

FINAL REPORT



FCA US LLC

DETROIT, MICHIGAN

DETROIT ASSEMBLY COMPLEX JEFFERSON (DACJ): SOURCE TESTING PLAN – CONCENTRATORS REMOVAL EFFICIENCY TESTING & THERMAL OXIDIZERS

RWDI #2304605

September 9, 2023

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EXECUTIVE SUMMARY

RWDI USA LLC (RWDI) was retained by FCA US LLC (FCA) to complete the emission sampling program at their Detroit Assembly Complex Jefferson (DACJ) (also referred to as Jefferson North Assembly Plant (JNAP)) located at 2101 Connor Ave., Detroit, Michigan. DACJ operates an automobile assembly plant that produces Jeep Grand Cherokee and Dodge Durango. Under Title V Renewable Operating Permit (ROP) MI ROP-N2155-2017 this Source Testing Report covers the required testing for validation of removal efficiency for the three (3) Zeolite Concentrators servicing the EU-TOPCOAT1, EU-TOPCOAT2 and EU-TOPCOAT3 and Thermal Oxidizers destruction efficiencies for Color 1 Booth, Color 3 Booth, Color 3 Oven, and EU-ECOAT.

DACJ recorded the production rate of vehicles processed during each removal efficiency test from three (3) EU-TOPCOAT Lines concentrators and the desorb inlet gas temperatures for each of the Zeolite Concentrators. Also, for the Thermal Oxidizers noted, oxidizer temperature and production volumes were recorded.

Executive Table i: Color 1 Concentrator RE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Removal)			
	Run 1	Run 2	Run 3	Average
THC Inlet (Adsorb + Desorb) (As propane)	637.1 ppmvd (desorb) 1.47 ppmvd (adsorb) Total 47.0 lb/hr	675.7 ppmvd (desorb) 1.73 ppmvd (adsorb) Total 48.5 lb/hr	644.6 ppmvd (desorb) 1.63 ppmvd (adsorb) Total 47.1 lb/hr	637.1 ppmvd (desorb) 1.61 ppmvd (adsorb) Total 47.5 lb/hr
NMOC Inlet (Adsorb + Desorb) (As propane)	636.5 ppmvd (desorb) 0.56 ppmvd (adsorb) Total 46.5 lb/hr	674.6 ppmvd (desorb) 0.73 ppmvd (adsorb) Total 48.0 lb/hr	643.3 ppmvd (desorb) 0.62 ppmvd (adsorb) Total 46.4 lb/hr	651.4 ppmvd (desorb) 0.64 ppmvd (adsorb) Total 46.9 lb/hr
THC Outlet Adsorb (as propane)	1.47 ppmv 0.77 lb/hr	1.73 ppmv 0.90 lb/hr	1.63 ppmv 0.85 lb/hr	1.61 ppmv 0.84 lb/hr
NMOC Outlet Adsorb (as propane)	0.56 ppmv 0.29 lb/hr	0.73 ppmv 0.38 lb/hr	0.62 ppmv 0.32 lb/hr	0.64 ppmv 0.33 lb/hr
Removal Efficiency	98.4% (as THC) 99.4% (as NMOC)	98.2% (as THC) 99.2% (as NMOC)	98.2% (as THC) 99.3% (as NMOC)	98.2% (as THC) 99.3% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm

Executive Table ii: Color 1 Booth TO DE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Destruction / Removal)			
	Run 1	Run 2	Run 3	Average
THC inlet (Desorb) (As propane)	637.1 ppmv 46.2 lb/hr	675.7 ppmv 47.6 lb/hr	644.6 ppmv 46.2 lb/hr	652.5 ppmv 46.7 lb/hr
NMOC Inlet (Desorb) (As propane)	636.5 ppmv 46.2 lb/hr	674.6 ppmv 47.6 lb/hr	643.3 ppmv 46.1 lb/hr	651.5 ppmv 46.6 lb/hr
THC Outlet (TO) (As propane)	4.43 ppmv 0.36 lb/hr	4.74 ppmv 0.39 lb/hr	4.71 ppmv 0.38 lb/hr	4.63 ppmv 0.37 lb/hr
NMOC Outlet (TO) (As propane)	3.83 ppmv 0.31 lb/hr	3.90 ppmv 0.32 lb/hr	4.05 ppmv 0.32 lb/hr	3.93 ppmv 0.32 lb/hr
Destruction Efficiency	99.2% (as THC) 99.3% (as NMOC)	99.2% (as THC) 99.3% (as NMOC)	99.2% (as THC) 99.3% (as NMOC)	99.2% (as THC) 99.3% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm



Executive Table iii: Color 2 Concentrator RE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Removal)			
	Run 1	Run 2	Run 3	Average
THC Inlet (Adsorb + Desorb) (As propane)	626.0 ppmvd (desorb) 1.95 ppmvd (adsorb) Total 41.2 lb/hr	1043.3 ppmvd (desorb) 2.50 ppmvd (adsorb) Total 72.5 lb/hr	947.6 ppmvd (desorb) 2.53 ppmvd (adsorb) Total 64.1 lb/hr	872.3 ppmvd (desorb) 2.33 ppmvd (adsorb) Total 59.3 lb/hr
NMOC Inlet (Adsorb + Desorb) (As propane)	624.4 ppmvd (desorb) 0.86 ppmvd (adsorb) Total 40.6 lb/hr	1041.6 ppmvd (desorb) 1.35 ppmvd (adsorb) Total 71.8 lb/hr	946.4 ppmvd (desorb) 1.42 ppmvd (adsorb) Total 63.5 lb/hr	870.8 ppmvd (desorb) 1.21 ppmvd (adsorb) Total 58.7 lb/hr
THC Outlet Adsorb (as propane)	1.95 ppmv 0.90 lb/hr	2.50 ppmv 1.16 lb/hr	2.53 ppmv 1.17 lb/hr	2.33 ppmv 1.08 lb/hr
NMOC Outlet Adsorb (as propane)	0.86 ppmv 0.40 lb/hr	1.35 ppmv 0.63 lb/hr	1.42 ppmv 0.65 lb/hr	1.21 ppmv 0.56 lb/hr
Removal Efficiency	97.8% (as THC) 99.0% (as NMOC)	98.4% (as THC) 99.1% (as NMOC)	98.2% (as THC) 99.0% (as NMOC)	98.1% (as THC) 99.0% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm

Executive Table iv: Color 3 Concentrator RE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Removal)			
	Run 1	Run 2	Run 3	Average
THC Inlet (Adsorb + Desorb) (As propane)	589.3 ppmvd (desorb) 8.31 ppmvd (adsorb) Total 50.2 lb/hr	467.3 ppmvd (desorb) 6.45 ppmvd (adsorb) Total 38.0 lb/hr	535.8 ppmvd (desorb) 7.62 ppmvd (adsorb) Total 46.3 lb/hr	530.8 ppmvd (desorb) 7.46 ppmvd (adsorb) Total 44.9 lb/hr
NMOC Inlet (Adsorb + Desorb) (As propane)	587.2 ppmvd (desorb) 7.12 ppmvd (adsorb) Total 49.4 lb/hr	464.4 ppmvd (desorb) 4.69 ppmvd (adsorb) Total 37.0 lb/hr	533.2 ppmvd (desorb) 5.90 ppmvd (adsorb) Total 45.0 lb/hr	528.3 ppmvd (desorb) 5.90 ppmvd (adsorb) Total 43.8 lb/hr
THC Outlet Adsorb (as propane)	8.31 ppmv 4.90 lb/hr	6.45 ppmv 3.84 lb/hr	7.62 ppmv 4.54 lb/hr	7.46 ppmv 4.43 lb/hr
NMOC Outlet Adsorb (as propane)	7.12 ppmv 4.20 lb/hr	4.69 ppmv 2.79 lb/hr	5.90 ppmv 3.51 lb/hr	5.90 ppmv 3.50 lb/hr
Removal Efficiency	90.2% (as THC) 91.5% (as NMOC)	90.0% (as THC) 92.5% (as NMOC)	90.2% (as THC) 92.2% (as NMOC)	90.1% (as THC) 92.0% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm

Executive Table v: Color 3 Booth TO DE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Destruction / Removal)			
	Run 1	Run 2	Run 3	Average
THC inlet (Desorb) (As propane)	589.3 ppmv 45.3 lb/hr	467.3 ppmv 34.5 lb/hr	535.8 ppmv 41.7 lb/hr	530.8 ppmv 40.5 lb/hr
NMOC Inlet (Desorb) (As propane)	587.2 ppmv 45.1 lb/hr	464.4 ppmv 34.2 lb/hr	533.2 ppmv 41.5 lb/hr	528.3 ppmv 40.3 lb/hr
THC Outlet (TO) (As propane)	11.91 ppmv 0.95 lb/hr	11.02 ppmv 0.93 lb/hr	12.82 ppmv 1.02 lb/hr	11.92 ppmv 0.97 lb/hr
NMOC Outlet (TO) (As propane)	9.39 ppmv 0.75 lb/hr	8.99 ppmv 0.76 lb/hr	9.93 ppmv 0.79 lb/hr	9.44 ppmv 0.77 lb/hr
Destruction Efficiency	97.9% (as THC) 98.3% (as NMOC)	97.3% (as THC) 97.8% (as NMOC)	97.5% (as THC) 98.1% (as NMOC)	97.6% (as THC) 98.1% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm



Executive Table vi: Color 3 Oven TO DE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Destruction / Removal)			
	Run 1	Run 2	Run 3	Average
THC inlet (As propane)	207.8 ppmv 9.61 lb/hr	150.5 ppmv 7.03 lb/hr	165.3 ppmv 7.82 lb/hr	174.5 ppmv 8.16 lb/hr
NMOC Inlet (As propane)	184.6 ppmv 8.54 lb/hr	132.0 ppmv 6.17 lb/hr	143.5 ppmv 6.79 lb/hr	153.4 ppmv 7.17 lb/hr
THC Outlet (As propane)	7.44 ppmv 0.38 lb/hr	7.18 ppmv 0.36 lb/hr	7.58 ppmv 0.38 lb/hr	7.40 ppmv 0.37 lb/hr
NMOC Outlet (As propane)	3.82 ppmv 0.19 lb/hr	3.72 ppmv 0.18 lb/hr	3.89 ppmv 0.19 lb/hr	3.81 ppmv 0.19 lb/hr
Destruction Efficiency	96.1% (as THC) 97.7% (as NMOC)	94.9% (as THC) 97.0% (as NMOC)	95.1% (as THC) 97.1% (as NMOC)	95.4% (as THC) 97.3% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm

Executive Table vii: E-Coat A DE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Destruction / Removal)			
	Run 1	Run 2	Run 3	Average
THC inlet (As propane)	347.7 ppmv 4.66 lb/hr	478.3 ppmv 6.32 lb/hr	426.9 ppmv 5.55 lb/hr	417.6 ppmv 5.51 lb/hr
NMOC Inlet (As propane)	338.1 ppmv 4.54 lb/hr	468.0 ppmv 6.18 lb/hr	420.5 ppmv 5.47 lb/hr	408.9 ppmv 5.40 lb/hr
THC Outlet (As propane)	0.12 ppmv 0.002 lb/hr	0.23 ppmv 0.003 lb/hr	0.43 ppmv 0.006 lb/hr	0.26 ppmv 0.004 lb/hr
NMOC Outlet (As propane)	0.12 ppmv 0.002 lb/hr	0.22 ppmv 0.003 lb/hr	0.43 ppmv 0.006 lb/hr	0.26 ppmv 0.003 lb/hr
Destruction Efficiency	99.9% (as THC) 99.9% (as NMOC)	99.9% (as THC) 99.9% (as NMOC)	99.9% (as THC) 99.9% (as NMOC)	99.9% (as THC) 99.9% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm

Executive Table viii: E-Coat B DE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Destruction / Removal)			
	Run 1	Run 2	Run 3	Average
THC inlet (As propane)	95.8 ppmv 6.38 lb/hr	152.1 ppmv 10.7 lb/hr	157.2 ppmv 10.7 lb/hr	135.0 ppmv 9.27 lb/hr
NMOC Inlet (As propane)	74.5 ppmv 4.96 lb/hr	130.1 ppmv 9.17 lb/hr	134.6 ppmv 9.20 lb/hr	113.0 ppmv 7.78 lb/hr
THC Outlet (As propane)	0.11 ppmv 0.01 lb/hr	0.21 ppmv 0.01 lb/hr	0.19 ppmv 0.01 lb/hr	0.17 ppmv 0.01 lb/hr
NMOC Outlet (As propane)	0.11 ppmv 0.01 lb/hr	0.21 ppmv 0.01 lb/hr	0.19 ppmv 0.01 lb/hr	0.17 ppmv 0.01 lb/hr
Destruction Efficiency	99.9% (as THC) 99.9% (as NMOC)	99.9% (as THC) 99.9% (as NMOC)	99.9% (as THC) 99.9% (as NMOC)	99.9% (as THC) 99.9% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm



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1 INTRODUCTION

RWDI USA LLC (RWDI) was retained by FCA US LLC (FCA) to complete the emission sampling program at their Detroit Assembly Complex Jefferson (DACJ) (also referred to as Jefferson North Assembly Plant (JNAP)) located at 2101 Connor Ave., Detroit, Michigan. DACJ operates an automobile assembly plant that produces Jeep Grand Cherokee and Dodge Durango. Under Title V Renewable Operating Permit (ROP) MI ROP-N2155-2017 this Source Testing Report covers the required testing for validation of removal efficiency for the three (3) Zeolite Concentrators servicing the EU-TOPCOAT1, EU-TOPCOAT2, and EU-TOPCOAT3 lines and Thermal Oxidizers destruction efficiencies for Color 1 Booth, Color 3 Booth, Color 3 Oven, and EU-ECOAT.

DACJ recorded the production rate of vehicles processed during each removal efficiency test from three (3) EU-TOPCOAT Lines concentrators and the desorb inlet gas temperatures for each of the Zeolite Concentrators. Also, for the Thermal Oxidizers noted, oxidizer temperature and production volumes were recorded

1.1 Location and Dates of Testing

The test program was completed between July 11th and 13th at the Detroit Assembly Complex Jefferson (DACJ), located in Detroit, Michigan.

1.2 Purpose of Testing

The emissions test program is required by Michigan Department of Environment, Great Lakes, and Energy (EGLE) permit number MI ROP-N2155-2017. The test plan and approval letter documents are provided in **Appendix G**.

1.3 Description of Source

DACJ operates an automobile assembly plant that produces Jeep Grand Cherokee and Dodge Durango models for FCA US LLC under Emission Units and Flexible Group: EU-TOPCOAT, EU-ECOAT, and FG-FACILITY, there are three (3) Zeolite Concentrators (one for each color line booth), as well as multiple Thermal Oxidizers that are covered under this source testing program.



1.4 Personnel Involved in Testing

Table 1.4.1: Testing Personnel

<p>Tom Caltrider Corporate Environmental Programs Thomas.caltrider@stellantis.com</p>	<p>FCA US LLC Sterling Heights</p>	<p>(248) 882-7169</p>
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<p>Andrew Riley Air Quality Division Riley8@michigan.gov</p>	<p>Michigan Department of Environment, Great Lakes & Energy Air Quality Division / Technical Programs Unit</p>	<p>(586) 565-7379</p>
<p>Brad Bergeron Project Director Brad.Bergeron@rwdi.com</p>	<p>RWDI USA LLC 2239 Star Court Rochester Hills, MI 48309</p>	<p>(248) 234-3885</p>
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<p>Cade Smith Field Technician Cade.Smith@rwdi.com</p>		



2 SUMMARY OF RESULTS

2.1 Operating Data

Operational data collected during the testing includes the production rate of vehicles processed during each removal efficiency test from three (3) EU-TOPCOAT Lines concentrators, and the desorb inlet gas temperatures for each of the Zeolite Concentrators. Also, for the Thermal Oxidizers noted, oxidizer temperature and production volumes were recorded.

2.2 Applicable Permit Number

MI ROP-N2155-2017.

3 SOURCE DESCRIPTION

3.1 Description of Process and Emission Control Equipment

For topcoat one, two, and three, emissions from the basecoat bell zone, basecoat automatic conventional zone, heated flash, and clearcoat bell zones are ducted to a filter house, concentrator, and a thermal oxidizer. Emissions from the oven are controlled by a separate thermal oxidizer.

For E-coat A and B, VOC emissions from the curing oven are controlled by two thermal oxidizers.

3.2 Process Flow Sheet or Diagram

The stack figures can be found in the **Figures Section**.

3.3 Type and Quantity of Raw and Finished Materials

For the Topcoat process, the vehicles are coated with various materials from robots.

3.4 Normal Rated Capacity of Process

Each Topcoat line is rated for 35 jobs per hour. For the E-Coat Line, the process is rated for 70 jobs per hour.

3.5 Process Instrumentation Monitored During the Test

The TO temperatures were monitored during the test, as well as the desorb inlet temperatures for each of the Zeolite concentrators.

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4 SAMPLING AND ANALYTICAL PROCEDURES

4.1 Description of Sampling Train and Field Procedures

4.1.1 Sampling for Volatile Organic Compounds - USEPA Method 25A

The measurements were taken continuously following the USEPA Method 25A from all sources (using a non-methane/methane analyzer). As outlined in Method 25A, the measurement location was taken at the centroid of each source.

The compliance test consisted of a three 60-minute runs from each unit. Regular performance checks on the CEMS were carried out by zero and span calibration checks using USEPA Protocol calibration gases. These checks verified the ongoing precision of the monitor with time by introducing pollutant-free (zero) air followed by known calibration gas (span) into the monitor. The response of the monitor to pollutant-free air and the corresponding sensitivity to the span gases was reviewed frequently as an ongoing indication of analyzer performance.

