

## Laboratory Analyst Series

FLSA Status: Covered (Laboratory Analyst I and Laboratory Analyst II); Exempt (All Others)  
Bargaining Unit: District Council of Trade Unions (DCTU)

### General Summary

Positions in this broad class perform environmental laboratory analyses and reporting following mandated federal and state regulations and guidelines for the purpose of assessing, monitoring, and protecting the environment and public health.

### Laboratory Analyst I - 30000241

#### Distinguishing Characteristics

This is the first level of this series. It typically performs preparatory work and basic laboratory analyses utilizing standard methodologies and procedures. This classification works under direction from senior staff.

#### Typical Duties/Examples of Work

1. Performs laboratory preparatory work and analysis following EPA and other methodologies employing various standard analytical techniques including BOD, spectrophotometry, gravimetric, colorimetric and other bench chemistry, microbiological techniques, and/or other basic analyses as appropriate.
2. Ensures that all assigned analyses are performed within required holding times and laboratory established turnaround times.
3. Performs assigned analyses according to established QA /QC requirements, including all documentation as required for compliance with appropriate regulations promulgated by EPA, state agencies, and other regulatory bodies.
4. Participates in proficiency studies to demonstrate analytical competency.
5. Calculates results generated in the process of laboratory analyses, evaluates against QA/QC standards, and reports final data.
6. May perform duties with focus on sample receiving, such as: preparation of sample kits, preservation, chain-of-custody protocols, use of the LIMS for sample login and data entry, maintaining bottle inventories, other section related duties.

7. Collects, preserves and transports field samples as assigned following appropriate chain of custody requirements.
8. May order and receive lab supplies, process payments according to City protocols, and maintain lab supply inventories and purchasing records.
9. May assist in preparatory work for more advanced procedures.
10. As a team member, participates in implementation of updated and new protocols and procedures.
11. Acquires new knowledge in the field by reading, attending seminars and workshops; participates in continuing education.
12. Performs related duties as assigned

### **Required Knowledge, Skills and Abilities**

Knowledge of: standard laboratory and sample collection practices and methodologies; principles of inorganic chemistry, organic chemistry, environmental sciences, biology, mathematics, microbiology and/or other related scientific fields; laboratory safety techniques; standard computer programs and software used to perform data analyses; principles of laboratory ethics as applied to the production of valid analytical data.

Ability to: perform assigned laboratory analytical and production work and meet established QA/QC requirements; learn new laboratory techniques and procedures; evaluate and verify results obtained in the analytical process; work safely with hazardous substances; communicate effectively, orally and in writing; establish and maintain effective working relationships with co-workers; work constructively in a team.

Skill in: utilizing laboratory equipment and computers to conduct sample and data analysis; interpreting analytical data and evaluating results, sample collection.

### **Special Requirements**

May require a valid state driver's license;

Typically requires course work in chemistry, environmental science, biology, microbiology, geology or a related field, and one to two years of analytical laboratory experience, or an equivalent.

### **Classification History:**

Revised: 11-15-09 Clarified duties and responsibilities to distinguish it from new Laboratory Analyst II classification.

Adopted: 02-03-99 Class created as a result of DCTU Classification and Compensation Study 1998-99. This class is composed of the following classes:  
3280 Water Lab Tech

## **Laboratory Analyst II - 30001283**

### **Distinguishing Characteristics**

The second level of this series typically performs laboratory analyses utilizing standard methodologies and procedures. It is distinguished from the Laboratory Analyst I by the greater complexity of laboratory tasks performed, including instrument-based analyses and responsibility for troubleshooting procedures and equipment. It requires the ability to exercise scientific judgment, the ability to use evaluative and troubleshooting skills, and the ability to work independently with limited direction.

### **Typical Duties/Examples of Work**

1. Conducts laboratory preparatory work and chemical/instrumental analyses following EPA and other methodologies employing various analytical techniques including IC, AA, automated flow injection, COD and BOD analyses, spectrophotometry, gravimetric, colorimetric and other bench chemistry, and microbiological techniques and/or other analyses as appropriate.
2. May be assigned an area of responsibility such as Chemistry and/or Microbiology analyses including responsibility for meeting quality assurance criteria for that assigned area to comply with regulatory compliance requirements promulgated by agencies such as EPA, state agencies, and other regulatory and/or accrediting bodies. Performs required (e.g. monthly, quarterly and annual) QA/QC checks for assigned area.
3. Ensures that all assigned analyses are performed within required holding times and laboratory established turnaround times.
4. May perform preparatory work for advanced instrumental analysis, including ICP, ICP/MS, GC, and/or GC/MS.
5. Participates in proficiency studies to demonstrate analytical competency.
6. Performs assigned analyses according to established QA/QC requirements, including all documentation; verifies that analytical level quality control criteria are met; verifies accuracy and

completeness of data; takes corrective action when needed; performs quality and maintenance checks on assigned lab instruments; updates and maintains Standard Operating Procedures. May serve as focal point and technical consultant for assigned analytical-level QA/QC issues and activities.

