Position Description Form (PDF)

College: Sir Sandford Fleming

Incumbent's Name: VACANT

Position Title: CAWT Laboratory Technician Payband: H

Position Code/Number (if applicable): S00549

Scheduled No. of Hours: ____35_____per week

Appointment Type: **X** 12 months □ Less than 12 months (please specify # months:_____)

Supervisor's Name and Title: Jennifer Andersen, Manager, Centre for Advancement of Water and Wastewater Technologies (CAWT)

Completed by: Stephanie Collins Date: March 3, 2016
Last Revision: March 29, 2016
JEC Review: March 3, 2016

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 fo 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 Laboratory Technician will set up and conduct a wide range of experiments and analyses in the Centre for Alternative Wastewater Treatment (CAWT). The incumbent will: keep detailed records; assist in the development of laboratory methods in consultation with co-workers and the CAWT managers; assist in the maintenance and calibration of equipment and undertake trouble-shooting and repair work. The incumbent will coordinate research projects, which will include planning and troubleshooting experiments, updating CAWT researchers, laboratory staff, and CAWT managers, and interacting with client companies. The incumbent will be expected to organize their daily activities with direction from CAWT Laboratory Technologists, and the CAWT managers. Occasionally the incumbent will be expected to provide guidance and direction to student workers and/or graduate interns.

The incumbent may be asked to perform any of the following analyses in the CAWT laboratory: digestions and analysis for total Kjeldahl nitrogen, total phosphorus and metals, ion analysis by colorimetry, total suspended solids, BOD_5, CBOD5, COD, DO, turbidity, pH, conductivity, alkalinity, *E. coli,* total coliform, anion/cation analysis by ion chromatography, and any other tests involving CAWT's laboratory instrumentation The incumbent may also be asked to assist laboratory technologists in the sample preparation for and operation of CAWT's analytical instrumentation including but not limited to AAS, UV/VIS spec, ICP-OES, ICP-MS, GC-MS, HPLC, TOC/DOC, and CNS.

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. Operate DO, Conductivity, pH, ORP meters, microbiological testing equipment, incubators, heating blocks, evaporators, distillation units and water purification systems, chemical digestion equipment, nephelometers, fumehoods, sewage pumps, peristaltic pumps, SCADA systems, multi-probe sensory units, flow meters, temperature recording devices, environmental chamber, and other laboratory equipment. Assist with sample preparation for and the operation of complex laboratory instrumentation following standard methodologies including: Atomic Absorption Spectrophotometer, UV/Vis Spec, Gas Chromatography, High Performance Liquid Chromatography, Anion/Cation chromatography, Total Organic Carbon analyzer, Carbon, Nitrogen, Sulfur analyzer and ICP Spectrophotometry. Trouble shooting, maintenance, calibration, and repairing of the various laboratory equipment will be required. .	40%
2. Set up and organize analytical laboratory procedures and experiments based on Standard Methods, OMOE, and USEPA guidelines, as required for an accredited testing facility. Coordinate the execution of experimental testing in support of the CAWT research activities. Assist CAWT Laboratory Technologists and Technicians, managers, Research Scientists, CAWT staff, grad interns, and others requiring CAWT analytical services. Communicate with project clients in regards to project updates and results. Prevent safety issues by following planning protocols and health and safety procedures for the safe use of potentially hazardous chemicals and equipment.	30%
3. Maintain experiments in CAWT greenhouse, environmental chamber, outdoor ponds and assist in maintenance of outdoor wetland cells. Assist in inventory levels and organization of consumable supplies and CAWT equipment and infrastructure.	15%
4. Assist in the pursuit and maintenance of proficiency testing (CALA) and laboratory accreditation (ISO 17025). Follow the CAWT Quality Manual and standard operating procedures for laboratory operations and provide suggestions on amendments or improvements as discovered.	5%
5. Participate in CAWT Health and Safety protocols and overall Health and Safety mandate for the facilities. This includes discussing Health and Safety concerns and issues with other lab staff and the CAWT managers. This also includes encouraging proper Health and Safety practices for all in the laboratory and during project work. .	5%
Other related 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	X 3 year diploma / degree	□ 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:

Environmental Technician with emphasis on Analytical Chemistry and/or laboratory analysis.

