

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N242248850

FACILITY: PLASTI PAINT INC		SRN / ID: N2422
LOCATION: 801 WOODSIDE DR, SAINT LOUIS		DISTRICT: Lansing
CITY: SAINT LOUIS		COUNTY: GRATIOT
CONTACT: Dave Bacon , President		ACTIVITY DATE: 05/02/2019
STAFF: Julie Brunner	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Compliance inspection of Plasti-Paint, Inc. PTI 568-97D, GPTI 183-13 (non-compliance), and misc. exemptions		
RESOLVED COMPLAINTS:		

On May 2, 2019, I conducted a scheduled inspection of Plasti-Paint, Inc. (N2422) in Saint Louis. The last inspection of this facility was on August 3, 2016.

Facility Contacts:

Mr. David Bacon, General Manager, 989-681-5702, dbacon@plastipaint.com
Mr. Jameson Evitts, Plant Manager, 989-681-5702, jevitts@plastipaint.com
Mr. Kevin Newell, Paint Manager, 989-681-5702, knewell@plastipaint.com

Facility Description:

Plasti-Paint, Inc. coats about 80% plastic and 20% metal parts with urethane coatings for mainly automotive applications. Currently, they are manufacturing 100% automotive parts for BMW, Toyota, Chrysler, and Ford. They have done parts for Polaris in the past. The parts are received already formed, and in the case of the metal parts, they have an electrodeposition coating or are pretreated. No metal stamping or plastic molding of the parts is done at the facility. Plasti-Paint is considered a job shop. The facility is located in an industrial park off of State Road. The surrounding area is rural with some agricultural, commercial, and residential mixed in.

Plasti-Paint, Inc. is a synthetic minor source of volatile organic carbon (VOC) emissions with an uncontrolled potential to emit of greater than 250 tons per year (tpy). They have enforceable permit restrictions of 30 tpy of VOCs avoiding major New Source Review (NSR). The facility is considered a synthetic minor source for emissions of hazardous air pollutants (HAPs) with opt-out limits of less than 9.0 tpy of any individual HAP, and 22.5 tpy of aggregate HAPs. The facility has opted out of the Title V - Renewable Operating Permit (ROP) Program and any applicable federal standards with the permitted restrictions on emissions of HAPs. Plasti-Paint has two (2) active Permits to Install (PTI) 568-97D and General Permit to Install (GPTI) 183-13 along with some exempt processes.

Active Air Use Permits:

PTI 568-97D – Coating lines with optional control, and HAPs opt-out

Emission Unit (EU) /Flexible Group (FG) ID	Emission Unit Description
EUCOATINGLINE	Plastic and metal parts coating line consisting of three (3) paint spray booths, three (3) hand application pick-up booths, a five-stage parts washer, a natural gas-fired drying oven, a natural gas-fired cure oven and associated application equipment.
EUSPINDLE	Plastic and metal parts painting line consisting of two (2) spindle spray booths and two (2) natural gas-fired cure ovens.
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.

PTI 183-13 – General permit for a natural gas-fired burnoff oven

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)
EU-BURNOFF	One batch type natural gas-fired burnoff oven with a secondary chamber or afterburner, used to remove cured paints, oil or grease from metal parts by thermal decomposition in a primary chamber.

Exempt Equipment:

- Rule 281(2)(h) - Cold cleaner / parts washer (new)
- Rule 282(2)(b)(i) - Natural gas-fired space heaters
- Rule 282(2)(g) – Diesel fuel-fired emergency generator (new)
- Rule 283(2)(b) – Paint lab
- Rule 284(2)(b) – LP tank storage
- Rule 285(2)(l)(vi) – Sanding buffing tables in main plant and another small plant building
- Rule 287(2)(k) – Mix room for the coating lines

Michigan Air Emissions Reporting System (MAERS):

The facility reports to MAERS. There was 4.4 tons of VOC emissions reported for 2018 from the facility.

