Position Description Form (PDF)

College: Sir Sandford Fleming

Incumbent's Name: VACANT

Position Title: CAWT Quality Specialist Payband: L

Position Code/Number (if applicable): S00565

Scheduled No. of Hours____35_____

Appointment Type: ___X_____12 months _____less than 12 months

Supervisor's Name and Title: Jennifer Andersen, Manager, CAWT

Completed by: Jennifer Andersen PDF Date: March 10, 2022

Signatures:

Incumbent: Date:
(Indicates the incumbent has read and understood the PDF)

Supervisor: Date:

Instructions for Completing the PDF

1. Read the form carefully before completing any of the sections.

2. Answer each section as completely as you can based on the typical activities or requirements of the position and not on exceptional or rare requirements.

3. If you have any questions, refer to the document entitled "A Guide on How to Write Support Staff Position Description Forms" or contact your Human Resources representation for clarification.

4. Ensure the PDF is legible.

5. Responses should be **straightforward and concise using simple factual statements.**

Position Summary

Provide a concise description of the overall purpose of the position.

The CAWT Quality Specialist is responsible for overall daily coordination of work in the CAWT analytical laboratory. This role develops and implements appropriate laboratory protocols, methods, and QA/QC procedures for the analytical laboratory and is responsible for maintaining ongoing accreditation standards (ISO 17025 and ISO 17020). The incumbent is responsible for tracking the analytical laboratory budget, purchasing laboratory supplies (under the approval of the CAWT Manager), and the coordination of laboratory human and physical resources.

The incumbent will oversee all laboratory instrumentation, including coordination of repairs or troubleshooting, working with external vendors to resolve challenges, and obtaining quotes as required. The incumbent will coordinate the work of laboratory technicians, students and others as necessary to meet lab service deliverables. The incumbent will develop, organize and oversee CAWT lab operations ensuring safe, accurate and effective use of facilities and equipment and that all laboratory health and safety procedures are developed and followed for the protection of students, staff, faculty, and visitors.

The incumbent oversees all laboratory method development and training. On occasion the incumbent will perform laboratory analysis following standard methods.

This position works closely with the CAWT Manager, to ensure services and projects are completed on time, on budget and to the satisfaction of the client or partner.

The incumbent will maintain effective relationships with industry clients, external agencies and internal partners and will prepare project documentation, including progress and final reports as required.

Duties and Responsibilities

Indicate as clearly as possible the significant duties and responsibilities associated with the position. Indicate the approximate percentage of time for each duty. Describe duties rather than detailed work routines.

	Approximate % of time annually*
1. Analytical Laboratory Services This position is responsible for overall coordination of the CAWT's analytical laboratory services. This includes the following: formulating and implementing short and long-term goals for the laboratory operations; benchmarking and optimizing resources and processes to ensure that effective, accurate and cost-competitive analytical services are provided; overseeing method development and evaluating and recommending new techniques and technologies. The incumbent coordinates with the CAWT Manager and other CAWT staff to solve issues which impact laboratory services and to improve technical activities. This role assumes full responsibility for all aspects of laboratory testing services, working closely with Research Scientists, technologists, technicians, and partners to develop and implement plans and ensure all laboratory resources, logistics, equipment and materials are coordinated and managed effectively and that barriers are identified and removed in order to fulfill contractual commitments, on time and on budget. This position prepares laboratory documentation, progress reports, and final detailed technical reports as required. They provide direction and guidance to staff engaged in laboratory activities, including direction on method development, validation of methods, non-routine calibration of high end instrumentation, analytical testing services and methods of data collection and analysis. They perform laboratory analysis as required, following standard methods. This position is also responsible for the effective operation of the Laboratory Information Management Systems (LIMS).	40%
2. Quality Management System The incumbent is also responsible for maintaining ongoing ISO 17025 and ISO 17020 accreditation which includes: maintaining relevant policies and procedures; developing and implementing quality assurance programs relating to calibration and maintenance of equipment and standards; ensuring quality control of sample processing; and developing, implementing, monitoring and evaluating current and projected laboratory services and productivity.	20%

