Lab Director Approval: Mark Tolbert / 08/19/2021

QA Manager Approval: Jeffrey Moore / 08/19/2021

Georgia EPD Laboratory Standard Operating Procedure (SOP): Initial Demonstration of Capability

Access to this SOP shall be available within the laboratory for reference purposes; the official copy of this SOP resides on the official Georgia EPD website at https://epd.georgia.gov/about-us/epd-laboratory-operations. Printed copies of this SOP will contain a watermark indicating the copy is an uncontrolled copy.

1 Purpose:

1.1 This SOP describes the Georgia Environmental Protection Division Laboratory initial certification program and documentation, and the requirements for achieving initial certification.

1.2 The SOP also provides guidance for completing the appropriate forms for documentation of initial certification.

2 Scope and Application:

2.1 This procedure details the requirements for analyst qualification, training, and initial demonstration of method proficiency. The system is based on NELAC requirements for analyst certifications with modifications.

2.2 This procedure requires the development, presentation and documentation of the analyst's knowledge of an analytical measurement system and of the standard operating procedure(s) and method(s) upon which it is based.

2.3 All supervisors, scientists and technicians must meet the requirements of this Standard Operating Procedure before the analysis of actual samples without direct supervision. Documentation will be maintained in the analyst's training file and available for review by authorized inspectors.

3 Summary:

3.1 Analysts are provided with Standard Operating Procedures (SOPs) and access to the methods and program requirements upon which those SOPs are based. Upon the completion of the training, the analyst is expected to be familiar with all aspects of the SOPs for which they are to be certified.

3.2 An experienced analyst or supervisor trains analysts in specific procedures. Until training and certification have been completed, analyst in training are not permitted to analyze samples unless under strict supervision by the trainer. The trainer will initial and date all documents related to sample analysis that the analyst in training is involved with to indicate close supervision.

3.3 Upon completion of training, analysts perform specific analyses in order to demonstrate proficiency in those analyses.

3.4 If the proficiency testing results are within acceptable limits, the analyst may fill out the required forms. Upon approval by the analyst's supervisor, manager and the EPD Lab's QA manager, the analyst may perform the analyses under normal supervision.

4 Definitions:

4.1 Applicant – The supervisor, scientist or technician applying for certification in a particular procedure.

4.2 Trainer – An experienced scientist or supervisor certified in the procedure of interest and responsible for training the applicant.

4.3 Initial Demonstration of Capability (IDC) – Performance of a specific procedure within acceptable limits published in the associated SOP.

4.4 Initial Demonstration of Capability Form (IDF) – Documentation verifying that the applicant has successfully completed the requirements of the procedure and that the applicant's supervisor and manager have reviewed and approved the application.

4.5 Initial Demonstration of Capability Certification Statement – Certificate indicating that the applicant has successfully completed all of the requirements necessary to perform the procedure of interest.

5 Personnel Qualifications and Responsibility:

5.1 Applicants:

5.1.1 Applicants are required to review the relevant method(s), laboratory SOP(s), MSDS(s) and waste streams generated by the analysis or activity of interest. Verification of these reviews is documented on the Initial Demonstration of Capability Form (IDF).

5.1.2 Applicants are required to fill out the IDF template for chemistry or microbiology as is appropriate for the analysis, completing the form as described below. Analytical data supporting the application and the printed forms are submitted to the applicant's supervisor.

5.2 Supervisors and Managers:

5.2.1 The applicant's supervisor will complete the printed form after review and approval of all relevant data.

5.2.2 The supervisor will submit the data and forms to the laboratory manager for review and approval.

5.2.3 Supervisors must be certified in the analysis of interest in order to review and approve certification applications.

5.3 Manager:

5.3.1 After reviewing and approving the data and forms, the manager will submit these to the QA Manager for final approval.

5.4 Qualifications:

5.4.1 Individual laboratory job descriptions are maintained as part of the training record. The job description states the level of academic training and experience required for the position. A candidate must meet the minimum qualifications of the job description before being considered for a position.

5.4.2 Regardless of the level of previous academic training and experience, all analysts must complete training requirements of this SOP for each method before the analysis of samples.