Prior to testing, a 4-point analyzer calibration error check was conducted using USEPA protocol gases. The calibration error check was performed by introducing zero, low, mid, and high-level calibration gases up the heated line to the probe tip. The calibration error check was performed to confirm that the analyzer response is within $\pm 5\%$ of the certified calibration gas introduced. At the conclusion of each test run a system-bias check was performed to evaluate the percent drift from pre- and post-test system bias checks. The system bias checks were used to confirm that the analyzer did not drift greater than $\pm 3\%$ throughout a test run.

Zero and mid gas calibration checks were conducted both before and after each test run to quantify measurement system calibration drift and sampling system bias. During these checks, the calibration gases were introduced into the sampling system at the probe outlet so that the calibration gases were analyzed in the same manner as the flue gas samples.

A gas sample was continuously extracted from the stack and delivered to the gas analyzer, which measure the pollutant or diluent concentrations in the gas. The analyzers were calibrated on-site using EPA Protocol No. 1 certified calibration mixtures. The probe tip was equipped with a sintered stainless-steel filter for particulate removal or heated filter system. The end of the probe was connected to a heated Teflon sample line, which delivered the sample gases from the stack to the CEM system. The heated sample line is designed to maintain the gas temperature above 250°F in order to prevent condensation of stack gas moisture within the line.

Each analyzer was able to monitor Total Hydrocarbon (as propane) and Methane concurrently. The response factor for Methane to Propane (for each system) was determined via obtaining the concurrent response to methane calibration standard as both methane and THC (as Propane). This response factor was applied to each for the methane results to determine the total methane on the outlets of sources as Propane. During each run for each source, the Total Hydrocarbon (as Propane) and the Methane (corrected to as Propane) was determined and the methane response (as Propane) was subtracted from the Total Hydrocarbon (as Propane) value. This resulted in obtaining the Total Non-Methane Organic Compound (NMOC) values from each for the sources.

4.1.2 Gas Dilution (Method 205)

Calibration gas was mixed using an Environics 4040 Gas Dilution System. The mass flow controllers are factory calibrated using a primary flow standard traceable to the United States National Institute of Standards and Technology (NIST). Each flow controller utilizes an 11-point calibration table with linear interpolation, to increase accuracy and reduce flow controller nonlinearity. The calibration is done yearly, and the records are included. A multi-point EPA Method 205 check was executed in the field prior to testing to ensure accurate gas-mixtures. The gas dilution system consists of calibrated orifices or mass flow controllers and dilutes a high-level calibration gas to within $\pm 2\%$ of predicted values. The gas divider is capable of diluting gases at set increments and was evaluated for accuracy in the field in accordance with US EPA Method 205 "*Verification of Gas Dilution Systems for Field Instrument Calibrations*". Before testing, the gas divider dilutions were measured to evaluate that the responses are within $\pm 2\%$ of predicted values. In addition, a certified mid-level calibration gas within $\pm 10\%$ of one of the tested dilution gases was introduced into an analyzer to ensure the response of the gas calibration is within $\pm 2\%$ of gas divider dilution concentration.

4.1.3 Sampling for Stack Velocity, Temperature, and Volumetric Flowrate

The exhaust velocities and flow rates were determined following U.S. EPA Method 2, "Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)". Velocity measurements were taken with a pre-calibrated S-Type pitot tube and incline manometer. Volumetric flow rates were determined following the equal area method as outlined in U.S. EPA Method 2. Temperature measurements were made simultaneously with the velocity measurements and were conducted using a chromel-alumel type "k" thermocouple in conjunction with a calibrated digital temperature indicator.

The dry molecular weight of the stack gas was determined following calculations outlined in U.S. EPA Method 3, "Gas Analysis for the Determination of Dry Molecular Weight". Stack moisture content was determined through direct condensation and according to U.S. EPA Method 4, "Determination of Moisture Content of Stack Gases".

4.2 Description of Recovery and Analytical Procedures

There were no samples to recover during this test program. All testing used real time data from the analyzers.

4.3 Sampling Port Description

All sampling ports meet USEPA Method 1 locations and can be found in the **Figures Section**.



5 TEST RESULTS AND DISCUSSION

5.1 Detailed Results

Detailed results are provided in **Appendices B** and **C**.

Table 5.1.1: Color 1 Concentrator RE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Removal)			
	Run 1	Run 2	Run 3	Average
THC Inlet (Adsorb + Desorb) (As propane)	637.1 ppmvd (desorb) 1.47 ppmvd (adsorb) Total 47.0 lb/hr	675.7 ppmvd (desorb) 1.73 ppmvd (adsorb) Total 48.5 lb/hr	644.6 ppmvd (desorb) 1.63 ppmvd (adsorb) Total 47.1 lb/hr	637.1 ppmvd (desorb) 1.61 ppmvd (adsorb) Total 47.5 lb/hr
NMOC Inlet (Adsorb + Desorb) (As propane)	636.5 ppmvd (desorb) 0.56 ppmvd (adsorb) Total 46.5 lb/hr	674.6 ppmvd (desorb) 0.73 ppmvd (adsorb) Total 48.0 lb/hr	643.3 ppmvd (desorb) 0.62 ppmvd (adsorb) Total 46.4 lb/hr	651.4 ppmvd (desorb) 0.64 ppmvd (adsorb) Total 46.9 lb/hr
THC Outlet Adsorb (as propane)	1.47 ppmv 0.77 lb/hr	1.73 ppmv 0.90 lb/hr	1.63 ppmv 0.85 lb/hr	1.61 ppmv 0.84 lb/hr
NMOC Outlet Adsorb (as propane)	0.56 ppmv 0.29 lb/hr	0.73 ppmv 0.38 lb/hr	0.62 ppmv 0.32 lb/hr	0.64 ppmv 0.33 lb/hr
Removal Efficiency	98.4% (as THC) 99.4% (as NMOC)	98.2% (as THC) 99.2% (as NMOC)	98.2% (as THC) 99.3% (as NMOC)	98.2% (as THC) 99.3% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm

Table 5.1.2: Color 1 Booth TO DE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Destruction / Removal)			
	Run 1	Run 2	Run 3	Average
THC inlet (Desorb) (As propane)	637.1 ppmv 46.2 lb/hr	675.7 ppmv 47.6 lb/hr	644.6 ppmv 46.2 lb/hr	652.5 ppmv 46.7 lb/hr
NMOC Inlet (Desorb) (As propane)	636.5 ppmv 46.2 lb/hr	674.6 ppmv 47.6 lb/hr	643.3 ppmv 46.1 lb/hr	651.5 ppmv 46.6 lb/hr
THC Outlet (TO) (As propane)	4.43 ppmv 0.36 lb/hr	4.74 ppmv 0.39 lb/hr	4.71 ppmv 0.38 lb/hr	4.63 ppmv 0.37 lb/hr
NMOC Outlet (TO) (As propane)	3.83 ppmv 0.31 lb/hr	3.90 ppmv 0.32 lb/hr	4.05 ppmv 0.32 lb/hr	3.93 ppmv 0.32 lb/hr
Destruction Efficiency	99.2% (as THC) 99.3% (as NMOC)	99.2% (as THC) 99.3% (as NMOC)	99.2% (as THC) 99.3% (as NMOC)	99.2% (as THC) 99.3% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm



Table 5.1.3: Color 2 Concentrator RE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Removal)			
	Run 1	Run 2	Run 3	Average
THC Inlet (Adsorb + Desorb) (As propane)	626.0 ppmvd (desorb) 1.95 ppmvd (adsorb) Total 41.2 lb/hr	1043.3 ppmvd (desorb) 2.50 ppmvd (adsorb) Total 72.5 lb/hr	947.6 ppmvd (desorb) 2.53 ppmvd (adsorb) Total 64.1 lb/hr	872.3 ppmvd (desorb) 2.33 ppmvd (adsorb) Total 59.3 lb/hr
NMOC Inlet (Adsorb + Desorb) (As propane)	624.4 ppmvd (desorb) 0.86 ppmvd (adsorb) Total 40.6 lb/hr	1041.6 ppmvd (desorb) 1.35 ppmvd (adsorb) Total 71.8 lb/hr	946.4 ppmvd (desorb) 1.42 ppmvd (adsorb) Total 63.5 lb/hr	870.8 ppmvd (desorb) 1.21 ppmvd (adsorb) Total 58.7 lb/hr
THC Outlet Adsorb (as propane)	1.95 ppmv 0.90 lb/hr	2.50 ppmv 1.16 lb/hr	2.53 ppmv 1.17 lb/hr	2.33 ppmv 1.08 lb/hr
NMOC Outlet Adsorb (as propane)	0.86 ppmv 0.40 lb/hr	1.35 ppmv 0.63 lb/hr	1.42 ppmv 0.65 lb/hr	1.21 ppmv 0.56 lb/hr
Removal Efficiency	97.8% (as THC) 99.0% (as NMOC)	98.4% (as THC) 99.1% (as NMOC)	98.2% (as THC) 99.0% (as NMOC)	98.1% (as THC) 99.0% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm

Table 5.1.4: Color 3 Concentrator RE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Removal)			
	Run 1	Run 2	Run 3	Average
THC Inlet (Adsorb + Desorb) (As propane)	589.3 ppmvd (desorb) 8.31 ppmvd (adsorb) Total 50.2 lb/hr	467.3 ppmvd (desorb) 6.45 ppmvd (adsorb) Total 38.0 lb/hr	535.8 ppmvd (desorb) 7.62 ppmvd (adsorb) Total 46.3 lb/hr	530.8 ppmvd (desorb) 7.46 ppmvd (adsorb) Total 44.9 lb/hr
NMOC Inlet (Adsorb + Desorb) (As propane)	587.2 ppmvd (desorb) 7.12 ppmvd (adsorb) Total 49.4 lb/hr	464.4 ppmvd (desorb) 4.69 ppmvd (adsorb) Total 37.0 lb/hr	533.2 ppmvd (desorb) 5.90 ppmvd (adsorb) Total 45.0 lb/hr	528.3 ppmvd (desorb) 5.90 ppmvd (adsorb) Total 43.8 lb/hr
THC Outlet Adsorb (as propane)	8.31 ppmv 4.90 lb/hr	6.45 ppmv 3.84 lb/hr	7.62 ppmv 4.54 lb/hr	7.46 ppmv 4.43 lb/hr
NMOC Outlet Adsorb (as propane)	7.12 ppmv 4.20 lb/hr	4.69 ppmv 2.79 lb/hr	5.90 ppmv 3.51 lb/hr	5.90 ppmv 3.50 lb/hr
Removal Efficiency	90.2% (as THC) 91.5% (as NMOC)	90.0% (as THC) 92.5% (as NMOC)	90.2% (as THC) 92.2% (as NMOC)	90.1% (as THC) 92.0% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm

Table 5.1.5: Color 3 Booth TO DE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Destruction / Removal)			
	Run 1	Run 2	Run 3	Average
THC inlet (Desorb) (As propane)	589.3 ppmv 45.3 lb/hr	467.3 ppmv 34.5 lb/hr	535.8 ppmv 41.7 lb/hr	530.8 ppmv 40.5 lb/hr
NMOC Inlet (Desorb) (As propane)	587.2 ppmv 45.1 lb/hr	464.4 ppmv 34.2 lb/hr	533.2 ppmv 41.5 lb/hr	528.3 ppmv 40.3 lb/hr
THC Outlet (TO) (As propane)	11.91 ppmv 0.95 lb/hr	11.02 ppmv 0.93 lb/hr	12.82 ppmv 1.02 lb/hr	11.92 ppmv 0.97 lb/hr
NMOC Outlet (TO) (As propane)	9.39 ppmv 0.75 lb/hr	8.99 ppmv 0.76 lb/hr	9.93 ppmv 0.79 lb/hr	9.44 ppmv 0.77 lb/hr
Destruction Efficiency	97.9% (as THC) 98.3% (as NMOC)	97.3% (as THC) 97.8% (as NMOC)	97.5% (as THC) 98.1% (as NMOC)	97.6% (as THC) 98.1% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm



Table 5.1.6: Color 3 Oven TO DE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Destruction / Removal)			
	Run 1	Run 2	Run 3	Average
THC inlet (As propane)	207.8 ppmv 9.61 lb/hr	150.5 ppmv 7.03 lb/hr	165.3 ppmv 7.82 lb/hr	174.5 ppmv 8.16 lb/hr
NMOC Inlet (As propane)	184.6 ppmv 8.54 lb/hr	132.0 ppmv 6.17 lb/hr	143.5 ppmv 6.79 lb/hr	153.4 ppmv 7.17 lb/hr
THC Outlet (As propane)	7.44 ppmv 0.38 lb/hr	7.18 ppmv 0.36 lb/hr	7.58 ppmv 0.38 lb/hr	7.40 ppmv 0.37 lb/hr
NMOC Outlet (As propane)	3.82 ppmv 0.19 lb/hr	3.72 ppmv 0.18 lb/hr	3.89 ppmv 0.19 lb/hr	3.81 ppmv 0.19 lb/hr
Destruction Efficiency	96.1% (as THC) 97.7% (as NMOC)	94.9% (as THC) 97.0% (as NMOC)	95.1% (as THC) 97.1% (as NMOC)	95.4% (as THC) 97.3% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm

Table 5.1.7: E-Coat A DE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Destruction / Removal)			
	Run 1	Run 2	Run 3	Average
THC inlet (As propane)	347.7 ppmv 4.66 lb/hr	478.3 ppmv 6.32 lb/hr	426.9 ppmv 5.55 lb/hr	417.6 ppmv 5.51 lb/hr
NMOC Inlet (As propane)	338.1 ppmv 4.54 lb/hr	468.0 ppmv 6.18 lb/hr	420.5 ppmv 5.47 lb/hr	408.9 ppmv 5.40 lb/hr
THC Outlet (As propane)	0.12 ppmv 0.002 lb/hr	0.23 ppmv 0.003 lb/hr	0.43 ppmv 0.006 lb/hr	0.26 ppmv 0.004 lb/hr
NMOC Outlet (As propane)	0.12 ppmv 0.002 lb/hr	0.22 ppmv 0.003 lb/hr	0.43 ppmv 0.006 lb/hr	0.26 ppmv 0.003 lb/hr
Destruction Efficiency	99.9% (as THC) 99.9% (as NMOC)	99.9% (as THC) 99.9% (as NMOC)	99.9% (as THC) 99.9% (as NMOC)	99.9% (as THC) 99.9% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm

Table 5.1.8: E-Coat B DE - Table of Results

Parameter	Concentration & Emission Rate (ppmv/ lb/hr & % Destruction / Removal)			
	Run 1	Run 2	Run 3	Average
THC inlet (As propane)	95.8 ppmv 6.38 lb/hr	152.1 ppmv 10.7 lb/hr	157.2 ppmv 10.7 lb/hr	135.0 ppmv 9.27 lb/hr
NMOC Inlet (As propane)	74.5 ppmv 4.96 lb/hr	130.1 ppmv 9.17 lb/hr	134.6 ppmv 9.20 lb/hr	113.0 ppmv 7.78 lb/hr
THC Outlet (As propane)	0.11 ppmv 0.01 lb/hr	0.21 ppmv 0.01 lb/hr	0.19 ppmv 0.01 lb/hr	0.17 ppmv 0.01 lb/hr
NMOC Outlet (As propane)	0.11 ppmv 0.01 lb/hr	0.21 ppmv 0.01 lb/hr	0.19 ppmv 0.01 lb/hr	0.17 ppmv 0.01 lb/hr
Destruction Efficiency	99.9% (as THC) 99.9% (as NMOC)	99.9% (as THC) 99.9% (as NMOC)	99.9% (as THC) 99.9% (as NMOC)	99.9% (as THC) 99.9% (as NMOC)

Note: All emission data is based on a volumetric flow rate expressed as cfm



5.2 Discussion of Results

A summary of the removal efficiency and destruction efficiency is provided below.

- Color 1 Concentrator – 99.3% Removal Efficiency
- Color 1 Booth TO – 99.3% Destruction Efficiency
- Color 2 Concentrator – 99.0% Removal Efficiency
- Color 3 Concentrator – 92.0% Removal Efficiency
- Color 3 Booth TO – 98.1% Destruction Efficiency
- Color 3 Oven TO – 97.3% Destruction Efficiency
- E-Coat Oven A TO – 99.9% Destruction Efficiency
- E-Coat Oven B TO – 99.9% Destruction Efficiency

5.3 Variations in Testing Procedures

There were no sampling variations.

5.4 Process Upset Conditions During Testing

There were normal process breaks during production.

5.5 Maintenance Performed in Last Three Months

There was no maintenance performed outside of normal operations.

5.6 Re-Test

This was not a retest.

5.7 Audit Samples

This test did not require any audit samples.

5.8 Process Data

Process data can be found in **Appendix A**.

5.9 Flows and Moisture

Flow rate determination spreadsheets can be found in **Appendix B and C**.



5.10 Field Data Sheets

Field Data Sheets can be found in **Appendix D**.

5.11 Calibration Data

Calibration records can be found in **Appendix E**.

5.12 Example Calculations

Example calculation sheets can be found in **Appendix F**.

5.13 Laboratory Data

There was no laboratory data from this testing program.