7. May review analytical data produced by Lab Analysts, following established standards and requirements; evaluates data for integrity and validity of the results obtained in the analyses.
8. Maintains analytical equipment and instrumentation, performing day-to-day routine care and periodic maintenance, as well as investigating, correcting and documenting serious malfunctions and problems.
9. Investigates, adopts and incorporates new analytical and instrumental techniques and procedures, expanding a list of methods that could be performed in the laboratory, and/or improving limits of detection.
10. Trains analytical personnel engaged in preparatory and analytical work in designated specialization.
11. Collects, preserves and transports field samples as assigned following appropriate chain of custody requirements
12. As a team member, participates in implementation of updated and new protocols and procedures.
13. Researches and acquires new knowledge in the field by reading, attending seminars and workshops; participates in continuing education
14. Performs related duties as assigned.

### **Required Knowledge, Skills and Abilities**

Knowledge of: laboratory methodology as applicable to chemical and microbiological analysis; principles of inorganic chemistry, organic chemistry, environmental sciences, biology, microbiology and/or other related scientific fields; good laboratory practices, including quality assurance and quality control; standard computer programs and software used to perform data analysis; mathematics; statistical analysis; laboratory and hazardous chemical safety techniques; operation and maintenance of laboratory instruments and equipment; principles of laboratory ethics as applied to the production of valid analytical data.

Ability to: perform laboratory analyses and produce high quality data; evaluate and verify results obtained in the analytical process; learn new laboratory

techniques and procedures; work safely with hazardous substances; comply with technical procedures and policies; understand and use data acquisition/processing/reduction analytical software; diagnose and correct problems with laboratory equipment and/ or procedures; work independently and in a group; establish and maintain effective working relationships with co-workers and managers, including representative outside groups and agencies.

Skill in: utilizing laboratory equipment and computers to conduct sample and data analysis; oral and written communication and communicating technical concepts; diagnosing and correcting problems with laboratory equipment, procedures and analytical processes; demonstrating techniques and providing training to others.

### **Special Requirements**

May require a valid state driver's license.

Requires a degree in chemistry, environmental science, biology, microbiology, geology or a related field, and two to three years of analytical laboratory experience, or equivalent.

### **Classification History:**

Adopted: 08-14-08

## **Laboratory Analytical Specialist - 30001284**

### **Distinguishing Characteristics**

The advanced laboratory analytical level performs highly technical and advanced scientific and/or instrumental analysis procedures in a specialized area, utilizing both standard and non-routine methodologies and procedures. This classification conducts analyses that rely on advanced instrumentation and complex computer software, and develops and implements complex analytical techniques. It is distinguished from the Laboratory Analyst II by the independent and self-directed nature of the work and by its required advanced knowledge in areas of inorganic chemistry, organic chemistry, or microbiology. This classification may perform lead duties to lower level Laboratory Analysts.

### **Typical Duties/Examples of Work**

1. Performs advanced scientific and/or instrumental analyses exercising independent judgment in data interpretation and evaluation of compliance with regulatory requirements as promulgated by EPA, state agencies, and other regulatory bodies. Advanced-level analytical techniques could include: GC, GC/MS, LC, HPLC, ICP, ICP/MS, Microscopic, Microbiological and/or other analyses as appropriate.

2. Provides technical expertise to other bureau and City staff for all aspects of environmental analyses in a specialized area; where applicable, researches special environmental/analytical problems and writes reports of findings; participates in interdepartmental meetings on a range of specialized technical and/or scientific subjects as needed.
3. Participates in proficiency studies to demonstrate analytical competency, to examine and investigate problematic areas, and to research and develop improved preparatory and/or analytical techniques.
4. Develops, implements, and maintains appropriate QA/QC controls and procedures. Integrates technical knowledge of regulatory requirements and applicable standards into all laboratory practices and procedures in a specialized area. Manages special projects and assignments related to assigned specialized area. Serves as focal point and technical consultant for assigned analytical-level QA/QC issues and activities.
5. Gathers, evaluates, and interprets analytical and environmental data to determine regulatory compliance, ambient conditions, and process control trending.
6. Troubleshoots and maintains sophisticated analytical instrumentation, performing day-to-day routine care and more complex periodic maintenance, as well as investigating, correcting and documenting serious instrumental malfunctions and problems.
7. May review analytical data produced by other analysts and specialists, following established standards and requirements; evaluates data for integrity and validity of the results.
8. Develops, implements, and incorporates new analytical and instrumental techniques and procedures, expanding a list of methods that could be performed in the laboratory, and/or improving limits of detection; helps to extend laboratory's capabilities in order to accommodate for an increasing list of contaminants of interest and specialized customer requests. Serves as focal point for analytical accreditation by accrediting authorities where applicable.
9. Designs, develops, and maintains analytical data reports and/or databases; creates spreadsheets, word processing documents, and/or database forms and reports when needed for intermediate and final data processing.
10. Trains and/or leads analytical personnel engaged in preparatory and analytical work in designated specialization; serves as a reference and provides technical assistance to project managers and other personnel.

