	7:50:00	2.00	2.34	479.326	72	72	66	4	228	250	47
1-5	8:00:00	2.10	2.46	488.658	72	73	67	4	238	250	46
1-5'	8:10:00	2.10	2.46	498.238	72	74	68	4	228	251	48
1-6	8:20:00	2.00	2.35	507.836	72	74	68	4	236	250	48
1-6'	8:30:00	2.00	2.34	517.203	73	73	69	4	243	251	49
1-7	8:40:00	1.80	2.11	526.562	72	74	69	4	226	253	51
	8:50:00			535.455							
1-7'	9:15:00	1.80	2.11	535.455	73	72	72	4	255	257	56
1-8'	9:25:00	1.60	1.88	544.351	74	76	72	4	257	249	53
1-8'	9:35:00	1.60	1.89	552.759	74	79	74	4	245	249	53
1-9'	9:45:00	1.50	1.77	561.209	75	79	75	4	242	249	53
1-9'	9:55:00	1.50	1.78	569.390	74	80	76	4	246	253	54
1-10'	10:05:00	1.40	1.66	577.594	75	81	76	4	241	249	56
1-10'	10:15:00	1.40	1.67	585.519	76	84	81	4	251	252	58
1-11'	10:25:00	1.40	1.66	593.496	76	84	80	4	246	250	57
1-11'	10:35:00	1.40	1.67	601.465	76	85	81	4	250	250	59
1-'12	10:45:00	1.20	1.43	609.448	77	86	82	4	258	261	58
1-12'	10:55:00	1.20	1.42	616.847	79	86	83	4	255	250	58
	11:05:00			624.240							
2-1	11:10:00	1.50	1.78	630.525	79	87	84	4	251	255	61
2-1'	11:20:00	1.50	1.78	638.805	79	87	84	4	247	258	61
2-2	11:30:00	1.60	1.91	647.062	79	88	85	4	244	249	63
	11:40:00			655.628							
2-2'	12:10:00	1.60	1.89	655.628	83	86	85	4	254	254	68
2-3'	12:20:00	1.80	2.14	664.148	82	89	85	4	257	247	61
2-3'	12:30:00	1.80	2.13	673.218	83	87	85	4	247	250	57
2-4	12:40:00	2.00	2.37	682.262	83	89	87	4	240	252	55
2-4'	12:50:00	2.00	2.37	691.829	84	90	86	4	240	248	55
2-5	13:00:00	2.10	2.49	701.389	84	90	87	4	246	255	57
2-5'	13:10:00	2.10	2.49	711.195	85	91	87	4	237	260	63
	13:20:00			720.999							
2-6'	14:14:00	2.00	2.38	720.999	87	94	92	4	251	252	64
2-6'	14:24:00	2.00	2.38	730.620	87	96	93	4	251	257	64
	14:34:00			740.267							
2-7'	14:51:00	2.00	2.38	740.267	88	97	93	4	252	248	65
2-7'	15:01:00	2.00	2.38	749.914	88	98	93	4	243	245	64

Run 2 - Method ODEQ 5

Client: PCC Structurals, Inc. — **Date: 8/1/25**

Facility: Large Parts Campus Facility - Milwaukie, OR — **Start Time: 6:05**

Test Location: Baghouse 8901 Outlet — **End Time: 16:51**

Source Condition: Batch Process

DRY GAS METER CONDITIONS			STACK CONDITIONS		
ΔH:	1.99	In. H_2O	Static Pressure	2.00	in. H_2O
Meter Temperature, Tm:	83.0	°F	Flue Pressure (Ps):	30.04	in. Hg. abs.
Sqrt ΔP:	1.293	In. H_2O			
Stack Temperature, Ts:	80.0	°F			
Meter Volume, Vm:	417.132	ft^3			
Meter Volume, Vmstd:	413.675	dscf	Gas Weight dry, Md:	29.000	lb/lb mole
Meter Volume, Vwstd:	5.770	wscf	Gas Weight wet, Ms:	28.849	lb/lb mole
Isokinetic Variance:	102.8	%I			
			Gas Velocity, Vs:	73.287	fps
Test Length:	480.00	in mins.	Volumetric Flow:	3,454	acfm
Nozzle Diameter:	0.190	in inches	Volumetric Flow:	3,343	dscfm
Barometric Pressure:	29.89	in Hg	Volumetric Flow:	3,390	scfm

MOISTURE DETERMINATION

Initial Impinger Content:	2019.9	ml	Silica Initial Wt.	816.6	grams
Final Impinger Content:	2106.8	ml	Silica Final Wt.	852.2	grams
Impinger Difference:	86.9	ml	Silica Difference:	35.6	grams

Total Water Gain: 122.5 — Moisture, Bws: 0.014 — **Supersaturation Value, Bws: 0.034**

Port-Point No.	Clock Time	Velocity Head Δp in. H2O	Orifice ΔH in. H2O	Actual Meter Vol. ft^3	Stack Temp °F	Meter Temp Inlet °F	Meter Temp Outlet °F	Pump Vacuum "Hg	Probe Temp °F	Filter Exit Temp °F	Impinger Exit Temp °F
2-8'	15:11:00	1.80	2.14	759.569	89	100	93	4	256	249	64
2-8'	15:21:00	1.80	2.14	768.737	90	101	94	4	240	253	67
2-9'	15:31:00	1.60	1.91	777.913	90	102	95	4	254	254	66
2-9'	15:41:00	1.60	1.91	786.580	90	102	95	4	259	251	67
2-10'	15:51:00	1.50	1.78	795.270	94	102	95	4	251	256	68
2-10'	16:01:00	1.50	1.79	803.607	92	102	96	4	253	251	67
2-11'	16:11:00	1.40	1.67	811.991	91	102	96	4	251	255	68
2-11'	16:21:00	1.40	1.67	820.098	91	103	96	4	260	247	68
2-12'	16:31:00	1.20	1.43	828.212	91	103	96	4	247	252	67
2-12'	16:41:00	1.20	1.42	835.724	92	99	96	4	248	251	68
	16:51:00			843.202							
Total	8:00:00			417.132		85.3	80.8				
Average			1.99		80.0	83.0		4			
Min			1.42		71.0	60.0		4			
Max			2.49		94.0	103.0		4			

Impinger Weight Sheet - Run 2

Client:	**PCC Structurals, Inc.**
Facility:	**Large Parts Campus Facility - Milwauki**
Test Location:	**Baghouse 8901 Outlet**
Project #:	**M253113**
Date:	**8/1/2025**
Test Method:	**ODEQ 5**
Weighed/Measured By:	**RICHS**
Balance ID:	**S10-07**

Scale Calibration Check Date: **8/1/2025**

Scale Calibration Check (see QS-6.05C for procedure)
must be within ± 0.5g of certified mass

Certified Weight, grams	Result, grams
250	250.0
500	500.0
750	750.0

IMPINGER CONTENTS	FINAL MLS / GRAMS	INITIAL MLS / GRAMS	GAIN MLS / GRAMS
DI Water	678.5	708.3	-29.8
DI Water	788.0	686.7	101.3
Empty	640.3	624.9	15.4
Silica Gel	852.2	816.6	35.6
	2,106.8	2,019.9	86.9
	Liquid Final	**Liquid Initial**	**Liquid Gain**
	852.2	816.6	35.6
	Silica Final	**Silica Initial**	**Silica Gain**

Appendix E - Plant Operating Data

BH 8901 Production Data

Date	Number of Ingots Processed	Total Mass Processed (lb)	Total Mass Processed (tons)
7/29/2025	155	30,936	15.5
7/30/2025	192	29,938	15.0
7/31/2025	179	27,490	13.7
8/1/2025	190	30,486	15.2

Time	Differential Pressure (inches w.c.)	
	Primary	HEPA
7/29/2025		
6:20AM	2.4	0.6
6:50AM	2.4	0.6
7:20AM	2.4	0.6
7:50AM	2.5	0.6
8:20AM	2.5	0.6
8:50AM	2.4	0.6
9:20AM	2.4	0.6
9:50AM	2.4	0.6
10:20AM	2.5	0.6
12:00PM	1.5	0.6
12:30PM	1.5	0.6
1:00PM	1.6	0.6
1:30PM	1.6	0.6
2:20PM	1.7	0.6
2:40PM	1.7	0.6
3:10PM	1.8	0.6
3:32PM	1.8	0.6
4:02PM	1.8	0.6
4:32PM	1.8	0.6

Time	Differential Pressure (inches w.c.)	
	Primary	HEPA
7/30/2025		
6:25AM	2.1	0.6
6:55AM	2.1	0.6
7:25AM	2.1	0.6
7:55AM	2.1	0.6
8:25AM	2.1	0.6
9:00AM	2.1	0.6
9:30AM	2.1	0.6
10:00AM	2.1	0.6
10:30AM	2.1	0.6
11:00AM	2.1	0.6
11:45AM	2.1	0.6
12:15PM	2.2	0.6
12:45PM	2.1	0.6
1:15PM	2.2	0.6
1:25PM	2.2	0.6
1:45PM	2.2	0.6
2:15PM	2.2	0.6
2:55PM	2.3	0.6
3:25PM	2.3	0.6
3:55PM	2.3	0.6
4:25PM	2.3	0.6
4:55PM	2.5	0.6

Time	Differential Pressure (inches w.c.)	
	Primary	HEPA
7/31/2025		
6:05AM	1.6	0.6
6:35AM	1.8	0.6
7:05AM	1.8	0.6
7:35AM	1.8	0.6
8:05AM	1.8	0.6
8:15AM	1.8	0.6
8:45AM	1.8	0.6
9:15AM	1.8	0.6
9:45AM	1.8	0.6
10:15AM	1.9	0.6
10:42AM	1.8	0.6
11:12AM	1.8	0.6
11:42AM	1.9	0.6
12:00PM	1.9	0.6
12:30PM	1.8	0.6
1:00PM	1.9	0.6
1:30PM	2	0.6
2:00PM	1.9	0.6
2:45PM	2	0.6
3:15PM	2	0.6
3:45PM	2	0.6

Time	Differential Pressure (inches w.c.)	
	Primary	HEPA
8/1/2025		
6:05AM	2.3	0.6
6:35AM	2.3	0.6
6:55AM	2.3	0.6
7:30AM	2.4	0.6
8:00AM	2.4	0.6
8:30AM	2.4	0.6
8:50AM	2.4	0.6
9:15AM	2.4	0.6
9:45AM	2.4	0.6
10:15AM	2.4	0.6
10:45AM	2.4	0.6
11:05AM	2.5	0.6
11:10AM	1.6	0.6
11:40AM	1.6	0.6
12:10PM	1.6	0.6
12:40PM	1.6	0.6
1:10PM	1.7	0.6
1:20PM	1.7	0.6
2:14PM	1.7	0.6
2:34PM	1.6	0.6
2:51PM	1.6	0.6
3:21PM	1.6	0.6
3:51PM	1.7	0.6
4:21PM	1.7	0.6
4:51PM	1.8	0.6

Appendix F - Field Data Sheets

Isokinetic Sampling Cover Sheet

Client:	PCC Structurals inc	Pitot Tube Cp:	.840
Facility:	Large parts campus facility	Probe Length (Feet):	3.0
Test Location:	Bag house 8901 inlet	Probe Liner Material:	Glass
Project #:	M253113	Sample Plane:	(Horiz.) or Vert.
Test Method(s):	29	Port Length ("):	4.00
Test Engineer:	AZR	Port Diameter ("):	4.00
Test Technician:	JSC	Port Type:	Nipple
Upstream Diameters:	8.5	Duct Shape:	(Circ.) or Rect.
Downstream Diameters:	20.0	Diameter (Feet):	1.00
# of Ports Sampled:	2	Length (Feet):	—
# of Points per Port:	6	Width (Feet):	—
Source Condition:	Normal Batch Process	Duct Area (Sq. Feet):	0.785
Diluent Model/SN:		Minutes per Point:	40
Mid Gas ID/concentration:	/%CO_2 %O_2	Total Traverse Points:	12
High Gas ID/concentration:	/%CO_2 %O_2	Test Length (Min.):	480
Moisture Balance ID:	S10-7	Train Type:	Hot Box

	R# 1	R# 2	R#
Meter ID:	CM43	CM43	
Pitot ID:	1883	1883	
Filter ID:	N/A	N/A	
Filter Pre-Weight (g):	N/A	N/A	
Nozzle Diameter ("):	.175	.175	
Meter Cal Factor (Y):	.991	.991	
Meter Orifice Setting (DH):	1.826	1.826	
Nozzle Kit ID:	Glass #23	Glass #23	
Individual Nozzle ID:	573	573	
Pre Pitot Leak Check:	0.0 @ 4.3 "H_2O	0.0 @ 5.2 "H_2O	@ "H_2O
Post Pitot Leak Check:	0.0 @ 5.2 "H_2O	0.0 @ 6.0 "H_2O	@ "H_2O
Pre Nozzle Leak Check:	0.000 @ 8 "Hg	0.000 @ 9 "Hg	@ "Hg
Post Nozzle Leak Check:	0.000 @ 12 "Hg	0.000 @ 15 "Hg	@ "Hg
Barometric Pressure,"Hg:	30.02	30.02	
Static Pressure, "H_2O:	-5.50	-5.50	
CO_2 %:	0	0	
O_2 %:	20.90	20.50	

Comments: did silica swap at Port change New leak checks

Volumetric Flow Rate Determination Field Data Sheet

Project Number:	M253113	Date:	7-25-25
Client:	PCC Structurals inc	Test Number:	Run
Test Location:	Bag house 8501 inlet	Start Time:	5:15
Source Condition:	Baton Process	End Time:	5:45
Test Engineer:	AJR	Test Tech:	JSC

Duct Diameter 1.00 ft — Upstream Disturbance, Diameters 8.5
Flue Area 0.785 ft^2 — Downstream Disturbance, Diameters 20.0
Port Length 4.00 " Port Size 4.00 " Port Type Nipple Pitot ID 1893 Pitot Coefficient (C_p) .840

P_{bar} 28.02 "Hg — CO_2 % 0 — Wet Bulb Temp ____ — Leak Checks Passed@
Static -5.50 "H_2O — O_2 % 20.90 — Dry Bulb Temp ____ — Pre 9 Inches H_2O
Static ____ "Hg — N_2 % 79.10 — B_{ws} ____ — Post 13 Inches H_2O
P_s 29.62 "Hg — Meter No. CM43 — Fluke # CM43 — Umbilical ID ___

Port-Point #	ΔP	Temp. °F	$\sqrt{\Delta P}$	Null Point Angle, Degrees	Port-Point #	ΔP	Temp. °F	$\sqrt{\Delta P}$	Null Point Angle, Degrees
A 1	1.90	65		0	B 1	1.90	65		0
2	1.90	65		2	2	1.90	65		2
3	2.00	65		3	3	1.90	65		2
4	2.00	65		4	4	1.90	65		1
5	2.10	65		2	5	2.00	65		0
6	2.00	65		1	6	2.00	65		3
Average									

.44 x CO_2% + .32 x O_2% + .28 x N_2% = _____ (Md)

(_____ Md × _____ 1-Bws) + (18 × _____ Bws) = _____ (Ms)

$$85.49 \times ____ Cp \times \sqrt{\frac{(____)Ts\ °R}{____ Ms \times ____ Ps}} \times ____ \sqrt{\Delta P} = ____ ft/sec\ (Vs)$$

_____ Vs × _____ Flue Area × 60 = _____ acfm

$$17.647 \times ____ acfm \times \frac{Ps}{Ts\ °R} = ____ scfm \times 60 = ____ scfh$$

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7-25-25 Test Number: 1

Client: PCC Structurals inc Test Location: Bayhouse 8501 inlet Operator: AZR Test Tech: Avn

Plant: Large Parts campus facility Test Method: 29 Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ___ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
1 - 1	6:20	2.00	2.02	233.509	68	72	72	5	250	250	57				
1	6:30	2.00	2.04	241.486	65	73	73	5	260	260	57				
1	6:40	2.00	2.04	249.484	65	74	74	5	260	260	57				
1	6:50	2.00	2.05	257.494	65	75	75	5	260	260	60				
1 - 2	7:00	2.10	2.14	265.527	68	75	75	5	260	260	43				
2	7:10	2.10	2.15	273.736	67	76	76	5	260	260	40				
2	7:20	2.10	2.15	281.944	66	76	76	5	260	260	40				
2	7:30	2.10	2.15	290.197	65	76	76	5	260	260	40				
1 - 3	7:40	1.90	1.95	298.445	65	76	76	5	260	260	40				
3	7:50	1.90	1.95	306.284	66	77	77	5	260	260	41				
3	8:00	1.90	1.95	314.131	66	77	77	5	260	260	41				
3	8:10	1.90	1.94	321.982	68	77	77	5	260	260	44				
1 - 4	8:20	2.00	2.05	329.816	66	77	77	5	260	260	50				
4	8:30	2.00	2.05	337.867	67	77	77	5	260	260	53				
4	8:40	2.00	2.04	345.912	68	77	77	5	260	260	56				
4	8:50	2.00	2.05	353.954	68	78	78	5	260	260	58				
1 - 5	9:00	1.80	1.84	362.006	68	78	78	5	260	260	60				
5	9:10	1.90	1.84	369.835	69	79	79	5	260	260	63				
5	9:20	1.90	1.84	377.882	70	79	79	5	260	260	66				
5	9:30	1.80	1.84	384.937	70	79	79	5	260	260	66				
1 - 6	9:40	1.76	1.74	392.564	71	80	80	5	260	260	64				
6	9:50	1.70	1.73	400.209	72	80	80	5	260	260	63				
6	10:00	1.70	1.74	407.923	72	81	81	5	260	260	63				
6	10:10	1.70	1.73	414.855	73	81	81	5	260	260	62				
	10:20			422.280											

Isokinetic Sampling Field Data Sheet

Project Number: M25 3113 Date: 7-29-25 Test Number: 1

Client: PCC Structurals Inc Test Location: Baghouse EPOI inlet Operator: AIR Test Tech: AM

Plant: Large Parts Complex Test Method: 25 Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x___ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
2 1	12:00	2.10	2.11	423.271	79	79	79	5	260	260	62				
1	12:10	2.10	2.12	431.468	78	80	80	5	260	260	63				
1	12:20	2.10	2.11	439.673	82	81	81	5	260	260	64				
1	12:30	2.10	2.12	447.862	80	82	82	5	260	260	64				
2-2	12:40	1.80	1.82	456.087	80	83	83	5	260	260	50				
2	12:50	1.80	1.82	463.713	80	84	84	5	260	260	49				
2.3	13:00	1.90	1.83	471.346	79	85	85	5	260	260	50				
3	13:10	1.80	1.81	478.058	83	85	85	5	260	260	55				
2-4	13:20	1.90	1.91	486.637	85	86	86	5	260	260	60				
4	13:30	1.90	1.92	494.478	85	87	87	5	260	260	61				
~~2-5~~	13:40			502.331											
2-5	13:50	1.80	1.82	502.331	84	87	87	5	260	260	62				
2-5	14:00	1.80	1.82	509.993	84	87	87	5	260	260	64				
6	14:10	1.90	1.92	517.642	85	88	88	5	260	260	63				
6	14:20	1.90	1.92	525.513	85	88	88	5	260	260	63				
~~7-6~~	14:30			533.381											
-6	14:40	1.90	1.91	533.381	88	89	89	5	260	260	64				
-5	14:50	1.90	1.90	541.253	90	89	89	5	260	260	61				
~~-5~~	15:00	2.00	2.02	549.097	87	90	90	5	260	260	58				
-5	15:10	2.00	2.02	557.184	88	90	90	5	260	260	56				
~~-4~~	15:20			565.273											
-4	15:32	1.80	1.82	565.273	88	91	91	5	260	260	60				
-~~3~~4	15:42	1.80	1.82	572.561	88	91	91	5	260	260	61				
-3	15:52	1.70	1.72	580.649	87	91	91	5	260	260	63				
-3	16:02	1.70	1.72	588.116	87	91	91	5	260	260	64				
-2	16:12	1.70	1.72	595.591	88	92	92	5	260	260	65				
~~-2~~	16:22	1.70	1.72	603.067	88	92	92	5	260	260	63				
	16:32			610.534											

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7-30-25 Test Number: 2

Client: PCC Structurals inc Test Location: Baghouse E901 inlet Operator: AIR Test Tech: Am

Plant: Large Parts Campus Test Method: 29 Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ___ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
1 - 1	6:25	1.80	1.83	610.911	67	72	72	5	260	260	52				
1	6:35	1.80	1.83	618.488	67	72	72	5	260	260	43				
1	6:45	1.80	1.82	626.056	67	73	73	5	260	260	48				
1	6:55	1.80	1.83	633.642	68	74	74	5	260	260	48				
1 - 2	7:05	1.70	1.73	641.237	68	75	75	5	260	260	49				
2	7:15	1.70	1.73	648.624	68	76	76	5	260	260	50				
2	7:25	1.70	1.74	656.034	68	77	77	5	260	260	51				
2	7:35	1.70	1.74	663.486	68	77	77	5	260	260	52				
1 - 3	7:45	1.90	1.94	670.873	69	77	77	5	260	260	53				
3	7:55	1.90	1.94	678.708	69	78	78	5	260	260	54				
3	8:05	1.90	1.94	686.554	69	78	78	5	260	260	54				
3	8:15	1.90	1.94	694.407	69	78	78	5	260	260	55				
~~4~~	8:25			702.253											
4	9:00	1.80	1.84	702.253	70	78	79	5	260	260	57				
4	9:10	1.80	1.84	709.894	71	79	79	5	260	260	60				
4	9:20	1.80	1.84	717.536	71	79	79	5	260	260	61				
4	9:30	1.80	1.84	725.179	71	80	80	5	260	260	61				
5	9:40	1.80	1.84	732.837	71	80	80	5	260	260	61				
5	9:50	1.80	1.84	740.483	71	80	80	5	260	260	62				
5	10:00	1.80	1.84	748.145	72	81	81	5	260	260	63				
5	10:10	1.80	1.84	755.810	72	81	81	5	260	260	63				
5	10:20	2.00	2.04	763.467	73	81	81	5	260	260	65				
6	10:30	2.00	2.04	771.533	73	81	81	5	260	260	64				
6	10:40	2.00	2.04	779.6008	73	81	81	5	260	260	63				
6	10:50	2.00	2.04	787.675	73	81	81	5	260	260	60				
	11:00			795.743											

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7.30-25 Test Number: 2

Client: PCL Structurals inc Test Location: Baghouse 890 inlet Operator: ADR Test Tech: AM

Plant: Large Parts complex facility Test Method: 29 Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft^3, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional)			
													K=	x ____	
												Square Root, ΔP	Meter Rate, Cubic Feet/ Min.	Theoretical Meter Volume, (V_m) ft^3, per point	Theoretical Meter Volume, (V_m) ft^3, total
2-1	11:45	1.70	1.70	796.371	81	79	79	5	260	260	58				
1	11:55	1.70	1.72	803.737	76	79	79	5	260	260	58				
1	12:05	1.70	1.72	811.126	77	80	80	5	260	260	60				
1	12:15	1.70	1.72	818.524	77	81	81	5	260	260	62				
2-2	12:25	1.80	1.82	825.938	78	82	82	5	260	260	63				
2	12:35	1.80	1.82	833.569	78	83	83	5	260	260	64				
2	1245	1.80	1.82	841.216	78	83	83	5	260	260	65				
2	1255	1.80	1.82	848.867	79	84	84	5	260	260	66				
2-3	13:05	2.00	2.03	856.519	79	84	84	5	260	260	66				
3	13:15	2.00	2.03	864.588	79	84	84	5	260	260	64				
~~3~~	13:25			872.653											
3	13:45	2.00	2.02	872.653	80	84	84	5	260	260	60				
3	13:55	2.00	2.02	880.726	80	84	84	5	260	260	61				
2-4	14:05	1.90	1.92	888.783	80	84	84	5	260	260	62				
	14:15			896.645											
2-4	14:55	1.90	1.92	896.645	80	84	84	5	260	260	63				
4	15:05	1.90	1.92	904.514	81	85	85	5	260	260	64				
4	1515	1.90	1.93	912.376	81	86	86	5	260	260	64				
2-5	1525	1.90	1.93	920.253	81	86	86	5	260	260	62				
5	1535	1.90	1.93	928.137	81	86	86	5	260	260	63				
5	1545	1.90	1.93	936.011	82	87	87	5	260	260	63				
5	1555	1.90	1.93	943.898	82	87	87	5	260	260	61				
2-6	16:05	2.00	2.03	951.782	82	87	87	5	260	260	60				
6	16:15	2.00	2.03	959.873	81	87	87	5	260	260	60				
6	16:25	2.00	2.03	967.965	81	88	88	5	260	260	60				
6	16:35	2.00	2.03	976.083	81	88	88	5	260	260	60				
	16:45			984.196											

Isokinetic Sampling Cover Sheet

Client:	pk structures, inc	**Pitot Tube Cp:**	0.840
Facility:	large campus parts facility	**Probe Length (Feet):**	3.0
Test Location:	bag house 8901 outlet	**Probe Liner Material:**	glass
Project #:	m25-3113	**Sample Plane:**	(Hrztl.) or (Vert.)
Test Method(s):	0061	**Port Length (“):**	4.0
Test Engineer:	JSL	**Port Diameter (“):**	4.0
Test Technician:	ASM	**Port Type:**	nipple
Upstream Diameters:	8.5	**Duct Shape:**	(Circ) or Rect.
Downstream Diameters:	20.0	**Diameter (Feet):**	~~0.785~~ 1.0 7/29 JL
# of Ports Sampled:	2	**Length (Feet):**	—
# of Points per Port:	6	**Width (Feet):**	—
Source Condition:	batch process	**Duct Area (Sq. Feet):**	0.785
Diluent Model/SN:		**Minutes per Point:**	40
Mid Gas ID/concentration:	/%CO_2 %O_2	**Total Traverse Points:**	12
High Gas ID/concentration:	/%CO_2 %O_2	**Test Length (Min.):**	480
Moisture Balance ID:	S10-7	**Train Type:**	0061

	R# 1	R# 2	R#
Meter ID:	Cm53	Cm53	
Pitot ID:	025	025	
Filter ID:	—	—	
Filter Pre-Weight (g):	—	—	
Nozzle Diameter (“):	0.177	0.177	
Meter Cal Factor (Y):	1.006	1.006	
Meter Orifice Setting (DH):	1.829	1.829	
Nozzle Kit ID:	glass 23	glass 23	
Individual Nozzle ID:	799	799	
Pre Pitot Leak Check:	0.0 @ 4.1 “H_2O	0.0 @ 3.5 “H_2O	@ “H_2O
Post Pitot Leak Check:	0.0 @ 3.7 “H_2O	0.0 @ 3.7 “H_2O	@ “H_2O
Pre Nozzle Leak Check:	0.0190 @ 13 “Hg	0.0020 @ 14 “Hg	@ “Hg
Post Nozzle Leak Check:	0.0020 @ 11 “Hg	0.0000 @ 11 “Hg	@ “Hg
Barometric Pressure,“Hg:	30.02	29.95	
Static Pressure, “H_2O:	-5.50	-5.50	
CO_2 %:			
O_2 %:			

Comments: leak checked at port change
paused at 15:20:00 to add 100mL KOH and leak check

Isokinetic Sampling Field Data Sheet

Project Number: M25313 | Date: 7/29/2025 | Test Number: 1

Client: pic geotech, inc. | Test Location: big huge 0901 site | Operator: JSL | Test Tech: ASM

