Australian Government

ANSTO
Science. Ingenuity. Sustainability.

POSITION DESCRIPTION

Position Title:	Environmental Monitoring Scientist
Cluster / Business Unit / Division	NSTLI / Research Infrastructure
Section or Unit:	Nuclear Stewardship / Environmental Monitoring
Classification:	Band 5
Position Description Number:	PD-1934
Work Contract Type:	Professional

POSITION PURPOSE

The primary objective of the Environmental Monitoring Scientist is to provide authoritative advice and services to a combination of internal ANSTO clients and external stakeholders, through characterising ANSTO's radiological effluent releases and assessing their impact on the local environment. This includes fostering and maintaining client relationships, operating and maintaining specialised instrumentation and systems, implementing data storage and dissemination systems, developing new and improving existing sampling methodology or radioanalytical techniques, applying a high degree of expertise in the interpretation of analytical results on behalf of clients, and training and mentoring staff and visiting scientists.

The role enables ANSTO to meet its regulatory, safety, quality and environmental objectives and commitments in relation to radioactive emissions from its licenced facilities, by providing verifiable evidence of ANSTO's regulatory compliance and environmental performance.

ORGANISATIONAL ENVIRONMENT

ANSTO is the national organisation for nuclear science and technology. We focus on undertaking leading edge research, delivering innovative scientific services and providing specialised advice to government, industry, academia and other research organisations.

Nuclear Science & Technology and Landmark Infrastructure (NSTLI) incorporates ANSTO's research, innovation, landmark research infrastructure and associated platforms and capabilities. NSTLI conducts research and development in relation to nuclear science and technology and connects people, transfers knowledge and provides nuclear-based products and services for the benefit of Australia.

Nuclear Stewardship is the custodian of ANSTO's mandated and site-essential capabilities housed within NSTLI that respond to the needs of the Australian Government, industry and the community relevant to nuclear detection, nuclear forensics, radionuclide metrology, radioanalytical chemistry and environmental monitoring.

The Environmental Monitoring (EM) group within Nuclear Stewardship develops and maintains specialist environmental monitoring facilities, systems and applications that support ANSTO's core activities and stakeholders. The EM capability area applies nuclear techniques and associated expertise to monitoring and modelling releases of radionuclides into the environment, dose and environmental assessments and the quantification of radionuclides at or above typical environmental levels.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities

The key accountabilities for this position include:

- Provide authoritative advice and environmental monitoring services to a range of internal and external stakeholders relating to ANSTO's radiological emissions, regulatory compliance and any associated environmental impacts.

- Conduct the Environmental Monitoring Program which aims to characterise ANSTO's radiological emissions and local environmental radioactivity levels, through:
    - collecting and processing a wide range of environmental and effluent samples from the Lucas Heights, Little Forest and Camperdown sites as well as the Buffer Zone and local area;
    - performing the required chemical & radiological analyses (including alpha/beta gas proportional, gamma spectroscopy and liquid scintillation counting techniques);
    - evaluating & interpreting results against applicable standards, regulatory and quality requirements; and
    - reporting results and trends to stakeholders within tight timeframes.
- Provide stack monitoring and reporting services that support ANSTO's licenced radiation facilities, prepare quarterly and annual reports. Assess trends and performance against ARPANSA notification levels as evidence of compliance with discharge authorisations.
- Maintain knowledge of industry best practice and technological developments to inform reviews of the Environmental Monitoring Program and its supporting systems; contribute to improvements and upgrades ensuring they meet ANSTO's requirements and the expectations of ARPANSA and the local community.
- Respond to environmental incidents and provide rapid sampling, analysis and reports to support ANSTO's emergency response arrangements (including exercises), continued site operations and ISO14001 Environmental Management System certification requirements.
- Implement and maintain data and information gathering, storage, retrieval and dissemination systems, including bespoke applications and webpages for public reporting.
- Independently plan and undertake targeted fieldwork campaigns or supplementary analyses to address existing or emerging issues (eg the environmental dosimetry program or effluent dilution studies to validate ANSTO's Trade Waste agreement with Sydney Water). Provide and assess results and make preliminary interpretations of the data.
- Apply specialist technical knowledge to the operation, calibration, troubleshooting and maintenance of instrumentation and specialised EM systems in order to generate high quality data - including real-time stack monitors, associated bespoke software and stack flow velocity testing. Provide expert advice and technical support for new installations and undertake validations.
- Investigate analytical issues and anomalous data, perform data entry quality checks and participate in national or international benchmarking exercises to provide assurance on the precision and accuracy of environmental monitoring data.
- Contribute to internal, external or commercial reports and research publications; give presentations at scientific conferences, meetings and seminars; and develop and maintain networks to share outcomes of work with research, industry and community groups.
- Assist with domestic and international engagement and outreach projects and provide demonstrations of monitoring capabilities to various public interest groups, visiting scientists, VIP's and school students.
- Supervise and mentor staff, IAEA fellows and students to develop their skills in the areas of environmental & stack emission monitoring and low-level nuclear counting techniques, to reinforce ANSTO's reputation as a technical support provider to developing nations.
- Contribute to asset and laboratory management, including maintenance and cleaning to ensure that laboratories and equipment are functioning effectively.
- Maintain quality and safety by adhering to good working practices in accordance with ANSTO's WHS system, Bld 34 SAC approval and ISO9001 requirements. Develop and maintain instructions and standard operating procedures, conduct risk assessments, update SDSs and participate in quality, safety, environmental and housekeeping inspections as required.
- Independently plan work-load to meet group outcomes and deliver on time to meet changing requirements. Undertake additional duties when required and during periods of leave of other staff,