11. Keeps up to date on the technological advancements in assigned specialize area, and advises laboratory management on adoption and implementation of these technologies; participates in purchasing decisions for upgrades and new equipment.
12. Contributes to development and implementation of short and long-range laboratory plans and objectives; participates in inter-departmental meetings on organizational, technical, and/or scientific subjects when assigned.
13. Researches and acquires new knowledge in the field by reading, attending seminars and workshops.
14. Performs related duties as assigned.

### **Required Knowledge, Skills and Abilities**

Knowledge of: principles of scientific analysis and established laboratory methodology; inorganic chemistry, organic chemistry, environmental sciences, biology, mathematics, microbiology and/or other related scientific fields; laboratory and chemical principles, terminology, material, equipment, procedures, and techniques; statistical methods employed in data processing/reduction by analytical software; quality control and quality assurance techniques; regulatory requirements related to laboratory analysis; principles of laboratory ethics as applied to the production of valid analytical data.

Ability to: independently learn and develop new complex laboratory procedures; perform complex laboratory analyses and produce high quality data; verify or reject questionable output using alternative calculating techniques; work safely with hazardous substances; understand statistical models employed in data processing/reduction by analytical software; perform QA/QC activities objectively and without outside influence; establish and maintain effective working relationships with coworkers and managers, including representative outside groups and agencies; research environmental and analytical problems.

Skill in: using complex analytical techniques including GC, GC/MS, LC, HPLC, ICP, ICP/MS, Microscopic, Microbiological and/or other analyses as appropriate; advanced data processing and reporting using spreadsheets, databases, and specialized software; interpreting analytical data and evaluating results; troubleshooting analytical problems; utilizing laboratory equipment and computers to conduct sample and data analyses; oral and written communication and communicating technical concepts; diagnosing and correcting problems with laboratory equipment and/ or procedures; providing direction to staff engaged in the area of specialization, including assigning and reviewing work; demonstrating techniques and providing training to others.

### **Special Requirements**

May require a valid state driver's license;  
Requires a degree in chemistry, environmental science, biology, microbiology, geology or a related field, and three to five years of progressively responsible instrumental and/or scientific chemical analysis experience, or equivalent.

### **Classification History:**

Adopted: 08-14-08 Composed of Chemist and Microbiologist classifications

## **Laboratory Coordinator - 30001285**

### **Distinguishing Characteristics**

This level in the series is responsible for development, implementation, and administration of a laboratory-wide program such as regulatory compliance, process control, quality assurance, coordination of work flow, and/or project coordination. Significant emphasis is placed on development and documentation of procedures and data, and it involves a high level of accountability and decision making responsibilities. The Laboratory Coordinator is distinguished from the Laboratory Analyst II and the Laboratory Analytical Specialist by its laboratory-wide programmatic responsibilities and associated regulatory and/or accreditation requirements. This classification also requires interaction with personnel outside of the Bureau and City, and has the authority to evaluate analytical performance and direct the technical work of other laboratory personnel within the context of their program.

### **Typical Duties/Examples of Work**

1. Serves as primary focal point for laboratory-wide program activities and associated regulatory and/or accreditation requirements. Responsible for oversight of laboratory-wide compliance with analytical process, documentation, data management, and/or QA program requirements within the laboratory.
2. Plans, establishes, implements, and monitors laboratory-wide data quality objectives to meet regulatory and program requirements; informs and instructs analytical personnel in regard to quality objectives.
3. Maintains a laboratory-wide documentation program including: raw and processed analytical data, paper and electronic archives, and related documentation to meet regulatory compliance and/or accreditation requirements; writes and/or reviews QA documents such as SOPs, Quality



Manual, Chemical Hygiene Plan, Chemical Inventory, and Code of Ethics; establishes and oversees control and archive procedures for QA documents.

