

<b>UNIT CODE</b>	NAT11429002
<b>UNIT TITLE</b>	<b>Conduct an indoor air quality assessment</b>
<b>SUBJECTS</b>	<ul style="list-style-type: none"> <li>• <b>Air Pollution</b></li> <li>• <b>Sampling Methods</b></li> </ul>
<b>APPLICATION</b>	<p>This unit describes the performance outcomes, skills and knowledge required to assess indoor air quality in the built environment.</p> <p>It requires knowledge of indoor air pollutants (lead, allergens, toxicants and noxious gases), understanding their health impacts, analysis of laboratory results, problem-solving for air pollutant issues, and mitigation strategies. It requires the ability to use technical equipment to quantify air pollutants and compare outcomes with relevant exposure standards.</p> <p>This unit applies to building biologists, indoor environmental practitioners or individuals who perform indoor air quality assessments of the built environment.</p> <p>No licensing, legislative or certification requirements apply to this unit at the time of publication.</p>
<b>COMPETENCY FIELD</b>	050999 Environmental Studies, nec
<b>ELEMENTS</b>	<b>PERFORMANCE CRITERIA</b>
Elements describe the essential outcomes of the unit	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Plan and prepare for an indoor air quality assessment	<p>1.1 Consult the client to clarify objectives, scope and site-specific issues</p> <p>1.2 Create a structured questionnaire and checklist to conduct the assessment covering health, building history, housekeeping and maintenance</p> <p>1.3 Research and document local ambient air pollution sources</p> <p>1.4 Investigate sources of indoor air pollutants within the property</p> <p>1.5 Research potential health impacts associated with air pollutants</p> <p>1.6 Assess property construction and age to flag potential hazards for specialist referral</p> <p>1.7 Document exposure standards for indoor air quality for residential settings</p>
2. Conduct a visual inspection and record results	<p>2.1 Quantify the level of dust and clutter in the home</p> <p>2.2 Conduct a visual inspection for allergen sources and reservoirs</p> <p>2.3 Locate and record sources of toxicants</p> <p>2.4 Locate and record sources of lead</p> <p>2.5 Locate and document potential sources of noxious gases</p>

	<p>2.6 Specify the type, age and maintenance history of heating and cooling systems</p> <p>2.7 Record visual observations using the prepared checklist</p>
3. Perform sampling and interpret results	<p>3.1 Select and assemble the necessary equipment to conduct air sampling</p> <p>3.2 Operate sampling equipment to measure toxicants (VOCs), lead and noxious gases (CO/CO<sub>2</sub>)</p> <p>3.3 Complete chain-of-custody documentation for collected samples</p> <p>3.4 Package and dispatch samples for laboratory analysis</p> <p>3.5 Analyse laboratory results, interpret findings and compare them to standards</p>
4. Make recommendations to improve indoor air quality	<p>4.1 Integrate observational and quantitative data to assess risk, with attention to susceptible groups</p> <p>4.2 Develop strategies for minimising dust and indoor allergen exposure</p> <p>4.3 Make recommendations for reducing client toxicant exposures</p> <p>4.4 Make recommendations for reducing exposure to lead</p> <p>4.5 Propose solutions for mitigating exposure to noxious gases</p>
5. Report assessment outcomes	<p>5.1 Prepare a comprehensive, professional report summarising findings, data analysis, methodologies and recommendations</p> <p>5.2 Specify key personnel needed for implementation of recommendations</p> <p>5.3 Reference standards, and scientific literature supporting conclusions and recommendations</p> <p>5.4 Present recommendations and findings in clear, accessible language suitable for clients</p>

### FOUNDATION SKILLS

Foundation skills essential to performance in this unit, but not explicit in the performance criteria are listed below including a brief description of how the skill is applied.

