

## Job Description

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<b>Job Title:</b>	Research Hydrogeochemist
<b>Department:</b>	Earth and Environmental Sciences
<b>Reports To:</b>	Professor
<b>Jobs Reporting:</b>	N/A
<b>Salary Grade:</b>	USG9
<b>Effective Date:</b>	June 1, 2018

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### **Primary Purpose**

The Groundwater Geochemistry and Remediation Group (GGR) in the Department of Earth and Environmental Sciences at the University of Waterloo is a collection of dynamic individuals led by David Blowes and Carol Ptacek who are committed to advancing understanding of the fate, transport and remediation of inorganic and organic contaminants in groundwater. This research includes detailed field investigations, laboratory studies, development of reactive barriers and other passive remedial solutions, and development of mathematical models to predict the complex geochemical behaviour of these systems. The UWaterloo research team consists of approximately 30 individuals including research staff, post-doctoral fellows, graduate students and undergraduate students. The research team works in close collaboration with several individuals and research teams across Canada and internationally in both academic and government organizations. In addition, the research team maintains partnerships with a number of Canadian and international mining and industrial sector companies. The Research Hydrogeochemist is accountable to the Principal Investigators, and will work collaboratively with a team of internal stakeholders (the Principal Investigators, co-investigators, research staff and students) toward achieving major project objectives and contributing to the ongoing growth of the research program. Responsibilities will include: managing the operation and maintenance of sophisticated analytical instruments; participate in the publication of primary research articles; supporting students and post-doctoral fellows in the laboratory and field studies; the continual improvement of the laboratory and field safety management plans; developing/implementing experimental protocols; and select administrative duties such as billing, ordering supplies, grant writing, and budget development and tracking. This job was created to ensure the objectives of the GGR research program could be met by hiring personnel with extensive experimental and analytical experience to provide continuity and support for students and post-doctoral fellows.

### **Key Accountabilities**

*List the major responsibilities of the job, divided into 3 to 5 broad categories. These should reflect 80 - 90% of "what" the job does not the "how". Insert a category heading and in bullet form below, state specific responsibilities.*

#### **Contribution to the execution of the groundwater geochemistry and remediation research program**

- Work collaboratively with a team of internal stakeholders toward achieving major project objectives
- Support graduate students and post-doctoral fellows in the pursuit of similar activities
- Operation and maintenance of analytical instrumentation, including but not limited to HPLC electrospray tandem mass spectrometer, ion chromatograph, ultra-trace total mercury analyzer, gas chromatograph, DOC analyzer
- Troubleshoot and arrange for repair instrument breakages
- Ensure high quality deliverables through preparing and distributing concise, accurate, analytical reports and project communications
- Ensure high quality communication with external stakeholders through compiling and distributing research results and deliverables

#### **Development and execution of laboratory and field studies**

## Job Description

- Conduct laboratory experiments (column and batch tests, solid-phase extractions, etc.)
- Support field studies through scheduling, supply management, participating in and overseeing field activities
- Analyse aqueous and solid-phase samples following QA/QC protocols
- Aid in the preparation of research papers based on results for submission to peer-reviewed journals
- Present results both internally and externally (e.g. conference calls, conferences, workshops)
- Support graduate students and post-doctoral fellows in the pursuit of similar activities

### **Contribute to the overall management of groundwater geochemistry and remediation program**

- Develop and implement laboratory and field safety procedures and training protocols
- Manage the monthly laboratory safety inspections
- Participate in administrative duties (e.g. analytical billing, budget tracking, payroll)
- Assist in the preparation of grant applications that support the research program

### **Required Qualifications**

*If hiring today, what would be the required education, experience, knowledge, skills and abilities?*

#### **Education**

- MSc in Environmental Chemistry, Earth Sciences or a related discipline

#### **Experience**

- Experience with Unit4, Concur, making purchase requisitions, analytical billing, internal invoicing
- Conference call and meeting organization
- Experience with budget tracking for concurrent research projects
- Field geochemical sampling
- Minimum 1 year of experience working with an automated total mercury analyzer in a clean room environment, analysis of samples following EPA Method 1631, Revision E
- Minimum 1 year of experience operating and maintaining an ion chromatograph, dissolved organic carbon analyzer, gas chromatograph

#### **Knowledge/Skills/Abilities**

- Proficiency in MS Word, Excel, Powerpoint, Sigmaplot, CorelDraw
- Knowledge of geochemistry, hydrogeology and contaminant transport processes
- Report-writing skills
- First Aid Certified
- Full G Licence
- Can work well both independently and in a team environment

### **Nature and Scope**

- **Contacts:** Communicates with both internal/external contacts through conference call presentations, frequent meetings and interactions with co-workers
- **Level of Responsibility:** This job has defined specialized and routine tasks and receives specific guidance
- **Decision-Making Authority:** Primarily independent decision-making, regular communication with the Principal Investigators (in-person and via email) for direction and priorities
- **Physical and Sensory Demands:** Attention to detail, time management, deadline pressures, demand for thoroughness and accuracy, physical exertion when working at field sites
- **Working Environment:** Office-based, laboratory-based, clean room environment, loud environment, outdoor environment when participating in field work