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**Malfunction Abatement Plan (MAP)**  
**FCA US LLC - Trenton Engine Complex (TEC)**

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# Contents

<b>1.0</b>	<b>Introduction</b>	<b>1</b>
<b>2.0</b>	<b>Malfunction Abatement Plan (MAP)</b>	<b>1</b>
<b>3.0</b>	<b>Definitions</b>	<b>2</b>
<b>4.0</b>	<b>Procedure</b>	<b>2</b>
<b>Reference 1:</b>	<b>Equipment List: Mist &amp; Dust Collectors at TEC</b>	<b>3</b>
<b>Reference 2:</b>	<b>Major Replacement Parts / Repair Time</b>	<b>4</b>
<b>Reference 3:</b>	<b>Activity &amp; Frequency Matrix for Mist Collectors</b>	<b>5</b>
<b>Reference 4:</b>	<b>Activity &amp; Frequency Matrix for Dust Collectors</b>	<b>8</b>
<b>Reference 5:</b>	<b>Mist &amp; Dust Collector Monitoring Stages</b>	<b>11</b>
<b>5.0</b>	<b>Preventive Maintenance Plan (PMP)</b>	<b>12</b>
<b>6.0</b>	<b>Corrective Procedures to Achieve Compliance</b>	<b>13</b>

## 1.0 Introduction

### Wet and Dry Machining Air Emissions Units (EUs)

The Michigan Department of Environment, Great Lakes and Energy (EGLE), Air Quality Division (AQD), renewable operating permit (ROP) # MI-ROP-B3350-2014b for FCA US LLC – Trenton Engine Complex (TEC) requires that the facility have a Malfunction Abatement Plan (MAP) for the air pollution control equipment used to control emissions from the wet and dry machining operations in the facility. The wet machining operations are controlled by mist collectors and the dry machining operations are controlled by dust collectors.

The equipment description for the EUs are provided below:

**EU- Dry Machine** — various machining operations including grinding, boring, etc. The processes are maintained with particulate matter (PM) filtration systems.

**EU- Wet Machine** — various machining operations including grinding, boring, etc. utilizing various cutting oils and coolants. The processes are maintained with oil mist collectors.

## 2.0 Malfunction Abatement Plan (MAP)

The MAP consists of 3 parts as below and would be covered in detail in Section 5:

- 1 Preventive Maintenance Plan (PMP)**
- 2 List of Emissions Control Devices and Variables Monitored**
- 3 Corrective Procedures to Achieve Compliance**

**a. Purpose**

To develop a malfunction abatement plan for air pollution control devices used for controlling emissions from wet and dry machining operations at FCA US LLC – Trenton Engine Complex (TEC).

**b. Scope**

This plan addresses the operations of the dry machining dust collectors and wet machining oil mist collectors at the FCA US LLC - TEC, in Trenton, Michigan.

### **3.0 Definitions**

***Air Pollution Control Devices or Equipment*** — These are the dust collectors and oil mist collectors associated with dry and wet machining or filter gallery operations that reduce or remove air contaminants [e.g., particulate matter (PM)] prior to discharge to the atmosphere.

***Total Maintenance System (TMS)*** – the TMS is a company-wide automated, electronic database that generates work tickets and logs, tracks, and monitors the preventive maintenance activities for all equipment in the facility, including the control equipment for the emissions units EU-Dry Machine and EU-Wet Machine.

### **4.0 Procedure**

The following references outline all items required for the MAP:

**Reference 1:** ***Equipment List: Mist & Dust Collector at TEC***

**Reference 2:** ***Major Replacement Parts / Repair Time***

**Reference 3:** ***Activity & Frequency Matrix for Mist Collectors***

**Reference 4:** ***Activity & Frequency Matrix for Dust Collectors***

**Reference 5:** ***Mist & Dust Collector Monitoring Stages***

## Reference 1: Equipment List: Mist & Dust Collectors at TEC

<b>Mist &amp; Dust Collector Information</b>					
<b>Trenton Engine Complex</b>					
46 Units Total, 19 North Plant & 27 South Plant					
Asset Name	Asset #	Model	Plant	Location	Notes
BLK FIN MIST-B4	AAA300876	OMC-062-10	South	A5	NONE
BLK FIN MIST-B5	AAA300877	OMC-050-8	South	A5	NONE
BLK FIN MIST-B6	AAA300878	OMC-067-10	South	A4	NONE
BLK RGH MIST-B1	AAA297274	OMC-055-8	South	B1	NONE
BLK RGH MIST-B2	AAA300874	OMC-097-15	South	B8	NONE
BLK RGH MIST-B3	AAA300875	OMC-102-15	South	B8	NONE
BLKX MIST MCB-01-J1	AAA380020	STC-085-15	North	J1	NONE
BLKX MIST MCB-02-E1	AAA380019	STC-090-15	North	E1	NONE
CAM MIST FE2-T5	AAA367298	N/A	North	T5	NONE
CAM MIST OP90R-1-T5	AAA367293	N/A	North	T5	NONE
CAM MIST OP90R-4-T3	AAA368153	N/A	North	T3	NONE
CAM MIST-P10	AAA367304	N/A	North	P10	NONE
CAM MIST-R10	AAA367303	N/A	North	R10	NONE
CAM MIST-T7	MIST-OP40A	N/A	North	T7	NONE
CAM MIST-T8	AAA367301	N/A	North	T8	NONE
CRK FIN MIST-C4	AAA300890	N/A	South	C4	NONE
CRK FIN MIST-C5	AAA300891	OMC-025-4	South	C5	NONE
CRK FIN MIST-C6	AAA300892	OMC-032-4	South	C6	NONE
CRK RGH MIST-C2	AAA300888	OMC-025-4	South	C10	NONE
CRK RGH MIST-C3	AAA300889	OMC-030-4	South	E8	NONE
FBLK MIST-D10	165890001673	STC-3000-6	North	D10	NONE
FBLK MIST-D6	165890001674	STC-4000-6	North	D6	NONE
FG FE3 MIST MCF-1-F5	AAA350958	STC-025-4	South	F5	NONE
FG HD MIST-FGH3	AAA300894	OMC-050-6	South	FGH3	NONE
HDA FIN MIST-H10	AAA300887	OMC-067-10	South	J6	NONE
HDA FIN MIST-H9	AAA300886	OMC-077-10	South	J7	NONE
HDA RGH MIST-H6	AAA300883	OMC-097-15	South	J10	NONE
HDA RGH MIST-H7	AAA300884	OMC-097-15	South	J9	NONE
HDA RGH MIST-H8	AAA300885	OMC-092-15	South	J8	NONE
HDB FIN MIST-H4	AAA300881	OMC-077-10	South	H7	NONE
HDB FIN MIST-H5	AAA300882	OMC-067-10	South	H6	NONE
HDB RGH MIST-H1	AAA297275	OMC-097-15	South	H10	NONE
HDB RGH MIST-H2	AAA300879	OMC-097-15	South	H9	NONE
HDB RGH MIST-H3	AAA300880	OMC-092-15	South	H8	NONE
HDX MIST MCH-01-M6	AAA380014	STC-035-4	North	M6	NONE
HDX MIST MCH-02-M7	AAA380015	STC-060-89	North	M7	NONE
HDX MIST MCH-03-G6	AAA380016	STC-050-8	North	G6	NONE
HDX MIST MCH-04-F6	AAA380017	STC-090-15	North	F6	NONE
HDX MIST MCH-05-F10	AAA380018	STC-085-15	North	F10	NONE
NCRK RGH MIST-F4	AAA398047	STC-098-15	North	F4	NONE
NCRK RGH MIST-K3	AAA398046	STC-067-8	North	K3	NONE
CRK RGH DUST-C1	AAA297280	DC-120-6	South	E9	NONE
CRK RGH DUST-C7	AAA350958	CDC-031-6	South	C10	NONE
NCRK RGH DUST-B4	AAA399400	N/A	North	B4	NONE
FG MIST-FGC2	AAA300893	OMC-052-6	South	FGC2	NONE
FG MIST-FGB1	AAA297276	OMC-045-1	South	FGB1	NONE

Trenton Engine Complex Malfunction Abatement Plant (MAP)  
This Plan Supersedes and all previous PMPs / MAPs

