

UNIT CODE	NAT11429004
UNIT TITLE	Conduct an electromagnetic field assessment
SUBJECTS	<ul style="list-style-type: none"> • Electricity Fundamentals • Electrobiology
APPLICATION	<p>This unit describes the outcomes required to competently plan, conduct and report on electromagnetic field (EMF) assessments in the built environment.</p> <p>It requires knowledge of electrical principles, the electromagnetic spectrum, EMF sources, exposure standards, shielding materials and adverse health impacts associated with electromagnetic field exposures. It requires technical skills to operate meters to measure electromagnetic fields in the built environment and strategies to solve complex problems unique to the site.</p> <p>This unit applies to building biologists, licensed electricians or other professionals assessing EMFs in the built environment.</p> <p>No licensing, legislative or certification requirements apply to this unit at the time of publication.</p>
COMPETENCY FIELD	050999 Environmental Studies, nec
ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes of the unit	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Plan and prepare to conduct an electromagnetic field assessment	<p>1.1 Consult the client to clarify objectives, scope and site-specific issues</p> <p>1.2 Develop and apply questionnaires and checklists to capture health history, building details, and digital device use</p> <p>1.3 Research external and internal sources of AC magnetic fields, Radiofrequency Electromagnetic Fields (RF-EMFs), Dirty Electricity (DE) and radioactivity that may impact the built environment</p> <p>1.4 Research and document health impacts arising from exposure to AC magnetic fields and Radiofrequency Electromagnetic fields</p> <p>1.5 Document electromagnetic fields exposure standards in the built environment</p> <p>1.6 Select and prepare equipment to conduct the assessment</p>
2. Undertake an electromagnetic field assessment of the built environment	<p>2.1 Conduct a visual inspection of the site for sources of electromagnetic fields</p> <p>2.2 Operate high-frequency meters and associated antennas to detect and measure RF-EMFs in areas where clients spend time</p> <p>2.3 Operate a gauss meter to locate and measure AC magnetic fields in areas where clients spend time</p>

	<p>2.4 Use a dirty electricity meter to quantify DE unique to the site</p> <p>2.5 Evaluate building materials that influence the site's electroclimate</p> <p>2.6 Record observations using the prepared checklist</p>
3. Analyse results and identify risks	<p>3.1 Analyse measurement data to assess client exposure</p> <p>3.2 Compare results with applicable exposure standards</p> <p>3.3 Evaluate risks considering age, proximity, duration and susceptibilities</p>
4. Develop recommendations to reduce exposure	<p>4.1 Provide actionable mitigation strategies for AC magnetic fields, RF-EMFs and Dirty Electricity Advise on healthier lighting solutions</p> <p>4.2 Recommend shielding solutions and explain applications</p> <p>4.3 Tailor strategies for susceptible populations including EHS cases</p>
5. Report assessment outcomes	<p>5.1 Prepare a detailed professional report summarising findings, data analysis, methods and recommendations</p> <p>5.2 Specify key personnel needed for solution implementation</p> <p>5.3 Reference standards, guidelines, and scientific literature supporting conclusions and recommendations</p> <p>5.4 Communicate findings and recommendations in accessible language 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 scientific literature, equipment manuals, and technical drawings to inform EMF assessing processes
Numeracy skills to:	Convert, calculate and analyse measurement units, compare numerical data with exposure standards and interpret technical results
Problem-solving skills to:	Identify site-specific EMF sources, troubleshoot measurement challenges and develop client-focused solutions
Technology skills to:	Operate measurement equipment, use websites to locate site specific EMF sources and produce professional documentation

UNIT MAPPING INFORMATION	Code and Title	Code and Title	Comments
	Current Version	Previous Version	

	NAT11429004 Conduct an electromagnetic field assessment	NAT10913002 Conduct an electromagnetic field assessment	Equivalent unit Minor amendments to terminology
TITLE	Assessment Requirements for NAT11429004 Conduct an electromagnetic field assessment		
PERFORMANCE EVIDENCE	<p>The learner must show evidence of the ability to complete tasks outlined in the elements and performance criteria of this unit, manage tasks and contingencies in the context of their role as a Building Biologist or Electromagnetic field-testing technician.</p> <p>There must be demonstrated evidence the learner has undertaken an electromagnetic assessment of an occupied home in the presence of a trainer using industry standard processes and equipment and completed the following tasks:</p> <ul style="list-style-type: none"> • Design a structured questionnaire to obtain information about the site and client digital-use behaviour • Complete a comprehensive checklist capturing site information • Demonstrate tasks over multiple, realistic occasions (multiple rooms in the house) to ensure competency and consistency • Determine the location of mobile phone base stations via two or more of the following: <ul style="list-style-type: none"> ○ RFNSA ○ ACMA ○ AEMO ○ Rosetta portal ○ Maprad ○ Bai Communications • Perform comprehensive visual inspection, operate correct use of various EMF meters and interpret readings using the following: <ul style="list-style-type: none"> ○ Gauss Meter ○ DE meter ○ High frequency meters and associated antennas • Analyse data against exposure standards and recommend site appropriate mitigation solutions • Produce a professional report summarising methodology, findings and recommendations 		
KNOWLEDGE EVIDENCE	<p>The learner must be able to demonstrate essential knowledge required to effectively undertake the task outlined in the elements and performance criteria of this unit and manage the task and contingencies in the context of conducting electromagnetic assessments of the built environment. This includes knowledge of:</p>		

	<ul style="list-style-type: none"> • Principles of electricity including Standard SI units, voltage, current, frequency, power output and types of electromagnetic fields • External and internal sources of AC magnetic fields, Radiofrequency electromagnetic fields and Dirty Electricity including mapping tools (e.g., RFNSA, Maprad) • The electromagnetic spectrum, radiometric and radon maps and characteristics of building materials that influence the electroclimate of the built environment (e.g., metal barriers, sarking, granite) • National and international exposure standards for EMF exposure (e.g., IGNIR, SBM Building Biology Testing Standards, BioInitiative Report, ARPANSA, ICNIRP) • Current research on adverse health effects, risks and tailored approaches for high-risk populations (e.g., children, EHS) • Mitigation strategies (e.g., distancing, shielding, avoidance, limiting devices, lighting alternatives) • Personnel to implement recommendations (e.g., licensed electrician, data cabler, IT technician)
<p>ASSESSMENT CONDITIONS</p>	<p>Assessment must be conducted in an environment that reflects current industry practice and workplace conditions. Candidates must have access to:</p> <ul style="list-style-type: none"> • A residential building that replicates workplace conditions • A floorplan of the building • Current industry standards and guidelines relevant to electromagnetic fields (SBM Building Biology, IGNIR, Bioinitiative Report, ARPANSA, ICNIRP) • Pre-recording or live interaction representing a client interview • Meters to conduct an EMF assessment <ul style="list-style-type: none"> ○ 3-axis digital gauss meter ○ High frequency meters with associated antennas (e.g., Gigahertz HF59B, HFW59D) ○ Dirty Electricity Meter (e.g., Green wave meter, Stetzer Microsurge meter or EMI meter) ○ Shielding material • Sample documentation including a structured checklist and report template • Interaction with the trainer and other learners to simulate workplace communication and consultation <p>Assessor Requirements</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>