6 Procedure:

6.1 Literature Review

6.1.1 Prior to actual training on a new procedure, the laboratory manager provides the applicant with controlled copies of all relevant SOPs. The applicant is also provided access to the methods and program documents upon which the procedure and SOPs are based. The applicant is shown where to find appropriate material safety data sheets (MSDSs) and is given an opportunity to review the EPD Laboratory Quality Assurance Plan (QAP) – See SOP reference 10.1.

6.1.2 The applicant shall study the provided SOP and reference materials to acquire a basic understanding of the procedure, safety information and method/program requirements.

6.1.3 Following the literature review, the actual training may begin.

6.2 Training

6.2.1 An experienced scientist or supervisor provides the applicant with hands-on training in the procedure.

6.2.2 The applicant is not allowed to perform any part of the procedure without the direct supervision of the scientist/supervisor until an IDF form has been completed and received all of the necessary approvals and a certificate has been issued.

6.2.2.1 During training, the applicant may be called upon to aid in the analysis of actual samples. The trainer must be present and provide direct supervision of the applicant during this time and must add his/her initials to any forms or datasheets produced by the applicant.

6.2.3 Differences between the promulgated methods, program requirements, training and the laboratory SOP are to be brought to the attention of the applicant by the trainer. The applicant should also bring to the attention of the trainer any such differences not explained by the trainer.

6.2.4 Upon completion of training, the applicant should be able to discuss important aspects of the method, program requirements and the SOP with the laboratory manager or a lab supervisor.

6.3 Method Proficiency

6.3.1 When the trainer is satisfied that the applicant is capable of performing the procedure without direct supervision, the applicant may begin performing the test needed to satisfy method proficiency requirements.

6.3.2 Chemistry Requirements

6.3.2.1 Calibration: The applicant must perform an acceptable calibration, when appropriate for the procedure.

6.3.2.2 The applicant should make and document at least one standard to be used as a calibration or continuing standard. This standard must pass all SOP and method requirements when run in a calibration or as a continuing calibration standard. It is acceptable, of course, for the applicant to prepare an entire set of calibration standards.

6.3.2.3 The standard is not to be used by any other analyst, or for the analysis of samples until the standard has been shown to be acceptable and the applicant has completed the certification process and received all of the necessary approvals.

6.3.2.4 The applicant need not prepare a standard for every analyte of interest for the procedure. However, if a single standard does not encompass all of the analytes of interest, a standard should be chosen that contains a significant portion of all analytes of interest. For example, for SW846-8081A pesticides, a Chlordane standard would not be sufficient (one multi-component analyte) while Mix A (approximately half of the single component analytes) would be.

6.3.2.5 Method Blank: The applicant must prepare/extract, document and analyze a method blank for the procedure.

6.3.2.6 Each analyte of interest must be found to be below the reporting limits.

6.3.2.7 Four Replicate LCSs: The applicant must prepare/extract, document and analyze four reference samples, Laboratory Control Samples (LCSs).

6.3.2.8 The applicant must prepare four and only four LCSs (unless otherwise stated in the method) for each analyte of interest to meet these requirements. Preparing five or more LCSs and "picking and choosing" the best four is not permitted. If an analytical method requires more than 4 LCSs, the analyst may only prepare the exact number specified by the method.

6.3.2.9 Each LCS must meet method recovery limits for Initial Demonstration of Capability. Do not compare to possibly more restrictive internal recovery limits developed from control charts. If no method limits are stated, the SOP for the procedure should establish limits for the Initial Demonstration of Capability.

6.3.2.10 The Percent Relative Standard Deviation (%RSD) for the four replicates must be less than 20% unless otherwise specified by the method or program documentation.

6.3.2.11 Four LCSs must be prepared and analyzed for each analyte of interest.

6.3.2.12 Blind: The applicant must prepare/extract, document and analyze an LCS of unknown concentration (Blind).

6.3.2.13 The Blind is to be spiked by a supervisor or manager and recorded in a log to which the applicant is not allowed access.

6.3.2.14 The applicant will not be informed what the expected concentration of the Blind is until the analysis has been completed and all data turned in to the trainer. The applicant assesses the Blind in the same manner as a sample, surrogate recovery and internal standard response where applicable.

6.3.2.15 The trainer or supervisor will calculate the actual recoveries based on the Blind spiking log entry and compare these results to the method default recovery limits. Do not compare to the possibly more restrictive internal recovery limits developed from control charts.

