

WASHOE COUNTY
HEALTH DISTRICT

ENHANCING QUALITY OF LIFE

Quality Management Plan

November 1, 2019

**WASHOE COUNTY
HEALTH DISTRICT**
ENHANCING QUALITY OF LIFE



VISION

A healthy community

MISSION

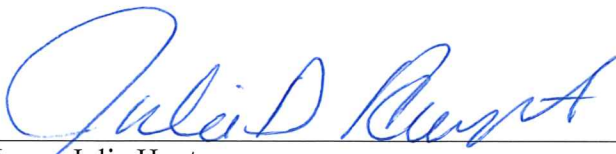
To protect and enhance the well-being and quality of life for all in Washoe County.



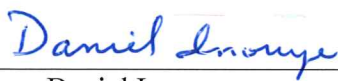
Public Health
Prevent. Promote. Protect.

Ambient Air Monitoring Branch Approval Sheet

This Quality Management Plan has been approved by the following individuals in the Washoe County Health District - Air Quality Management Division's Ambient Air Monitoring Branch:

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Acronyms and Abbreviations

AQMD	Washoe County Health District - Air Quality Management Division
AQS	Air Quality System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DMS	Data Management System
DQO	Data Quality Objective
EPA	U.S. Environmental Protection Agency
MQO	Measurement Quality Objectives
NAAQS	National Ambient Air Quality Standards
NIST	National Institute of Standards and Technology
NCORE	National Core Multi-Pollutant Monitoring Station
NO	Nitric Oxide
NO _x	Oxides of Nitrogen
NO _y	Reactive Oxides of Nitrogen
NO ₂	Nitrogen Dioxide
NPAP	National Performance Audit Program
O ₃	Ozone
PM _{2.5}	Particulate Matter less than or equal to 2.5 microns in aerodynamic diameter
PM ₁₀	Particulate Matter less than or equal to 10 microns in aerodynamic diameter
PM _{coarse}	PM ₁₀ minus PM _{2.5}
PEP	Performance Evaluation Program
PQAO	Primary Quality Assurance Organization
QAPP	Quality Assurance Project Plan
QA	Quality Assessment
QC	Quality Control
QMP	Quality Management Plan
RH	Relative Humidity
TSA	Technical Systems Audit
TTP	Through-the-Probe
SO ₂	Sulfur Dioxide
SOP	Standard Operating Procedure
SLAMS	State and Local Air Monitoring Station
TSD	Technology Services Department
WCDBOH	Washoe County District Board of Health

1. Introduction

1.1 Purpose of Document

The Washoe County Health District - Air Quality Management Division (AQMD) is a regional governmental agency responsible for air quality in Washoe County. This Quality Management Plan (QMP) describes the quality management system utilized by the Ambient Air Monitoring Branch. Quality assurance goals, policies, procedures, organizational responsibilities, evaluation and reporting requirements and other elements of the Branch quality management system are addressed within this QMP.

A companion document to the QMP is the Quality Assurance Project Plan (QAPP) for the Ambient Air Monitoring Branch, which includes the Standard Operating Procedures (SOPs). The Monitoring Branch has elected to maintain a single QAPP document for all ambient air quality monitoring projects.

1.2 Document Approval

This QMP and associated QAPP must be approved and signed by the Ambient Air Monitoring Branch:

- Quality Assurance Manager
- Senior Air Quality Specialist
- Air Quality Supervisor
- Division Director

Upon submission to U.S. Environmental Protection Agency (EPA) Region 9, signature/approvals are required by the EPA Quality Assurance Manager and the Air Quality Analysis Office Manager. After document approvals are complete, parts of these documents may be revised using a version control and approval/notification system outlined in Section 6. EPA Region 9 will be notified of any approved changes to the QMP/QAPP. Both documents will undergo a comprehensive review by Branch management and the Quality Assurance Manager every five years.

The AQMD publishes and maintains the official Ambient Air Monitoring Branch QMP and QAPP documents on the agency web site at www.OurCleanAir.com. Each section in these documents can be independently revised in accordance with the QAPP. The Quality Assurance Manager maintains a list of the current versions and a history of changes for each QMP and QAPP section and each SOP.

2. Management and Organization

2.1 AQMD Mission Statement

“The Air Quality Management Division implements clean air solutions that protect the quality of life for the citizens of Reno, Sparks, and Washoe County through community partnerships along with programs and services such as air monitoring, permitting and compliance, planning, and public education.” The mission of the Ambient Air Monitoring Branch is “To monitor and assure the scientific accuracy of the ambient air quality data collected for the determination of compliance with the National Ambient Air Quality Standard (NAAQS) as defined by the US Environmental Protection Agency (EPA).”

2.2 Structure of the Organization

Nevada Revised Statutes 445B.500 authorizes the Washoe County District Board of Health (WCDBOH) to implement and administer air quality management programs within the geographic boundaries of Washoe County. The WCDBOH is the governing body for the Washoe County Health District which includes the AQMD. The AQMD is organized into four administrative branches - Monitoring, Planning, Permitting, and Enforcement. The two Air Quality Supervisors each manage two branches. One manages the Monitoring and Planning branches, while the other manages the Permitting and Enforcement branches. Figures 2-1 and 2-2 show the organizational structure of the WCHD and AQMD. A complete list of staff responsibilities in the Monitoring and Planning Branches are listed in Section 4 (Project/Task Organization) of the QAPP.

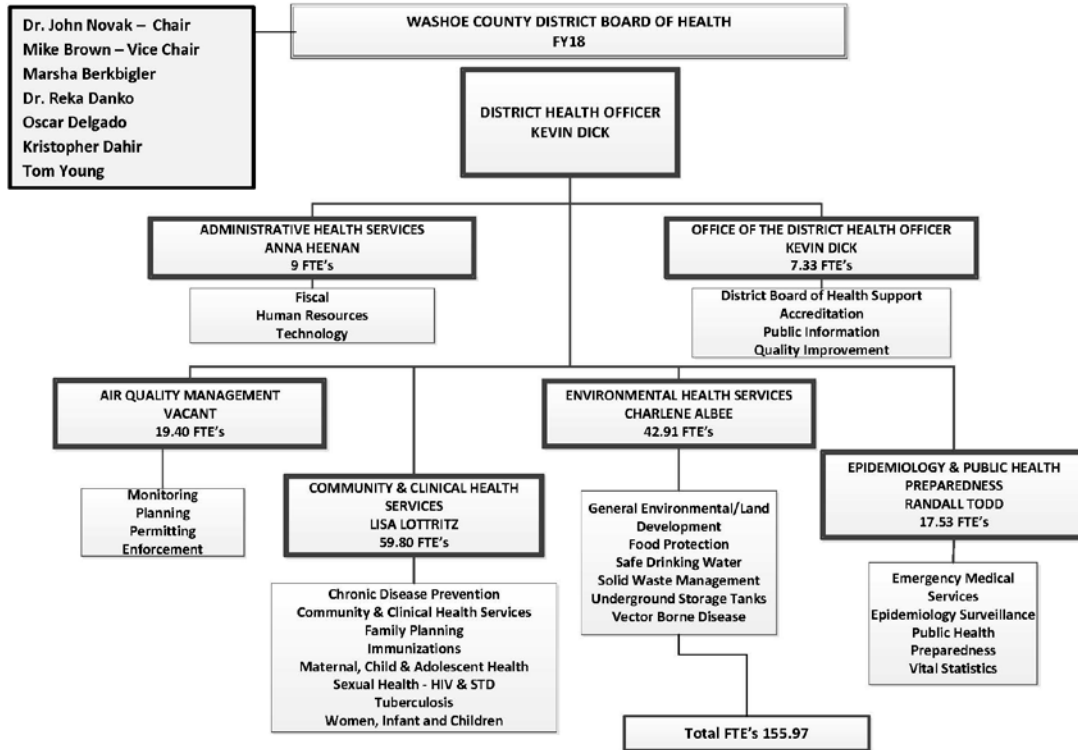
The Ambient Air Monitoring Branch is responsible for:

- Collecting air quality data pursuant to the regulatory, health, and informational needs of the Air District, industry, and the public;
- Maintaining the AQMD’s air monitoring network, including meteorological measurements, and is responsible for Quality Assessment/Quality Control (QA/QC);
- Maintaining a laboratory capable of analyzing a wide range of ambient and source related air samples;
- Collecting and reviewing data at ambient air monitoring sites;
- Collecting gaseous and filter samples for analysis;
- Maintaining a set of SOPs to operate, repair, and evaluate the performance of all monitoring equipment in order to meet or exceed EPA data quality objectives;
- Providing ambient air quality data review in accordance with QAPP Data Management SOPs;
- Analyzing gaseous and filter samples collected at monitoring sites;
- Maintaining a set of SOPs to operate, repair, and evaluate the performance of all laboratory analytical equipment in order to meet or exceed EPA data quality objectives; and
- Providing data review for all laboratory measurements in accordance with QAPP Data Management SOPs.

The Planning Branch is responsible for:

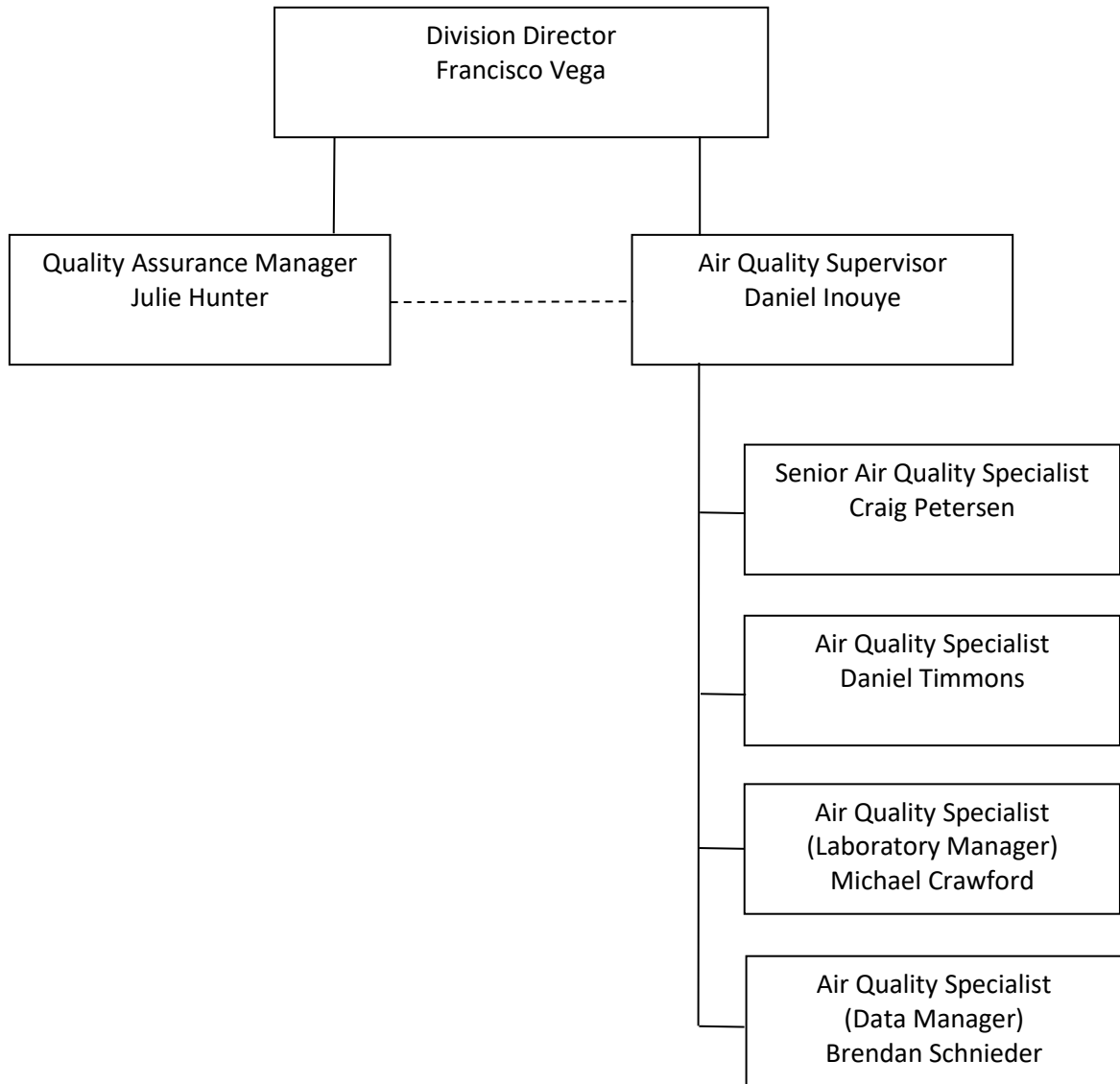
- Review and revise QMP and QAPP;
- Review technical SOPs;
- Preparing reports for submission to EPA Region 9;
- Prepare Emissions Inventories;
- Review and approve Corrective Actions;
- Managing AirVision data collection software;
- Daily review of air quality data;
- Assisting with data certification annually; and
- Data submission to the Air Quality System (AQS), the National regulatory database maintained by EPA.