Plant: huge pipe comps facility mil worthe OK | Test Method: 0061 | Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ____ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
1-1	6:20:00	1.90	1.84	627.750	66	75	73	4			55				
1-1	6:30:00	1.90	1.84	635.630	65	76	76	4			55				
1-1	6:40:00	1.90	2.05	643.553	65	78	78	4			57				
1-1	6:50:00	1.90	2.05	651.415	65	79	79	4			58				
1-2	7:00:00	1.85	2.00	659.412	66	80	80	4			59				
1-2	7:10:00	1.85	2.00	667.260	64	81	81	5			59				
1-2	7:20:00	1.85	2.00	675.108	66	81	81	5			60				
1-2	7:30:00	1.85	2.00	682.971	67	82	82	5			60				
1-3	7:40:00	2.00	2.17	690.842	66	83	83	5			59				
1-3	7:50:00	2.00	2.17	699.407	68	83	83	5			59				
1-3	8:00:00	2.00	2.17	707.238	68	83	83	5			59				
1-3	8:10:00	2.00	2.16	715.424	70	84	84	5			60				
1-4	8:20:00	1.90	1.95	723.618	68	84	84	5			59				
1-4	8:30:00	1.90	1.95	731.407	68	84	84	5			59				
1-4	8:40:00	1.90	1.95	739.147	69	84	84	5			59				
1-4	8:50:00	1.90	1.95	746.964	69	85	85	5			60				
1-5	9:00:00	1.75	1.90	754.755	70	85	85	5			60				
1-5	9:10:00	1.75	1.90	762.430	69	85	85	5			60				
1-5	9:20:00	1.75	1.90	770.112	71	86	86	5			60				
1-5	9:30:00	1.75	1.90	777.794	71	86	86	5			60				
1-6	9:40:00	1.70	1.83	785.476	73	86	86	5			62				
1-6	9:50:00	1.70	1.83	793.033	74	87	87	5			62				
1-6	10:00:00	1.70	1.83	800.597	74	87	87	5			61				
1-6	10:10:00	1.70	1.83	808.161	74	87	87	5			62				
	10:20:00			815.725											
2-1	12:00:00	2.00	2.13	817.353	78	85	85	5			64				
2-1	12:10:00	2.00	2.13	825.191	79	84	84	6			63				
2-1	12:20:00	2.00	2.11	833.516	83	84	84	6			65				
2-1	12:30:00	2.00	2.13	841.609	80	85	85	7			65				
2-2	12:40:00	1.90	1.91	849.734	81	86	86	7			61				

Isokinetic Sampling Field Data Sheet

Project Number: m25 3113 | Date: 7/29/25 | Test Number: 1

Client: FFC Structural, LLC | Test Location: Log house 7901 inlet | Operator: JCL | Test Tech: ASM

Plant: Large plastics pumps facility Milwaukie OR | Test Method: 0061 | Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ___ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
2-2	12:50:00	2.80	1.91	891.456	81	86	86	7			61				
2-3	13:00:00	1.70	1.41	465.175	81	87	87	7			56				
2-3	13:10:00	1.70	1.80	872.690	86	86	86	7			57				
2-4	13:20:00	1.60	1.91	880.144	85	89	89	7			55				
2-4	13:30:00	1.60	1.92	887.916	84	91	91	7			57				
	13:40:00			895.684											
2-5	13:50:00	1.70	1.82	495.604	84	92	92	7			59				
2-5	14:00:00	1.70	1.82	903.247	84	92	92	7			55				
2-6	14:10:00	1.85	1.97	910.809	86	92	92	7			56				
2-6	14:20:00	1.85	1.97	918.644	85	92	92	7			56				
	14:30:00			926.556											
2-6	14:40:00	1.85	1.96	926.556	90	92	92	7			57				
2-6	14:50:00	1.45	1.95	934.402	91	93	93	7			56				
2-5	15:00:00	1.85	1.97	942.241	87	94	94	7			57				
2-5	15:10:00	1.85	1.97	950.151	88	95	95	7			57				
	15:20:00			958.054											
2-4	15:32:00	1.90	2.02	958.877	88	94	94	7			59				
2-4	15:42:00	1.90	2.03	966.472	88	95	95	7			57				
2-3	15:52:00	1.80	1.92	974.881	86	95	95	7			57				
2-3	16:02:00	1.80	1.94	982.676	86	95	95 11:7129 95	7			57				
2-2	16:12:00	1.80	1.92	990.472	86	95	95	7			57				
2-2	16:22:00	1.80	1.92	998.267	84	95	95	7			57				
	16:32:00			1006.063											

Isokinetic Sampling Field Data Sheet

Project Number: M25317 Date: 7/30/25 Test Number: 2

Client: PCC structurals, inc. Test Location: big house #901 inlet Operator: JSL Test Tech: AMS

Plant: large parts campus Milwaukie OR Test Method: 0061 Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ____ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
1-1	6:25:00	1.80	1.91	6.847	69	72	72	4			50				
1-1	6:35:00	1.80	1.91	14.461	69	72	72	4			45				
1-1	6:45:00	1.80	1.91	22.075	69	73	73	5			44				
1-1	6:55:00	1.80	1.91	29.704	69	73	73	5			43				
1-2	7:05:00	1.70	1.80	37.332	70	74	74	5			44				
1-2	7:15:00	1.70	1.81	44.753	70	75	75	5			44				
1-2	7:25:00	1.70	1.81	52.147	70	76	76	5			44				
1-2	7:35:00	1.70	1.81	59.635	70	76	76	5			44				
1-3	7:45:00	2.00	2.13	67.084	76	77	77	5			45				
1-3	7:55:00	2.00	2.13	75.174	70	77	77	5			44				
1-3	8:05:00	2.00	2.14	83.271	70	79	79	5			45				
1-3	8:15:00	2.00	2.14	91.395	70	79	79	5			45				
	8:25:00			99.519											
1-4	9:00:00	1.80	1.92	99.519	72	79	79	5			46				
1-4	9:10:00	1.80	1.92	107.212	72	79	79	5			44				
1-4	9:20:00	1.80	1.92	114.904	72	80	80	5			45				
1-4	9:30:00	1.80	1.93	122.611	72	81	81	5			47				
1-5	9:40:00	1.75	1.87	130.322	72	81	81	5			46				
1-5	9:50:00	1.75	1.88	137.945	72	82	82	5			46				
1-5	10:00:00	1.75	1.87	145.573	72	81	81	5			46				
1-5	10:10:00	1.75	1.87	153.186	75	82	82	5			47				
1-6	10:20:00	1.90	2.03	160.791	74	82	82	5			47				
1-6	10:30:00	1.90	2.03	168.774	75	83	83	5			48				
1-6	10:40:00	1.90	2.04	176.664	74	84	84	5			47				
1-6	10:50:00	1.90	2.03	184.625	74	83	83	5			46				
	11:00:00			192.572											
2-1	11:45:00	1.60	1.69	194.933	79	82	82	5			53				
2-1	11:55:00	1.60	1.70	202.178	77	83	83	5			49				
2-1	12:05:00	1.60	1.70	209.451	77	83	83	5			51				
2-1	12:15:00	1.60	1.71	216.723	77	85	85	5			50				

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/30/25 Test Number: 2

Client: pcl stanton 3, inc. Test Location: big house 8901 : mkt Operator: JSL Test Tech: cmg

Plant: large parts campus facility Test Method: 0061 Page Number: 2 of 2

milwaukie OR

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp, °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ___ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
2-2	12:25:00	1.75	1.97	224.022	78	85	85	5	~~50~~ JL 7/30		52				
2-2	12:35:00	1.75	1.47	231.649	78	86	86	5			52				
2-2	12:45:00	1.75	1.67	239.249	79	86	86	5			51				
2-2	12:55:00	1.75	1.47	246.923	80	87	87	5			53				
2-3	13:05:00	1.90	2.03	254.563	80	87	87	5			53				
2-3	13:15:00	1.90	2.03	262.524	79	88	88	5			53				
	13:25:00			270.507											
2-3	13:45:00	1.90	2.03	270.507	80	87	87	5			56				
7/30 2-3	13:55:00	1.90	2.03	278.488	80	87	87	5			53				
JL 2-4	14:05:00	2.00	2.13	286.429	80	86	86	5			54				
~~2-4~~	14:15:00			294.582											
2-4	14:55:00	2.00	2.13	294.582	81	86	86	5			55				
2-4	15:05:00	2.00	2.13	302.880	81	86	86	5			56				
2-4	15:15:00	2.00	2.13	310.950	81	86	86	5			57				
2-5	15:25:00	1.85	1.97	319.016	82	89	89	5			57				
2-5	15:35:00	1.85	1.98	326.988	82	90	90	5			56				
2-5	15:45:00	1.85	1.98	334.772	81	90	90	5			58				
2-5	15:55:00	1.85	1.98	342.663	82	91	91	5			56				
2-6	16:05:00	2.00	2.14	350.562	82	92	92	5			56				
2-6	16:15:00	2.00	2.15	358.769	82	91	91	5			56				
2-6	16:25:00	2.00	2.14	367.002	82	91	91	5			56				
2-6	16:35:00	2.00	2.14	375.214	82	91	91	5			56				
				383.426											

Isokinetic Sampling Cover Sheet

Client:	PCC Structurals	**Pitot Tube Cp:**	0.840
Facility:	Large parts Campus facility Milwaukie OR	**Probe Length (Feet):**	3
Test Location:	Big barge 8901 inlet	**Probe Liner Material:**	glass
Project #:	M253113	**Sample Plane:**	(Hrztl) or (Vert)
Test Method(s):	5	**Port Length (“):**	4
Test Engineer:	JSL	**Port Diameter (“):**	4
Test Technician:	AE/R	**Port Type:**	Nipple
Upstream Diameters:	8.5	**Duct Shape:**	(Circ) or Rect
Downstream Diameters:	20.0	**Diameter (Feet):**	1.00
# of Ports Sampled:	2	**Length (Feet):**	—
# of Points per Port:	6	**Width (Feet):**	—
Source Condition:	batch process	**Duct Area (Sq. Feet):**	0.785
Diluent Model/SN:		**Minutes per Point:**	40
Mid Gas ID/concentration:	/%CO_2 %O_2	**Total Traverse Points:**	12
High Gas ID/concentration:	/%CO_2 %O_2	**Test Length (Min.):**	480
Moisture Balance ID:	S10-7	**Train Type:**	hot box

	R# 1	R# 2	R#
Meter ID:	Cm 43	Cm 43	
Pitot ID:	1483	1483	
Filter ID:	22792	22721	
Filter Pre-Weight (g):	0.45057	0.47634	
Nozzle Diameter (“):	0.177	0.177	
Meter Cal Factor (Y):	0.991	0.991	
Meter Orifice Setting (DH):	1.826	1.826	
Nozzle Kit ID:	glass #23	glass #23	
Individual Nozzle ID:	799	799	
Pre Pitot Leak Check:	0.0 @ 3.8 “H_2O	0.0 @ 3.5 “H_2O	@ “H_2O
Post Pitot Leak Check:	0.0 @ 4.0 “H_2O	0.0 @ 4.1 “H_2O	@ “H_2O
Pre Nozzle Leak Check:	0.0080 @ 17 “Hg	0.0000 @ 15 “Hg	@ “Hg
Post Nozzle Leak Check:	0.0000 @ 17 “Hg	0.0010 @ 13 “Hg	@ “Hg
Barometric Pressure,“Hg:	29.92	30.01	
Static Pressure, “H_2O:	-5.50	-5.50	
CO_2 %:			
O_2 %:			

Comments: leak checked at port change run 1 — leak checked at port change run 2

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/31/25 Test Number: 1

Client: PCC Structurals Test Location: Lg hrsc 9301 inlet Operator: JSL Test Tech: AEIR

Plant: Large parts campus finishing Milwaukie OR Test Method: 5 Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ___ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
1-1	6:25:00	1.90	2.01	984.843	67	69	69	2	260	260	59				
1-1	6:15:00	1.90	1.99	992.748	71	69	69	2	260	260	61				
1-1	6:25:00	1.90	2.01	1000.634	64	70	70	2	260	260	58				
1-1	6:35:00	1.90	2.01	1008.557	67	71	71	2	260	260	57				
1-2	6:45:00	1.80	1.91	1016.502	66	72	72	2	260	260	57				
1-2	6:55:00	1.90	1.92	1024.257	66	73	73	2	260	260	54				
1-2	7:05:00	1.80	1.92	1032.027	66	74	74	2	260	260	55				
1-2	7:15:00	1.90	1.92	1039.811	66	75	75	2	260	260	55				
1-3	7:25:00	2.00	2.14	1047.610	66	76	76	2	260	260	54				
1-3	7:35:00	2.00	2.14	1055.431	66	76	76	2	260	260	56				
1-3	7:45:00	2.00	2.14	1064.068	66	76	76	2	260	260	56				
1-3	7:55:00	2.00	2.15	1072.304	66	77	77	2	260	260	57				
	8:05:00			1080.555											
1-4	8:15:00	1.90	2.04	1080.555	66	77	77	2	260	260	50				
1-4	8:25:00	1.90	2.04	1088.594	66	76	76	2	260	260	52				
1-4	8:35:00	1.90	2.04	1096.625	67	77	77	2	260	260	53				
1-4	8:45:00	1.90	2.04	1104.660	67	77	77	2	260	260	54				
1-5	8:55:00	1.75	1.87	1112.695	67	77	77	2	260	260	57				
1-5	9:05:00	1.75	1.87	1120.407	64	77	77	2	268	260	57				
1-5	9:15:00	1.75	1.87	1128.111	68	77	77	2	260	260	60				
1-5	9:25:00	1.75	1.87	1135.815	64	77	77	2	260	260	54				
1-6	9:35:00	1.80	1.93	1143.519	66	78	78	2	260	260	59				
1-6	9:45:00	1.80	1.93	1151.347	69	78	78	2	260	260	58				
1-6	9:55:00	1.80	1.92	1159.175	69	78	78	2	260	260	60				
1-6	10:05:00	1.80	1.92	1166.995	69	78	78	2	260	260	60				
	10:15:00			1174.816											
2-1	10:42:00	1.70	1.81	1175.315	71	77	77	2	260	260	56				
2-1	10:52:00	1.70	1.81	1182.647	71	77	77	2	260	260	56				
2-1	11:02:00	1.70	1.81	1190.454	71	74	74	2	260	260	58				
2-1	11:12:00	1.70	1.78	1198.044	77	78	74	2	260	260	60				

Isokinetic Sampling Field Data Sheet

Project Number: M253113 | Date: 7/31/25 | Test Number: 1

Client: pcl Structurals | Test Location: bag house 8901 inlet | Operator: JSC | Test Tech: AEIR

Plant: large parts empo facility Ashworkie OR | Test Method: 5 | Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ___ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
2-2	11:22:00	1.60	1.91	1205.586	73	79	79	2	260	260	62				
2-2	11:32:00	1.60	1.91	1213.393	73	79	79	2	260	260	62				
	11:42:00			1221.199											
2-2	12:00:00	1.60	1.92	1221.199	72	79	79	2	260	260	54				
2-2	12:10:00	1.60	1.92	1229.012	72	79	79	2	260	260	50				
2-3	12:20:00	1.90	2.02	1236.825	72	79	79	2	260	260	47				
2-3	12:30:00	1.90	2.02	1244.652	75	80	80	2	260	260	49				
2-3	12:40:00	1.90	2.02	1252.471	73	79	79	2	260	260	48				
2-3	12:50:00	1.90	2.02	1260.490	73	80	80	2	260	260	48				
2-4	13:00:00	1.80	1.91	1268.925	73	79	79	2	260	260	47				
2-4	13:10:00	1.80	1.91	1276.730	73	79	79	2	260	260	47				
2-4	13:20:00	1.80	1.91	1284.536	74	80	80	2	260	260	47				
2-4	13:30:00	1.80	1.91	1292.349	74	80	80	2	260	260	46				
2-5	13:40:00	1.90	2.02	1300.161	74	81	81	2	260	260	46				
2-5	13:50:00	1.90	2.02	1308.203	74	81	81	2	260	260	46				
	14:00:00			1316.245											
2-5	14:45:00	1.90	2.02	1316.245	75	81	81	2	260	260	49				
2-5	14:55:00	1.90	2.02	1324.279	76	81	81	2	260	260	42				
2-6	15:05:00	1.85	1.85	1332.306	76	82	82	2	260	260	43				
2-6	15:15:00	1.75	1.86	1340.009	78	83	85	2	260	260	42				
2-6	15:25:00	1.75	1.86	1347.726	78	84	84	2	260	260	42				
2-6	15:35:00	1.75	1.86	1355.458	74	84	84	2	260	260	42				
				1363.190											

Isokinetic Sampling Field Data Sheet

Project Number: M753113 | Date: 8/1/2025 | Test Number: 2

Client: PLL Structures | Test Location: Log House 8901 inlet | Operator: JSL | Test Tech: AEJR

Plant: Large pipes Campus Facility | Test Method: 5 | Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ____ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
1-1	6:05:00	2.00	2.09	386.702	70	67	67	2	260	260	53				
1-1	6:15:00	2.00	2.10	374.769	68	67	67	2	260	260	56				
1-1	6:25:00	2.00	2.11	362.652	66	68	64	2	260	260	58				
1-1	6:35:00	2.00	2.11	350.965	66	69	69	2	260	260	58				
1-2	6:45:00	1.90	2.01	339.094	61	70	70	2	260	260	58				
JL 8/1 1-2	6:55:00			407.032											
1-2	7:30:00	1.90	2.02	407.032	65	72	72	2	260	260	46				
1-2	7:40:00	1.90	2.02	415.007	67	72	72	2	260	260	45				
1-2	7:50:00	1.90	2.02	422.964	66	73	73	2	260	260	47				
1-3	8:00:00	2.00	2.13	430.950	66	74	74	2	260	260	47				
1-3	8:10:00	2.00	2.13	439.156	67	74	74	2	260	260	48				
1-3	8:20:00	2.00	2.13	447.354	67	74	74	2	260	260	48				
1-3	8:30:00	2.00	2.13	455.551	67	75	75	2	260	260	49				
1-4	8:40:00	1.85	1.97	463.764	67	75	75	2	260	260	47				
	8:50:00			471.663											
1-4	9:00:00	1.85	1.97	471.663	67	74	74	2	260	260	44				
1-4	9:25:00	1.85	1.97	479.547	69	75	75	2	260	260	45				
1-4	9:35:00	1.85	1.97	487.431	68	76	76	2	260	260	47				
1-5	9:45:00	1.70	1.81	495.334	69	76	76	2	260	260	46				
1-5	9:55:00	1.70	1.81	502.910	69	77	77	2	260	260	46				
1-5	10:05:00	1.70	1.81	510.496	70	77	77	2	260	260	45				
1-5	10:15:00	1.70	1.81	518.075	70	77	77	2	260	260	46				
1-6	10:25:00	1.75	1.87	525.693	70	78	78	2	260	260	47				
1-6	10:35:00	1.75	1.86	533.357	70	78	78	2	260	260	46				
1-6	10:45:00	1.75	1.86	541.054	72	78	78	2	260	260	45				
1-6	10:55:00	1.75	1.85	548.755	75	78	78	2	260	260	45				
	11:05:20			556.716											
2-1	11:10:00	1.90	2.02	557.058	73	79	79	2	260	260	47				
2-1	11:20:00	1.90	2.02	565.077	74	79	79	2	260	260	46				
2-1	11:30:00	1.90	2.02	573.089	73	80	80	2	260	260	48				

Isokinetic Sampling Field Data Sheet

Project Number: M253113 | Date: 6/11/2025 | Test Number: 2

Client: PLC Structures | Test Location: big house 8901 inlet | Operator: JSL | Test Tech: AEJR

Plant: Large ports campus facility, Milwaukee WI | Test Method: 5 | Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ___ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
	11:40:00			581.124											
2-1	12:10:00	1.90	1.94	581.124	82	78	78	2	260	260	54				
2-2	12:20:00	2.00	2.11	589.262	76	78	78	2	260	260	49				
2-2	12:30:00	2.00	2.11	597.251	77	79	79	2	260	260	49				
2-2	12:40:00	2.00	2.11	605.448	77	79	79	2	260	260	50				
2-2	12:50:00	2.00	2.11	613.645	78	80	80	2	260	260	50				
2-3	13:00:00	1.80	1.90	621.450	74	91	41	2	260	260	51				
2-3	13:10:00	1.80	1.91	629.648	78	82	82	2	260	260	51				
	13:20:00			637.461											
2-3	14:14:00	1.80	1.92	637.461	80	81	41	2	260	260	55				
2-3	14:24:00	1.80	1.90	645.245	81	81	41	2	260	260	49				
	14:34:00			653.021											
2-4	14:51:00	1.75	1.84	653.021	81	82	82	2	260	260	55				
2-4	15:01:00	1.75	1.84	660.703	82	83	83	2	260	260	51				
2-4	15:11:00	1.75	1.84	668.392	82	83	83	2	260	260	51				
2-4	15:21:00	1.75	1.84	676.080	82	84	84	2	260	260	52				
2-5	15:31:00	1.85	1.95	683.763	82	84	84	2	260	260	52				
2-5	15:41:00	1.95	1.94	691.704	86	85	85	2	260	260	53				
2-5	15:51:00	1.85	1.93	699.909	89	85	85	2	260	260	53				
2-5	16:01:00	1.85	1.93	707.453	89	85	85	2	260	260	53				
2-6	16:11:00	1.70	1.79	715.377	86	86	86	2	260	260	54				
2-6	16:21:00	1.70	1.80	722.969	84	87	87	2	260	260	53				
2-6	16:31:00	1.70	1.79	730.583	81	86	87	2	260	260	56				
2-6	16:41:00	1.70	1.80	734.029	84	87	89	2	260	260	52				
				745.829											

Isokinetic Sampling Cover Sheet

Client:	PCC STRUCTURALS, INC.	**Pitot Tube Cp:**	0.840
Facility:	LARGE PARTS CAMPUS FACILITY	**Probe Length (Feet):**	3.0
Test Location:	BAG HOUSE 8901 OUTLET	**Probe Liner Material:**	GLASS
Project #:	M253113	**Sample Plane:**	(Hrztl.) or Vert.
Test Method(s):	29	**Port Length (“):**	3.00
Test Engineer:	DV	**Port Diameter (“):**	8.00
Test Technician:	RICHTS	**Port Type:**	NIPPLE
Upstream Diameters:	3.0	**Duct Shape:**	(Circ.) or Rect.
Downstream Diameters:	3.0	**Diameter (Feet):**	1.00
# of Ports Sampled:	2	**Length (Feet):**	
# of Points per Port:	12	**Width (Feet):**	
Source Condition:	BATCH PROCESS	**Duct Area (Sq. Feet):**	0.785
Diluent Model/SN:		**Minutes per Point:**	20
Mid Gas ID/concentration:	/%CO_2 %O_2	**Total Traverse Points:**	24
High Gas ID/concentration:	/%CO_2 %O_2	**Test Length (Min.):**	480
Moisture Balance ID:	S10-7	**Train Type:**	ANDERSON BOX

	R# 1	R#	R#
Meter ID:	CM7	CM7	
Pitot ID:	4032	4032	
Filter ID:			
Filter Pre-Weight (g):			
Nozzle Diameter (“):	0.175	0.175	
Meter Cal Factor (Y):	1.016	1.016	
Meter Orifice Setting (DH):	1.509	1.509	
Nozzle Kit ID:	GLASS SET #1	GLASS SET #01	
Individual Nozzle ID:	#23	#23	
Pre Pitot Leak Check:	0.0 @ 4.5 “H_2O	0.0 @ 4.0 “H_2O	@ “H_2O
Post Pitot Leak Check:	0.0 @ 4.8 “H_2O	0.0 @ 4.3 “H_2O	@ “H_2O
Pre Nozzle Leak Check:	0.000 @ 15 “Hg	0.000 @ 15 “Hg	@ “Hg
Post Nozzle Leak Check:	0.000 @ 15 “Hg	0.000 @ 16 “Hg	@ “Hg
Barometric Pressure,“Hg:	29.9	29.9	
Static Pressure, “H_2O:	2.2	2.2	
CO_2 %:			
O_2 %:			

Comments: LEAK CHECK DURING PORT CHANGE R1-R2

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/29/2025 Test Number: 1

Client: PCC STRUCTURALS INC Test Location: BAGHOUSE 8901 OUTLET Operator: DV Test Tech: RICH

Plant: LARAMIE CAMPUS FACILITY Test Method: M29 Page Number: , of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional)			
													K=	x ____	
												Square Root, ΔP	Meter Rate, Cubic Feet/ Min.	Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
1-1	6:20	1.10	0.92	322.735	68	64	62	5	249	249	62				
1-1	630	1.10	0.92	328.454	68	64	62	5	250	251	62				
1-2	640	1.00	0.84	334.172	68	66	62	4	249	251	61				
1-2	650	1.00	0.84	339.634	69	67	62	4	250	250	61				
1-3	700	1.10	0.93	345.097	69	75	64	3	250	250	60				
1-3	710	1.10	0.93	350.880	70	71	65	3	251	249	60				
1-4	720	1.20	1.02	356.642	70	74	67	3	250	250	61				
1-4	730	1.20	1.02	362.688	70	74	68	3	250	250	61				
1-5	740	1.40	1.19	368.741	71	75	69	4	250	250	60				
1-5	750	1.40	1.19	375.284	72	76	69	4	252	250	60				
1-6	800	2.20	1.87	381.827	72	77	71	3	249	250	59				
1-6	810	2.20	1.87	390.052	73	78	72	3	251	250	58				
1-7	820	2.00	1.71	398.285	72	80	73	4	250	249	58				
1-7	830	2.00	1.71	406.165	73	82	75	3	252	250	58				
1-8	840	1.40	1.20	414.066	73	82	75	3	253	249	58				
1-8	850	1.40	1.19	420.677	74	82	76	3	249	251	58				
1-9	900	1.20	1.03	427.267	74	84	77	3	248	250	60				
1-9	910	1.20	1.03	433.425	74	84	78	3	251	250	60				
1-10	920	1.10	0.94	439.568	75	84	78	3	250	251	61				
1-10	930	1.10	0.95	445.444	76	84	78	3	249	250	62				
1-11	940	1.00	0.85	451.368	77	85	80	3	249	251	62				
1-11	950	1.00	0.85	456.976	78	86	81	3	252	251	62				
1-12	1000	1.00	0.86	462.589	79	87	82	3	251	251	63				
1-12	1010	1.00	0.86	468.212	79	90	82	3	249	250	63				
	1020			473.845											
2-1	1200	1.20	1.02	477.625	84	86	86	3	249	250	60				
2-1	1210	1.20	1.02	483.769	84	89	86	3	249	250	57				
2-2	1220	1.10	0.93	489.928	86	90	87	3	250	251	56				
2-2	1230	1.10	0.94	495.825	86	93	88	3	251	250	57				
2-3	1240	2.00	1.71	501.744	86	94	91	3	249	250	58				

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/29/2025 Test Number: 1

Client: PCC STRUCTURALS INC Test Location: BAGHOUSE 8901 OUTLET Operator: DW Test Tech: RICH S

Plant: LARGE PARTS CAMPUS FACILITY Test Method: M29 Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ____ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
2-4	1250	2.00	1.71	509.753	89	97	92	3	250	248	60				
2-5	1300	2.00	1.72	517.770	86	97	93	3	250	252	60				
2-6	1310	2.20	1.89	525.816	87	99	94	3	248	250	61				
2-7	1320	2.20	1.88	534.269	91	100	95	3	253	250	61				
2-8	1330	2.00	1.72	542.707	90	102	97	3	251	250	64				
2-9	1340			550.789											
2-9	1350	1.50	1.29	550.789	91	102	98	3	248	251	64				
2-10	1400	1.50	1.29	557.789	91	103	98	3	250	252	63				
2-11	1410	1.50	1.30	564.794	93	105	100	3	248	249	62				
2-12	1420	1.50	1.29	571.823	93	106	101	3	250	249	63				
2-12	1430			578.841											
2-12	1440	1.60	1.36	578.841	97	103	101	3	250	249	56				
2-11	1450	1.60	1.37	586.057	96	103	100	3	252	248	58				
2-10	1500	1.50	1.28	593.272	96	105	101	3	250	250	60				
2-9	1510	2.00	1.72	600.276	95	107	101	3	251	249	60				
2-8	1520	2.00		608.386	95	108	103	3	250	250	62				
2-8	1532	2.00	1.72	608.386	95	108	103	3	250	250	62				
2-7	1542	2.00	1.72	615.518	95	109	103	3	250	249	56				
2-6	1552	1.80	1.55	624.657	95	110	103	3	250	251	55				
2-5	1602	1.60	1.38	632.385	95	112	104	3	249	250	56				
2-4	1612	1.50	1.30	639.690	96	112	105	3	250	249	57				
2-3	1622	1.50	1.30	646.763	96	111	105	3	250	252	57				
	1632			653.809											

Isokinetic Sampling Field Data Sheet

Project Number: M25313 Date: 7/30/2025 Test Number: 2

Client: PCC STRUCTURALS INC Test Location: BAGHOUSE 8901 OUT Operator: DV Test Tech: RICHS