## Reference 2: Major Replacement Parts / Repair Time

<b>Mist and Dust Collector Critical Parts</b>				
<b>Trenton Engine Complex</b>				
<b>Monroe Environmental (Mist &amp; Dust Collectors)</b>				
<b><u>Common Parts</u></b>	<b><u>Part Description</u></b>	<b><u>MFG #</u></b>		<b><u>Repair Time</u></b>
	Photohelic Gauge	3005MR		30 min
	20A 24VDC Power Supply	6EP1 3333BA10		30 min
<b><u>Model Specific Parts</u></b>	<b><u>Part Description</u></b>	<b><u>Manufacturer</u></b>	<b><u>PN</u></b>	<b><u>Repair Time</u></b>
AAA297276 (Mist)	15 HP Motor	Marathon	284U	240 min
	30A Disconnect	Allen-Bradley	1494V-DH633	90 min
AAA300893 (Mist)	15 HP Motor	Marathon	284U	240 min
	30A Disconnect	Allen-Bradley	1494V-DH633	90 min
AAA300894 (Mist)	15 HP Motor	Marathon	284U	240 min
	30A Disconnect	Allen-Bradley	1494V-DH633	90 min
AAA297280 (Dust)	40 HP Motor	Marathon	364U	240 min
	100A Disconnect	Allen-Bradley	1494V-DH611	90 min
<b>Consumables</b>				
<b><u>Filters</u></b>	<b><u>Part Description</u></b>	<b><u>Manufacturer</u></b>	<b><u>PN</u></b>	<b><u>Repair Time</u></b>
	95% DOP Filters	Flanders	2027	15 min
	Cartridge Filters	Monroe	3748	20 min

## Reference 3: Activity & Frequency Matrix for Mist Collectors

Equipment	Activity Description	Procedure Description	Frequency	TMS Reference – Activity Number.Task
Mist Collector	Basic Operation and DOP Check	Check HEPA filter operation, static pressure for filter changes or coil cleaning	Daily (once per shift)	N/A
Mist Collector	Mist Collectors Monthly/Semi-Annual PMs: Record hours of operation	Record hours of operation to date. Record Static level at time of PM for DOP Filters. Verify the hours on the hour meter for the unit are tracking properly.	Monthly Every 6 mon	22.4 24.10
Mist Collector	Mist Collectors Monthly/Semi-Annual PMs: Check HEPA Filter Gauge	Visually check to make sure the HEPA filter gauge is working properly. Gauge to be “zeroed” at shutdown & fan stopped. If gauge reads greater than 3.0 inches, filter replacement must take place.	Monthly Every 6 mon	22.5 24.11
Mist Collector	Mist Collectors Monthly/Semi-Annual PMs: Check Pump and Float	Visually check to see if the pump and float are in good operating condition. (Note that not all units have pumps.)  Check and clean the pump reservoir for debris. Verify pump suction is clear.	Monthly Every 6 mon  Monthly Every 6 mon	22.6 24.12  22.8 24.14
Mist Collector	Mist Collectors Monthly/Semi-Annual PMs: Review Filter & Backwash	Check for debris in the filter then close door and check the operation of the backwash cycle: A. Keep control power on and the fan off. B. Keep the fan access and lower helix door open. C. Push the pre-filter wash test button. Coolant should come on while pressing the pushbutton.	Monthly Every 6 mon	22.7 24.13
Mist Collector	Mist Collectors Monthly/Semi-Annual PMs: Check Air Lock	Visually check to make sure the airlock box is filled with liquid.  Check and clean the bottom of the airlock for debris. If applicable add liquid via the pre-filter wash test pushbutton.	Monthly Every 6 mon  Monthly Every 6 mon	22.9 24.15  22.10 24.16
Mist Collector	Mist Collectors Monthly/Semi-Annual PMs: Check Airflow Restrictions	Visually check for airflow restrictions and leaks in the following areas: A. Helix, B. Duct Connections.	Monthly Every 6 mon	22.11 24.17
Mist Collector	Mist Collectors Monthly/Semi-Annual PMs: Interior & Exterior Equipment Check	Wipe down exterior of mist collector with a multi-purpose cleaner.  Plug drain pan into airlock box. Squeegee and remove concentrated coolant and debris along the inside walls of the mist collector.  Visually check and clean the inside of the mist collector for aluminum chip shavings and heavy oil coolant build up on top of the helix tubes and in the sides and bottom of the mist collector.  If the mist collector needs a power washing submit a corrective work ticket into TMS.	Monthly Every 6 mon  Monthly Every 6 mon  Monthly Every 6 mon	22.12 24.18  22.13 24.19  22.14 24.20  22.15 24.21

