

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

N242236083

<b>FACILITY:</b> PLASTI PAINT INC		<b>SRN / ID:</b> N2422
<b>LOCATION:</b> 801 WOODSIDE DR, SAINT LOUIS		<b>DISTRICT:</b> Lansing
<b>CITY:</b> SAINT LOUIS		<b>COUNTY:</b> GRATIOT
<b>CONTACT:</b> Dave Bacon , President		<b>ACTIVITY DATE:</b> 08/03/2016
<b>STAFF:</b> Julie Brunner	<b>COMPLIANCE STATUS:</b> Non Compliance	<b>SOURCE CLASS:</b> SM OPT OUT
<b>SUBJECT:</b> Scheduled inspection of Plasti-Paint, Inc. Non-compliances identified in regards to PTI 568-97C and PTI 150-15.		
<b>RESOLVED COMPLAINTS:</b>		

On August 3, 2016, I conducted a scheduled inspection of Plasti-Paint, Inc. (N2422) in Saint Louis. The last inspection of this facility was on July 22, 2015.

Arrived: 9:17 AM

Departed: 1:11 PM

Weather: 78°F, SSW@4 MPH, UV Index 2 low

Facility Contacts:

David Bacon, General Manager, 989-681-5702, dbacon@plastipaint.com

Jameson Evitts, Plant Manager, 989-681-5702, jevitts@plastipaint.com

Kevin Newell, Paint Manager, 989-681-5702, knewell@plastipaint.com

Facility Description:

Plasti-Paint, Inc. coats plastic and metal parts with urethane coatings for mainly automotive applications. The types of parts coated include instrument panels for Chrysler and parts for Polaris. 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 minor source with a potential to emit of less than 250 tons per year (tpy) of any regulated air contaminant. 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 single 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 three active Permits to Install (PTI) Nos. 568-97C, 183-13, and 150-15 along with some exempt processes.

Active Air Use Permits:

PTI 568-97C – Coating line with optional control, and HAPs opt-out

<b>Emission Unit (EU) /Flexible Group (FG) ID</b>	<b>Emission Unit Description</b>
<b>EU</b> COATINGLINE	<b>Plastic parts painting 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 bake oven and associated application equipment.</b>
<b>FG</b> FACILITY	<b>All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.</b>

PTI 150-15 – General permit for a spindle coating line

Flexible Group ID	Description - Emission Unit(s) Included in Group
FG-COATING	One or more coating lines and all associated purge and clean-up operations, where each coating line is a single series in a coating process and is comprised of one or more coating applicators, any associated flash-off areas, drying areas, and ovens where one or more surface coatings are applied and subsequently dried or cured. Coating lines may be used to coat any substrate except cans, coils, large appliances, metal furniture, magnet wire, fabrics, paper, vinyl, flat wood paneling, or graphic arts lines.
FG-SOURCE	All coating lines and all associated purge and clean-up operations at the stationary source. This includes any coating line covered by this or any other general permit or any permit to install issued pursuant to Rule 201, and any coating line exempt from the requirement to obtain a permit to install pursuant to Rule 287 and/or Rule 290.

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 284(b) – LP tank storage
- Rule 285(l)(vi) – Sanding buffing tables
- Rule 283(b) – Paint lab

Boilers? No  
 Emergency Generators? No  
 Cold Cleaners? No

Michigan Air Emissions Reporting System (MAERS):

The facility reports to MAERS. There was 10.9 tons per year (tpy) of VOC emissions reported for 2015.

Inspection:

I arrived at 9:17 AM. 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. I gave a brief overview of the inspection process and provided an "Environmental Inspections" brochure. The facility operations were discussed. The facility is currently operating three (3) shifts per day, 5 (sometimes 6) days per week. A facility tour was then taken with Mr. Jameson Evitts and Mr. Kevin Newell.

Coating Line with Optional control, and HAPs opt-out (PTI 568-97C):

Coating of plastic and pretreated metal (aluminum, galvanized steel) is done on EUCOATINGLINE. The coating line was installed in 1990, and was modified with robotics installed in 2007. Currently, Plasti-Paint is coating approximately 90% automotive parts, and 8% to 10% Polaris parts (3-wheeler). 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 170°F.