Plant: LARGE PARTS CAMPUS FACILITY Test Method: M29 Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ____ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
1-1	625	1.50	1.25	656.910	73	64	63	3	251	249	41				
1-1	635	1.50	1.25	663.563	73	67	64	3	249	252	44				
1-2	645	1.50	1.26	670.241	73	71	65	3	250	249	45				
1-2	655	1.60	1.34	676.950	73	73	65	3	250	248	44				
1-3	705	1.80	1.51	683.891	74	75	67	3	249	251	46				
1-3	715	1.80	1.52	691.277	73	75	69	3	250	253	42				
1-4	725	1.60	1.35	698.682	75	77	69	3	250	249	43				
1-4	735	1.60	1.35	705.664	74	78	70	3	250	249	43				
1-5	745	2.00	1.69	712.665	74	78	70	3	248	252	43				
1-5	755	2.00	1.71	720.494	74	80	71	3	248	249	45				
1-6	805	2.10	1.78	728.344	75	82	72	3	249	250	43				
1-6	815	2.10	1.79	736.402	76	84	74	3	249	250	46				
	825			744.499											
1-7	900	2.20	1.86	744.499	76	77	75	3	248	249	51				
1-7	910	2.20	1.87	752.725	76	82	76	3	250	250	47				
1-8	920	2.00	1.70	760.997	77	84	77	3	250	251	49				
1-8	930	2.00	1.71	768.898	76	85	77	3	249	251	49				
1-9	940	1.50	1.28	776.814	76	85	77	3	249	251	50				
1-9	950	1.60	1.37	783.669	77	86	78	3	248	250	50				
1-10	1000	1.50	1.20	790.754	78	86	80	3	249	251	52				
1-10	1010	1.50	1.28	797.636	78	89	81	3	252	251	53				
1-11	1020	1.20	1.03	804.529	78	90	82	3	250	250	55				
1-11	1030	1.20	1.03	810.705	79	90	83	3	249	250	55				
1-12	1040	1.60	1.37	816.882	79	88	82	3	250	251	55				
1-12	1050	1.60	1.37	823.995	80	88	82	3	251	248	57				
	1100			831.101											

Isokinetic Sampling Field Data Sheet

Project Number: M253113 Date: 7/30/2025 Test Number: 2

Client: PCL STRUCTURALS INC Test Location: BAGHOUSE 8901 OUTLET Operator: DV Test Tech: RICHS

Plant: LARGE PARTS CAMPUS FACILITY Test Method: M29 Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ___ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
2-1	1145	1.50	1.27	831.310	81	84	82	3	249	251	40				
2-1	1155	1.50	1.28	838.160	82	88	84	3	250	251	45				
2-2	1205	1.80	1.54	845.040	82	93	87	3	251	251	44				
2-2	1215	1.80	1.55	852.632	83	96	90	3	250	249	47				
2-3	1225	2.00	1.74	860.258	83	99	92	3	249	252	47				
2-3	1235	2.00	1.75	868.333	83	101	93	3	250	250	48				
2-4	1245	1.80	1.56	876.430	84	100	94	3	251	252	50				
2-4	1255	1.80	1.55	884.105	85	99	93	3	250	250	51				
2-5	1305	1.80	1.56	891.759	85	99	95	3	251	250	49				
2-5	1315	1.80	1.56	899.427	85	99	96	3	252	250	50				
	1325			907.101											
2-6	1345	2.00	1.71	907.101	86	94	92	3	252	251	50				
2-6	1355	2.00	1.71	915.119	86	95	91	3	250	250	50				
2-7	1405	1.80	1.37	923.136	86	95	91	3	251	250	50				
	1415	1.60		930.306											
2-7	1455	1.60	1.37	930.306	85	92	89	3	252	250	52				
2-8	1505	1.60	1.37	937.452	86	94	89	3	250	249	59				
2-8	1515	1.50	1.37	944.603	86	94	89	3	250	250	60				
2-9	1525	1.50	1.29	951.527	86	97	90	3	250	248	60				
2-9	1535	1.50	1.29	958.703	86	99	91	3	248	251	61				
2-10	1545	1.40	1.20	965.691	87	101	92	3	253	250	60				
2-10	1555	1.30	1.12	972.414	88	103	95	3	251	250	60				
2-11	1605	1.20	1.03	978.936	88	103	95	3	252	250	62				
2-11	1615	1.20	1.04	985.202	88	104	97	3	248	251	60				
2-12	1625	1.20	1.04	991.484	88	103	96	3	250	251	57				
2-12	1635	1.20	1.03	997.756	88	100	96	3	251	250	54				
	1645			1004.010											

Isokinetic Sampling Cover Sheet

Client:	PCL Structurals	**Pitot Tube Cp:**	0.840
Facility:	LPC - Milwaukie, OR	**Probe Length (Feet):**	3
Test Location:	8501 Outlet	**Probe Liner Material:**	Glass
Project #:	M253113	**Sample Plane:**	(Hrzt) or Vert.
Test Method(s):	001	**Port Length (“):**	3.25
Test Engineer:	CE	**Port Diameter (“):**	3.0
Test Technician:	JLV	**Port Type:**	Nipple
Upstream Diameters:	3.0	**Duct Shape:**	(Circ.) or Rect.
Downstream Diameters:	3.0	**Diameter (Feet):**	1.6
# of Ports Sampled:	2	**Length (Feet):**	—
# of Points per Port:	12	**Width (Feet):**	—
Source Condition:	Boiler Room	**Duct Area (Sq. Feet):**	
Diluent Model/SN:	—	**Minutes per Point:**	20/10/reading
Mid Gas ID/concentration:	/%CO2 %O2	**Total Traverse Points:**	24
High Gas ID/concentration:	/%CO2 %O2	**Test Length (Min.):**	480
Moisture Balance ID:	510-7	**Train Type:**	Anderson

	R# 1	R# 2	R#
Meter ID:	Cm23	Cm23	
Pitot ID:			
Filter ID:	—		
Filter Pre-Weight (g):	—		
Nozzle Diameter (“):	0.205	0.205	
Meter Cal Factor (Y):	1.003	1.003	
Meter Orifice Setting (DH):	1.863	1.863	
Nozzle Kit ID:	Glass A5	Glass A5	
Individual Nozzle ID:			
Pre Pitot Leak Check:	0.0 @ 3.6 “H2O	0.0 @ 3.7 “H2O	@ “H2O
Post Pitot Leak Check:	0.0 @ 4.1 “H2O	0.0 @ 3.3 “H2O	@ “H2O
Pre Nozzle Leak Check:	0.012 @ 12 “Hg	0.004 @ 10 “Hg	@ “Hg
Post Nozzle Leak Check:	0.004 @ 10 “Hg	0.002 @ 10 “Hg	@ “Hg
Barometric Pressure,“Hg:	29.90		
Static Pressure, “H2O:	2.20		
CO2 %:	—		
O2 %:	—		

Comments: Post port 1 leak check 0.006 @ 10 “Hg (silicon seal swapped after port 1) R2 Post leak check port 1 0.001 @ 12 “Hg

R1 Pre port 2 leak check 0.000 @ 12 “Hg

Post leak check after 1430 stack change, under 0.5 KUH 0.002 @ 10 “Hg

Pre 0.004 @ 12 “Hg

Change 5/4 orifice, added kraft

Pre leak check 0.005 @ 10 “Hg

Isokinetic Sampling Field Data Sheet

Project Number:	M25113	Date:	7/29/25	Test Number:	1
Client:	PCC Structurals	Test Location:	8901 Stack	Operator:	EJE Test Tech:
Plant:	LPC - Milwaukie, OR	Test Method:	0061	Page Number:	1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= .7771 / .9861 Meter Rate, Cubic Feet/ Min.	x 10 Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
			1.1958												
1-1	6:20	2.1	~~4.1~~	550.642	68	70	69	2	—	—	63	1.493	~~1.117~~	11.173	—
1	6:30	2.0	3.9	561.56	73	78	69	3	—	—	61	1.414	1.090	10.904	562.023
2	6:40	1.8	3.5	571.830	75	81	76	3	—	—	63	1.342	1.034	10.344	572.731
2	6:50	1.8	3.5	582.470	73	83	76	3	—	—	63	1.342	1.034	10.344	583.227
3	7:00	2.0	3.9	591.32	73	84	78	3	—	—	63	1.414	1.090	10.904	593.613
3	7:10	2.0	3.9	603.180	75	84	77	3	—	—	66	1.414	1.090	10.904	604.522
4	7:20	1.8	3.5	614.210	75	85	74	3	—	—	62	1.342	1.034	10.344	615.426
4	7:30	1.9	3.7	624.220	75	86	74	3	—	—	62	1.378	1.063	10.625	625.770
5	7:40	2.0	3.9	635.210	74	87	76	3	—	—	58	1.414	1.090	10.904	636.398
5	7:50	2.1	4.1	646.220	74	86	76	3	—	—	56	1.449	1.117	11.173	647.342
6	8:00	2.0	3.9	657.330	74	87	77	3	—	—	58	1.414	1.090	10.904	658.475
6	8:10	2.0	3.9	668.030	74	87	77	3	—	—	58	1.414	1.090	10.904	669.379
7	8:20	1.9	3.7	680.340	75	89	80	3	—	—	61	1.378	1.063	10.628	680.283
7	8:30	1.9	3.7	690.720	75	90	81	3	—	—	61	1.378	1.063	10.628	690.911
8	8:40	2.0	3.9	701.610	76	91	83	3	—	—	60	1.414	1.090	10.904	701.537
8	8:50	2.0	3.9	712.350	76	92	83	3	—	—	59	1.414	1.090	10.904	~~7230~~ 712.493
9	9:00	1.8	3.5	722.720	76	93	84	3	—	—	61	1.342	1.034	10.344	723.077
9	9:10	1.8	3.5	733.250	77	93	85	3	—	—	62	1.342	1.034	10.344	733.357
10	9:20	1.6	3.1	743.760	77	94	86	3	—	—	63	1.265	0.975	9.757	743.615
10	9:30	1.6	3.1	753.22	78	94	87	3	—	—	64	1.265	0.975	9.757	753.4457
11	9:40	1.7	3.3	763.620	78	94	88	3	—	—	64	1.324	0.705	9.050	763 203
11	9:50	1.7	3.3	772.020	78	94	88	3	—	—	65	1.324	0.705	9.050	772.253
12	10:00	1.6	3.1	781.360	79	94	88	3	—	—	66	1.265	0.975	9.752	781.303
12	10:10	1.6	3.1	791.238	77	94	88	3	—	—	66	1.265	0.975	9.753	791.056
	10:20			80.598											800.807

Isokinetic Sampling Field Data Sheet

Project Number: M253113 | Date: 7/29/25 | Test Number: 1

Client: Pace Structures | Test Location: Stack Outlet | Operator: CE | Test Tech: ____

Plant: CPC - Milwaukie, OR | Test Method: 0061 | Page Number: 2 of 2

Port-Point #	Time	(ΔP)	2.000 Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= 0.85 Meter Rate, Cubic Feet/ Min.	x 6 Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
1-1	1200	1.7	3.4	811.212	86	93	93	5	—	—	60	1.304	1.029	10.287	—
1	1210	1.7	3.4	821.120	86	96	93	5	—	—	57	1.304	1.029	10.287	821.499
2	1220	1.8	3.6	830.510	87	102	95	5	—	—	55	1.341	1.058	10.556	831.786
3	1230	1.7	3.4	841.503	87	103	96	5	—	—	57	1.304	1.029	10.287	842.372
4	1240	1.6	3.2	852.850	87	105	98	5	—	—	57	1.264	0.998	9.980	852.659
5	1250	1.8	3.6	862.230	89	106	99	5	—	—	59	1.341	1.058	10.556	862.639
6	1300	1.8	3.6	872.850	89	107	100	5	—	—	59	1.341	1.058	10.556	873.195
7	1310	1.8	3.6	883.650	89	107	100	5	—	—	60	1.341	1.058	10.556	883.751
8	1320	1.8	3.6	893.560	90	108	101	5	—	—	61	1.341	1.058	10.556	894.307
9	1330	1.8	3.6	904.510	92	108	102	5	—	—	62	1.341	1.058	10.132	904.863
10	1340	1.8	3.6	915.111	91	109	102	5	—	—	64	1.341	1.058	10.556	915.419
9	1350	1.8	3.6	915.181	91	109	102	5	—	—	64	1.341	1.058	10.556	925.975
10	1400	1.9	3.8	925.490	91	109	103	5	—	—	64	1.378	1.088	10.876	936.531
11	1410	1.7	3.4	936.360	95	110	103	5	—	—	62	1.304	1.029	10.287	947.407
12	1420	1.6	3.6	947.120	93	111	104	5	—	—	61	1.241	1.058	10.576	957.699
—	1430			956.876					—	—					—
12	1440	1.9	3.8	967.376	96	106	104	5	—	—	65	1.378	1.088	10.876	—
11	1450	1.9	3.8	966.180	96	106	104	5	—	—	60	1.378	1.088	10.876	968.57
10	1500	1.8	3.6	979.326	96	109	104	5	—	—	62	1.241	1.058	10.576	979.446
9	1510	1.9	3.8	989.020	96	111	104	5	—	—	62	1.378	1.088	10.876	990.322
8	1520	—	—	1000.150	—	—	—	—	—	—	65	1.414	1.116	11.159	1001.378
7	1530	1.9	3.8	1011.450	97	114	106	5	—	—	62	1.378	1.088	10.876	1012.254
6	1540	1.9	3.8	1011.450	96	115	106	5	—	—	62	1.378	1.088	10.876	1011.754
5	1550	1.8	3.6	1022.920	96	115	106	5	—	—	57	1.241	1.058	10.576	1022.63
4	1600	1.9	3.8	1033.050	96	117	107	5	—	—	56	1.378	1.088	10.876	1033.186
3	1612	1.8	3.6	1043.870	96	116	107	5	—	—	56	1.241	1.058	10.576	1044.062
	1622	1.6	3.2	1054.330	96	117	107	5	—	—	57	1.264	0.998	9.980	1054.618
	1632			1064.279											1064.598

Isokinetic Sampling Field Data Sheet

Project Number: MS3113 | Date: 7/30/25 | Test Number: 2

Client: PCC | Test Location: 8801 outlet | Operator: CE | Test Tech: ____

Plant: Milwaukie, OR | Test Method: 0061 | Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH) 1.966	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= 0.782 x 10 Meter Rate, Cubic Feet/ Min.	Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
1-1	625	1.9	3.7	64.710	76	66	65	7	—	—	55	1.378	1.078	10.779	—
1	635	1.8	3.5	75.120	76	70	65	7	—	—	58	1.341	1.049	10.492	75.189
2	645	2.1	4.1	89.920	76	74	67	7	—	—	64	1.449	1.133	11.332	85.980
2	655	2.1	4.1	96.150	76	77	68	7	—	—	67	1.449	1.133	11.332	97.312
3	705	1.7	3.3	107.930	77	81	70	6	—	—	58	1.304	1.020	10.196	108.644
3	715	1.8	3.5	117.760	76	81	71	6	—	—	59	1.341	1.049	10.492	118.840
4	725	2.0	3.9	127.850	77	83	72	7	—	—	57	1.414	1.106	11.059	129.332
4	735	2.0	3.9	138.970	77	85	74	7	—	—	59	1.414	1.106	11.059	140.391
5	745	1.7	3.3	150.200	77	85	74	6	—	—	58	1.304	1.020	10.196	151.450
5	755	1.8	3.5	160.920	77	85	75	6	—	—	52	1.341	1.049	10.492	161.646
6	805	1.8	3.5	170.710	77	86	76	6	—	—	52	1.341	1.049	10.492	172.138
6	815	1.7	3.3	181.940	77	88	78	6	—	—	52	1.304	1.020	10.196	182.603
7	825	2.0		191.966					—	—					192.826
7	835 830	2.0	3.9	191.966	79	87	82	7	—	—	49	1.414	1.106	11.059	—
7-8	845 840	2.0	3.9	203.440	79	89	82	7	—	—	52	1.414	1.106	11.059	203.885
8	855 850	2.0	3.9	214.630	79	91	83	7	—	—	53	1.414	1.106	11.059	214.944
8	905 900	2.0	3.9	225.520	79	92	83	6	—	—	54	1.414	1.106	11.059	226.003
9	915 910	1.9	3.7	236.590	79	92	84	6	—	—	54	1.378	1.078	10.779	237.062
9-10	925 920	2.0	3.9	247.160	79	93	84	6	—	—	54	1.414	1.106	11.059	247.841
10	935 930	1.8	3.5	258.330	81	96	86	6	—	—	58	1.341	1.049	10.492	258.860
10	945 940	1.9	3.7	268.220	82	96	87	6	—	—	59	1.378	1.078	10.779	269.352
11	955 950	1.9	3.7	279.050	81	97	89	6	—	—	57	1.378	1.078	10.779	280.131
11-12	1005 1000	1.8	3.5	289.950	81	96	88	6	—	—	57	1.341	1.049	10.492	290.510
12	1015 1010	1.8	3.5	301.060	82	95	88	6	—	—	57	1.341	1.049	10.492	301.402
12	1025 1020	1.8	3.5	311.457	82	95	89	6	—	—	57	1.341	1.049	10.492	311.894
	1030			321.820											322.386

Isokinetic Sampling Field Data Sheet

Project Number: m253113 Date: 7/30/25 Test Number: 2

Client: PCC Test Location: 8901 outlet Operator: CDS Test Tech: ____

Plant: Hillsboro, OR Test Method: 0061 Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft^3, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= 0.782 Meter Rate, Cubic Feet/ Min.	x 10 Theoretical Meter Volume, (V_m) ft^3, per point	Theoretical Meter Volume, (V_m) ft^3, total
2A	1145	1.8	~~3.5~~ 3.166	~~322.050~~ 323.090	84	86	86	7	—	—	62	1.341	1.049	10.492	—
1	1155	1.7	3.3	332.590	86	91	89	6	—	—	60	1.304	1.020	10.196	332.582
2	1205	1.7	3.3	342.830	88	95	88	6	—	—	63	1.304	1.020	10.196	342.778
2	1215	1.7	3.3	353.350	88	97	89	6	—	—	64	1.304	1.020	10.196	352.974
3	1225	1.8	3.5	363.330	90	100	93	7	—	—	66	1.341	1.049	10.492	363.170
3	1235	1.8	3.5	374.120	86	102	95	7	—	—	67	1.341	1.049	10.492	373.662
4	1245	1.7	3.3	384.500	86	103	96	7	—	—	67	1.341	1.049	10.492	384.154
4	1255	1.7	3.3	394.510	87	104	98	7	—	—	64	1.241	1.049	10.492	394.646
5	1305	2.0	3.9	404.580	86	105	99	7	—	—	62	1.414	1.106	11.059	405.138
5	1315	1.9	3.7	415.639	87	105	99	7	—	—	59	1.378	1.078	10.779	416.197
~~6~~	1325			425.789					—	—					426.776
6	1345	1.9	3.7	425.789	89	96	96	7	—	—	61	1.378	1.078	10.779	—
6 7	1355	2.0	3.9	437.210	89	96	96	7	—	—	57	1.414	1.106	11.059	437.755
7	1405	1.8	3.5	448.650	89	99	94	7	—	—	56	1.341	1.049	10.492	448.814
~~7 8~~	1415	~~1.6~~	~~3.1~~	~~458.756~~	~~84~~	~~100~~	~~94~~	~~6~~	—	—	~~52~~	~~1.265~~	~~1.020~~	~~10.196~~	459.306
7 ~~8~~	1425	1.6	3.1	458.756	88	91	91	6	—	—	55	1.265	0.989	9.892	~~468.50~~
8 9	1505	~~1.6~~ 1.7	~~3.1~~ 3.3	468.520	88	94	91	6	—	—	56	1.241	1.049	10.492	469.198
8 9	~~1515~~ 1515	1.8	3.5	479.690	88	99	92	7	—	—	59	1.341	1.049	10.492	479.690
9 ~~10~~	~~1525~~ 1525	1.8	3.5	489.200	88	101	92	7	—	—	60	1.341	1.049	10.492	490.182
9 ~~10~~	~~1535~~ 1535	1.7	3.3	499.750	89	103	93	7	—	—	61	1.241	1.049	10.492	500.674
10	1545	1.6	3.1	510.270	89	105	95	6	—	—	63	1.265	0.989	9.892	511.166
10	~~1555~~ 1555	1.6	3.1	520.590	90	107	96	6	—	—	67	1.265	0.989	9.892	521.058
~~11~~ 11	~~1605~~ 1605	1.7	3.3	530.830	90	108	97	6	—	—	64	1.241	1.049	10.492	530.95
~~11~~ 12	~~1615~~ 1615	1.7	3.3	541.120	90	108	99	6	—	—	59	1.241	1.049	10.492	541.442
12	~~1625~~ 1625	1.6	3.1	551.280	90	107	99	6	—	—	58	1.265	0.989	9.892	551.934
12	1635	1.6	3.1	561.230	90	107	99	6	—	—	58	1.265	0.989	9.892	561.826
	1645			571.431											571.718

Isokinetic Sampling Cover Sheet

Client:	PCC Structurals, Inc.	**Pitot Tube Cp:**	0.840
Facility:	Large parts Campus	**Probe Length (Feet):**	3.0
Test Location:	Baghouse 8901 outlet	**Probe Liner Material:**	Glass
Project #:	M253113	**Sample Plane:**	(Hrzt.) or Vert.
Test Method(s):	5	**Port Length (“):**	3.00
Test Engineer:	ASM1	**Port Diameter (“):**	3.00
Test Technician:	DV	**Port Type:**	Nipple
Upstream Diameters:	3.0	**Duct Shape:**	(Circ.) or Rect.
Downstream Diameters:	3.0	**Diameter (Feet):**	1.00
# of Ports Sampled:	2	**Length (Feet):**	N/A
# of Points per Port:	12	**Width (Feet):**	N/A
Source Condition:	Batch process	**Duct Area (Sq. Feet):**	0.785
Diluent Model/SN:	N/A	**Minutes per Point:**	20
Mid Gas ID/concentration:	N/A /%CO_2 %O_2	**Total Traverse Points:**	24
High Gas ID/concentration:	N/A /%CO_2 %O_2	**Test Length (Min.):**	480
Moisture Balance ID:	S10-7	**Train Type:**	Anderson Box

	R# 1	R# 2	R#
Meter ID:	CM7	CM7	
Pitot ID:	4032	4032	
Filter ID:	22790	22762	
Filter Pre-Weight (g):	0.47948	0.47833	
Nozzle Diameter (“):	0.190	0.190	
Meter Cal Factor (Y):	1.016	1.016	
Meter Orifice Setting (DH):	1.509	1.509	
Nozzle Kit ID:	Glass set #5	Glass set #5	
Individual Nozzle ID:	S48	S48	
Pre Pitot Leak Check:	0.0 @ 4.5 “H_2O	0.0 @ 3.8 “H_2O	@ “H_2O
Post Pitot Leak Check:	0.0 @ 4.0 “H_2O	0.0 @ 4.0 “H_2O	@ “H_2O
Pre Nozzle Leak Check:	0.000 @ 15 “Hg	0.000 @ 14 “Hg	@ “Hg
Post Nozzle Leak Check:	0.000 @ 15 “Hg	0.000 @ 15 “Hg	@ “Hg
Barometric Pressure,“Hg:	29.89	29.89	
Static Pressure, “H_2O:	2	2	
CO_2 %:	N/A	N/A	
O_2 %:	N/A	N/A	

Comments:

Isokinetic Sampling Field Data Sheet

Project Number: M253113
Client: PCC
Plant: Large Parts Campus
Date: 7/31/2025
Test Location: Baghouse 8901 out
Test Method: 5
Test Number: 1
Operator: ASM1
Test Tech: DV
Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
1-1	6:05:00	1.50	1.72	4.735	74	62	61	4	257	250	45				
1-1	6:15:00	1.50	1.73	12.553	74	65	62	4	251	250	48				
1-2	6:25:00	1.50	1.73	20.400	74	67	62	4	244	249	49				
1-2	6:35:00	1.50	1.74	28.263	72	69	63	4	240	250	45				
1-3	6:45:00	1.80	2.10	36.643	72	71	64	4	252	251	47				
1-3	6:55:00	1.80	2.10	45.471	72	73	65	4	253	250	45				
1-4	7:05:00	2.00	2.34	54.324	72	73	66	4	255	251	48				
1-4	7:15:00	2.00	2.34	63.664	72	74	67	4	265	249	49				
1-5	7:25:00	2.10	2.46	73.022	72	74	68	4	230	251	52				
1-5	7:35:00	2.10	2.47	82.621	72	77	68	4	230	251	55				
1-6	7:45:00	2.00	2.36	92.246	72	74	69	4	270	249	54				
1-6	7:55:00	2.00	2.35	101.022	72	75	69	4	264	250	55				
1-7	8:05:00			111.007											
1-7	8:15:00	1.80	2.11	111.007	72	71	69	4	269	251	54				
1-7	8:25:00	1.80	2.11	119.918	72	72	69	4	253	251	55				
1-8	8:35:00	1.60	1.88	128.756	72	75	70	4	262	251	50				
1-8	8:45:00	1.60	1.84	137.157	72	76	71	4	242	249	49				
1-9	8:55:00	1.50	1.77	145.575	73	80	72	4	262	252	49				
1-9	9:05:00	1.50	1.76	153.756	73	78	72	4	260	249	51				
1-10	9:15:00	1.50	1.77	161.321	74	79	73	4	238	249	51				
1-10	9:25:00	1.50	1.77	170.044	74	78	73	4	255	248	51				
1-11	9:35:00	1.20	1.42	178.260	74	78	74	4	275	251	51				
1-11	9:45:00	1.20	1.42	185.570	74	80	74	4	260	250	52				
1-12	9:55:00	1.20	1.42	192.344	74	80	75	4	230	251	52				
1-12	10:05:00	1.20	1.42	200.225	75	81	75	4	246	250	52				
	10:15:00			207.555											
2-1	10:42:00	1.60	1.84	207.555	76	81	77	4	250	250	55				
2-1	10:52:00	1.60	1.84	216.029	77	82	77	4	241	249	56				
2-2	11:02	1.50	1.77	224.501	77	83	78	4	238	251	53				
2-2	11:12	1.50	1.76	232.720	81	84	79	4	246	250	60				

Isokinetic Sampling Field Data Sheet

Project Number: M253113
Client: PCC
Plant: Large parts campus
Date: 7/31/2025
Test Location: Baghouse 8901 out
Test Method: 5
Test Number: 1
Operator: Asm 2
Test Tech: DV
Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
2-3	11:22:00	1.50	1.76	240.922	81	84	79	4	245	251	60				
2-3	11:32:00	1.50	1.77	249.125	79	84	80	4	244	250	61				
	11:42:00			257.352											
2-4	12:00:00	1.60	1.89	257.352	78	81	79	4	249	250	60				
2-4	12:10:00	1.60	1.89	265.825	77	83	79	4	255	252	62				
2-5	12:20:00	1.80	2.13	274.322	78	84	79	4	246	252	63				
2-5	12:30:00	1.80	2.13	283.333	80	87	80	4	251	250	65				
2-6	12:40:00	2.00	2.37	292.361	79	88	81	4	254	250	62				
2-6	12:50:00	2.00	2.38	301.403	79	89	82	4	252	250	50				
2-7	13:00:00	2.00	2.37	308.612	80	93	83	4	257	249	50				
2-7	13:10:00	2.00	2.38	315.932	80	90	83	4	256	250	48				
2-8	13:20:00	2.10	2.49	324.922	80	88	83	4	251	249	50				
2-8	13:30:00	2.10	2.49	332.325	81	87	83	4	261	250	49				
2-9	13:40:00	2.00	2.37	340.512	80	88	83	4	230	251	49				
2-9	13:50:00	2.00	2.37	352.112	90	87	84	4	260	250	47				
	14:00:00			369.241											
2-10	14:45:00	1.50	1.78	369.241	82	89	84	4	244	250	55				
2-10	14:55:00	1.50	1.78	377.496	82	92	85	4	241	251	55				
2-11	15:05:00	1.50	1.78	385.988	84	94	87	4	254	249	56				
2-11	15:15:00	1.40	1.67	394.105	84	96	88	4	239	251	56				
2-12	15:25:00	1.20	1.43	402.162	85	96	89	4	240	251	60				
2-12	15:35:00	1.20	1.43	409.620	85	97	90	4	239	250	57				
	15:45:00			417.093											