TABLES

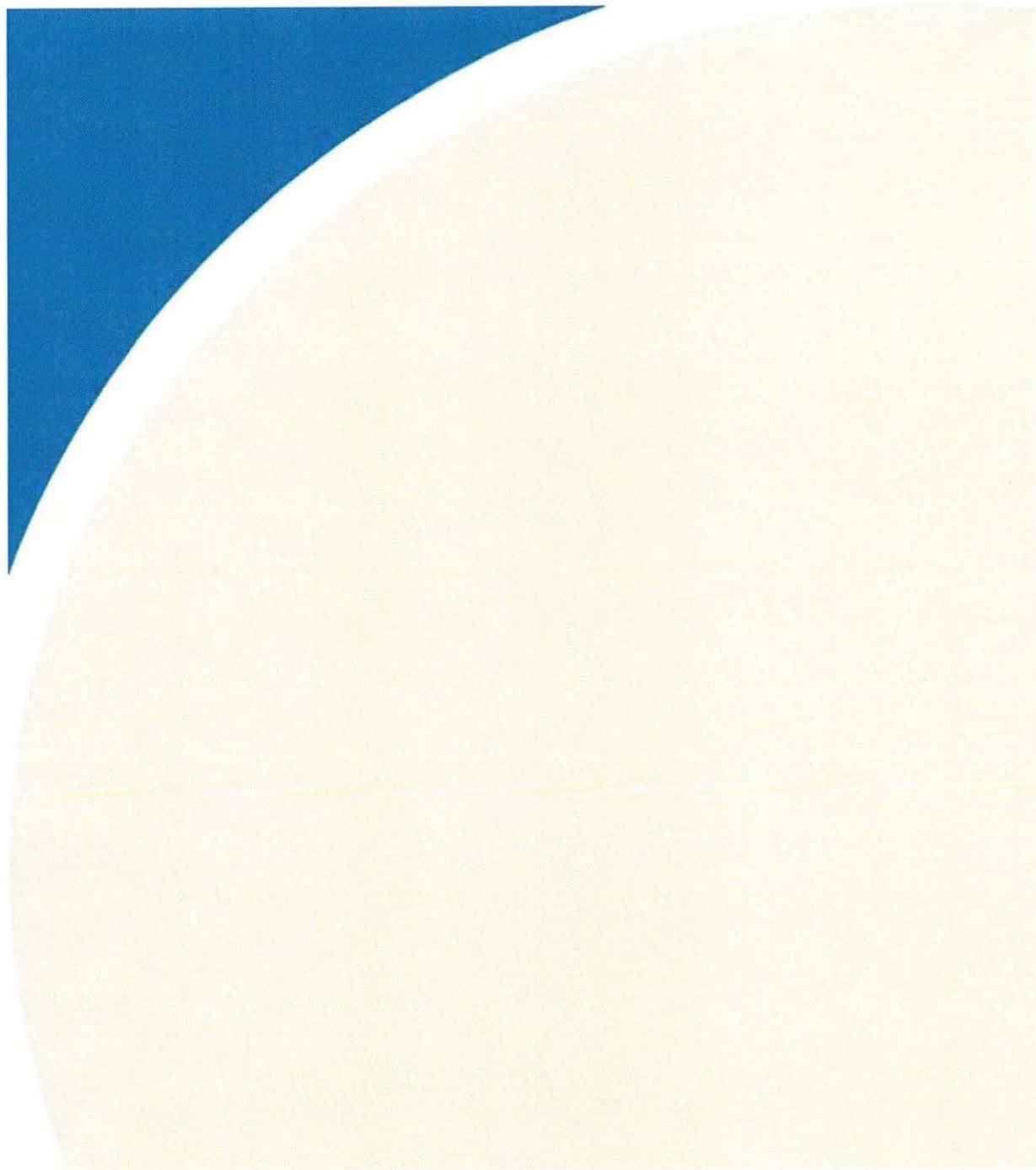


Table 1: Summary of Sampling Parameters and Methodology - FCA DACJ

Source Location	No. of Tests per Stack	Sampling Parameter	Sampling Method
Color 1 Concentrator	3	Velocity, Temperature and Flow Rate	U.S. EPA ^[1] Methods 1-4
	3	Oxygen/Carbon Dioxide	U.S. EPA ^[1] Method 3
	3	THC, Methane, NMOC	U.S. EPA [1] Method 25A
Color 1 Booth TO	3	Velocity, Temperature and Flow Rate	U.S. EPA ^[1] Methods 1-4
	3	Oxygen/Carbon Dioxide	U.S. EPA ^[1] Method 3
	3	THC, Methane, NMOC	U.S. EPA [1] Method 25A
Color 2 Concentrator	3	Velocity, Temperature and Flow Rate	U.S. EPA ^[1] Methods 1-4
	3	Oxygen/Carbon Dioxide	U.S. EPA ^[1] Method 3
	3	THC, Methane, NMOC	U.S. EPA [1] Method 25A
Color 3 Concentrator	3	Velocity, Temperature and Flow Rate	U.S. EPA ^[1] Methods 1-4
	3	Oxygen/Carbon Dioxide	U.S. EPA ^[1] Method 3
	3	THC, Methane, NMOC	U.S. EPA [1] Method 25A
Color 3 Booth TO	3	Velocity, Temperature and Flow Rate	U.S. EPA ^[1] Methods 1-4
	3	Oxygen/Carbon Dioxide	U.S. EPA ^[1] Method 3
	3	THC, Methane, NMOC	U.S. EPA [1] Method 25A
Color 3 Oven TO	3	Velocity, Temperature and Flow Rate	U.S. EPA ^[1] Methods 1-4
	3	Oxygen/Carbon Dioxide	U.S. EPA ^[1] Method 3
	3	THC, Methane, NMOC	U.S. EPA [1] Method 25A
E-Coat A TO	3	Velocity, Temperature and Flow Rate	U.S. EPA ^[1] Methods 1-4
	3	Oxygen/Carbon Dioxide	U.S. EPA ^[1] Method 3
	3	THC, Methane, NMOC	U.S. EPA [1] Method 25A
E-Coat B TO	3	Velocity, Temperature and Flow Rate	U.S. EPA ^[1] Methods 1-4
	3	Oxygen/Carbon Dioxide	U.S. EPA ^[1] Method 3
	3	THC, Methane, NMOC	U.S. EPA [1] Method 25A

Notes:

[1] U.S. EPA - United States Environmental Protection Agency

Table 2: Sampling Summary and Sample Log - FCA DACJ

Source and Test #	Sampling Date	Start Time	End Time
Color 1 Concentrator - Velocity / THC / Methane / NMOC			
Test #1	12-Jul-23	8:43 AM	9:42 AM
Test #2	12-Jul-23	10:12 AM	11:11 AM
Test #2	12-Jul-23	11:46 AM	12:45 PM
Color 1 Booth TO - Velocity / THC / Methane / NMOC			
Test #1	12-Jul-23	8:43 AM	9:42 AM
Test #2	12-Jul-23	10:12 AM	11:11 AM
Test #3	12-Jul-23	11:46 AM	12:45 PM
Color 2 Concentrator - Velocity / THC / Methane / NMOC			
Test #1	13-Jul-23	7:15 AM	8:14 AM
Test #2	13-Jul-23	8:39 AM	9:38 AM
Test #3	13-Jul-23	10:09 AM	11:08 AM
Color 3 Concentrator - Velocity / THC / Methane / NMOC			
Test #1	11-Jul-23	2:44 PM	3:43 PM
Test #2	11-Jul-23	4:10 PM	5:09 PM
Test #3	11-Jul-23	5:41 PM	6:40 PM
Color 3 Booth TO - Velocity / THC / Methane / NMOC			
Test #1	11-Jul-23	2:44 PM	3:43 PM
Test #2	11-Jul-23	4:10 PM	5:09 PM
Test #3	11-Jul-23	5:41 PM	6:40 PM
Color 3 Oven TO - Velocity / THC / Methane / NMOC			
Test #1	11-Jul-23	2:55 PM	3:55 PM
Test #2	11-Jul-23	4:22 PM	5:22 PM
Test #3	11-Jul-23	6:00 PM	7:00 PM
E-Coat A TO - Velocity / THC / Methane / NMOC			
Test #1	12-Jul-23	9:30 - 10:00 AM	11:15 - 11:45 AM
Test #2	12-Jul-23	12:20 PM	13:20 PM
Test #3	12-Jul-23	1:52 PM	2:51 PM
E-Coat B TO - Velocity / THC / Methane / NMOC			
Test #1	13-Jul-23	10:10 AM	11:09 AM
Test #2	13-Jul-23	11:40 AM	12:39 PM
Test #3	13-Jul-23	1:10 PM	2:09 PM

Table 3B: Sampling Summary - Flow Characteristics - Color 2 Concentrator

Stack Gas Parameter		Test No. 1	Test No. 2	Test No. 3	Average Concentrator 2 Desorb
		THC / Methane / NMOC Concentrator 2 Desorb	THC / Methane / NMOC Concentrator 2 Desorb	THC / Methane / NMOC Concentrator 2 Desorb	
Source					
Testing Date		13-Jul-23	13-Jul-23	13-Jul-23	
Stack Temperature	°F	146	145	146	146
Moisture	%	3.74%	3.10%	3.49%	3.44%
Velocity	ft/s	40.95	43.05	42.08	42.03
Referenced Flow Rate	DSCFM	9,393	9,966	9,678	9,679

Stack Gas Parameter		Test No. 1	Test No. 2	Test No. 3	Average Concentrator 2 Adsorb
		THC / Methane / NMOC Concentrator 2 Adsorb	THC / Methane / NMOC Concentrator 2 Adsorb	THC / Methane / NMOC Concentrator 2 Adsorb	
Source					
Testing Date		13-Jul-23	13-Jul-23	13-Jul-23	
Stack Temperature	°F	83	83	84	83
Moisture	%	1.84%	1.91%	1.84%	1.86%
Velocity	ft/s	28.64	28.95	28.79	28.79
Referenced Flow Rate	DSCFM	67,219	67,825	67,423	67,489

Table 3C: Sampling Summary - Flow Characteristics - Color 3 Concentrator, Color 3 Booth TO and Color 3 Oven TO

Stack Gas Parameter		Test No. 1	Test No. 2	Test No. 3	Average Concentrator 3 Desorb
Source		THC / Methane / NMOOC Concentrator 3 Desorb	THC / Methane / NMOOC Concentrator 3 Desorb	THC / Methane / NMOOC Concentrator 3 Desorb	
Testing Date		11-Jul-23	11-Jul-23	11-Jul-23	
Stack Temperature	°F	122	123	118	121
Moisture	%	3.13%	3.24%	3.03%	3.13%
Velocity	ft/s	49.61	47.69	49.86	49.05
Referenced Flow Rate	DSCFM	11,202	10,737	11,347	11,095

Stack Gas Parameter		Test No. 1	Test No. 2	Test No. 3	Average Concentrator 3 Adsorb
Source		THC / Methane / NMOOC Concentrator 3 Adsorb	THC / Methane / NMOOC Concentrator 3 Adsorb	THC / Methane / NMOOC Concentrator 3 Adsorb	
Testing Date		11-Jul-23	11-Jul-23	11-Jul-23	
Stack Temperature	°F	91	92	93	92
Moisture	%	2.17%	1.83%	1.96%	1.99%
Velocity	ft/s	40.20	40.53	40.62	40.45
Referenced Flow Rate	DSCFM	85,991	86,776	86,804	86,524

Stack Gas Parameter		Test No. 1	Test No. 2	Test No. 3	Average Concentrator 3 Booth TO Outlet
Source		THC / Methane / NMOOC Concentrator 3 Booth TO Outlet	THC / Methane / NMOOC Concentrator 3 Booth TO Outlet	THC / Methane / NMOOC Concentrator 3 Booth TO Outlet	
Testing Date		11-Jul-23	11-Jul-23	11-Jul-23	
Stack Temperature	°F	629	631	632	631
Moisture	%	5.54%	4.93%	6.41%	5.63%
Velocity	ft/s	68.88	72.22	69.49	70.20
Referenced Flow Rate	DSCFM	11,653	12,270	11,612	11,845

Stack Gas Parameter		Test No. 1	Test No. 2	Test No. 3	Average Concentrator 3 Oven TO Inlet
Source		THC / Methane / NMOOC Concentrator 3 Oven TO Inlet	THC / Methane / NMOOC Concentrator 3 Oven TO Inlet	THC / Methane / NMOOC Concentrator 3 Oven TO Inlet	
Testing Date		11-Jul-23	11-Jul-23	11-Jul-23	
Stack Temperature	°F	292	289	288	290
Moisture	%	3.55%	2.32%	2.12%	2.66%
Velocity	ft/s	54.13	53.85	54.29	54.09
Referenced Flow Rate	DSCFM	6,737	6,809	6,895	6,814

Stack Gas Parameter		Test No. 1	Test No. 2	Test No. 3	Average Concentrator 3 Oven TO Outlet
Source		THC / Methane / NMOOC Concentrator 3 Oven TO Outlet	THC / Methane / NMOOC Concentrator 3 Oven TO Outlet	THC / Methane / NMOOC Concentrator 3 Oven TO Outlet	
Testing Date		11-Jul-23	11-Jul-23	11-Jul-23	
Stack Temperature	°F	690	692	692	691
Moisture	%	4.25%	5.30%	4.62%	4.72%
Velocity	ft/s	40.44	40.24	40.34	40.34
Referenced Flow Rate	DSCFM	7,350	7,225	7,292	7,289

Table 3D: Sampling Summary - Flow Characteristics - E-Coat A TO

Stack Gas Parameter		Test No. 1	Test No. 2	Test No. 3	Average E-Coat A TO Inlet
		THC / Methane / NMOC	THC / Methane / NMOC	THC / Methane / NMOC	
Source		E-Coat A TO Inlet	E-Coat A TO Inlet	E-Coat A TO Inlet	
Testing Date		12-Jul-23	12-Jul-23	12-Jul-23	
Stack Temperature	°F	350	346	344	347
Moisture	%	4.61%	3.58%	4.77%	4.32%
Velocity	ft/s	33.95	32.93	32.75	33.21
Referenced Flow Rate	DSCFM	1,954	1,924	1,894	1,924

Stack Gas Parameter		Test No. 1	Test No. 2	Test No. 3	Average E-Coat A TO Outlet
		THC / Methane / NMOC	THC / Methane / NMOC	THC / Methane / NMOC	
Source		E-Coat A TO Outlet	E-Coat A TO Outlet	E-Coat A TO Outlet	
Testing Date		12-Jul-23	12-Jul-23	12-Jul-23	
Stack Temperature	°F	855	844	849	849
Moisture	%	3.08%	3.29%	2.94%	3.10%
Velocity	ft/s	41.47	40.16	40.74	40.79
Referenced Flow Rate	DSCFM	1,969	1,918	1,946	1,944

Table 3E: Sampling Summary - Flow Characteristics - E-Coat B Oven TO

Stack Gas Parameter		Test No. 1	Test No. 2	Test No. 3	Average E-Coat B TO Inlet
		THC / Methane / NMOC E-Coat B TO Inlet	THC / Methane / NMOC E-Coat B TO Inlet	THC / Methane / NMOC E-Coat B TO Inlet	
Source					
Testing Date		13-Jul-23	13-Jul-23	13-Jul-23	
Stack Temperature	°F	355	344	342	347
Moisture	%	3.91%	2.13%	3.69%	3.24%
Velocity	ft/s	37.61	38.54	37.92	38.02
Referenced Flow Rate	DSCFM	9,704	10,261	9,955	9,973

Stack Gas Parameter		Test No. 1	Test No. 2	Test No. 3	Average E-Coat B TO Outlet
		THC / Methane / NMOC E-Coat B TO Outlet	THC / Methane / NMOC E-Coat B TO Outlet	THC / Methane / NMOC E-Coat B TO Outlet	
Source					
Testing Date		13-Jul-23	13-Jul-23	13-Jul-23	
Stack Temperature	°F	603	604	567	591
Moisture	%	5.81%	5.38%	5.32%	5.50%
Velocity	ft/s	41.85	42.04	42.07	41.99
Referenced Flow Rate	DSCFM	9,041	9,117	9,452	9,203

Table 4 - THC, Methane, and NMOC EMISSIONS TABLE - Removal Efficiency - Color 1 Concentrator

Source: JNAP Concentrator 1

RWDI Project # 2304605

Parameter	Test 1	Test 2	Test 3	Average
Date	12-Jul-23	12-Jul-23	12-Jul-23	--
Start Time:	8:43	10:12	11:46	--
Stop Time:	9:42	11:11	12:45	--
Duration (mins):	60	50	60	--
Average Production Number (Color 1 Booth):	18	16	18	17
Average Temperature for Color 1 Concentrator Desorb (°F):	355	354	355	355
Desorb Booth THC Concentration (as propane) (ppmw):	617.2	656.0	625.1	632.8
Desorb Booth THC Concentration (as propane) (ppmd):	637.1	675.7	644.6	652.5
Desorb Booth THC Concentration (as propane) (mg/m3d):	1167.8	1238.6	1181.5	1195.9
Desorb Booth THC Concentration (as propane) (lb/hrd):	46.2	47.6	46.2	46.7
Desorb Booth Methane Correction Factor	2.21	2.16	2.17	2.18
Desorb Booth CH4 Concentration (as methane) (ppmw):	1.39	2.28	2.89	2.19
Desorb Booth CH4 Concentration (as Methane) (ppmd):	1.43	2.35	2.98	2.25
Desorb Booth CH4 Concentration (as Propane) (ppmd):	0.65	1.09	1.38	1.04
Desorb Booth CH4 Concentration (as propane) (mg/m3d):	1.19	1.99	2.52	1.90
Desorb Booth CH4 Concentration (as propane) (lb/hrd):	0.05	0.08	0.10	0.07
Desorb Booth NMOC Concentration (as Propane) (ppmd):	636.5	674.6	643.2	651.4
Desorb Booth NMOC Concentration (as propane) (mg/m3d):	1166.6	1236.6	1179.0	1194.0
Desorb Booth NMOC Concentration (as propane) (lb/hrd):	46.2	47.6	46.1	46.6
Desorb Booth Flow Rate (dscfm):	10,584	10,278	10,447	10,437
Desorb Booth Flow Rate (dm3/s):	4.99	4.85	4.93	4.92
Moisture:	3.12%	2.92%	3.02%	3.02%
Adsorb Booth Flow Rate (dscfm):	75,939	75,640	75,859	75,813
Adsorb Booth Flow Rate (dm3/s):	35.82	35.68	35.79	35.77
Moisture:	1.89%	1.95%	2.02%	1.95%
Adsorb Booth THC Concentration (as propane) (ppmw):	1.44	1.69	1.60	1.58
Adsorb Booth THC Concentration (as propane) (ppmd):	1.47	1.73	1.63	1.61
Adsorb Booth THC Concentration (as propane) (mg/m3d):	2.70	3.16	2.99	2.95
Adsorb Booth THC Concentration (as propane) (lb/hrd):	0.77	0.90	0.85	0.84
Adsorb Booth Methane Correction Factor	2.30	2.24	2.27	2.27
Adsorb Booth CH4 Concentration (as methane) (ppmw):	2.06	2.19	2.25	2.17
Adsorb Booth CH4 Concentration (as Methane) (ppmd):	2.10	2.23	2.30	2.21
Adsorb Booth CH4 Concentration (as Propane) (ppmd):	0.91	0.99	1.01	0.97
Adsorb Booth CH4 Concentration (as propane) (mg/m3d):	1.67	1.82	1.86	1.78
Adsorb Booth CH4 Concentration (as propane) (lb/hrd):	0.48	0.52	0.53	0.51
Adsorb Booth NMOC Concentration (as Propane) (ppmd):	0.56	0.73	0.62	0.64
Adsorb Booth NMOC Concentration (as propane) (mg/m3d):	1.02	1.34	1.14	1.17
Adsorb Booth NMOC Concentration (as propane) (lb/hrd):	0.29	0.38	0.32	0.33
Destruction Efficiency (THC) (%):	98.4%	98.2%	98.2%	98.2%
Destruction Efficiency (NMOC) (%):	99.4%	99.2%	99.3%	99.3%

