

**Bay Area Air Quality Management District  
939 Ellis Street  
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**Bay Area Air Quality Management District**

**Manual of Procedures**

**Volume IV ST- 40**

**Volume VI - Air Monitoring Procedures**

**Volume IX - Water Sampling Procedure**

**MOP**

**Workshop Report**

**March 16, 2016**

## I. INTRODUCTION

This workshop report provides information regarding the intended adoption by the Bay Area Air Quality Management District (BAAQMD or Air District) of two new procedures for incorporation into the Manual of Procedures (MOP), and proposed amendments to an existing MOP Air Monitoring Procedure.

The MOP is a compilation of technical specifications for various procedures to be used by the regulated community to demonstrate compliance with Air District rules. The document consists of eight volumes of required methods for Enforcement Procedures, Engineering Permitting Procedures, Laboratory Policy and Procedures, Source Test Policy and Procedures, Continuous Emission Monitoring Policy and Procedures, Air Monitoring Procedures, Guidelines for Environmental Processes as well as Procedures for Calculating and Generating Mobile Source Emission Reduction Credits.<sup>1</sup>

When the Air District adopted amendments to Rule 11-10 in December 2016, staff stated that new MOP procedures for total hydrocarbon (THC) leak detection methods would be adopted ahead of the July 1, 2016 implementation date for Rule 11-10. It is important for the local petroleum refinery industry to have access to Air District-approved guidelines to study them and to conduct test runs on cooling tower water detection methods prior to July 1, 2016.

In order to have the appropriate procedures available for complying with Rule 11-10, staff recommends the adoption of a new water sampling procedure, a new laboratory water analysis procedure and a new air stripping procedure. Each of these relate to the detection of THC concentrations in petroleum refinery cooling tower water. Similarly, MOP Volume IV, ST- 40, has been developed to provide guidelines for an air stripping procedure that is one of three options refineries may use to detect THC concentrations in cooling tower water.

Furthermore, amendments to Volume VI of the MOP's Air Monitoring Procedures provide updated guidelines that ensure that meteorological data is measured accurately and representatively. This change is unrelated to the procedures needed for Rule 11-10, but is a relatively straightforward update that the staff would like to make at this time.

There are several other parts of the MOP that need to be updated. Due to the urgency of the requirements for Rule 11-10, staff would like to focus this update of the MOP on these four items. Staff will coordinate closely with stakeholders on the other technical updates to the MOP.

The Air District will hold a public workshop to discuss the draft procedures and invite participation in the workshop and written comments on any aspect of the proposal. When staff finalizes the new draft MOP procedure in Volume IV, the amended procedure in Volume VI, cooling tower water sampling and laboratory analysis procedures in Volume IX, and the staff report, they will be submitted for consideration by the Air District's Board of Directors. It should be noted that the laboratory analysis procedure is incorporated into the water sampling procedure.

## **II. PROPOSED MOP UPDATES**

### **A. MOP Volume IV ST-40**

Rule 11-10, Section 304.3 provides petroleum refineries the option of using the Modified El Paso Method (MEPM) as an approved THC leak detection method. The (MEPM) is an air-stripping procedure that was developed in Texas to quantify the concentration of Highly Reactive Volatile Organic Compounds (HRVOC) in petroleum refinery cooling tower water. This procedure is currently used by some refineries in Texas to comply with the leak requirements in the Texas Commission on Environmental Quality (TCEQ) Chapter 115 – Control of Air Pollution from Volatile Organic Compounds, SUBSHAPTER H: HIGHLY-REACTIVE VOLATILE COMPOUNDS. The MEPM is also approved by the US EPA for use by petroleum refineries to comply with leak detection requirements in Section 63.654 of the MACT CC. While the MEPM, as it is currently specified, is a satisfactory leak detection procedure for TCEQ requirements for HRVOC leaks, as well as EPA MACT CC requirements, it contains limitations that staff has addressed to make it more suitable as a THC leak detection methodology. Due to concerns that the current method does not provide enough guidance and clarity to ensure that the MEPM procedure can be completed uniformly throughout the Bay Area, and to ensure that equipment used for this procedure reduces error to the maximum extent possible, the Air District is clarifying and, where needed, modifying the method to ensure repeatable, accurate results. The new procedure, titled ST- 40, is intended to be incorporated into Volume IV of the MOP.

### **B. MOP Volume IX, Water Sampling Procedure**

Currently, the MOP does not have a water sampling procedure for THC concentration analysis. As one of three approved THC leak detection methods, Rule 11-10, Section 304.1 provides petroleum refineries the option of analyzing cooling tower water samples in a laboratory for THC concentration. Refineries that choose this detection method will be required to use the Procedure - 1 in MOP Volume IX to sample cooling water. The purpose of Volume IX, Procedure - 1 is twofold. The procedure will ensure that petroleum refineries consistently extract water samples that are representative of cooling tower water circulating in the heat exchanger system. The MOP water sampling procedure will also ensure the integrity of the sample so when it transported to a lab for analysis, the results of the THC concentration analysis will be repeatable and accurate.

Currently, the MOP does not have a water analysis procedure for THC concentration analysis in cooling tower water. As one of three approved THC leak detection methods, Rule 11-10, Section 304.1 provides petroleum refineries the option of having cooling tower water analyzed in a laboratory for THC concentration. Refineries that choose this detection method will be required to use the laboratory procedure referenced in Volume IX, Procedure -1, Section 9 of the MOP to analyze cooling water for THC concentration. The purpose of this new MOP procedure is to ensure that the results from the cooling tower water laboratory analysis are repeatable and accurate.

### **C. MOP Volume VI, Air Monitoring Procedures**

Volume VI of the MOP is being updated to bring instrument operating guidelines in accordance with current EPA requirements as outlined in EPA's QA Handbook for Air Pollution Measurement Systems, Volume II, EPA-454/B-13-003. The updated procedure removes outdated calibration procedures, increases the frequency with which data collected by the required instrumentation is reviewed, and requires the submission of data on a daily basis for Air District review. Additionally, the updated air monitoring procedure requires a website to provide displays of H<sub>2</sub>S, SO<sub>2</sub>, and meteorological data to provide a means for the public to view the data.

### **III. MOP AMENDMENTS / PUBLIC CONSULTATION PROCESS**

When staff developed the amendments to Regulation 11, Rule 10, Hexavalent Chromium Emissions from All Cooling Towers and Total Hydrocarbon Emissions from Petroleum Refinery Cooling Towers, Bay Area petroleum refineries were informed that a water sampling methodology and a water laboratory analysis methodology would be developed to provide guidance to industry if they opted to use Rule 11-10, Section 304.1 as the method to detect THC leaks in cooling tower heat exchanger systems. Similarly, staff informed industry that the MEPM would be clarified and updated for Air District approval as a THC concentration detection method for refineries that opt to use 11-10, Section 304.3 as a THC detection method. It was mentioned again at the public hearing to adopt the amendments to Rule 11-10.

The Air District will conduct a public workshop to solicit comments from the public regarding the draft new and amended procedures for the MOP. During the workshop, Air District staff will seek comments and answer questions on material presented in this report. Staff will review and consider all comments received during the public workshop and revise the proposal as appropriate.

Staff is specifically seeking comment on the feasibility of the draft procedures from affected facilities and other interested parties.

Staff will prepare final draft procedures for the MOP and staff report that will be available for public comment prior to a public hearing before the Air District's Board of Directors in May 18, 2016.

### **IV REFERENCES**

<sup>1</sup> Bay Area Air Quality Management District Manual of Procedures:  
<http://www.baaqmd.gov/publications/manual-of-procedures>.