AIR MONITROING FIELD TRAINING PROGRAM FOR STATION OPERATORS AND CALIBRATION STAFF

First Edition

MONITORING AND LABORATORY DIVISION

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Approval of Standard Operating Procedures

Title:	Air Monitoring Field Training Program
Section:	Operations and Data Support
Branch:	Air Quality Surveillance Branch (AQSB)
Division:	Monitoring and Laboratory Division (MLD)
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LIST OF ACRONYMS

AMNS - Air Monitoring North Section
AMSS - Air Monitoring North Section
AQSB - Air Quality Surveillance Branch
APTI - Air Pollution Training Institute
CARB - California Air Resources Board
CFR - Code of Federal Regulations
MLD - Monitoring and Laboratory Division
NLB - Northern Laboratory Branch
ODSS - Operations and Data Support Section
OJT – On-the-Job Training
NIST - National Institute of Standards and Technology
PQAO - Primary Quality Assurance Organization
PST – Pacific Standard Time
QA – Quality Assurance
QAS – Quality Assurance Section
QA/QC - Quality Control/Quality Assurance
QFT – Qualified Field Trainer
QMB - Quality Management Branch
SOP - Standard Operating Procedure
U.S.EPA – United States Environmental Protection Agency

AIR MONITORING TRAINING PROGRAM

1.0 Introduction

The purpose of this document is to outline the Air Quality Surveillance Branch's (AQSB) Air Monitoring Field Training Program.

2.0 Overview

The field training program is designed to provide new AQSB air monitoring personnel, station operators and calibration staff ("calibrator"), with the necessary training that will allow staff to become proficient with their primary job functions as air monitoring professionals.

This training program primarily consists of web-based on-line training and on-the-job training (OJT) conducted by qualified field trainers (QFT) and supervised by AQSB section managers.

On-line courses are provided through the U.S. Environmental Protection Agency's (U.S. EPA) Air Pollution Training Institute (APTI), California Air Resources Board (CARB) Air Quality Training Program, and the Primary Quality Assurance Organization (PQAO) training process.

OJT is provided in-house by personnel deemed qualified by respective section managers. OJT is customized training for each new staff (trainee) and is tailored to their specific job duties, skills set, and existing knowledge base.

These training methods are used to develop a skill set unique to air monitoring field work. While on-line training is typically conducted in the office, most of the OJT will be conducted in the field while performing air monitoring activities at air monitoring stations. Over the course of the first year working as a station operator or calibrator, new air monitoring field staff will learn the various aspects of air monitoring functions while operating monitors and samplers or performing calibrations at air monitoring stations.

Once trained, the trainee will perform field activities under observation by the QFT or manager to prove proficiency prior to working in the field independently and subsequently when new types of equipment or methods are implemented.

Some training is required on a continuous basis as indicated on individual training plans. Other routine CARB specified administrative training is required but not addressed in this document (e.g. Internet Security, Sexual Harassment Prevention, etc.).

3.0 Air Monitoring Field Training Team Members

The air monitoring field training team consists of the air monitoring manager, the designated qualified field trainer (QFT), and the trainee. Each has distinct responsibilities, as detailed below, to ensure the trainee has the tools and information needed to become proficient as a station operator or calibrator.

Air Monitoring Manager: The manager is responsible for initiating field training for each trainee, monitoring the progress of training, and documenting all training received. Responsibilities of the manager with respect to the training program are as follows:

- Develop an individualized training plan for the trainee by identifying the knowledge and skills needed by trainee to accomplish assigned duties,
- Designate QFTs
- Match trainee with an appropriate QFT,
- Assess the QFT's ability to transfer knowledge and skills to the trainee,
- Work closely with the QFT and trainee to ensure the expectations and roles are clearly defined,
- Provide direction to the QFT and trainee during training period,
- Evaluate and monitor the trainee's progress and proficiency, and document when training is complete.