Inspection:

Arrived: 9:10 am
 Weather: 41°F, E @ 9 MPH, UV Index 0
 Departed: 12:20 pm

I detected no odors around the facility. There were no visible emissions from the exhaust stacks.

A pre-inspection meeting was conducted with Mr. Dave Bacon, Mr. Jameson Evitts, and Mr. Kevin Newell. I gave a brief overview of the inspection process and facility operations were discussed. The facility is currently operating three (3) shifts per day and 5 days per week for the main coating line. Sunday at 8:00 pm is start-up and on Friday at 8:00 pm they stop spraying. For the spindle line, they run 1-shift, 3 to 5 days per week. They have about 100 employees for operations. A facility tour was then taken.

Coating Lines with Optional Control, and HAPs opt-out (PTI 568-97D):

Coating of plastic and pretreated metal (aluminum, galvanized steel) is done on EUCOATINGLINE. The coating line was installed in 1990, and robotics were installed in 2007. They have replaced the robot in a booth as part of routine maintenance and repair with no change in quality, nature, and quantity of air emissions under Rule 285(2)(a). The parts travel through the totally enclosed coating line on a 1000 foot long overhead conveyor that transports the parts on metal rack hangers. The coating of parts starts with a five (5) stage heated spray power washer (RO water, cleaning, and rinse additive), natural gas-fired dry-off oven (170°F to 175°F), six (6) spray booths, and an overhead natural gas-fired bake oven that was operating at 185°F.

Main coating line booth information –

Booth 1	Cross draft recirculation dry filter booth with robotic spray application of 90% black adhesion promoters and primers - conventional applicators, purge pot in booth.
Booth 2	Cross draft recirculation dry filter booth with manual spray application for touch-up of adhesion promoters and primers - conventional applicators, purge pot in booth.
Booth 3	Cross draft recirculation dry filter booth with two (2) robots for spray application of basecoats and color coats - conventional electrostatic applicators, purge pot in booth.

Booth 4	Cross draft recirculation dry filter booth with manual spray application for touch-up of basecoats and color coats - conventional applicators, purge pot in booth.
Booth 5	Cross draft recirculation dry filter booth with two (2) robots for spray application of clearcoats – bell, electrostatic applicators, and purge pot in booth.
Booth 6	Cross draft recirculation dry filter booth with manual spray application for touch-up of clearcoats - conventional applicators, purge pot in booth.

The filters in the prime and basecoat booths are changed at every shift. The filters in the clearcoat booths are changed every couple of days. This appears in compliance with Special Condition (SC) IV.1 for installing, maintaining, and operation of exhaust filters in a satisfactory manner. The booths are cleaned on the weekend.

The coating line is in a permanent total enclosure (PTE). Pressure drop across each booth is manually checked at each shift with a Shortridge automatic magnehelic gauge and recorded on a daily "Air Flow Checks" log. This is satisfactory for SC IV.2 to verify that air is entering the PTE. A copy of the log sheet for the week of 4/29/19 was obtained. All pressure drop readings were above 0.007" as required by Method 204 for a PTE per SC III.5.

Plastic-Paint sprays 147 colors. The coatings are dispensed to the booths from 55 gallon drums for large coating runs and 5 gallon paint pots for smaller runs. The system was upgraded to gear pumps that mix the coating and catalyst at the booth while spraying. The coating and catalyst is no longer mixed in the paint storage and mix room before going to the coating line. The purge solvent (methyl ethyl ketone) used for color changes is also dispensed from 55 gallon drums. The paint is blown out of the lines in the booth, and then the purge solvent is run which goes to the purge bucket. There have been no changes in paint coating formulations.

VOC emissions from the coating line can be (are) controlled by a 26,000 cfm Durr regenerative thermal oxidizer (RTO). The RTO was installed in 2012 and is a refurbished unit. It has a pre-filter bed before the oxidizer zones. The RTO is used to meet the emission limits on PTI 568-97D and is permitted as a Rule 205 restriction. It is not permitted as Best Available Control Technology (BACT) via Rule 702. The oxidizer can be turned off, and the coating line can operate in bypass with VOC emissions venting uncontrolled out the bypass stacks from the booths and oven.