Equipment	Activity Description	Procedure Description	Frequency	TMS Reference – Activity Number.Task
Mist Collector	Mist Collectors Monthly PM: Motor Bearing Check	Inspect motor bearing; submit a work ticket if bearing needs to be replaced.	Monthly	22.16
Mist Collector	Mist Collectors Semi-Annual PM: Inspect Spiral Tubes	Inspect spiral tube flush nozzles spray pattern. Open doors and initiate a manual wash-down cycle. Visually check spray pattern. Unclog / replace plugged nozzles as necessary.  Inspect spiral tubes for cleanliness. Check static pressure on monitoring gauge. If at or near alarm condition open lower access doors, unclamp and pull out spiral tube carts. Remove and power-wash as required.	Every 6 months	24.4 24.5
Mist Collector	Mist Collectors Semi-Annual PM: Check DOP	Check DOP Filter static pressure and condition. Check static pressure on monitoring gauge if at or near alarm condition open lower access doors, unclamp and remove by pulling each filter out towards the door opening. If filter is at alarm set-point, if media is torn or deteriorated, or it has been 6 months since last filter change then remove and replace with new filter. Write date on filter if filter is changed.	Every 6 months	24.6
Mist Collector	Mist Collectors Quarterly PM: Check Filter Gauges	Check filter gauges for proper operations. Check for “zero” and adjust if necessary. Check gauge lines for blockages especially at the connections to the collector. Remove lines from gauges and blow out lines with compressed air. Gauge lines must be removed to protect gauge from damage.	Every 3 months	27.4
Mist Collector	Mist Collectors Quarterly PM: Check Sump Pump & Drain	Check sump pump for flow through pump. Open access hatch and add liquid to initiate pump on condition. Pump should run and shut off automatically at low / pump off levels.  Check drain for obstruction of flow. Remove lid from drain trap and add liquid. Observe and verify liquid flows through the drain. Open lower doors and locate trash guard. Remove any collected debris.	Every 3 months	27.5 27.6
Mist Collector	Mist Collectors Quarterly PM: Check Photohelic Reading and Hour Meter	Check the photohelic readings and record the hour meter air flow gauge, 2nd cartridge filters and 3rd stage DOP filters.	Every 3 months	27.7
Mist Collector	Mist Collectors Quarterly PM: Check Motor Mounting Bolts	Check the Motor Mounting bolts for tightness, re-torque as needed	Every 3 months	27.8
Mist Collector	Mist Collectors Quarterly PM: Check Fan/Motor Key Set	Check the Fan/Motor key set, insure they are tight, repair as needed	Every 3 months	27.9
Mist Collector	Mist Collectors Quarterly PM: Test Annunciator Light	Test the Annunciator light using the “press to test” button, replace as needed	Every 3 months	27.10
Mist Collector	Mist Collectors Quarterly PM: Inspect Belt & Couplings	Inspect the belt screens and coupling guards for cleanliness and security, repair as needed	Every 3 months	27.11
Mist Collector	Mist Collectors Quarterly PM: Check Air Pressure	Check the air pressure setting adjust to the required setting if needed, inspect and/or clean the filter bowl as needed	Every 3 months	27.13

Trenton Engine Complex Malfunction Abatement Plant (MAP)  
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Equipment	Activity Description	Procedure Description	Frequency	TMS Reference – Activity Number.Task
Mist Collector	Mist/Dust Collectors Semi-Annual PM: Ductwork Inspection	Open a minimum of two mist/dust collection duct access hatches	Every 6 mon	222.1
		Review and take pictures of inside mist/dust ductwork		222.2
		Look for slime, mold or any other build up		222.3
Mist Collector	Mist/Dust Collectors Semi-Annual PM: Ductwork Cleaning Determination	If it is deemed by the plant engineering team that they need to be cleaned then a planned work ticket needs to be created	Every 6 mon	222.4
Mist Collector	Mist/Dust Collectors Semi-Annual PM: Vibration Inspection	Perorm vibration data collection route for established area	Every 6 mon	752.1
		Create a planned work ticket to follow up on any abnormal readings outside of baseline limits.		752.2
		Download data collected from route to software to be analyzed.		752.3
Mist Collector	Mist/Dust Collectors Semi-Annual PM: Infrared Inspection	Adjust camera settings for correct temperature range and emissivity settings	Every 6 mon	754.1
		Perform infrared analysis route for established area.		754.2
		Create a work ticket to follow up on any abnormal readings or hot spots detected.		754.3
Mist Collector	Mist/Dust Collectors Weekly PM: Ductwork Inspection	Visually inspect flex hose from machines to steel tube. Make any adjustments or fix as necessary	Every week	1197.1