Figure 2-1 WCHD Organizational Chart



Updated 6-18-19

Figure 2-2 AQMD Organizational Chart



2.3 Administrative Responsibilities

Administrative staff refers to Division employees directly or indirectly responsible for one or more of the Monitoring Branch programs/projects. Administrative staff exercise authority over at least one lower tier of supervisory staff or supervise staff time on a project related basis. The Air Quality Supervisor and the Quality Assurance Manager are included in this group and play a role in the Monitoring Branch Quality System, as described below:

Division Director - Under administrative direction, the Division Director plans, organizes and directs the Air Quality Management Program. This position reports directly to the Health Officer of the WCHD.

Air Quality Supervisor - This supervising employee reports to the Division Director of the AQMD. The Air Quality Supervisor prioritizes the training and continuing educational needs of staff and develops funding proposals to accommodate these needs, as necessary and ensures the Branch is operating under the approved QMP, QAPP and SOPs

Senior Air Quality Specialist – This non-management employee is responsible for leading the air quality Monitoring Program and reports to the Air Quality Supervisor.

Air Quality Specialist (Laboratory Manager) – This non-management employee is responsible for managing all laboratory operations and documents. The Laboratory Manager reports directly to the Air Quality Supervisor and is in the Monitoring Branch of the AQMD.

Air Quality Specialist (Data Manager) – This non-management employee is responsible for managing the data management system all ambient air monitoring data collected from the monitoring network. The Data Manager reports directly to the Air Quality Supervisor and is in the Planning Branch of the AQMD.

Quality Assurance (QA) Manager - This non-management employee is responsible for managing the quality assurance in the Monitoring Branch. The QA Manager reports directly to the Division Director and is in the Planning Branch of AQMD.

2.4 Quality Assurance

Quality assurance is a general term for the procedures used to ensure that a particular measurement meets the quality requirements for its intended use. In addition to performing tests to determine bias and precision, additional quality indicators (such as sensitivity, representativeness, completeness, timeliness, documentation quality, and sample custody control) are also evaluated. Quality assurance procedures fall under two categories:

- Quality Control - procedures built into the daily sampling and analysis methodologies to ensure data quality, and
- Quality Assessment - periodic outside evaluations of data quality.

Quality control includes all of the measures taken by managers and field, laboratory and data management personnel to achieve a predetermined level of data reliability. Quality control is applied from the planning and design stages of the monitoring effort, through the implementation stages, to the handling, storage and reporting of accumulated data.

Quality assessment refers to the collective efforts of management to ensure that field, laboratory and data management meet the objectives of the organization and are acquired and utilized in an efficient and scientifically defensible manner. Major QA functions include review and auditing of sample collection, sample analysis, and data handling procedures, and evaluating the effectiveness of implemented QC procedures.

EPA defines a primary quality assurance organization as a monitoring organization or a group of monitoring organizations that share a number of common “QA factors”. Each criteria pollutant sampler/monitor at a site in the State and Local Air Monitoring Station (SLAMS) network must be associated with one, and only one, Primary Quality Assurance Organization (PQAO).

The purpose of having the SLAMS network under one PQAO is so that measurement uncertainty among all stations in the organization can be expected to be reasonably homogeneous, as a result of common factors. Common factors that should be considered by monitoring organizations in defining primary quality assurance organizations include:

- a) Operation by a common team of field operators according to a common set of procedures;
- b) Use of a common QAPP or standard operating procedures;
- c) Common calibration facilities and standards;
- d) Oversight by a common quality assurance organization; and
- e) Support by a common management, laboratory or headquarters.

The AQMD meets all of these requirements and is, therefore, a PQAO and responsible for the quality of all air monitoring data.

2.4.1 Quality Assurance Policy

The Ambient Air Monitoring Branch has the following policies which are in accordance with 40 CFR Part 58, Appendix A.

1. Air quality data will be collected in sufficient quantity and of sufficient quality to meet the monitoring objectives of:
 - Providing air pollution data to the general public in a timely manner.
 - Supporting compliance with ambient air quality standards and emission strategy development.
 - Supporting air pollution research studies.
 - Activating emergency control procedures that prevent or alleviate air pollution episodes.
 - Observing pollution trends throughout the region, including non-urban areas.
2. Each individual program will have a written and approved QAPP prior to the start of monitoring.
3. The QAPP will be revised as changes are made to individual programs. The entire QAPP will be reviewed and revised as needed every 5 years.
4. Quality assurance activities will be managed independently from data collection. These activities include performance evaluations and technical system audits.
5. Only EPA certified monitors will be used to measure criteria pollutants.

6. Only gaseous pollutant concentration standards traceable to either a National Institute of Standards or Technology Traceable Reference Material, or a NIST-certified Gas Manufacturer's Internal Standard will be used.
7. Flow rate measurements will be made by flow measuring instruments traceable to an authoritative volume or other applicable standard.
8. Precision tests will be conducted in accordance with 40 CFR Part 58 recommendations.
9. Measurement Quality Objectives (MQO) will be developed for each criteria pollutant that meets or exceeds those specified in 40 CFR Part 58 or the Quality Assurance Handbook Volume 2. Also, MQO will be developed for non-criteria pollutants.
10. Quality assurance reports will be reviewed quarterly for compliance with the Data Quality Objectives.
11. Changes to the monitoring program will be discussed in the Annual Network Plan and made available for public comment whenever possible.
12. Precision and performance evaluation data will be submitted quarterly to EPA. Data assessment evaluations for SLAMS sites will meet or exceed EPA requirements.

2.4.2 Quality Assurance Goal

The foremost goal of the Quality Management System is to ensure that all environmental monitoring operations administered by the Branch produce data that is of known and acceptable quality and that meets the informational needs and regulatory functions of the AQMD in a scientifically defensible manner.

2.4.3 Quality Assurance Activities and Tools

Quality Assurance tools include activities within the Monitoring Branch as well as assessments conducted by outside agencies. Internal tools include data quality assessments, performance audits, internal technical systems audits, management reviews, and contracted audits. While EPA does not play a role in routine operations at the AQMD, they do provide periodic external assessments. These assessments include laboratory, performance, and technical systems audits. Reports from all quality assurance activities are provided to management for review and possible action. See Chapter 3 on Quality System Components and Chapter 10 on Assessment and Response for more details on QA Activities, and external assessments.

2.5 Funding Sources

As an independent regional agency, the AQMD receives funding from:

1. Operating permit fees,
2. EPA grants,
3. Nevada Department of Motor Vehicle funds, and
4. the City of Reno, City of Sparks, and County of Washoe via an inter-local agreement with the Washoe County Health District.

3. Quality System Component

3.1 Quality Management Plan

The QMP is the overall document that explains the Quality System. It describes staff and management and their respective responsibilities, qualifications, and training, and it explains how the system is to function for producing quality data including project management responsibilities, data generation and acquisition, assessment and oversight, and data validation and usability. This QMP will be renewed every five years or when significant changes have been made to its program elements, whichever comes first. This QMP includes the elements from the document “*EPA Requirements for Quality Management Plans*” (EPA QA/R-2) (March 2001).

3.2 Quality Assurance Project Plan

Quality Assurance Project Plans (QAPPs) are project or program- specific plans that establish the method by which Quality Objectives will be met or exceeded. QAPPs are typically needed where significant data collection and analysis will be associated with a project or an entire program area. A QAPP dictates the minimum requirements for project management, data measurement, data acquisition, assessment, oversight, data validation and data usability. The QAPP includes the main elements from the document “*EPA Requirements for Quality Assurance Project Plans*” (EPA QA/R-5)” (March, 2001), “*Guide to Writing Quality Assurance Project Plans for Ambient Air Monitoring Networks*” (EPA-454/B-18-006) (August 2018). Each monitoring project or program will go through the Data Quality Objective (DQO) process outlined in the document “*Guidance for the Data Quality Objectives Process (EPA QA/G-4)*” (August, 2000).

The Air Quality Supervisor is responsible for maintaining Quality Objectives for the area within his span of control. As such, commitment to and responsibility for the quality objectives and operations detailed in this QMP and any QAPP or SOP in place in the Ambient Air Monitoring Branch begins with the Air Quality Supervisor and continues to his staff.

The air monitoring programs performed by the Monitoring Branch are listed below. Because many of the elements of the programs have the same or similar requirements, all programs were combined into a single integrated QAPP.

- Criteria Gases (O₃, CO, NO₂, SO₂)
- Non-Criteria Gases (NO, NO_x, NO_y)
- Criteria PM (PM₁₀, PM_{2.5}, PM_{course})
- Non-Criteria PM (PM_{2.5} Speciation; PM_{course})
- NCore (Trace level CO and SO₂, NO_y)
- Meteorology (wind speed, wind direction, ambient temperature, RH)

Any new program which is developed will be subject to the QAPP development process specified in section 8.2 of this QMP.

3.3 Standard Operating Procedures

The Monitoring Branch uses SOPs to ensure that certain kinds of regularly performed activities, such as sampling techniques, operational procedures, laboratory analyses, data review, or quality assurance procedures, are conducted uniformly and appropriately given the needs of a task. Written SOPs help to ensure standardization of work for a program. SOPs are required with a QAPP for every program to allow the Monitoring Branch management to verify that acceptable procedures are being used. SOPs submitted with the QAPP must be followed when performing data collection and analysis and will be used when auditing equipment and data. All program managers or group leaders are responsible for developing, documenting, and implementing SOPs for appropriate routine, standardized, special or critical operations.