3. Space/Facilities, Financial and Health & Safety Coordination This position is responsible for tracking the analytical laboratory budget. The incumbent identifies, and purchases lab supplies and equipment or delegates as needed. This position is responsible for ensuring laboratory facilities are operated safely and according to CAWT policies and procedures and according to ISO standards and quality manual requirements. The incumbent serves on the CAWT Health and Safety Committee. This position, in collaboration with the CAWT Manager is also responsible for proactively addressing health and safety and ergonomic needs of laboratory staff to ensure that issues are appropriately resolved. This position also develops and implements appropriate laboratory and operational protocols and procedures in support of operational efficiency and safety of analytical procedures and use of instrumentation. This role, together with the CAWT Manager coordinates space allocation for the CAWT required for analytical services, working in cooperation with the College Physical Resources department.	15%
4. Outreach and Client Relations Maintain effective relationships with both industry clients and external agencies by communicating with and meeting with project partners for research planning and development sessions so current changes in methodology and technology can be applied to laboratory components. The incumbent meets with clients and partners on a regular basis to assess needs, exchange information, provide status updates and to assure optimum service is given as pertains to laboratory services. The incumbent will check for client satisfaction and will propose and implement improvements, as needed. This role maintains relationships with external parties and organizations and works closely with the Vice President, Applied Research & Innovation to maintain and enhance business activities in areas of laboratory services. This position may also represent the CAWT at external events, including research conferences and with industry stakeholders, government agencies and officials.	10%
5. Training Facilitate training/orientation sessions/demonstrates procedures for new lab staff, student workers, placement workers, and technicians including informing them of procedures, policies and best practices. Assist in recruitment and selection of student workers, coordinate and oversee laboratory work, delegate tasks, and provide day-to-day guidance for student workers.	10%
6. Other duties as assigned.	5%

* To help you estimate approximate percentages:

½ hour a day is 7%	1 hour a day is 14%	1 hour a week is 3%
½ day a week is 10%	½ day a month is 2%	1 day a month is 4%
1 week a year is 2%		

1. Education

A. Check the box that best describes the **minimum** level of **formal** education that is required for the position and specify the field(s) of study. Do not include on-the-job training in this information.

□ Up to High School □ 1 year certificate □ 2 year diploma

□ Trade certification □ 3 year diploma / degree X 4 year degree or 3 year diploma / degree plus professional certification

□ Post graduate degree (e.g. Masters) or 4 years degree plus professional certification

□ Doctoral degree

Field(s) of Study:

Analytical Chemistry, Molecular Biology, Organic Chemistry, Water or Wastewater Engineering, or other lab-based disciplines

B. Check the box that best describes the requirement for specific course(s), certification, qualification, formal training or accreditation in addition to and not part of the education level noted above and in the space provided specify the additional requirement(s). Include only the requirement that would typically be included in the job posting and would be acquired prior to the commencement of the position. Do not include courses that are needed to maintain a professional designation.

X No additional requirements	
□ Additional requirements obtained by course(s) of a total of 100 hours or less	-
□ Additional requirements obtained by course(s) of a total between 101 and 520 hours	
□ Additional requirements obtained by course(s) of a total of more than 520 hours	

2. Experience

Experience refers to the minimum time required in prior position(s) to understand how to apply the techniques, methods and practices necessary to perform this job. This experience may be less than experience possessed by the incumbent, as it refers only to the minimum level required on the first day of work.

Check the box that best captures the typical number of year of experience, in addition to the necessary education level, required to perform the responsibilities of the position and, in the space provided, describe the type of experience. Include any experience that is part of a certification process, but only if the work experience or on-the-job training occurs after the conclusion of the educational course or program.

□ Less than one (1) year

□ Minimum of one (1) year

□ Minimum of two (2) years

□ Minimum of three (3) years

x Minimum of five (5) years

Experience overseeing the operations of a laboratory (with several analytical methods and staff), in a managerial or supervisory capacity; experience overseeing an ISO accredited laboratory an asset.

Practical, related working experience in the following: Analytical and Environmental Chemistry methods, and instrumentation, including Mass Spectrometry, Atomic Absorption, ICP Spectrometry, Ion Chromatography. Working knowledge of analytical chemistry techniques including analysis of water, wastewater, and soil samples.

Experience coordinating the work of several personnel (3+)

Experience repairing, maintaining and trouble shooting, calibrating and operating a wide range of highly technical and sensitive instrumentation; experience creating analytical chemistry methodologies for environmental applications.

Expertise and experience in analytical methods that are used in research projects and in quality assurance as relates to research design and planning.

Strong interpersonal, planning and communication skills required. Practical experience in organizational techniques and inventory control. Ability to liaise with outside agencies and industry. High level of analytical and problem solving expertise.

Advanced spreadsheet and work processing skills.

Experience with and knowledge of health and safety legislation.

Experience coordinating and directing the work of others.

Knowledge of and experience with ISO 17025 and ISO 17020 standards an asset.

First Aid, CPR, WHMIS and confined space awareness training is preferred.