Isokinetic Sampling Field Data Sheet

Project Number: M253113
Client: PCC
Plant: Large Parts Campus
Date: 8/1/2025
Test Location: Baghouse 8101 out
Test Method: 5
Test Number: 2
Operator: ASM2 Test Tech: DJ
Page Number: 1 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x ___ Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
1-1	6:05:00	.50	.73	419.785	72	62	60	4	225	242	50				
1-1	6:15:00	1.50	.73	422.745	72	66	61	4	233	251	50				
1-2	6:25:00	1.60	.86	435.742	71	69	62	4	244	251	53				
1-2	6:35:00	1.60	.87	444.042	71	71	63	4	228	256	50				
1-3	6:45:00	1.80	2.10	452.364	71	72	64	4	231	251	51				
	6:55:00			461.209											
1-3	7:30:00	1.80	2.10	461.209	71	67	65	4	251	248	47				
1-4	7:40:00	2.00	2.33	470.021	71	64	65	4	224	249	46				
1-4	7:50:00	2.00	2.34	479.326	72	72	66	4	228	250	47				
1-5	8:00:00	2.10	2.46	488.658	72	73	67	4	238	250	46				
1-5	8:10:00	2.10	2.46	498.238	72	74	68	4	228	251	48				
1-6	8:20:00	2.00	2.35	507.836	72	74	68	4	236	250	48				
1-6	8:30:00	2.00	2.34	517.203	73	73	69	4	243	251	49				
1-7	8:40:00	1.80	2.11	526.562	72	74	69	4	226	253	51				
	8:50:00			536.455											
1-7	9:15:00	1.80	2.11	535.453	73	72	72	4	255	257	56				
1-8	9:25:00	1.60	1.88	544.357	74	76	72	4	257	249	53				
1-8	9:35:00	1.60	1.84	552.259	74	79	74	4	245	249	53				
1-9	9:45:00	1.50	1.77	561.209	75	79	75	4	242	249	53				
1-9	9:55:00	1.50	1.78	569.390	74	80	76	4	246	253	54				
1-10	10:05:00	1.40	1.66	577.544	75	81	76	4	241	254	56				
1-10	10:15:00	1.40	1.67	585.519	76	84	81	4	251	252	58				
1-11	10:25:00	1.40	1.66	593.496	76	84	80	4	246	250	57				
1-11	10:35:00	1.40	1.67	601.465	76	85	81	4	250	250	54				
1-12	10:45:00	1.20	1.43	609.448	77	86	82	4	258	261	58				
1-12	10:55:00	1.20	1.42	616.847	74	86	83	4	255	250	58				
	11:05:00			624.240											
2-1	11:10:00	1.50	1.78	630.525	79	87	84	4	257	255	61				
2-1	11:20:00	1.50	1.78	638.805	74	87	84	4	247	258	61				
2-2	11:30:00	1.60	1.91	647.062	74	88	85	4	249	249	63				

Isokinetic Sampling Field Data Sheet

Project Number: M253113
Client: PCC
Plant: Large Parts (campus)
Date: 8/1/2025
Test Location: Baghouse 8901 out
Test Method: 5
Test Number: 2
Operator: Asm2 Test Tech: DV
Page Number: 2 of 2

Port-Point #	Time	(ΔP)	Orifice Setting (ΔH)	Meter Volume (V_m) ft³, Actual	Stack Temp, °F	Meter Temp Inlet, °F	Meter Temp Outlet, °F	Pump Vacuum, "Hg	Probe Temp. °F	Filter Temp. °F	Impinger Outlet Well Temp. °F	K-Calcs (Optional) Square Root, ΔP	K= Meter Rate, Cubic Feet/ Min.	x Theoretical Meter Volume, (V_m) ft³, per point	Theoretical Meter Volume, (V_m) ft³, total
	11:40:00			655.628											
2-2	12:10:00	1.60	1.84	655.628	83	86	85	4	254	254	68				
2-3	12:20:00	1.80	2.14	664.148	82	94	85	4	257	247	61				
2-3	12:30:00	1.80	2.13	673.248	83	87	85	4	247	250	57				
2-4	12:40:00	2.00	2.37	682.262	83	89	87	4	240	252	55				
2-4	12:50:00	2.00	2.37	691.829	84	90	86	4	240	248	55				
2-5	13:00:00	2.10	2.49	701.389	84	90	87	4	246	255	57				
2-5	13:10:00	2.10	2.49	711.145	85	91	87	4	237	260	63				
	13:20:00			720.949											
2-6	14:14:00	2.00	2.38	720.999	87	94	92	4	251	252	64				
2-6	14:24:00	2.00	2.38	730.620	82	96	93	4	251	257	64				
	14:34:00			740.267											
2-7	14:51:00	2.00	2.38	740.267	88	97	93	4	252	243	65				
2-7	15:01:00	2.00	2.38	749.914	88	98	93	4	243	245	64				
2-8	15:11:00	1.80	2.14	759.564	89	100	93	4	256	249	64				
2-8	15:21:00	1.80	2.14	768.737	90	101	94	4	240	253	67				
2-9	15:31:00	1.60	1.91	777.913	90	102	95	4	254	254	66				
2-9	15:41:00	1.60	1.91	786.580	90	102	95	4	259	251	67				
2-10	15:51:00	1.50	1.78	795.270	94	102	95	4	261	256	68				
2-10	16:01:00	1.50	1.79	803.607	92	102	96	4	253	251	67				
2-11	16:11:00	1.40	1.67	811.991	91	102	96	4	251	255	68				
2-11	16:21:00	1.40	1.67	820.098	91	103	96	4	260	247	68				
2-12	16:31:00	1.20	1.43	828.22	91	103	96	4	247	252	67				
2-12	16:41:00	1.20	1.42	835.774	92	94	96	4	248	251	68				
	16:51:00			843.202											

Appendix G - Calibration and Response Time Data

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Procedures for Method 5 and Flow Calibration

Nozzles

The nozzles are measured according to Method 5, Section 10.1

Dry Gas Meters

The test meters are calibrated according to Method 5, Section 10.3 and 16.1. and “Procedures for Calibrating and Using Dry Gas Volume Meters as Calibration Standards” by P.R. Westlin and R.T. Shigehara, March 10, 1978.

Analytical Balance

The accuracy of the analytical balance is checked with Class S, Stainless Steel Type 303 weights manufactured by F. Hopken and Son, Jersey City, New Jersey.

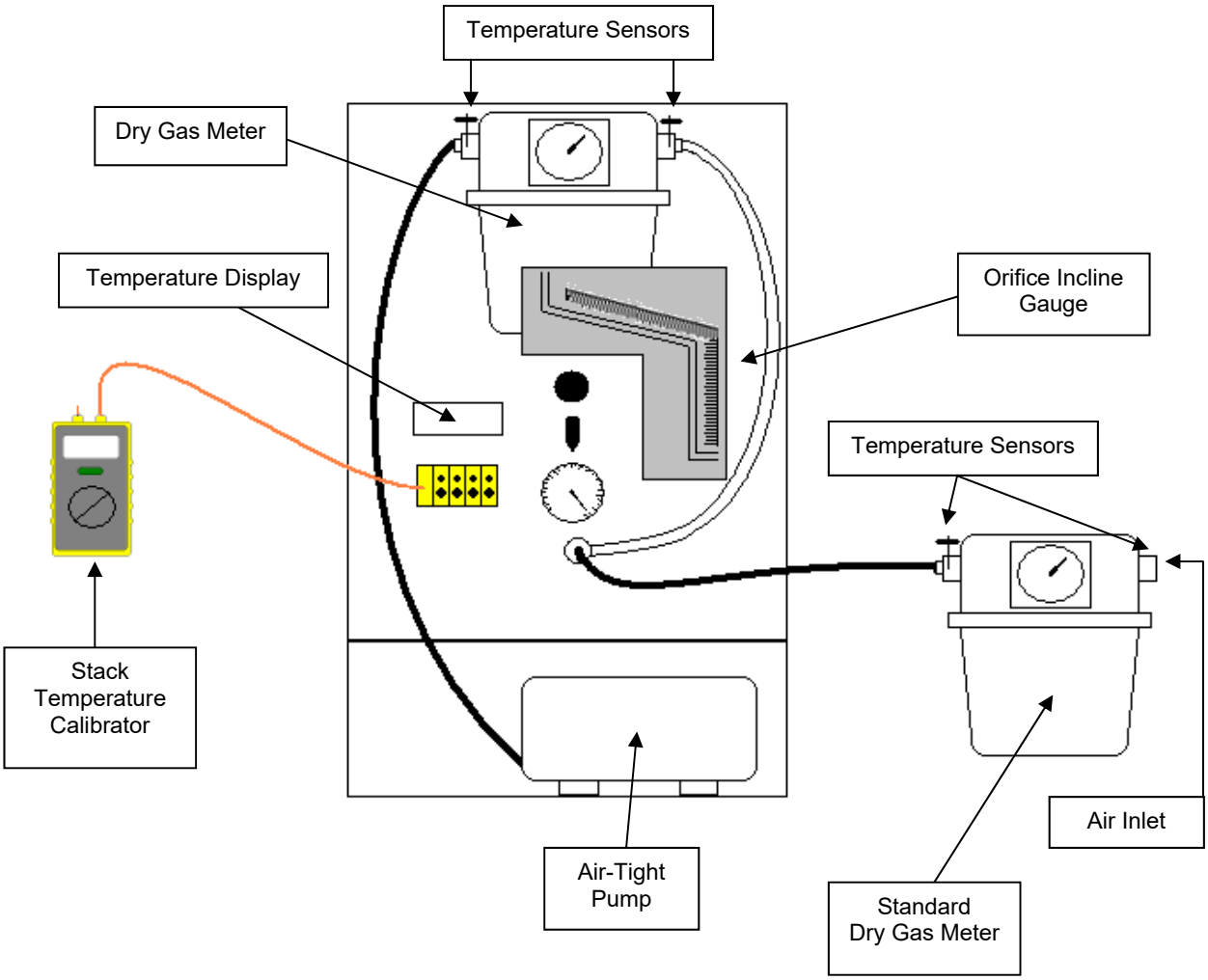
Temperature Sensing Devices

The potentiometer and thermocouples are calibrated utilizing a NIST traceable millivolt source.

Pitot Tubes

The pitot tubes utilized during this test program are manufactured according to the specification described and illustrated in the *Code of Federal Regulations*, Title 40, Part 60, Appendix A, Methods 1 and 2. The pitot tubes comply with the alignment specifications in Method 2, Section 10.1; and the pitot tube assemblies are in compliance with specifications in the same section.

Dry Gas Meter/Control Module Calibration Diagram



Dry Gas Meter Calibration Data

Dry Gas Meter No.	*CM7*	*Date:*	*July 2, 2025*
Standard Meter No.	*15788714*	*Calibrated By:*	*SKF*
Standard Meter (Y)	*1.00470*	*Barometric Pressure:*	*29.30*

Run Number		Orifice Setting in H_2O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final			*19.862*	*91.505*	*80*	*80*	*80*					
Initial			*14.774*	*86.456*	*79*	*79*	*80*					
Difference	*1*	*0.20*	*5.088*	*5.049*	*80*	*80*	*80*	*80*	*19*	*14*	*1.012*	*1.660*
Final			*31.180*	*102.706*	*80*	*80*	*81*					
Initial			*25.768*	*97.333*	*80*	*80*	*81*					
Difference	*2*	*0.50*	*5.412*	*5.373*	*80*	*80*	*81*	*81*	*12*	*13*	*1.012*	*1.480*
Final			*44.845*	*16.194*	*81*	*81*	*81*					
Initial			*38.935*	*10.371*	*80*	*81*	*81*					
Difference	*3*	*0.70*	*5.910*	*5.823*	*81*	*81*	*81*	*81*	*11*	*16*	*1.019*	*1.480*
Final			*38.529*	*9.968*	*81*	*81*	*81*					
Initial			*31.694*	*3.214*	*80*	*80*	*81*					
Difference	*4*	*0.90*	*6.835*	*6.754*	*81*	*81*	*81*	*81*	*11*	*44*	*1.015*	*1.543*
Final			*25.501*	*97.062*	*80*	*80*	*80*					
Initial			*20.049*	*91.693*	*80*	*80*	*80*					
Difference	*5*	*1.20*	*5.452*	*5.369*	*80*	*80*	*80*	*80*	*8*	*9*	*1.017*	*1.560*
Final			*14.675*	*86.358*	*79*	*80*	*80*					
Initial			*9.506*	*81.280*	*79*	*79*	*79*					
Difference	*6*	*2.00*	*5.169*	*5.078*	*79*	*80*	*80*	*80*	*5*	*32*	*1.019*	*1.329*
										Average	***1.016***	***1.509***

Stack Temperature Sensor Calibration			
Temperature ID :	100769	Name :	skf
Ambient Temperature, °F :	82.6	Date :	July 2, 2025

Temperature Calibrator			
Model # :	CL23A	Certification Date:	February 5, 2025
Serial # :	T-249465	Expiration Date:	February 5, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	-2	0.4
250	249	0.1
600	599	0.1
1200	1198	0.1

$$\frac{(\text{Ref. Temp., }^{o}\text{F} + 460) - (\text{Test Therm. Temp., }^{o}\text{F} + 460)}{\text{Ref. Temp., }^{o}\text{F} + 460} * 100 <= 1.5\ \%$$

Dry Gas Meter Calibration Data

Dry Gas Meter No.	*CM7*	*Date:*	*September 2, 2025*
Standard Meter No.	*25125408*	*Calibrated By:*	*CJM*
Standard Meter (Y)	*0.98960*	*Barometric Pressure:*	*29.40*

Run Number		Orifice Setting in H_2O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final			*33.836*	*7.271*	*72*	*75*	*75*					
Initial			*28.717*	*2.139*	*71*	*76*	*73*					
Difference	*1*	*0.20*	*5.119*	*5.132*	*72*	*76*	*74*	*75*	*18*	*43*	*0.993*	*1.563*
Final			*46.464*	*19.913*	*73*	*78*	*76*					
Initial			*41.291*	*14.729*	*72*	*78*	*76*					
Difference	*2*	*0.50*	*5.173*	*5.184*	*73*	*78*	*76*	*77*	*12*	*2*	*0.995*	*1.581*
Final			*57.808*	*31.287*	*73*	*78*	*77*					
Initial			*52.671*	*26.133*	*73*	*78*	*77*					
Difference	*3*	*0.70*	*5.137*	*5.154*	*73*	*78*	*77*	*78*	*10*	*0*	*0.993*	*1.551*
Final			*52.134*	*25.607*	*73*	*80*	*77*					
Initial			*47.029*	*20.486*	*73*	*78*	*76*					
Difference	*4*	*0.90*	*5.105*	*5.121*	*73*	*79*	*77*	*78*	*8*	*52*	*0.993*	*1.587*
Final			*40.692*	*14.128*	*72*	*78*	*75*					
Initial			*34.215*	*7.652*	*72*	*75*	*75*					
Difference	*5*	*1.20*	*6.477*	*6.476*	*72*	*77*	*75*	*76*	*9*	*42*	*0.994*	*1.573*
Final			*28.135*	*101.560*	*71*	*78*	*73*					
Initial			*23.031*	*96.481*	*70*	*76*	*76*					
Difference	*6*	*2.00*	*5.104*	*5.079*	*71*	*77*	*75*	*76*	*6*	*4*	*0.999*	*1.642*
									Average		***0.994***	***1.583***

Stack Temperature Sensor Calibration			
Temperature ID :	100769	Name :	CJM
Ambient Temperature, °F :	75.2	Date :	September 2, 2025

Temperature Calibrator			
Model # :	CL23A	Certification Date:	February 5, 2025
Serial # :	T-249465	Expiration Date:	February 5, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	0	0.0
250	248	0.3
600	596	0.4
1200	1198	0.1

$$\frac{(\text{Ref. Temp., }^{o}\text{F} + 460) - (\text{Test Therm. Temp., }^{o}\text{F} + 460)}{\text{Ref. Temp., }^{o}\text{F} + 460} * 100 <= 1.5\ \%$$

Dry Gas Meter Calibration Data

Dry Gas Meter No.	*CM23*	*Date:*	*July 16, 2025*
Standard Meter No.	*16541852*	*Calibrated By:*	*JSC*
Standard Meter (Y)	*0.99920*	*Barometric Pressure:*	*28.15*

Run Number		Orifice Setting in H_2O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final			*113.638*	*120.280*	*97*	*101*	*98*					
Initial			*108.625*	*115.249*	*96*	*101*	*97*					
Difference	*1*	*0.20*	*5.013*	*5.031*	*97*	*101*	*98*	*99*	*18*	*44*	*1.000*	*1.753*
Final			*108.625*	*115.249*	*96*	*101*	*97*					
Initial			*103.614*	*110.206*	*95*	*101*	*97*					
Difference	*2*	*0.50*	*5.011*	*5.043*	*96*	*101*	*97*	*99*	*12*	*9*	*0.998*	*1.839*
Final			*103.614*	*110.206*	*95*	*101*	*97*					
Initial			*98.530*	*105.125*	*95*	*99*	*96*					
Difference	*3*	*0.70*	*5.084*	*5.081*	*95*	*100*	*97*	*98*	*10*	*25*	*1.004*	*1.838*
Final			*98.530*	*105.125*	*95*	*99*	*96*					
Initial			*93.512*	*100.116*	*94*	*99*	*95*					
Difference	*4*	*0.90*	*5.018*	*5.009*	*95*	*99*	*96*	*97*	*9*	*5*	*1.004*	*1.844*
Final			*93.512*	*100.116*	*94*	*99*	*95*					
Initial			*88.474*	*95.103*	*93*	*98*	*94*					
Difference	*5*	*1.20*	*5.038*	*5.013*	*94*	*99*	*95*	*97*	*8*	*0*	*1.006*	*1.888*
Final			*88.474*	*95.103*	*93*	*98*	*94*					
Initial			*83.436*	*90.092*	*93*	*98*	*93*					
Difference	*6*	*2.00*	*5.038*	*5.011*	*93*	*98*	*94*	*96*	*6*	*24*	*1.004*	*2.013*
										Average	***1.003***	***1.863***

Stack Temperature Sensor Calibration			
Temperature ID :	552	Name :	JSC
Ambient Temperature, °F :	94.7	Date :	July 16, 2025

Temperature Calibrator			
Model # :	CL940A	Certification Date:	March 6, 2025
Serial # :	526	Expiration Date:	March 6, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	1	0.2
250	252	0.3
600	602	0.2
1200	1206	0.4

$$\frac{(\text{Ref. Temp., }^{o}\text{F} + 460) - (\text{Test Therm. Temp., }^{o}\text{F} + 460)}{\text{Ref. Temp., }^{o}\text{F} + 460} * 100 <= 1.5\ \%$$

Dry Gas Meter Calibration Data

Dry Gas Meter No.	*CM23*	*Date:*	*August 28, 2025*
Standard Meter No.	*25125408*	*Calibrated By:*	*ZGB*
Standard Meter (Y)	*0.98960*	*Barometric Pressure:*	*29.38*

Run Number		Orifice Setting in H_2O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final			23.303	5.820	74	80	78					
Initial			18.210	0.728	73	79	77					
Difference	1	0.20	5.093	5.092	74	80	78	79	20	34	0.999	1.909
Final			34.088	16.635	74	81	79					
Initial			28.922	11.455	74	81	78					
Difference	2	0.50	5.166	5.180	74	81	79	80	13	27	0.996	1.982
Final			45.052	27.646	73	82	80					
Initial			39.843	22.417	73	81	80					
Difference	3	0.70	5.209	5.229	73	82	80	81	11	17	0.998	1.910
Final			39.711	22.278	73	82	80					
Initial			34.425	16.972	73	81	79					
Difference	4	0.90	5.286	5.306	73	82	80	81	10	15	0.998	1.969
Final			28.608	11.142	74	81	74					
Initial			23.515	6.031	73	74	78					
Difference	5	1.20	5.093	5.111	74	78	76	77	8	33	0.989	1.986
Final			18.009	100.525	73	82	77					
Initial			12.947	95.461	73	81	76					
Difference	6	2.00	5.062	5.064	73	82	77	79	6	31	0.995	1.934
										Average	***0.996***	***1.948***

Stack Temperature Sensor Calibration			
Temperature ID :	100769	Name :	ZGB
Ambient Temperature, °F :	74.7	Date :	August 28, 2025

Temperature Calibrator			
Model # :	CL23A	Certification Date:	February 5, 2025
Serial # :	T-249465	Expiration Date:	February 5, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	0	0.0
250	251	0.1
600	601	0.1
1200	1205	0.3

$$\frac{(\text{Ref. Temp., }^{o}\text{F} + 460) - (\text{Test Therm. Temp., }^{o}\text{F} + 460)}{\text{Ref. Temp., }^{o}\text{F} + 460} * 100 <= 1.5\ \%$$

Dry Gas Meter Calibration Data

Dry Gas Meter No.	*CM43*	*Date:*	*July 2, 2025*
Standard Meter No.	*25125408*	*Calibrated By:*	*SKF*
Standard Meter (Y)	*0.98960*	*Barometric Pressure:*	*29.28*

Run Number	*Orifice Setting in H_2O Chg (H)*	*Standard Meter Gas Volume vr*	*Dry Gas Meter Gas Volume vd*	*Standard Meter Temp. F° tr*	*Dry Gas Meter Inlet Temp. F° tdi*	*Dry Gas Meter Outlet Temp. F° tdo*	*Dry Gas Meter Avg. Temp. F° td*	*Time Min*	*Time Sec*	*Y*	*Chg (H)*
Final		*99.805*	*22.853*								
Initial		*94.512*	*17.560*	*81*	*81*	*81*					
Difference 1	*0.20*	*5.293*	*5.293*	*81*	*81*	*81*	*81*	*20*	*59*	*0.989*	*1.889*
Final		*16.558*	*39.599*	*80*	*80*	*80*					
Initial		*11.330*	*34.356*	*80*	*80*	*80*					
Difference 2	*0.50*	*5.228*	*5.243*	*80*	*80*	*80*	*80*	*12*	*56*	*0.986*	*1.836*
Final		*27.843*	*50.906*	*80*	*80*	*80*					
Initial		*22.445*	*45.490*	*80*	*80*	*80*					
Difference 3	*0.70*	*5.398*	*5.416*	*80*	*80*	*80*	*80*	*11*	*19*	*0.985*	*1.846*
Final		*22.396*	*45.342*								
Initial		*16.815*	*39.856*	*80*	*80*	*80*					
Difference 4	*0.90*	*5.581*	*5.486*	*80*	*80*	*80*	*80*	*10*	*4*	*1.004*	*1.757*
Final		*11.179*	*34.200*	*81*	*80*	*80*					
Initial		*6.099*	*29.145*	*81*	*80*	*81*					
Difference 5	*1.20*	*5.080*	*5.055*	*81*	*80*	*81*	*80*	*8*	*2*	*0.990*	*1.806*
Final		*94.355*	*17.406*	*81*	*81*	*81*					
Initial		*89.107*	*12.208*	*81*	*81*	*81*					
Difference 6	*2.00*	*5.248*	*5.198*	*81*	*81*	*81*	*81*	*6*	*28*	*0.994*	*1.825*

Average	***0.991***	***1.826***

Stack Temperature Sensor Calibration			
Temperature ID :	100769	Name :	SKF
Ambient Temperature, °F :	85.2	Date :	July 2, 2025

Temperature Calibrator			
Model # :	CL23A	Certification Date:	February 5, 2025
Serial # :	T-249465	Expiration Date:	February 5, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	-3	0.7
250	249	0.1
600	599	0.1
1200	1203	0.2

$$\frac{(\text{Ref. Temp., }^{o}\text{F} + 460) - (\text{Test Therm. Temp., }^{o}\text{F} + 460)}{\text{Ref. Temp., }^{o}\text{F} + 460} * 100 <= 1.5\ \%$$

Dry Gas Meter Calibration Data

Dry Gas Meter No.	*CM43*	*Date:*	*August 22, 2025*
Standard Meter No.	*18654513*	*Calibrated By:*	*CJM*
Standard Meter (Y)	*1.00570*	*Barometric Pressure:*	*29.39*

Run Number		Orifice Setting in H_2O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final			12.411	75.612	77	77	77					
Initial			7.328	70.488	76	77	77					
Difference	1	0.20	5.083	5.124	77	77	77	77	20	17	0.998	1.829
Final			23.418	86.679	77	77	77					
Initial			18.322	81.554	77	77	77					
Difference	2	0.50	5.096	5.125	77	77	77	77	12	48	0.999	1.815
Final			34.715	98.041	77	78	78					
Initial			29.656	92.939	77	78	78					
Difference	3	0.70	5.059	5.102	77	78	78	78	10	49	0.997	1.838
Final			29.029	92.311	77	78	78					
Initial			23.943	87.196	77	77	77					
Difference	4	0.90	5.086	5.115	77	78	78	78	9	37	0.999	1.850
Final			17.836	81.062	77	77	77					
Initial			12.714	75.929	76	77	77					
Difference	5	1.20	5.122	5.133	77	77	77	77	8	23	1.001	1.846
Final			6.932	70.090	76	77	77					
Initial			1.819	64.979	76	77	77					
Difference	6	2.00	5.113	5.111	76	77	77	77	6	29	1.003	1.844
								Average			***1.000***	***1.837***

Stack Temperature Sensor Calibration			
Temperature ID :	100769	Name :	CJM
Ambient Temperature, °F :	77.7	Date :	August 22, 2025

Temperature Calibrator			
Model # :	CL23A	Certification Date:	February 5, 2025
Serial # :	T-249465	Expiration Date:	February 5, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	0	0.0
250	250	0.0
600	600	0.0
1200	1204	0.2

$$\frac{(\text{Ref. Temp., }^{o}\text{F} + 460) - (\text{Test Therm. Temp., }^{o}\text{F} + 460)}{\text{Ref. Temp., }^{o}\text{F} + 460} * 100 <= 1.5\ \%$$

Dry Gas Meter Calibration Data

Dry Gas Meter No.	*53*	*Date:*	*July 10, 2025*
Standard Meter No.	*16541852*	*Calibrated By:*	*DSN*
Standard Meter (Y)	*0.99920*	*Barometric Pressure:*	*28.16*

Run Number		Orifice Setting in H_2O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F° tr	Dry Gas Meter Inlet Temp. F° tdi	Dry Gas Meter Outlet Temp. F° tdo	Dry Gas Meter Avg. Temp. F° td	Time Min	Time Sec	Y	Chg (H)
Final			*40.093*	*39.093*	*92*	*94*	*94*					
Initial			*35.074*	*34.085*	*91*	*92*	*92*					
Difference	*1*	*0.20*	*5.019*	*5.008*	*92*	*93*	*93*	*93*	*18*	*55*	*1.004*	*1.771*
Final			*35.074*	*34.085*	*91*	*92*	*92*					
Initial			*30.034*	*29.085*	*90*	*91*	*91*					
Difference	*2*	*0.50*	*5.040*	*5.000*	*91*	*92*	*92*	*92*	*12*	*15*	*1.008*	*1.839*
Final			*30.034*	*29.085*	*90*	*91*	*91*					
Initial			*25.001*	*24.077*	*90*	*90*	*90*					
Difference	*3*	*0.70*	*5.033*	*5.008*	*90*	*91*	*91*	*91*	*10*	*20*	*1.003*	*1.837*
Final			*25.001*	*24.077*	*90*	*90*	*90*					
Initial			*19.910*	*19.015*	*89*	*90*	*90*					
Difference	*4*	*0.90*	*5.091*	*5.062*	*90*	*90*	*90*	*90*	*9*	*15*	*1.003*	*1.848*
Final			*19.910*	*19.015*	*89*	*90*	*90*					
Initial			*14.790*	*13.955*	*90*	*89*	*89*					
Difference	*5*	*1.20*	*5.120*	*5.060*	*90*	*90*	*90*	*90*	*8*	*5*	*1.008*	*1.862*
Final			*14.790*	*13.955*	*90*	*89*	*89*					
Initial			*9.676*	*8.945*	*90*	*89*	*89*					
Difference	*6*	*2.00*	*5.114*	*5.010*	*90*	*89*	*89*	*89*	*6*	*10*	*1.013*	*1.816*