Note: "d" indicated based on dry conditions

Table 5: THC, Methane, and NMOC EMISSIONS TABLE - Destruction Efficiency - Color 1 Booth TO

Source: JNAP Booth TO Color1

RWDI Project # 2304605

Parameter	Test 1	Test 2	Test 3	Average
Date	12-Jul-23	12-Jul-23	12-Jul-23	--
Start Time:	8:43	10:12	11:46	--
Stop Time:	9:42	11:11	12:45	--
Duration (mins):	60	60	60	--
Average Production Number (Color 1 Booth):	18	16	18	17
Average Temperature for TO (°F):	1292	1290	1290	1291
Inlet (Desorb Duct)THC Concentration (as propane) (ppmw):	617.2	656.0	625.1	632.8
Inlet (Desorb Duct)THC Concentration (as propane) (ppmd):	637.1	675.7	644.6	652.5
Inlet (Desorb Duct)THC Concentration (as propane) (mg/m3d):	1167.8	1238.6	1181.5	1195.9
Inlet (Desorb Duct)THC Concentration (as propane) (lb/hrd):	46.2	47.6	46.2	46.7
Inlet (Desorb Duct)Methane Correction Factor	2.22	2.16	2.17	2.18
Inlet (Desorb Duct)CH4 Concentration (as methane) (ppmw):	1.39	2.28	2.77	2.15
Inlet (Desorb Duct)CH4 Concentration (as Methane) (ppmd):	1.43	2.35	2.86	2.21
Inlet (Desorb Duct)CH4 Concentration (as Propane) (ppmd):	0.65	1.09	1.32	1.02
Inlet (Desorb Duct)CH4 Concentration (as propane) (mg/m3d):	1.18	1.99	2.42	1.87
Inlet (Desorb Duct)CH4 Concentration (as propane) (lb/hrd):	0.05	0.08	0.09	0.07
Inlet (Desorb Duct)NMOC Concentration (as Propane) (ppmd):	636.5	674.6	643.3	651.5
Inlet (Desorb Duct)NMOC Concentration (as propane) (mg/m3d):	1166.6	1236.6	1179.1	1194.1
Inlet (Desorb Duct)NMOC Concentration (as propane) (lb/hrd):	46.2	47.6	46.1	46.6
Inlet (Desorb Duct)Flow Rate (dscfm):	10,584	10,278	10,447	10,437
Inlet (Desorb Duct)Flow Rate (dm ³ /s):	4.99	4.85	4.93	4.92
Moisture:	3.12%	2.92%	3.02%	3.0%
Outlet Flow Rate (dscfm):	11,737	11,941	11,692	11,790
Outlet Flow Rate (dm ³ /s):	5.54	5.63	5.52	5.56
Moisture:	4.84%	5.32%	4.79%	4.98%
Outlet THC Concentration (as propane) (ppm _w):	4.22	4.49	4.48	4.39
Outlet THC Concentration (as propane) (ppm _d):	4.43	4.74	4.71	4.63
Outlet THC Concentration (as propane) (mg/m ³ _d):	8.12	8.69	8.63	8.48
Outlet THC Concentration (as propane) (lb/hr _d):	0.36	0.39	0.38	0.37
Outlet Methane Correction Factor	2.37	2.23	2.22	2.27
Outlet CH4 Concentration (as methane) (ppm _w):	1.36	1.76	1.39	1.50
Outlet CH4 Concentration (as Methane) (ppm _d):	1.43	1.86	1.46	1.58
Outlet CH4 Concentration (as Propane) (ppm _d):	0.60	0.84	0.66	0.70
Outlet CH4 Concentration (as propane) (mg/m ³ _d):	1.11	1.53	1.20	1.28
Outlet CH4 Concentration (as propane) (lb/hr _d):	0.05	0.07	0.05	0.06
Outlet NMOC Concentration (as Propane) (ppm _d):	3.83	3.90	4.05	3.93
Outlet NMOC Concentration (as propane) (mg/m ³ _d):	7.01	7.15	7.43	7.20
Outlet NMOC Concentration (as propane) (lb/hr _d):	0.31	0.32	0.32	0.32
Destruction Efficiency (THC) (%):	99.2%	99.2%	99.2%	99.2%
Destruction Efficiency (NMOC) (%):	99.3%	99.3%	99.30%	99.3%

Note: "d" indicated based on dry conditions

TABLE 6: THC, Methane, and NMOC EMISSIONS TABLE - Removal Efficiency - Color2 Concentrator

Source: JNAP Concentrator 2 Removal Efficiency

RWDI Project # 2304605

Parameter	Test 1	Test 2	Test 3	Average
Date	13-Jul-23	13-Jul-23	13-Jul-23	--
Start Time:	7:15	8:38	10:09	--
Stop Time:	8:14	9:37	11:08	--
Duration (mins):	60	60	60	--
Average Production Number (Color 2 Booth):	12	17	21	17
Average Temperature for Color 2 Desorb (°F):	355	355	355	355
Desorb Booth THC Concentration (as propane) (ppmw):	602.6	1011.0	914.5	842.7
Desorb Booth THC Concentration (as propane) (ppmd):	626.0	1043.3	947.6	872.3
Desorb Booth THC Concentration (as propane) (mg/m3d):	1147.5	1912.3	1736.8	1598.9
Desorb Booth THC Concentration (as propane) (lb/hrd):	40.3	71.3	62.9	58.2
Desorb Booth Methane Correction Factor	2.19	2.11	2.14	2.15
Desorb Booth CH4 Concentration (as methane) (ppmw):	3.43	3.62	2.36	3.13
Desorb Booth CH4 Concentration (as Methane) (ppmd):	3.56	3.73	2.44	3.25
Desorb Booth CH4 Concentration (as Propane) (ppmd):	1.63	1.77	1.14	1.51
Desorb Booth CH4 Concentration (as propane) (mg/m3d):	2.98	3.25	2.10	2.77
Desorb Booth CH4 Concentration (as propane) (lb/hrd):	0.10	0.12	0.08	0.10
Desorb Booth NMOC Concentration (as Propane) (ppmd):	624.4	1041.6	946.4	870.8
Desorb Booth NMOC Concentration (as propane) (mg/m3d):	1144.5	1909.1	1734.7	1596.1
Desorb Booth NMOC Concentration (as propane) (lb/hrd):	40.2	71.2	62.8	58.1
Desorb Booth Flow Rate (dscfm):	9,393	9,966	9,678	9,679
Desorb Booth Flow Rate (dm3/s):	4.43	4.70	4.57	4.57
Moisture:	3.74%	3.10%	3.49%	3.44%
Adsorb Booth Flow Rate (dscfm):	67,219	67,825	67,423	67,489
Adsorb Booth Flow Rate (dm3/s):	31.71	32.00	31.81	31.84
Moisture:	1.84%	1.91%	1.84%	1.86%
Adsorb Booth THC Concentration (as propane) (ppmw):	1.92	2.46	2.49	2.29
Adsorb Booth THC Concentration (as propane) (ppmd):	1.95	2.50	2.53	2.33
Adsorb Booth THC Concentration (as propane) (mg/m3d):	3.58	4.59	4.65	4.27
Adsorb Booth THC Concentration (as propane) (lb/hrd):	0.90	1.16	1.17	1.08
Adsorb Booth Methane Correction Factor	2.35	2.30	2.31	2.32
Adsorb Booth CH4 Concentration (as methane) (ppmw):	2.53	2.61	2.53	2.56
Adsorb Booth CH4 Concentration (as Methane) (ppmd):	2.57	2.66	2.58	2.60
Adsorb Booth CH4 Concentration (as Propane) (ppmd):	1.09	1.16	1.12	1.12
Adsorb Booth CH4 Concentration (as propane) (mg/m3d):	2.00	2.12	2.05	2.06
Adsorb Booth CH4 Concentration (as propane) (lb/hrd):	0.50	0.54	0.52	0.52
Adsorb Booth NMOC Concentration (as Propane) (ppmd):	0.86	1.35	1.42	1.21
Adsorb Booth NMOC Concentration (as propane) (mg/m3d):	1.58	2.47	2.59	2.21
Adsorb Booth NMOC Concentration (as propane) (lb/hrd):	0.40	0.63	0.65	0.56
Destruction Efficiency (THC) (%):	97.8%	98.4%	98.2%	98.1%
Destruction Efficiency (NMOC) (%):	99.0%	99.1%	99.0%	99.0%

Note: "d" indicated based on dry conditions

TABLE 7: THC, Methane, and NMOC EMISSIONS TABLE - Removal Efficiency - Color 3 Concentrator

Source: JNAP Concentrator 3 (Adsorb and Desorb) - Removal Efficiency

RWDI Project # 2304605

Parameter	Test 1	Test 2	Test 3	Average
Date	11-Jul-23	11-Jul-23	11-Jul-23	--
Start Time:	14:44	16:10	17:41	--
Stop Time:	15:43	17:09	18:40	--
Duration (mins):	60	60	60	--
Average Production Number (Color 3 Booth):	20	11	13	15
Average Temperature for Color 3 Desorb (°F):	370	370	370	370
Desorb Booth THC Concentration (as propane) (ppmw):	570.8	452.2	519.5	514.2
Desorb Booth THC Concentration (as propane) (ppmd):	589.3	467.3	535.8	530.8
Desorb Booth THC Concentration (as propane) (mg/m3d):	1080.1	856.6	982.0	972.9
Desorb Booth THC Concentration (as propane) (lb/hrd):	45.32	34.45	41.74	40.5
Desorb Booth Methane Correction Factor	2.16	2.10	1.99	2.08
Desorb Booth CH4 Concentration (as methane) (ppmw):	4.43	6.04	4.94	5.14
Desorb Booth CH4 Concentration (as Methane) (ppmd):	4.57	6.24	5.10	5.30
Desorb Booth CH4 Concentration (as Propane) (ppmd):	2.12	2.97	2.56	2.55
Desorb Booth CH4 Concentration (as propane) (mg/m3d):	3.88	5.44	4.69	4.67
Desorb Booth CH4 Concentration (as propane) (lb/hrd):	0.16	0.22	0.20	0.19
Desorb Booth NMOC Concentration (as Propane) (ppmd):	587.2	464.4	533.2	528.3
Desorb Booth NMOC Concentration (as propane) (mg/m3d):	1076.2	851.1	977.3	968.2
Desorb Booth NMOC Concentration (as propane) (lb/hrd):	45.2	34.2	41.5	40.3
Desorb Booth Flow Rate (dscfm):	11,202	10,737	11,347	11,095
Desorb Booth Flow Rate (dm3/s):	5.28	5.07	5.35	5.23
Moisture:	3.13%	3.24%	3.03%	3.13%
Adsorb Booth Flow Rate (dscfm):	85,991	86,776	86,804	86,524
Adsorb Booth Flow Rate (dm3/s):	40.57	40.94	40.95	40.82
Moisture:	2.17%	1.83%	1.96%	1.99%
Adsorb Booth THC Concentration (as propane) (ppmw):	8.13	6.33	7.47	7.31
Adsorb Booth THC Concentration (as propane) (ppmd):	8.31	6.45	7.62	7.46
Adsorb Booth THC Concentration (as propane) (mg/m3d):	15.23	11.82	13.97	13.68
Adsorb Booth THC Concentration (as propane) (lb/hrd):	4.90	3.84	4.54	4.43
Adsorb Booth Methane Correction Factor	2.41	2.19	2.20	2.27
Adsorb Booth CH4 Concentration (as methane) (ppmw):	2.80	3.80	3.73	3.44
Adsorb Booth CH4 Concentration (as Methane) (ppmd):	2.87	3.87	3.80	3.51
Adsorb Booth CH4 Concentration (as Propane) (ppmd):	1.19	1.76	1.73	1.56
Adsorb Booth CH4 Concentration (as propane) (mg/m3d):	2.18	3.23	3.17	2.86
Adsorb Booth CH4 Concentration (as propane) (lb/hrd):	0.70	1.05	1.03	0.93
Adsorb Booth NMOC Concentration (as Propane) (ppmd):	7.12	4.69	5.90	5.90
Adsorb Booth NMOC Concentration (as propane) (mg/m3d):	13.0	8.59	10.81	10.8
Adsorb Booth NMOC Concentration (as propane) (lb/hrd):	4.20	2.79	3.51	3.50
Destruction Efficiency (THC) (%):	90.2%	90.0%	90.2%	90.1%
Destruction Efficiency (NMOC) (%):	91.5%	92.5%	92.2%	92.0%

Note: "d" indicated based on dry conditions

TABLE 8: THC, Methane, and NMOC EMISSIONS TABLE - Destruction Efficiency - Color 3 Booth TO

Source: JNAP Booth TO Color 3 - Destruction Efficiency

RWDI Project # 2304605

Parameter	Test 1	Test 2	Test 3	Average
Date	11-Jul-23	11-Jul-23	11-Jul-23	--
Start Time:	14:44	16:10	17:41	--
Stop Time:	15:43	17:09	18:40	--
Duration (mins):	60	60	60	--
Average Production Number (Color 3 Booth):	20	11	13	15
Average Temperature for Color 3 Booth TO (°F):	1291	1291	1291	1291
Inlet (Desorb) THC Concentration (as propane) (ppmw):	570.8	452.2	519.5	514.19
Inlet (Desorb) THC Concentration (as propane) (ppmd):	589.3	467.3	535.8	530.8
Inlet (Desorb) THC Concentration (as propane) (mg/m3d):	1080.1	856.6	982.0	972.9
Inlet (Desorb) THC Concentration (as propane) (lb/hrd):	45.32	34.45	41.74	40.50
Inlet (Desorb) Methane Correction Factor	2.16	2.10	2.01	2.09
Inlet (Desorb) CH4 Concentration (as methane) (ppmw):	4.43	6.04	4.94	5.14
Inlet (Desorb) CH4 Concentration (as Methane) (ppmd):	4.58	6.24	5.10	5.30
Inlet (Desorb) CH4 Concentration (as Propane) (ppmd):	2.12	2.97	2.54	2.54
Inlet (Desorb) CH4 Concentration (as propane) (mg/m3d):	3.88	5.44	4.65	4.66
Inlet (Desorb) CH4 Concentration (as propane) (lb/hrd):	0.16	0.22	0.20	0.19
Inlet (Desorb) NMOC Concentration (as Propane) (ppmd):	587.2	464.4	533.2	528.3
Inlet (Desorb) NMOC Concentration (as propane) (mg/m3d):	1076.2	851.1	977.4	968.3
Inlet (Desorb) NMOC Concentration (as propane) (lb/hrd):	45.1	34.2	41.5	40.3
Inlet (Desorb) Flow Rate (dscfm):	11,202	10,737	11,347	11,095
Inlet (Desorb) Flow Rate (dm3/s):	5.28	5.07	5.35	5.23
Moisture:	3.13%	3.24%	3.03%	3.13%
Outlet Flow Rate (dscfm):	11,653	12,270	11,612	11,845
Outlet Flow Rate (dm ³ /s):	5.50	5.79	5.48	5.59
Moisture:	5.54%	4.93%	6.41%	5.63%
Outlet THC Concentration (as propane) (ppm _w):	11.25	10.48	12.00	11.24
Outlet THC Concentration (as propane) (ppm _d):	11.91	11.02	12.82	11.92
Outlet THC Concentration (as propane) (mg/m ³ _d):	21.84	20.20	23.50	21.85
Outlet THC Concentration (as propane) (lb/hr _d):	0.95	0.93	1.02	0.97
Outlet Methane Correction Factor	2.19	2.22	2.10	2.17
Outlet CH4 Concentration (as methane) (ppm _w):	5.22	4.30	5.70	5.07
Outlet CH4 Concentration (as Methane) (ppm _d):	5.53	4.52	6.09	5.38
Outlet CH4 Concentration (as Propane) (ppm _d):	2.52	2.04	2.89	2.48
Outlet CH4 Concentration (as propane) (mg/m ³ _d):	4.62	3.73	5.31	4.55
Outlet CH4 Concentration (as propane) (lb/hr _d):	0.20	0.17	0.23	0.20
Outlet NMOC Concentration (as Propane) (ppm _d):	9.39	8.99	9.93	9.44
Outlet NMOC Concentration (as propane) (mg/m ³ _d):	17.2	16.5	18.2	17.3
Outlet NMOC Concentration (as propane) (lb/hr _d):	0.75	0.76	0.79	0.77
Destruction Efficiency (THC) (%):	97.9%	97.3%	97.6%	97.6%
Destruction Efficiency (NMOC) (%):	98.3%	97.8%	98.1%	98.1%