The RTO is pretty much always operated even though the permit does allow coating of plastic parts uncontrolled. When coating metal parts, the RTO has to be operated per SC III.4. The coating lines actually never operate uncontrolled. When the RTO is operated, a minimum temperature of 1375°F and a minimum destruction efficiency of 93.7% is required by SC IV.2. The RTO temperature is continuously monitored and the RTO set point is 1425°F. Temperature records were obtained demonstrating that the RTO is operated in compliance. The last time the RTO was tested was February 2013, and DE was measured at 93.7%. We did talk about the need to test the RTO as it has been greater than 5 years since the last test. Based on the monitoring records for temperature and pressure, it is assumed that the line is operated in compliance with SC IV.2. Temperature and pressure monitoring is done in a satisfactory manner as required by SC IV.3 and SC IV.4.

As part of the preventative maintenance (PM) program, the RTO is baked out annually. The last bake out was completed on 7/8/2018. The temperature of the exhaust from the bake out is 430°F. Smoke is only observed if there is too much build up in the unit. Smoke has not been observed from the unit during a bake out. The PM program for the facility is electronic. All monitoring (temperature) and maintenance records can be accessed. Monthly downloads of temperature data for the RTO are available. Compliance with SC III.3 to implement and maintain a malfunction abatement plan (MAP) was demonstrated. There has really been no change in the MAP since 2012 other than to include the spindle coating line.

Spindle Coating Line (EUSPINDLE) -

A spindle coating line was originally installed under a general permit, but is now on PTI 568-97D. The line is a refurbished line. Only blacks and greys are sprayed on the spindle line. Parts travel through the coating line on spindles moved by a chain-on-edge conveyor. The parts first go through a carbon dioxide (CO₂) booth for

“snow” cleaning of the part. (A CO₂ tank provides the gas for the booth applicator/gun.) This cleaning station replaces the traditional aqueous parts washer. The part then goes to a dry filter booth (Booth 1) for robotic spray application of primer or basecoat. The part goes to an identical booth for a second coating. Then the part goes through a natural gas-fired drying oven. The spindle line is actually two identical lines consisting of a booth=>oven combination that is currently being operated as one line. It takes about 40 minutes to process a part on the spindle line as opposed to 3-hours for parts on EUCOATINGLINE. Operation of the spindle coating line started in March 2016. Plastic-Paint is only coating plastic parts on the line but it is also permitted for metal parts. The line was producing interior, plastic parts for a Dodge Minivan during the inspection.

The spray applicators on the spindle line are a cross between conventional and high volume low pressure (HVLP).

There is magnehelic gauges on the booths that measure pressure drop to determine when filters need to be changed. The gauge was 0.45” at the time of inspection. Filters are changed when 1.5” is measured.

The procedures for pressure monitoring of air into the booth are the same as for EUCOATINGLINE to meet the requirements of a PTE. A copy of the log sheet for the week of 4/29/19 was obtained. All pressure drop readings were above 0.007” as required by Method 204 for a PTE and per SC III.5.

VOC emissions from the spindle coating line can be controlled by a 26,000 cfm Durr regenerative thermal oxidizer (RTO) shared with EUCOATINGLINE. The existing RTO had the capacity to add the emissions from the spindle line. When EUSPINDLE is operating, it is always controlled since Plasti-Paint doesn’t normally operate uncontrolled. The spindle line also has bypass stacks. The requirements for operating the RTO are identical to the requirements for EUCOATINGLINE since it is a shared RTO.

All stacks, bypass and RTO, appear to be at the heights listed on PTI 568-97D, VIII. Stack/Vent Restrictions.

SC V.1 for EUCOATINGLINE and EUSPINDLE – Formulation data or Method 24?

Plasti-Paint gets Air Quality Data Sheets from the paint supplier for record keeping. They can run a Method 24 on coatings. I recommended they do this annually on some of the more used coatings to validate supplier data.

