

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

A864848616

FACILITY: FORD MOTOR CO ROUGE COMPLEX		SRN / ID: A8648
LOCATION: 3001 MILLER RD, DEARBORN		DISTRICT: Detroit
CITY: DEARBORN		COUNTY: WAYNE
CONTACT: Kimberly Cole , Environmental Engineer - Rouge Complex		ACTIVITY DATE: 02/21/2019
STAFF: Robert Byrnes	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: 2019 Scheduled Inspection, Section 1.		
RESOLVED COMPLAINTS:		

On February 21, 2019, Jay Olaguer and I visited the Ford Dearborn Truck Plant to conduct an announced air quality inspection. I arrived at the facility at approximately 9:15 am and met with Kim Cole, Mike Ostrach, Rob Williams of Ford and Jay from GZA. The purpose of this inspection was to determine compliance with MI-ROP-A8648-2015. No visible emissions were observed nor were any odors detected from the security parking lot at the time of entry to the plant. The Ford Dearborn Assembly Plant manufacturers, paints and assembles Ford F-150 pick-up trucks. The facility currently runs 2 shifts, 10 hours Monday through Friday. 1 shift, 10 hours on both Saturday and Sunday. Occasionally there are what they call "super Sat. or Sun, in which they run 2 shift 10 hours on those days or holidays. The facility is a major source of VOC/HAP and is cover by ROP MI-ROP-A8648-2015.

The inspection began with a pre-meeting where we planned the walkthrough portion of the site visit. During that time, we discussed the records we were looking to obtain, the 10-day MAP/O&M reports, any recent changes or new projects coming up, and work schedule. No recent changes have been made to the facility and one likely change may occur during the July 2019 shut down. Ford will likely abandon the existing fluidized bed and prime RTO and duct the prime booth emissions to the main Topcoat RTO. The 2-week shutdown period will allow for the construction of new duct work, any additional booth recirculation and then finally switching over upon start up to prime emissions going to the main RTO. This change will be reportable as a deviation until a PTI has changed to remove the fluidized bed and RTO references in the prime system and change them to the rotary concentrator and main RTO. Ford initially applied for an ROP modification to make the change, both Karen Owens and I agreed this needed a PTI and the ROP mod was sent back while informing Ford they must get a PTI for the change. The majority of this site inspection focused on discussions about the 10-day malfunction reports, a walk through the plant to observe processes operating and to obtain operational parameters from the VOC abatement equipment.

VOC Controls

The facility uses carbon wheel concentrators to concentrate VOC emissions from the topcoat auto booths. The concentrators then send the VOC laden air to a 3 cell RTO which also controls the emissions from the E-coat tank, E-coat cure oven, the prime cure oven and the topcoat cure ovens. Operating parameters have been established from performance tests which demonstrate the control devices are installed, maintained and operated in a satisfactory manner. The facility also uses a fluidized bed concentrator and an RTO to control the emissions from the prime coat auto booths.

The following operational parameters were recorded during the day of the inspection:

Prime Abatement System

Adsorber differential pressure – did not observe

Adsorber tray differential pressure – did not observe

Desorber tray differential pressure - did not observe

Desorption temps from top to bottom 63.9, 277.8, 586.2, 191.2 (previously 98.7, 285.1, 648.5, 256.1), (previously 85, 347, 501, 240) degree Fahrenheit

Oxidizer 1486 (previously 1417 & 1422) degrees Fahrenheit

The recording devices on the oxidizers, concentrators and chart recorders were previously calibrated on 11/25/18 according to the records obtained from Ford. Although the Calibration Certificate records showed units that were calibrated there was no indication of what was calibrated other than Dearborn Paint Plant. Equipment information included ID's, serial number, manufacturer, inst. Type, model number and Temp./RH were on the certificates but I had no way of telling what was certified. All records do state the results as "pass" and 2 of the certificates were "found" in the 1400 degree Fahrenheit range and were also "left" in that range so I assumed at

a minimum those were likely the RTO certificates.

Topcoat Abatement System

The Topcoat abatement equipment consists of 2 rotary carbon wheels followed by a 3 tower RTO. The main abatement systems controls the E-coat, prime, color 1 & 2 ovens which are sent directly to the RTO and the CC 1 & 2 bells and e-coat dip tank which are sent to the concentrator wheels and then the RTO for VOC abatement. The following operational parameters were recorded:

- Concentrator Desorb 370 (previously 375 & 391) degrees Fahrenheit
- Concentrator Outlet Temperature - did not observe (previously 258 & 244) degrees Fahrenheit
- Exhaust Temperature - did not observe (previously 90 degrees Fahrenheit).
- RTO inlet temperature 291 (previously 261) degrees F
- Pressure drop 8.4" (previously 1.39 & 1.59") wc
- Average chamber temperature 1486 (previously 1532 & 1506), degrees Fahrenheit
- Outlet temperature 346 (previously 348 & 350) degrees Fahrenheit