Note: "d" indicated based on dry conditions

TABLE 9: THC, Methane, and NMOC EMISSIONS TABLE - Destruction Efficiency - Color 3 Oven TO

Source: DACJ Color 3 Oven Thermal Oxidizer (TO)

RWDI Project # 2304605

Parameter	Test 1	Test 2	Test 3	Average
Date	11-Jul-23	11-Jul-23	11-Jul-23	--
Start Time:	14:55	16:22	18:00	--
Stop Time:	15:54	17:21	18:59	--
Duration (mins):	60	60	60	--
Average Production Number (Color 3 Oven):	20	9	13	14
Average Temperature for Color 2 Oven TO (°F):	1402	1400	1401	1401
Inlet THC Concentration (as propane) (ppmw):	200.4	147.0	161.8	169.7
Inlet THC Concentration (as propane) (ppmd):	207.8	150.5	165.3	174.5
Inlet THC Concentration (as propane) (mg/m3d):	380.8	275.8	303.0	319.8
Inlet THC Concentration (as propane) (lb/hrd):	9.61	7.03	7.82	8.16
Inlet Methane Correction Factor	2.38	2.36	2.33	2.36
Inlet CH4 Concentration (as methane) (ppmw):	53.19	42.42	49.63	48.42
Inlet CH4 Concentration (as Methane) (ppmd):	55.15	43.43	50.70	49.76
Inlet CH4 Concentration (as Propane) (ppmd):	23.17	18.40	21.76	21.11
Inlet CH4 Concentration (as propane) (mg/m3d):	42.47	33.73	39.89	38.70
Inlet CH4 Concentration (as propane) (lb/hrd):	1.07	0.86	1.03	0.99
Inlet NMOC Concentration (as Propane) (ppmd):	184.6	132.0	143.5	153.4
Inlet NMOC Concentration (as propane) (mg/m3d):	338.3	242.0	263.1	281.2
Inlet NMOC Concentration (as propane) (lb/hrd):	8.54	6.17	6.79	7.17
Inlet Flow Rate (dscfm):	6,737	6,809	6,895	6,814
Inlet Flow Rate (dm3/s):	3.18	3.21	3.21	3.20
Moisture:	3.55%	2.32%	2.12%	2.66%
Outlet Flow Rate (dscfm):	7,350	7,225	7,292	7,289
Outlet Flow Rate (dm ³ /s):	3.47	3.41	3.44	3.44
Moisture:	4.25%	5.30%	4.62%	4.72%
Outlet THC Concentration (as propane) (ppm _d):	7.13	6.80	7.23	7.05
Outlet THC Concentration (as propane) (ppm _s):	7.44	7.18	7.58	7.40
Outlet THC Concentration (as propane) (mg/m ³ _d):	13.65	13.17	13.90	13.57
Outlet THC Concentration (as propane) (lb/hr _d):	0.38	0.36	0.38	0.37
Outlet Methane Correction Factor	2.25	2.24	2.29	2.26
Outlet CH4 Concentration (as methane) (ppm _d):	7.80	7.34	8.07	7.74
Outlet CH4 Concentration (as Methane) (ppm _s):	8.15	7.75	8.46	8.12
Outlet CH4 Concentration (as Propane) (ppm _s):	3.62	3.46	3.69	3.59
Outlet CH4 Concentration (as propane) (mg/m ³ _d):	6.64	6.34	6.77	6.59
Outlet CH4 Concentration (as propane) (lb/hr _d):	0.18	0.17	0.18	0.18
Outlet NMOC Concentration (as Propane) (ppm _d):	3.82	3.72	3.89	3.81
Outlet NMOC Concentration (as propane) (mg/m ³ _d):	7.01	6.82	7.13	6.98
Outlet NMOC Concentration (as propane) (lb/hr _d):	0.19	0.18	0.19	0.19
Destruction Efficiency (THC) (%):	96.1%	94.9%	95.1%	95.4%
Destruction Efficiency (NMOC) (%):	97.7%	97.0%	97.1%	97.3%

Note: "d" indicated based on dry conditions

TABLE 10: THC, Methane, and NMOC EMISSIONS TABLE - Destruction Efficiency - E-COAT Oven A TO

Source: DACJ Ecoat A Thermal Oxidizer

RWDI Project # 2304605

Parameter	Test 1	Test 2	Test 3	Average
Date	12-Jul-23	12-Jul-23	12-Jul-23	--
Start Time:	9:30/11:15	12:20	13:52	--
Stop Time:	9:59/11:44	13:19	14:51	--
Duration (mins):	60	60	60	--
Average Production Number (Ecoat Oven):	21	34	29	28
Average Temperature for ECOAT A TO (°F):	1329	1330	1327	1329
Inlet THC Concentration (as propane) (ppmw):	331.6	461.2	406.6	399.8
Inlet THC Concentration (as propane) (ppmd):	347.7	478.3	426.9	417.6
Inlet THC Concentration (as propane) (mg/m3d):	637.2	876.7	782.5	765.5
Inlet THC Concentration (as propane) (lb/hrd):	4.66	6.32	5.55	5.5
Inlet Methane Correction Factor	2.27	2.27	2.29	2.28
Inlet CH4 Concentration (as methane) (ppmw):	20.65	22.65	13.92	19.07
Inlet CH4 Concentration (as Methane) (ppmd):	21.64	23.49	14.62	19.92
Inlet CH4 Concentration (as Propane) (ppmd):	9.53	10.35	6.38	8.75
Inlet CH4 Concentration (as propane) (mg/m3d):	17.48	18.97	11.70	16.05
Inlet CH4 Concentration (as propane) (lb/hrd):	0.13	0.14	0.08	0.12
Inlet NMOC Concentration (as Propane) (ppmd):	338.1	468.0	420.5	408.9
Inlet NMOC Concentration (as propane) (mg/m3d):	619.7	857.8	770.8	749.4
Inlet NMOC Concentration (as propane) (lb/hrd):	4.54	6.18	5.47	5.40
Inlet Flow Rate (dscfm):	1,954	1,924	1,894	1,924
Inlet Flow Rate (dm3/s):	0.92	0.91	0.89	0.91
Moisture:	4.61%	3.58%	4.77%	4.32%
Outlet Flow Rate (dscfm):	1,969	1,918	1,946	1,944
Outlet Flow Rate (dm3/s):	0.93	0.90	0.92	0.92
Moisture:	3.08%	3.29%	2.94%	3.10%
Outlet THC Concentration (as propane) (ppm _w):	0.12	0.22	0.42	0.25
Outlet THC Concentration (as propane) (ppm _d):	0.12	0.23	0.43	0.26
Outlet THC Concentration (as propane) (mg/m ³ _d):	0.22	0.42	0.79	0.48
Outlet THC Concentration (as propane) (lb/hr _d):	0.0017	0.0030	0.0058	0.0035
Outlet Methane Correction Factor	2.29	2.29	2.28	2.29
Outlet CH4 Concentration (as methane) (ppm _w):	0.000	0.033	0.001	0.011
Outlet CH4 Concentration (as Methane) (ppm _d):	0.000	0.034	0.001	0.012
Outlet CH4 Concentration (as Propane) (ppm _d):	0.000	0.015	0.0005	0.005
Outlet CH4 Concentration (as propane) (mg/m ³ _d):	0.000	0.027	0.001	0.009
Outlet CH4 Concentration (as propane) (lb/hr _d):	0.00000	0.00020	0.00001	0.00007
Outlet NMOC Concentration (as Propane) (ppm _d):	0.123	0.216	0.433	0.257
Outlet NMOC Concentration (as propane) (mg/m ³ _d):	0.225	0.396	0.793	0.471
Outlet NMOC Concentration (as propane) (lb/hr _d):	0.00166	0.00284	0.00578	0.003
Destruction Efficiency (THC) (%):	99.96%	99.95%	99.90%	99.94%
Destruction Efficiency (NMOC) (%):	99.96%	99.95%	99.89%	99.94%

Note: "d" indicated based on dry conditions

TABLE 11: THC, Methane, and NMOC EMISSIONS TABLE - Destruction Efficiency - E-Coat Oven B TO

Source: DACJ Ecoat B Oven Thermal Oxidizer

RWDI Project # 2304605

Parameter	Test 1	Test 2	Test 3	Average
Date	13-Jul-23	13-Jul-23	13-Jul-23	--
Start Time:	10:10	11:40	13:10	--
Stop Time:	11:09	12:39	14:09	--
Duration (mins):	60	60	60	--
Average Production Number (ECOAT Oven):	19	39	39	32
Average Temperature for ECOAT B TO (°F):	1331	1331	1329	1330
Inlet THC Concentration (as propane) (ppmw):	92.1	148.9	151.4	130.8
Inlet THC Concentration (as propane) (ppmd):	95.8	152.1	157.2	135.0
Inlet THC Concentration (as propane) (mg/m ³ d):	175.7	278.9	288.1	247.5
Inlet THC Concentration (as propane) (lb/hrd):	6.4	10.7	10.7	9.3
Inlet Methane Correction Factor	2.31	2.23	2.19	2.24
Inlet CH4 Concentration (as methane) (ppmw):	47.46	48.09	47.67	47.74
Inlet CH4 Concentration (as Methane) (ppmd):	49.39	49.13	49.49	49.34
Inlet CH4 Concentration (as Propane) (ppmd):	21.38	22.03	22.60	22.00
Inlet CH4 Concentration (as propane) (mg/m ³ d):	39.19	40.38	41.42	40.33
Inlet CH4 Concentration (as propane) (lb/hrd):	1.42	1.55	1.54	1.51
Inlet NMOC Concentration (as Propane) (ppmd):	74.5	130.1	134.6	113.0
Inlet NMOC Concentration (as propane) (mg/m ³ d):	136.5	238.5	246.7	207.2
Inlet NMOC Concentration (as propane) (lb/hrd):	4.96	9.17	9.20	7.8
Inlet Flow Rate (dscfm):	9,704	10,261	9,955	9,973
Inlet Flow Rate (dm ³ /s):	4.58	4.84	4.70	4.71
Moisture:	3.91%	2.13%	3.69%	3.24%
Outlet Flow Rate (dscfm):	9,041	9,117	9,452	9,203
Outlet Flow Rate (dm ³ /s):	4.27	4.30	4.46	4.34
Moisture:	5.81%	5.38%	5.32%	5.50%
Outlet THC Concentration (as propane) (ppm _d):	0.10	0.20	0.18	0.16
Outlet THC Concentration (as propane) (ppm _s):	0.11	0.21	0.19	0.17
Outlet THC Concentration (as propane) (mg/m ³ _d):	0.19	0.39	0.35	0.31
Outlet THC Concentration (as propane) (lb/hr _d):	0.007	0.013	0.012	0.011
Outlet Methane Correction Factor	2.32	2.32	2.33	2.32
Outlet CH4 Concentration (as methane) (ppm _d):	0.00	0.00	0.00	0.00
Outlet CH4 Concentration (as Methane) (ppm _s):	0.00	0.00	0.00	0.00
Outlet CH4 Concentration (as Propane) (ppm _d):	0.00	0.00	0.00	0.00
Outlet CH4 Concentration (as propane) (mg/m ³ _d):	0.00	0.00	0.00	0.00
Outlet CH4 Concentration (as propane) (lb/hr _d):	0.000	0.000	0.000	0.00
Outlet NMOC Concentration (as Propane) (ppm _d):	0.11	0.21	0.19	0.17
Outlet NMOC Concentration (as propane) (mg/m ³ _d):	0.19	0.39	0.35	0.31
Outlet NMOC Concentration (as propane) (lb/hr _d):	0.007	0.01	0.01	0.01
Destruction Efficiency (THC) (%):	99.90%	99.88%	99.88%	99.89%
Destruction Efficiency (NMOC) (%):	99.87%	99.86%	99.86%	99.86%

Note: "d" indicated based on dry conditions



FIGURES



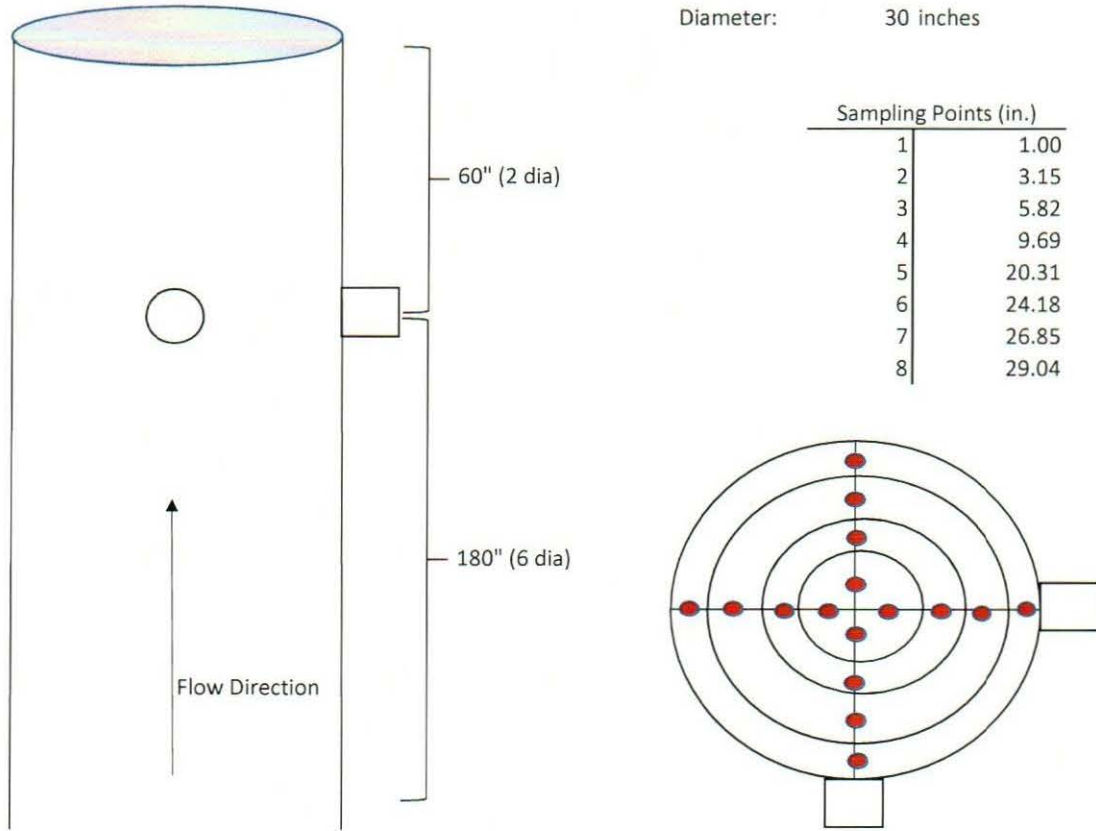
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AIR QUALITY DIVISION



Figure No. 1- Color 1 Desorb Exhaust & Booth TO Inlet Traverse Points



Not to scale

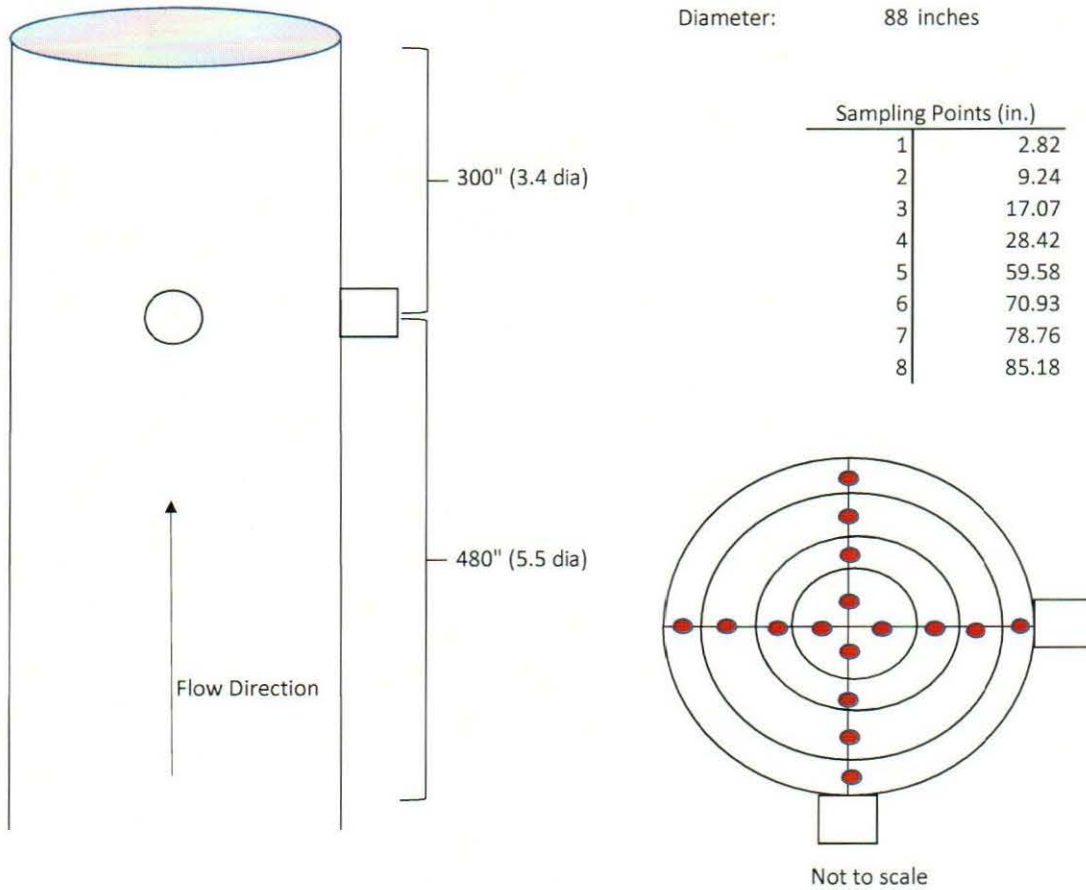
COLOR 1 Desorb Exhaust & Booth TO Inlet
FCA US LLC
Detroit Assembly Complex - Jefferson (DACJ)
Detroit, MI