Natural Gas-Fired Burnoff Oven (GPTI 183-13):

The burn-off oven is located in a separate building from the main plant which includes a small machine shop. The metal racks from the coating line are cleaned in the burn-off oven. The oven is a Controlled Pyrolysis with a total heat input 750,000 Btu/hr including the afterburner. The oven was down. On April 26th, it was discovered that severe corrosion of the stack was causing a back draft/pressure into the oven. The oven was locked out and the stack removed. A new stack was ordered. The racks from the coating line were being sent to Jackson Oven for processing. The oven normally operates every day.

Temperatures are monitored using a paper chart recorder meeting the requirements of SC IV.4 and SC VI.1. The oven operates at 800°F, and the afterburner typically operates at temperatures greater than 1400°F. Temperatures are monitored using a paper chart recorder. A spot check of the paper wheels for 4/8/2019, 4/15/2019, and 4/22/2019 as showed that the afterburner was operating at greater than 1400°F. The general permit requires a minimum afterburner temperature of 1400°F per SC IV.1.

The burnoff oven vent stack was 1.5 times the building height per SC VIII.1. A new stack meeting the height requirements was installed and notice that the oven was operational again was provided on May 29th. A root cause analysis of the stack failure was performed. Plasti-Paint contacted the oven supplier which was Jackson Oven. Apparently, other customers had a similar problem and a change was made in the stack construction material from an outside skin of galvanized steel to stainless steel type 304. Maintenance records as required in SC VI.4 are kept in a satisfactory manner.

Due to the stack corrosion issue, AQD staff requested that the chemical composition of the materials going into the oven be reviewed. Plasti-Paint contacted N/B Coating to look at several of the highest used materials for chlorinated compounds. It appears that Ad Pro (HP 20154-HSRG, FG32599) contains a chlorinated polymer. SC III.1 prohibits putting halogenated materials (i.e., chlorinated polymers) into the burn-off oven. Per a discussion with Dave Bacon on 6/4/2019, a PTI application for the burn-off oven will be submitted since the process no longer meets the requirements of the GPTI and to address the issue.

Rule 287(2)(k) - Mix room for the coating lines (controlled)

The mix room is a separate room which holds materials for the coating lines in 55-gallon drums. The room air is ducted to the RTO. This meets the requirements of the permit exemption Rule 287(2)(k) for mixing, blending, or metering operations associated with a surface coating line.

Rule 281(2)(h) - Cold cleaner / parts washer (new)

Also, in the mix room is a mask washer that uses methyl ethyl ketone (MEK) to clean off parts. It is a tank that tumbles parts in the washer fluid. It is directly ducted to the RTO. The lid was closed on it during the inspection. This appears to meet the requirements of exemption Rule 281(2)(h) for cold cleaners that have an air/vapor interface of not more than 10 square feet. If the air/vapor interface is larger than 10 square feet, the Rule 290 could be used.

Rule 285(2)(g) – Diesel Fuel-Fired Emergency Generator

A 500 kW diesel fuel-fired emergency generator set (genset) has been installed. It is located just east of the RTO.

Cummins Power Generation:

Diesel-Genset, 60 Hz, 500 kW–Standby Rating

Engine Model QSX15-G9, No. 79972442, Family HCEXL015.AAJ

Displacement 912/15

Date of Mfg. 03/17

Emissions Certification, EPA, Tier 2, NSPS CI Stationary Emergency

Engine Hrs: 47.4

The engine is run 30-minutes (20-minutes full, 2-minutes cool down) weekly to test it. It hasn't been run for emergency power yet. The emergency generator is exempt from permitting per Rule 285(2)(g) for internal combustion engines that have less than 10 MMBtu/hr maximum heat input.

It is subject to 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE). The provisions of this subpart apply to CI ICE that commence construction (ordered) after July 11, 2005. According to the tags, the engine is certified, EPA, Tier 2. As long as the certification is maintained which requires that the engine be installed and configured according to the manufacturer's specifications, then compliance with 40 CFR 60, Subpart IIII is demonstrated.