Skill	Description
Reading skills to:	Interpret research articles, manufacturer equipment manuals, and regulatory standards relevant to indoor air quality
Oral communication skills to:	Communicate with the client to establish their needs, clarify information during site visits, and present findings in client accessible language
Numeracy skills to:	Apply formulas and interpret measurement data, calibrate equipment, and compare laboratory results with standards

Problem-solving skills to:	Identify site-specific pollutant sources, devise mitigation strategies, and recommend control measures for complex issues		
Technology skills to:	Calibrate pump and use air sampling equipment		
<b>UNIT MAPPING INFORMATION</b>	Code and Title Current Version	Code and Title Previous Version	Comments
	NAT11429002 Conduct an indoor air quality assessment	NAT10913001 Conduct an indoor air quality assessment	Equivalent unit  Minor amendments to terminology
<b>TITLE</b>	Assessment Requirements for NAT11429002 Conduct an indoor air quality assessment		
<b>PERFORMANCE EVIDENCE</b>	<p>The learner must show evidence of the ability to complete tasks outlined in the elements and performance criteria of this unit and manage tasks and contingencies as a Building Biology Consultant. Demonstrated evidence must show the learner has successfully conducted an assessment of two residential properties – one for lead and the other for indoor air quality - with each assessment completed independently under simulated or real workplace conditions representative of building biology or environmental health practice.</p> <ul style="list-style-type: none"> <li>• Develop and administer a site-specific client questionnaire</li> <li>• Research and document lead sources unique to the site</li> <li>• Research and document ambient and indoor air pollution unique to the site</li> <li>• Select, calibrate, and operate a range of air sampling equipment, recording all measurement data and locations</li> <li>• Prepare samples, ensure accurate chain-of-custody documentation, and dispatch samples for laboratory analysis</li> <li>• Analyse and interpret laboratory results, comparing data with relevant published exposure standards</li> <li>• Synthesise observational and quantitative data to assess risk, including consideration of at-risk groups</li> <li>• Prepare and present professional reports meeting industry standards and client expectations, with documented recommendations for improving indoor air quality</li> </ul>		
<b>KNOWLEDGE EVIDENCE</b>	The learner must be able to demonstrate essential knowledge required to effectively do the tasks outlined in the elements and performance criteria of this unit, and manage the tasks and contingencies in the context of conducting indoor air quality assessments. This includes knowledge of:		

	<ul style="list-style-type: none"> <li>• Sources of ambient air pollutants, including traffic emissions, flight paths, agricultural activities, and industrial processes</li> <li>• Sources of indoor air pollutants including lead, noxious gases (carbon monoxide, carbon dioxide, nitrogen dioxide), volatile organic compounds (from air fresheners, cleaning products, building materials), allergens (pet dander, pollen, mould, pests, dust mites), and dust reservoirs within residential environments</li> <li>• Types of ventilation and HVAC systems used in residential environments</li> <li>• Adverse health impacts of indoor and ambient air pollutants</li> <li>• Exposure standards and guidelines for indoor air quality, including methods for interpreting and applying these standards during assessments</li> <li>• Selection, operation, and limitations of air sampling equipment (CO/CO<sub>2</sub> meters, humidity and temperature sensors, VOC samplers, PRISM pumps), and correct procedures for sample packaging and chain-of-custody documentation</li> <li>• Accredited laboratory procedures for analysing air samples and reporting results</li> <li>• Authoritative information sources for indoor environmental health hazards</li> <li>• Risk management principles relevant to indoor air quality, including the Hierarchy of Control and effective mitigation interventions</li> <li>• Devices and strategies for reducing dust, allergens, toxicants, lead and noxious gases, and how to select appropriate interventions for specific site conditions.</li> <li>• Roles of key specialists who may assist with indoor air quality solutions (e.g., HVAC technicians, plumbers, ventilation engineers, pest controllers)</li> </ul>
<p><b>ASSESSMENT CONDITIONS</b></p>	<p>Assessment must be carried out in two residential environments using authentic client data representative of real workplace conditions. Assessment activities must comply with relevant workplace health and safety policies and ensure access to:</p> <ul style="list-style-type: none"> <li>• An occupied residential home reflective of workplace conditions</li> <li>• Sampling equipment including lead test kits, PRISM pump and tube, CO/CO<sub>2</sub> meters, and hygrothermometer.</li> <li>• Laboratory facilities for sample analysis</li> <li>• Documentation including chain of custody forms and report templates</li> <li>• Exposure guidelines, scientific literature, and relevant standards (Building Biology, Safe Work Australia, The LEAD Group, US Environmental Protection Agency)</li> </ul> <p><b>Assessor Requirements</b></p> <p>Assessors must satisfy the requirements outlined in the Standards for Registered Training Organisations (RTOs) 2025 or successor standards and demonstrate current industry skills and knowledge as a Building Biologist, with a minimum of three years' relevant industry experience.</p>