Coating line booth information –

<b>Booth 1</b>	<b>Cross draft recirculation dry filter booth with robotic spray application of 90% black adhesion promoters and primers - conventional applicators, purge pot in booth.</b>
<b>Booth 2</b>	<b>Cross draft recirculation dry filter booth with manual spray application for touch-up of adhesion promoters and primers - conventional applicators, purge pot in booth.</b>
<b>Booth 3</b>	<b>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.</b>
<b>Booth 4</b>	<b>Cross draft recirculation dry filter booth with manual spray application for touch-up of basecoats and color coats - conventional applicators, purge pot in booth.</b>
<b>Booth 5</b>	<b>Cross draft recirculation dry filter booth with two (2) robots for spray application of clearcoats – bell, electrostatic applicators, and purge pot in booth.</b>
<b>Booth 6</b>	<b>Cross draft recirculation dry filter booth with manual spray application for touch-up of clearcoats - conventional applicators, purge pot in booth.</b>

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. 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. The three (3) readings are averaged. The copies of the log sheets for the weeks of 7/18/16, 7/25/16, and 8/1/16 were obtained. All pressure drop readings were above 0.007" as required by Method 204 for a PTE.

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 just 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. Purge solvents used on the coating line are also dispensed from 55 gallon drums.

VOC emissions from the coating line can be 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. (A picture of the RTO and the electronic controls on the RTO is attached.) The RTO is used to meet the emission limits on PTI 568-97C and 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. When the RTO is operated, a minimum

temperature of 1375°F and a minimum destruction efficiency of 93.7% is required by the permit. The RTO temperature is continuously monitored and the RTO set point is 1400°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%.

As part of the preventative maintenance (PM) program, the RTO is baked out annually. The last bake out was completed on 5/16/2016. 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 never 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.

All stacks, bypass and RTO, appear to be at the heights listed on PTI 568-97C.

#### Spindle Coating Line (General PTI 150-15):

A new spindle coating line has been installed under General PTI 150-15. The line is a refurbished line. It takes about 40 minutes to process a part on the spindle line as opposed to 3-hours for parts on EUACOATINGLINE. Operation of the spindle coating line started in March 2016. Currently, the line is operating one (1) 8-hr shift, 5 days per week and only coating plastic parts. Parts travel through the coating line on spindles moved by a chain-on-edge conveyor. The parts first go through a carbon dioxide (CO<sub>2</sub>) booth for "snow" cleaning of the part. (A CO<sub>2</sub> 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 to 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. The line was producing interior, plastic parts for a Chrysler Minivan. The facility is still optimizing the line operations.

The spray applicators on the spindle line are a cross between conventional and high volume low pressure (HVLP). A demonstration will need to be made to show compliance with Special Condition (SC) IV.1. The applicators need to be HVLP applicators or a comparable technology with equivalent transfer efficiency.

There is a magnehelic gauge on the booth that was measuring a pressure drop across the booth of 0.35". The procedures for pressure monitoring will be instituted to meet the requirements of a PTE.

VOC emissions from the spindle coating line can be controlled by a 26,000 cfm Durr regenerative thermal oxidizer (RTO) shared with EUACOATINGLINE. The existing RTO had the capacity to add the emissions from the spindle line. The spindle line also has bypass stacks. The general permit requires that if the line is controlled that a minimum temperature of 1400°F based on a 3-hour average be maintained in an RTO. The temperature on the RTO is currently set at 1400°F. When I pointed out the general permit requires a minimum temperature of 1400°F, Dave made plans to increase the set point to 1425°F for a greater margin of compliance.

Also, a minimum of 76% reduction in VOC emissions is required by the general permit. The destruction efficiency of the RTO has been tested at 93.7% and if the pressure drop monitoring meets the requirements of a PTE, then a reduction efficiency of 93.7% can be used for the new spindle line.

The general permit requires that all stacks be a minimum of 1.5 times the building height. The highest building peak is 34.5 feet according to site plans on record. The stacks therefore need to be a minimum of 52 feet tall. The stack on the RTO is 25 feet tall and the bypass stacks probably aren't 1.5 times the building height either.