6.3.2.16 The applicant must prepare and analyze the required samples (four LCSs and a Blind LCS) as if they were part of a valid batch of samples. The required Method Blank would be part of the batch QC. The four LCSs replace the LCS/LCSD pair normally required.

6.3.2.17 If the applicant fails to achieve satisfactory results for either the calibration standard(s), the four LCSs, the method blank or the Blind, he/she may repeat the calibration or calibrations failed, four LCSs for the failed analytes, a method blank for all analytes accompanied by four LCSs encompassing all failed method Blank analytes, or a Blind.

6.3.2.18 If, after two attempts, the applicant has not passed calibration, four replicate LCSs, a method Blank and Blind for every analyte, the applicant must undergo additional training before attempting a full set of IDC samples (calibration, LCSs, blank and Blind) again.

6.3.2.19 If an applicant fails two or more attempts, the Laboratory Director and the QA Manager must be notified.

6.3.2.20 MDL Study **(Drinking Water Analysis Only)**: The applicant must prepare/extract, document and analyze an MDL Study consisting of 7 MDL Spikes and 7 MDL Blanks extracted and analyzed over a minimum of 3 days with a minimum of 2 MDLs extracted and analyzed per day per 40CFR§136, Appendix B for analyses requiring MDLs.

6.3.2.21 The calculated MDL values must be less than or equal to the method Reporting Limits unless specified otherwise by the method.

6.3.2.22 Analysts conducting a drinking water IDC MDL study must use the protected Excel MDLblanks and MDLspiked spreadsheets to calculate their IDC MDL values to separate their individual MDLs from the on-going MDL studies, however the IDC MDLs are to be given sample numbers and included in the on-going MDL studies.

6.3.2.23 Analysts must select the highest value between the MDLblanks and MDLspiked as their IDC MDL value.

6.3.3 *Microbiology Requirements*

6.3.4 *Bacteriology*

6.3.4.1 The applicant must examine spiked samples administered by the trainer or samples in parallel with the trainer.

6.3.4.2 Training Samples: For Membrane Filtration (MF), the applicant must examine a minimum of 20 samples in parallel with the trainer.

6.3.4.3 For Most Probable Number (MPN), the applicant must examine a minimum of 15 samples in parallel with the trainer.

6.3.4.4 For Presence/Absence (PA), the applicant must examine a minimum of 5 sets of 25 spiked samples or samples in parallel with the trainer.

6.3.4.5 For Heterotrophic Plate Count (HPC), the applicant must examine a minimum of 2 samples in parallel with the trainer.

6.3.4.6 For Media Preparation, the applicant must proficiently perform the procedure in accordance to the method SOP with the trainer.

6.3.4.7 Two Blinds: The applicant must examine two Blind samples for all methods except for media prep and HPC.

6.3.4.8 The applicant must pass both Blind samples.

6.3.4.9 The applicant must meet requirements for interpretation of results.

6.3.4.10 The applicant must read a number of plates (MF/HPC) or runs (PA), or interpret a number of Presumptive and Confirmative tests, as noted in the particular SOP, with the trainer.

6.3.4.11 Media Preparation: The applicant must proficiently prepare culture media and reagents with the trainer.

6.3.5 *Protozoan*

6.3.5.1 For EPA Method 1623: The applicant must examine a minimum of 50 to 100 samples using EPA Method 1623 depending on their position (Technician, Analyst or Principal Analyst), 4 initial precision and recovery (IPR) samples, a minimum of 1 matrix spike sample and 1 method blank sample.

6.3.5.2 For Turbidity: The applicant must proficiently examine blind samples with the trainer.

6.3.5.3 The applicant recoveries must be within the method control limits.

6.3.5.4 Microscopy: The applicant must obtain continuous microscopy training for a minimum of 6 months to 1 year depending on their position (Analyst or Principal Analyst).

6.4 Documentation

6.4.1 The Initial Demonstration of Capability Forms (IDFs) for chemistry and microbiology are located on the shared data drive (the "S:" drive for most users) as:

6.4.1.1 S:\Approved Forms\Form 12.1, current revision, Initial Demonstration Form – Chemistry – Office 2010jsm.docx. See Appendix 11.1.

6.4.1.2 S:\Approved Forms\Form 12.2, current revision, Initial Demonstration Form – Protozoan – Office 2010jsm.docx. See Appendix 11.2.