The Monitoring Branch uses the QAPP to guide staff and management in standardizing the SOPs. The SOP explains the process for creating or making changes to the Monitoring Branch's Quality System documentation including the QMP, the QAPP, and SOPs. It includes the document format requirements, the management positions responsible for content, the review and approval requirements, and the recordkeeping, notification, and publishing requirements.

SOPs are revised whenever procedural changes are made to a program. Regardless of any updates, all SOPs are reviewed annually by Monitoring Branch management and the Quality Assurance Manager. After revisions, the SOP must be reviewed by the Senior Air Quality Specialist and final approval by the Quality Assurance Manager and the Division Director; and a new revision number and approval date is applied.

4. Personnel Qualification and Training

4.1 Qualifications

The knowledge, skills, and abilities of staff, supervisors, and managers involved in the production of ambient air monitoring data directly influence the quality of that data. The job class descriptions for all AQMD employees involved in the collection, handling, analysis, performance auditing, assessment, management, and reporting of ambient air monitoring data specify the qualifications required to ensure candidates are selected that have the education, knowledge, skills, and abilities required to perform their duties. Appendix A is a list of job descriptions including the following journey level, senior, principal, supervisor, and management positions:

- Air Quality Specialist Trainee
- Air Quality Specialist
- Senior Air Quality Specialist
- Air Quality Supervisor
- Division Director

4.2 Ambient Air Monitoring Branch

Air Quality Specialist Trainees and Air Quality Specialists in the Monitoring Branch are trained by experienced Senior Air Quality Specialists in all aspects of ambient air monitoring and laboratory activities including:

- Standard operating procedures;
- Equipment troubleshooting, diagnosis, maintenance and repair;
- Quality control and quality assurance requirements;
- Data acquisition, data management, data reporting, data quality and data completeness objectives;
- Equipment maintenance and certification, and recertification requirements for audit standards;
- Field data review;
- Documentation and;
- Safety.

4.3 Training

The Air Quality Supervisor assesses staff training requirements of each employee's required annual performance evaluation. New or enhanced training as well as retraining requirements are noted, tracked, and documented in the annual performance evaluation. The Air Quality Supervisor also maintains a "Supervisor copy" of the QAPP and SOPs that contains required reading forms signed by all staff members. Managers include appropriate funds for training in their program budgets. The Division Director has the responsibility for training managers and reviewing training policies developed by managers and supervisors.

The AQMD provides reimbursement for job related continuing education courses and related materials, including required books, supplies, and lab fees. Staff is encouraged to take job-related courses. Managers and supervisors provide assistance on the selection of appropriate courses and arrange work schedules to facilitate staff attending such courses.

4.4 Employee Performance Reviews

Responsibility for applicable quality assurance activities is included in the annual employee performance reviews as a specific objective for staff at the journey, senior, supervisory, and manager level. Managers and supervisors conduct annual performance reviews of each employee, including comparison of the employee's performance against the standard performance objectives and an assessment of any training needs. If deficiencies are noted, a performance improvement plan is developed and progress is tracked by the manager or supervisor.

5. Procurement of Items and Services

In the Monitoring Branch, procurement includes criteria and non-criteria pollutant monitoring equipment; laboratory analytical instruments; performance auditing equipment; meteorological monitoring equipment; spare parts; consumables; supplies; computer hardware and software; and service contracts for laboratory instruments. Within the Division, equipment needs are determined by the Air Quality Supervisor and Senior Air Quality Specialist. They evaluate, prioritize, and make decisions on items for proposed procurement in accordance with the need for the equipment, supplies and services, the program budget, and grant requirements. Managers and supervisors are also responsible for developing relevant specifications and ensuring that equipment purchased meets all of the applicable regulatory requirements, grant requirements, codes, standards, procedures, methods, and other criteria.

All purchases are subject to procedures that include a purchasing agent, specifications, contract limitations, contracts with minority and women's business enterprises, purchase requests, and contracts.

5.1 Purchasing Agent

The purchasing agent negotiates to obtain the best price obtainable on all goods and services required by the AQMD.

5.2 Specifications

Where written specifications are prepared and submitted for public bidding, the specifications must include all criteria to be considered by the AQMD in selecting a successful bidder. For criteria pollutant monitoring, the AQMD only purchases EPA certified Reference/Equivalent Method sampling equipment or equivalent, Approved Regional Method equipment, or EPA recommended and approved monitoring, sampling, and analytical equipment and supplies. For meteorological equipment, the AQMD only purchases equipment that meets the accuracy and response characteristics recommended by EPA in the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements.

5.3 Contract Limitations

The Division Director executes all AQMD contracts for the purchase of supplies, materials, and services. Prior to execution, the AQMD has different Board approval procedures depending on contract dollar amounts and defined in the WCHD Administrative Code. At the highest level, contracts are signed by the chairperson of the WCDBOH. Mid-level contracts are reported to the WCDBOH as a consent item. Lower-level contracts may be executed without WCDBOH involvement.

5.4 Contracts with Minority and Women's Business Enterprises

The policy of the WCDBOH is to take affirmative action as necessary to ensure that Minority and Women's Business Enterprises are provided the maximum practical opportunity to compete for and participate in all contracts for the purchase of services, materials, or supplies.

5.5 Purchase Requests

Purchase requests for supplies, equipment, and/or services must be completed and submitted to upper management per the Purchase Request Form (Figure 5-1) prior to any order being given to a vendor. Purchase requests exceeding the remaining balance of unexpended funds within the budget for each line item in a program budget must be accompanied by an approval for a transfer of funds sufficient to cover the amount of the purchase request. The approval document must indicate the line item for the source and destination of the transfer of funds. The AQMD purchases all supplies, equipment and/or services per the [Washoe County Purchasing Division Procedures Manual](#).

5.6 Contracts

The purchasing policy provides for formal bids, informal bids, telephone bids, monopoly/sole source bids, prior bid/last price, and letter quotation depending on the goods or services to be purchased, the value, and the circumstances. Requests for consulting services must include a statement of the work; a statement of the qualifications of persons necessary to perform the required work; and an assessment of the resources, capital equipment, and supplies required to carry out the work. Bid solicitation is required for all contracts for goods and services valued above a threshold level specified in the WCHD Administrative Code and must include instructions to bidders, proposal submittal requirements, draft contract, and a list of potential bidders. Bid awards are based on an evaluation of bids and recommendation to the Division Director by staff requesting the goods or services.

5.7 Acceptance Testing

Equipment delivered by a vendor for use under the AQMD's Quality Plan must undergo an acceptance test. For EPA-certified Reference Method or Equivalent equipment, acceptance testing is conducted to ensure that EPA quality requirements are met. If the equipment fails to meet the performance specifications in the purchase agreement, the vendor must repair or upgrade the equipment until the test is passed. After the acceptance test is passed, the Air Quality Supervisor will authorize payment.

EPA requires that all certified air quality monitoring equipment display a certification tag on the front panel. This tag, affixed by the vendor, informs the purchaser and user of the equipment that it meets the EPA quality and documentation requirements for use in regulatory ambient air quality monitoring.

6. Documents and Records

The storage and retention of documents and records are subject to the Documentation and Record Retention (Table 6-1). Documents and records produced by Monitoring Branch in the course of its work are stored and controlled by that Branch.

The primary documents that specify the quality requirements for air quality data produced by the AQMD are the QMP (this document), the QAPP, SOPs, and AQMD policies. The Quality Assurance Manager reviews and approves the QMP, QAPP, and all SOPs. The Air Quality Division Director has final approval authority for the QMP and QAPP.

SOPs and SOP revisions are proposed, reviewed, and approved by the Air Quality Supervisor and Senior Air Quality Specialist. After approval, the Quality Assurance Manager must also approve an SOP before incorporating it into the official QAPP. Data management SOPs that assess data quality must be approved by the Data Manager providing that data. New or revised SOPs are uniquely identified with a version number and approval date. The Air Quality Supervisor, Senior Air Quality Specialist, Quality Assurance Manager and Data Manager are responsible for ensuring that documents and records accurately reflect completed work under any SOP.

All Monitoring Branch staff has network access to the current versions of the QMP, QAPP, and SOPs which are stored in the Monitoring Docs folder on an AQMD's file server. The file server is backed up daily by Washoe County Technology Services Department. Staff is encouraged to access the electronic version of these documents to ensure that they have the latest version. The Quality Assurance Manager maintains a distribution list of all staff members who require access to these documents. When any of these documents are revised, an e-mail is sent to the distribution list that specifies the revised document, briefly summarizes the revision, and instructs staff who printed a paper copy of the old document to recycle it. Older quality system document revisions are maintained in read only pdf format in a designated archive subdirectory on the file server and are available for reference if needed.

As part of the Monitoring documents, the Air Quality Supervisor also maintains subfolders for Performance Evaluations and Policy Directives and Notices. Performance Evaluations include internal and external Performance Audits of Monitoring Branch measurements, Technical System Audits, AQS data quality reports, and other indicators and reports of data quality over the last five years. Policy Directives and Notices include administrative directives from management to staff, corrective actions taken by management to remedy problems associated with the Quality System or Monitoring Branch operations, and notices from the EPA Quality Assurance Office regarding changes to the Quality System.

All air quality data, related air QA data, and meteorological data produced by the AQMD are stored in databases on file servers that are backed up daily. After data quality control reviews are completed, these data are loaded into Air Quality System (AQS). AQMD data management policy and procedures comply with AQMD requirements and EPA Directives 2160 and 2100 (U.S. Environmental Protection Agency, 2007) concerning vital data records management,

public access, etc. Some aspects of the EPA Directives are not under direct Monitoring Branch control, but instead are managed by AQMD staff with broader responsibilities.

Table 6-1 Document and Record Retentions

Record Type	Retention Period	Disposition/ Notes	Type/ Location
Data			
Ambient Air Monitoring Data	Permanent	None	Electronic/ LAN
Meteorological Monitoring Data	Permanent	None	Electronic/ LAN
Data Files for Submittal	Permanent	None	Electronic/ LAN
Annual Data Certifications	15 years	Delete/Destroy	Electronic/ LAN
Monthly Data Review	5 years	Delete/Destroy	Hardcopy/ Data Manager
Station Data Exception Logs	5 years	Delete/Destroy	Hardcopy/ Data Manager
Data Relating to Legal Action	Until Action is Complete	Delete	Electronic/ LAN
QA/QC			
Quarterly Audits (Gas, PM, Met)	15 years	Delete/Destroy	Electronic and Hardcopy/ LAN and Data Manager
EPA Audit Reports (PEP and NPAP)	15 years	Delete/Destroy	Electronic/ LAN
Calibration Cylinder Certifications	15 years	Delete/Destroy	Electronic/ LAN
O3 Transfer Standard Verifications	15 years	Delete/Destroy	Electronic/ LAN
Annual Multi-point QC Checks (NCore Gas)	5 years	Delete/Destroy	Electronic/ LAN
Semi-Annual Multi-point QC Checks (Gas)	5 years	Delete/Destroy	Electronic/ LAN
Monthly Verifications (PM)	5 years	Delete/Destroy	Electronic and Hardcopy/ LAN and Data Manager
Bi-weekly QC Checks (Gas, PM)	5 years	Delete/Destroy	Electronic/ LAN
Weekly QC Checks (NCore Gas)	5 years	Delete/Destroy	Electronic/ LAN
Calibration Records (Gas, PM, Met)	5 years	Delete/Destroy	Electronic/ LAN
Control Charts	5 years	Delete/Destroy	Electronic/ LAN
Station Log Reports	5 years	Delete/Destroy	Hardcopy/ Data Manager
Quality Assurance Project Plan (QAPP)	Superseded by revision (revised every 5 years, reviewed annually)	Delete	Electronic/ LAN & Website
Standard Operating Procedures	Superseded by revision (revised every 5 years, reviewed annually)	Delete	Electronic/ LAN
Quality Management Plan (QMP)	Superseded by revision (revised every 5 years, reviewed annually)	Delete	Electronic/ LAN & Website

