



# ***C & E Advisor***

## **BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

### **Compliance & Enforcement Division June 9, 2004**

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This Advisory is provided to inform you about activities of the District which may affect your operation. It is intended to assist you in your effort to achieve and maintain compliance with applicable air pollution rules and regulations.

#### **ATTENTION: PETROLEUM REFINERIES**

#### **ADVISORY FOR REGULATION 12, RULE 11**

#### **FLARE MONITORING AT PETROLEUM REFINERIES**

On June 4, 2003, the District Board of Directors adopted Regulation 12, Rule 11, Flare Monitoring at Petroleum Refineries. The purpose of this rule is to require monitoring and recording of emission data for flares at petroleum refineries. It requires operators of flares at petroleum refineries to monitor the gases directed to the flare and submit a monthly report containing the total volumetric flow and composition of the vent, pilot and purge gas, the calculated methane, non-methane and sulfur dioxide emissions, the molecular weight given by the flow meter, and the archive images of the flare.

#### **VENT GAS FLOW MONITORING**

Section 12-11-401.1 requires the monthly report to contain the total volumetric flow of vent gas in standard cubic feet for each day and for the month, and, effective for the first full month after the commencement of the monitoring required by Section 12-11-501, for each hour of the month. The monitor's raw data must be submitted to the District. No engineering determinations should be made to correct the flow data. A monthly report without complete volumetric flow raw data will be considered deficient.

Effective June 4, 2004, and every six months thereafter, a flow verification report is required for each flare subject to the rule. For purposes of verification, the options are traditional methods including ST-17 and ST-18, EPA methods 1 and 2, or any verification method recommended by the manufacturer of the flow monitoring equipment. In addition, other flow monitoring devices or process monitors, tracer gas dilution or velocity, or any alternative method approved by the APCO and EPA may be used. Effective December 4, 2004, the flow monitoring system shall be maintained to be accurate to within  $\pm 20\%$ .

#### **COMPOSITION MONITORING**

Effective April 1, 2004, the sample trigger for non-continuous monitoring occurs when the flow rate of vent gas flared in any consecutive 15-minute period continuously exceeds 330 standard cubic feet per minute (SCFM). Section 12-11-506.4 requires a flow data collection system capable of recording one-minute averages. This flow rate information shall be used for verifying the sample trigger. Section 12-11-505 requires maintaining these records for five years.

### **PILOT MONITORING**

If a pilot flame is employed, the flame shall be monitored with a device to detect the presence of the pilot flame. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. Other equivalent devices include acoustic sensors, flame ionization or infrared detectors.

### **GENERAL MONITORING REQUIREMENTS**

Periods of flare monitoring system inoperation greater than 24 continuous hours shall be reported by the following working day, followed by notification of resumption of monitoring. Periods of inoperation of the vent gas flow monitoring system and the integrated sampling shall not exceed 30 days per calendar year. Effective October 1, 2004, periods of inoperation of the continuous analyzer, if used for determination of vent gas composition, and the video monitoring, shall not exceed 30 days per calendar year. There is no downtime provision for vent gas composition monitoring if done by grab sampling. Facilities shall report downtime using the episode report forms.

### **VIDEO MONITORING**

The recorded image of the flare shall be of sufficient size, contrast, and resolution to be readily apparent in the overall image or frame. The submitted archive of images shall in a format that is readily accessible and free of charge. It must be an open format commonly available on the internet. Proprietary file formats are not acceptable.

### **REPORTING REQUIREMENTS**

The flare data reporting requirements in Section 12-11-401 state that the report format shall be an electronic format approved by the District. The submittal shall consist of a cover letter addressed to Director of Enforcement, Mail Stop FM1, a hardcopy version of the report, and a spreadsheet (typically Microsoft Excel) on a floppy disc, CD, or DVD.

### **EMISSION CALCULATIONS**

Section 12-11-401.9 requires reporting of the calculated methane, non-methane and sulfur dioxide emissions. The intent of the calculated non-methane emissions is to obtain the non-methane hydrocarbon emissions. For the purposes of calculating the non-methane hydrocarbon emissions, use the molecular weight of the non-methane hydrocarbon portion of the sample and the mole fraction of the non-methane hydrocarbon portion.

Sections 12-11-401.2 and 12-11-401.3 require reporting of the total hydrocarbon content as propane by volume for those days when sampling is required. If the content of any additional compound(s) is determined by the analysis of a sample, then the content by volume of those compounds must be reported.

All prior monthly reports should be reviewed for any omissions and resubmitted with the next monthly report. For further questions on District Regulation 12, Rule 11, call Douglas Tolar at (415) 749-5118 or e-mail at [dtolar@baaqmd.gov](mailto:dtolar@baaqmd.gov).

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