Australian Government

MSS027007 Coordinate air quality management activities

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MSS027007A Coordinate air quality management activities

Application

This unit of competency covers the ability to oversee the day-to-day air quality management activities for a site, project or an ongoing program. Personnel are required to interpret and implement an air quality management plan, organise specified management activities, verify the quality of monitoring data and investigate and rectify unexpected or unacceptable results, monitor compliance with relevant air quality objectives or standards and provide reports. They work under the supervision of an environmental scientist or engineer, site manager or workplace environmental manager.

This unit of competency is applicable to environmental site coordinators, environmental managers and senior environmental officers working in a range of industry sectors, such as environmental services involved with sampling and monitoring of ambient air, indoor air and workplace air parameters; environmental compliance, auditing and inspection. Note that the term 'manager' is used to refer to management of a function, project and/or program and does not necessarily imply line management.

While no specific licensing or certification requirements apply to this unit at the time of publication, environmental monitoring and management activities are governed by relevant legislation, regulations and/or external accreditation requirements. Local requirements should be checked.

Pre-requisite Unit

MSS025009	Perform sampling and testing of air OR
MSS025016	Perform sampling and testing of stationary emissions

Competency Field

Management

Unit Sector

Environmental

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	**Confirm scope of air quality management activities with manager**	1.1	Review legislative, regulatory and licensing requirements and approvals that apply to site/project/program.
		1.2	Review current air quality management plan, including objectives, known issues, specified management activities and any required changes.
		1.3	Review previous air quality records and reports, if available.
		1.4	Confirm that site set-up, sampling methods, instrumentation and workplace procedures are in accordance with relevant standards and guidelines.
		1.5	Clarify own scope of responsibility/authority for achieving specific outcomes and the roles of other key personnel.
		1.6	Identify resources available to conduct air quality management activities.
2	**Organise air quality management activities**	2.1	Develop a consolidated schedule to ensure all activities can be conducted efficiently with the available resources.
		2.2	Develop checklists/clear work instructions to enable personnel to perform assigned tasks efficiently and with minimal errors.
		2.3	Ensure that personnel who conduct sampling, monitoring and/or field testing are competent to undertake their assigned tasks.
		2.4	Ensure air sampling/monitoring/testing equipment is regularly calibrated and maintained and that adequate stocks of consumables are available.

		2.5	Ensure air samples are handled in accordance with the sampling method and chain of custody requirements and dispatched promptly for analysis.
		2.6	Arrange for source emission testing according to licence requirements (if relevant to site/project/program).
		2.7	Conduct, or arrange for, regular site inspections to monitor the effectiveness of air quality management actions (if relevant to site/project/program).
		2.8	Advise relevant personnel when specified air quality management actions are not being implemented effectively (if relevant to site/project/program).
		2.9	Conduct, or arrange for, additional monitoring/inspections after atypical events, legitimate complaints or government requests.
3	**Verify air quality data**	3.1	Identify relevant job instructions, data and technical records in workplace information management system.
		3.2	Confirm that technical records provide sufficient information to ensure traceability/chain of custody for the monitoring activities involved.
		3.3	Compare data with expected values and identify any outliers.
		3.4	Inspect data records to identify any gaps and to check the integrity of data entry, transfers, alterations and calculations.
		3.5	Notify manager when data is incomplete or contains significant errors, and clarify what action to take.
4	**Determine if results are acceptable and within expectation**	4.1	Compare results with expected values and/or relevant standards and identify any significant differences or trends.
		4.2	Check the reliability of results by examining data or results from other monitoring stations, repeat measurements and/or tests of duplicate samples.
		4.3	Assess the significance of any recorded atypical

			environmental or meteorological conditions.
		4.4	Check that all calculations are free from error.
		4.5	Check that estimations of uncertainty are reasonable and consistent with the sampling method, relevant standards or guidelines.
		4.6	Report results that meet workplace data quality standards and are consistent with expectations.
5	**Investigate/rectify unexpected or unacceptable results**	5.1	Examine records of pre-use checks and calibration performance to ensure that the sampling equipment, reagents/standards and/or monitoring/test instruments used meet specifications and workplace requirements.
		5.2	Establish whether human, environmental and/or meteorological factors could have affected the reliability of results.
		5.3	Check for obvious sources of interference that may have occurred during measurements or analysis of samples.
		5.4	Retrieve stored samples (if available) and assess whether they are atypical or contaminated.
		5.5	Arrange for control tests using the same or new samples to check unexpected results, if relevant.
		5.6	Report unexpected results that meet workplace data quality standards.
		5.7	Identify possible root causes of unacceptable results and appropriate preventative/corrective actions.
		5.8	Report investigation outcomes and recommendations for improvements in accordance with workplace procedures.
		5.9	Seek manager's advice when challenges are beyond own technical competence or when input from environmental specialists may be required.
6	**Keep management informed about**	6.1	Provide regular reports about air quality performance including instances of potential/actual non-conformance and incidents and the actions taken in each case.

	air quality performance	6.2	Report opportunities and recommendations for improvements in air quality monitoring or management in accordance with workplace procedures.
7	**Maintain air quality records**	7.1	Ensure all air quality records are legible, accurate and satisfy workplace/legislative requirements.
		7.2	Store air quality records to enable easy access and review by authorised personnel in accordance with workplace procedures.
		7.3	Regularly review air quality records to identify any significant trends and impacts.
		7.4	Identify any problems with the maintenance and security of air quality records and resolve them promptly.