Record Type	Retention Period	Disposition/ Notes	Type/ Location
Equipment			
Instrument Logbooks	15 years	Dispose	Hardcopy/ Field Site
Maintenance and Calibration Records	15 years	Delete/Destroy	Electronic/ LAN
Work Orders and Repair Orders	15 years	Delete/Destroy	Electronic and Hardcopy/ Vendor and Field Site
Standard Traceability Certifications	15 years	Delete/Destroy	Electronic/ LAN
Requisitions and Purchase Orders	15 years	Delete/Destroy	Electronic/ LAN
Manuals	Life of equipment	Dispose	Hardcopy/ Field Site
Laboratory			
PM2.5 STN Custody and Field Sample Forms	Permanent	None	Hardcopy/ Data Manager
PM2.5 and PM10 FRM Field Sample Reports	Permanent	None	Hardcopy/ Data Manager
Laboratory Logbooks	Permanent	None	Hardcopy/ Laboratory
Annual Service/Calibration Records	15 years	Delete/Destroy	Electronic/ LAN
Quarterly Audits (Temp, RH)	15 years	Delete/Destroy	Electronic/ LAN
PM Weigh Logs	15 years	Delete/Destroy	Electronic/ LAN
Mass Standard Verifications	15 years	Delete/Destroy	Electronic/ LAN
Mass Standard Traceability Certifications	15 years	Delete/Destroy	Electronic/ LAN
47mm PM2.5 and PM10 Filters	5 years	Dispose	Refrigerated
BAM PM2.5 and PM10 Filter Tape	5 years	Dispose	Field Site
PM Filters Relating to Legal Action	Until Action is Complete	Dispose	Refrigerated

7. Computer Hardware and Software

7.1 Software

The Washoe County Technology Services Department (TSD) provides support for the AQMD's enterprise systems, including the financial system, production system, web site, and the development and implementation of business applications for the new production system to meet business needs. The TSD group also purchases and maintains a suite of standard office software tools that are maintained AQMD-wide. Policies and procedures for purchasing, evaluating, installing, using, maintaining, controlling, and documenting computer software are managed within the TSD and are outside the scope of this document.

New software specific to AQMD needs and work tasks is identified by Monitoring Branch staff or management, and purchased directly by the Branch after management approvals. Software that requires network support of some sort would be approved by the TSD group prior to purchase and installation. For more complex software, management may approve professional, off-site training classes. After installation and testing on a trial work task, the software is evaluated for efficiency and productivity. If the software successfully completes the work task in a cost/time efficient manner determined by management, SOPs are created or modified to document procedures on how to consistently use the new software. All new computer tools are used in accordance with AQMD computer policies that are EPA Directive 2100 and 2160 compliant (U.S. Environmental Protection Agency, 2007).

7.2 Hardware

The TSD provides the computer and telecommunications infrastructure, including the selection, purchase, installation, operation, maintenance, and repair of new software systems, networks, network servers, telephone systems, voicemail systems, firewalls, personal and notebook computers, workstations, file and database servers, operating systems, and application software as required to meet business needs.

Monitoring sites are connected to the AQMD office using wireless signals. All instruments at sites are wired by analog or Ethernet connections to the data loggers. Secure routers are installed at each site and connected to the data logger to ensure security during data polling.

7.3 Air Monitoring Data Acquisition, Management, and Reporting

The AQMD currently uses AirVision as the Data Management System (DMS). All data is received through data loggers and direct polling BAMs installed at each monitoring station via a wireless broadband connection to the Washoe County Network. The DMS is configured to automatically poll each station every hour to retrieve data. Data is reviewed daily by monitoring and planning staff to identify any outliers. The DMS is also configured to identify and flag suspect outliers and when equipment is taken offline for weekly, bi-weekly, monthly checks and audits. On a monthly basis all data goes through an extensive QC check. At the beginning of each month the Data Manager reviews and edits all data to ensure flags are properly assigned to

the data. The data is further reviewed by the monitoring staff to again ensure data is properly flagged and monthly QC checks are complete. Data that require manual entry, such as those obtained from manual method particulate samplers, are recorded onto the appropriate field data sheets. The Data Manager is responsible for entering manual method data into the DMS.

Each quarter, the AQMD will submit all raw and QA data to AQS from the previous quarter within 90 days of the end of the quarter. The quarterly reports will be submitted consistent with the data reporting requirements specified for air quality data as set forth in 40 CFR Part 58, Appendix A, Section 5. The quarterly data reporting requirements of 40 CFR Part 58.16 apply to those stations designated SLAMS or National Core multi-pollutant Monitoring Station (NCore). AQMD also submits all SPM data following the same data reporting requirements. For detailed SOPs on Data Acquisition, Management, and Reporting refer to the QAPP.

8. Planning

8.1 The Elements of Systematic Planning

The purpose of ambient air monitoring in the AQMD is to collect data of known and documented quality that will meet five basic objectives:

- Provide air pollution data to the general public in a timely manner.
- Support compliance with ambient air quality standards and emission strategy development.
- Support air pollution research studies.
- Activate emergency control procedures that prevent or alleviate air pollution episodes.
- Observe pollution trends throughout the region, including non-urban areas.

Before embarking on the collection of air quality data, systematic planning is necessary. AQMD staff use the elements of systematic planning from Chapter 3 *EPA Quality Manual for Environmental Programs, EPA Manual 5360 A1* (U.S. EPA, 2000c), which are listed below.

- **Organization:** Identification and involvement of the project manager, sponsoring organization and responsible official, project personnel, stakeholders, scientific experts, etc. (i.e., all customers and suppliers).
- **Project Goal:** Description of the project goal, objectives, and study questions and issues.
- **Schedule:** Identification of project schedule, resources (including budget), milestones, and any applicable requirements (i.e., regulatory requirements, contractual requirements).
- **Data Needs:** Identification of the type of data needed and how the data will be used to support the project's objectives.
- **Criteria:** Determination of the quantity of data needed and specification of performance criteria for measuring quality.
- **Data Collection:** Description of how and where the data will be obtained (including existing data) and identification of any constraints on data collection.
- **Quality Assurance:** Specification of needed QA and QC activities to assess the quality performance criteria (i.e., QC samples for field and laboratory, audits, technical assessments, performance evaluations, etc.).
- **Analysis:** Description of how the acquired data will be analyzed (either in the field or the laboratory), evaluated (i.e., QA review/verification/validation), and assessed against its intended use and the quality performance criteria.

The Air Quality Supervisor is responsible for identifying the need for any new monitoring programs and for validating continued operation of all existing programs in support of the five basic AQMD objectives. The Division Director identifies the sponsoring organizations and officials, the program stakeholders, scientific experts, and data customers, etc., for new programs and specifies the program goals, objectives, and study questions and issues. The Division Director assigns a QA Manager to design a QAPP that meets the program goals and objectives.

The assigned QA Manager is responsible for developing a Project Plan that meets the goals and objectives established by the Division Director, or to modify an existing Project Plan to address

plan changes identified by the Division Director. The Plan includes a project schedule, resources needed (budget, staff, equipment, etc.), milestones, and applicable regulatory and contractual requirements. The Plan identifies the type, quantity, quality, and origin of data needed and how it will be used to support the program objectives. Any constraints on data collection such as location, local sampling conditions, proximity to sources, monitoring objective, spatial scale, etc., are included in the Plan.

Project Plan data quality may be specified in several different ways and must include procedures to evaluate quality to insure plan objectives are met. For some criteria pollutant data collected to determine attainment of National Ambient Air Quality Standards, EPA provides Data Quality Objectives and quality assessment guidelines to determine Measurement Quality Objectives and the corresponding Standard Operating Procedures. Other Plans may have only Measurement Quality Objectives based on a manufacturer's instrument specifications, the highest data quality available within the Division's resources. Data quality objectives must also include data collection constraints.

In consultation with the Quality Assurance Manager and other appropriate Monitoring Branch staff, the QA Manager must include a Quality Assurance element in the Project Plan to assess the quality of data collected and demonstrate that performance objectives are met. Quality Control activities may include, but are not limited to, single point precision checks, collocated samplers, flow and leak checks, laboratory blanks, technical assessments, and performance evaluations. The Plan must also include a description of how the data will be reviewed, verified, validated, and if possible, assessed against its intended use.

Completed Quality Assurance Project Plans are submitted by the QA Manager to the Air Quality Supervisor for review, revision as required, and the Division Director's final approval. The QA Manager is then responsible for submitting the Plan to the EPA Quality Assurance Office for approval, and executing the Program according to the approved Plan. The Director is responsible for providing the necessary staff, budget, and other Monitoring Branch resources required in the Plan.

8.2 Developing, Reviewing, Approving, Implementing, and Revising a QAPP

If a particular project does not adequately fit into a previously developed AQMD QAPP as determined by the QA Manager and confirmed by the Air Quality Supervisor, the QA Manager will produce a project specific QAPP. The QA Manager identifies all activities to be covered in the project specific QAPP and ensures that the guidance and methodologies will produce data of sufficient quality to meet identified project goals. Any deviation, addition, or omission from applicable portions of any QAPP are to be reviewed by appropriate parties, noted, and explained in written documents maintained with the QAPP. The QA Manager has content approval authority for the project specific QAPP, with input and review by the Monitoring Branch staff, where appropriate, and final approval by the Division Director. The QA Manager shall establish a project folder on a network drive (with suitable file restrictions) where all Program-specific documents will be maintained.

The QA Manager is responsible for integrating the new QAPP content into the unified QAPP maintained by the Monitoring Branch. After final review and approval of the amended QAPP by the Monitoring staff and Air Quality Supervisor, the QA Manager will assign new revision numbers to the affected document sections and publish the new version as outlined in the QAPP. The new QAPP takes effect upon notification of staff and any other parties included in the Quality System Notification List.

8.3 Evaluating and Qualifying Collected Data for New Use

The QA Manager also works with interested parties to determine if the obtained data are of sufficient quality to be utilized for other purposes outside of the original scope. The QA Manager's recommendations are noted in the project folder. The Data Manager, QA Manager and Air Quality Supervisor determines if the data meet all appropriate quality control/quality assurance requirements of the QAPP and whether it is appropriate to use the data for other purposes, with final approval from the Division Director.

The AQMD uses both air quality and meteorological data collected by third parties, providing that the Monitoring Branch has approved the monitoring site, monitoring equipment, quality control procedures, and data quality objectives and has either reviewed external audits or conducted performance audits demonstrating that quality control procedures have been implemented and data quality objectives have been met.

9. Implementation of Work Practices

The AQMD uses Standard Operating Procedures to ensure that the work performed in the collection, handling, analysis, performance auditing, assessment, management, and reporting of ambient air monitoring data produces data that meet the quality and completeness objectives.