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	
X Minimum of three (3) years	Practical, related working experience in the following: Analytical and Environmental Chemistry methods, and instrumentation, including spectrophotometers, handheld multiprobes, pH, DO, ORP, conductivity, turbidity meters. Working knowledge of analytical chemistry techniques including analysis of water, wastewater, and soil samples. Experience repairing, maintaining, trouble shooting,calibrating and operating laboratory instrumentation. Experience in experimental set-up and project coordination. Knowledge of pumps and associated electrical systems an asset as is knowledge of ISO 17025 accreditation Strong interpersonal and communication skills required. Practical experience in organizational techniques and inventory control.
□ Minimum of five (5) years	
□ 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.	Analyze numerous wastewater samples for many different parameters, for multiple ongoing projects in a short period of time. Prepare for all analysis according to the Standard Operating Procedures for each method, including calibration of appropriate instruments (BOD titrator, handheld meters, pH meter, etc) and preparation of required chemicals, standards, and samples. Determine through experimentation the range of calibration, dilution requirements, and potential interferences that may occur according to sample types. Adjust the chemistry and testing protocols where necessary.
How is it identified?	Analysis is focused on scheduled laboratory work according to project plans and sample drop off to the laboratory.
Is further investigation required to define the situation and/or problem? If so, describe.	Analysis turnaround time according to methods dictates a short timeline for completion of analysis involving multiple instruments and prescribed testing protocols running simultaneously. If variables change ie: Chemical interferences, specific needs of client (minimum detection level), adjustments and changes to the protocol must be made to complete analysis in the allotted time and as required, following standard testing methodologies. This could mean adding steps to the protocol, or adjusting chemical makeup of the samples being tested. Instruments might have to be adapted to a new procedure that they were not originally designed for. Occasionally problems are not easily identified and non-routine and may require an additional level of troubleshooting.

Explain the analysis used to determine a solution(s) for the situation and/or problem.	Given time, tests and experiments using a modified protocol will be performed. The incumbent will use the results of these tests to make the necessary changes, i.e. adding a new step to the procedure, or learning a new standard method. The incumbent will also set up quality control checks to detect errors in sampling and analysis as they occur and make adjustments based on results.
What sources are available to assist the incumbent finding solution(s)? (eg. past practices, established standards or guidelines).	In most cases there are existing protocols that suit the instrumentation at hand, but original research and adaptations to existing lab techniques must be done to arrive at solutions for occasional problems that are not easily identified and non-routine. Analytical chemistry journals and standard references are used periodically as a starting point.

3. Analysis and Problem Solving

	#2 regular & recurring
Key issue or problem encountered	Trouble shoot CAWT experiments: e.g. pump stalled delivering influent to mesocosm.
How is it identified?	Deviation – minor or major – from normal operations (e.g. pooling of influent, lack of expected treatment, other problems or issues).
Is further investigation required to define the situation and/or problem? If so, describe.	Incumbent must investigate the situation thoroughly prior to taking action by determining if the pump is receiving electricity; see if the pump parts are moving; see if there is a blockage in the pipes; as well as determine if there is influent in the holding tank.
Explain the analysis used to determine a solution(s) for the situation and/or problem.	Incumbent will use accumulated knowledge to evaluate what is known about the system, incumbent will refer to process design drawings and general operations throughout all seasonal and operational conditions, and in consultation with the CAWT managers, and other CAWT staff, determine best course of action for resolving problem.
What sources are available to assist the incumbent finding solution(s)? (eg. past practices, established standards or guidelines).	Current Fleming Physical Resources Management & Technical Support personnel will be an important resource. Other resources include textbooks, and peer reviewed journals. The CAWT managers, and Research Scientists will be important resources for solving these problems.

	#3 regular & recurring
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).	

3. Analysis and Problem Solving

	#1 occasional
Key issue or problem encountered	Accommodating interruptions from Physical Resources and infrastructure maintenance. The incumbent will need to occasionally accommodate interruptions in routine activities to allow Physical Resources staff to do maintenance to equipment, and facility infrastructure. This maintenance may be unrelated to CAWT facilities (e.g. accessing building plumbing).
How is it identified?	The incumbent will be informed, typically via email or verbally, of facilities and infrastructure maintenance prior to the interruption. Unplanned maintenance could also occur.
Is further investigation required to define the situation and/or problem? If so, describe.	Communicating with CAWT managers to further identify the scope of the interruption.
Explain the analysis used to determine a solution(s) for the situation and/or problem.	Adapting activities through re-scheduling of sample collection and testing timelines as well as potentially sending samples to contract laboratories for analysis to accommodate interruption may be required. Alternative measures may need to be discussed with the CAWT managers.
What sources are available to assist the incumbent finding solution(s)? (eg. past practices, established standards or guidelines).	CAWT managers and possibly CAWT Research Scientists may need to be contacted to determine long term solution if interruption is lengthy.

	#2 occasional
Key issue or problem encountered	Gas alarms sounding unexpectedly.
How is it identified?	The incumbent may use any of the several gas monitors for research projects for safety and monitoring, and when sounding they emit a high pitch sound and usually flashing lights.