including assistance to the EM meteorology team and providing fieldwork or experimental support to projects.

Decision Making

- The ANSTO values, Corporate and Business plans; NSTLI strategy; Nuclear Stewardship Business Plan and Environmental Monitoring Operational Plans provide the context for the position.
- The position holder works within a framework of legislation, policies, professional standards and resource parameters. Within this framework the position holder will be provided with the parameters in which to operate the EM laboratories and facilities. The position holder has some independence in determining the tasks and activities required to achieve day-to-day operational outcomes.
- The position is fully accountable for the accuracy, integrity and quality of the content of advice and the services provided to users, clients and stakeholders, and is required to ensure that decisions are based on sound evidence.
- Daily work priorities are self-determined within the context of agreed work plans, and the position holder will consult with line management on complex, sensitive and major issues that have a significant impact on the unit's operations.
- The levels of authority delegated to this position are those approved and issued by the Chief Executive Officer. All delegations will be in line with the ANSTO Delegation Manual AS-1682 (as amended or replaced).

Key Challenges

The major challenges for this position include:

- The broad and cross-disciplinary nature of the role, which requires proficiency across multiple disciplines, including: sampling methodology for environmental media; low-level radioanalytical techniques; maintaining bespoke scientific systems & applications; the operation, calibration & maintenance of a wide range of scientific instruments and equipment; and maintaining QA/QC procedures to ensure high quality data;
- Keeping abreast of applicable standards and Regulatory frameworks and developments in the field of environmental monitoring to achieve continuous improvement and maintain technical expertise;
- Performing a wide range of tasks effectively to maintain efficient laboratory operations and scheduled sample collections, whilst managing conflicting priorities and responding to incidents or urgent requests;
- Developing improved ways of working, with a flexible approach and more productive methods to achieve project outcomes;
- Establishing working relationships with a diverse range of internal and external stakeholders with varying scientific or technical backgrounds.

KEY RELATIONSHIPS

Who	Purpose
Internal	
Line Manager	• Receive direction and guidance • Provide expert, authoritative and evidence-based advice • Negotiate and report on resources consistent with strategic plans and goals • Recommend and gain endorsement for plans and other initiatives
Work area team members	• Provide and receive information, direction, support, training and technical leadership • Provide expert advice and analysis on a range of systems, radioanalytical techniques, instruments and laboratory matters • Contribute to group decision-making processes, planning and goals • Collaborate and share accountability • Negotiate and resolve scheduling or laboratory access conflicts

