State of Michigan
Civil Service Commission

Capitol Commons Center, P.O. Box 30002
Lansing, MI 48909

Position Code
1. LABSCIAB18R

POSITION DESCRIPTION

This position description serves as the official classification document of record for this position. Please complete the information as accurately as you can as the position description is used to determine the proper classification of the position.

2. Employee's Name (Last, First, M.I.)	**8. Department/Agency** MDHHS-COM HEALTH CENTRAL OFF
3. Employee Identification Number	**9. Bureau (Institution, Board, or Commission)** Laboratories
4. Civil Service Position Code Description Laboratory Scientist-A	**10. Division** Chemistry & Toxicology
5. Working Title (What the agency calls the position) Laboratory Scientist 12	**11. Section** Environmental Chemistry
6. Name and Position Code Description of Direct Supervisor FREED, KELLEY; LABORATORY SCIENTIST MANAGER-3	**12. Unit** Environmental Inorganic Unit
7. Name and Position Code Description of Second Level Supervisor FISHER, KERI; STATE ADMINISTRATIVE MANAGER-1	**13. Work Location (City and Address)/Hours of Work** 3350 N MARTIN LUTHER KING JR; LANSING, MI 48906 / 8:00 AM – 4:30 PM; Monday – Friday

14. General Summary of Function/Purpose of Position

This position functions as an advanced level Laboratory Scientist serving as a senior worker and performing a full range of professional laboratory assignments involving the analysis of environmental and biological samples for a wide range of heavy metals and other environmental and industrial contaminants within the Environmental Inorganic Unit. The analysis of environmental and biological samples include sample preparation, maintenance and troubleshooting of laboratory equipment, quantitative analysis involving direct mercury analyzer; ICP-MS; ICP-MSMS; ICP-AES; LC-ICP-MS; GC-ICP-MS and ICP-DRC-MS. The Laboratory Scientist in this position maintains the Environmental Lead Laboratory Programs records according to the ISO/IEC 17025 standard and the regulatory body and performs statistical analysis of quality control data to ensure reliability of the analyses performed in the laboratory. This position reviews approved data through the current LIMS (Laboratory Information Management System) and assures that accurate data is obtained and reported in a timely manner to the appropriate follow-up programs throughout the state and country in support of public health decisions. The laboratory scientist is responsible for participating in method development, validation, written documentation, and implementation of new methods as they relate to the Environmental Inorganic Unit. Finally, this position requires the evaluation of technical literature, conducting independent method development, writing progress reports, and providing expert consultation.

15. Please describe the assigned duties, percent of time spent performing each duty, and what is done to complete each duty.

List the duties from most important to least important. The total percentage of all duties performed must equal 100 percent.

Duty 1

General Summary: **Percentage: 50**

Perform the analysis of environmental and biological samples for a wide range of heavy metals and other environmental and industrial contaminants within the Environmental Inorganic Unit in support of the Childhood Lead Poisoning Prevention Program, Lead Hazard Remediation Program, Food Emergency Response Network, Public Health Emergency Preparedness, and other cooperative agreements. The analysis of environmental and biological samples include sample preparation, quantitative instrumental analysis, and assuring accurate data is obtained and reported in a timely manner to follow-up programs. This duty is performed according to established procedures, practices, and policies of the section.

Individual tasks related to the duty:

- Oversee daily incoming samples and related test request paperwork.
- Aid in determining priority status of sample requests.
- Sorts, organizes, and logs batches of samples into Starlims, the laboratory information system, according to the appropriate procedure.
- Sample preparation for Direct Mercury Analysis, ICP-AES, ICP-MS, ICP-MSMS, LC-ICP-MS, GC-ICP-MS and ICP-DRC-MS analysis including acid digestion and steps leading up to the acid digestion.
- Prepare standards, reagent and QC samples for analysis by Direct Mercury Analysis, ICP-AES, ICP-MS, ICP-MSMS, GC-ICP-MS, LC-ICP-MS, and ICP-DRC-MS.
- Assembles supplies and prepares equipment for the assays following the authorized methods. The equipment used is an inductively coupled plasma atomic emission spectrometry (ICP-AES and ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS and ICP-MSMS), automated hotblock, microwave, thermal decomposition/atomic absorption spectrophotometry (TD/AA) and liquid chromatography/gas chromatography inductively coupled plasma mass spectrometry (LC/GC-ICP-MS).
- Operate, maintain, and troubleshoot instruments and associated computers.
- Review data from the Direct Mercury Analyzer, ICP-AES, ICP-MS, ICP-MSMS, GC-ICP-MS, LC-ICP-MS, and ICP-DRC-MS instruments, samples request forms and reports for accuracy.
- Perform mathematical computations including statistical analysis of test data and validation studies.
- Review and evaluate the validity of laboratory test results using Quality Control (QC) values specific to the analytical methodology.
- Post accurate results to the specific databases for each of the various sample types.
- Prepare detailed written reports of laboratory data and results, archiving of laboratory data, and reporting of laboratory results.
- Perform analysis on proficiency testing materials
- Maintain accurate and detailed up-to-date records of all work performed.
- Maintain competency at the appropriate frequency and according to the accreditation guidelines.
- Assure proper disposal of biological and chemical waste materials generated during the performance of assigned laboratory work.
- Follow all laboratory procedures and practices pertaining to universal precautions, laboratory safety, laboratory infection control, laboratory chemical hygiene and the handling of hazardous materials.
- Assume responsibility, when assigned, for training and orientation of new hires and students according to established procedures, practices, and policies of the section.