Depending on the nature of the work performed, the Air Quality Supervisor, Quality Assurance Manager, or Senior Air Quality Specialist is responsible for ensuring that the work is performed as described in the QAPP, SOPs, or policies. The supervisor establishes standard performance objectives for staff working in the same functional area: air monitoring field operations; laboratory analysis; performance audits; or data assessment, management, and reporting. The supervisor conducts annual performance reviews of each employee, including comparison of the employee's performance against the standard performance objectives and an assessment of any training needs. If deficiencies are noted, a performance improvement plan is developed and progress is tracked by the supervisor.

The Air Quality Supervisor and Senior Air Quality Specialist determine the need for SOPs based on data quality objectives, data completeness objectives, or other operational requirements. Depending on the specific activity, the Air Quality Supervisor or Senior Air Quality Specialist may identify, propose, draft, revise, or review SOPs. The Quality Assurance Manager has the authority to approve new or revised SOPs and to establish policies for their use subject to QA approvals. Chapter 6, Documents and Records, describes the release, revision, and implementations of SOPs, as well as the removal of obsolete documentation and verification that changes are made.

10. Assessment and Response

Quality Assessment functions include review and approval of program planning documents, auditing of sample collection, sample analysis, and data handling procedures, and evaluating the effectiveness of implemented QC procedures. QA takes two forms. Internal QA is conducted or arranged within the Division as directed by senior management. External QA is provided by EPA. As part of grant funding and regulatory requirements, EPA provides oversight/audit services. The following is a list of internal and external assessment tools utilized by the AQMD:

Internal

- Data quality assessments – annually and every 5-years, as applicable;
- Performance Evaluations – quarterly;
- Flow rate audits – quarterly;
- Gaseous audits by Monitoring staff – quarterly;
- Meteorological performance audit by Monitoring staff – quarterly;
- Meteorological performance audit by contractor – annually and;
- Management reviews.

External

- Technical systems audits by EPA – every 3 years;
- NPAP through-the-probe audits – annually at 25% of stations, and;
- Performance Evaluation Program (PEP) audit by EPA – 5 times annually.

10.1 Data Quality Assessments

Internal data quality assessments will be reviewed annually and conducted by the Quality Assurance Manager. These assessments may include data management and review procedures, completeness, quality control/review procedures, and statistical evaluations. Assessment reports will be prepared and submitted to the Division Director with recommendations. At the request of senior management, independent data assessments are also conducted by a Data Manager in the AQMD Planning Branch. These assessments are usually conducted using final pollutant data that have gone through the normal, complete data review process and been submitted to AQS. If irregularities are discovered, QA staff is notified and causes or explanations for the data irregularities are identified. As a result of the findings, data may be invalidated, adjusted, or confirmed through this process. Corrective actions by Air Monitoring staff may be required if data were invalidated or adjusted. If a systemic problem is identified, recommendations for Quality System changes are submitted to the QA Manager, with final approval from the Division Director.

10.2 Review of EPA AQS Reports

The EPA maintains several standard AQS reports that provide data quality summary information. The AMP430 Completeness Report shows the percentage of valid data by month for all pollutants and other aerometric data submitted to AQS. The AMP246 and AMP247 Precision and Accuracy Reports list all submitted one-point QC checks and performance evaluations, including those conducted by outside agencies, and provide a quick review for

problems associated with a particular monitor or site. The AMP255 Quality Indicator Summary Report currently provides statistical information on all criteria pollutants for individual AQMD sites and the entire network. This report also includes comparable statistics from other air monitoring agencies that provide another form of performance evaluation. Statistical information for non-criteria pollutant data will be reviewed as the scope of the AMP255 Report is expanded.

AQS reports are reviewed quarterly by the Air Quality Supervisor and the Quality Assurance Manager to ensure that data quality objectives are met. When the data completeness or data quality objectives are not met, the Quality Assurance Manager and Senior Air Quality Specialist determines the cause and notifies the Air Quality Supervisor. The Quality Assurance Managers briefs the Division Director on the data completeness and data quality for the previous year prior to completing the Data Certification by the Air Quality Supervisor. Before May 1, the AMP 600 Data Certification Report will be reviewed for the previous year by the Senior Air Quality Specialist and Quality Assurance Manager, with final approval from the Division Director, as part of the Data Certification process.

10.3 Internal Audits

Performance evaluations assess the accuracy of ambient particulate samplers, gaseous pollutant analyzers, and laboratory instruments. These audits are performed quarterly by the Air Quality Specialists in the Monitoring Branch, making sure that no staff member is auditing the samplers, analyzers, or instruments that they run on a day-to-day basis. This ensures the separation of duties as required by EPA regulation. If the difference between the audit reference standards and the indicated values of the equipment being audited exceed the tolerances established as policy in the QAPP, the auditor issues a Corrective Action Request form (see Figure 10-1) indicating the need for investigation of the audit discrepancy. The Monitoring Branch must investigate the cause of the discrepancy and take corrective action if necessary. Depending on the results of the investigation, data collected while the discrepancy existed may require correction (if possible) or invalidation. The results of the investigation and any action taken are documented on the Corrective Action Request form which remains on file as a record of the problem, the corrective action, the resulting data adjustments, and the timetable for these events. After the corrective action has been addressed by the auditor and the site operator, the Quality Assurance Manager reviews the Corrective Action form for accuracy and completeness of the corrective action. The QA Manager approves the Corrective Action form before submitting the form to the Division Director for final approval.

Meteorological performance audits are performed quarterly, including functionality tests on sonic anemometers and three-point temperature checks on ambient temperature sensors. Once per year, the sonic anemometers are taken down for complete recertification/calibration by the manufacturer or a third-party testing facility. The audit findings and recommendations are submitted to the Quality Assurance Manager for review, and corrective action taken where needed. Data from sensors that fail the audit are reviewed and edited or invalidated.

Figure 10-1 Corrective Action Request Form

Air Quality Management Division
Corrective Action Request



Part A (to be completed by requestor)

To: (Site/Instrument Operator) _____

Urgency: (check one)

- Emergency (failure to take action immediately may result in injury or property damage)
- Immediate (4 hours)
- Urgent (24 hours)
- Routine (7 days)
- As resources allow
- For information only

From: (Requestor) _____

Problem Identification:

Site: _____
System: _____
Date: _____
Time: _____

Nature of Problem: _____

Recommended Action: _____

Signature: _____ Date: _____

Part B (to be completed by site/instrument operator)

Problem Resolution:

Date corrective action taken: _____
Time corrective action taken: _____
Corrective Action Summary: _____

Signature: _____ Date: _____

QA Manager Signature: _____ Date: _____

Supervisor Signature: _____ Date: _____

Director Signature: _____ Date: _____

File completed original form in audit folder and file copies in instrument and data exception logs.

10.4 External Audits

The AQMD's quality system is audited by EPA or an EPA-hired contractor. EPA's contractor conducts National Performance Audit Program (NPAP) through-the-probe (TTP) evaluations annually at 25% of AQMD's monitoring sites. EPA's audit program is certified and these performance evaluations fulfill the federal NPAP requirement. EPA conducts local agency program review audits, including the Air Monitoring Program every 7 to 10 years. EPA's contractor conducts performance evaluations at AQMD's PM_{2.5} monitoring sites as part of the Performance Evaluation Program (PEP) 5 to 6 times per year

EPA also conducts technical systems audits (TSAs). A TSA is an on-site inspection and review of a monitoring organization's entire program, including sample collection, sample analysis, data processing, staff, procedures, facilities, and documentation to assure compliance with EPA air quality monitoring, quality assurance, siting, and data reporting regulations. EPA's Region 9 Air Quality Analysis Office conducts a technical systems audit of the AQMD every three years and submits the audit report to the Division Director and Air Quality Supervisor of the Monitoring Branch

Any audit findings that require corrective action are addressed as described under the Management Review and Response subchapter below.

10.5 Assessment Staff

Performance evaluations are performed by the Air Quality Supervisor in the Monitoring Branch. The job class descriptions for staff selected for performance evaluations specify the education, knowledge, skills, and abilities required to perform their duties (Appendix A). Staff receives extensive training from senior and supervisory level staff and managers. Staff also attends National Ambient Air Monitoring annual conferences, Air Quality Systems semi-annual training and conferences, instrument vendor training, and college classes under the AQMD tuition reimbursement program. Supervisors and managers develop standard performance objectives for assessment of staff and evaluate their performance against the objectives annually. Managers and staff are evaluated annually on their implementation of and adherence to QMP, QAPP, SOPs, and policies.

10.6 Management Review and Response

Staff document all work performed by preparing reports, which are reviewed by supervisors and managers. If quality problems are identified by data assessment, internal audits, or external audits or reviews that require corrective action, the Senior Air Quality Specialist notifies the Quality Assurance Manager and together they develop and implement a corrective action plan. The corrective action plan identifies the root causes, determines if the problem is unique, and recommends a revision to an existing SOP or a new SOP as appropriate. The Senior Air Quality Specialist ensures that corrective action is taken as soon as possible, and the Quality Assurance Manager verifies the implementation and effectiveness of any corrective action taken.

10.7 Assessment Disputes

Internal Assessment and Recommendations:

All assessment information and recommendations are sent to the appropriate site managers by the Senior Air Quality Specialists to the Quality Assurance Manager. In cases where the assessment findings or recommendations are disputed or any other disputes arise among the site operators, Senior Air Quality Specialist, Data Manager, Laboratory Manager or Quality Assurance Manager, disputes are resolved at the lowest level of the organization as follows:

- Journey level staff involved in the dispute meet and discuss the disputed findings or recommendations and attempt to resolve the dispute at that level;
- If the dispute cannot be resolved by Journey level staff, the dispute is escalated to Senior level staff in a further attempt to reach a resolution;
- If the dispute cannot be resolved by Senior level staff, the dispute is escalated to Supervisory level staff in a further attempt to reach a resolution;
- If the dispute cannot be resolved by Supervisory level staff, the AQMD Division Director reviews the information presented and makes a final decision.

External Assessment and Recommendations:

In cases where external assessments conducted by or recommendations made by EPA or any other third party are disputed, the Division Director and Air Quality Supervisor involved in the dispute meet with the appropriate staff from EPA or other third party to discuss and attempt to resolve the disputed findings. In some cases where there is an interagency dispute the Division Director may be involved in dispute resolution. For external assessments, EPA or another third party ultimately make the final determination in resolving a dispute.

11. Quality Improvement

Quality improvement is an ongoing, continuous process by which an organization identifies areas that require corrective action or provides opportunities for improvement. As part of the process, this QMP, the associated QAPP, and all SOPs are all “living” documents subject to constant review and change as improvements are made.

The Air Quality Supervisor, Senior Air Quality Specialist, and Quality Assurance Manager are responsible for identifying, planning, implementing, and evaluating the effectiveness of quality improvements.

There are many tools and techniques, described elsewhere in this document, that are designed to prevent and/or promptly identify conditions that require corrective action, in particular developing, maintaining, and revising high quality standard operating procedures. A few examples include:

- Quality control checks for gaseous analyzers;
- Frequent flow rate checks for PM samplers;
- Frequent performance evaluations;
- Monthly PM_{2.5} filters with invalid flag report
- Blanks, standards, controls, and replicates lab analysis; and
- Internal systems audits.