#### Natural Gas-Fired Burnoff Oven (General PTI 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 burnoff oven vent stack is 1.5 times the building height. A copy of the paper chart recorder (dated 7/25/2016) shows that the oven operates at 800°F and the afterburner typically operates at temperatures equal to and greater than 1800°F. The general permit requires a minimum afterburner temperature of 1400°F.

#### Rule 284(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(b).

**Rule 285(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. All particulate emissions from the sanding operations are contained within the room and building, and are exempt from permitting per Rule 285(l)(vi). The building also has some storage areas.

**Rule 283(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 2015 and up to July 2016 were obtained. Usage information is collected daily, and compiled into the monthly record. Summary printouts are attached. In July of 2016, VOC emissions were 0.75 tons and the rolling 12-month total was 8.18 tons which are below the permitted limits of 30 tpy. For the spindle line, VOC emissions were 0.17 tons by July 2016 below the permitted limits of 2000 lbs/month, 10 tpy per line, and 30 tpy source-wide. HAP emissions were 4.3 tons on a rolling 12-month total in July 2016 for the facility. In 2015, the highest emission of a single HAP was toluene at 1.5 tpy. And, emissions of ethyl benzene were 181.8 lbs and cumene were 0.66 lbs for the year below the permitted limits. Plasti-Paint is 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 (10-min intervals) for 6/17/16 to 7/26/16 were obtained. A snapshot print out is attached.

PTE – The copies of the log sheets for the weeks of 7/18/16, 7/25/16, and 8/1/16 documenting pressure drop readings and air flow checks are attached.