It is subject to 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE MACT) as a new emergency generator located at an area source of HAPs. This subpart establishes emission limitations and operating limitations for HAPs emitted from stationary RICE located at major and area sources of HAP emissions. For the diesel fuel-fired engine, compliance with RICE MACT is demonstrated through compliance with 40 CFR 60, Subpart IIII. This requires (at a minimum) that the generator be operated less than 100 hours per year (for readiness testing) and maintain an engine clock. Actual emergency operation is unlimited.

Rule 284(2)(b) – LP Tank Storage:

About 8 to 10 small portable LP tanks are stored outside the main plant building on a covered pad. The LP tanks are exempt from permitting per Rule 284(2)(b).

Rule 285(2)(l)(vi) – Sanding/Buffering Tables:

In a third building, hand sanding of parts is performed. In a separate room, two (2) downdraft tables with automatic hand-held sanders are vented to a fabric filter for particulate control. One (1) self-contained table vents into the room. Three (3) tables for hand sanding do not have any ventilation. In the main plant are 4 sanding/buffing tables. Hand-held grinders are used and there is no exhaust to the outside ambient air. All particulate emissions from the sanding operations are contained within the room and buildings, and are exempt from permitting per Rule 285(2)(l)(vi). The buildings also have some storage areas.

Rule 283(2)(b) – Paint Lab;

A small paint lab to test coating quality is located in a separate room from the coating line and is exempt from permitting per Rule 283(b).

Records:

VOC and HAP emissions – Monthly records for 2018 and Jan to April & May 2019 were obtained for EU COATING LINE and EU SPINDLE. Usage information is collected daily, and compiled into the monthly record. Summary printouts are attached.

Records review shows that emissions from EU COATINGLINE are below the VOC emission limit of 30.0 tpy and emission limits for cumene, ethyl benzene and xylenes.

For the spindle line, VOC emissions were 0.79 tpy by April 2019 below the permitted limits of 2000 lbs/month, 10 tpy, and 30 tpy source-wide. The emissions of toxic air contaminants for EUSPINDLE need to be double checked as extracting data from the database leads to number errors.

Facility-wide HAP emissions appear to be less than 2 tons on a 12-month rolling time period. Plasti-Paint appears to be in compliance with the facility-wide HAPs limits of 9.0 tpy for a single HAP and 22.5 tpy for aggregate HAPs.

RTO – Electronic temperature records (15-min intervals) for 11/12/2017 to 3/27/2019 were obtained. A snapshot print out is attached.

PM records including booth filter change logs, RTO maintenance completed from 6/12/2018 to 4/14/2019 are attached.

Information on the burn-off oven stack replacement and cause of failure is also attached.

Summary:

The facility appeared to be in compliance with the applicable rules and regulations, and PTI 568-97D. There are compliance issues with GPTI 183-13 and the processing of chlorinated containing materials in the burn-off oven. A PTI application to process chlorinated materials in the burn-off will be submitted to resolve the compliance issues.