When activities that require corrective action are identified, senior and supervisory level staff and managers make it a priority to determine the cause and the extent of the problem. Corrective action is taken as soon as possible, and the problem and corrective action taken are documented as appropriate on a Corrective Action Request form (Figure 10-1), in the air monitoring station log book, air monitoring instrument log book, or laboratory instrument log book. Depending on the nature of the problem, the manager, supervisor, or senior level staff responsible for the area in which corrective action was required is responsible for tracking the corrective action. Tracking of corrective actions takes place on the Monitoring Quarterly Audits summary sheet (See Figure 11-1).

Manager, supervisory, and senior level staff are responsible for ensuring that staff at all levels identify, report, and develop recommendations for activities that require corrective action or provide opportunities for improvement, and report them to the appropriate manager, supervisor, or senior level staff.

Manager, supervisory, and senior level staff are also responsible for ensuring that staff at all levels communicate with both internal and external data users and external data suppliers to identify problems as well as opportunities for improvement and to develop and propose solutions.

Figure 11-1 Monitoring Quarterly Audits Summary Sheet

Monitoring Quarterly Audits										Year: 2019	Quarter: 1st
Parameter	Site	Instrument	Model	Serial #	Date	Avg. % Dev.	Difference	Audit Criteria	Pass / Fail	Corrective Action	
CO	Reno 3	TAPI	300EU	261	03/20/19	0.4	—	+/- 15%	Pass		
	Sparks	TAPI	300EU	269	03/13/19	2.0	—	+/- 15%	Pass		
Ozone	Incline	TAPI	400E	2824	03/15/19	3.1	—	+/- 15%	Pass		
	Lemmon Valley	TAPI	T400	1399	03/14/19	-1.3	—	+/- 15%	Pass		
	Reno 3	TAPI	400E	2133	03/20/19	4.1	—	+/- 15%	Pass		
	South Reno	TAPI	T400	1398	03/14/19	-0.1	—	+/- 15%	Pass		
	Spanish Springs	TAPI	T400	2789	03/13/19	-1.2	—	+/- 15%	Pass		
	Sparks	TAPI	T400	1400	03/13/19	0.0	—	+/- 15%	Pass		
Toll	TAPI	400E	2607	03/15/19	5.3	—	+/- 15%	Pass			
SO ₂	Reno 3	TAPI	100EU	157	03/20/19	-3.3	—	+/- 15%	Pass		
NO ₂	Reno 3	TAPI	200EU	222	03/21/19	5.5	—	+/- 15%	Pass		
NO ₂ (Y)	Reno 3	TAPI	200EU	109	03/21/19	4.5	—	+/- 15%	Pass		
Zero Air	Incline O ₃	TAPI	701	2704	03/15/19	—	0.0	< 10 ppb	Pass		
	Lemmon Valley O ₃	TAPI	701	2707	03/14/19	—	1.0	< 10 ppb	Pass		
	Reno 3 CO	TAPI	701H	2946	03/20/19	—	-0.019	< 0.1 ppm	Pass		
	Reno 3 O ₃	TAPI	701H	2946	03/20/19	—	0.0	< 10 ppb	Pass		
	Reno 3 SO ₂	TAPI	701H	2946	03/20/19	—	0.03	< 1 ppb	Pass		
	Reno 3 NO ₂	TAPI	701H	2946	03/28/19	—	0.0	< 10 ppb	Pass		
	Reno 3 NO _x -NO	TAPI	701H	2946	03/28/19	—	0.6	< 10 ppb	Pass		
	South Reno O ₃	TAPI	701	794	03/14/19	—	-0.7	< 10 ppb	Pass		
	Spanish Springs O ₃	TAPI	701	2346	03/13/19	—	-2.0	< 10 ppb	Pass		
	Sparks CO	TAPI	701H	2705	03/13/19	—	0.0	< 0.1 ppm	Pass		
	Sparks O ₃	TAPI	701H	2705	03/13/19	—	0.0	< 10 ppb	Pass		
	Toll O ₃	TAPI	701	2195	03/15/19	—	0.0	< 10 ppb	Pass		
Shelt. Temp.	Incline	T Sentry	140-100HVB	91011331	03/15/19	—	0.0	+/- 2°C	Pass		
	Lemmon Valley	T Sentry	140-100HVB	91011333	03/14/19	—	0.2	+/- 2°C	Pass		
	Reno 3	T Sentry	140-100HVB	91011335	03/26/19	—	0.7	+/- 2°C	Pass		
	South Reno	T Sentry	140-100HVB	91011330	03/14/19	—	-0.1	+/- 2°C	Pass		
	Spanish Springs	T Sentry	140-100HVB	91011329	03/19/19	—	0.0	+/- 2°C	Pass		
	Sparks	T Sentry	140-100HVB	91011332	03/19/19	—	0.0	+/- 2°C	Pass		
Toll	T Sentry	140-100HVB	120315641	03/15/19	—	0.3	+/- 2°C	Pass			
PM ₁₀	Reno 3	BGI	PQ200	794	03/20/19	-0.1	—	+/- 4%	Pass		
	Reno 3	Met One	BAM 1020	K1287	03/26/19	-0.6	—	+/- 4%	Pass		
	Spanish Springs	Met One	BAM 1020	N10986	03/19/19	0.3	—	+/- 4%	Pass		
	Sparks	Met One	BAM 1020	R10379	03/19/19	0.4	—	+/- 4%	Pass		
	Toll	Met One	BAM 1020	M7649	03/19/19	-0.1	—	+/- 4%	Pass		
PM _{2.5} (act. flow)	Reno 3 Des.	BGI	PQ200	790	03/20/19	0.0	—	+/- 4%	Pass		
	Reno 3	Met One	BAM 1020	K1286	03/26/19	0.1	—	+/- 4%	Pass		
	Spanish Springs	Met One	BAM 1020	N10986	03/19/19	-0.8	—	+/- 4%	Pass		
	Sparks	Met One	BAM 1020	M4380	03/19/19	-0.7	—	+/- 4%	Pass		
	Toll	Met One	BAM 1020	M7605	03/19/19	-0.2	—	+/- 4%	Pass		
Speciation	Reno 3	Met One	SuperSASS	R11519	03/26/19	1.5	—	+/- 10%	Pass		
	Reno 3	URG	300DN	3N-B0819	03/26/19	-0.4	—	+/- 10%	Pass		
Amb. Temp.	Balance Room	Dickson	RTRH	16323910	03/13/19	—	-0.5	+/- 2°C	Pass		
	Reno 3	YSI	700	—	03/26/19	—	-0.1	+/- 0.5°C	Pass		
	South Reno	YSI	700	—	03/19/19	—	-0.2	+/- 1.0°C	Pass		
	Spanish Springs	YSI	700	—	03/19/19	—	-0.1	+/- 1.0°C	Pass		
	Sparks	YSI	700	—	03/19/19	—	0.5	+/- 1.0°C	Pass		
	Toll	YSI	700	—	03/19/19	—	-0.4	+/- 1.0°C	Pass		
RH	Balance Room	Dickson	RTRH	16323910	03/13/19	—	-0.9	+/- 2%	Pass		
	Reno 3	Met One	063E	P18243	03/26/19	—	4.1	+/- 7%	Pass		
WSP/WDR	Reno 3	Met One	50.5H	N11876 /	03/26/19	—	—	Ops check	Pass		
	South Reno	Met One	50.5H	D6669	03/19/19	—	—	Ops check	Pass		
	Spanish Springs	Met One	50.5H	D6670	03/19/19	—	—	Ops check	Pass		
	Sparks	Met One	50.5H	N11878	03/19/19	—	—	Ops check	Pass		
	Toll	Met One	50.5H	D6668	03/19/19	—	—	Ops check	Pass		
Mass	Lab	Working	400 mg	83551	03/14/19	—	1.0	+/- 2.0µg	Pass		
	Lab	Working	300 mg	65511	03/14/19	—	-1.5	+/- 2.0µg	Pass		

 - failed audit

 - audit not completed

QA Manager Signature: _____

Date: _____

12. References

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**Appendix A: Washoe County Health District - Air Quality
Management Division Job Class Specifications**

For

Quality Management Plan

Ambient Air Quality Monitoring Program



CLASS SPECIFICATION

Class Code: 0619
Date Est: 09/90
Last Rev: 6/14/2010
Last Title Chg:
FLSA: Exempt
Probation: 12 months

DIVISION DIRECTOR - AIR QUALITY MANAGEMENT

DEFINITION

Under administrative direction, plans, organizes, and directs the Air Quality Management program for Washoe County, including regulation development, air quality plan development, air quality monitoring, permitting, enforcement, emissions control, and public education efforts; represents the division on a variety of matters with boards, public forums, and the media; and performs related work as required.

EXPERIENCE AND TRAINING REQUIREMENTS

A bachelor's degree from an accredited college or university in Natural or Environmental Sciences or a closely related field and five years of full-time experience performing environmental control or enforcement functions in a health department or industry, including two years in developing or directing a major program in a field of environmental control; OR an equivalent combination of education and experience.

A master's degree in Environmental Science, Public Health or a related field may be substituted for one year of the required experience.

LICENSE OR CERTIFICATE

A valid driver's license is required at the time of appointment.

SUPERVISION EXERCISED

This is a supervisory, division head, management classification for the Washoe County Air Quality Management Program.

EXAMPLES OF DUTIES *(The following is used as a partial description and is not restrictive as to duties required.)*

Prepare, present, and implement a Strategic Plan, including Federal Air Quality work plans; and development of program requirements based on statutes and the need for the maintenance of air quality standards.

Develop regulatory proposals to control emissions from mobile and stationary sources of air pollution and submit them for consideration by the District Board of Health.

Assign, direct, and review the work of division staff including the direct supervision of air pollution staff.

Conduct performance evaluations and evaluate the effectiveness of programs.

Develop and provide budget justifications for division expenditures and make recommendations for budget reductions deemed necessary during budget review.

Represent the Air Pollution Management Program with the media, hearing boards, District Board of Health, the public, civic organizations, and other departments and agencies.

Explain division regulations, air pollution attainment strategies, air quality trends, and related issues to the public.

Direct the preparation and prepare progress reports to grant agencies and special reports on air quality programs and issues for the public and the District Board of Health.

Coordinate with other agencies in the development and implementation of strategies to attain health-based air quality standards.

Develop recommendations for technical and research programs necessary to determine sources and extent of air quality problems or to evaluate potential solutions; including, but not limited to, siting of air quality and meteorology monitors, computer simulation modeling of air pollution episodes, chemical testing, and identification of sources.

Provide direction and guidance for enforcement processes including enforcement techniques, documentation of facts, evidence collection, and issue of notices of violation, stop work orders, operating permit suspensions, and citations.

Make recommendations to Health Officer on the declaration of air pollution episodes when air pollution levels reach, or are predicted to reach, unhealthful levels.

Ensure that assigned personnel perform duties and responsibilities in a safe and prudent manner that does not expose them or others to unnecessary harm or risk of on-the-job injury.

JOB RELATED AND ESSENTIAL QUALIFICATIONS

Full Performance *(These may be acquired on the job and are needed to perform the work assigned.)*

Knowledge of:

Departmental/division policies and procedures.

Countywide personnel policies and procedures.

Computer software specific to the department/division and technical field.

Federal, State and County laws and regulations governing air quality management.

The community commissions and agencies involved in air pollution control.

Ability to:

Supervise personnel, including training, assigning, and reviewing work, administering discipline, and conducting performance evaluations.

Plan, coordinate, and direct the operations of the Air Quality Management Program to efficiently accomplish established goals and objectives.