Duty 2

General Summary: **Percentage: 15**

At the advanced level, performs statistical analysis and maintains quality controls statistical data to ensure reliability of results being reported and develops laboratory reports that comply with the ISO/IEC 17025 standard; preventive maintenance logs to remain in compliance with regulatory requirements.

Individual tasks related to the duty:

- Review instrument calibration, quality control and samples analysis data in terms of acceptable performance standards.
- Prepare monthly QC charts and documents using NWA statistical software.
- Maintains and evaluates ongoing records of QC results and corresponding statistical data to ensure QC material stays within the established operational windows for each analyte.
- Notifies supervisor of all work that does not meet acceptable quality control standards.
- Prepare professional reports including parameters required by the ISO/IEC 17025 standard.
- Review literature and assimilate ongoing changes to the ISO/IEC 17025 standard and AIHA LAP, LLC regulations.
- Monitor the stability of the various instruments and analytical methods using the QC data.
- Evaluates QC across time for trends that may indicate problems with the instrument, materials, or operators. Appropriately documents these findings and notifies supervisor of trend.
- Perform internal audits to determine compliance with the AIHA-LAP, LLC accreditation guidelines.
- Maintain accurate records of when competencies are performed and ensures they are conducted in a timely manner.

Duty 3

General Summary: **Percentage: 20**

At the advanced level, monitor, evaluate and develop laboratory procedures and the Laboratory Information System. Annually review and update existing laboratory procedures and analytical methods for the unit. Perform evaluations on current and new laboratory instruments and equipment.

Individual tasks related to the duty:

- Design and perform studies to evaluate and modify current laboratory methods.
- Design laboratory studies involved in methods development, evaluation, and validation.
- Perform the laboratory studies required for methods development, evaluation, and validation.
- Work with other laboratory scientists in the section and division to review, update and write laboratory procedures as necessary.
- Perform implementation and evaluation of new laboratory instrumentation and equipment including the StarLIMS database system.
- Serve as a lead worker conducting laboratory studies to develop new laboratory methods utilizing ICP-MS, ICP-AES, ICP-MSMS, LC-ICP-MS, GC-ICP-MS and ICP-DRC-MS in support of public health decisions.
- Analyzes laboratory data from new methods development studies utilizing ICP-MS, ICP-AES, ICP-MSMS, LC-ICP-MS, GC-ICP-MS, and ICP-DRC-MS in support of public health decisions.
- Assure proper disposal of biological and chemical waste materials generated during the performance of assigned laboratory work.
- Follow all laboratory procedures and practices pertaining to universal precautions, laboratory safety, laboratory infection control, laboratory chemical hygiene and the handling of hazardous materials.

Duty 4

General Summary: **Percentage:** **10**

At the advance level, perform duties related to the policies, standards, and professionalism of the Bureau of Laboratories.

Individual tasks related to the duty:

- Attend meeting, seminars, workshops, and conference as related to the Section.
- Review scientific literature, technical bulletins, and government documents for information relevant to the Section and distribute pertinent information to other laboratory personnel.
- Attend annual safety training.
- Order supplies, as necessary.
- Aid in determining priority status of daily incoming samples and related test request paperwork.

Duty 5

General Summary: **Percentage:** **5**

This position will function as a member of the Michigan Bioterrorism and Chemical Terrorism Public Health response teams as needed.

Individual tasks related to the duty:

- Conduct activities to prepare health care professionals and other partners for possible bioterrorism or chemical terrorism incident of event.
- Respond, as necessary, to a possible bioterrorism or chemical terrorism incident or event, to provide state assistance to health care professionals in investigation and control efforts.

16. Describe the types of decisions made independently in this position and tell who or what is affected by those decisions.

- Determination of the validity of laboratory test results.
- Determination to release and report results or to repeat analysis.
- Apply professional judgment and experience to solve problems that arise during the performance of work assignments, while keeping management apprised of the situation.
- It is essential that accurate and timely lab results are reported because certain levels of contamination trigger remediation procedures in housing that is occupied by lead burdened children.
- Health advisories for children pregnant or nursing women are also dependent on accurate reporting of mercury levels in Michigan fish.

