MRRT Approaches Approved in Pilot Permits

Source	Key Emissions Monitoring, Recordkeeping, Reporting, and Testing Requirements
3M St. Paul, Minnesota	• Mass balance approach to VOC emissions measurement; applies an overall control efficiency (capture and destruction) to the VOC input (derived from material usage tracking system); parametric monitoring is conducted of selected control system operating parameters (e.g., combustion temperature, exhaust gas flow). • Control device performance testing is required every two years for both capture efficiency and destruction efficiency. • Uncontrolled fugitive emissions from churn and mogul rooms measured by CEMS. • Daily calculation of VOC emissions from all emissions units (required within 41 hours) are maintained on-site. • Quarterly reporting to MPCA of daily plant-wide VOC emissions and 365-day rolling totals.
DaimlerChrysler Newark, Delaware	• Mass balance approach to VOC emissions measurement, based on EPA's "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations" (EPA-450/3-88-018, December 1988); parametric monitoring is conducted of selected control system (RTO) operating parameters (e.g., combustion temperature, inlet pressure); booth/oven splits, transfer efficiency, and incinerator efficiencies used in calculations are based on the most recent tests completed using the protocol. • Compliance with EDP primecoat operations is demonstrated pursuant to procedures in New Source Performance Standards (40 CFR 60.393 (c)(2)) through the use of capture and control. VOC RACT standards apply to the miscellaneous metal parts coating and final repair operations and dictate the compliance method. Compliance with these limits is demonstrated through the use of complying coatings or daily weighted averages. • Oven burners and miscellaneous NOx sources use AP-42 emission factors in conjunction with monitored parameters to calculate emissions; source-specific emission factors were developed for the antichip, topcoat and EDP primecoat incinerators and the boilers. • Monthly reporting to DNREC of plant-wide VOC and NOx emissions (daily, monthly, and 12-month rolling totals).
Imation Weatherford, Oklahoma	• Mass balance approach to VOC emissions measurement; parametric monitoring is conducted for all capture and control devices (RTO, catalytic oxidizer, and carbon adsorber). • Criteria air pollutant emissions are determined using fuel type, monthly fuel usage to the boilers and oxidizers, and appropriate AP-42 emission factors. • Daily and monthly calculation of VOC emissions (prorated hourly, daily, and 12-month rolling totals) are maintained on-site.
Intel Aloha, Oregon	• Mass balance approach to VOC emissions measurement; bi-monthly VOC emissions based on actual solvent monitoring; bimonthly emissions data with production activity data (i.e., total surface area of wafers processed, square centimeters[cm2]) provides the information necessary to calculate an overall emission factor (EF) for the fab. Using the recent bimonthly EF with weekly production data provides total weekly VOC emissions (tons/wk). • Criteria air pollutant emissions are determined using fuel type, monthly fuel usage to the boilers and oxidizers, and appropriate AP-42 emission factors, except for Emission Unit 3 boiler's NOx and CO emission factors which are based on manufacturer's data and verified by source test.
Lasco Bathware Yelm, Washington	• VOC emissions calculations based on raw material usage, VOC (styrene) content of the raw materials, and site-specific emission factors (pounds [lbs.] of emissions per lb. of styrene); site-specific emissions factors are based on source testing; material usage is calculated on a daily basis. • Monthly plant-wide VOC emissions are calculated each month, along with 12-month rolling totals.
Saturn Spring Hill, Tennessee	• Mass balance approach to VOC emissions measurement, based on EPA's "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations" (EPA-450/3-88-018, December 1988); parametric monitoring is conducted of selected control system operating parameters (e.g., combustion temperature, exhaust gas flow rates); booth/oven splits, transfer efficiency, and incinerator efficiencies used in calculations are based on the most recent tests completed using the protocol. • Criteria air pollutant emissions are determined using monthly natural gas usage data and appropriate AP-42 emission factors. • Monthly calculation of monthly and 12-month rolling plant-wide VOC emissions totals.

Source: EPA, *Evaluation of Implementation Experiences with Innovative Air Permits: Results of the U.S. EPA Flexible Permit Implementation Review*. http://www.epa.gov/ttn/oarpg/t5/memoranda/iap_eier.pdf