Is further investigation required to define the situation and/or problem? If so, describe.	The incumbent will be required to evaluate a number of factors to determine the extent of the health and safety issues. This includes: knowing the H&S procedure prior to start of the project and ensuring the first steps to investigation (ie: is it safe to be in the vicinity of the gas detector); reviewing the H&S procedures to determine if there is a real threat; re-testing the space with a re-calibrated gas detector; and use a different gas detector if one is available.
Explain the analysis used to determine a solution(s) for the situation and/or problem.	After the incumbent goes through the investigation, the incumbent will share the results with the CAWT Manager to determine the appropriate next steps.
What sources are available to assist the incumbent finding solution(s)? (eg. past practices, established standards or guidelines).	The incumbent will use the internet, project binders, and CAWT staff as resources to determining a solution.

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.	The incumbent needs to plan and coordinate bench top and instrument analyses to find the most efficient way to execute analyses.
What are the organizational and/or project management skills needed to bring together and integrate this activity?	Incumbent needs to be familiar with performing standard operating procedures for CAWT analyses and running analytical equipment. This includes planning and coordinating analytical runs and coordinating with ongoing experiments and research activities in the CAWT; scheduling with co-workers for completing tests; and multitasking to complete all time sensitive items in a timely manner.
List the types of resources required to complete this task, project or activity.	Instrument Manuals, Standard Methods, MOE procedures, Internet sources, liaise with outside professionals.
How is/are deadline(s) determined?	Deadlines are determined by CAWT managers.

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 CAWT managers decides if changes are required and if they will impact others such as meeting client objectives. Incumbent tests and assesses the procedure and decides if the system is working properly.

4. Planning/Coordinating

	#2 regular & recurring
List the project and the role of the incumbent in this activity.	Plan and coordinate experimental activities.
What are the organizational and/or project management skills needed to bring together and integrate this activity?	Incumbent must maintain laboratory records of research experiments and coordinate activities associated with running of the experiment as outlined in the project plans developed in coordination with the CAWT managers. Coordination will involve collaborating with other CAWT lab staff to carry out the requirements stated in the project plan. The incumbent will also be responsible for data review and entry, possible development of final data reports, and at times communicating results with clients.
List the types of resources required to complete this task, project or activity.	Laboratory manuals, experimental handbooks, science journals, internet sources, as well as Fleming personnel.
How is/are deadline(s) determined?	Deadlines are determined in consultation with CAWT managers and project collaborators.
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 coordinating laboratory experiments under direct supervision of CAWT managers. The CAWT managers will determine if these change impact other areas, which could include changing of the project plan or informing clients of delays.

	#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
List the project and the role of the incumbent in this activity.	Assisting with inventory control by informing lab staff and those responsible for budgets when supplies are running low, or assisting the CAWT managers in preparation of supplies required for budgets.
What are the organizational and/or project management skills needed to bring together and integrate this activity?	The incumbent will need to be able to proactively evaluate the amount of supplies required for testing in the near future and be able to forecast for coming projects. The incumbent will need to work with other lab staff to collaborate on purchasing, and stocking of supplies.
List the types of resources required to complete this task, project or activity.	Historical CAWT spreadsheets used for inventory control will be used as a resource and will be used to keep inventory up to date.
How is/are deadline(s) determined?	For projects, deadlines are determined by the CAWT managers. Other deadlines for orders can be determined based on urgency of need to meet testing requirements.
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.	If supplies are not available, the incumbent would inform the CAWT managers as soon as possible who will evaluate options and determine if it will have an effect on project outcomes.

	#2 occasional
List the project and the role of the incumbent in this activity.	The incumbent will play a role in the laboratories ISO 17025 accreditation which will include assisting in the planning and coordinating of testing validations, audits, and day to day document control and records.
What are the organizational and/or project management skills needed to bring together and integrate this activity?	The incumbent will be required to fully understand and follow the laboratory Quality Manual and existing SOPs. The incumbent will need to have clear lab notes and keep documents, lab records and maintenance records as stated in the Quality Manual and SOPs

List the types of resources required to complete this task, project or activity.	The incumbent will have official ISO documents, the Quality Manual, SOPs and internet references to assist with carrying out requirements. The incumbent will need to work closely with the CAWT managers and other lab staff to ensure consistency in following ISO.
How is/are deadline(s) determined?	The CAWT managers will provide deadlines.
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.	The CAWT managers will determine if changes to ISO activities are required, and will work with all lab staff to determine if these changes will affect other aspects of work at the CAWT. For example, if a new instrument is used for a testing parameter and a change of ISO SOP is required to adapt to the new equipment, the CAWT managers will work with the lab staff to ensure proper changes are implemented in the SOP and followed. At the time of changes, a thorough discussion will be had as a lab team to determine if the changes impact other areas of the lab.

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 may be required to explain laboratory procedures to student employees (techs), graduate student researchers, and others that may be using CAWT facilities.
X	□	There is a need for the incumbent to demonstrate correct processes/ procedures to others so that they can complete specific tasks.	Demonstrate and reinforce safety protocols to part-time laboratory staff and students.
□	X	The incumbent recommends a course of action or makes decisions so that others can perform their day-to-day activities	Provide guidance and direction to student workers and grad interns so they can complete their daily tasks
□	□	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.	
□	□	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.	