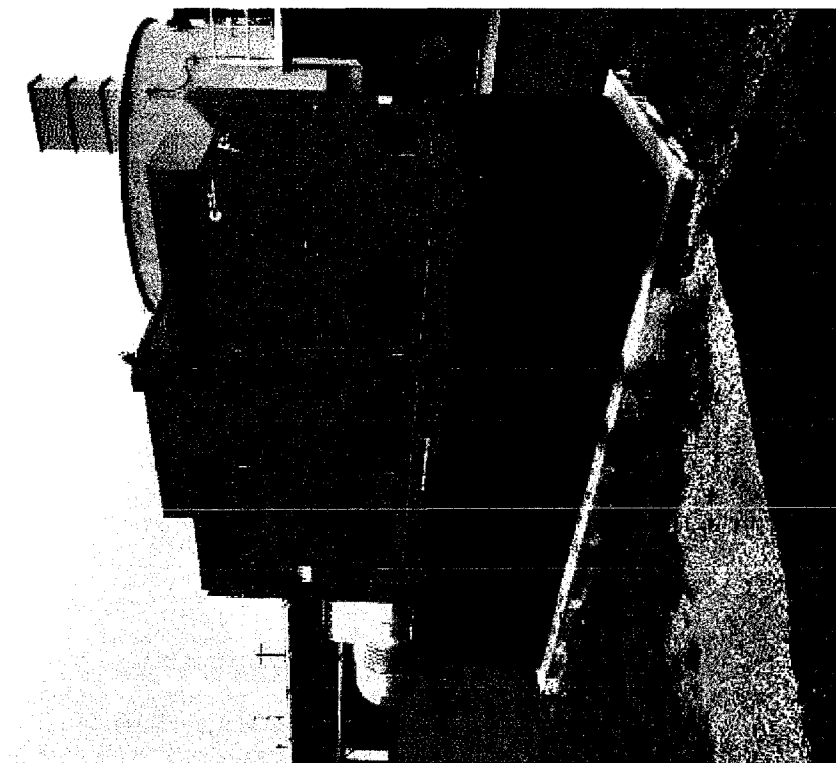


Image 1(2) : Emergency engine

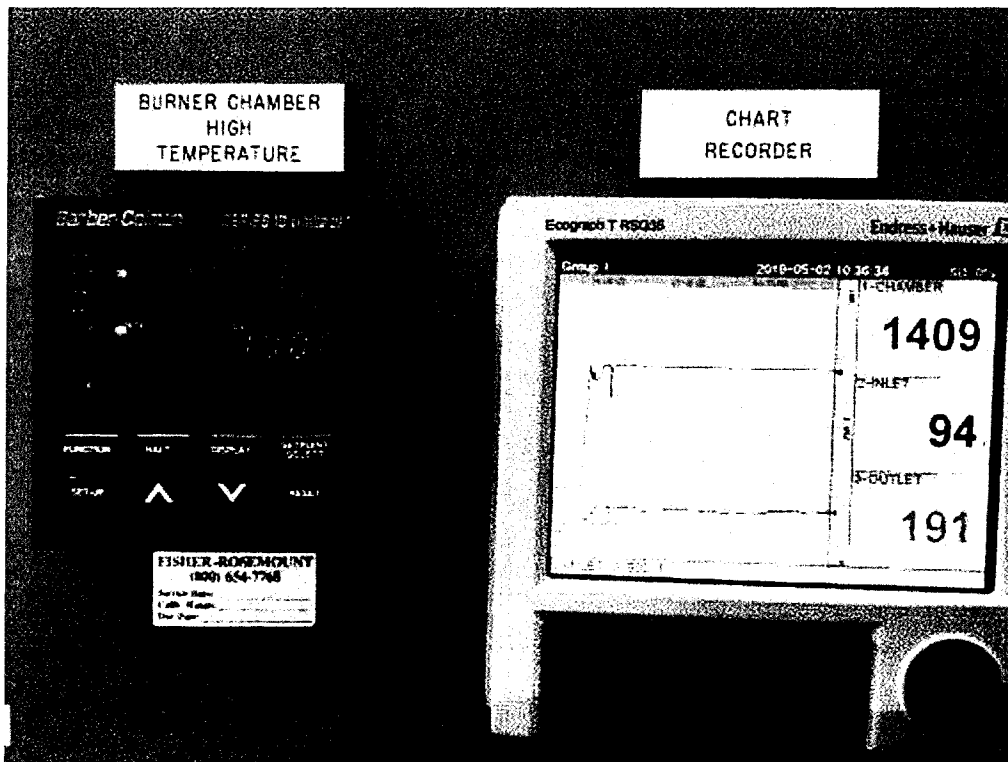


Image 2(8) : RTO operating screens

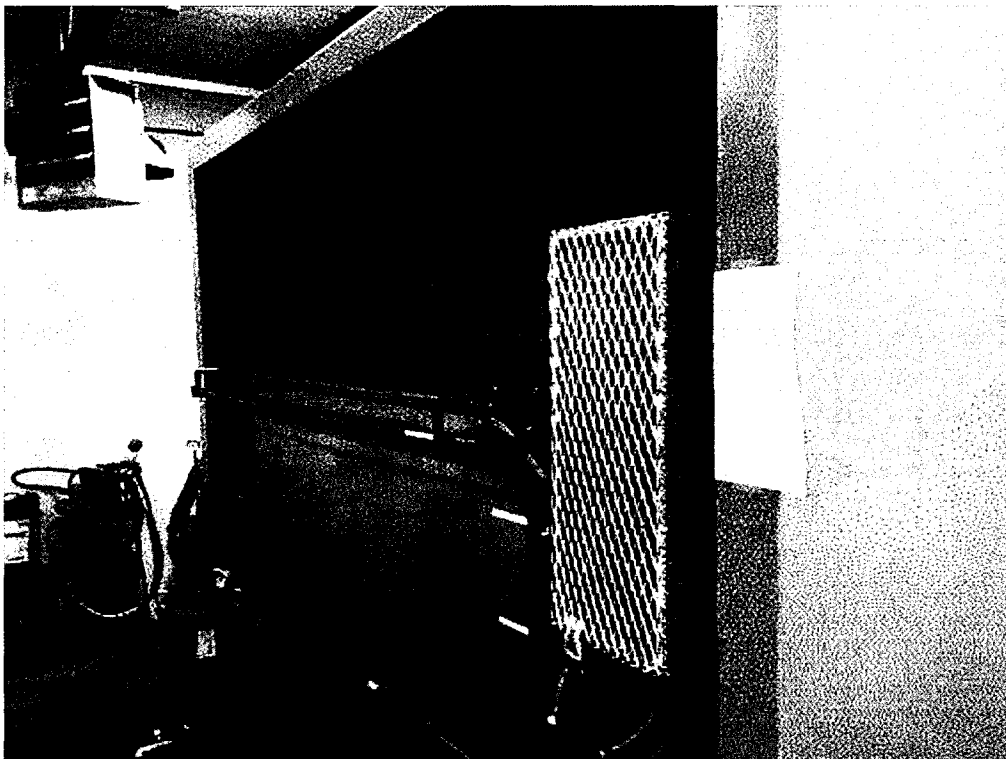