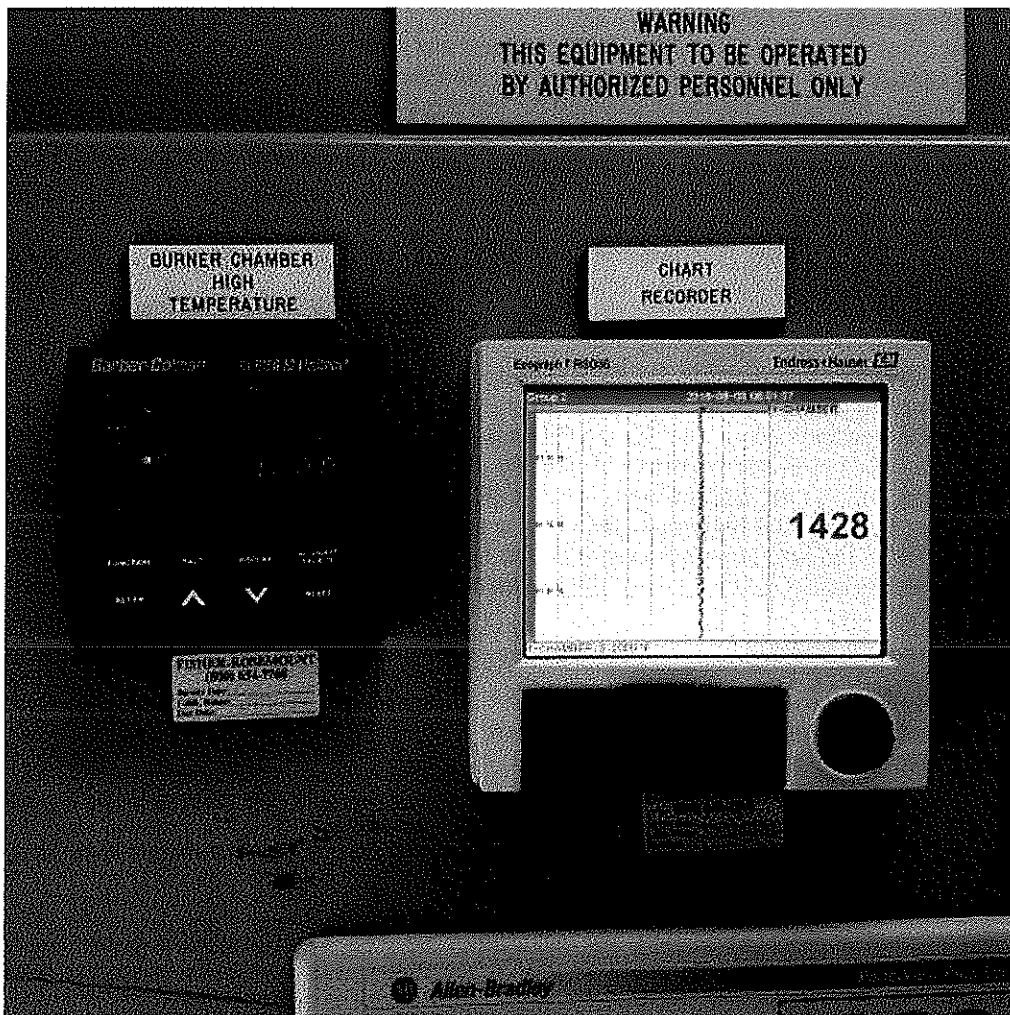
**Summary:**

The facility appeared to have some compliance issues with the applicable rules and regulations, and permitting.

PTI 568-97C is for a plastic parts coating line and metal parts are also being coated on this line. Applicable requirements for the coating of metal parts were not included in the PTI. This appears to be an oversight since AQD knew that metal parts were being coated on the line. A modification to the PTI is needed to correct this issue. Possible options for the coating of metal parts could include any of the following:

1. Adding VOC emission limits of 2,000 lbs/month and 10.0 tpy for coating of metal which would fall under the overall VOC emission limit of 30 tpy allowed on the coating line.
2. Add a VOC content limit of 3.5 lb/gallon (minus water), as applied, for air-dried metal parts coatings and no additional mass emission limits would be needed.
3. Add the requirement to operate the RTO at all times when the line is operating. No additional VOC content limits or mass emission limits would be needed.

General PTI 150-15 has the requirement that the stacks at a minimum must be 1.5 times the building height. The stacks on the coating line do not appear to meet this requirement. Plasti-Paint can either increase the height of all stacks to a minimum of 52 feet or apply for a PTI for the coating line as installed.