Qualified Field Trainer: The QFT should be a trained site operator or calibration staff with a minimum of three years' experience in the AQSB. The QFT should be someone with a demonstrated operational proficiency, good communication skills, have lead person experience, and possess the ability to effectively transfer knowledge. It is the decision of the manager to designate appropriate QFTs. Responsibilities of the QFT with respect to the training program are as follows:

- Plan and implement the training established by the manager,
- Develop a good working relationship with and mentor the trainee,
- Transfer knowledge and teach skills to the trainee using various methods (oral, visual, and tactile) to accommodate individual learning styles,
- Complete the training within the timeframe specified in the training plan.

The QFT will be the first point of contact for the trainee when he or she has questions. The QFT will offer technical advice and guidance to help foster and promote skills and professional development over the course of the training period. The QFT will also provide information about the Division's culture, day-to-day procedures, and policies.

Trainee: The trainee is responsible for being an interactive learner, developing a good working relationship with the field trainer, and demonstrating acquired knowledge and aptitude while mastering the material taught.

4.0 Selecting and Preparing Qualified Field Trainers

The foundation of the training program is the knowledge and skills of its QFTs. QFTs must be proficient and highly skilled in the jobs which they are teaching and also be capable of understanding how best to share their knowledge and skills with the trainee.

In addition to expertise, the manager selects QFTs based on their skill sets, ability and interest to train, and their ability to successfully interact with the trainee. Staff designated as QFTs should attend the following Cal HR courses before conducting field training duties:

- Lead Person Workshop and Problem Solving
- Decision Making
- Completed Staff Work for Technical Staff

5.0 Trainee's Role in Air Monitoring Field Training Program

Trainees must be active participants in the field training program. Trainees will observe demonstrations of procedures performed by their QFT or other designated qualified personnel consistent with their classification. After completing the field training program, the trainee should be able to demonstrate proficiency for the job duties assigned.

Trainees need to understand the importance of field training and how it aids in developing their skills. For the trainee-QFT relationship to succeed, the trainee must be ready to learn, be open to communicating honestly, ask questions to ensure their understanding of the training topic, and be respectful of his or her assigned QFT.

Trainees must become familiar with all work-related documents, adept with procedures, and versed in regulatory requirements of the position. Successfully meeting the training requirements may factor into the probationary report or annual performance evaluation.

6.0 Training Plan

An individual training plan must be developed for each trainee based on the skills they need to acquire or enhance and to become familiar with AQSB policies and procedures. The plan must include training events and timelines for completion.

An example of a training plan is illustrated in Appendix A. It should be tailored to each trainee's needs and the specific job duty requirements determined by their classification and intended operational duties. The training plan includes the following sections:

- CARB Overview
- General Field Training
- Station Operator Training
- Calibration Training
- Documentation Review
- Data Systems and Data Review Tools

7.0 Trainee Review and Documentation

The two critical components of the training program are trainee review and documentation. Monitoring and reviewing a trainee's progress are the responsibility of the manager with input from the QFT. During the training process, the QFT must provide feedback to the trainee as well as the manager to improve the quality of the training, identify and address areas of improvement, and to determine that training goals have been met. The training plan will help define expectations and allow the trainee to monitor his or her progress.

Trainee Review

The manager will perform regular evaluations by way of the completion of courses and tasks on the training plan with demonstrations of proficiency. Additional training may be required if proficiency is not demonstrated. Evaluating and documenting trainee performance improves communication and guides the trainee toward enhancing his or her skills. At least three times during the training period the manager will formally observe, evaluate, and document the trainee's field training performance to determine progress towards training goals and to offer suggestions to improve the trainee's skills. These reviews should occur at four, eight, and twelve months from the start of training and be documented in the trainee's probationary reports.

Four Month Review

The manager will observe the trainee during an actual site visit or calibration trip. At this point, the trainee is expected to have read the appropriate standard operating procedures and manuals for equipment he or she will be operating, be familiar with health and safety procedures for air monitoring operations, and have taken training as indicated on his or her training plan.

Eight Month Review

A trainee is expected to be able to perform basic station monitoring operations or calibration tasks and demonstrate sound judgement with minimal assistance by eight months. The manager will accompany the trainee on a typical site visit to evaluate the trainee's ability to complete the assigned site operations or calibration functions independently.