Date:
July 12th, 2023

RWDI USA LLC
2239 Star Court
Rochester Hills, MI 48309



Figure No. 2 - Color 1 Concentrator (Adsorb) Traverse Points



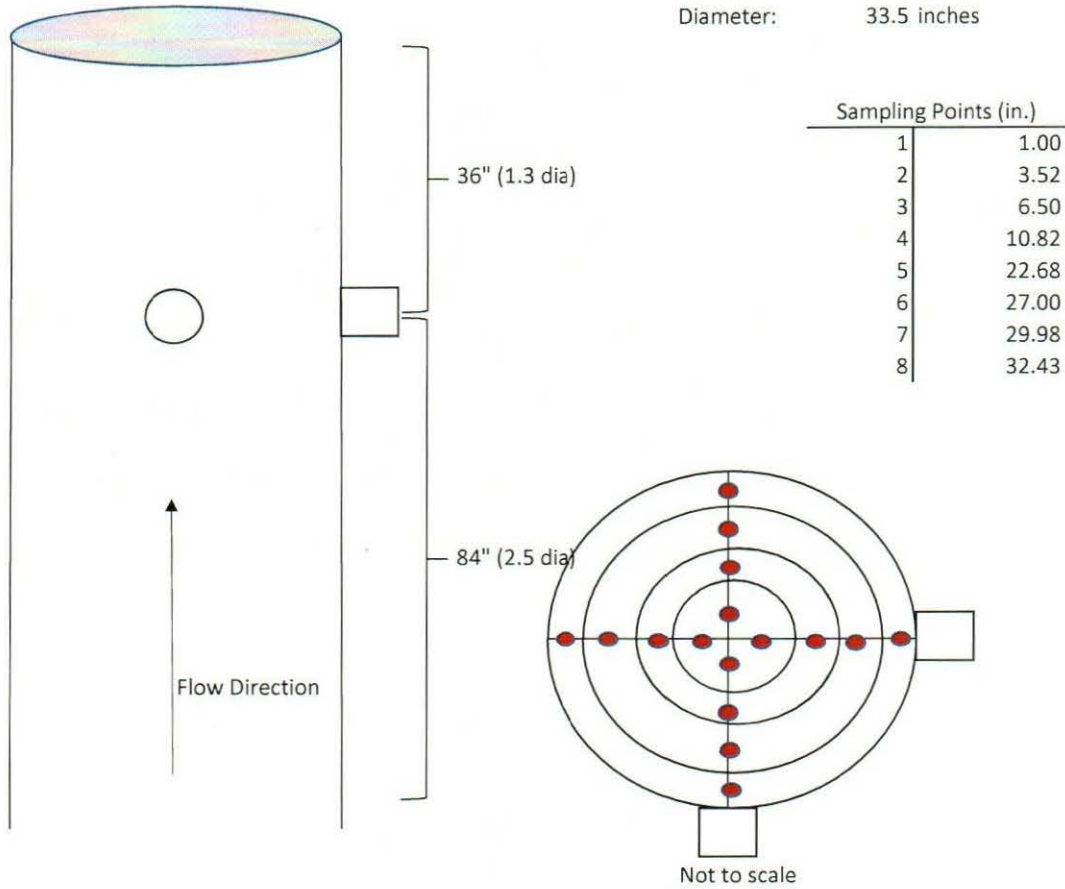
EU-TOPCOAT1 - Concentrator Adsorb
FCA US LLC
Detroit Assembly Complex - Jefferson (DACJ)
Detroit, MI

Date:
12-Jul-23

RWDI USA LLC
2239 Star Court
Rochester Hills, MI 48309



Figure No. 3- Color 1 Booth TO Outlet Traverse Points



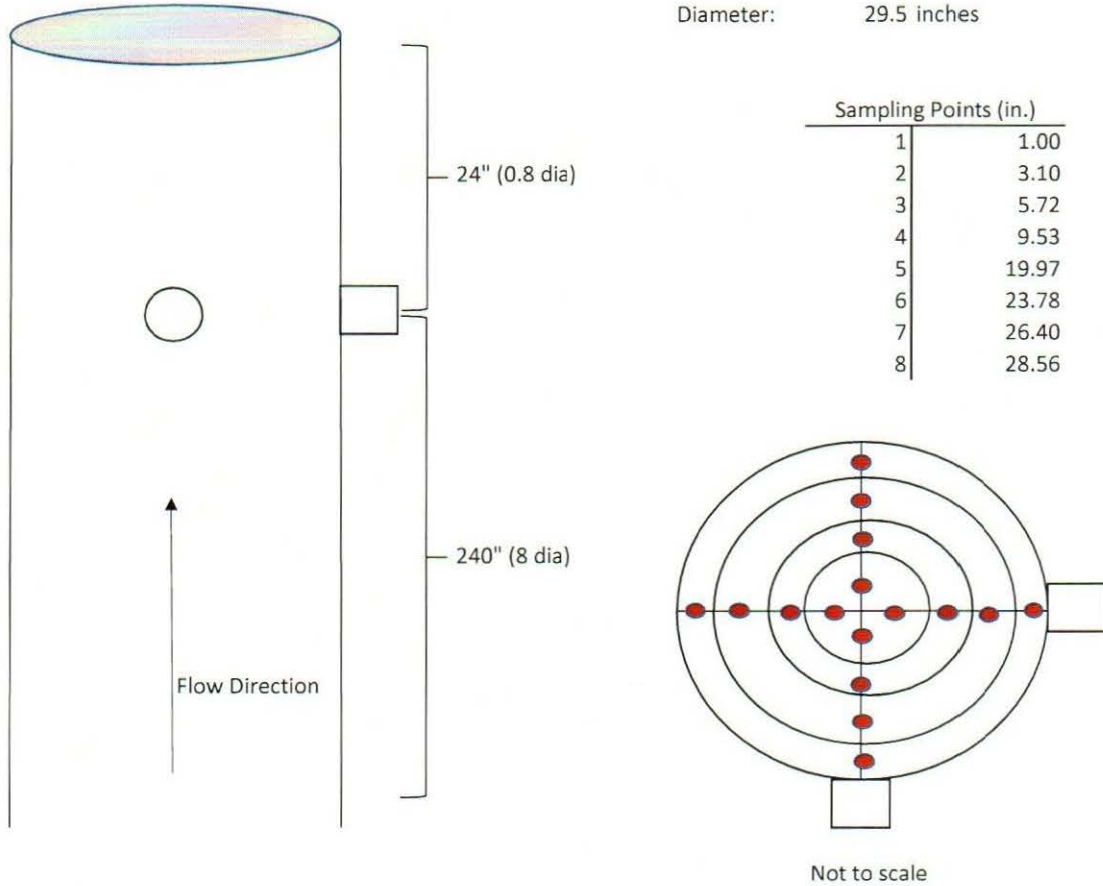
COLOR 1 Booth TO Outlet
 FCA US LLC
 Detroit Assembly Complex - Jefferson (DACJ)
 Detroit, MI

Date:
 July 12th, 2023

RWDI USA LLC
 2239 Star Court
 Rochester Hills, MI 48309



Figure No. 4 - Color 2 Desorb Exhaust & Booth TO Inlet Traverse Points



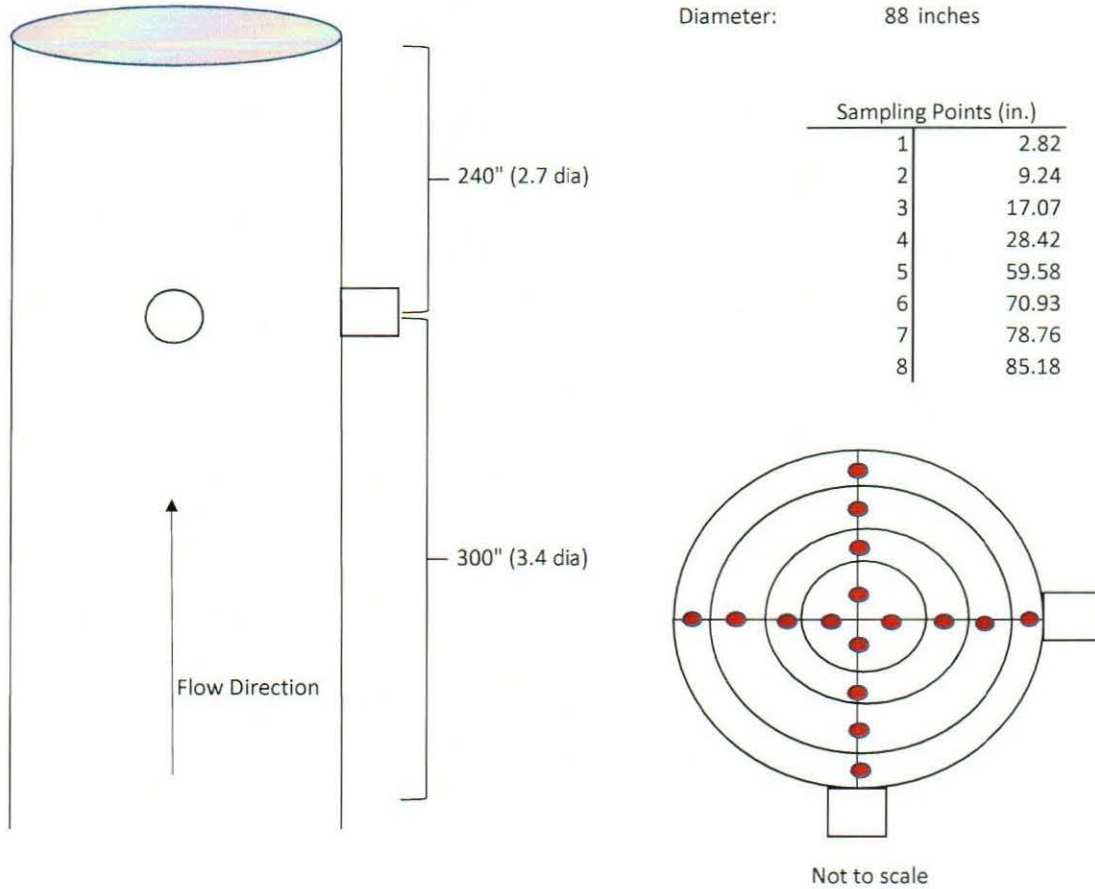
COLOR 2 Desorb Exhaust & Booth TO Inlet
FCA US LLC
Detroit Assembly Complex - Jefferson (DACJ)
Detroit, MI

Date:
July 12th, 2023

RWDI USA LLC
2239 Star Court
Rochester Hills, MI 48309



Figure No. 5 - Color 2 Concentrator (Adsorb) Traverse Points



EU-TOPCOAT2 - Concentrator Adsorb
FCA US LLC
Detroit Assembly Complex - Jefferson (DACJ)
Detroit, MI

Date:
July 12th, 2023

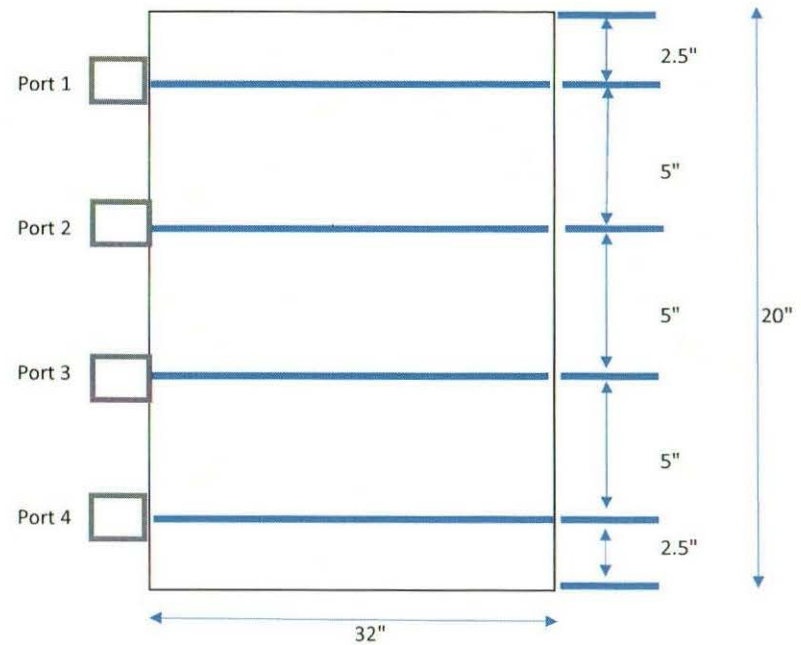
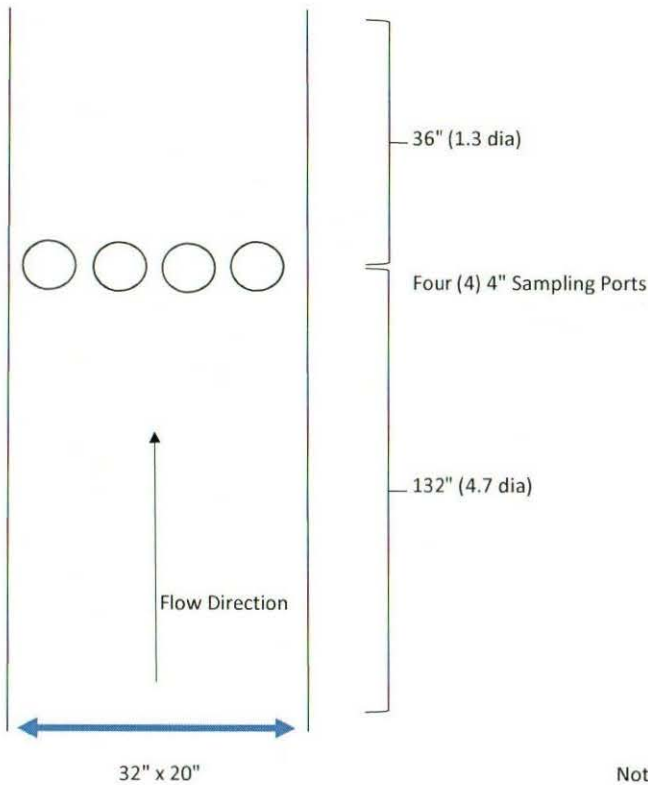
RWDI USA LLC
2239 Star Court
Rochester Hills, MI 48309



Stack Dimensions: 32" x 20"
 Equivalent Diameter: 28"

Figure No. 6 - Color 3 Desorb & Booth TO Inlet Traverse Points

Point	Distance from inside Wall			
	Port 1	Port 2	Port 3	Port 4
1	4.0	4.0	4.0	4.0
2	12.0	12.0	12.0	12.0
3	20.0	20.0	20.0	20.0
4	28.0	28.0	28.0	28.0