4. Oversees and certifies training requirements including initial and ongoing Demonstration of Capability for laboratory staff; coordinates proficiency testing studies, both regulatory and internal; develops, monitors, and oversees corrective actions for analytical and QA non-conformances; conducts annual internal audits of laboratory processes and the quality systems.
5. Reviews analytical data for accuracy and QC compliance. Recommends and documents corrective actions and works with Lab Manager to determine appropriate corrective actions to change or improve procedures.
6. Coordinates and monitors day-to-day laboratory activities; establishes and tracks priorities within the laboratory; develops and implements laboratory analysts' daily work schedule; oversees regulatory compliance sampling for process control/ treatment plants.
7. Provides technical support to internal and external clients including other bureau work groups, other city bureaus, and regulatory agencies to maintain a service-oriented lab work environment that supports regulatory compliance requirements, and the lab's and bureau's missions.
8. Interprets and implements rules, regulations, laws, and policies promulgated by regulatory agencies such as EPA, OSHA, DEQ, and DHS as they pertain to accreditation programs, sampling and analytical protocols, reporting requirements, and other laboratory programs such as Good Laboratory Practices Standards (GLPS) and workplace safety regulations.
9. Assists bureau managers and staff in compliance obligations; coordinates the design, development, and implementation of internal procedures to govern the enforcement of compliance policy; coordinates responses to violations of standards; implements bureau information program to assure that managers and staff understand their compliance obligations through training sessions and other technical resources.
10. Conducts internal compliance audits, surveys, or reviews; reports to bureau managers and appropriate agencies their programs' compliance status with federal, state, and local regulatory requirements; maintains records of audits and compliance reports.
11. Oversees sample handling and custody procedures; ensures conformance with project sampling requirements; resolves non-conformances such as omissions and inconsistencies; makes decisions regarding sample validity; monitors analytical holding times.

12. May serve as project manager in the design, development, implementation, and maintenance of information systems and supporting computer hardware; participates in decisions regarding software applications related to laboratory information management; assists in database maintenance and quality control; maintains integrity of data in the LIMS via control of coding conventions and user privileges; creates various reports, charts, and other materials from electronically stored data.
13. Manages specialized projects within the laboratory; oversees new method development.
14. Serves as a technical resource to Bureau and City personnel; provides assistance for program development; monitors day-to-day laboratory performance in meeting project requirements.
15. Provides customer service for laboratory data users; validates sample results; generates and distributes analytical reports; responds to questions and investigates customers' technical concerns.
16. Administers contracts for professional services as assigned, including completion of project objectives and adherence to technical, quality assurance, and administrative requirements.
17. Performs related duties as assigned.

### **Required Knowledge, Skills and Abilities**

Knowledge of: inorganic chemistry, organic chemistry, environmental sciences, biology, mathematics, microbiology and/or other related scientific fields; theory, principles and procedures of quality assurance and quality control for laboratory procedures and analyses; flow of work in an environmental lab including sample collection, receiving, documentation, preparation and analysis; federal and state regulations related to environmental monitoring and clean-up, and/or drinking water programs; analytical principles, terminology, material, equipment, procedures, and techniques; laboratory accreditation standards and programs; standard computer programs and software used to perform data analyses; techniques required for laboratory safety and the proper handling of hazardous materials; principles of laboratory ethics as applied to the production of valid analytical data.

Ability to: manage internal projects with laboratory-wide perspective; design appropriate analytical programs for regulatory directives; design, implement and monitor technical procedures and policies; write QA program and project plans and standard operating procedures; perform QA/QC activities objectively; perform technical and systems audits; interpret and evaluate analytical data; train

staff on technical procedures; organize work, set priorities and exercise sound judgment.

Skill in: coordination of laboratory-wide technical programs that involve personnel of varying skill levels; interpreting, following and applying rules and regulations; identifying need for new practices or policies; utilizing laboratory equipment and computers; identifying and correcting problems with laboratory programs and procedures; establishing and overseeing quality assurance processes; maintaining effective working relationships with personnel with a wide range of backgrounds; verbal and written communication of technical concepts; making presentations; instructing and overseeing others.

### **Special Requirements**

May require a valid state driver's license

Requires a degree in chemistry, environmental science, biology, microbiology, geology or a related field, and four to six years of progressively responsible analytical laboratory experience, or equivalent.

### **Classification History:**

Adopted: 08-14-08 Classification comprised of Senior Laboratory Analyst, Laboratory Production Specialist and Laboratory Quality Assurance Specialist.

## **Working Conditions**

Work in this class series is typically performed in a laboratory environment. It may require lifting up to 50 pounds; collecting samples in all weather conditions; wearing protective gear; being exposed to hazardous materials; working a flexible schedule including afternoons, evenings, designated holidays, and/or weekends.