

# Mass Spectrometer Senior Technician



*The mass spectrometer senior technician will support technical and research staff to operate and maintain isotope ratio mass spectrometers and associated analytical equipment and undertake analyses and develop techniques that will support current and new opportunities of research.*

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| <b>Reports to:</b>      | Mantle to Atmosphere Laboratories Team Leader |
| <b>Department:</b>      | Laboratories and Workshops                    |
| <b>Group:</b>           | Science and Commercial Operations             |
| <b>Employment Type:</b> | Permanent                                     |
| <b>Location:</b>        | Gracefield                                    |
| <b>Direct reports:</b>  | Nil   |
| <b>Budget:</b>          | Nil   |
| <b>Career Path:</b>     | Senior Technician                             |
| <b>Job Family:</b>      | Research, Laboratory & Field Technology       |
| <b>Career Step:</b>     | Senior Technician 1 / Step 6                  |
| <b>Date:</b>            | October 2024                                  |

## Laboratories & Workshops Department functions include:

- Foster and develop skills and expertise to provide excellence in analytical and manufacturing processes and products and curation of collections in support of the geoscience, Earth resources, and materials science sectors.
- Support and work alongside other GNS teams to achieve & deliver excellent science.
- Be a collegial place where staff are nurtured, feel a sense of purpose, support each other, and where careers flourish through a strong sense of personal and professional belonging to the wider GNS organisation.

We contribute and add value to the strategic science being undertaken in GNS across all Themes. Additionally, we provide high value services to external clients when capacity and capability is available to optimise the use of and return on the investment in the Laboratories & Workshops infrastructure.

## Position priorities and responsibilities

- Support the Laboratory Lead Operator to operate and maintain isotope ratio mass spectrometers (IRMS) and sample interfaces (dual inlet and continuous flow), cavity ring-down spectrometers for isotope ratio measurement, Elemental Analysers (EA) and GC-C-IRMS.

- Develop and implement analytical techniques for measurement of sample isotope ratios and chemical compositions.
  - Chemical and physical preparation and extraction methods of samples for isotope analyses.
  - IRMS, EA and GC-C-IRMS analytical routines to measure isotope ratios and compositions.
- Mentor and support other technicians to increase knowledge base.
- Assist with instrument schedules for sample analyses and reporting of results.
- Remain up-to-date on developments in stable isotope analyses through scientific literature and on-line discussion groups.
- Work with the stable isotope Laboratory Lead Scientist and Laboratory Lead Operator on improvements to lab processes to increase lab efficiencies and/or reduce costs and/or improve the service offering.
- Develop and maintain networks with other laboratories and manufacturers.
- Contribute to GNS science reports, journal articles and conference proceedings where applicable.
- Lead or contribute to publications in research journals and if approved present findings at appropriate conferences and workshops.
- Assist with other duties as required by the Mantle to Atmosphere Laboratories Team Leader.

## **Responsibilities of all staff**

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- Comply with all GNS Science policies and procedures.
- Contribute to making GNS Science a healthy and safe place to work by complying with the responsibilities and accountabilities outlined in the Health and Safety Management System Framework.

The responsibilities of this position will change over time to respond to changing needs. The incumbent will need the flexibility to adapt and develop as the company and its environment evolves.

## **Key working relationships**

### **Internal:**

- Mantle to Atmosphere Laboratories Team Leader
- Water and Ice Team Leader
- Stable Isotope Laboratory Lead Scientist
- Laboratories & Workshops Department Manager
- GNS Science researchers utilising the laboratory
- Rafter Radiocarbon Laboratory, Ice Core Facility, Tritium Laboratory and NZ Geothermal Analytical Laboratory
- Other members of the Laboratories and Workshops Department

### **External:**

- Regulatory and compliance organisations, e.g., WorkSafe, MPI.
- Clients, researchers and laboratories from other institutes.

## Person specification

### Skills, knowledge and attributes

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- Knowledge of isotope ratio mass spectrometers (dual inlet and continuous flow) and peripheral equipment, such as vacuum lines, element analysers and gas chromatographs.
- Knowledge of analytical laboratory operations, isotope ratio mass spectrometer equipment, vacuum lines, elemental analysers, gas chromatographs and best practice QA/QC procedures.
- Ability to work reliably, independently and to adhere to strict procedures.
- Meticulous attention to detail, including clear and accurate record keeping.
- The ability to work well in a team.
- Knowledge of current Health & Safety practices.
- Advanced user of computer software such as Access and Excel.
- Flexibility in being able to change working methods and adopt new approaches in response to difficult problems that may be encountered in sample processing.

### Experience

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#### Essential:

- Proven experience in operating, maintaining and development of isotope ratio mass spectrometers and peripheral equipment.
- Troubleshooting instrumentation and software issues.
- Experience in analytical laboratory operations and best practice QA/QC procedures.

#### Desirable:

- Computer coding and database experience (e.g., Filemaker, Access).
- Demonstrated ability to publish and present research.
- Experience in handling hazardous substances.

### Qualifications

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#### Essential:

- Undergraduate physical sciences or engineering degree or at least 5 years appropriate work experience.

#### Desirable:

- Postgraduate physical science or engineering degree and at least 5 years appropriate work experience.

### Other requirements

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#### Essential:

- Car driver's license.

#### Desirable:

- First aid certificate
- Current electronics certification
- Approved Hazardous Substances handler.

## Performance dimensions

At a high level, GNS Science recognises six **performance dimensions**: three relate to technical capability, one relates to leadership (if applicable) and two relate to the way we work. Below are the general expectations that are the minimum standards expected of all staff. There are also expectations that specifically relate to the career step associated with the role; you can find these on GNS Online.

### Technical capabilities

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#### Scope, complexity and innovation

- Enduring commitment to maintaining and developing skills and knowledge in area of expertise.
- Both the ability and desire to apply appropriate rigour, principles and practices to deliver quality work in a cost-effective manner.
- Acts in a manner that conveys high personal and professional standards.
- Open to coaching and feedback – incorporates suggestions to find better ways of doing things (to improve own and GNS Science performance).

#### Contribution to GNS Science / profession

- Establishes and maintains effective and collaborative working relationships – with colleagues and external individuals and groups.
- Both the ability and commitment to work in a culturally responsive and inclusive manner; respecting and valuing the diverse perspectives of individuals and groups.
- Takes an interest in early career colleagues, graduates and students – provides coaching and/or mentoring as appropriate. Supports initiatives to promote science careers.
- Prevents harm to self and others by carrying out duties safely and responsibly.

#### Delivery of work

- The ability and commitment to deliver pieces of work and projects on time to required quality, cost and benefit parameters.
- The application of appropriate project management rigour, principles and practices to delivering quality projects in a cost-effective manner

### Behavioural expectations

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#### Manaakitanga – we do the right thing

Champions a positive working culture. Works and interacts with colleagues, external partners, stakeholders and customers in a way that is consistent with our values:

- We are **CONNECTED** in our purpose; with each other, with partners and stakeholders and with our communities.
- We are **INSPIRED** by our work to explore, challenge, innovate and aim higher.
- We are **EMPOWERED** to be our best – valued for our differences, encouraged to contribute and enabled to grow and develop.

#### Bicultural commitment

- As a Crown Research Institute, GNS Science is committed to partnering with iwi/hapū and Māori communities and agencies to achieve their science aspirations.
- We do this in a way that is culturally appropriate (**tikanga**) and honours Māori and non-Māori worldviews (**te ao**).

These expectations are intended to support and guide the development of individual staff.