- □ Minimum of eight (8) years

3. Analysis and Problem Solving

This section relates to the application of analysis and judgement within the scope of the position.

The following charts help to define the level of complexity involved in the analysis or identification of situations, information or problems, the steps taken to develop options, solutions or other actions and the judgement required to do so.

Please provide up to three (3) examples of analysis and problem solving that are regular and recurring and, if present in the position, up to two (2) examples that occur occasionally:

	#1 regular & recurring
Key issue or problem encountered.	Assess potential analytical laboratory service opportunities to gauge capacity for the lab to fulfill client expectations.
How is it identified?	Analytical service opportunities come from multiple sources: directly from external clients, through the CAWT Manager, from Faculty, and Research Scientists, from Technologists, from the VP, and from funding partners or other project partners. The incumbent may also self-generate ideas.
Is further investigation required to define the situation and/or problem? If so, describe.	This is complex in that the strategic mandate of the CAWT along with potential opportunities and revenue generation must be considered in relation to the physical capacity of the lab and its current staffing abilities.
Explain the analysis used to determine a solution(s) for the situation and/or problem.	The incumbent will evaluate the time on task requirements for the analytical services and establish anticipated resources required. This position is responsible in particular for non-routine analytical opportunities. For example, clients and partners that come with very unique service requests that require highly customized procedures, the validation of equipment, methods, protocols, all the while evaluating the costs of all stages of capacity building to have an adaptive cost-benefit analysis to report to the VP whether or not the business opportunity is strategic or not. There is inherent uncertainty and risk associated with implementing new opportunities. The change may result in unforeseeable costs, or delays, or result in further problems. The incumbent must attempt to meet the clients' needs and requests while also navigating what may be unacceptable burdens to the CAWT (in resource allocations), or the CAWT may simply not be able to meet demands within parameters acceptable to the CAWT/College.

What sources are available to assist the incumbent finding solution(s)? (eg. past practices, established standards or guidelines).	In most cases the CAWT has established guidelines for testing service resource requirements but more resources will need to be constantly developed as new tests are offered. To a large degree resource material to assist in this task is limited. Commercial laboratories are very reluctant to share any information that would have a commercial value (trade secret), and very few post-secondary institutions are engaging in the kinds of services that CAWT is doing and plans to do. As a result there are very limited resources available. CAWT is deliberately targeting under-serviced markets but that means working in new territory with very little assistance available.

3. Analysis and Problem Solving

	#2 regular & recurring
Key issue or problem encountered	Maintaining laboratory accreditation (CALA and ISO 17025) ensuring all protocols are followed by staff for all audited procedures.
How is it identified?	Incumbent will be involved in developing and validating laboratory SOPs and methods, will participate in internal and external audits to achieve and maintain ISO accreditation.
Is further investigation required to define the situation and/or problem? If so, describe.	The incumbent will need to conduct quality control checks on analytical procedures. Inconsistencies with tests or with samples results from outside lab will need to be corrected and reported to the assessor during the accreditation process. Isolating the cause of the inconsistency will require extensive investigation.

Explain the analysis used to determine a solution(s) for the situation and/or problem.	ISO laboratory methods for quality assurance and quality control will be implemented. An example is measurement of uncertainty: The incumbent is responsible for ensuring the process of measurement uncertainty estimation is followed as per the quality manual. The first step is to specify the measurand and write down a clear statement of what is being measured, including the relationship between the measurand and the input quantities (e.g. measured quantities, constants, calibration standard values etc.) upon which it depends. Where possible, corrections for known systematic effects should be included. The specification information should be given in the relevant Standard Operating Procedure (SOP) or other method description. Step 2 is to identify uncertainty sources and list the possible sources of uncertainty. This will include sources that contribute to the uncertainty on the parameters in the relationship specified in Step 1, but may include other sources and must include sources arising from chemical assumptions. A general procedure for forming a structured list is suggested in the Quality Manual. Step 3 requires the incumbent to quantify uncertainty components and estimate the size of the uncertainty component associated with each potential source of uncertainty identified. It is often possible to estimate or determine a single contribution to uncertainty associated with a number of separate sources using data from validation studies, QC data etc. Using such data considerably reduces the effort required to evaluate the uncertainty and since it utilizes actual experimental data can lead to reliable estimates of the uncertainty. It is also important to consider whether available data accounts sufficiently for all sources of uncertainty, and plan additional experiments and studies carefully to ensure that all sources of uncertainty are adequately accounted for. Step 4 requires the calculation of the combined uncertainty. The information obtained in step 3 will consist of a number of quantified contributions to overall uncertainty, whether associated with individual sources or with the combined effects of several sources. The contributions have to be expressed as standard deviations, and combined according to the appropriate rules, to give a combined standard uncertainty. The appropriate coverage factor should be applied to give an expanded uncertainty.
What sources are available to assist the incumbent finding solution(s)? (eg. past practices, established standards or guidelines).	ISO 17025 Standard, Standard Methods (CAWT subscribes), as well as governmental standards (e.g. USEPA) will be used.