Image 3(10) : Mask washer (cold cleaner) - space heater in background

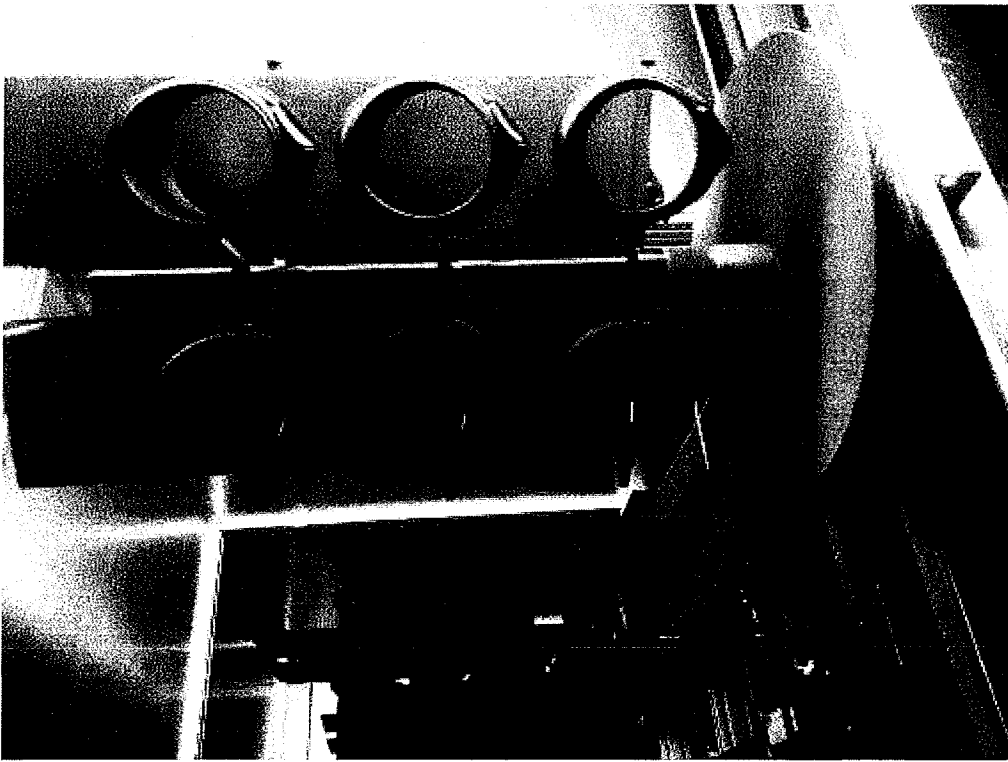


Image 4(16) : Parts coming out of the drying oven on EUSPINDLE.