The Chief Nuclear Officer; ANSTO's Licenced Facilities; ANSTO Regulatory Officer; Radiation Protection Services; ANSTO Exec. & Board ANSTO Staff	• Provide authoritative and evidence-based advice on ANSTO's radiological emissions, regulatory compliance and local environmental radioactivity levels • Advise on requirements for new monitoring installations or modifications to existing systems; • contribute to project planning and the installation, commissioning and validation of new systems
Licenced Facility Officers, Asset Management & Services Group, Building Managers	• Calibrate stack monitoring systems and conduct stack flow velocity testing on active ventilation systems to ensure the quality of airborne emission data.
External	
Regulatory bodies (ARPANSA, Sydney Water, EPA)	• Support inspections, audits and verification programmes • Assist with the preparation of external reports and quarterly / annual reports to regulatory bodies.
Commercial clients (State Authorities, Councils Industry,	• Establish constructive relationships • Consultation to establish scope of work, provide quotations & analytical services, prepare reports/certificates of analysis, complete invoicing processes
Suppliers; Instrument manufacturers and providers of calibration, and maintenance services	• Establish constructive relationships • Specify & procure scientific instruments, equipment, laboratory consumables and chemicals • Trouble-shoot instrument faults and arrange repairs/calibration • Clearly communicate needs, deliverables and expected outcomes
IAEA fellows/ interns /trainees; Visiting scientists; VIPs, schools or community interest groups	• Liaison regarding analytical capabilities, scheduling and reporting • Mentor & provide supervision, advice and training • Collaborate on new research projects • Provide EM demonstrations to support ANSTO's outreach activities
National & International networks: Australian Radiation Laboratory Network; SPERA IAEA's ALMERA network;	• Establish constructive working relationships, keep abreast of recent developments and share information with the EM team • Represent EM interests and advise on analytical methods • Participate in workshops and/or analytical benchmarking exercises

POSITION DIMENSIONS

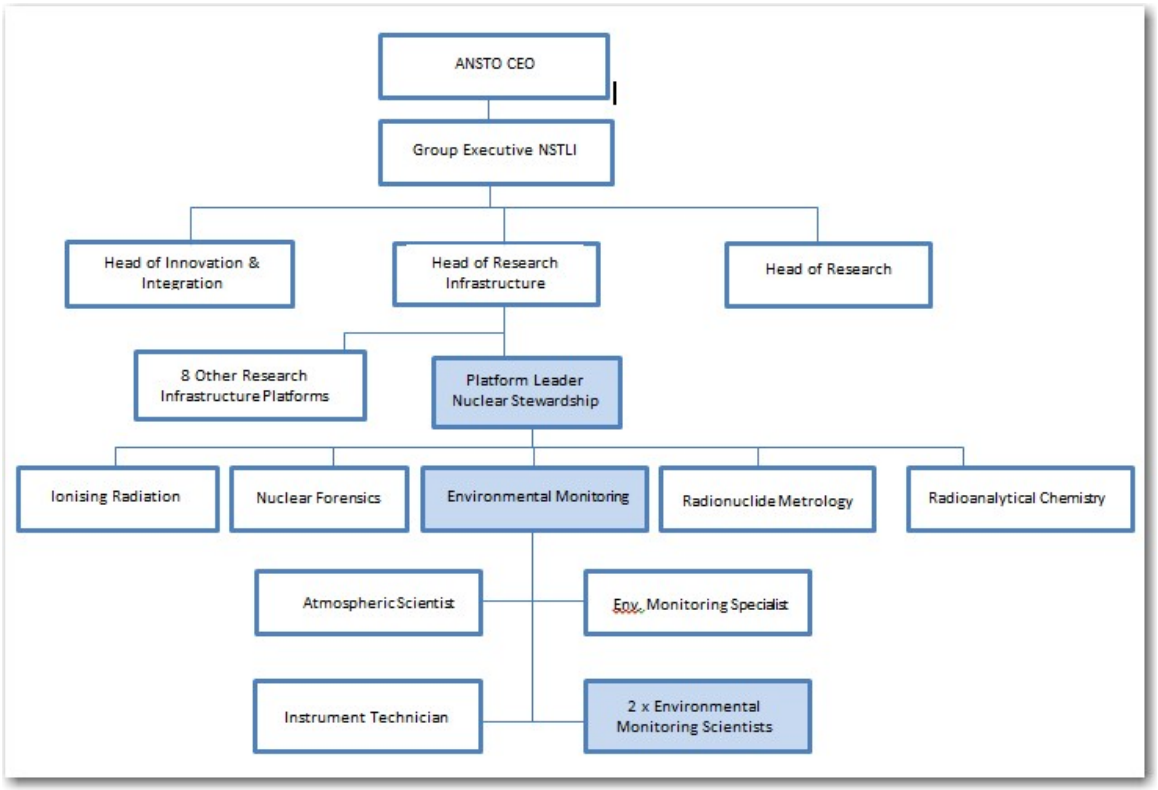
Staff Data	
Reporting Line	Reports to the Manager, Environmental Monitoring
Direct Reports	Nil
Indirect Reports	Nil