## Reference 4: Activity & Frequency Matrix for Dust Collectors

Equipment	Activity Description	Procedure Description	Frequency	TMS Reference – Activity Number.Task
Dust Collector	Basic Operation and DOP Check	Check HEPA filter operation, static pressure for filter changes or coil cleaning and verify the need for a dust barrel change	Daily (once per shift)	N/A
Dust Collector	Dust Collectors Semi-Annual PM: Check Filter Gauges	Check motor for cleanliness and running sound. Visually inspect cooling fan with fins and clean as necessary. Listen for any abnormal noises or rubbing sounds.	Every 6 mon	20.1
Dust Collector	Dust Collectors Semi-Annual PM: Check Filter Gauges	Check fan wheel for cleanliness. Remove access hatch and check for residue debris or corrosion on the wheel blades and surface clean as needed.	Every 6 mon	20.2
Dust Collector	Dust Collectors Semi-Annual PM: Check Filter Gauges	Check the top filter static pressure and condition. Check static pressure on the monitoring gauge. If it is at or near alarm condition open the access door. Unclamp and remove by pulling each filter out towards the door opening if the filter is at the alarm set point or if the media is torn or deteriorated remove and replace with a new filter.	Every 6 mon	20.3
Dust Collector	Dust Collectors Semi-Annual PM: Check Filter Gauges	Inspect drive V-Belt. Listen for any odd noises or rubbing sounds. Listen for any squeals or other belt noises especially at start-up. Check for frayed or excessive wear of the belts. Replace as needed. (Note: Belt dust could be a sign of sheave mis-alignment. Check the alignment with a straight edge or laser alignment tool. Realign as needed.	Every 6 mon	20.4
Dust Collector	Dust Collectors Quarterly PM: Check Filter Gauges	Check filter gauges for proper operations. Check for “zero” and adjust if necessary. Check gauge lines for blockages especially at the connections to the collector. Remove lines from gauges and blow out lines with compressed air. Gauge lines must be removed to protect gauge from damage.	Every 3 mon	167.1
Dust Collector	Dust Collectors Quarterly PM: Check Cartridge Filter Pressure & Condition	Check cartridge filter pressure and condition. Unit is equipped with in-place pulse cleaning feature. Increase pulse frequency OT manual pulse several times. Check static pressure on monitoring gauge. If static pressure does not decrease proceed with filter change. Open access doors-unclamp and remove by pulling each filter out toward door opening. If filter is at alarm set point or if media is torn or deteriorated remove and replace filter.	Every 3 mon	167.2
Dust Collector	Dust Collectors Quarterly PM: Check Slide Gate	Manually check slide gate is in proper working order by closing and opening. Feel for any restrictions. Repair as needed.	Every 3 mon	167.3
Dust Collector	Dust Collectors Monthly, Quarterly, Semi-annual & Annual PMs: Check Photohelic Reading and Hour Meter	Check the photohelic readings and record the hour meter air flow gauge, 2 <sup>nd</sup> cartridge filters and 3 <sup>rd</sup> stage DOP filters.	Monthly Every 3 mon Every 6 mon Annual	21.1 167.4 20.6 356.3