Image 5(18) : Grinding tables in Main Plant

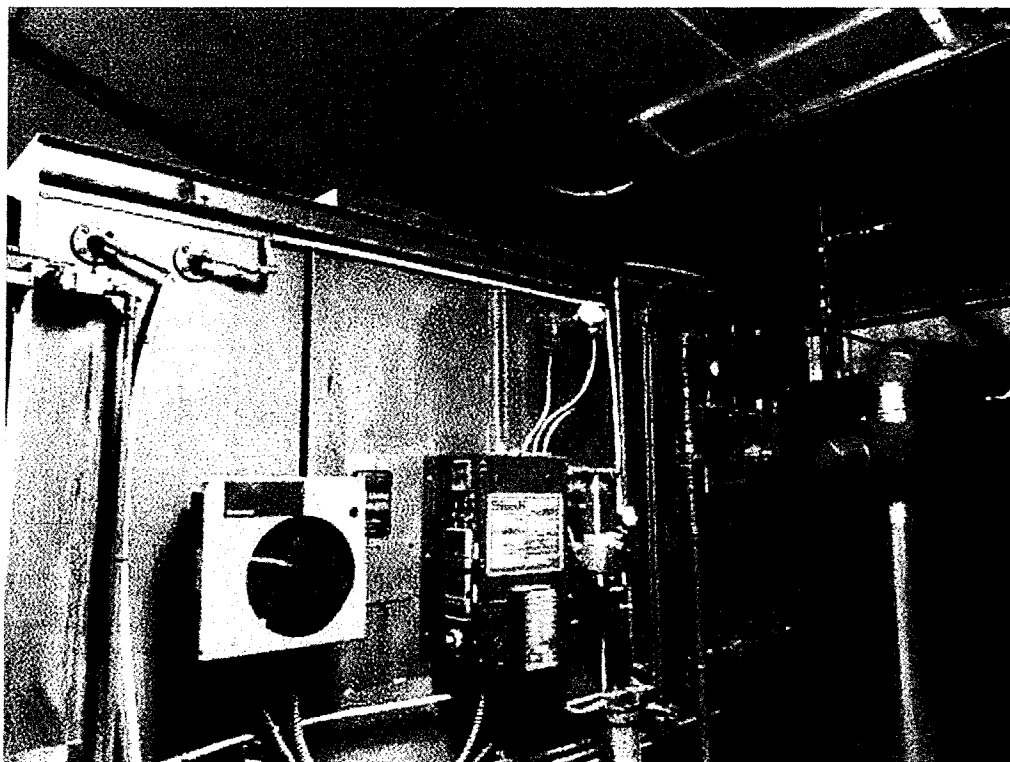


Image 6(21) : Burn-off oven with hole in the roof where the stack is missing.

NAME Orville L. Farnum

DATE 6/18/19

SUPERVISOR B. M.