Develop and implement air pollution control requirements and apply federal air quality control requirements while demonstrating awareness and sensitivity to political issues.

Implement work methods and procedures that promote a safe working environment and ensure proper staff training in work safety.

Entry Level *(Applicants will be screened for possession of these through written, oral, performance, or other evaluation methods.)*

Knowledge of:

Principles and practices of management and supervision.

Principles of budget preparation and fiscal accounting.

Federal air quality management control programs and laws, rules, and regulations pertaining to air quality standards.

Methods and procedures of identifying and controlling air quality problems, which includes the measurement and control of pollutants.

Meteorological and atmospheric processes affecting air pollution levels in the community.

Investigation, inspection, and enforcement techniques.

Ability to:

Interpret, understand, and apply technical reports, statutes, rules, regulations, physical test results, and data.

Evaluate work priorities, procedures, and processes to determine their effectiveness and efficiency.

Direct investigations and inspections through the use of proper investigative techniques and processes.

Ensure that appropriate enforcement actions are undertaken.

Develop and implement recommendations regarding work procedures and cost effective services.

Interpret chemical and physical test results and ensure conformity to appropriate standards.

Communicate effectively, both orally and in writing.

Make sound decisions under pressure and negotiate outcomes that preserve individual rights and meet environmental standards.

Maintain cooperative working relationships with division staff, the public, and representatives of other departments.

SPECIAL REQUIREMENTS

Essential duties require the following physical skills and work environment.

Ability to sit for extended periods. Ability to frequently stand and walk. Ability to lift and move objects weighing up to 25 lbs. Ability to use environmental testing equipment and office equipment including computers, copiers, telephones, and two-way radios.

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards.



CLASS SPECIFICATION

Class Code: 0609
Date Est: 6/74
Last Rev: 4/98
Last Title Chg: 5/94
FLSA: Exempt

AIR QUALITY SUPERVISOR

DEFINITION

Under general direction, coordinates the activities in one or more major functional areas within the Air Quality Division (e.g., Planning, Monitoring, Compliance, etc.); plans, develops and implements procedures; supervises professional, technical and support staff; and performs related work as required.

EXPERIENCE AND TRAINING REQUIREMENTS

A bachelor's degree from an accredited college or university in engineering, natural, physical or environmental sciences, or a closely related field, plus four years of professional or technical full time experience in air quality planning, monitoring, analysis or permitting; OR an equivalent combination of training and experience.

LICENSE OR CERTIFICATE

A valid driver's license is required at the time of appointment.

DISTINGUISHING CHARACTERISTICS

This is the supervisory level in the Air Quality Specialist series. Incumbents direct and participate in activities of a major functional area(s) in the Air Quality Division (e.g., Planning, Monitoring, Compliance, etc.).

SUPERVISION EXERCISED

Exercises direct supervision over professional, technical and support staff.

EXAMPLES OF DUTIES *(The following is used as a partial description and is not restrictive as to duties required.)*

Manage the activities of one or more major functional areas of the Air Quality Division through the formulation, implementation and evaluation of procedures which regulate air quality monitoring, data collection and analysis, air quality planning, compliance/enforcement, rule/regulation development, grant/report writing and coordinate assigned activities with others in related areas.

Supervise assigned staff engaged in air quality monitoring, planning and/or compliance functions including selection of personnel, training coordination, work assignment/review, employee discipline and performance evaluation.

Analyze the operational impact of changes in federal mandates and regulations; evaluate operational performance, review work methods, and procedures, and develop and recommend changes in work processes, workflow, and/or equipment used to ensure effective operations in compliance with policies and/or regulations.

Participate in and/or coordinate the collection of raw data relating to the nature, type and quantity of ambient air pollutants by assigning staff to collect the appropriate data or contracting with outside agencies to provide the same for inclusion in progress reports, planning recommendations and other documents.

Analyze and interpret collected data through a variety of methods including statistical analysis, computer simulation modeling, and chemical analysis, determining the source of air pollutants, air quality trends, and the degree of regulatory effectiveness/compliance to develop and/or evaluate appropriate strategies for air quality attainment and continued maintenance.

Develop regulatory proposals for adoption by the District Board of Health that will facilitate attainment of mandated air quality standards and provide for continued compliance within the jurisdiction of the Air Quality District.

Coordinate the preparation and compose documents such as grant applications, state implementation plans, progress, monitoring and other reports, which describe regulatory activities and their effectiveness, for submission to the appropriate agencies in a timely manner.

Represent the division before different entities or individuals which may include the EPA, District Board of Health, advisory boards, state, county and other planning agencies, the general public, professional groups and civic organizations to provide information, explain division policies/regulations and represent the interests of the division.

Provide written recommendations, including cost projections and justifications, for staffing levels, supplies, equipment, services, and other program needs for inclusion in the annual budget.

Ensure that assigned personnel perform duties and responsibilities in a safe and prudent manner that does not expose them or others to harm or unnecessary risk of on-the-job injury.

JOB RELATED AND ESSENTIAL QUALIFICATIONS

Full Performance *(These may be acquired on the job and are needed to perform the work assigned.)*

Knowledge of:

Departmental/divisional policies and procedures.

Countywide personnel policies such as affirmative action, sexual harassment, discrimination, and EEO.

State and local laws and regulations governing air quality control.

Jurisdictional, compliance and enforcement issues related to air quality control regulations.

Computer hardware, software, and monitoring equipment utilized by the division/department.

Ability to:

Plan, coordinate, and direct the operations of an air quality program to accomplish established goals and objectives and optimize efficiency.

Incorporate existing geographic and meteorological conditions of Washoe County into air quality planning and monitoring programs and activities.

Select, supervise, and evaluate the performance of assigned staff.

Identify work methods and procedures that promote a safe working environment for employees and others; and train staff in same.

Entry Level *(Applicants will be screened for possession of these through written, oral, performance, or other evaluation methods.)*

Knowledge of:

Principles, practices, and techniques of air quality planning, monitoring, and control.

Principles and practices of management and supervision.

Federal laws and regulations governing air quality control.

Advanced mathematics including algebra, trigonometry, calculus, and statistics.

Atmospheric physics, meteorology and chemistry as they apply to air quality control.

Engineering principles and practices as they apply to air quality control.

Ability to:

Evaluate work priorities, procedures, and processes to determine their effectiveness and efficiency.

Analyze data and make suitable recommendations.

Develop and implement recommendations regarding work procedures and cost effective services.

Compile statistical reports.

Use a personal computer.

Interpret and apply statutes, regulations, policies, and procedures.

Communicate orally in a clear, concise manner.

Write draft regulations and narrative reports.

Establish and maintain effective working relationships with those contacted in the course of work.

SPECIAL REQUIREMENTS

Essential duties require the following physical skills and work environment.

Ability to work in a standard office environment. Ability to occasionally work outdoors in various types of weather. Ability to lift and move objects weighing up to 25 lbs. Ability to use standard office equipment including, telephones, computers, copiers, and fax machines.

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards.

Approved _____ WERCCS Job Evaluation Committee _____

Date _____ March, 2001 _____



CLASS SPECIFICATION

Class Code: 15900
Date Est: 07/2006
Last Rev:
Last Title Chg:
FLSA: non-exempt
Probation: 12 months

SENIOR AIR QUALITY SPECIALIST

DEFINITION

Under general supervision, as lead worker in a specific air quality program, independently performs and directs others in the full range of air quality duties, including air quality monitoring, air quality planning activities, and compliance and enforcement duties; and performs related work as required.

EXPERIENCE AND TRAINING REQUIREMENTS

A bachelor's degree from an accredited college or university in Engineering, Natural, Physical or Environmental Sciences, or a closely related field, plus four years of full time journey level experience in an air pollution control or enforcement program, including two years of experience in a specialized program area; OR an equivalent combination of training and experience.

LICENSE OR CERTIFICATE

A valid driver's license is required at the time of appointment.

DISTINGUISHING CHARACTERISTICS

This class is distinguished from the Air Quality Specialist class series by lead worker responsibility over the flexibly staffed Air Quality series in a specific air quality program. Incumbents also perform full range of air quality duties.

SUPERVISION EXERCISED

Provides lead direction over technical and support staff assigned to the Air Quality Division.

EXAMPLES OF DUTIES *(The following is used as a partial description and is not restrictive as to duties required.)*

Provide lead direction in a specific air quality program, direct program activities; schedule, assign, and review work; train Air Quality Specialists and other support staff in procedures of air quality to ensure that activities are performed within established standards and regulations; conduct annual needs assessments and develop goals and objectives for program activities and staff assignments.

Coordinate and participate in the development of new programs and revision of existing programs to meet department objectives; develop, review and approve processes for new and revised rules and regulations pertaining to air quality.

Review and analyze complex cases, reports and rules for compliance with applicable regulations; prepare reports and recommendations relative to enforcement programs.

Interact with local, state, federal, and industry representatives to obtain and disseminate technical and operations information.

Monitor and evaluate legislation and governmental actions related to air quality; develop recommendations for district regulations and programs.

Conduct, coordinate, and perform research data collection for the control or eradication of air quality hazards or deficiencies; write inspection and investigation reports which evaluate the findings and include recommendations;

assemble data, (computerized and manual) for tracking and documentation purposes and to prepare federal, state, and local reports.

Implement new federal, state, or district air quality procedures, policies and programs.

Testify/present evidence in court or before designated hearing boards regarding actions, involvement, observations, and information obtained related to violations of complex environmental regulations.

Promote awareness and understanding of air quality programs, services, policies and regulatory requirements by conducting workshops, making presentations and providing training/information to targeted groups, e.g., a variety of legal, public, private agency officials, boards, businesses and meetings of community groups.

Mentor, train staff in procedures and protocols of air quality programs to ensure that assigned activities are performed within established standards and regulations.

Ensure that assigned personnel perform duties and responsibilities in a safe and prudent manner that does not expose them or others to unnecessary harm or risk of on-the-job injury.

JOB RELATED AND ESSENTIAL QUALIFICATIONS

Knowledge of:

Program planning and implementation.

Operations, services, and activities of air quality management programs.

Federal regulations governing compliance with air quality standards.

Training methods, techniques, and practices.

Advanced investigative sampling and testing methods, techniques, and protocols for air quality programs.

Conditions contributing to air quality problems and accepted control measures.

Quantitative methods, scientific methodology, data collection and report preparation.

Advanced principles of chemical analysis.

Advanced mathematics, including algebra, geometry, and trigonometry.

Instrumentation and equipment commonly used in air quality/monitoring programs.

Ability to:

Maintain responsibility for the planning, development, and implementation of assigned air pollution control program components.

Use sampling and testing methods for air quality data acquisition.

Operate instruments and equipment commonly used in air quality/monitoring programs.

Mentor, train and lead staff in the performance of assigned program(s) activities; assign, direct and review work.

Perform functions and activities of various program areas with the Air Quality Division.

Present training and public education programs to a variety of audiences.

Observe and evaluate air quality/pollution deficiencies and hazards and recommend solutions.

Interpret, develop and apply protocols, regulations, policies, and procedures.

Operate a personal computer and use a variety of software packages.

Research, compile, tabulate, analyze, and interpret data and information.

Communicate in a clear, concise manner both orally and in writing.

Write inspection/investigative reports and other documents.

Interact courteously and diplomatically with the public.

Work independently in the absence of direct supervision

Plan, prioritize, and organize work to meet schedules and timelines.