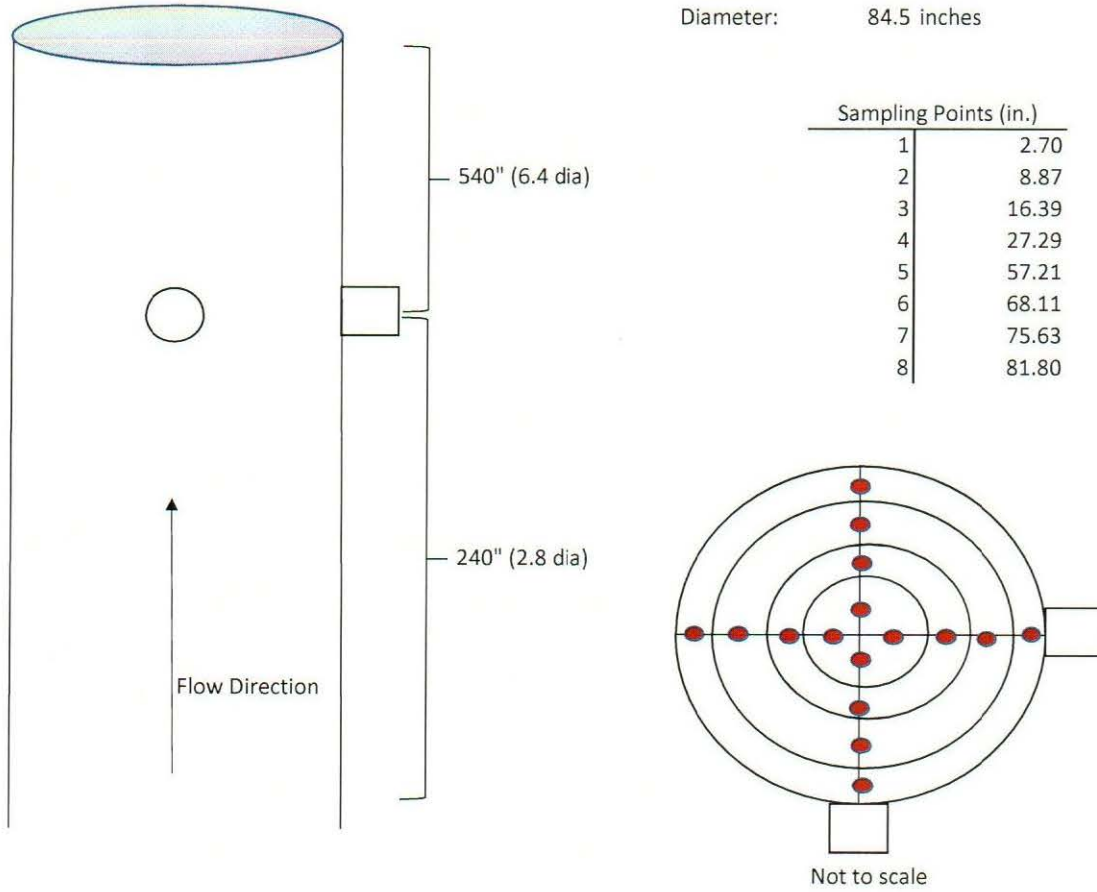


Not to scale

8



Figure No. 7 - Color 3 Concentrator Outlet (Adsorb) Traverse Points



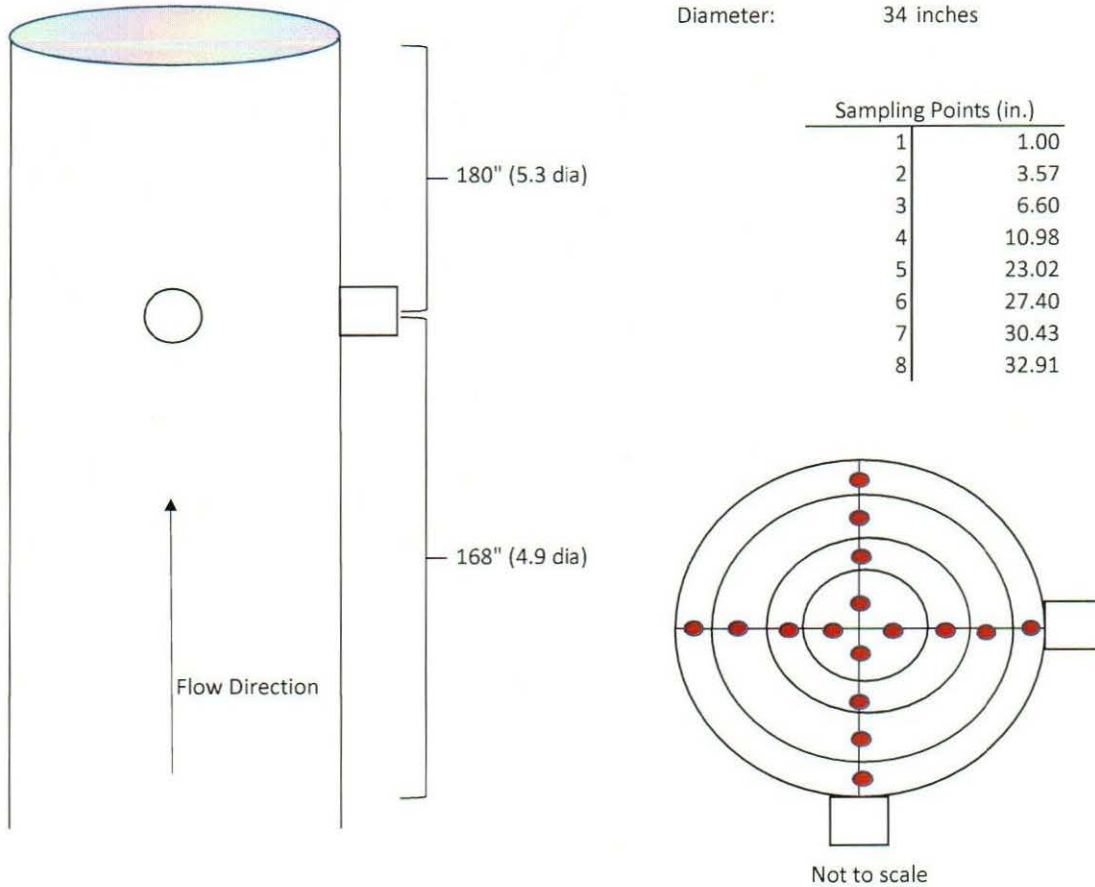
EU-TOPCOAT3 - Concentrator Adsorb
 FCA US LLC
 Detroit Assembly Complex - Jefferson (DACJ)
 Detroit, MI

Date:
 10-Jul-23

RWDI USA LLC
 2239 Star Court
 Rochester Hills, MI 48309



Figure No. 8 - Color 3 Booth TO Outlet Traverse Points



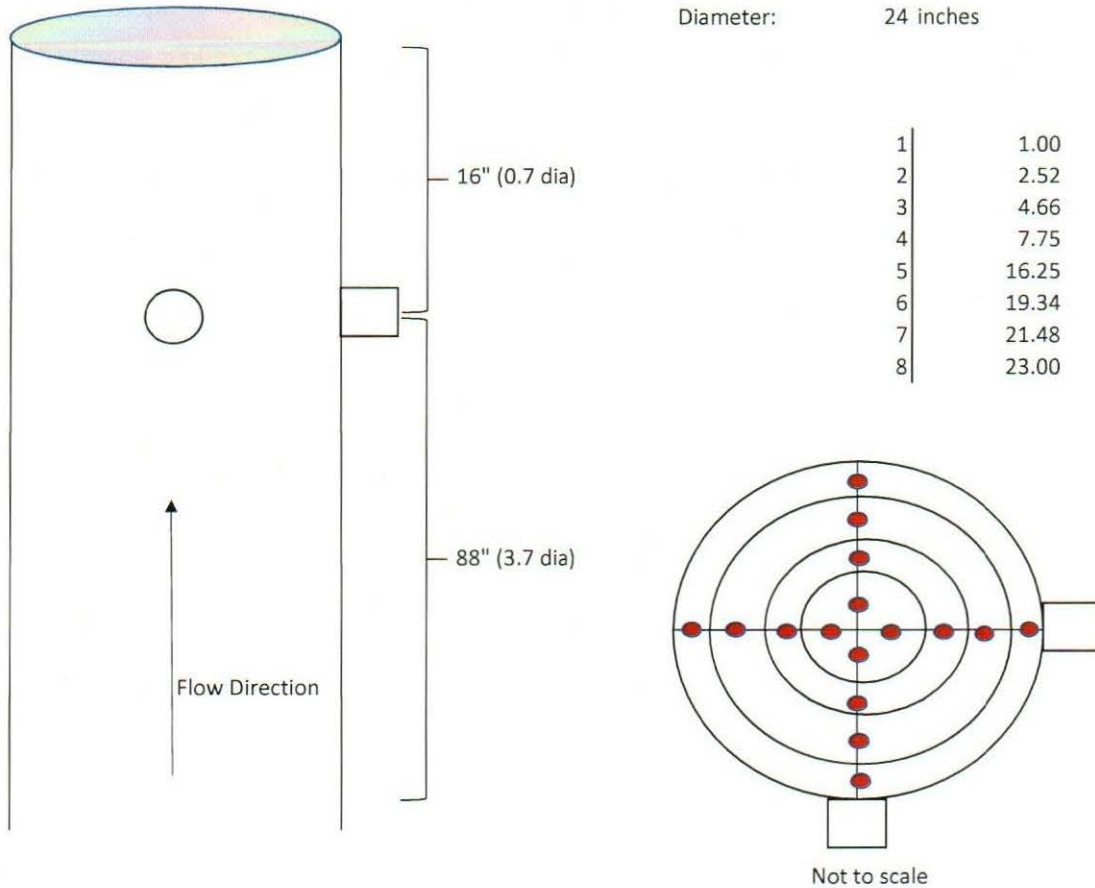
COLOR 3 Booth TO Outlet
FCA US LLC
Detroit Assembly Complex - Jefferson (DACJ)
Detroit, MI

Date:
July 10th, 2023

RWDI USA LLC
2239 Star Court
Rochester Hills, MI 48309



Figure No. 9 - Color 3 Oven TO Inlet Traverse Points



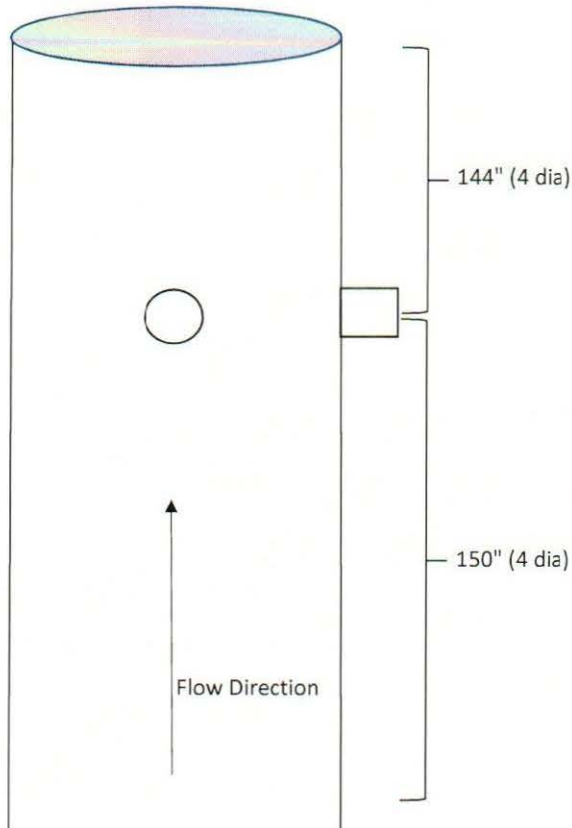
EU-TOPCOAT3 - Oven TO
FCA US LLC
Detroit Assembly Complex - Jefferson (DACJ)
Detroit, MI

Date:
July 10th, 2023

RWDI USA LLC
2239 Star Court
Rochester Hills, MI 48309

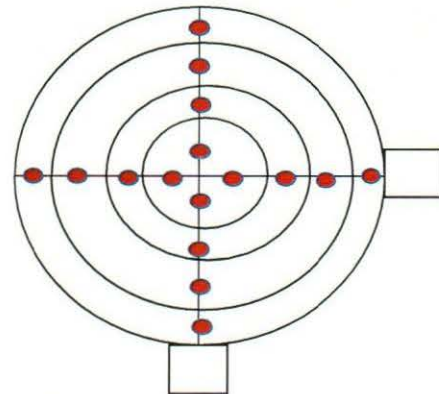


Figure No. 10 - Color 3 Oven TO Outlet Traverse Points



Diameter: 36 inches

Sampling Points (in.)	
1	1.15
2	3.78
3	6.98
4	11.63
5	24.37
6	29.02
7	32.22
8	34.85



Not to scale

EU-TOPCOAT3 - Oven TO Outlet
FCA US LLC
Detroit Assembly Complex - Jefferson (DACJ)
Detroit, MI

Date:
July 10th, 2023

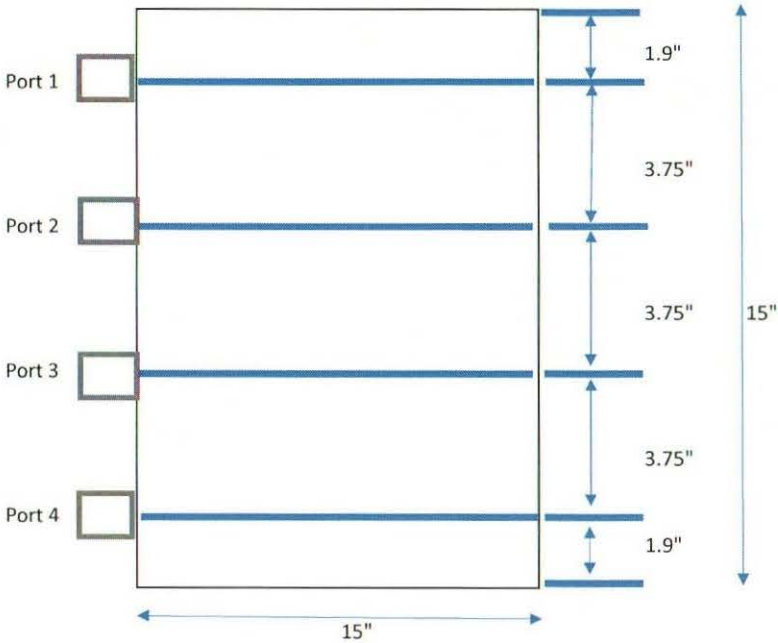
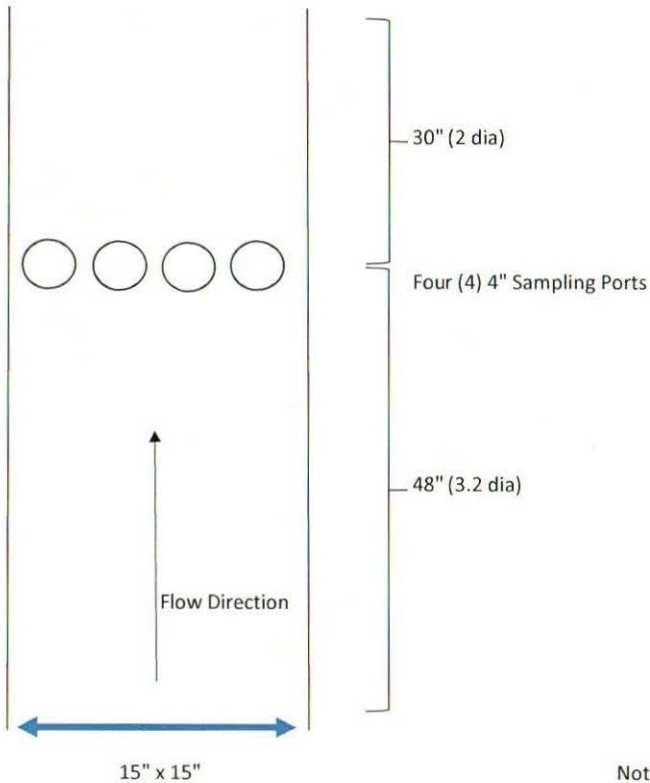
RWDI USA LLC
2239 Star Court
Rochester Hills, MI 48309



Diameter: 15" x 15"
 Effective Diameter: 15

Figure No. 11 - E-Coat A Oven TO Inlet Traverse Points

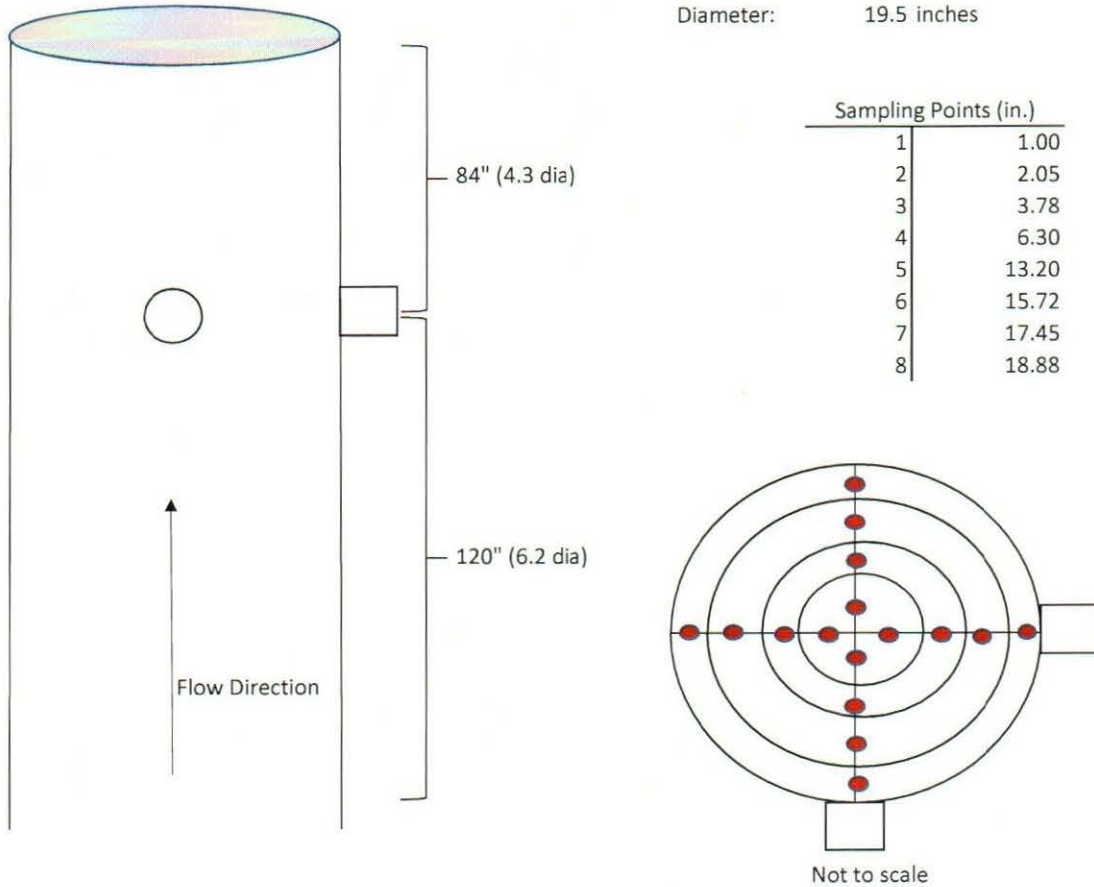
Point	Distance from inside Wall			
	Port 1	Port 2	Port 3	Port 4
1	1.9	1.9	1.9	1.9
2	5.7	5.7	5.7	5.7
3	9.4	9.4	9.4	9.4
4	13.2	13.2	13.2	13.2



Not to scale



Figure No. 12- E-Coat A Oven TO Outlet Traverse Points



EU-ECOAT - E-Coat A Oven TO Outlet
FCA US LLC
Detroit Assembly Complex - Jefferson (DACJ)
Detroit, MI