Equipment	Activity Description	Procedure Description	Frequency	TMS Reference – Activity Number.Task
Dust Collector	Dust Collectors Monthly, Quarterly, Semi-annual & Annual PMs: Filter Pulse Selector Switch Check	Place the 2 <sup>nd</sup> stage filter pulse selector switch temporarily to continuous. Listen for the 2 <sup>nd</sup> stage filter solenoids to “fire” a few times. If this cycle occurs all is functioning correct. Switch back to Auto.	Monthly Every 3 mon Every 6 mon Annual	21.2 167.5 20.7 356.4
Dust Collector	Dust Collectors Monthly, Quarterly, Semi-annual & Annual PMs: Check Motor Mounting Bolts	Check the Motor Mounting bolts for tightness, re-torque as needed	Monthly Every 3 mon Every 6 mon Annual	21.3 167.6 20.8 356.5
Dust Collector	Dust Collectors Monthly, Quarterly, Semi-annual & Annual PMs: Check Fan/Motor Key Set	Check the Fan/Motor key set, insure they are tight, repair as needed	Monthly Every 3 mon Every 6 mon Annual	21.4 167.7 20.9 356.6
Dust Collector	Dust Collectors Monthly, Quarterly, Semi-annual & Annual PMs: Check Air Pressure	Check the air pressure setting adjust to the required setting if needed, inspect and/or clean the filter bowl as needed	Monthly Every 3 mon Every 6 mon Annual	21.5 167.8 20.10 356.7
Dust Collector	Dust Collectors Monthly, Quarterly, Semi-annual & Annual PMs: Test Annunciator Light	Test the Annunciator light using the “press to test” button, replace as needed	Monthly Every 3 mon Every 6 mon Annual	21.6 167.9 20.11 356.8
Dust Collector	Dust Collectors Monthly, Quarterly, Semi-annual & Annual PMs: Inspect Belt & Couplings	Inspect the belt screens and coupling guards for cleanliness and security, repair as needed	Monthly Every 3 mon Every 6 mon Annual	21.7 167.10 20.13 356.9
Dust Collector	Dust Collectors Monthly, Quarterly, Semi-annual & Annual PMs: Lube Fan Bearing	Lubricate fan bearing with grease (.13 oz)	Monthly Every 3 mon Every 6 mon Annual	21.8 167.11 20.12 356.10
Dust Collector	Mist/Dust Collectors Semi-Annual PM: Ductwork Inspection	Open a minimum of two mist/dust collection duct access hatches Review and take pictures of inside mist/dust ductwork Look for slime, mold or any other build up	Every 6 mon	222.1 222.2 222.3

Trenton Engine Complex Malfunction Abatement Plant (MAP)  
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Equipment	Activity Description	Procedure Description	Frequency	TMS Reference – Activity Number.Task
Dust Collector	Mist/Dust Collectors Semi-Annual PM: Ductwork Cleaning Determination	If it is deemed by the plant engineering team that they need to be cleaned then a planned work ticket needs to be created	Every 6 mon	222.4
Dust Collector	Dust Collectors Annual PM: Lubricate Motor Bearings	Lubricate motor bearings. Apply grease to the bearings (0.97 oz)	Annual	356.1
Dust Collector	Dust Collectors Annual PM: Check Gaskets	Open the doors and check the gasket sealing surfaces for cuts, tears or deterioration. Replace as needed.	Annual	356.2
Dust Collector	Dust Collectors Weekly & Semi-Annual PMs: Debris Barrel Emptying	Check to see if barrel is full by looking through the port. If barrel is $\frac{3}{4}$ or more full, empty. Remove bonnet from barrel. With a forklift raise barrel off the ground slightly and pull barrel out from under dust collector. Install lid on barrel and make sure it is secure to prevent spillage. Install empty barrel in dust collector and re-install bonnet. Dispose of full barrel in scrap steel roll off located in material handling building.	Every week	650.1/ 20.5 650.2/ 20.5 650.3/ 20.5 650.4/ 20.5 650.5/ 20.5 650.6/ 20.5
Dust Collector	Mist/Dust Collectors Semi-Annual PM: Vibration Inspection	Preform vibration data collection route for established area Create a planned work ticket to follow up on any abnormal readings outside of baseline limits. Download data collected from route to software to be analyzed.	Every 6 mon	752.1 752.2 752.3
Dust Collector	Mist/Dust Collectors Semi-Annual PM: Infrared Inspection	Adjust camera settings for correct temperature range and emissivity settings  Perform infrared analysis route for established area.  Create a work ticket to follow up on any abnormal readings or hot spots detected.	Every 6 mon	754.1 754.2 754.3
Dust Collector	Mist/Dust Collectors Weekly PM: Ductwork Inspection	Visually inspect flex hose from machines to steel tube. Make any adjustments or fix as necessary	Every week	1197.1