#3 regular & recurring

Key issue or problem encountered	Validation of Newly Developed Analytical Methods
How is it identified?	A method is validated when it is necessary to verify that its performance parameters are adequate for use for a particular analytical problem. For example: - Method just developed, demonstration of the equivalence between two methods, e.g. a new method and a standard. Certain areas of analytical practices will specify validation requirements relevant to the method.
Is further investigation required to define the situation and/or problem? If so, describe.	All new methods must be validated. The validity of a specific method is demonstrated in laboratory experiments designed and executed by the incumbent. The incumbent will execute the following steps: 1. Develop a validation protocol, an operating procedure or a validation master plan for the validation 2. For a specific validation project define owners and responsibilities 3. Develop a validation project plan 4. Define the application, purpose and scope of the method 5. Define the performance parameters and acceptance criteria 6. Define validation experiments 7. Verify relevant performance characteristics of equipment 8. Qualify materials, e.g. standards and reagents for purity, accurate amounts and sufficient stability 9. Perform pre-validation experiments 10. Adjust method parameters or/and acceptance criteria if necessary 11. Perform full internal (and external) validation experiments 12. Develop SOPs for executing the method in the routine 13. Define criteria for revalidation 14. Define type and frequency of system suitability tests and/or analytical quality control (AQC) checks for the routine 15. Document validation experiments and results in the validation report

Explain the analysis used to determine a solution(s) for the situation and/or problem.	Successful acceptance of the validation parameters and performance criteria requires multiple steps. The incumbent establishes the scope of the method and its validation criteria, which includes answering the following questions: • What analytes should be detected? • What are the expected concentration levels? • What are the sample matrices? • Are there interfering substances expected, and, if so, should they be detected and quantified? • Are there any specific legislative or regulatory requirements? • Should information be qualitative or quantitative? • What are the required detection and quantitation limits? • What is the expected concentration range? • What precision and accuracy is expected? • How robust should the method be? • Which type of equipment should be used? Is the method for one specific instrument, or should it be used by all instruments of the same type? • Will the method be used in one specific laboratory or should it be applicable in all laboratories? • What skills do the anticipated users of the method have?
What sources are available to assist the incumbent finding solution(s)? (eg. past practices, established standards or guidelines).	ISO 17025 Standard, Standard Methods (CAWT subscribes), as well as government resources (e.g. USEPA), method development literature will be used.

#1 Occasional ~~(if none, please strike out this section)~~

Key issue or problem encountered	
How is it identified?	
Is further investigation required to define the situation and/or problem? If so, describe.	
Explain the analysis used to determine a solution(s) for the situation and/or problem.	

What sources are available to assist the incumbent finding solution(s)? (eg. past practices, established standards or guidelines).	

#2 Occasional ~~(if none, please strike out this section)~~

Key issue or problem encountered	
How is it identified?	
Is further investigation required to define the situation and/or problem? If so, describe.	
Explain the analysis used to determine a solution(s) for the situation and/or problem.	
What sources are available to assist the incumbent finding solution(s)? (eg. past practices, established standards or guidelines).	

4. Planning/Coordinating

Planning is a proactive activity as the incumbent must develop in advance a method of acting or proceeding, while coordinating can be more reactive in nature.

Using the following charts, provide up to three (3) examples of planning and/or coordinating that are regular and recurring and, if present in the position, up to two (2) examples that occur occasionally:

	#1 regular & recurring
List the project and the role of the incumbent in this activity.	Implementation of a planned research method or experiment in the CAWT facilities, including set up, monitoring and troubleshooting of laboratory equipment and instrumentation. Process includes reviewing the test plan and coordinating the activities to build the laboratory experiment. Incumbent will assist the Research Scientist and Manager in the method design before and during the project. The incumbent would source any necessary equipment and supplies and potentially adapting and modifying existing equipment to suit the experiment. The final result is the development of an experiment that produces the results and analysis that suits the scientific needs for the client within financial and logistical constraints.
What are the organizational and/or project management skills needed to bring together and integrate this activity?	Incumbent needs to work independently to organize the necessary resources build, troubleshoot any potential issues and test the experiment, within a specified, frequently compressed time frame. Also, this work may involve the assistance of students and other CAWT workers, who would require specific direction in this activity. The incumbent will assign tasks to these individuals and follow up to ensure that tasks have been completed correctly. There could also be work required by other department staff (Physical Resources) and would require effective communications skills to monitor the project This project would also require regular communication with, Manager, and with other project partners and stakeholders.
List the types of resources required to complete this task, project or activity.	Instrument and Equipment Manuals, Standard Methods, Plumbing and electrical procedures, Internet sources, Liaise with partners, internal and outside professionals, develop safety protocols when required
How is/are deadline(s) determined?	Deadline is determined by CAWT Manager

Who determines if changes to the project or activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.	Incumbent in consultation with the Manager decides if changes are required. Incumbent tests and assesses the procedure and decides if the system is working properly. If schedules or priorities of others need to change, the incumbent will identify these changes and the Manager will approve. An example is the ongoing adaptations required by NSF for providing testing services for evaluation of NSF standards. When undertaking an NSF 350 technology validation trial, the partner requires constant evaluation of the test protocols, operational protocols, and laboratory analytical methods. If anything is outside of the required operational scope parameters immediate action must be taken to bring operations back into required parameters. NSF in this case would make the decisions but the incumbent is responsible for ensuring analytical services are appropriate and in place to meet all the information needs of the project to allow for fast and responsive changes to operational protocols.

4. Planning/Coordinating

	#2 regular & recurring
List the project and the role of the incumbent in this activity.	Plan and coordinate the testing and analysis activities within an analytical laboratory
What are the organizational and/or project management skills needed to bring together and integrate this activity?	Incumbent must undertake project management including such things as determining required resources, planning and assigning tasks, tracking and follow up to ensure proper completion of tasks, communicating priorities, etc. This task involves the complex coordination of people, equipment, processes, competing priorities, and constantly changing workloads and demands.
List the types of resources required to complete this task, project or activity.	Laboratory manuals, science journals, internet sources, as well as Fleming personnel.
How is/are deadline(s) determined?	Deadlines are determined by the project agreement as agreed to by the clients, funders, and/or other engaged stakeholders or by the incumbent in consultation with the Research Scientist, Manager and project collaborators. Day to day deadlines for lab technicians and students would be set and tracked by the incumbent.

Who determines if changes to the project or activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.	Incumbent is responsible for coordination of laboratory capacity in consultation with the CAWT Manager. The incumbent is the first person to recognize and become aware whether or not project deadlines are realistic or if they need to be changed. As such there is significant responsibility on the incumbent to remain hyper aware of anticipated changes that may be required on analytical testing programs and deadlines, and experimental project milestones and deadlines. Any foreseeable changes need to be communicated to the CAWT Manager as soon as possible. Incumbent will adjust the schedules and activities of the lab technicians and students as needed, to meet changing deadlines.

~~#3 regular & recurring~~

List the project and the role of the incumbent in this activity.	
What are the organizational and/or project management skills needed to bring together and integrate this activity?	
List the types of resources required to complete this task, project or activity.	
How is/are deadline(s) determined?	
Who determines if changes to the project or activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.	

4. Planning/Coordinating

#1 occasional (if none, please strike out this section)

List the project and the role of the incumbent in this activity.	The incumbent is responsible for developing and delivering information/training sessions (and materials) on laboratory procedures and/or ISO standards, or quality procedures.
What are the organizational and/or project management skills needed to bring together and integrate this activity?	Skills required include: collaboration, communication, planning, facilitation, creation of presentation and learning materials (handouts, flowcharts, powerpoints etc)

List the types of resources required to complete this task, project or activity.	Laboratory procedures, ISO standards
How is/are deadline(s) determined?	By the incumbent in consultation with the supervisor.
Who determines if changes to the project or activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.	Changes are identified by the incumbent, who also determines whether these changes have an impact on others. e.g. If there is a change in the ISO 17025 standard, the incumbent will determine the changes that need to be made to laboratory operating procedures or processes, who will be impacted by those changes and will provide /adjust training to ensure that the change is understood and implemented as needed. CALA, ISO, NSF, other partners or standards organizations frequently have mandatory changes. The incumbent is responsible for having awareness off these changes and organizing and implementing training activities in anticipation of these changes.

~~#2 occasional~~ ~~(if none, please strike out this section)~~

List the project and the role of the incumbent in this activity.	
What are the organizational and/or project management skills needed to bring together and integrate this activity?	
List the types of resources required to complete this task, project or activity.	
How is/are deadline(s) determined?	
Who determines if changes to the project or activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.	