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Control Device Maintenance Reports & Maintenance Work Order Details

A copy of the Preventative Maintenance (PM) reports was requested as part of the inspection. Ford has the inspections conducted by PCE Monarch. Review of these reports show the date added, the equipment, priority, description, recommended action/notes and action taken/status. Most items required no action and those that needed fixed or replaced generally had an action taken within 4 months. KZR seals seem to have the need to always have seals replaced. This report notes the vendor was not available for December 2018 shutdown, so it was scheduled for July 2019 shutdown. This seems like too much of an extended time given the inspection was conducted on 8/30/18 (or the report as written?) so the repair will take over 11 months. A copy of the PCE Monarch report is included with the hard copy in the file.

FG-Facility

A review of the most recent emission data for the month of December 2018 was reviewed for compliance with the emission and material limits in FG-Facility as follows:

Limit	Permit Limit	December 2018 Actual Emissions	Compliance?
VOC	897 tons per 12 month rolling time period	776.0 tpy	Yes
VOC	4.8 Lbs VOC/Job per 12 month rolling time period	4.2	Yes
NOx	79.5 tons per 12 month rolling time period	44.7 tons	Yes
PM 10	19.0 tons per 12 month rolling time period	10.3 tons	Yes
Natural Gas	1600 MMCF/12 month rolling time period	998 MMCF	Yes

A copy of the December 2018 emission reports can be found attached to the hard copy of this report.

Further review of the emission records found 3 items I was having difficulty

- E-coat product bulletin values (item 2 VOC contents and solids content) don't appear to match those used in the calculations (item 9c).
- Basecoat volume solids values (item 3 solids content) doesn't appear to be close to the values used in the calculations (item 9b).
- Also, I'm having difficulty following the purge/clean materials (items 6 & 7) and how they relate to the emissions rates (item 9 facility compliance demonstration)

A response via e-mail from Kimberly Cole was received on June 3, 2019.

The e-coat materials were switched in January 2019 so I received the new material SDS vs. the older one which was used for the December 2018 emission data which I received. The new SDS matches the solids content used in the emission calculations.

The basecoat analysis was for Oxford White which was one of the highest %solids values. A different basecoat analysis was provided which shows a more typical lower % solids value. The new basecoat is more reflective (Ingot Silver @ 19.7% solids vs. Oxford White @ 31% solids) of the calculations using an average of 24% solids.

For the Purge/clean materials report it was noted just the monthly values were provided which is complicated to review. The response included daily purge/clean emission report data including the purge control factor. This information allowed for the verification of the miscellaneous solvent emission data.

Particulate Controls

Records were obtained for both the water wash system and for the paint repair spot repair decks (1-3) as well as the pressure drops across the concentrators.

Water wash records were obtained for January 2018 of which inspections were conducted on 1/3, 1/10, 1/17, 1/24 and 1/31. These records show no issues and document booth pressure drop readings have been recorded, pump amperage and psi were checked, flood sheets and headers visually inspected, any repairs completed or reported and date/time of inspection. Also, during the walkthrough portion of the inspection the waterflow across the booth floor (flood sheets?) was checked for obstruction to flow and none was found during this inspection.

Dry filter records were obtained for January 2018 of which inspections were conducted on 1/3, 1/10, 1/17, 1/24 and 1/29. These records show the pressure drops for E-coat scuff, Topcoat scuff, Prime scuff, and the black-out wax booth. Records also show the if the filter condition was acceptable for the paint building spot repair decks (1-3). All records for these 5 weeks showed acceptable filters and pressure drops. The only exception would be for the first two weeks, additional information on the pages shows that carbon wheel (ceramic) #2 had 0.00 pressure drop which could possibly indicate a faulty reading or a device that wasn't online during a production or non-production period.

Conclusion:

This inspection did not review all the details of the facility but did included a visit to final assembly and then mostly concentrated on the paint shop and the abatement equipment. Records obtained included 14 separate attachments to this report which were reviewed. Those records included: Filter/Water wash records and December 2018 emission data for E-coat, Guidecoat, Topcoat, Miscellaneous Solvents, Repair, Facility and controls; auto protocol annual reviews for 2017 and 2018; PCE Monarch abatement equipment inspections; thermocouple validation results; thermal oxidizer down time data for February 17, 2019; natural gas records, December 2018 NOx, CO and PM10 emission summary data. The inspection, records review and observed activities appeared to be in compliance with the MI-ROP-A8648-2015 requirements.

NAME  DATE 6/26/19 SUPERVISOR 