17. Describe the types of decisions that require the supervisor's review.

- When guidelines or instructions are not available.
- Policy matters that involve the Bureau or the Department such as those covered by the Privacy Acts or similar entities.

18. What kind of physical effort is used to perform this job? What environmental conditions in this position physically exposed to on the job? Indicate the amount of time and intensity of each activity and condition. Refer to instructions.

Any person working with specimens of human origin from unknown patients is at increased risk of acquiring communicable diseases by bacterial, viral or other infections and is required to use careful aseptic techniques and proper precautions while working. Laboratory work involves daily contact with biological samples and hazardous chemicals. Accurate and precise laboratory and safety procedures, including universal precautions, must be followed at all times.

Physical Activities: Extended periods of standing, sitting on lab stools, and computer usage.

Conditions/Hazards: Constantly exposed to hazardous chemicals, fumes, noise, and contaminated samples.

19. List the names and position code descriptions of each classified employee whom this position immediately supervises or oversees on a full-time, on-going basis.

Additional Subordinates

20. This position's responsibilities for the above-listed employees includes the following (check as many as apply):

N	Complete and sign service ratings.	N	Assign work.
N	Provide formal written counseling.	N	Approve work.
N	Approve leave requests.	N	Review work.
N	Approve time and attendance.	N	Provide guidance on work methods.
N	Orally reprimand.	N	Train employees in the work.

22. Do you agree with the responses for items 1 through 20? If not, which items do you disagree with and why?

Yes.

23. What are the essential functions of this position?

The employee performs a full range of professional laboratory scientist assignments using independent judgment to oversee the complex duties in accomplishing production needed for the environmental lead laboratory. The duties involve use and maintenance of ICP-AES, ICP-MS, ICP-MSMS, LC-ICP-MS, GC-ICP-MS, and DRC-ICP-MS instrumentation. The essential duties of this position are duties 1-5 above.

24. Indicate specifically how the position's duties and responsibilities have changed since the position was last reviewed.

New establishment.

25. What is the function of the work area and how does this position fit into that function?

This unit performs a wide range of laboratory analysis of tissue, environmental and biological samples for evidence of trace amounts of heavy metals and a wide range of environmental and industrial contaminants. These specimens and samples come from counties and clinics throughout the state of Michigan in support of Medicaid and HUD lead programs, from other state agencies and departments, researchers conducting biomonitoring studies, the CDC, and cooperative agreements with the USDA. This position assures that accurate and precise data and results are obtained in a timely manner so that appropriate follow-up personnel can track and treat individuals.

26. What are the minimum education and experience qualifications needed to perform the essential functions of this position.

EDUCATION:

Possession of a bachelor's degree in chemistry, biochemistry, biology, microbiology, forensic science, or a related pure or applied science.

EXPERIENCE:

Laboratory Scientist 12
Three years of professional experience carrying out a variety of tests, analyses, or production and research activities involving chemical, biochemical and biological samples, specimens, and products equivalent to a Laboratory Scientist, including one year equivalent to a Laboratory Scientist P11.

KNOWLEDGE, SKILLS, AND ABILITIES:

As listed on the Civil Service job specification. In addition:

- Meticulous work habits and good attendance.
- Ability to communicate effectively and maintain favorable relationships with both peers and the public.
- Knowledge of departmental rules, regulations and policies related to the lab environment.
- Advanced level of knowledge of computer application programs for laboratory activities and data management.
- Skilled in the use and care of common laboratory equipment, personal protective equipment, and analytical instrumentation.
- Ability to maintain detailed records and prepare technical reports.
- Ability to prepare written laboratory procedures.
- Advanced level of knowledge of the principles and practice of general, qualitative, quantitative, and inorganic chemistry.
- Knowledge of appropriate health, safety, and environmental regulations to provide for safe laboratory practices.
- Advanced level of knowledge of statistical and quality control techniques.
- Ability to function as an effective team member

The MDHHS mission is to provide opportunities, services, and programs that promote a healthy, safe, and stable environment for residents to be self-sufficient. We are committed to ensuring a diverse workforce and a work environment whereby all employees are treated with dignity, respect and fairness.

CERTIFICATES, LICENSES, REGISTRATIONS:

Must meet the ISO/IEC 17025 standard and AIHA-LAP, LLC regulatory requirements.

NOTE: Civil Service approval does not constitute agreement with or acceptance of the desired qualifications of this position.

I certify that the information presented in this position description provides a complete and accurate depiction of the duties and responsibilities assigned to this position.

Supervisor **Date**

TO BE FILLED OUT BY APPOINTING AUTHORITY

Indicate any exceptions or additions to the statements of employee or supervisors.

None.

I certify that the entries on these pages are accurate and complete.

LIBERTY IRWIN 8/1/2024

Appointing Authority **Date**

I certify that the information presented in this position description provides a complete and accurate depiction of the duties and responsibilities assigned to this position.

Employee **Date**