Average	***1.006***	***1.829***

Stack Temperature Sensor Calibration			
Temperature ID :	100770	Name :	DSN
Ambient Temperature, °F :	92.4	Date :	July 10, 2025

Temperature Calibrator			
Model # :	CL940A	Certification Date:	March 6, 2025
Serial # :	526	Expiration Date:	March 6, 2026

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	Test Thermometer Temperature (°F)	Temperature Difference %
0	-1	0.2
250	249	0.1
600	599	0.1
1200	1203	0.2

$$\frac{(\text{Ref. Temp., }^{o}\text{F} + 460) - (\text{Test Therm. Temp., }^{o}\text{F} + 460)}{\text{Ref. Temp., }^{o}\text{F} + 460} * 100 <= 1.5\ \%$$

Dry Gas Meter Calibration Data

Dry Gas Meter No.	*53*	*Date:*	*August 4, 2025*
Standard Meter No.	*16541852*	*Calibrated By:*	*OB*
Standard Meter (Y)	*0.99920*	*Barometric Pressure:*	*28.11*

Run Number		Orifice Setting in H_2O Chg (H)	Standard Meter Gas Volume vr	Dry Gas Meter Gas Volume vd	Standard Meter Temp. F^o tr	Dry Gas Meter Inlet Temp. F^o tdi	Dry Gas Meter Outlet Temp. F^o tdo	Dry Gas Meter Avg. Temp. F^o td	Time Min	Time Sec	Y	Chg (H)
Final			*125.097*	*120.046*	*95*	*95*	*95*					
Initial			*120.037*	*114.929*	*94*	*94*	*94*					
Difference	*1*	*0.20*	*5.060*	*5.117*	*95*	*95*	*95*	*95*	*18*	*55*	*0.988*	*1.759*
Final			*120.037*	*114.929*	*94*	*94*	*94*					
Initial			*114.956*	*109.811*	*94*	*93*	*93*					
Difference	*2*	*0.50*	*5.081*	*5.118*	*94*	*94*	*94*	*94*	*12*	*15*	*0.990*	*1.829*
Final			*114.956*	*109.811*	*94*	*93*	*93*					
Initial			*109.944*	*104.786*	*93*	*92*	*92*					
Difference	*3*	*0.70*	*5.012*	*5.025*	*94*	*93*	*93*	*93*	*10*	*0*	*0.993*	*1.754*
Final			*109.944*	*104.786*	*93*	*92*	*92*					
Initial			*104.728*	*99.556*	*93*	*91*	*91*					
Difference	*4*	*0.90*	*5.216*	*5.230*	*93*	*92*	*92*	*92*	*9*	*15*	*0.991*	*1.781*
Final			*98.878*	*93.719*	*92*	*90*	*90*					
Initial			*93.754*	*88.646*	*91*	*89*	*89*					
Difference	*5*	*1.20*	*5.124*	*5.073*	*92*	*90*	*90*	*90*	*8*	*0*	*1.002*	*1.838*
Final			*93.754*	*88.646*	*91*	*89*	*89*					
Initial			*88.668*	*83.625*	*91*	*89*	*89*					
Difference	*6*	*2.00*	*5.086*	*5.021*	*91*	*89*	*89*	*89*	*6*	*5*	*1.003*	*1.796*
									Average		***0.995***	***1.793***

Stack Temperature Sensor Calibration			
Temperature ID :	*100770*	*Name :*	*OB*
Ambient Temperature, °F :	*92.9*	*Date :*	*August 4, 2025*

Temperature Calibrator			
Model # :	*CL940A*	*Certification Date:*	*March 6, 2025*
Serial # :	*526*	*Expiration Date:*	*March 6, 2026*

Primary Standards Directly Traceable National Institute of Standards and Technology (NIST)

Reference Source Temperature (°F)	***Test Thermometer Temperature (°F)***	***Temperature Difference %***
0	*1*	0.2
250	*251*	0.1
600	*601*	0.1
1200	*1205*	0.3

$$\frac{(\text{Ref. Temp., °F} + 460) - (\text{Test Therm. Temp., °F} + 460)}{\text{Ref. Temp., °F} + 460} * 100 <= 1.5\ \%$$

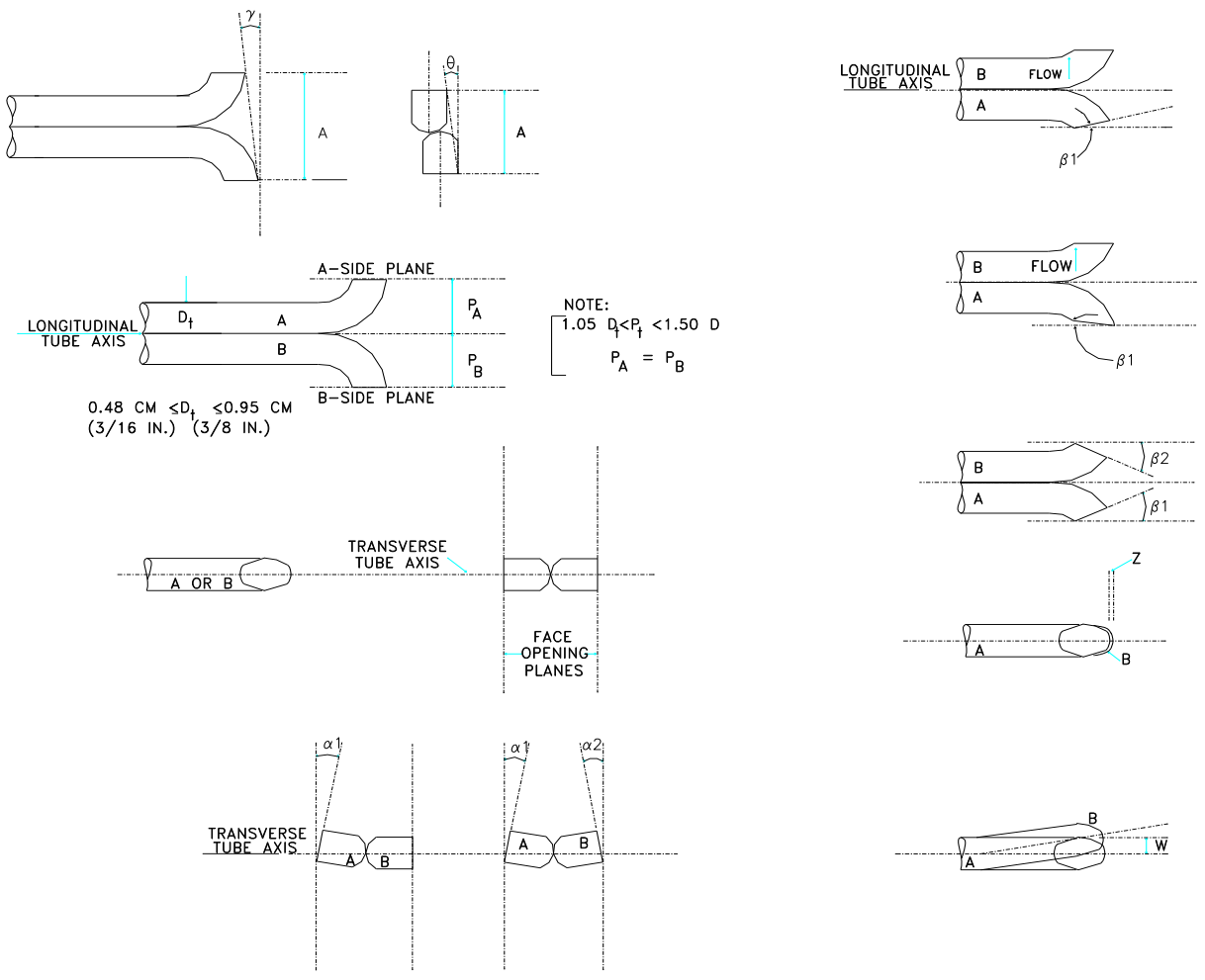
S TYPE PITOT TUBE INSPECTION WORKSHEET

Pitot Tube No: 25 Date: 3/27/2025 Inspectors Name: JAM

Type of Probe: (mark one)

M2	M5	M17
	X	

Probe Length: 3 ft.



Pitot tube assembly level? X yes _____ no

Pitot tube openings damaged? _____ yes (explain below) X no

a_1 = 2.5 ° (≤10°) a_2 = 3.5 ° (≤10°) z = A sin γ = **0.017** (in.); (≤0.125 in.)

b_1 = 0.5 ° (≤5°) b_2 = 2.5 ° (≤5°) w = A sin θ = **0.01688** (in.); (≤0.03125 in.)

γ = 1 ° θ = 1 ° A = 0.967 (in.) P_A = 0.484 (in.), P_B = 0.484 (in.), D_t = 0.375 (in.)

Calibration required? _____ yes **X** no

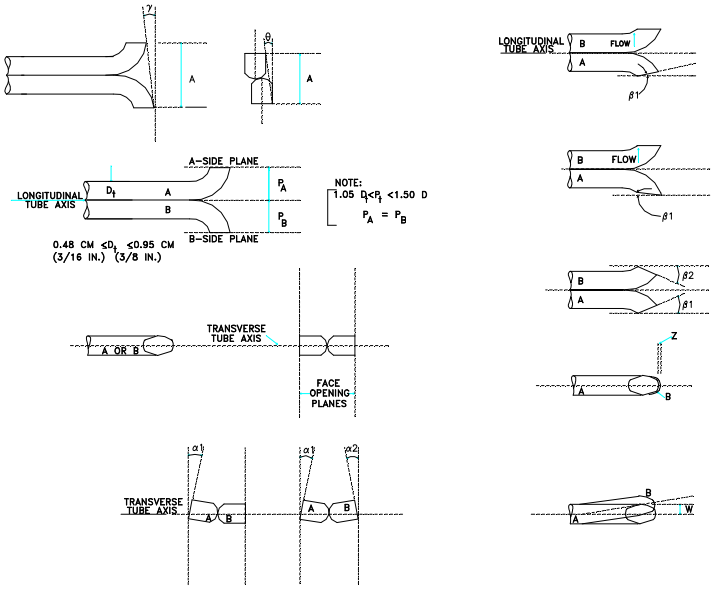
S TYPE PITOT TUBE INSPECTION WORKSHEET

Pitot Tube No: 25 Date: 8/29/2025 Inspectors Name: SFG1

Type of Probe: (circle one)

M2	M5	M17
	x	

Probe Length: 3 ft.



γ

Pitot tube assembly level? x yes _____ no

Pitot tube openings damaged? _____ yes (explain below) x no

a_1 = 0.5 ° (≤10°) a_2 = 1 ° (≤10°) z = A sin γ = **0.017** (in.); (≤0.125 in.)

b_1 = 2 ° (≤5°) b_2 = 1.5 ° (≤5°) w = A sin θ = **0.02479** (in.); (≤0.03125 in.)

γ = 1 ° θ = 1.5 ° A = 0.947 (in.) P_A = 0.474 (in.), P_B = 0.474 (in.), D_t = 0.375 (in.)

Calibration required? _____ yes **X** no

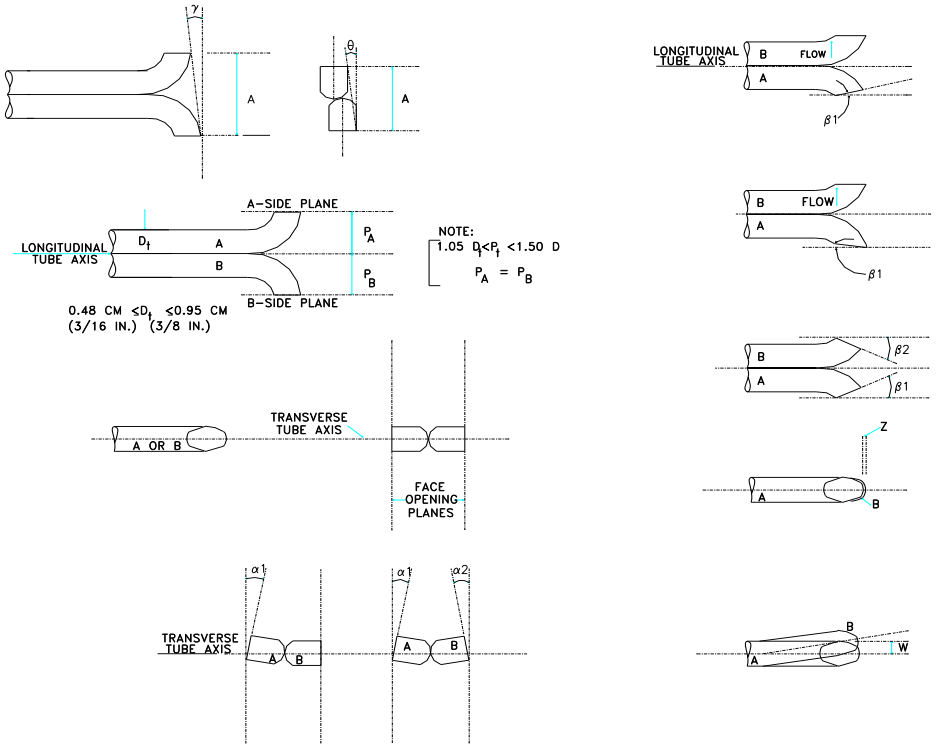
S TYPE PITOT TUBE INSPECTION WORKSHEET

Pitot Tube No: 1883 Date: 2/24/2025 Inspectors Name: JAM

Type of Probe: (mark one)

M2	M5	M17
	X	

Probe Length: 3 ft.



Pitot tube assembly level? X yes _____ no

Pitot tube openings damaged? _____ yes (explain below) X no

a_1 = 3.5 ^{o} (≤10^o) a_2 = 2 ^{o} (≤10^o) z = A sin γ = **0.015** (in.); (≤0.125 in.)

b_1 = 3 ^{o} (≤5^o) b_2 = 0 ^{o} (≤5^o) w = A sin θ = **0.01511** (in.); (≤0.03125 in.)

γ = 1 ^{o} θ = 1 ^{o} A = 0.866 (in.) P_A = 0.433 (in.), P_B = 0.433 (in.), D_t = 0.375 (in.)

Calibration required? _____ yes **X** no

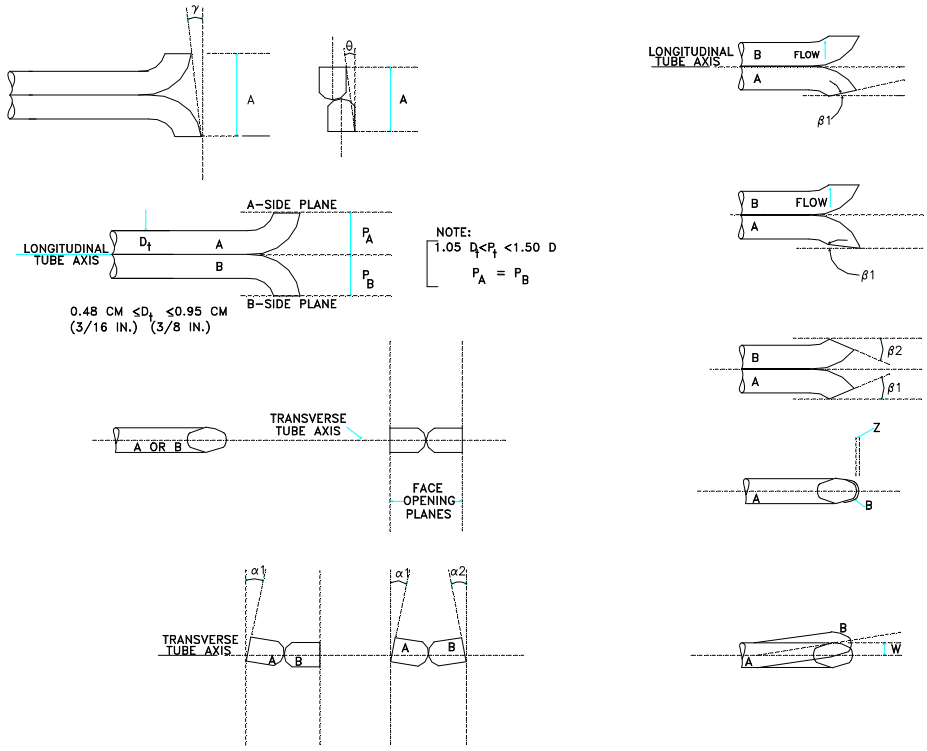
S TYPE PITOT TUBE INSPECTION WORKSHEET

Pitot Tube No: 1883 Date: 9/11/2025 Inspectors Name: JAM

Type of Probe: (mark one)

M2	M5	M17
	X	

Probe Length: 3 ft.



Pitot tube assembly level? x yes _____ no

Pitot tube openings damaged? _____ yes (explain below) x no

a_1 = 2.5 ° (≤10°) a_2 = 1.5 ° (≤10°) z = A sin γ = **0.008** (in.); (≤0.125 in.)

b_1 = 1 ° (≤5°) b_2 = 1.5 ° (≤5°) w = A sin θ = **0.00000** (in.); (≤0.03125 in.)

γ = 0.5 ° θ = 0 ° A = 0.862 (in.) P_A = 0.431 (in.), P_B = 0.431 (in.), D_t = 0.375 (in.)

Calibration required? _____ yes **x** no

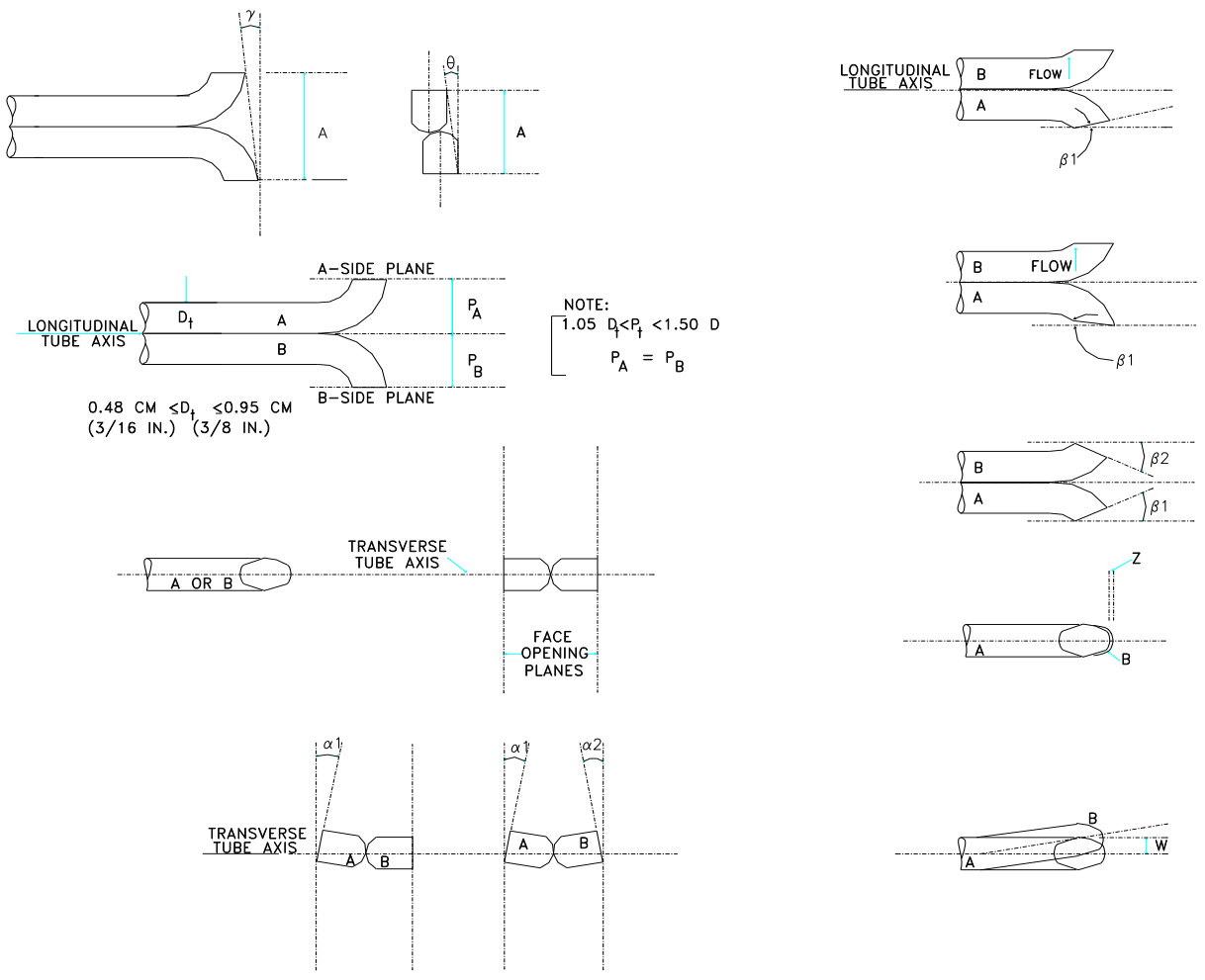
S TYPE PITOT TUBE INSPECTION WORKSHEET

Pitot Tube No: 4032 Date: 5/16/2025 Inspectors Name: MO

Type of Probe: (mark one)

M2	M5	M17
	X	

Probe Length: 3 ft.



Pitot tube assembly level? X yes _____ no

Pitot tube openings damaged? _____ yes (explain below) X no

a_1 = 1 ° (≤10°) a_2 = 1.5 ° (≤10°) z = A sin γ = **0.017** (in.); (≤0.125 in.)

b_1 = 1.5 ° (≤5°) b_2 = 1 ° (≤5°) w = A sin θ = **0.00830** (in.); (≤0.03125 in.)

γ = 1 ° θ = 0.5 ° A = 0.951 (in.) P_A = 0.476 (in.), P_B = 0.476 (in.), D_t = 0.375 (in.)

Calibration required? _____ yes **X** no

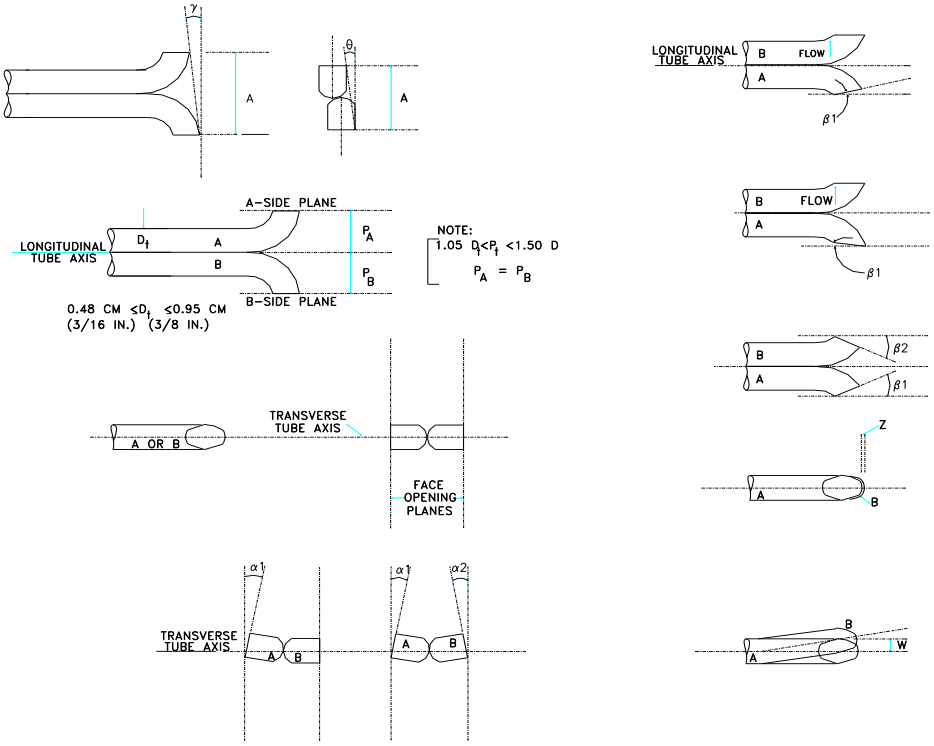
S TYPE PITOT TUBE INSPECTION WORKSHEET

Pitot Tube No: 4032 Date: 8/19/2025 Inspectors Name: DMS

Type of Probe: (mark one)

M2	M5	M17
	X	

Probe Length: 3 ft.



Pitot tube assembly level? X yes _____ no

Pitot tube openings damaged? _____ yes (explain below) X no

a_1 = 4 ° (≤10°) a_2 = 3 ° (≤10°) z = A sin γ = **0.000** (in.); (≤0.125 in.)

b_1 = 2 ° (≤5°) b_2 = 4 ° (≤5°) w = A sin θ = **0.00823** (in.); (≤0.03125 in.)

γ = 0 ° θ = 0.5 ° A = 0.944 (in.) P_A = 0.472 (in.), P_B = 0.472 (in.), D_t = 0.375 (in.)