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)~~
Incumbent will receive direction from CAWT managers with daily supervisory contact. The managers will request specific analyses and the incumbent will follow established laboratory protocols. Where such protocols are not in use in CAWT, the incumbent may be asked to research and seek guidance from other CAWT Laboratory Technicians and Technologists.	

What rules, procedures, past practices or guidelines are available to guide the incumbent?	
Regular and Recurring	Occasional (if none, please strike out this section)
There are a number of standard and established laboratory and research protocols. Information is available for these applications: 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. Instrument manuals supply operational information. Methods are created by research and drawing on incumbent experience. CAWT Quality Manual	ISO 17025 Standard

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 reviewed up to several times weekly depending on the task. Feedback is given up to several times weekly depending on the activities from CAWT managers.	

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)
Incumbent will need to consult with CAWT Laboratory Technicians and Technologists on a frequent basis to coordinate analyses and experimental activities.	Major adjustments to lab testing protocols or project plan details Complex troubleshooting and repair of equipment

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)
Set up of complex lab experiments	Situations where incumbent feels faculty or student demands may infringe on policies or rules of College. All health and safety as well as security issues requiring managerial attention or intervention.

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

Finding efficiencies in routine laboratory operations. Set up of routine lab experiments Appropriate chemistry and lab protocol adjustments when analyzing samples Routine troubleshooting and repair of equipment	Research methodologies and adapt existing instrumentation methods to perform required analysis.

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 results of lab tests	Execute lab experiments, write reports, modify Lab protocols and methods,	CAWT staff Industry partners/clients	D M
Provide advice and information on proposed research.	Research required information and provide advice required	CAWT staff, CAWT managers	M

New experiment/protocol required	Develop a new experiment/protocol to meet lab needs. For example, a more efficient method/protocol needs to be developed based on a new piece of instrumentation or efforts to reduce cost. Incumbent will research available literature and peer-review articles and will then need to customize the protocol in order to meet the unique circumstances/needs in the lab.	CAWT managers/ Research Scientists	I
Provide advice on improvements to QA/QC protocols	Provide background and justification for improvements	CAWT managers	I
Organize experiments	Work with CAWT Project Manager and researchers on developing project details	CAWT managers /Research Scientists	W
Coordinate research projects	Share day to day project details with staff, coordinate with other lab members participating in the project, ensure goals are being met, proactively inform CAWT managers of issues that may arise with the project, or areas of concern.	CAWT staff, CAWT managers	D

* 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	Other technicians and technologists in CAWT , CAWT managers	D
	Exchange information and learn of new techniques, journals and other new information	CAWT staff and partners e.g. Trent University, etc.	M
Explanation and interpretation of information or ideas	Learn new instrumentation and techniques in chemistry field	External sources	M
	Participate in group brainstorming sessions on how to complete project tasks and laboratory analysis.	Other Lab Technicians and Technologists, CAWT managers	D
Imparting technical information and advice	Demonstrates safe and proper use of equipment, chemicals and analytical equipment.	Faculty, Students, Grad interns, Part-time Lab Technicians	D
	Explain results of research experiments	Industry partners	M

Instructing or training			
Obtaining cooperation or consent			
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			D		X	
Lifting instruments, equipment Water jugs	W	D				X	
Setting up equipment	I			D		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	D			X
Can concentration or focus be maintained throughout the duration of the activity? If not, why? X Usually □ No				

Activity #2	Frequency (D, W, M, I)*	Average Duration		
		Short < 30 mins	Long up to 2 hrs	Extended > 2 hrs
Calibrating precision instruments	D		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
Troubleshooting and repairing equipment	W		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)		
X accessing crawl spaces/confined spaces	CAWT experimental set ups	W
□ dealing with abusive people		
□ dealing with abusive people who pose a threat of physical harm		
X difficult weather conditions	Exposure to inclement weather during field research	I
X exposure to extreme weather conditions	Occasionally need to work in Extreme Cold and snow temperatures to perform Field Procedures up to 4 weeks per year	I
X exposure to very high or low temperatures (e.g. freezers)	Work in CAWT environmental chamber (-20C)	W
X handling hazardous substances	Low dose exposure to chemicals (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.	D
X smelly, dirty or noisy environment	Some procedures requiring use of fume hoods to reduce odours Instruments are just below noise threshold for hearing protection	M
X travel	To field locations locally and potentially remote locations	I
X working in isolated or crowded situations	The incumbent will need to work in crowded laboratory conditions or at times be alone in the CAWT laboratories.	D
X other (explain)	Exposure to high voltage equipment	D

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