5. Guiding/Advising Others

This section describes the **assigned responsibility** of the position to guide or advise others (e.g. other employees, students). Focus on the actions taken (rather than the communication skills) that directly assist others in the performance of their work or skill development.

Though Support Staff cannot formally "supervise" others, there may be a requirement to guide others using the incumbent's job expertise. This is beyond being helpful and providing ad hoc advice. It must be an assigned responsibility and must assist or enable others to be able to complete their own tasks.

Check the box(es) that best describe the level of responsibility assigned to the position and provide an example(s) to support the selection, including the positions that the incumbent guides or advises.

Regular & Recurring	Occasional	Level	Example
x	□	Minimal requirement to guide/advise others. The incumbent may be required to explain procedures to other employees or students.	Incumbent will be required to explain laboratory procedures to lab technicians, student employees, graduate student researchers, and others that may be using the CAWT laboratory.
X	□	There is a need for the incumbent to demonstrate correct processes/ procedures to others so that they can complete specific tasks.	Demonstrates safe and proper use of chemicals and all analytical equipment. Provides training on laboratory processes and ISO standards.
X	□	The incumbent recommends a course of action or makes decisions so that others can perform their day-to-day activities.	Provides direction to staff engaged in laboratory activities, including direction on method development, testing services and methods of data collection and analysis.
□	□	The incumbent is an active participant and has ongoing involvement in the progress of others with whom he/she has the responsibility to demonstrate correct processes/procedures or provide direction.	
X	□	The incumbent is responsible for allocating tasks to others and recommending a course of action or making necessary decisions to ensure the tasks are completed.	Assigns tasks and provides direction to technicians and student workers and follows up to ensure tasks are completed correctly and on time.

6. Independence of Action

Please illustrate the type of independence or autonomy exercised in the position. Consideration is to be given to the degree of freedom and constraints that define the parameters in which the incumbent works.

What are the instructions that are typically required or provided at the beginning of a work assignment?	
Regular and Recurring	Occasional (if none, please strike out this section)
Work assignments are carried out independently with broad objective and outcomes defined by the supervisor The position has significant autonomy to work directly with all necessary stakeholders to achieve successful task completion and work assignment outcomes. The incumbent is expected to work in a self-directed manner and display significant initiative and independent judgment through interaction with others.	Occasional assignment will be explained in more detail by the supervisor.

What rules, procedures, past practices or guidelines are available to guide the incumbent?	
Regular and Recurring	Occasional (if none, please strike out this section)
MOE manuals, Standard Methods, and USEPA methods are all available. Journals and a small number of texts can be referenced to aid in the creation of new analytical techniques. Information from outside sources such as Ministry of Environment and through some liaising with colleagues outside of the college. ISO 17025 and ISO 17020 standards Instrument manuals only supply operational info; Methods are created by research and drawing on incumbent experience.	

How is work reviewed or verified (eg. feedback from others, work processes, Supervisor)?

Regular and Recurring	Occasional (if none, please strike out this section)
Work is checked by the supervisor through reports (monthly/quarterly) and/or discussions, as needed. Work is reviewed at key periods or significant stages in a project.	Potential issues with work performance would become apparent through staff complaints, missed deadlines, deficient relations with fellow staff and industry partners. Such issues would be discussed with the supervisor.

6. Independence of Action

Describe the type of decisions the incumbent will make in consultation with someone else other than the Supervisor?	
Regular and Recurring	Occasional (if none, please strike out this section)
Equipping lab as needed to maintain accredited status will require ordering appropriate equipment and supplies – requiring decisions and extensive consultation with other supply companies, and outside labs. Other examples include consulting Fleming personnel concerning routine operational matters and making appropriate decisions (e.g. making decisions as needed for IT needs or requesting something from Physical Resources, etc.). Equipping the lab and/or gaining technical capacity for new business lines. Consultation with the CAWT Manager, and with the VP ARI for evaluation of recommended pursuits. Collaborating with Research Scientists regarding appropriate methods used in research projects	Resolution to complex laboratory health and safety issues in the lab.

Describe the type of decisions that would be decided in consultation with the Supervisor.	
Regular and Recurring	Occasional (if none, please strike out this section)

Permission to access funds for items not specifically part of the approved budget (e.g. major repairs or purchase of capital equipment). All health and safety, personnel issues requiring managerial attention or intervention. Changes to and/or new laboratory services to ensure ongoing client satisfaction and revenue generation.	