Calibration required? _____ yes **X** no

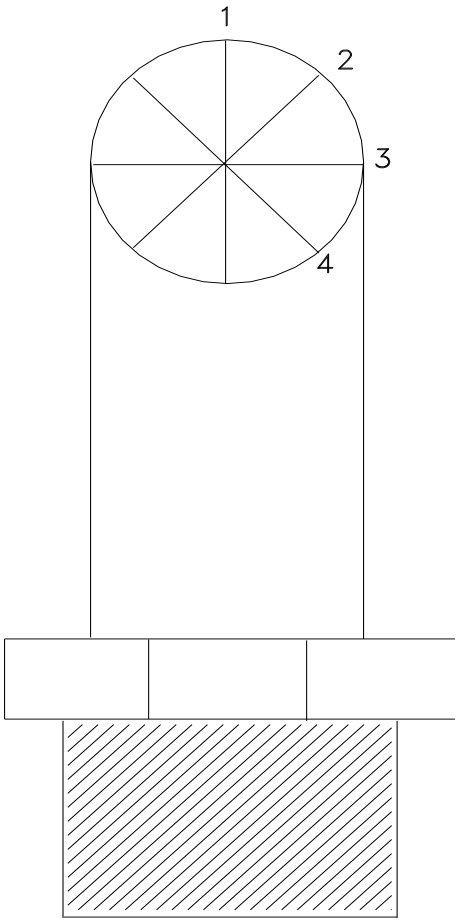
Nozzle Calibration

Date: 5/19/2025

Nozzle ID No.: #23, .175

Analyst: JAM

Material/Type: Glass



0.177	1
0.174	2
0.175	3
0.174	4

Valid Data

Average
0.175

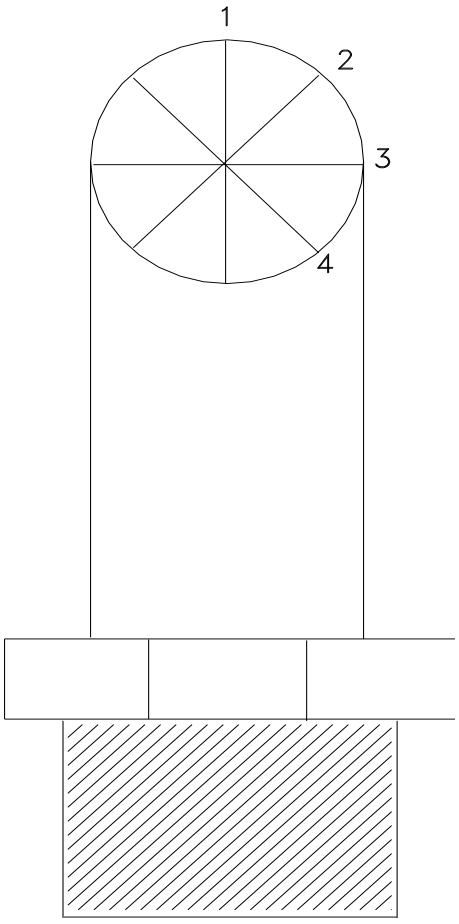
Nozzle Calibration

Date: 6/30/2025

Nozzle ID No.: 799, .177

Analyst: JAM

Material/Type: Glass



0.179	1
0.176	2
0.177	3
0.177	4

Valid Data

Average
0.177

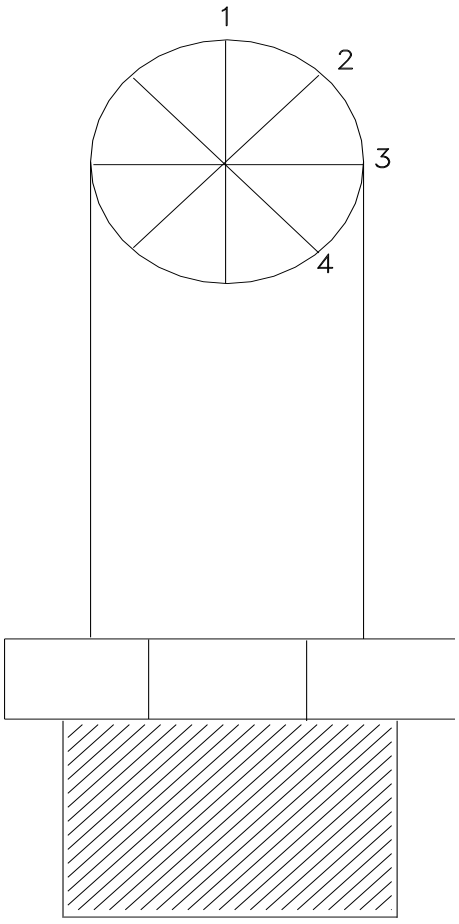
Nozzle Calibration

Date: 4/16/2025

Nozzle ID No.: 848, .190

Analyst: JAM

Material/Type: Glass



0.190	1
0.191	2
0.190	3
0.190	4

Valid Data

Average
0.190

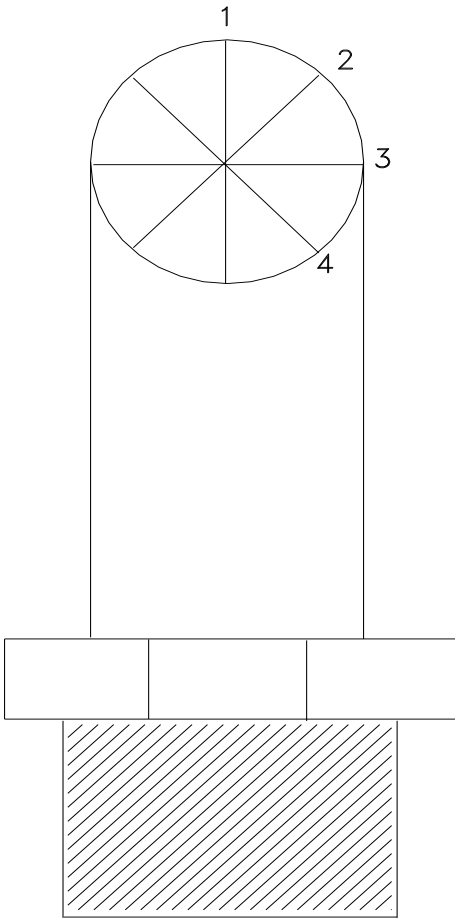
Nozzle Calibration

Date: 4/25/2025

Nozzle ID No.: 879, .205

Analyst: JAM

Material/Type: Glass



0.204	1
0.205	2
0.205	3
0.204	4

Valid Data

Average
0.205

Pre/Post	Date	Time	Analyst	Ambient Temperature degrees F	Relative Humidity %	Barometric Pressure inches Hg	Calibration Standard 50.0000g	% Error	Calibration Standard 5.0000g	% Error	Calibration Standard 0.5000g	% Error
Pre	8/4/2025	12:24PM	LNT	85	17.0	28.12	49.99998		4.99996		0.50000	
Post	8/4/2025	12:39PM	LNT	85	17.0	28.12	49.99999		4.99998		0.50000	
PRE	8/5/2024	12:30PM	LNT	86	12.0	28.20	49.99993		4.99995		0.49995	
Post	8/5/2024	1:45PM	LNT	91	10.0	28.18	49.99993		4.99995		0.49995	
Pre	8/6/2024	1:10PM	LNT	87	15.0	28.25	49.99990		4.99992		0.49999	
Post	8/6/2024	3:15PM	LNT	90	16.0	28.21	49.99991		4.99992		0.49999	
Pre	8/7/2024	10:18AM	LNT	81	29.0	28.24	49.99987		4.99992		0.49995	
Post	8/7/2024	12:09PM	LNT	84	28.0	28.22	49.99994		4.99995		0.50000	
Pre	8/8/2024	10:20AM	LNT	83	23.0	28.15	49.99995		4.99995		0.49997	
Post	8/8/2024	10:33AM	LNT	84	23.0	28.15	49.99995		4.99994		0.50000	
Pre	8/11/2025	11:29 AM	LNT	83	26.0	28.29	49.99999		4.99999		5.00000	
Post	8/11/2025	11:58AM	LNT	84	25.0	28.19	49.99997		4.99998		0.49998	
Pre	8/12/2025	2:16PM	LNT	85	29.0	28.10	50.00002		4.99998		0.50000	
Post	8/12/2025	2:24PM	LNT	85	29.0	28.10	50.00001		5.00000		0.50000	
Pre	8/13/2025	10:25AM	LNT	79	36.0	28.14	49.99993		5.00000		0.50000	
Post	8/13/2025	11:22PM	LNT	82	37.0	28.13	49.99990		4.99997		0.49998	
Pre	8/14/2025	1:05PM	LNT	85	32.0	28.08	49.99998		4.99999		0.50000	
Post	8/14/2025	2:40PM	LNT	90	29.0	28.04	49.99983		4.99984		0.49984	
Pre	8/17/2025	1:05PM	LNT	84	26.0	28.19	49.99989		4.99998		0.49998	
Post	8/17/2025	1:23PM	LNT	87	25.0	28.18	49.99988		4.99993		0.49994	
Pre	8/26/2025	12:43PM	JSC	78	36.0	28.30	49.99976		4.99995		0.50001	
Post	8/26/2025	1:16PM	LNT	79	37.0	28.26	49.99977		4.99993		0.50000	
Pre	8/27/2025	12:34 PM	LNT	80	35.0	28.31	49.99973		4.99994		0.49995	
Post	8/27/2025	2:06PM	LNT	83	29.0	28.28	49.99976		4.99993		0.49994	
Pre	8/28/2025	11:39 AM	JSC	69	36.0	28.33	49.99970		4.99996		0.49998	
Post	8/28/2025	2:04 AM	JSC	77	26.0	28.15	49.99988		4.99998		0.49998	

Balance ID Sartorius
Model QUINTIX65-1S
S/N 0034209777

1100 N. Villa Avenue
Villa Park IL 60181
Tel: 630-833-3800/Fax: 630-833-0044
acmemetrology.com

Certificate of Calibration

Certificate No. 255772

Customer Information

MOSTARDI-PLATT
888 INDUSTRIAL DR.
ELMHURST, IL 60126

Equipment Information

ID Number:	0034209777
Serial Number:	0034209777
Manufacturer:	SARTORIUS
Model:	QUINTIX65
Type:	SCALE
Size:	60 G X 0.00001

Calibration Information

As Found	In Tolerance
As Left	In Tolerance
Calibration Date:	2/21/2025
Next Due:	2/21/2026
Issue Date:	02/21/25
Temperature:	70.2 °F
Humidity:	24 %
Procedure:	PPCA503
	PPCA101
Purchase Order	VBL/JENNA
Event Type:	FIELD CALIBRATION

Description	Std. Nominal	Tolerance -	Tolerance +	As Found	As Left	Units
LINEARITY (SPAN)	0.00000	0.00000	0.00000	0.00000	0.00000	G
LINEARITY (SPAN)	15.00000	14.99300	15.00300	15.00009	15.00002	G
LINEARITY (SPAN)	30.00000	29.99300	30.00300	30.00021	30.00003	G
LINEARITY (SPAN)	45.00000	44.99300	45.00300	45.00031	45.00005	G
LINEARITY (SPAN)	60.00000	59.99300	60.00300	60.00021	60.00005	G
LINEARITY (SPAN)	0.00000	-0.00300	0.00300	0.00000	0.00000	G
SHIFT (POSITION 1)	20.00000	19.99300	20.00300	20.00000	20.00000	G
SHIFT (POSITION 2)	20.00000	19.99300	20.00300	20.00004	20.00002	G
SHIFT (POSITION 3)	20.00000	19.99300	20.00300	20.00009	20.00002	G
SHIFT (POSITION 4)	20.00000	19.99300	20.00300	20.00007	20.00002	G

"A" - Adjusted and returned in tolerance
"F" - Indicates out of tolerance result

Standards Used	I.D. Number	Last Cal.	Cal. Due
2 - 1000 GR WT SET	AM0025	8/21/2024	8/31/2026
TEMP/HUM GAUGE	AM0341A	7/17/2024	7/31/2026

Calibration Notes

This measurement equipment was tested using certified standards and was found to be indicating within manufacture specifications.

JOSEPH FABBRINI — *Certified/Authorized By*



Signature

2/21/2025 — *Date*

ACME Metrology, certifies that the instrument listed above has been tested, calibrated (if necessary), and meets the criteria established in the associated test procedure unless otherwise noted. The results found in this report relate only to the equipment identified in this report. The standards used are traceable to the "SI" through the National Institute of Standards and Technology (NIST) or other NMI. Statements of compliance use the Simple Acceptance Decision Rule per ILAC G8. The expanded uncertainty of measurement is not included in the determination of conformity or nonconformity, rather, it is provided with the data so as to facilitate its effect in false accept risk or false reject risk, as applicable, on a case by case basis by the customer. The calibration interval has been specified by the customer. Any number of factors may cause the calibration to drift out of tolerance before the recommended interval has expired. This Certificate of Calibration shall not be reproduced, except in full, without the written approval of ACME Metrology.

1100 N. Villa Avenue
Villa Park IL 60181
Tel: 630-833-3800/Fax: 630-833-0044
acmemetrology.com

Certificate of Verification

Certificate No. 255794

Customer Information

MOSTARDI-PLATT
888 INDUSTRIAL DR.
ELMHURST, IL. 60126

Equipment Information

ID Number:	W-01
Serial Number:	W-01
Manufacturer:	N/A
Model:	N/A
Type:	WEIGHT KIT 50G, 5G, .5G
Size:	WEIGHT KIT 50G, 5G, .5G

Calibration Information

Verification Date:	2/21/2025
Next Due Date:	2/21/2026
Temperature:	72.2F
Humidity:	21%
Department:	
Purchase Order:	VBL/JENNA

Calibration Notes

* This test weight was compared on customers scale (#0034209777) against Acme NIST traceable test weight and was found to weigh within acceptable limits of the indicated value.

Description	Std. Nominal	As Found	Units
Weight	0.50000	0.50004	mg
Weight	5.00000	5.00000	g
Weight	50.00000	49.99990	g

JOSEPH FABBRINI
Certified/Authorized By


Signature

2/21/2025
Date

Acme Metrology, certifies the instrument listed above has been verified according to the associated test procedure unless otherwise noted. The standards used are traceable to the National Institute of Standards and Technology (NIST). The verification interval has been specified by the customer. This Certificate of Verification shall not be reproduced, except in full, without the written approval of Acme Metrology.

Appendix H - Laboratory Sample Analysis

MOSTARDI PLATT

PROJECT: M253113
PCC – LARGE PARTS

CLIENT # M050
REPORT # 25-522 REVISION 1

SUBMITTED BY:
Alliance Technical Group
12242 S.W. GARDEN PLACE
TIGARD, OR 97223
(503) 624-2183

12242 SW Garden Place ❖ Tigard, OR 97223-8246 ❖ (503) 624-2183

Case Narrative

Date: October 9, 2025

General Information

Client:	Mostardi Platt
Client Number:	M050
Report Number:	25-522 Revision 1
Sample Description:	Impinger Trains
Sample Numbers:	25-S3103 – 25-S3133

Analysis

Analytes:	Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Hg, Ni, P, Se, Ag, Tl, V, Zn, Hexavalent Chromium
Analytical Protocols:	EPA Method 29 (8/2/17 version) SW-846 Method 0061 (revision 0, December 1996)
Analytical Notes:	Method 29 front half samples 25-S3103 and 25-S3108 were analyzed at a twofold dilution for Be because of matrix interference. The detection limits were raised to account for the dilution. Results are not blank corrected. The client requested Ba, Ag and Tl be added to this report on 10/6/25. Ba and Tl results were pulled from the original analysis, but Ag results are from reanalysis of the samples.
QA/QC Review:	All the data have been reviewed by the analysts performing the analyses and the project manager. All the quality control and sample-specific information in this package is complete and meets or exceeds the minimum requirements for acceptability.
Comments:	If you have any questions or concerns regarding this analysis, please feel free to contact the project manager.
Disclaimer:	This report shall not be reproduced, except in full, without the written approval of the laboratory. The results only represent that of the samples as received into the laboratory. All data are reported to the detection limit. Results <5x DL must be considered to have a higher degree of uncertainty associated with them. Due to the statistical process of detection limit determination, data in this report should not be used for statistical analysis as the data has been censored in such a manner as to bias statistical analyses high.

_____
Project Manager

Client: M050 - Mostardi Platt
Report Number: 25-522

Lab ID: 25-S3103
Client ID: Inlet Run 1 C1&3
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Aluminum, ICP	1,890	3.75	µg/sample
Antimony, ICP-MS	< DL	0.750	µg/sample
Arsenic, ICP	< DL	1.75	µg/sample
Barium, ICP	11.1	0.125	µg/sample
Beryllium, ICP	0.248	0.100	µg/sample
Cadmium, ICP-MS	0.274	0.075	µg/sample
Chromium, ICP	4,730	0.200	µg/sample
Cobalt, ICP	3,470	0.125	µg/sample
Copper, ICP	22.0	1.25	µg/sample
Lead, ICP-MS	1.74	0.075	µg/sample
Manganese, ICP	23.5	0.075	µg/sample
Mercury, CVAA	0.0344	0.0219	µg/sample
Nickel, ICP	15,000	0.750	µg/sample
Phosphorus, ICP	148.	5.00	µg/sample
Selenium, ICP	9.39	3.75	µg/sample
Silver, ICP	4.48	0.500	µg/sample
Thallium, ICP	45.5	2.50	µg/sample
Vanadium, ICP	3.54	0.250	µg/sample
Zinc, ICP	155.	0.750	µg/sample

Lab ID: 25-S3104
Client ID: Inlet Run 1 C4
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Aluminum, ICP	12.6	4.20	µg/sample
Antimony, ICP	< DL	0.700	µg/sample
Arsenic, ICP	< DL	0.980	µg/sample
Barium, ICP	1.80	0.070	µg/sample
Beryllium, ICP	0.036	0.028	µg/sample
Cadmium, ICP	0.292	0.056	µg/sample
Chromium, ICP	14.9	0.112	µg/sample
Cobalt, ICP	0.384	0.070	µg/sample
Copper, ICP	9.82	0.700	µg/sample
Lead, ICP	3.38	0.700	µg/sample
Manganese, ICP	7.98	0.042	µg/sample
Mercury, CVAA	0.0973	0.0243	µg/sample
Nickel, ICP	4.91	0.420	µg/sample
Phosphorus, ICP	22.9	2.80	µg/sample
Selenium, ICP	< DL	2.10	µg/sample
Silver, ICP	< DL	0.280	µg/sample
Thallium, ICP	< DL	1.40	µg/sample
Vanadium, ICP	< DL	0.140	µg/sample
Zinc, ICP	26.0	0.420	µg/sample

Client: M050 - Mostardi Platt
Report Number: 25-522

Lab ID: 25-S3105
Client ID: Inlet Run 1 C5A
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.00621	µg/sample

Lab ID: 25-S3106
Client ID: Inlet Run 1 C5B
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Mercury, CVAA	0.113	0.0248	µg/sample

Lab ID: 25-S3107
Client ID: Inlet Run 1 C5C
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0216	µg/sample

Lab ID: 25-S3108
Client ID: Inlet Run 2 C1&3
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	586.	3.75	µg/sample
Antimony, ICP-MS	< DL	0.750	µg/sample
Arsenic, ICP	< DL	1.75	µg/sample
Barium, ICP	5.28	0.125	µg/sample
Beryllium, ICP	0.428	0.100	µg/sample
Cadmium, ICP-MS	0.120	0.075	µg/sample
Chromium, ICP	2,040	0.200	µg/sample
Cobalt, ICP	330.	0.125	µg/sample
Copper, ICP	17.5	1.25	µg/sample
Lead, ICP-MS	0.560	0.075	µg/sample
Manganese, ICP	16.5	0.075	µg/sample
Mercury, CVAA	< DL	0.0219	µg/sample
Nickel, ICP	6,690	0.750	µg/sample
Phosphorus, ICP	32.8	5.00	µg/sample
Selenium, ICP	< DL	3.75	µg/sample
Silver, ICP	3.28	0.500	µg/sample
Thallium, ICP	6.30	2.50	µg/sample
Vanadium, ICP	3.02	0.250	µg/sample
Zinc, ICP	74.2	0.750	µg/sample

Client: M050 - Mostardi Platt
Report Number: 25-522

Lab ID: 25-S3109
Client ID: Inlet Run 2 C4
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	24.6	3.39	µg/sample
Antimony, ICP	< DL	0.565	µg/sample
Arsenic, ICP	< DL	0.791	µg/sample
Barium, ICP	0.904	0.056	µg/sample
Beryllium, ICP	< DL	0.023	µg/sample
Cadmium, ICP	0.123	0.045	µg/sample
Chromium, ICP	21.1	0.090	µg/sample
Cobalt, ICP	16.1	0.056	µg/sample
Copper, ICP	1.71	0.565	µg/sample
Lead, ICP	0.921	0.565	µg/sample
Manganese, ICP	6.70	0.034	µg/sample
Mercury, CVAA	0.140	0.0305	µg/sample
Nickel, ICP	112.	0.339	µg/sample
Phosphorus, ICP	19.5	2.26	µg/sample
Selenium, ICP	< DL	1.70	µg/sample
Silver, ICP	< DL	0.226	µg/sample
Thallium, ICP	< DL	1.13	µg/sample
Vanadium, ICP	< DL	0.113	µg/sample
Zinc, ICP	11.8	0.339	µg/sample

Lab ID: 25-S3110
Client ID: Inlet Run 2 C5A
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.00980	µg/sample

Lab ID: 25-S3111
Client ID: Inlet Run 2 C5B
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	0.0450	0.0262	µg/sample

Lab ID: 25-S3112
Client ID: Inlet Run 2 C5C
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0193	µg/sample

Client: M050 - Mostardi Platt
Report Number: 25-522

Lab ID: 25-S3113
Client ID: Outlet Run 1 C1&3
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Aluminum, ICP	115.	3.75	µg/sample
Antimony, ICP-MS	< DL	0.750	µg/sample
Arsenic, ICP	< DL	1.75	µg/sample
Barium, ICP	7.47	0.125	µg/sample
Beryllium, ICP	< DL	0.050	µg/sample
Cadmium, ICP-MS	0.171	0.075	µg/sample
Chromium, ICP	5.46	0.200	µg/sample
Cobalt, ICP	2.03	0.125	µg/sample
Copper, ICP	16.5	1.25	µg/sample
Lead, ICP-MS	0.588	0.075	µg/sample
Manganese, ICP	4.45	0.075	µg/sample
Mercury, CVAA	0.0312	0.0219	µg/sample
Nickel, ICP	75.2	0.750	µg/sample
Phosphorus, ICP	22.0	5.00	µg/sample
Selenium, ICP	< DL	3.75	µg/sample
Silver, ICP	< DL	0.500	µg/sample
Thallium, ICP	< DL	2.50	µg/sample
Vanadium, ICP	0.394	0.250	µg/sample
Zinc, ICP	20.2	0.750	µg/sample

Lab ID: 25-S3114
Client ID: Outlet Run 1 C4
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Aluminum, ICP	87.7	3.60	µg/sample
Antimony, ICP	< DL	0.600	µg/sample
Arsenic, ICP	1.24	0.840	µg/sample
Barium, ICP	2.68	0.060	µg/sample
Beryllium, ICP	0.044	0.024	µg/sample
Cadmium, ICP	0.408	0.048	µg/sample
Chromium, ICP	1.79	0.096	µg/sample
Cobalt, ICP	0.415	0.060	µg/sample
Copper, ICP	2.61	0.600	µg/sample
Lead, ICP	3.88	0.600	µg/sample
Manganese, ICP	11.5	0.036	µg/sample
Mercury, CVAA	0.121	0.0212	µg/sample
Nickel, ICP	1.66	0.360	µg/sample
Phosphorus, ICP	26.3	2.40	µg/sample
Selenium, ICP	< DL	1.80	µg/sample
Silver, ICP	< DL	0.240	µg/sample
Thallium, ICP	< DL	1.20	µg/sample
Vanadium, ICP	0.243	0.120	µg/sample
Zinc, ICP	11.5	0.360	µg/sample

Client: M050 - Mostardi Platt
Report Number: 25-522

Lab ID: 25-S3115
Client ID: Outlet Run 1 C5A
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0131	µg/sample

Lab ID: 25-S3116
Client ID: Outlet Run 1 C5B
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Mercury, CVAA	0.226	0.0311	µg/sample

Lab ID: 25-S3117
Client ID: Outlet Run 1 C5C
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/29/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0196	µg/sample

Lab ID: 25-S3118
Client ID: Outlet Run 2 C1&3
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	121.	3.75	µg/sample
Antimony, ICP-MS	< DL	0.750	µg/sample
Arsenic, ICP	< DL	1.75	µg/sample
Barium, ICP	2.88	0.125	µg/sample
Beryllium, ICP	< DL	0.050	µg/sample
Cadmium, ICP-MS	< DL	0.075	µg/sample
Chromium, ICP	10.1	0.200	µg/sample
Cobalt, ICP	3.24	0.125	µg/sample
Copper, ICP	6.01	1.25	µg/sample
Lead, ICP-MS	0.248	0.075	µg/sample
Manganese, ICP	3.08	0.075	µg/sample
Mercury, CVAA	< DL	0.0219	µg/sample
Nickel, ICP	56.6	0.750	µg/sample
Phosphorus, ICP	19.8	5.00	µg/sample
Selenium, ICP	< DL	3.75	µg/sample
Silver, ICP	< DL	0.500	µg/sample
Thallium, ICP	< DL	2.50	µg/sample
Vanadium, ICP	0.315	0.250	µg/sample
Zinc, ICP	12.2	0.750	µg/sample

Client: M050 - Mostardi Platt
Report Number: 25-522

Lab ID: 25-S3119
Client ID: Outlet Run 2 C4
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	27.0	3.48	µg/sample
Antimony, ICP	< DL	0.580	µg/sample
Arsenic, ICP	< DL	0.812	µg/sample
Barium, ICP	1.43	0.058	µg/sample
Beryllium, ICP	0.039	0.023	µg/sample
Cadmium, ICP	0.119	0.046	µg/sample
Chromium, ICP	1.71	0.093	µg/sample
Cobalt, ICP	0.300	0.058	µg/sample
Copper, ICP	0.858	0.580	µg/sample
Lead, ICP	0.710	0.580	µg/sample
Manganese, ICP	26.4	0.035	µg/sample
Mercury, CVAA	0.111	0.0258	µg/sample
Nickel, ICP	3.15	0.348	µg/sample
Phosphorus, ICP	19.8	2.32	µg/sample
Selenium, ICP	< DL	1.74	µg/sample
Silver, ICP	1.70	0.232	µg/sample
Thallium, ICP	< DL	1.16	µg/sample
Vanadium, ICP	< DL	0.116	µg/sample
Zinc, ICP	4.42	0.348	µg/sample

Lab ID: 25-S3120
Client ID: Outlet Run 2 C5A
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	0.0286	0.00910	µg/sample

Lab ID: 25-S3121
Client ID: Outlet Run 2 C5B
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	0.0851	0.0259	µg/sample

Lab ID: 25-S3122
Client ID: Outlet Run 2 C5C
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0192	µg/sample

Client: M050 - Mostardi Platt
Report Number: 25-522

Lab ID: 25-S3123
Client ID: C12 Filter Blank
Site: PCC-Large Parts
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	93.2	3.75	µg/sample
Antimony, ICP-MS	< DL	0.750	µg/sample
Arsenic, ICP	< DL	1.75	µg/sample
Barium, ICP	0.740	0.125	µg/sample
Beryllium, ICP	< DL	0.050	µg/sample
Cadmium, ICP-MS	< DL	0.075	µg/sample
Chromium, ICP	2.26	0.200	µg/sample
Cobalt, ICP	0.490	0.125	µg/sample
Copper, ICP	< DL	1.25	µg/sample
Lead, ICP-MS	< DL	0.075	µg/sample
Manganese, ICP	0.512	0.075	µg/sample
Mercury, CVAA	< DL	0.0219	µg/sample
Nickel, ICP	4.64	0.750	µg/sample
Phosphorus, ICP	20.2	5.00	µg/sample
Selenium, ICP	< DL	3.75	µg/sample
Silver, ICP	< DL	0.500	µg/sample
Thallium, ICP	< DL	2.50	µg/sample
Vanadium, ICP	0.278	0.250	µg/sample
Zinc, ICP	1.19	0.750	µg/sample

Lab ID: 25-S3124
Client ID: C8A .1N HNO3 Blank
Site: PCC-Large Parts
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	< DL	3.75	µg/sample
Antimony, ICP-MS	< DL	0.750	µg/sample
Arsenic, ICP	< DL	1.75	µg/sample
Barium, ICP	< DL	0.125	µg/sample
Beryllium, ICP	< DL	0.050	µg/sample
Cadmium, ICP-MS	< DL	0.075	µg/sample
Chromium, ICP	0.613	0.200	µg/sample
Cobalt, ICP	0.484	0.125	µg/sample
Copper, ICP	< DL	1.25	µg/sample
Lead, ICP-MS	< DL	0.075	µg/sample
Manganese, ICP	< DL	0.075	µg/sample
Mercury, CVAA	< DL	0.0219	µg/sample
Nickel, ICP	2.08	0.750	µg/sample
Phosphorus, ICP	< DL	5.00	µg/sample
Selenium, ICP	< DL	3.75	µg/sample
Silver, ICP	< DL	0.500	µg/sample
Thallium, ICP	< DL	2.50	µg/sample
Vanadium, ICP	< DL	0.250	µg/sample
Zinc, ICP	< DL	0.750	µg/sample

Client: M050 - Mostardi Platt
Report Number: 25-522

Lab ID: 25-S3125
Client ID: C9 5%/10% Blank
Site: PCC-Large Parts
Sample Date: 7/30/25

Analyte	Result	DL	Units
Aluminum, ICP	< DL	3.63	µg/sample
Antimony, ICP	< DL	0.605	µg/sample
Arsenic, ICP	< DL	0.847	µg/sample
Barium, ICP	0.245	0.060	µg/sample
Beryllium, ICP	< DL	0.024	µg/sample
Cadmium, ICP	0.114	0.048	µg/sample
Chromium, ICP	0.412	0.097	µg/sample
Cobalt, ICP	< DL	0.060	µg/sample
Copper, ICP	< DL	0.605	µg/sample
Lead, ICP	< DL	0.605	µg/sample
Manganese, ICP	0.183	0.036	µg/sample
Mercury, CVAA	0.122	0.0204	µg/sample
Nickel, ICP	0.614	0.363	µg/sample
Phosphorus, ICP	20.1	2.42	µg/sample
Selenium, ICP	< DL	1.82	µg/sample
Silver, ICP	< DL	0.242	µg/sample
Thallium, ICP	< DL	1.21	µg/sample
Vanadium, ICP	< DL	0.121	µg/sample
Zinc, ICP	0.688	0.363	µg/sample

Lab ID: 25-S3126
Client ID: C8B DI Water Blank
Site: PCC-Large Parts
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0178	µg/sample

Lab ID: 25-S3127
Client ID: C10 KMnO4 Blank
Site: PCC-Large Parts
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	0.112	0.0178	µg/sample

Lab ID: 25-S3128
Client ID: C11 8N HCl Blank
Site: PCC-Large Parts
Sample Date: 7/30/25