Twelve Month Review

A final evaluation is conducted at one year from the start of training. The manager will evaluate the trainee's ability to perform station or calibration operations with minimal assistance. The station used for evaluation should utilize most, if not all, instrumentation that the trainee is responsible to operate or calibrate in order for the manager to evaluate the trainee's progress.

8.0 Training Documentation

Documentation of a trainee's progress is critical to the success of training. If training is not documented, it is reasonable to assume the training did not occur. The training plan should be used to track the overall progress of training. It lists key tasks and training events, the expected completion date, and the actual date each task or training event was completed. The manager initials the form for each training task completed successfully. For training events where a trainee receives a completion certificate, the manager will keep the certificate in the trainee's file. When all training has been completed and the trainee has demonstrated proficiency in station operation or calibration, the manager will sign the training document indicating expectations have been met and the trainee can work independently.

Appendix A: Example Field Training Plan

Start date: _____

US EPA and CARB Basic Training

Course	Expected Completion Date	Date Completed	Trainer's Initials
• AP101: Air Academy Online Training (AAOT)	(i.e. within 3 months of start)		
• AP102: Air Quality Training Program (AQTP) - Online Training			
• Primary Quality Assurance Organization - Module 1 (Fundamentals of Air Monitoring and Station Setup and Operation)			
• Primary Quality Assurance Organization - Module 2 (Data Validation)			
• APTI RE-100-1: Basic Concepts in Environmental Sciences - Module 1: Basic Concepts			
• APTI SI-474: Introduction to Environmental Statistics			
• APTI SI-409: Basic Air Pollution Meteorology			
• Tour of CARB Facilities (Sacramento) o Sacramento T-Street monitoring station o Instrument repair shop o Stockroom and warehouse o Standards laboratory o Inorganic and organics laboratories			

General Field Training

Task	Expected Date	Date Completed	Trainer's Initials
• Defensive Driver Training (annual requirement)			
• Heat Illness Prevention Training (annual requirement)			
• Climbing and Safety Training (initial and annual refresher required)			
• Orientation to sites of responsibility			
• Site routine operation schedules			
• Site maintenance			
• Residence time calculations			

Site Operator Training

Task	Expected Date	Date Completed	Trainer's Initials
• Instrument specific orientation Each instrument has a check sheet listing areas covered (attach when completed), SOP's			
• Instrument specific monthly QC forms			
• Site Operating Principles			
• Sample shipping, media, calendar schedule and sample storage			
• Field Documentation o Log book entries o Monthly Flow Report o Nightly calibrations o Precision reporting			
• Quality Assurance o Standards and Certifications o Air Quality Data Actions (AQDA) o Corrective Action Notifications (CAN) o Audits, Trace, Flow, EPA-TSA			

Calibrator Training

Task	Expected Date	Date Completed	Trainer's Initials
• Instrument specific monthly QC forms			
• Instrument specific orientation Each instrument has a check sheet listing areas covered (attach when completed)			
• Calibration Principles			
• Use of Transfer Standards			
• Calibration Documentation o Calibration reports o Air Quality Data Actions (AQDA) o Corrective Action Notifications (CAN)			

Documentation Review

Task	Expected Date	Date Completed	Trainer's Initials
• SOPs and instrument manuals for instruments under care			
• CFR review			
• U.S. EPA Handbook Vol II review (emphasis on DV tables)			
• Branch memos and policies related to air monitoring			

AQ Data Management System

Task	Expected Date	Date Completed	Trainer's Initials
• Introduction to CARB Air Quality Data Management System (DMS)			
• Introduction to CARBLogger			
• Databases: AQS, AQMIS, AQI's, POC's etc.			
• Data Management Tools o DMS Homepage o Control Charts o Data Matrix			
• Data Review, Verification, and Validation Principles, Level 1 obligations, Level 2 obligations, Review Schedule			

All required training for (staff name) has been completed and proficiency has been satisfactorily demonstrated.

Manager signature: _____ Date: _____