Special / Physical Requirements	
Location:	Position is based at the Lucas Heights campus. Working in different areas of designated site/campus /buffer zone as needed.
Travel:	A current driving licence is essential, with the capability to drive (or learn to drive) a manual or automatic 4WD vehicle. May occasionally be required to travel to other ANSTO sites within Australia. Infrequent travel both internationally and nationally. May be required to undertake field work in remote locations from time to time.
Physical:	Office-based physical requirements: sitting, standing, minimal manual handling, movement around office and site, extended hours working at computer.

	Laboratory and field work physical requirements: lifting, sitting, standing, operating equipment, manual handling up to 20 kg. Ability to work outside for extended periods, work in semi-confined spaces, work at heights (training will be provided), e.g. scale fixed ladders, climb 50m meteorology tower and work on elevated platforms. Wearing personal protective equipment when handling hazardous and/or radioactive materials.
Radiation areas:	May be required to work with radioactive and/or otherwise hazardous chemicals or materials under tightly controlled safety conditions. Perform duties at contaminated sites or in radiation areas under tightly controlled safety conditions.
Hours:	Willingness to work extended and varied hours based on operational requirements. After hours work may be required for short and infrequent periods.
Clearance requirements:	Satisfy ANSTO Security and Medical clearance requirements Required to hold the appropriate national security clearance (protected area).

Workplace Health & Safety	
Specific role/s as specified in AG-2362 of the ANSTO WHS Management System	All Workers May be required to undertake one or more of the specified roles within the context and course of their duties • Area Supervisor • Building Manager • Building Warden • First Aid Officer • Contractor Supervisor

ORGANISATIONAL CHART



KNOWLEDGE, SKILLS AND EXPERIENCE

1. Degree or equivalent tertiary qualification in a relevant field of science (e.g. Chemistry, Environmental, Biology) or related discipline, coupled with experience working in a scientific field of not less than three years.
2. Experience conducting field sampling campaigns with a working knowledge of environmental field sampling equipment and techniques, eg groundwater, surface water and air sampling.
3. Experience with scientific software for data acquisition, data processing and storage with a sound knowledge of statistical analysis techniques, data interpretation and technical report reporting.
4. Strong interpersonal and communication skills with the ability to effectively interact and negotiate with a varied and multidisciplinary audience, including clients.
5. Develop and maintain productive working relationships, share knowledge, train and supervise staff and interns.
6. Demonstrated experience working in a laboratory including the operation, calibration and maintenance of scientific instrumentation and managing safety requirements (eg hazardous chemicals, radioactive materials).
7. Experience operating within a highly regulated environment under Quality, Safety and Environmental management systems, with a proactive approach to following policy, procedures and guidelines.
8. Demonstrated experience in supervising staff and providing inductions, safety and operational training and instruction to laboratory/facility users of varying skills and abilities.
9. Ability to work autonomously under limited supervision, prioritise work and respond to changing priorities and deadlines.
10. Willingness to learn, adapt and develop improved processes and procedures.
11. Demonstrates personal qualities that will add value to the work group.

VERIFICATION

This section verifies that the line manager and appropriate senior manager/executive confirm that this is a true and accurate reflection of the position.

Line Manager		**Delegated Authority**	
Name:	Emmy Hoffmann	Name:	Mark Reinhard
Title:	Manager, Environmental Monitoring	Title:	Leader, Nuclear Stewardship
Signature:	As per original	Signature:	As per original
Date:	06/07/2018	Date:	06/07/2018