## Reference 5: Mist & Dust Collector Monitoring Stages

<b>Parameters Monitored</b> <b>Trenton Engine Complex</b>
<b>Monroe Environmental (North and South Plant Mist Collectors)</b>
<u>1<sup>st</sup> Stage Monitoring (Spiral Tubes)</u> Level 1: Service Spiral Tubes at 5 iwg
<u>2<sup>nd</sup> Stage Monitoring (HEPA Filters)</u> Level 1: Replace 95% DOP Filter Light at 3 iwg Level 2: Unit Shuts Down at 4 iwg
<b>Monroe Environmental (North and South Plant Dust Collectors)</b>
<u>1<sup>st</sup> Stage Monitoring (Collector Air Flow)</u> Level 1: Service Collector Light at <1 iwg
<u>2<sup>nd</sup> Stage Monitoring: (Cartridge Filters)</u> Level 1: Pulse Clean at 3 iwg Level 2: Replace Cartridge Filter Light at 4 iwg
<u>3<sup>rd</sup> Stage Monitoring: (DOP Filters)</u> Level 1: Replace DOP Filter Light at 3 iwg Level 2: Unit Shuts Down at 4 iwg

## 5.0 Preventive Maintenance Plan (PMP)

This section covers the following:

- a. Maintenance tasks for the dust and mist collectors used in controlling the emissions from the operations of the dry and wet machining stations respectively.
- b. Identification of supervisory personnel responsible for maintenance, repairs and inspection of completed tasks on air pollution control devices.
- c. Description of items to be inspected, their frequency and an inventory of major replacement parts which shall be maintained

5.1 All maintenance activities and schedules in **Reference 3 & 4** are, at a minimum, to follow the manufacturers' recommendations for all mist and dust collectors in **Reference 1**.

5.2 The maintenance activities and schedules are entered into the TMS system during the initial installation of the emission unit. The TMS system provides advanced notifications for upcoming maintenance activities, generates work tickets, monitors work progress and maintains a history of completed maintenance activities for each EU-Dry Machine and EU-Wet Machine emission unit air pollution control device and their associated meters, mechanisms and filters. The elements of this plan will be incorporated into the Total Maintenance System (TMS).

5.3 Responsibilities

**5.3.1 Environmental Specialist and/or Facility EHS Group** — Provides guidance regarding the required engineering controls and/or maintenance procedures required by the facility air permit.

**5.3.2 Facilities Manager** — Responsible for assuring that Facilities personnel are conducting the required preventative maintenance activities and/or follow-ups.

**5.3.3 Facilities Maintenance Department**

5.3.3.1 Develop and/or specify engineering controls for air pollution control equipment for dry and wet machining operations.

- 5.3.3.2 Responsible for performing required preventive maintenance on dry and wet machining air pollution control equipment.
  - 5.3.3.3 Monitor equipment during malfunction events.
  - 5.3.3.4 Create and implement corrective action plans, as necessary.
  - 5.3.3.5 Utilize the TMS to track, record, and provide follow-up to required PM activities.
- 5.4 All major replacement parts for Mist and Dust Collectors are listed in **Reference 2** and are tracked in TMS and/or with the Facilities Department.
- 5.5 The inventory of each part is determined by the Facilities Department and a minimum order quantity is determined based on historic usage data, condition of the machine, etc.

## 6.0 Corrective Procedures to Achieve Compliance

This procedure consists of corrective actions in case of a failure during operations.

- 6.1 **Reference 5** covers different levels of air cleaning and variables monitored in the existing mist and dust collectors per the manufacturer's specifications.
- 6.2 **Reference 2** contains major replacement components and their respective replacement time.
- 6.3 From plant's prior experience, malfunctions for mist and dust collectors would result in replacement of one or more of the components defined in **Reference 2**. The time-frames for repair may vary due to location in the plant, accessibility for repairs, and time when malfunction occurs.
- 6.4 In the event that a malfunction occurs, resulting in the release of dust or mist that impacts the air quality as determined by the Plant Environment, Health and Safety Group, causing the plant to exceed the permitted levels, specific action will be taken to bring the plant back into compliance. Whenever required, overtime, off-shift labor, outside consultants, and/or contractors will be utilized where reasonable to minimize effects of the malfunction or release of excess emissions.
- 6.5 If the MAP fails to adequately address a malfunction event, the Environmental Specialist and Facilities Group shall revise the MAP within 45 days to address the shortcoming of the plan. The new MAP shall then be submitted to Michigan Department of Environmental Quality for approval.