Analyte	Result	DL	Units
Mercury, CVAA	< DL	0.0229	µg/sample

Client: M050 - Mostardi Platt
Report Number: 25-522

Lab ID: 25-S3129
Client ID: 0061 Inlet Run 1
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/29/25
Sample Volume: 500. mL

Analyte	µg/L Conc.	DL	µg/sample Conc.	DL
Cr VI	7.97	0.010	3.99	0.0050

Lab ID: 25-S3130
Client ID: 0061 Outlet Run 1
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/29/25
Sample Volume: 385. mL

Analyte	µg/L Conc.	DL	µg/sample Conc.	DL
Cr VI	6.08	0.010	2.34	0.0038

Lab ID: 25-S3131
Client ID: 0061 Inlet Run 2
Site: PCC-Large Parts
Source: Inlet
Sample Date: 7/30/25
Sample Volume: 460. mL

Analyte	µg/L Conc.	DL	µg/sample Conc.	DL
Cr VI	8.39	0.010	3.86	0.0046

Lab ID: 25-S3132
Client ID: 0061 Outlet Run 2
Site: PCC-Large Parts
Source: Outlet
Sample Date: 7/30/25
Sample Volume: 425. mL

Analyte	µg/L Conc.	DL	µg/sample Conc.	DL
Cr VI	6.13	0.010	2.60	0.0042

Lab ID: 25-S3133
Client ID: KOH Blank
Site: PCC-Large Parts
Sample Date: 7/30/25
Sample Volume: 355. mL

Analyte	µg/L Conc.	DL	µg/sample Conc.	DL
Cr VI	3.80	0.010	1.35	0.0036

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 1&3
Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Ag	ICB	< DL	2.00
Ag	Meth_Blk	< DL	2.00
Ag	CCB	< DL	2.00
Ag	CCB	< DL	2.00
Al	ICB	< DL	15.0
Al	Meth_Blk	< DL	15.0
Al	CCB	< DL	15.0
Al	CCB	< DL	15.0
As	ICB	< DL	7.00
As	Meth_Blk	< DL	7.00
As	CCB	< DL	7.00
As	CCB	< DL	7.00
Ba	ICB	< DL	0.500
Ba	Meth_Blk	< DL	0.500
Ba	CCB	< DL	0.500
Ba	CCB	< DL	0.500
Be	ICB	< DL	0.400
Be	Meth_Blk	< DL	0.400
Be	CCB	< DL	0.400
Be	CCB	< DL	0.400
Co	ICB	< DL	0.500
Co	Meth_Blk	< DL	0.500
Co	CCB	< DL	0.500
Co	CCB	< DL	0.500
Cr	ICB	< DL	0.800
Cr	Meth_Blk	< DL	0.800
Cr	CCB	< DL	0.800
Cr	CCB	< DL	0.800
Cu	ICB	< DL	5.00
Cu	Meth_Blk	< DL	5.00
Cu	CCB	< DL	5.00
Cu	CCB	< DL	5.00
Mn	ICB	< DL	0.300
Mn	Meth_Blk	< DL	0.300
Mn	CCB	< DL	0.300
Mn	CCB	< DL	0.300
Ni	ICB	< DL	3.00
Ni	Meth_Blk	< DL	3.00
Ni	CCB	< DL	3.00

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
*: Sample Media Blank (SM_Blk) concentration in µg/filter
Method Blank is in control if Method Blank results are <10% of sample results

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 1&3
Report Number: 25-522

Blank Data (continued)

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Ni	CCB	< DL	3.00
P	ICB	< DL	20.0
P	Meth_Blk	< DL	20.0
P	CCB	< DL	20.0
P	CCB	< DL	20.0
Se	ICB	< DL	15.0
Se	Meth_Blk	< DL	15.0
Se	CCB	< DL	15.0
Se	CCB	< DL	15.0
Tl	ICB	< DL	10.0
Tl	Meth_Blk	< DL	10.0
Tl	CCB	< DL	10.0
Tl	CCB	< DL	10.0
V	ICB	< DL	1.00
V	Meth_Blk	< DL	1.00
V	CCB	< DL	1.00
V	CCB	< DL	1.00
Zn	ICB	< DL	3.00
Zn	Meth_Blk	< DL	3.00
Zn	CCB	< DL	3.00
Zn	CCB	< DL	3.00

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
*: Sample Media Blank (SM_Blk) concentration in µg/filter
Method Blank is in control if Method Blank results are <10% of sample results

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Ag	ICV	2500.	2618.	104.7
Ag	LL-CCV	10.00	10.95	109.5
Ag	LL-LCS	9.000	5.096	56.6
Ag	CCV	2500.	2578.	103.1
Ag	CCV	2500.	2551.	102.0
Al	ICV	2500.	2514.	100.6
Al	LL-CCV	150.0	151.5	101.0
Al	LL-LCS	75.00	81.13	108.2

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
Calibration Verification Limits: 90% - 110% Recovery
Low Level-CCV Limits: 60% - 140% Recovery
Low Level-LCS Limits: 50% - 150% Recovery
LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 1&3
Report Number: 25-522

Calibration QC (continued)

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Al	CCV	2500.	2547.	101.9
Al	CCV	2500.	2634.	105.4
As	ICV	2500.	2411.	96.4
As	LL-CCV	35.00	36.69	104.8
As	LL-LCS	20.00	18.12	90.6
As	CCV	2500.	2398.	95.9
As	CCV	2500.	2352.	94.1
Ba	ICV	2500.	2528.	101.1
Ba	LL-CCV	2.500	2.690	107.6
Ba	LL-LCS	2.000	1.805	90.2
Ba	CCV	2500.	2570.	102.8
Ba	CCV	2500.	2602.	104.1
Be	ICV	2500.	2488.	99.5
Be	LL-CCV	1.000	1.058	105.8
Be	LL-LCS	0.500	0.512	102.4
Be	CCV	2500.	2433.	97.3
Be	CCV	2500.	2413.	96.5
Co	ICV	2500.	2500.	100.0
Co	LL-CCV	2.500	2.192	87.7
Co	LL-LCS	1.500	1.012	67.5
Co	CCV	2500.	2469.	98.8
Co	CCV	2500.	2442.	97.7
Cr	ICV	2500.	2358.	94.3
Cr	LL-CCV	4.000	4.414	110.4
Cr	LL-LCS	2.000	2.056	102.8
Cr	CCV	2500.	2368.	94.7
Cr	CCV	2500.	2332.	93.3
Cu	ICV	2500.	2393.	95.7
Cu	LL-CCV	25.00	27.05	108.2
Cu	LL-LCS	15.00	15.79	105.3
Cu	CCV	2500.	2389.	95.6
Cu	CCV	2500.	2365.	94.6
Mn	ICV	2500.	2503.	100.1
Mn	LL-CCV	1.500	1.740	116.0
Mn	LL-LCS	1.000	1.161	116.1
Mn	CCV	2500.	2487.	99.5
Mn	CCV	2500.	2462.	98.5

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
Calibration Verification Limits: 90% - 110% Recovery
Low Level-CCV Limits: 60% - 140% Recovery
Low Level-LCS Limits: 50% - 150% Recovery
LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 1&3
Report Number: 25-522

Calibration QC (continued)

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Ni	ICV	2500.	2448.	97.9
Ni	LL-CCV	15.00	17.16	114.4
Ni	LL-LCS	6.000	5.914	98.6
Ni	CCV	2500.	2412.	96.5
Ni	CCV	2500.	2370.	94.8
P	ICV	2500.	2535.	101.4
P	LL-CCV	100.0	99.66	99.7
P	LL-LCS	75.00	73.53	98.0
P	CCV	2500.	2493.	99.7
P	CCV	2500.	2437.	97.5
Se	ICV	2500.	2407.	96.3
Se	LL-CCV	75.00	74.90	99.9
Se	LL-LCS	30.00	28.91	96.4
Se	CCV	2500.	2372.	94.9
Se	CCV	2500.	2341.	93.6
Tl	ICV	2500.	2437.	97.5
Tl	LL-CCV	50.00	52.41	104.8
Tl	LL-LCS	30.00	22.21	74.0
Tl	CCV	2500.	2387.	95.5
Tl	CCV	2500.	2336.	93.4
V	ICV	2500.	2391.	95.6
V	LL-CCV	5.000	5.450	109.0
V	LL-LCS	3.000	3.246	108.2
V	CCV	2500.	2419.	96.8
V	CCV	2500.	2336.	93.4
Zn	ICV	2500.	2455.	98.2
Zn	LL-CCV	15.00	17.32	115.5
Zn	LL-LCS	6.000	6.607	110.1
Zn	CCV	2500.	2437.	97.5
Zn	CCV	2500.	2421.	96.8

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
Calibration Verification Limits: 90% - 110% Recovery
Low Level-CCV Limits: 60% - 140% Recovery
Low Level-LCS Limits: 50% - 150% Recovery
LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 1&3
Report Number: 25-522

Replicate Data

Analyte	Sample ID	Sample Conc. µg/L	Replicate Conc. µg/L	RPD
Ag	25-S3103	17.9	14.8	18.8
Al	25-S3103	7550	7680	1.71
As	25-S3103	< 7	< 7	N/C *
Ba	25-S3103	44.4	43.9	1.20
Be	25-S3103	0.994	0.978	1.62 *
Co	25-S3103	13900	13800	0.36
Cr	25-S3103	18900	18900	0.21
Cu	25-S3103	88.0	87.5	0.63
Mn	25-S3103	94.1	93.0	1.18
Ni	25-S3103	60200	60300	0.30
P	25-S3103	591.	594.	0.54
Se	25-S3103	37.6	38.8	3.15 *
Tl	25-S3103	182.	196.	7.40
V	25-S3103	14.2	14.1	0.64
Zn	25-S3103	622.	647.	3.99

RPD = {(sample-replicate)/[(sample+replicate)/2]}x100
N/C: RPD is not calculated when sample or replicate is below detection limit
Replicate Limit: 20% RPD
*: per EPA CLP protocol, control limits do not apply if sample and/or replicate concentration is less than 5x the detection limit

Laboratory Control Sample/Matrix Post Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Ag	LCS	< 2	1122.	1000	112.
Ag	LCS-Duplicate	< 2	1096.	1000	110.
Ag	25-S3108	13.10	1024.	1000	101.
Al	LCS	< 15	1070.	1000	107.
Al	LCS-Duplicate	< 15	1077.	1000	108.
Al	25-S3108	2343.	3371.	1000	103.
As	LCS	< 7	997.2	1000	99.7
As	LCS-Duplicate	< 7	984.2	1000	98.4
As	25-S3108	< 7	953.4	1000	95.3
Ba	LCS	< 0.5	1040.	1000	104.
Ba	LCS-Duplicate	< 0.5	1047.	1000	105.
Ba	25-S3108	21.14	1044.	1000	102.
Be	LCS	< 0.2	1021.	1000	102.

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 1&3
Report Number: 25-522

Laboratory Control Sample/Matrix Post Spike Analysis (continued)

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Be	LCS-Duplicate	< 0.2	1026.	1000	103.
Be	25-S3108	1.711	1843.	2000	92.1
Co	LCS	< 0.5	1030.	1000	103.
Co	LCS-Duplicate	< 0.5	1023.	1000	102.
Co	25-S3108	1318.	2152.	1000	83.4
Cr	LCS	< 0.8	955.0	1000	95.5
Cr	LCS-Duplicate	< 0.8	945.9	1000	94.6
Cr	25-S3108	8169.	17330	10000	91.6
Cu	LCS	< 5	1006.	1000	101.
Cu	LCS-Duplicate	< 5	1009.	1000	101.
Cu	25-S3108	69.94	975.1	1000	90.5
Mn	LCS	< 0.3	1026.	1000	103.
Mn	LCS-Duplicate	< 0.3	1030.	1000	103.
Mn	25-S3108	65.94	938.1	1000	87.2
Ni	LCS	< 3	1014.	1000	101.
Ni	LCS-Duplicate	< 3	1009.	1000	101.
Ni	25-S3108	26750	35280	10000	85.3
P	LCS	< 20	1058.	1000	106.
P	LCS-Duplicate	< 20	1051.	1000	105.
P	25-S3108	131.0	1037.	1000	90.6
Se	LCS	< 15	1010.	1000	101.
Se	LCS-Duplicate	< 15	999.6	1000	100.
Se	25-S3108	< 15	935.2	1000	93.5
Tl	LCS	< 10	1022.	1000	102.
Tl	LCS-Duplicate	< 10	1019.	1000	102.
Tl	25-S3108	25.18	863.5	1000	83.8
V	LCS	< 1	966.2	1000	96.6
V	LCS-Duplicate	< 1	945.3	1000	94.5
V	25-S3108	12.06	946.6	1000	93.5
Zn	LCS	< 3	1031.	1000	103.
Zn	LCS-Duplicate	< 3	1025.	1000	102.
Zn	25-S3108	296.7	1263.	1000	96.6

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery

LCS Duplicate Data

Analyte	Sample ID	Original Conc. µg/L	Replicate Conc. µg/L	RPD
Ag	LCS-Duplicate	1122.	1096.	2.34
Al	LCS-Duplicate	1070.	1077.	0.65

RPD = {(sample-duplicate)/[(sample+duplicate)/2]}x100 Duplicate Limit: 20% RPD

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 1&3
Report Number: 25-522

LCS Duplicate Data (continued)

Analyte	Sample ID	Original Conc. µg/L	Replicate Conc. µg/L	RPD
As	LCS-Duplicate	997.2	984.2	1.31
Ba	LCS-Duplicate	1040.	1047.	0.67
Be	LCS-Duplicate	1021.	1026.	0.49
Co	LCS-Duplicate	1030.	1023.	0.68
Cr	LCS-Duplicate	955.0	945.9	0.96
Cu	LCS-Duplicate	1006.	1009.	0.30
Mn	LCS-Duplicate	1026.	1030.	0.39
Ni	LCS-Duplicate	1014.	1009.	0.49
P	LCS-Duplicate	1058.	1051.	0.66
Se	LCS-Duplicate	1010.	999.6	1.04
Tl	LCS-Duplicate	1022.	1019.	0.29
V	LCS-Duplicate	966.2	945.3	2.19
Zn	LCS-Duplicate	1031.	1025.	0.58

RPD = {(sample-duplicate)/[(sample+duplicate)/2]}x100 Duplicate Limit: 20% RPD

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-MS
Instrument: Agilent 7850
Sample Description: EPA Method 29 Cont. 1&3
Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Cd	ICB	< DL	0.030
Cd	Meth_Blk	< DL	0.300
Cd	CCB	< DL	0.030
Cd	CCB	< DL	0.030
Pb	ICB	< DL	0.030
Pb	Meth_Blk	< DL	0.300
Pb	CCB	< DL	0.030
Pb	CCB	< DL	0.030
Sb	ICB	< DL	0.300
Sb	Meth_Blk	< DL	3.00
Sb	CCB	< DL	0.300
Sb	CCB	< DL	0.300

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
*: Sample Media Blank (SM_Blk) concentration in µg/filter
Method Blank is in control if Method Blank results are <10% of sample results

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Cd	ICV	100.0	99.41	99.4
Cd	CCV	100.0	105.3	105.3
Cd	CCV	100.0	104.4	104.4
Pb	ICV	100.0	99.54	99.5
Pb	CCV	100.0	98.99	99.0
Pb	CCV	100.0	99.17	99.2
Sb	ICV	100.0	96.08	96.1
Sb	CCV	100.0	98.80	98.8
Sb	CCV	100.0	97.46	97.5

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
Calibration Verification Limits: 90% - 110% Recovery
Low Level-CCV Limits: 60% - 140% Recovery
Low Level-LCS Limits: 50% - 150% Recovery
LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-MS
Instrument: Agilent 7850
Sample Description: EPA Method 29 Cont. 1&3
Report Number: 25-522

Replicate Data

Analyte	Sample ID	Sample Conc. µg/L	Replicate Conc. µg/L	RPD
Cd	25-S3103	1.10	1.14	4.02
Pb	25-S3103	6.98	7.03	0.69
Sb	25-S3103	< 3	< 3	N/C *

RPD = {(sample-replicate)/[(sample+replicate)/2]}x100
N/C: RPD is not calculated when sample or replicate is below detection limit
Replicate Limit: 20% RPD
*: per EPA CLP protocol, control limits do not apply if sample and/or replicate concentration is less than 5x the detection limit

Laboratory Control Sample/Matrix Post Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Cd	LCS	< 0.3	1028.	1000	103.
Cd	LCS-Duplicate	< 0.3	1041.	1000	104.
Cd	25-S3108	0.478	1045.	1000	104.
Pb	LCS	< 0.3	970.2	1000	97.0
Pb	LCS-Duplicate	< 0.3	966.0	1000	96.6
Pb	25-S3108	2.238	994.4	1000	99.2
Sb	LCS	< 3	967.9	1000	96.8
Sb	LCS-Duplicate	< 3	964.3	1000	96.4
Sb	25-S3108	< 3	987.4	1000	98.7

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery

LCS Duplicate Data

Analyte	Sample ID	Original Conc. µg/L	Replicate Conc. µg/L	RPD
Cd	LCS-Duplicate	1028.	1041.	1.26
Pb	LCS-Duplicate	970.2	966.0	0.43
Sb	LCS-Duplicate	967.9	964.3	0.37

RPD = {(sample-duplicate)/[(sample+duplicate)/2]}x100 Duplicate Limit: 20% RPD

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 4
Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Ag	ICB	< DL	2.00
Ag	Meth_Blk	< DL	2.00
Ag	CCB	< DL	2.00
Ag	CCB	< DL	2.00
Al	ICB	< DL	30.0
Al	Meth_Blk	< DL	30.0
Al	CCB	< DL	30.0
Al	CCB	< DL	30.0
As	ICB	< DL	7.00
As	Meth_Blk	< DL	7.00
As	CCB	< DL	7.00
As	CCB	< DL	7.00
Ba	ICB	< DL	0.500
Ba	Meth_Blk	1.02	0.500
Ba	CCB	< DL	0.500
Ba	CCB	< DL	0.500
Be	ICB	< DL	0.200
Be	Meth_Blk	< DL	0.200
Be	CCB	< DL	0.200
Be	CCB	< DL	0.200
Cd	ICB	< DL	0.400
Cd	Meth_Blk	< DL	0.400
Cd	CCB	< DL	0.400
Cd	CCB	< DL	0.400
Co	ICB	< DL	0.500
Co	Meth_Blk	< DL	0.500
Co	CCB	< DL	0.500
Co	CCB	< DL	0.500
Cr	ICB	< DL	0.800
Cr	Meth_Blk	< DL	0.800
Cr	CCB	< DL	0.800
Cr	CCB	< DL	0.800
Cu	ICB	< DL	5.00
Cu	Meth_Blk	< DL	5.00
Cu	CCB	< DL	5.00
Cu	CCB	< DL	5.00
Mn	ICB	< DL	0.300
Mn	Meth_Blk	< DL	0.300
Mn	CCB	< DL	0.300

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
*: Sample Media Blank (SM_Blk) concentration in µg/filter
Method Blank is in control if Method Blank results are <10% of sample results

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 4
Report Number: 25-522

Blank Data (continued)

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Mn	CCB	< DL	0.300
Ni	ICB	< DL	3.00
Ni	Meth_Blk	< DL	3.00
Ni	CCB	< DL	3.00
Ni	CCB	< DL	3.00
P	ICB	< DL	20.0
P	Meth_Blk	< DL	20.0
P	CCB	< DL	20.0
P	CCB	< DL	20.0
Pb	ICB	< DL	5.00
Pb	Meth_Blk	< DL	5.00
Pb	CCB	< DL	5.00
Pb	CCB	< DL	5.00
Sb	ICB	< DL	5.00
Sb	Meth_Blk	< DL	5.00
Sb	CCB	< DL	5.00
Sb	CCB	< DL	5.00
Se	ICB	< DL	15.0
Se	Meth_Blk	< DL	15.0
Se	CCB	< DL	15.0
Se	CCB	< DL	15.0
Tl	ICB	< DL	10.0
Tl	Meth_Blk	< DL	10.0
Tl	CCB	< DL	10.0
Tl	CCB	< DL	10.0
V	ICB	< DL	1.00
V	Meth_Blk	< DL	1.00
V	CCB	< DL	1.00
V	CCB	< DL	1.00
Zn	ICB	< DL	3.00
Zn	Meth_Blk	< DL	3.00
Zn	CCB	< DL	3.00
Zn	CCB	< DL	3.00

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
*: Sample Media Blank (SM_Blk) concentration in µg/filter
Method Blank is in control if Method Blank results are <10% of sample results

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 4
Report Number: 25-522

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Ag	ICV	2500.	2651.	106.0
Ag	LL-CCV	10.00	6.821	68.2
Ag	LL-LCS	9.000	5.487	61.0
Ag	CCV	2500.	2637.	105.5
Ag	CCV	2500.	2601.	104.0
Al	ICV	2500.	2497.	99.9
Al	LL-CCV	150.0	145.3	96.9
Al	LL-LCS	75.00	84.51	112.7
Al	CCV	2500.	2519.	100.8
Al	CCV	2500.	2489.	99.6
As	ICV	2500.	2429.	97.2
As	LL-CCV	35.00	32.67	93.3
As	LL-LCS	20.00	17.63	88.2
As	CCV	2500.	2429.	97.2
As	CCV	2500.	2422.	96.9
Ba	ICV	2500.	2529.	101.2
Ba	LL-CCV	2.500	2.657	106.3
Ba	LL-LCS	2.000	1.898	94.9
Ba	CCV	2500.	2541.	101.6
Ba	CCV	2500.	2516.	100.6
Be	ICV	2500.	2511.	100.4
Be	LL-CCV	1.000	1.083	108.3
Be	LL-LCS	0.500	0.932	186.4
Be	CCV	2500.	2531.	101.2
Be	CCV	2500.	2509.	100.4
Cd	ICV	2500.	2488.	99.5
Cd	LL-CCV	2.000	2.075	103.8
Cd	LL-LCS	1.500	1.943	129.5
Cd	CCV	2500.	2531.	101.2
Cd	CCV	2500.	2509.	100.4
Co	ICV	2500.	2472.	98.9
Co	LL-CCV	2.500	2.225	89.0
Co	LL-LCS	1.500	1.875	125.0
Co	CCV	2500.	2447.	97.9
Co	CCV	2500.	2447.	97.9
Cr	ICV	2500.	2439.	97.6
Cr	LL-CCV	4.000	4.430	110.8

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
Calibration Verification Limits: 90% - 110% Recovery
Low Level-CCV Limits: 60% - 140% Recovery
Low Level-LCS Limits: 50% - 150% Recovery
LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 4
Report Number: 25-522

Calibration QC (continued)

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Cr	LL-LCS	2.000	2.956	147.8
Cr	CCV	2500.	2470.	98.8
Cr	CCV	2500.	2453.	98.1
Cu	ICV	2500.	2349.	94.0
Cu	LL-CCV	25.00	27.47	109.9
Cu	LL-LCS	15.00	14.63	97.5
Cu	CCV	2500.	2367.	94.7
Cu	CCV	2500.	2352.	94.1
Mn	ICV	2500.	2485.	99.4
Mn	LL-CCV	1.500	1.737	115.8
Mn	LL-LCS	1.500	1.991	132.7
Mn	CCV	2500.	2515.	100.6
Mn	CCV	2500.	2500.	100.0
Ni	ICV	2500.	2389.	95.6
Ni	LL-CCV	15.00	15.72	104.8
Ni	LL-LCS	6.000	8.156	135.9
Ni	CCV	2500.	2413.	96.5
Ni	CCV	2500.	2405.	96.2
P	ICV	2500.	2447.	97.9
P	LL-CCV	100.0	98.93	98.9
P	LL-LCS	75.00	72.12	96.2
P	CCV	2500.	2432.	97.3
P	CCV	2500.	2432.	97.3
Pb	ICV	2500.	2365.	94.6
Pb	LL-CCV	25.00	27.27	109.1
Pb	LL-LCS	15.00	13.06	87.1
Pb	CCV	2500.	2261.	90.4
Pb	CCV	2500.	2281.	91.2
Sb	ICV	2500.	2438.	97.5
Sb	LL-CCV	25.00	21.68	86.7
Sb	LL-LCS	15.00	11.79	78.6
Sb	CCV	2500.	2555.	102.2
Sb	CCV	2500.	2539.	101.6
Se	ICV	2500.	2423.	96.9
Se	LL-CCV	75.00	77.71	103.6
Se	LL-LCS	30.00	38.24	127.5
Se	CCV	2500.	2355.	94.2

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
Calibration Verification Limits: 90% - 110% Recovery
Low Level-CCV Limits: 60% - 140% Recovery
Low Level-LCS Limits: 50% - 150% Recovery
LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 4
Report Number: 25-522

Calibration QC (continued)

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Se	CCV	2500.	2358.	94.3
Tl	ICV	2500.	2379.	95.2
Tl	LL-CCV	50.00	51.54	103.1
Tl	LL-LCS	30.00	25.52	85.1
Tl	CCV	2500.	2339.	93.6
Tl	CCV	2500.	2327.	93.1
V	ICV	2500.	2429.	97.2
V	LL-CCV	5.000	4.981	99.6
V	LL-LCS	3.000	3.218	107.3
V	CCV	2500.	2416.	96.6
V	CCV	2500.	2413.	96.5
Zn	ICV	2500.	2528.	101.1
Zn	LL-CCV	15.00	16.49	109.9
Zn	LL-LCS	6.000	8.121	135.4
Zn	CCV	2500.	2554.	102.2
Zn	CCV	2500.	2532.	101.3

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
Calibration Verification Limits: 90% - 110% Recovery
Low Level-CCV Limits: 60% - 140% Recovery
Low Level-LCS Limits: 50% - 150% Recovery
LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

Replicate Data

Analyte	Sample ID	Sample Conc. µg/L	Replicate Conc. µg/L	RPD
Ag	25-S3104	< 2	< 2	N/C *
Al	25-S3104	89.6	88.7	1.02
As	25-S3104	< 7	< 7	N/C *
Ba	25-S3104	12.9	12.7	1.41
Be	25-S3104	0.254	0.259	1.95 *
Cd	25-S3104	2.09	1.84	12.6 *
Co	25-S3104	2.74	2.83	3.26
Cr	25-S3104	106.	108.	1.40
Cu	25-S3104	70.2	70.1	0.01
Mn	25-S3104	57.0	57.5	0.89
Ni	25-S3104	35.1	35.4	1.02
P	25-S3104	163.	176.	7.66
Pb	25-S3104	24.1	27.6	13.4 *

RPD = {(sample-replicate)/[(sample+replicate)/2]}x100
N/C: RPD is not calculated when sample or replicate is below detection limit
Replicate Limit: 20% RPD
*: per EPA CLP protocol, control limits do not apply if sample and/or replicate concentration is less than 5x the detection limit

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 4
Report Number: 25-522

Replicate Data (continued)

Analyte	Sample ID	Sample Conc. µg/L	Replicate Conc. µg/L	RPD
Sb	25-S3104	< 5	< 5	N/C *
Se	25-S3104	< 15	< 15	N/C *
Tl	25-S3104	< 10	< 10	N/C *
V	25-S3104	< 1	< 1	N/C *
Zn	25-S3104	186.	187.	0.86

RPD = {(sample-replicate)/[(sample+replicate)/2]}x100
N/C: RPD is not calculated when sample or replicate is below detection limit
Replicate Limit: 20% RPD
*: per EPA CLP protocol, control limits do not apply if sample and/or replicate concentration is less than 5x the detection limit

Laboratory Control Sample/Matrix Post Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Ag	LCS	< 2	994.8	1000	99.5
Ag	LCS-Duplicate	< 2	999.5	1000	100.
Ag	25-S3109	< 2	989.4	1000	98.9
Al	LCS	< 30	941.2	1000	94.1
Al	LCS-Duplicate	< 30	896.2	1000	89.6
Al	25-S3109	218.0	1131.	1000	91.3
As	LCS	< 7	937.8	1000	93.8
As	LCS-Duplicate	< 7	937.6	1000	93.8
As	25-S3109	< 7	928.4	1000	92.8
Ba	LCS	1.022	931.4	1000	93.0
Ba	LCS-Duplicate	1.022	966.0	1000	96.5
Ba	25-S3109	7.996	993.5	1000	98.6
Be	LCS	< 0.2	955.6	1000	95.6
Be	LCS-Duplicate	< 0.2	953.0	1000	95.3
Be	25-S3109	< 0.2	947.0	1000	94.7
Cd	LCS	< 0.4	955.4	1000	95.5
Cd	LCS-Duplicate	< 0.4	953.4	1000	95.3
Cd	25-S3109	1.092	951.8	1000	95.1
Co	LCS	< 0.5	967.2	1000	96.7
Co	LCS-Duplicate	< 0.5	962.6	1000	96.3
Co	25-S3109	142.3	1107.	1000	96.5
Cr	LCS	< 0.8	948.1	1000	94.8
Cr	LCS-Duplicate	< 0.8	942.5	1000	94.2