Date:
July 12th, 2023

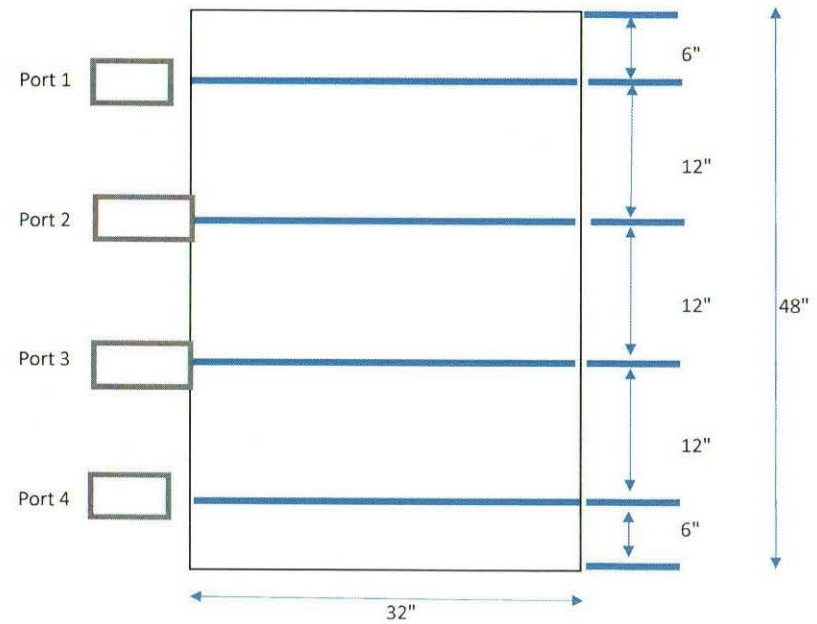
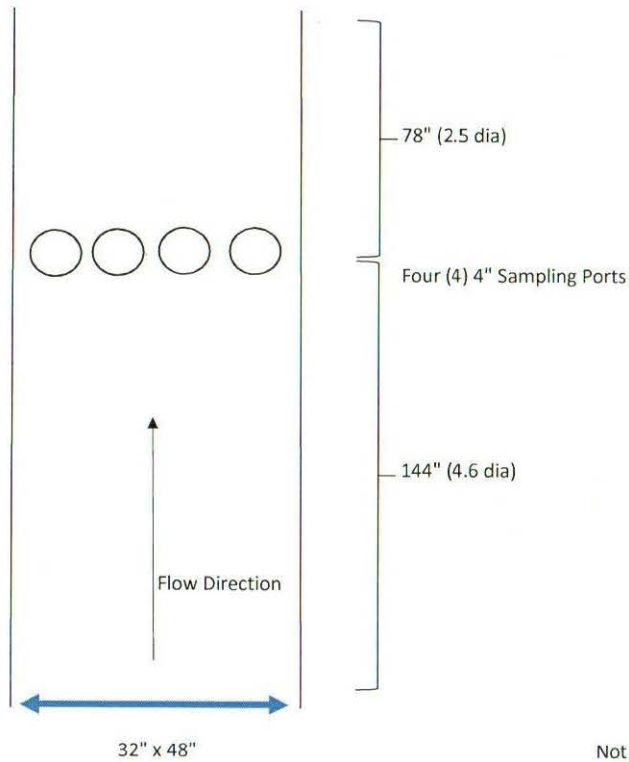
RWDI USA LLC
2239 Star Court
Rochester Hills, MI 48309



Diameter: 25 x 41
 Effective Diameter: 31.06

Figure No. 13 - E-Coat B Oven TO Inlet Traverse Points

Point	Distance from inside Wall			
	Port 1	Port 2	Port 3	Port 4
1	3.1	3.1	3.1	3.1
2	9.4	9.4	9.4	9.4
3	15.6	15.6	15.6	15.6
4	21.9	21.9	21.9	21.9



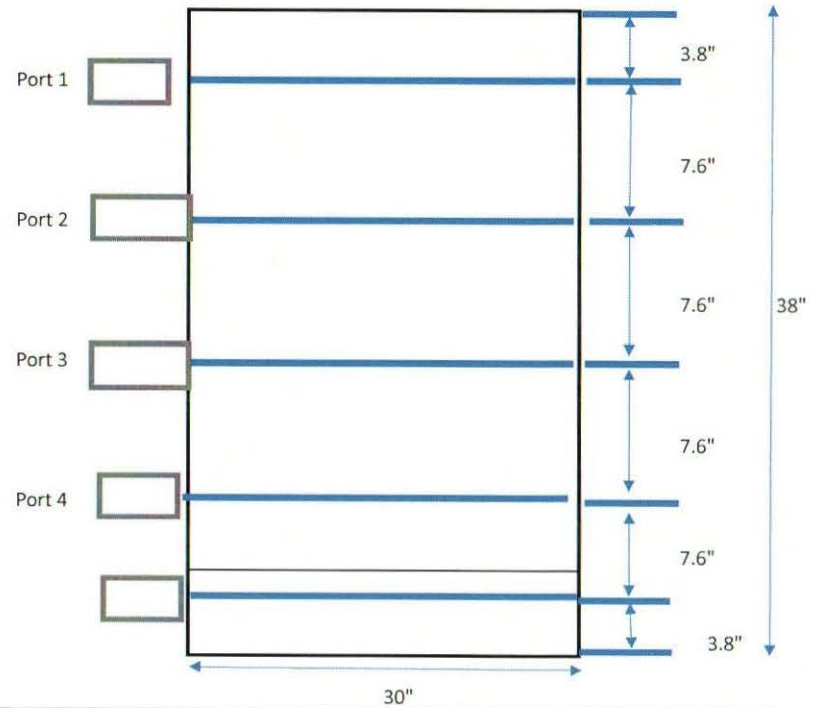
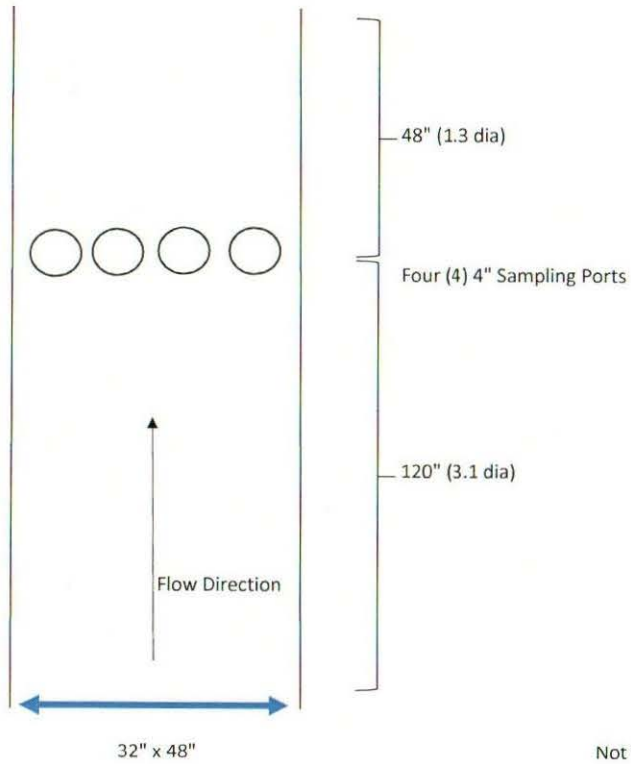
Not to scale



Figure No. 14 - E-Coat B Oven TO Outlet Traverse Points

Diameter: 32" x 48"
 Effective Diameter: 38.4

Point	Distance from inside Wall			
	Port 1	Port 2	Port 3	Port 4
1	4.7	4.7	4.7	4.7
2	14.1	14.1	14.1	14.1
3	23.4	23.4	23.4	23.4
4	32.8	32.8	32.8	32.8

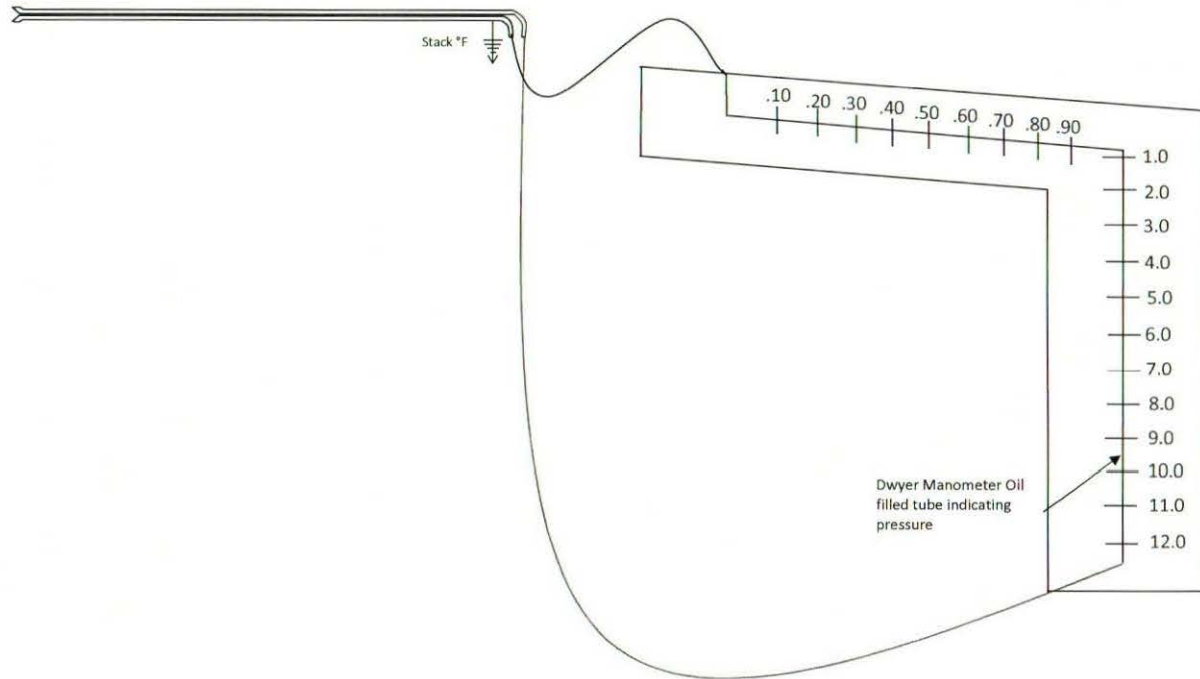


Not to scale

EU-ECOAT - E-Coat B Oven TO Outlet
 FCA US LLC
 Detroit Assembly Complex - Jefferson (DACJ)
 Detroit, MI

Date:
 July 13th, 2023

RWDI USA LLC
 2239 Star Court
 Rochester Hills, MI 48309



USEPA Method 2

FCA US, LLC

Detroit Assembly Complex - Jefferson (DACJ)

E-Coat A/B Oven TO, Topcoat 1, 2, & 3 Booth TO, Topcoat 3 Oven TO

Detroit, MI

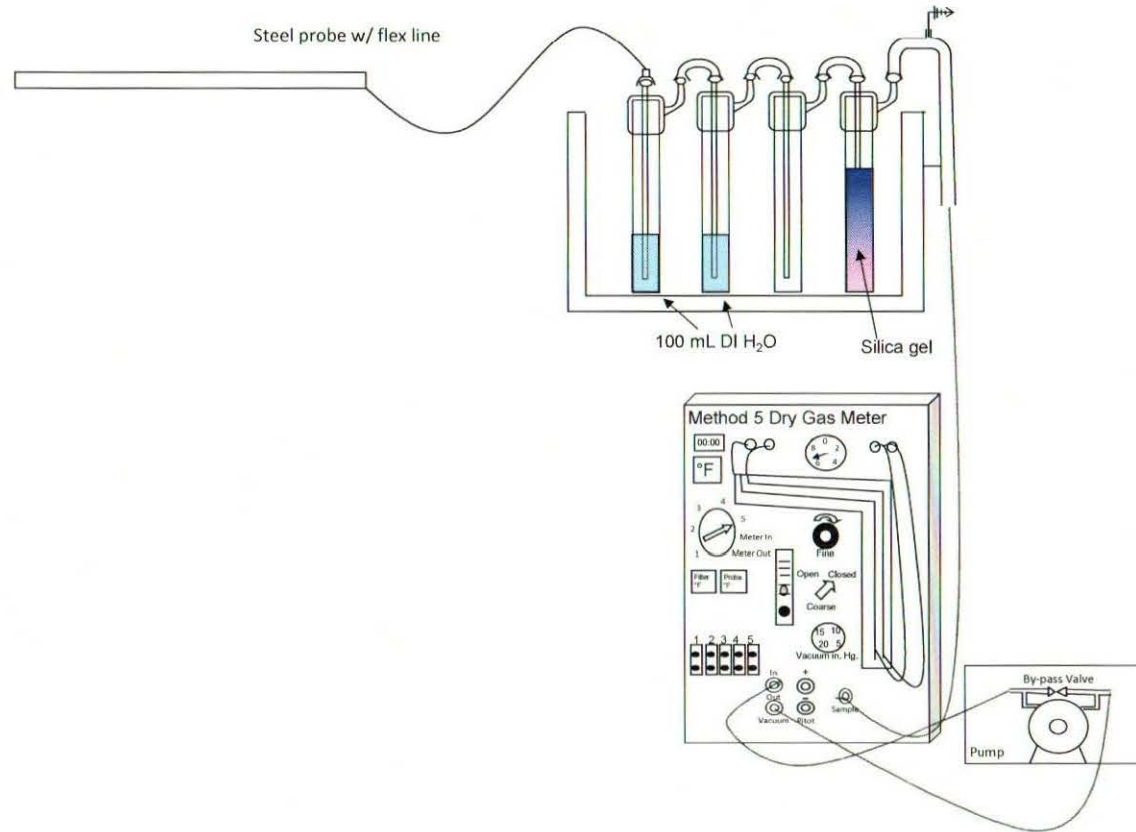
Project #2304605

Figure No. 15

Schematic of US EPA Method 2
Sampling Train

Date: July 11-13, 2023





USEPA Method 4

FCA US LLC

Detroit Assembly Complex - Jefferson (DACJ)

E-Coat A/B Oven TO, Topcoat 1,2,3 Booth TOs, & Topcoat 3 Oven TO

Detroit, MI

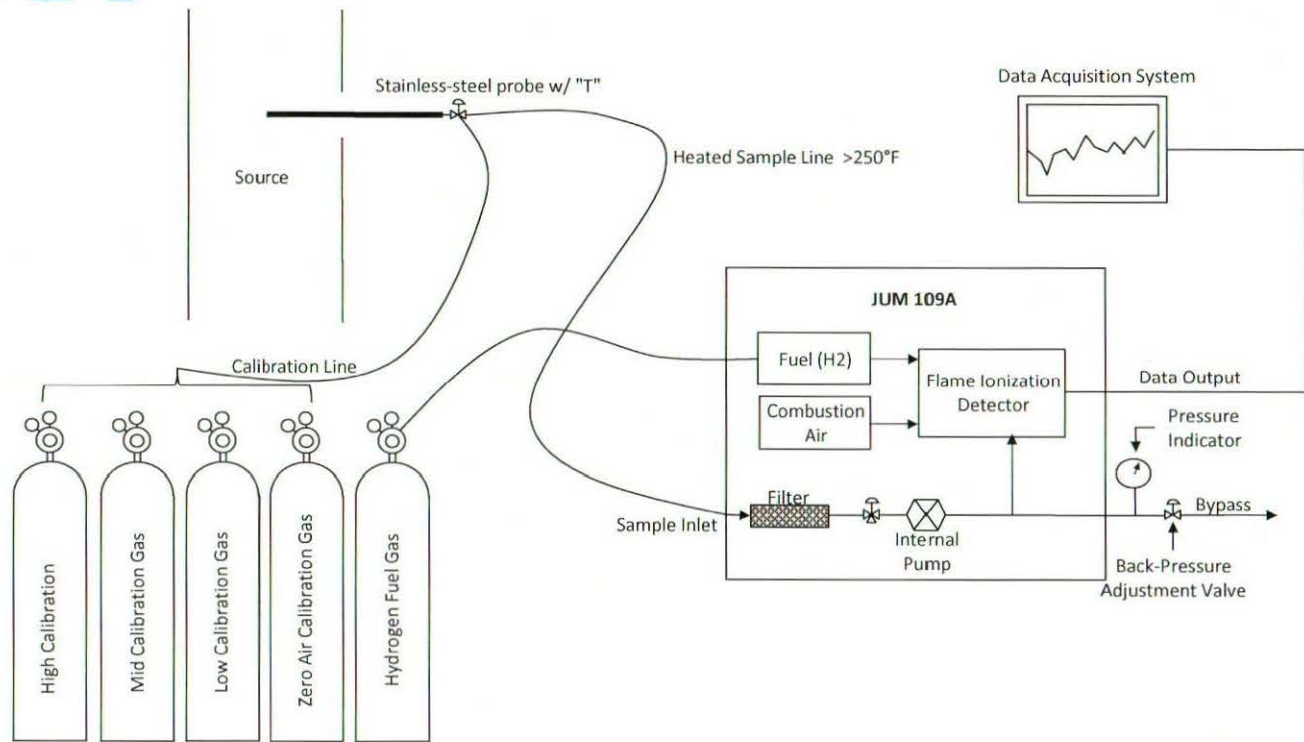
Project 2304605

Figure 16:

Schematic of US EPA Method 4
Sampling Train

Date: July 11-13, 2023





USEPA Method 25A

FCA US LLC

Detroit Assembly Complex - Jefferson (DAC)

E-Coat A/B Oven TO, Topcoat 1, 2, & 3 Booth TO, Topcoat 3 Oven TO

Detroit, MI

Project# 2304605

Figure 17:

Schematic of US EPA Method
25A Sampling Train

Date: July 11-13, 2023