Establish and maintain effective working relationships with those contacted in the course of work.

SPECIAL REQUIREMENTS

Essential duties require the following physical skills and work environment.

Work is performed in a standard office environment and various indoor/outdoor off-site locations. Ability to lift and move objects weighing up to 50 lbs. Ability to operate monitoring and sampling/testing equipment for air pollution control. Ability to use standard office equipment including computers, copiers, telephones, and FAX machines. Ability to work around machinery with moving parts and on slippery or uneven surfaces. Ability to tolerate exposure to the elements, dust, chemicals, and possibly toxic substances.

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards.

Approved _____ WERCCS Job Evaluation Committee _____

Date _____



CLASS SPECIFICATION

Class Code: 0618
Date Est: 07/1986
Last Rev: 09/2017
Last Title Chg: 09/2017
FLSA: non-exempt
Probation: 12 months

AIR QUALITY SPECIALIST

DEFINITION

Under general supervision, performs the full range of air quality control duties with a high degree of independence; investigates, monitors and analyzes existing and potential sources of air pollution; assists with the implementation and enforcement of abatement programs; and performs related work as required.

EXPERIENCE AND TRAINING REQUIREMENTS

A bachelor's degree from an accredited college or university in engineering, natural, physical or environmental sciences or a closely related field, AND two years of full time experience in an environmental management program; OR an equivalent combination of training and experience.

LICENSE OR CERTIFICATE

May require the ability to obtain an Asbestos Hazard Emergency Response Act Certification and/or Visual Emissions Evaluation Certification, and may be required to complete the Mine Safety and Health Administration basic above ground mine safety course, based on area of assignment.

A valid driver's license is required at the time of appointment.

DISTINGUISHING CHARACTERISTICS

This is the journey level in the Air Quality Specialist series. It is distinguished from the Air Quality Specialist Trainee by performance of the full scope of air quality monitoring, planning, permitting or enforcement duties with a high degree of independence.

SUPERVISION EXERCISED

Exercises no supervision.

EXAMPLES OF DUTIES *(The following is used as a partial description and is not restrictive as to duties required.)*

Monitor ambient air quality by installing, calibrating, adjusting, collecting and processing data from testing/sampling instrumentation and equipment to evaluate public health risks.

Develop and support databases for air quality programs, e.g., permitting, monitoring, planning, compliance and asbestos; compile and analyze data using statistical analysis, computer modeling, chemical analysis or other methods to draw conclusions and support recommendations.

Participate in the development of regulations; recommend changes in division protocols and procedures; recommend methods for the control or eradication of air quality hazards or deficiencies.

Review permit applications and inspection results to determine if businesses are in compliance with established air quality regulations; recommend modifications to establishments and/or operations to achieve compliance, gain permit approval or eliminate conditions which are in violation to assist local industry.

Enforce appropriate control measures to ensure compliance with air quality standards and regulations through the issue of operating permits and citations; inspect existing and potential stationary sources of air pollution, sampling and analyzing results.

Perform inspections and investigations of air quality complaints and conditions by sampling, testing and surveying potential or reported sources of emissions and other air quality problems to determine the extent of compliance/non-compliance with air quality standards and regulations and identify the necessity for corrective/preventative action.

Write inspection and investigation reports, which evaluate findings and include recommendations; assemble data (computerized and manual) for monitoring and documentation purposes and assist in preparing grant proposals, federal, state and local reports.

Testify/present evidence in court or before designated hearing boards regarding actions, involvement, observations and information obtained, related to violations of environmental regulations.

Promote awareness and understanding of air quality programs, services, policies and regulatory requirements by making presentations and providing training/information to targeted groups, e.g., boards, businesses and meetings of community groups.

Train staff in procedures and protocols of air quality programs to ensure that assigned activities are performed within established standards and regulations.

Full Performance *(These may be acquired on the job and are needed to perform the work assigned.)*

Knowledge of:

Departmental/divisional policies and procedures.

Federal, state, and local regulations governing compliance with air quality standards.

Local geography and population densities.

Management information systems and software programs used in the assigned area(s).

Protocol for handling, preserving, and presenting evidence.

Conditions contributing to air quality problems and accepted control strategies in Washoe County.

Program planning and implementation.

Asbestos hazard abatement.

Ability to:

Maintain responsibility for the planning, development and implementation of assigned air pollution control program components.

Train staff in procedures and protocols of air quality programs.

Operate and maintain assigned departmental equipment used in testing and sampling of air quality conditions and deficiencies.

Present training and public education programs to a variety of audiences.

Perform functions and activities of various program areas with the Air Quality Division.

Entry Level (*Applicants will be screened for possession of these through written, oral, performance or other evaluation methods.*)

Knowledge of:

State and local regulations governing compliance with air quality standards.

Investigative sampling and testing methods, techniques, and protocols for air quality programs.

Conditions contributing to air quality problems and accepted control strategies.

Quantitative methods, scientific methodology, data collection and report preparation.

Basic principles of chemical analysis.

Advanced mathematics; including algebra, geometry and trigonometry.

Instrumentation and equipment commonly used in air quality/monitoring programs.

Ability to:

Use sampling and testing methods for air quality data acquisition.

Operate instruments and equipment commonly used in air quality/monitoring programs.

Observe and evaluate air quality/pollution deficiencies and hazards and recommend solutions.

Interpret and apply protocols, regulations, policies and procedures.

Research, compile, tabulate, analyze and interpret data and information.

Communicate in a clear, concise manner both orally and in writing.

Write inspection/investigative reports and other documents.

Interact courteously and diplomatically with the public.

Maintain files, records, data and information.

Read blueprints, construction plans, and flow diagrams.

Establish and maintain effective working relationships with those contacted in the course of work.

SPECIAL REQUIREMENTS (*Essential duties require the following physical skills and work environment.*)

Work is performed in a standard office environment and various indoor/outdoor off-site locations. Ability to lift and move objects weighing up to 50 lbs. Ability to operate monitoring and sampling/testing equipment for air pollution control. Ability to use standard office equipment including computers, copiers, telephones, and fax machines. Ability to work around machinery with moving parts and on slippery or uneven surfaces. Ability to tolerate exposure to the elements, dust, chemicals, and possibly toxic substances. Ability to satisfactorily pass respirator medical screening tests.

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards.



CLASS SPECIFICATION

Class Code: 0617
Date Est: 07/1986
Last Rev: 09/2017
Last Title Chg: 09/2017
FLSA: non-exempt
Probation: 12 months

AIR QUALITY SPECIALIST TRAINEE

DEFINITION

Under direct supervision, receives training to perform investigation, inspection, monitoring and sampling duties to determine compliance with air quality standards; ensures appropriate enforcement action; and performs other related work as required.

EXPERIENCE AND TRAINING REQUIREMENTS

A bachelor's degree from an accredited college or university in engineering, natural, physical or environmental sciences or a closely related field: OR an equivalent combination of training and experience.

LICENSE OR CERTIFICATE

May require the ability to obtain an Asbestos Hazard Emergency Response Act Certification and/or Visual Emissions Evaluation Certification, and may be required to complete the Mine Safety and Health Administration basic above ground mine safety course, based on area of assignment.

A valid driver's license is required at the time of appointment.

DISTINGUISHING CHARACTERISTICS

This is the entry-level in the Air Quality Specialist classification series, which provides for progression to the next level in the series upon meeting the requirements of the class and recommendation of the appointing authority. This level is intended as a training position to enable incumbents to learn policies, procedures, specific techniques and regulations related to air quality management.

SUPERVISION EXERCISED

Exercises no supervision.

EXAMPLES OF DUTIES *(The following is used as a partial description and is not restrictive as to duties required.)*

Participate in monitoring local air quality by learning to install, calibrate, adjust, collect and process data from testing/sampling instrumentation and equipment to evaluate public health risks.

Assist in the development of and support databases for air quality programs, e.g., monitoring, planning, permitting, and compliance; learn to compile and analyze data using statistical analysis, computer modeling or other methods to draw conclusions and support recommendations.

Participate in the development of regulations; recommend changes in division procedures and protocols; recommend methods for the control or eradication of air quality hazards or deficiencies.

Learn to review permit applications and inspection results to determine if businesses are in compliance with established air quality regulations; recommend modifications to establishments and/or operations to achieve compliance, gain permit approval or eliminate conditions which are in violation.

Participate in inspections and investigations of air quality complaints and conditions by sampling, testing and surveying potential or reported sources of emissions and other air quality problems to determine the extent of compliance/non-compliance with air quality standards and regulations and identify the necessity for corrective/preventative action.

Write inspection and investigation reports to senior staff, which evaluate findings and include recommendations; assemble data (computerized and manual) for monitoring and documentation purposes and assist in preparing grant proposals, federal, state and local reports.

Review and recommend enforcement actions and appropriate control measures, to senior staff, which ensure compliance with air quality standards and regulations through the Issue of operating permits and citations; inspect existing and potential stationary sources of air pollution, sampling and analyzing results.

Observe and prepare to testify/present evidence in court or before designated hearing boards regarding actions, involvement, observations, and information obtained, related to violations of environmental regulations.

Promote awareness and understanding of air quality programs, services, policies and regulatory requirements by participating in presentations and providing training/information to targeted groups, e.g., boards, businesses and meetings of community groups.

JOB RELATED AND ESSENTIAL QUALIFICATIONS

Full Performance *(These may be acquired on the job and are needed to perform the work assigned.)*

Knowledge of:

Departmental/divisional policies and procedures.

Federal, state and local regulations governing compliance with air quality standards.

Investigative sampling and testing methods, techniques, and protocols for air quality programs.

Local geography and population densities.

Management information systems and software programs used in the assigned area(s).

Protocol for handling, preserving and presenting evidence.

Conditions contributing to air quality problems and accepted control measures in Washoe County.

Ability to:

Operate and maintain assigned departmental equipment used in testing and sampling of air quality conditions and deficiencies.

Understand the principles and practices of Air Quality investigation, inspection, monitoring and sampling as necessary to assume assigned responsibilities.

Observe and evaluate air quality/pollution deficiencies and hazards and recommend solutions.

Write inspection/investigative reports and other documents.

Read blueprints and construction plans.

Entry Level *(Applicants will be screened for possession of these through written, oral, performance or other evaluation methods.)*

Knowledge of:

Conditions contributing to air quality problems and accepted control strategies.

Quantitative methods, scientific methodology, data collection and report preparation.

Advanced mathematics, including algebra, geometry and trigonometry.

Instrumentation and equipment commonly used in air quality/monitoring programs.

Ability to:

Interpret and apply protocols, regulations, policies and procedures.

Research, compile, tabulate, analyze and interpret data and information.

Communicate in a clear, concise manner both orally and in writing.

Maintain files, records, data and information.

Establish and maintain effective working relationships with those contacted in the course of work.

Operate a personal computer and operate a variety of software programs.

SPECIAL REQUIREMENTS (*Essential duties require the following physical skills and work environment.*)

Work is performed in a standard office environment and various indoor and outdoor off-site locations. Ability to lift and move objects weighing up to 50 lbs. Ability to operate monitoring and sampling/ testing equipment for air pollution control. Ability to use standard office equipment including computers, copiers, telephones, and fax machines. Ability to work around machinery with moving parts and on slippery or uneven surfaces. Ability to tolerate exposure to the elements, dust, chemicals and possibly toxic substances. Ability to satisfactorily pass respirator medical screening tests.

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