Describe the type of decisions that would be decided by the incumbent.	
Regular and Recurring	Occasional (if none, please strike out this section)
Research methodologies and adapt existing instrumentation to perform required analysis. Develop and validate laboratory methods and SOPs as required in an ISO and/or CALA accredited laboratory Changes to the Quality Manual for maintenance of ISO 17025 accreditation (and other standards such as ISO 17020). Implementing efficiencies in laboratory operations New method development and validation procedures. Resolution to routine laboratory health and safety issues. Development of short and long term laboratory goals; implementation plans for achieving these goals. Appropriate allocation of tasks to laboratory staff.	Laboratory training needed for new staff.

7. Service Delivery

This section looks at the service relationship that is an assigned requirement of the position. It considers the required manner in which the position delivers service to customers. It is not intended to examine the incumbent's interpersonal relationship with those customers and the normal anticipation of what customers want and then supplying it efficiently. It considers how the request for service is received and the degree to which the position is required to design and fulfil the service requirement. A "customer" is defined in the broadest sense as a person or groups of people and can be internal or external to the College.

In the table below, list the key service(s) and its associated customers. Describe how the request for service is received by the incumbent, how the service is carried out and the frequency.

Information on the service		Customer	Frequency (D, W, M. I)*
How is it received?	How is it carried out?		
Provide effective, accurate and cost – competitive analytical services. Maintaining ISO accreditation.	Maintaining ISO accreditation is an ongoing activity requiring many maintenance activities (e.g. participating in CALA blind proficiency trials every 6 months; maintaining document control and filing records with CALA; having regular external audits). Providing all the services of an accredited lab is complex task requiring ongoing assessment and ongoing adaptive interventions. Actual lab operations are rarely routine but are frequently highly dynamic and changing in the tests being performed and in the volume and frequency.	CAWT staff, Researchers, External partners	D

New method development and/or technology implementation.	See prior section on method development and validation. This is highly technical and multi-stage process requiring technical expertise, and judgment. Incumbent will consult with clients to determine specifically what is needed and then will design/develop an appropriate solution. Incumbent will need to anticipate new methods that might be needed in the future based on trends, advances in science, regulatory changes, or other foreseeable drivers. This position will need to develop these methods in advance for marketing/ promotion. Examples include Ontario regulatory requirements for water and wastewater testing, and Fisheries Act requirements for Municipal Wastewater Effluent.	CAWT staff, Research Scientists, External partners	Peak periods - W; otherwise M
To provide results of lab tests (e.g. written reports).	Design and execute lab experiments, written reports, Lab protocols and methods,	CAWT staff, Researchers, External partners	D
Provide advice and information on research proposals	Research required information and provide advise required	External partners	W

* D = Daily W = Weekly M = Monthly I = Infrequently

8. Communication

In the table below indicate the type of communication skills required to deal effectively with others. Be sure to list both verbal (e.g. exchanging information, formal presentations) and written (e.g. initiate memos, reports, proposals) in the section(s) that best describes the method of communication.

Communication Skill/Method	Example	Audience	Frequency (D, W, M ,I)*
Exchanging routine information, extending common courtesy	Exchange information; assign tasks	Technicians and technologists	D
	Exchange information; provide status updates	Industry partners	D
Explanation and interpretation of information or ideas	Explains and provides direction on method development, testing services and methods of data collection and analysis.	CAWT staff	M
	Purchase chemicals and/or instrumentation	Technicians and technologists	W
	To learn of new instrumentation and techniques in chemistry field; troubleshoot operational issues with high end precision instrumentation	Suppliers	W

Imparting technical information and advice	To advise how to complete their analytical chem. goals and to aid in the repair and calibration of their highly technical chemistry related equipment	Other technicians and Technologists	D
	To advise CAWT researchers in the completion of their complex analytical chemistry needs	Researchers	D
	Acts as resource for technical questions and requests for advice Demonstrates safe and proper use of chemicals and analytical equipment – complicated or simple; explains laboratory procedures and processes; provides training sessions	Students, Technicians, Research/Scientists	D
	Explains research experiment results and complex methodology and technology to non-technical individuals	Industry clients	W
Instructing or training			

Obtaining cooperation or consent	Seeks and obtains cooperation/consent on lab-related technical matters. Examples 1.Best approach to implementing the Laboratory Information Management System (LIMS); there are highly differing views on how the IT aspects of the LIMS should be implemented. 2. The best test method for a parameter and what uncertainty/interferences /accuracy/ precision is best with each method. There are highly opposing views on this and obtaining cooperation, consent, consensus is commonly needed. This is very often the case with external clients who have little knowledge of laboratory operations and often come with biases and preferences that are not grounded in technical knowledge. Convincing clients to let go of a poorer method that they are familiar with in favour of a better newer method is commonly required (e.g. colipates)	Partners, CAWT staff, and CAWT and OARI leaders.	W
Negotiating			