**Image 1(RTO Control Panel) :** RTO operating temperature at the time of the inspection

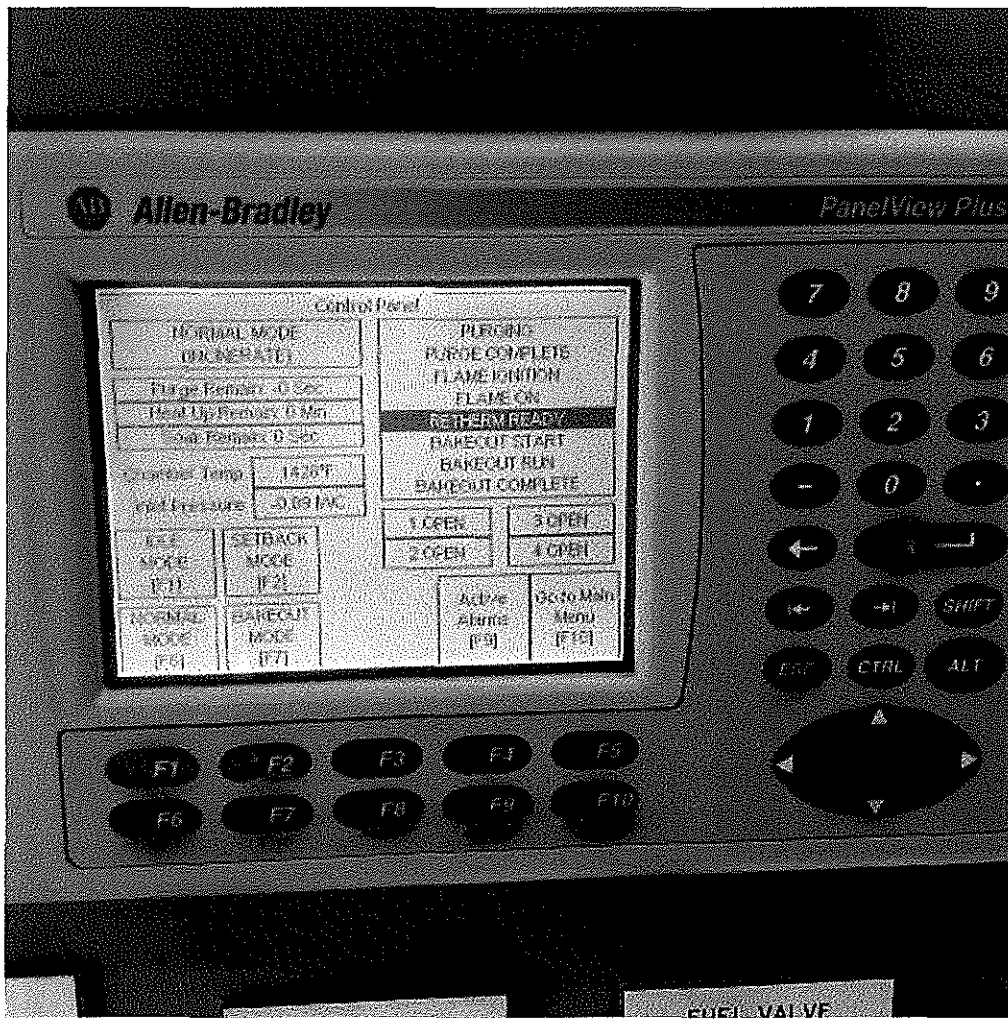


Image 2(RTO control panel) : Part of RTO control panel

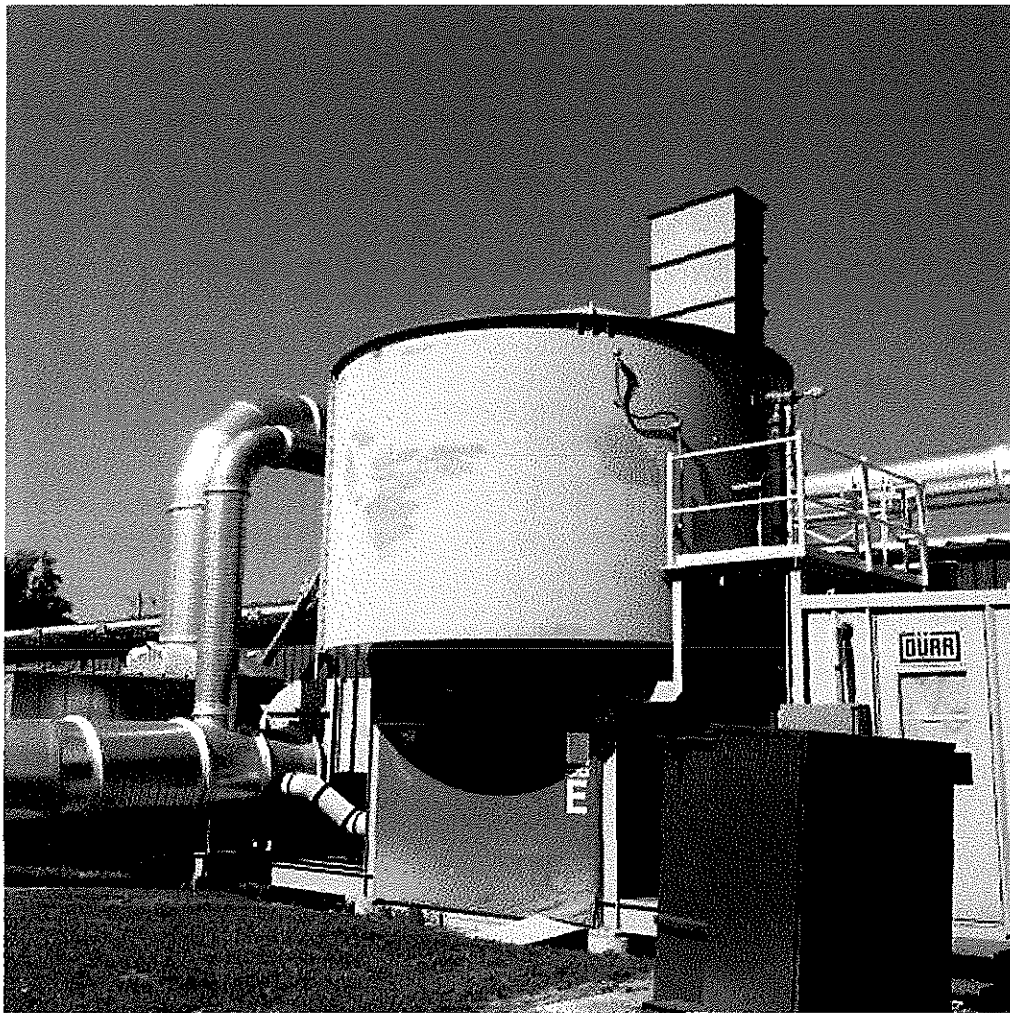
