

## Job Description



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<b>Job Title:</b>	Research Chemist
<b>Department:</b>	Civil & Environmental Engineering
<b>Reports To:</b>	Director/Associate Director, Water Science, Technology & Policy Research Group (Water STP Group)
<b>Jobs Reporting:</b>	None
<b>Salary Grade:</b>	USG 8
<b>Effective Date:</b>	October 2020

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### **Primary Purpose**

This position is accountable for the provision of analytical and general chemistry services for the Water Science, Technology & Policy Research Group (Water STP Group) for funded external research endeavors such as *forWater*, a Canada-wide and internationally-partnered research network of academics, water utilities, government agencies, industrial forestry companies, and NGOs focused on forest management-based approaches for drinking water source protection. The incumbent will support researchers with analysis and reporting of said analyses for their research projects, in addition to training users on analytical equipment in laboratories and maintaining the operations of the Water STP Group laboratories.

### **Key Accountabilities**

#### **Analytical Chemistry Services**

- Provide researchers with analysis, reporting, and suggestions for improvements
- Communicate scientific information; be able to explain methods, convey important methodological limitations
- Method development and validation; be able to implement existing methods, modify existing methods to improve detection or analysis of chemicals for which methods don't exist
- Troubleshooting for researchers and students
- Keep up-to-date on information and best practices for analytical instruments and methods

#### **Laboratory Operations**

- Maintain equipment in laboratories, including procurement of day-to-day supplies
- Support use of analytical equipment in labs associated with research group
- Assist in the selection of new analytical instrumentation, including requests for quotes
- Keep inventory of supplies for labs and order as required
- Scheduling sample analyses in instances where demand may exceed available instrument time or capacity for analyses
- Prepare sample containers/coolers and arrange shipments to and from research partners

#### **Training and Health & Safety**

- Provide training to researchers and students in the use of analytical lab equipment
- Instruct researchers and students in the appropriate implementation of quality control protocols
- Attend departmental safety meetings and required training for labs
- Liaise with University and Department Safety Office as appropriate on safety related concerns in the labs
- Provide laboratory and chemical safety information for researchers and students
- Inspect labs on a regular basis and advise researchers of potential safety problems

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*\*All employees of the University are expected to follow University and departmental health and safety policy, procedures and work practices at all times. Employees are also responsible for the completion of all health and safety training, as assigned. Employees with staff supervision and/or management responsibilities will ensure that assigned staff abide by the above, and actively identify, assess and correct health and safety hazards, as required.*

### Required Qualifications

<b>Education</b> <ul style="list-style-type: none"><li>• Preferably at least a Bachelor's degree in Chemistry</li></ul>
<b>Experience</b> <ul style="list-style-type: none"><li>• Experience using instruments such as: total organic carbon analyzers, zeta potential analyzer, turbidimeters, centrifuges, conductivity meters, pH meters ultraviolet/visible (UV/Vis) spectrophotometers, water filtration manifolds, ultraviolet fluorometers, dissolved oxygen meters, ozone generator, specific ion electrodes/meters, laboratory precision balances, fume hoods, liquid chromatograph/organic carbon detection (LC/OCD), liquid chromatograph/mass spectrometers (LC/MS), and gas chromatograph/mass spectrometers is an asset. It is not expected that any one candidate would possess the skills required to operate all of these.</li></ul>
<b>Knowledge/Skills/Abilities</b> <ul style="list-style-type: none"><li>• Background in general and analytical chemistry</li><li>• Appreciation for and understanding of the statistical nature of chemical analysis</li><li>• Attention to detail and strong organizational skills required</li><li>• Good communication skills</li></ul>

### Nature and Scope

- **Contacts:** Internal contacts include the research team and involve exchanging information and discussion of problems. Interactions with external contacts typically involve communication with suppliers to acquire product information and quotes, and initiate purchase requisitions. There may also be occasional direct contact with other researchers and their students and technicians as it relates to methods and/or data.
- **Level of Responsibility:** The Chemist will be required to produce high quality publishable analytical data that will come under the direct scrutiny of experts from outside the department. The position has no direct supervision of others but does require an awareness of student activity in lab and the ability to recognize an unsafe condition/practice.
- **Decision-Making Authority:** There will be interactions with different students and staff in the research group. It is possible that there could be multiple requests for the chemist's time or instruments for which there is limited capacity. These would typically be handled by the chemist but in the event of scheduling issues that can't be easily resolved the student's academic supervisor(s) would get involved to deal with such situations.
- **Physical and Sensory Demands:** Must manage multiple requests and deadlines while maintaining close attention to details and accuracy. There can be periods of time when the incumbent will be on their feet for long periods. There are occasions when heavy objects have to be handled.
- **Working Environment:** Most of the chemist's time is spent in laboratory or pilot plant environments where the possibility of exposure to toxic and/or reactive chemicals exists. There will also be some office based/computer work. Some travel off campus to research sites may be required.