* D = Daily W = Weekly M = Monthly I = Infrequently

9. Physical Effort

In the tables below, describe the type of physical activity that is required on a regular basis. Please indicate the activity as well as the frequency, the average duration of each activity and whether there is the ability to reduce any strain by changing positions or performing another activity. Activities to be considered are sitting, standing, walking, climbing, crouching, lifting and/or carrying light, medium or heavy objects, pushing, pulling, working in an awkward position or maintaining one position for a long period.

Physical Activity	Frequency (D, W, M, I)*	Duration			Ability to reduce strain		
		< 1 hr at a time	1 - 2 hrs at a time	> 2 hrs at a time	Yes	No	N/A
Standing	D			X		X	
Lifting instruments, equipment Water jugs	M	X			X		
Setting up equipment, working with instrumentation, and executing experiments	D			X	X		
Walking	D	X			X		

* D = Daily W = Weekly M = Monthly I = Infrequently

If lifting is required, please indicate the weights below and provide examples.

□ Light (up to 5 kg or 11 lbs)	
X Medium (between 5 to 20 kg or 11 to 44 lbs)	Equipment and instruments
X Heavy (over 20 kg or 44 lbs)	Water jugs

10. Audio Visual Effort

Describe the degree of attention or focus required to perform tasks taking into consideration:

- the audio/visual effort and the focus or concentration needed to perform a task and the duration of the task, including breaks (eg. up to 2 hours at one time including scheduled breaks)
- impact on attention or focus due to changes to deadlines or priorities
- the need for the incumbent to switch attention between tasks (eg. multi-tasking where each task requires focus or concentration)
- whether the level of concentration can be maintained throughout the task or is broken due to the number of disruptions

Provide up to three (3) examples of activities that require a higher than usual need for focus and concentration.

Activity #1	Frequency (D, W, M, I)*	Average Duration		
		Short < 30 mins	Long up to 2 hrs	Extended > 2 hrs
Experiment performance	W			X
Can concentration or focus be maintained throughout the duration of the activity? If not, why? X Usually □ No There are occasional interruptions from staff.				

Activity #2	Frequency (D, W, M, I)*	Average Duration		
		Short < 30 mins	Long up to 2 hrs	Extended > 2 hrs
Calibrating precision instruments	W		X	
Can concentration or focus be maintained throughout the duration of the activity? If not, why? X Usually □ No				

Activity #3	Frequency (D, W, M, I)*	Average Duration		
		Short < 30 mins	Long up to 2 hrs	Extended > 2 hrs
Working on computers requires higher than usual need for focus and concentration when preparing laboratory documentation, progress reports and final detailed technical reports.	D			X

Can concentration or focus be maintained throughout the duration of the activity? If not, why?
X Usually
□ No

* D = Daily W = Weekly M = Monthly I = Infrequently

11. Working Environment

Please check the appropriate box(es) that best describes the work environment and the corresponding frequency and provide an example of the condition.

Working Conditions	Examples	Frequency (D, W, M, I)*
□ acceptable working conditions (minimal exposure to the conditions listed below)		
□ accessing crawl spaces/confined spaces		
□ dealing with abusive people		
□ dealing with abusive people who pose a threat of physical harm		
□ difficult weather conditions		
□ exposure to extreme weather conditions		
X exposure to very high or low temperatures (e.g. freezers)	Work in CAWT environmental chamber (-40C)	I
X handling hazardous substances	Low dose exposure to chemicals is probably (hazardous) – Acids(Corrosives),(Alkalis) Bases, poison i.e. Cyanide, Arsenic, Solvents ie Toluene, Chloroform, etc.. Deals with radio-Active sources in instrumentation, Some UV and RF exposure as well. Incumbent works with potentially dangerous/hazardous chemicals and high voltage equipment	D
X smelly, dirty or noisy environment	Some procedures requiring use of fume hoods to reduce odours do not eliminate them, exposure to chemicals, Instruments are just below noise threshold for hearing	D

	protection	
X travel	To field locations locally and in remote locations (on average local travel – within 100 km - is once every two months; travel to remote locations – hundreds of kms - is approximately once per year)	I
□ working in isolated or crowded situations		
□ other (explain)		

* D = Daily M = Monthly W = Weekly I = Infrequently