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 4
Report Number: 25-522

Laboratory Control Sample/Matrix Post Spike Analysis (continued)

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Cr	25-S3109	186.6	1109.	1000	92.2
Cu	LCS	< 5	926.5	1000	92.6
Cu	LCS-Duplicate	< 5	923.5	1000	92.4
Cu	25-S3109	15.16	938.8	1000	92.4
Mn	LCS	< 0.3	979.8	1000	98.0
Mn	LCS-Duplicate	< 0.3	974.2	1000	97.4
Mn	25-S3109	59.31	1011.	1000	95.2
Ni	LCS	< 3	931.1	1000	93.1
Ni	LCS-Duplicate	< 3	924.0	1000	92.4
Ni	25-S3109	992.2	1959.	1000	96.7
P	LCS	< 20	947.1	1000	94.7
P	LCS-Duplicate	< 20	923.8	1000	92.4
P	25-S3109	172.2	1099.	1000	92.7
Pb	LCS	< 5	920.5	1000	92.0
Pb	LCS-Duplicate	< 5	906.0	1000	90.6
Pb	25-S3109	8.150	914.5	1000	90.6
Sb	LCS	< 5	959.1	1000	95.9
Sb	LCS-Duplicate	< 5	950.7	1000	95.1
Sb	25-S3109	< 5	947.0	1000	94.7
Se	LCS	< 15	913.8	1000	91.4
Se	LCS-Duplicate	< 15	924.5	1000	92.4
Se	25-S3109	< 15	902.3	1000	90.2
Tl	LCS	< 10	918.0	1000	91.8
Tl	LCS-Duplicate	< 10	925.6	1000	92.6
Tl	25-S3109	< 10	922.7	1000	92.3
V	LCS	< 1	950.9	1000	95.1
V	LCS-Duplicate	< 1	933.7	1000	93.4
V	25-S3109	< 1	939.1	1000	93.9
Zn	LCS	< 3	960.0	1000	96.0
Zn	LCS-Duplicate	< 3	963.7	1000	96.4
Zn	25-S3109	104.6	1061.	1000	95.6

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery

LCS Duplicate Data

Analyte	Sample ID	Original Conc. µg/L	Replicate Conc. µg/L	RPD
Ag	LCS-Duplicate	994.8	999.5	0.47
Al	LCS-Duplicate	941.2	896.2	4.90
As	LCS-Duplicate	937.8	937.6	0.02

RPD = {(sample-duplicate)/[(sample+duplicate)/2]}x100 Duplicate Limit: 20% RPD

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: ICP-OES
Instrument: Perkin Elmer Optima 8300
Sample Description: EPA Method 29 Cont. 4
Report Number: 25-522

LCS Duplicate Data (continued)

Analyte	Sample ID	Original Conc. µg/L	Replicate Conc. µg/L	RPD
Ba	LCS-Duplicate	931.4	966.0	3.65
Be	LCS-Duplicate	955.6	953.0	0.27
Cd	LCS-Duplicate	955.4	953.4	0.21
Co	LCS-Duplicate	967.2	962.6	0.48
Cr	LCS-Duplicate	948.1	942.5	0.59
Cu	LCS-Duplicate	926.5	923.5	0.32
Mn	LCS-Duplicate	979.8	974.2	0.57
Ni	LCS-Duplicate	931.1	924.0	0.77
P	LCS-Duplicate	947.1	923.8	2.49
Pb	LCS-Duplicate	920.5	906.0	1.59
Sb	LCS-Duplicate	959.1	950.7	0.88
Se	LCS-Duplicate	913.8	924.5	1.16
Tl	LCS-Duplicate	918.0	925.6	0.82
V	LCS-Duplicate	950.9	933.7	1.83
Zn	LCS-Duplicate	960.0	963.7	0.38

RPD = {(sample-duplicate)/[(sample+duplicate)/2]}x100 Duplicate Limit: 20% RPD

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: Cold Vapor Atomic Absorption
Instrument: Nippon 3320A CVAA
Sample Description: EPA Method 29 Cont. 1&3, 5C
Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Hg	ICB	< DL	0.007
Hg	MB_FH	0.015	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
*: Sample Media Blank (SM_Blk) concentration in µg/filter
Method Blank is in control if Method Blank results are <10% of sample results

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Hg	ICV	5.00	5.25	105.1
Hg	LL-LCS	0.020	0.023	115.0
Hg	CCV	5.00	5.03	100.6
Hg	CCV	5.00	4.98	99.6
Hg	CCV	5.00	4.99	99.8
Hg	CCV	5.00	4.94	98.8

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
Calibration Verification Limits: 90% - 110% Recovery
Low Level-LCS Limits: 50% - 150% Recovery
LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

Duplicate Data

All samples analyzed in duplicate. The reported concentrations are the average of the two measurements.

Laboratory Control Sample/Matrix Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Hg	LCS	0.015	4.94	5.00	98.6
Hg	LCS-Duplicate	0.015	5.19	5.00	104.
Hg	25-S3103	0.011	5.18	5.00	103.
Hg	25-S3107	< 0.007	5.09	5.00	102.

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery

LCS Duplicate Data

Analyte	Sample ID	Original Conc. µg/L	Replicate Conc. µg/L	RPD
Hg	LCS-Duplicate	4.94	5.19	4.83

RPD = {(sample-duplicate)/[(sample+duplicate)/2]}x100 Duplicate Limit: 20% RPD

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: Cold Vapor Atomic Absorption
Instrument: Nippon 3320A CVAA
Sample Description: EPA Method 29 Cont. 4
Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Hg	ICB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
*: Sample Media Blank (SM_Blk) concentration in µg/filter
Method Blank is in control if Method Blank results are <10% of sample results

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Hg	ICV	5.00	5.08	101.7
Hg	LL-LCS	0.020	0.019	95.0
Hg	CCV	5.00	4.97	99.4
Hg	CCV	5.00	4.99	99.9
Hg	CCV	5.00	4.99	99.7

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
Calibration Verification Limits: 90% - 110% Recovery
Low Level-LCS Limits: 50% - 150% Recovery
LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

Duplicate Data

All samples analyzed in duplicate. The reported concentrations are the average of the two measurements.

Laboratory Control Sample/Matrix Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Hg	25-S3038	0.028	4.66	5.00	92.5
Hg	25-S3104	0.028	4.82	5.00	95.8

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: Cold Vapor Atomic Absorption
Instrument: Nippon 3320A CVAA
Sample Description: EPA Method 29 Cont. 5A, 5B
Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Hg	ICB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007
Hg	CCB	< DL	0.007

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank
*: Sample Media Blank (SM_Blk) concentration in µg/filter
Method Blank is in control if Method Blank results are <10% of sample results

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Hg	ICV	5.00	5.01	100.3
Hg	LL-LCS	0.020	0.021	105.0
Hg	CCV	5.00	5.05	101.0
Hg	CCV	5.00	4.96	99.1
Hg	CCV	5.00	5.05	101.0
Hg	CCV	5.00	5.04	100.7

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
Calibration Verification Limits: 90% - 110% Recovery
Low Level-LCS Limits: 50% - 150% Recovery
LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

Duplicate Data

All samples analyzed in duplicate. The reported concentrations are the average of the two measurements.

Laboratory Control Sample/Matrix Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Hg	25-S3110	< 0.007	5.10	5.00	102.
Hg	25-S3106	0.032	5.09	5.00	101.
Hg	25-S3307	0.021	5.07	5.00	101.

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery

QA/QC Report

Client Name: Mostardi Platt
Project Number: M050
Analytical Technique: Ion Chromatography-PCR
Instrument: Aquion Cr VI IC (1)
Sample Description: 0061
Report Number: 25-522

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	DL Conc. µg/L
Cr VI	ICB	< DL	0.010
Cr VI	CCB	< DL	0.010
Cr VI	CCB	< DL	0.010

ICB: Initial Calibration Blank CCB: Continuing Calibration Blank

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Cr VI	ICV	0.500	0.488	97.6
Cr VI	LL-LCS	0.030	0.021	70.0
Cr VI	CCV	0.500	0.503	100.6
Cr VI	CCV	0.500	0.485	97.0

ICV: Initial Calibration Verification CCV: Continuing Calibration Verification
Calibration Verification Limits: 90% - 110% Recovery
Low Level-LCS Limits: 50% - 150% Recovery
LL-LCS results are insignificant if sample results are >10x LL-LCS concentration

Duplicate Data

Analyte	Sample ID	Sample Conc. µg/L	Duplicate Conc. µg/L	RPD
Cr VI	25-S3129	7.97	7.93	0.50

RPD = {(sample-duplicate)/[(sample+duplicate)/2]}x100 Duplicate Limit: 20% RPD
N/C: RPD is not calculated when sample or duplicate is below detection limit
*: per EPA CLP protocol, control limits do not apply if sample and/or duplicate concentration is less than 5x the detection limit

Laboratory Control Sample/Matrix Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
Cr VI	25-S3130	6.08	11.0	5.00	99.0

LCS Limit: 80% - 120% Recovery Spike Limit: 75% - 125% Recovery
*: per EPA CLP protocol, control limits do not apply if spike concentration is less than 25% of the sample concentration

Alliance Technical Group
SOURCE SAMPLE RECEIPT CHECKLIST

Client	Mostardi Platt	Date	7/31/2025
# Runs	4 + Blanks	Report #	25-522

Package intact?	✓	
Chain-of-Custody form inspected	✓	
CoC present with samples?	✓	
CoC indicates analytical methodology to be used? (eg M29, etc.)	M29, 0061	!!
Has CoC been signed by client?	✓	
Custody release date and time noted on CoC?	✓	
All sample containers inspected	✓	
Does number of samples match number on CoC form?	✓	!!
Do all sample ID numbers match those on the CoC form?	✓	!!
Did client mark sample volumes prior to shipment?	None	
Sample temperature recorded?	Ambient	
Are the sample containers intact?	✓	!!
If present, Audit Sample intact?	n/a	!!
Are signs of leakage present?	None	*
Chain-of-Custody form signed and dated by lab	✓	
Corrective actions		
Client contacted due to mismatching sample ID numbers		
Client contacted due to broken sample container(s)		
Client contacted due to leaking sample container(s)		
Client contacted for verification of methodology?		
Corrective actions documented?		
Corrective actions accomplished?	✓	

Items marked !! shall be addressed ***prior to any analytical work being started****.*
*Items marked * shall be* ***noted in case narrative*** *upon reporting of results to client.*

Signed _____

Notes RZ outlet C4 and DI water blank not found with initial drop-off. 0061's arrived at room temperature. Missing samples delivered 8/1/25.

Mostardi Platt

25-522

Chain-of-Custody Form

Project Number: M253113	Date Results Required:
Client: PCC – Large Parts	TAT Required: Standard
Plant/Test Location: 8901 Inlet and Outlet	Project Supervisor: C. Eldridge

Sample Number	Sample Date	Sample Point Identification	# of Conts	Sub Lab	Analysis Required	Volume, mls
001	7/29/25	INLET R1-0.1N HNO3 Rinse and Filter	2	Chester	M29 – see notes	25-53103
002	7/29/25	INLET R1-HNO3/H2O2 Imps and Rinse	1	Chester	M29	25-53104
003	7/29/25	INLET R1- HNO3 Rinse 5A, KMnO4 Imps & HCl Rinse	3	Chester	M29	25-53105 25-53106 25-53107
004	7/30/25	INLET R2-0.1N HNO3 Rinse and Filter	2	Chester	M29	25-53108
005	7/30/25	INLET R2-HNO3/H2O2 Imps and Rinse	1	Chester	M29	25-53109
006	7/30/25	INLET R2- HNO3 Rinse 5A, KMnO4 Imps & HCl Rinse	3	Chester	M29	25-53110 25-53111 25-53112
007	7/29/25	OUTLET R1-0.1N HNO3 Rinse and Filter	2	Chester	M29	25-53113
008	7/29/25	OUTLET R1-HNO3/H2O2 Imps and Rinse	1	Chester	M29	25-53114
009	7/29/25	OUTLET R1- HNO3 Rinse 5A, KMnO4 Imps & HCl Rinse	3	Chester	M29	25-53115 25-53116 25-53117
010	7/30/25	OUTLET R2-0.1N HNO3 Rinse and Filter	2	Chester	M29	25-53118
011	7/30/25	OUTLET R2-HNO3/H2O2 Imps and Rinse	1	Chester	M29	25-53119
012	7/30/25	OUTLET R2- HNO3 Rinse 5A, KMnO4 Imps & HCl Rinse	3	Chester	M29	25-53120 25-53121 25-53122
013	7/30/25	Filter Blanks	3	Chester	M29	25-53123
014	7/30/25	0.1N HNO3 Reagent Blank	1	Chester	M29	25-53124
015	7/30/25	HNO3/H2O2 Reagent Blank	1	Chester	M29	25-53125
016	7/30/25	DI Reagent Blank	1	Chester	M29/0061	25-53126 25-53134
017	7/30/25	KMnO4 & HCl Reagent Blank	2	Chester	M29	25-53127 25-53128
018	7/29/25	INLET R1 – KOH and Rinses	1	Chester	0061	25-53129
019	7/29/25	OUTLET R1 – KOH and Rinses	1	Chester	0061	25-53130
020	7/30/25	INLET R2 – KOH and Rinses	1	Chester	0061	25-53131
021	7/30/25	OUTLET R2 – KOH and Rinses	1	Chester	0061	25-53132
022	7/30/25	KOH Blank	1	Chester	0061	25-53133

Delivered to Lab by: R. Sollars Date/Time: 7/31 8:45 am	Received by: Date/Time: 7/31/25 8:50	Processed by: Date/Time:

Mostardi Platt

Laboratory Notes: Method 29 metals list: Aluminum (Al), Antimony (Sb), Arsenic (As), Beryllium (Be), Cadmium (Cd), Chromium (Cr), Cobalt (Co), Copper (Cu), Lead (Pb), Manganese (Mn), Mercury (Hg), Nickel (Ni), Phosphorus (P), Selenium (Se), Vanadium (V), and Zinc (Zn).

SW-846 Test Method 0061: Cr^{+6} Only

RAW DATA

Available upon request

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Inlet
Test Method: 29

Source Condition:		Batch Process Run 1	Batch Process Run 2
Identify Analyte:	Aluminum (Al)		
Molecular Weight:	26.98	ADL	ADL
ug (net) collected:		1809.4	581.3
Identify Analyte:	Antimony (Sb)		
Molecular Weight:	121.76	BDL	BDL
ug (net) collected:		1.45	1.315
Identify Analyte:	Arsenic (As)		
Molecular Weight:	74.92	BDL	BDL
ug (net) collected:		2.73	2.541
Identify Analyte:	Barium (Ba)		
Molecular Weight:	137.33	ADL	ADL
ug (net) collected:		11.915	5.199
Identify Analyte:	Beryllium (Be)		
Molecular Weight:	9.01	ADL	DLL
ug (net) collected:		0.284	0.451
Identify Analyte:	Cadmium (Cd)		
Molecular Weight:	112.41	ADL	ADL
ug (net) collected:		0.452	0.129
Identify Analyte:	Chromium (Cr)		
Molecular Weight:	52	ADL	ADL
ug (net) collected:		4741.002	2057.202
Identify Analyte:	Cobalt (Co)		
Molecular Weight:	58.93	DLL	ADL
ug (net) collected:		3469.086	344.642
Identify Analyte:	Copper (Cu)		
Molecular Weight:	63.55	ADL	ADL
ug (net) collected:		31.82	19.21
Identify Analyte:	Lead (Pb)		
Molecular Weight:	207.2	ADL	ADL
ug (net) collected:		5.12	1.481
Identify Analyte:	Manganese (Mn)		
Molecular Weight:	54.94	ADL	ADL
ug (net) collected:		30.785	22.505
Identify Analyte:	Mercury (Hg)		
Molecular Weight:	200.59	DLL	DLL
ug (net) collected:		0.27251	0.236
Identify Analyte:	Nickel (Ni)		
Molecular Weight:	58.69	ADL	ADL
ug (net) collected:		14997.19	6792.586
Identify Analyte:	Phosphorus (P)		
Molecular Weight:	30.97	ADL	ADL
ug (net) collected:		169.755	51.3
Identify Analyte:	Selenium (Se)		
Molecular Weight:	78.96	DLL	BDL
ug (net) collected:		11.49	5.45
Identify Analyte:	Silver (Ag)		
Molecular Weight:	107.87	DLL	DLL
ug (net) collected:		4.76	3.506
Identify Analyte:	Thallium (Tl)		
Molecular Weight:	204.38	DLL	DLL
ug (net) collected:		46.9	7.43
Identify Analyte:	Vanadium (V)		
Molecular Weight:	50.94	DLL	DLL
ug (net) collected:		3.402	2.855
Identify Analyte:	Zinc (Zn)		
Molecular Weight:	50.94	ADL	ADL
ug (net) collected:		179.122	84.122

Client:	**PCC Structurals, Inc.**		
Facility:	**Large Parts Campus Facility - Milwaukie, OR**		
Test Location:	**Baghouse 8901 Inlet**		
Test Method:	**0061**		
Source Condition:		**Batch Process Run 1**	**Batch Process Run 2**
Identify Analyte:	Hexavalent Chromium (Cr+6)		
Molecular Weight:	51.996	ADL	ADL
ug (net) collected:		2.465	2.3394

Sample	ug/sample	3.985	3.8594
Blank	ug/sample	1.349	1.349
	ug/mL blank	0.0038	0.0038
	mL of KOH in samples	400	400
	ug blank in sample	1.52	1.52

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Test Location: Baghouse 8901 Outlet
Test Method: 29

Source Condition:		Batch Process Run 1	Batch Process Run 2
Identify Analyte:	Aluminum (Al)		
Molecular Weight:	26.98	ADL	ADL
ug (net) collected:		191.066	136.366
Identify Analyte:	Antimony (Sb)		
Molecular Weight:	121.76	BDL	BDL
ug (net) collected:		1.35	1.33
Identify Analyte:	Arsenic (As)		
Molecular Weight:	74.92	DLL	BDL
ug (net) collected:		2.99	2.562
Identify Analyte:	Barium (Ba)		
Molecular Weight:	137.33	ADL	ADL
ug (net) collected:		9.165	3.325
Identify Analyte:	Beryllium (Be)		
Molecular Weight:	9.01	DLL	DLL
ug (net) collected:		0.094	0.089
Identify Analyte:	Cadmium (Cd)		
Molecular Weight:	112.41	ADL	DLL
ug (net) collected:		0.465	0.08
Identify Analyte:	Chromium (Cr)		
Molecular Weight:	52	ADL	ADL
ug (net) collected:		3.377	7.937
Identify Analyte:	Cobalt (Co)		
Molecular Weight:	58.93	DLL	DLL
ug (net) collected:		1.116	2.326
Identify Analyte:	Copper (Cu)		
Molecular Weight:	63.55	ADL	ADL
ug (net) collected:		19.11	6.868
Identify Analyte:	Lead (Pb)		
Molecular Weight:	207.2	ADL	ADL
ug (net) collected:		4.468	0.958
Identify Analyte:	Manganese (Mn)		
Molecular Weight:	54.94	ADL	ADL
ug (net) collected:		15.255	28.785
Identify Analyte:	Mercury (Hg)		
Molecular Weight:	200.59	DLL	DLL
ug (net) collected:		0.4109	0.2658
Identify Analyte:	Nickel (Ni)		
Molecular Weight:	58.69	ADL	ADL
ug (net) collected:		69.14	52.03
Identify Analyte:	Phosphorus (P)		
Molecular Weight:	30.97	ADL	ADL
ug (net) collected:		46.985	38.6
Identify Analyte:	Selenium (Se)		
Molecular Weight:	78.96	BDL	BDL
ug (net) collected:		5.55	5.49
Identify Analyte:	Silver (Ag)		
Molecular Weight:	107.87	BDL	DLL
ug (net) collected:		0.74	2.2
Identify Analyte:	Thallium (Tl)		
Molecular Weight:	204.38	BDL	BDL
ug (net) collected:		3.7	3.66
Identify Analyte:	Vanadium (V)		
Molecular Weight:	50.94	ADL	DLL
ug (net) collected:		0.359	0.153
Identify Analyte:	Zinc (Zn)		
Molecular Weight:	50.94	ADL	ADL
ug (net) collected:		29.822	14.742

Client:	**PCC Structurals, Inc.**		
Facility:	**Large Parts Campus Facility - Milwaukie, OR**		
Test Location:	**Baghouse 8901 Outlet**		
Test Method:	**0061**		
Source Condition:		**Batch Process Run 1**	**Batch Process Run 2**
Identify Analyte:	Hexavalent Chromium (Cr+6)		
Molecular Weight:	51.996	ADL	ADL
ug (net) collected:		1.2008	1.1575
Sample	ug/sample	2.3408	2.6775
Blank	ug/sample	1.349	1.349
	ug/mL blank	0.0038	0.0038
	mL of KOH in samples	300	400
	ug blank in sample	1.14	1.52

Client:	**PCC Structurals, Inc.**
Facility:	**Large Parts Campus Facility - Milwaukie, OR**
Project Number:	**M253113**
Test Location:	**Baghouse 8901 Inlet**
Test Method:	**5**
Filterable Analysis Date:	**8/15/2025**
Condensable Analysis Date:	**8/19/2025**

Filter Drying Temp °F:	**220**
Analyst:	**JMG**
Analyst:	**JMG**

Description	Sample Date	ID#	vol. (ml)	Initial Weight (grams)	Final Weight (grams)	Net Weight Gain (grams)
Filterable Particulate						
Run 1	7/31/2025					
Source Condition: Batch Process						
M5 Filter		22792		0.48057	0.49754	0.03801
Acetone Wash (M5 Pans)		24633	95 mL	4.98170	5.00274	
Acetone Blank						0.00027
Total Filterable Weight						0.03774
Condensable Particulate						
Acetone Wash		24390	125 mL	21.50753	21.51639	0.00886
Acetone Blank						0.00035
Hexane Rinse		24411	150	21.47667	21.47680	0.00013
Hexane Blank						0.00021
DI Wash		24369	471 mL	21.57325	21.57967	0.00642
DI Blank						0.00122
Total Condensable Weight						**0.01363**
Total Particulate Weight						**0.05137**
Filterable Particulate						
Run 2	8/1/2025					
Source Condition: Batch Process						
M5 Filter		22761		0.47634	0.58754	0.12260
Acetone Wash (M5 Pans)		24634	55 mL	4.91764	4.92904	
Acetone Blank						0.00015
Total Filterable Weight						0.12245
Condensable Particulate						
Acetone Wash		24391	120 mL	21.51389	21.51624	0.00235
Acetone Blank						0.00034
Hexane Rinse		24412	150	21.31483	21.31506	0.00023
Hexane Blank						0.00021
DI Wash		24370	334 mL	21.63854	21.64672	0.00818
DI Blank						0.00087
Total Condensable Weight						**0.00935**
Total Particulate Weight						**0.13179**
Reagent Blank Summary						
DI Wash		24371	231 mL	21.49225	21.49285	0.00060
Hexane Wash		24377	216 mL	21.80887	21.80917	0.00030
Acetone Wash (M5 Pans)		24392	125 mL	21.43788	21.43823	0.00035

RDL/MDL Summary

Media	MDL, grams	RDL, grams
M5 Filter	0.00005	0.00015
Acetone Wash (M5 Pans)	0.00008	0.00025
Sample Vials (M202)	0.00008	0.00025

Client: PCC Structurals, Inc.
Facility: Large Parts Campus Facility - Milwaukie, OR
Project Number: M253113
Test Location: Baghouse 8901 Outlet
Test Method: 5
Filterable Analysis Date: 8/15/2025
Condensable Analysis Date: 8/19/2025

Filter Drying Temp °F: 220
Analyst: JMG
Analyst: JMG

Description	Sample Date	ID#	vol. (ml)	Initial Weight (grams)	Final Weight (grams)	Net Weight Gain (grams)
Filterable Particulate						
Run 1	7/31/2025					
Source Condition: Batch Process						
M5 Filter		22790		0.47948	0.47863	0.00449
Acetone Wash (M5 Pans)		24635	70 mL	4.96494	4.97028	
Acetone Blank						0.00020
Total Filterable Weight						0.00429
Condensable Particulate						
Acetone Wash		24409	80 mL	21.56374	21.56400	0.00026
Acetone Blank						0.00022
Hexane Rinse		24378	150	21.76412	21.76446	0.00034
Hexane Blank						0.00021
DI Wash		24372	255 mL	21.51391	21.51877	0.00486
DI Blank						0.00066
Total Condensable Weight						**0.00437**
Total Particulate Weight						**0.00866**
Filterable Particulate						
Run 2	8/1/2025					
Source Condition: Batch Process						
M5 Filter		22762		0.47833	0.47750	0.00120
Acetone Wash (M5 Pans)		24636	60 mL	4.91828	4.92031	
Acetone Blank						0.00017
Total Filterable Weight						0.00103
Condensable Particulate						
Acetone Wash		24410	85 mL	21.58999	21.58988	≤ 0.00008
Acetone Blank						0.00008
Hexane Rinse		24379	150	21.54200	21.54725	0.00525
Hexane Blank						0.00021
DI Wash		24401	292 mL	21.58984	21.59712	0.00728
DI Blank						0.00076
Total Condensable Weight						≤ **0.01156**
Total Particulate Weight						≤ **0.01260**
Reagent Blank Summary						
DI Wash		24371	231 mL	21.49225	21.49285	0.00060
Hexane Wash		24377	216 mL	21.80887	21.80917	0.00030
Acetone Wash (M5 Pans)		24392	125 mL	21.43788	21.43823	0.00035

RDL/MDL Summary

Media	MDL, grams	RDL, grams
M5 Filter	0.00005	0.00015
Acetone Wash (M5 Pans)	0.00008	0.00025
Sample Vials (M202)	0.00008	0.00025

Appendix I - Correspondence

Oregon
Tina Kotek, Governor

Department of Environmental Quality
Agency Headquarters
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5696
FAX (503) 229-6124
TTY 711

January 27, 2026

PCC Structurals, Inc.
4600 SE Harney Drive
Portland, OR 97206
Sent electronically only

Brandon Hadzinsky,

I have reviewed the BH8901 source test report submitted by PCC Structurals on October 17, 2025. Based on my review of the source test report, DEQ requires that the following issues be addressed in a revised source test report. The revised source test report is due by February 26, 2026.

Method Specific Comments

Oregon Method 5

1. Revise the hexane and acetone blank corrections for all test runs using the actual blank and rinse volumes.

EPA Method 29

1. Provide additional details on the blank correction for nickel for runs 1 and 2 at the outlet.
2. Revise the mass of mercury for run 2 at the inlet to match the sum of the fractions in the lab report on pages 159 and 160.
3. Revise the moisture on inlet runs 1 and 2 to include the mass of water that was recorded on the data sheets for the second silica gel impinger.

SW 846 Method 0061

1. Revise the moisture used in the calculations on outlet runs 1 and 2. Use the moisture from the corresponding outlet Method 29 runs.
2. Revise the moisture used in the calculations on inlet runs 1 and 2 using the revised moisture from the corresponding inlet Method 29 runs.
3. Revise the blank corrections using only the volume of KOH charged in each sample train and the rinse used for all test runs

DEQ recognizes the unique challenges this testing posed to your facility and operations, and the results will provide valuable information for completing the risk assessment. If you have any questions or concerns, please contact me directly at 503-869-0054 or thomas.rhodes@deq.oregon.gov. Thank you for your continued efforts with this process.

Sincerely,

Thomas RHODES

Thomas Rhodes
DEQ CAO Source Test Coordinator

26-1867 PCC Structurals, Inc Large Parts Campus

END OF THE REPORT