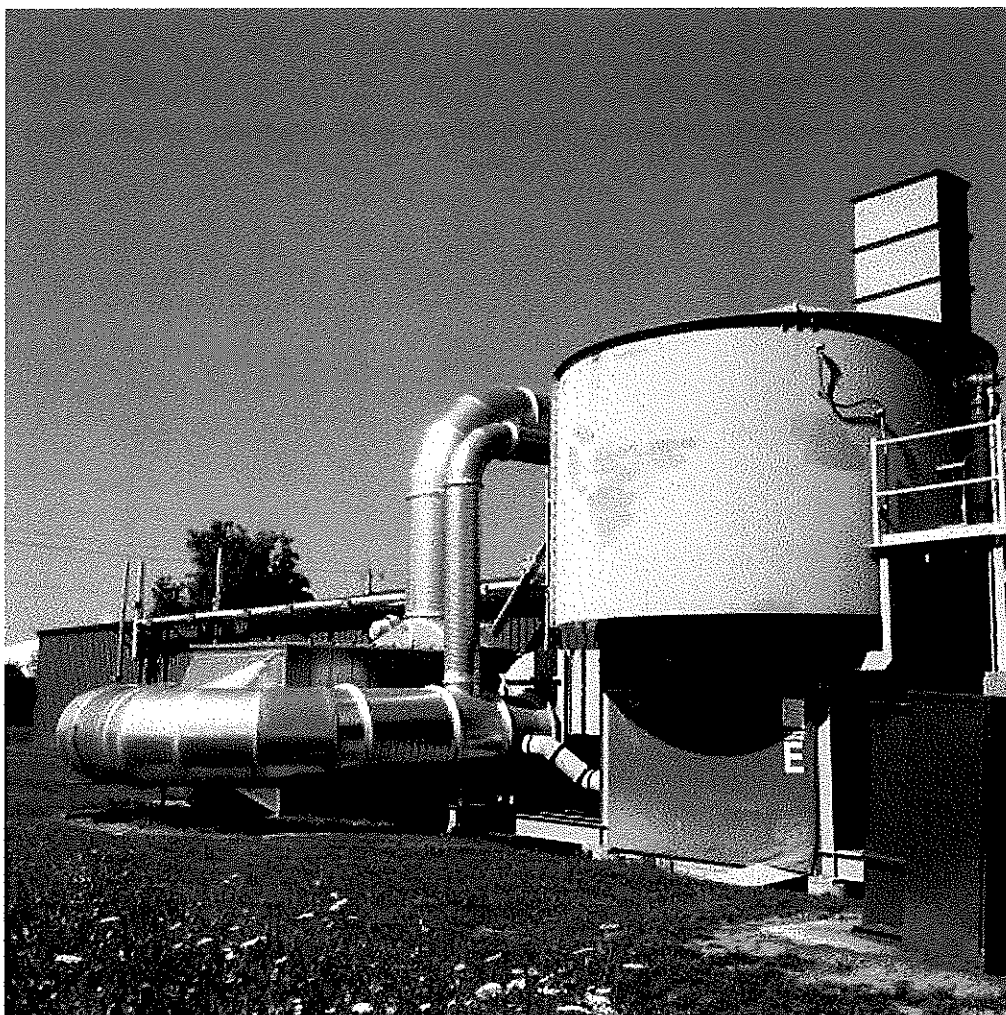


Image 3(RTO) : RTO





**Image 4(RTO) :** RTO with spindle line bypass stacks in the background.

NAME Julie L. Brown

DATE 8/22/16

SUPERVISOR B.M.