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Legislation, regulations, standards, codes, workplace procedures and requirements include the latest version of one or more of:	• federal legislation such as the Environment Protection and Biodiversity Conservation Act, and National Environmental Protection Measure (Ambient Air Quality) • state/territory government legislation and local government by-laws, policies, regulations and plans dealing with land use, environmental protection, pollution and contaminated sites, and mining operations • legislation, standards and codes of practice for work health and safety (WHS) • Australian and international standards covering environmental

	management (e.g. AS/NZS ISO 14000 Basic Set:2007 Environmental Management Basic Set), sampling and analysis of air (e.g. AS/NZS 3580 Methods for sampling and analysis of ambient air series, AS 2365 Methods for the sampling and analysis of indoor air series), and air quality (e.g. AS 2986 Workplace air quality series) • registration/licensing and/or accreditation requirements • site-specific requirements; workplace procedures for sampling; monitoring and in-field testing; recording, processing, presenting and reporting data • workplace documents, such as standard operating procedures (SOPs); work schedules; recording and reporting procedures; equipment manuals and warranties; supplier catalogue and handbooks; safety data sheets (SDS) and safety procedures; waste minimisation, containment, processing and safe disposal procedures.
Air quality management activities include one or more of:	• ambient air monitoring or source emission testing • determination of sampling point locations, sampling methods, number and type of samples, duration and frequency of sampling • specification of site sampling plans • specification of site equipment, such as instruments, and sampling ports/platforms to meet quality and safety requirements • arranging/conducting the set-up, calibration, (re)configuration, maintenance and troubleshooting of equipment • liaison with site personnel to coordinate process operations and sampling programs to ensure representative results • instruction and auditing of personnel to ensure monitoring, sampling and testing methods or procedures are followed • analysis and verification of results • investigation of unexpected and unacceptable results, including non-compliances • liaison/negotiation with regulators about licence conditions, and explanation of results and non-compliances • specification of air quality management actions for sites • site inspections to monitor the effectiveness of air quality management actions.

Ambient air parameters include one or more of:	• inorganic gases, such as:
	  • CO, CO_2, NO_x and SO_x
	  • acid gases

- H_2S
- ozone
- fluorides

- organic gases such as:
  - methane and non-methane hydrocarbons
  - poly-aromatic hydrocarbons (PAHs)
  - organic oxidants and other photochemical smog compounds (e.g. poly-aromatic nitrates (PANs))
- air toxics, such as:
  - benzene, toluene and xylenes
  - formaldehyde
  - Benzo(a)pyrene (PAH marker)
- particulates, such as:
  - deposited matter
  - suspended matter (PM_{10}, $PM_{2.5}$ and PM_1)
  - particulate fluorides
  - lead.

Indoor air parameters include one or more of:

- inorganic gases, such as:
  - CO, CO_2 and NO_x
  - radon
- organic gases, such as:
  - formaldehyde
  - PAHs
  - organic oxidants and other photochemical smog compounds (e.g. PANs)
- particulates, such as:
  - suspended matter (PM_{10}, $PM_{2.5}$ and PM_1)
  - microorganisms and spores.

Occupational (workplace) air parameters include one or more:

- chemicals listed in the '*Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment'*. Concentration levels for action are:
  - peak
  - short term exposure limit (STEL)
  - time weighted average (TWA).

Sampling equipment includes one or more

- gas sample bags and gas sample bottles/containers
- gas pipettes and gas syringes

of:	• air sampling pumps • sampling manifolds • passive diffusion samplers • impingers (with absorption solutions) • solid adsorbents • colour detection tubes • coated and uncoated filters • sampling trains in continuous gas monitors • pitot tubes • high volume samplers • dichotomous samplers • gas flow meters.
Testing equipment includes one or more of:	• continuous gas monitors • ultraviolet (UV) absorption (e.g. ozone) • chemiluminescence (e.g. NO_x) • pulsed fluorescence (e.g. (SO_x) • non-dispersive Infrared (e.g. CO) • flame ionisation detection (FID) (e.g. methane) • photo ionisation detection (PID) • integrating nephelometer methodologies (e.g. suspended particulates) • oxygen sensors (e.g. zirconia) • gas chromatographs • mass spectrometers • atomic absorption spectrophotometers • infrared spectrophotometers • UV-visible spectrophotometers • tapered element oscillating microbalance (TEOM) • beta gauges • particle counters • portable (handheld) gas monitors.
Air quality reports include one or more of:	• weekly and monthly environmental reports • non-conformance report form • contributions to regulatory agency reports (where required by permit, approval or licence conditions).
Air quality records include one or more	• digital photographs of air quality monitoring sites • data files

of:	• records required by permit, approval or licence conditions • records of monitoring equipment purchase, calibration, inspection, maintenance and service • records of complaints and government requests • records of air quality non-conformances, incidents or significant impacts • contractor and supplier information • internal quality/environmental audit reports • electronic/hard copy correspondence • records of approved expenditure and orders.
Air quality management actions include one or more of:	• use of adsorbers, filters and scrubbers • use of water and/or enclosing transfer points, operating equipment and discharge points to reduce dust • covering and/or watering stockpiles when not in use • keeping vehicle movements to engineered routes • using appropriate dust suppressants • limiting clearance/excavation areas to minimise ground disturbance • using mulch or vegetation cover to stabilise soils • prohibiting the burning of vegetation or waste • limiting or ceasing activities (e.g. dusty work) during unfavourable weather conditions (e.g. high wind) • use of wind breaks and wind fences to prevent migration of dust.
WHS and environmental management requirements include:	• compliance with relevant federal/state/territory WHS legislation at all times • assuming that samples are potentially hazardous and applying standard precautions • accessing and applying current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and state/territory Departments of Health, where relevant.

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet - https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998