6.4.1.3 S:\Approved Forms\Form 12.3, current revision, Initial Demonstration Form – Bacti – Office2010jsm.docx. See Appendix 11.3.

6.4.1.4 S:\Approved Forms\MDL Table for Office 2010-MDLblanks – DW IDC\MDL Table for Office 2010-MDL-blanks – DW IDC Worksheet: MDL. See Appendix 11.4.

6.4.1.5 S:\Approved Forms\MDL Table for Office 2010-MDLspiked – DW IDC\MDL Table for Office 2010-MDL-spiked – DW IDC Worksheet: MDL. See Appendix 11.5.

6.4.2 The appropriate form is filled out online after all documentation review and method proficiency requirements have been met by the applicant and approved by the trainer.

6.4.3 All available electronic fields are to be competed before the form is printed.

6.4.4 Saving a partially or completely filled out form for later reuse is not permitted.

6.4.5 The forms contain usage tips that will "pop up" when the mouse pointer hovers above one of the highlighted areas of the documents. These comments are intended as brief reminders of the following requirements for filling out the forms:

6.4.6 Date (Pages 1 and 2) – Automatically filled as the current date by the software.

6.4.7 Effective Date (Pages 1 and 2) – Date of QA approval. To be completed by the QA Manager.

6.4.8 Analyst (Pages 1 and 2) – Applicant's name.

6.4.9 Matrix (Pages 1 and 2) – Dropdown selection box. Select the appropriate matrix.

6.4.10 Method number, and Analyte, etc (Page 1) – The parent method and a description of the analyte, compound class, or physical parameters being measured.

6.4.11 The parent method should be correctly identified including any appropriate prefix.

6.4.12 SW846 methods should be identified as SW846-<method number>, EPA methods should be identified as EPA-<method number>, and Standard Methods should be identified as SM<method ID>.

6.4.13 Other method groups should be identified as appropriate for the source of the methods.

6.4.14 Standard Operating Procedure ID: SOP Rev. 0 (Page 1) – Identify the SOP number and revision, for example, this SOP would be SOP "6-001" Rev. "6" or the current revision number.

6.4.15 Signatures and dates (Page 1) – These are supplied by the Laboratory Manager and QA Manager to indicate their approval of the IDC.

6.4.16 Initials Box (Page 2) – Supervisor, Lab Manager and QA Manager approvals.

6.4.17 Position Number (Page 2) – The applicants state position ID number. This number is unique to each individual.

6.4.18 Method Reference(s) (Page 2) – Parent method from page 1 plus any additional methods or documentation references.

6.4.19 The applicant's initials and date are written here verifying that he/she has reviewed the referenced documents as part of the training process and is familiar with the requirements therein.

6.4.20 Examples:

6.4.21 For SW846-8081A, the parent method, additional reference to SW846-8000B would be required.

6.4.22 For EPA 524.2 (Drinking Water) the parent method, the Drinking Water Certification Manual (this abbreviated name would be acceptable) would be referenced.

6.4.23 SOP(s), etc. (Page 2) – SOP from page 1 plus any additional sample preparation, etc. SOPs that would be appropriate to list.

6.4.24 The applicant's initials and date are written here verifying that he/she has studied the referred SOPs as part of the training process and is familiar with the requirements therein.

6.4.25 Quality Assurance Plan (Page 2) – Current QAP.

6.4.26 The applicant's initials and date are written here verifying that he/she has received training in the QAP of the EPD Lab as part of the training process.

6.4.27 MSDS Review(s) (Page 2) – The applicant's initials and date are written here verifying that he/she has reviewed all of the MSDSs for all chemicals associated with the procedure as part of the training process.

6.4.28 Waste Management (Page 3) – Waste streams and the final disposition of the waste associated with the procedure are listed in the table.

6.4.29 Specific waste streams for the procedure must be identified.

6.4.30 The final disposition of each waste stream may be determined from the laboratory SOP for Waste Management, SOP 6-015, Revision 1 or most current revision, Table 6.3.

6.4.31 Method Proficiency (Page 3) – This section is filled out as is appropriate for the method proficiency testing performed by the applicant.

6.4.32 Comments (Page 3) – Information that later reviewers should be aware of that is not otherwise indicated on the form.

6.4.33 Supporting Documentation (Page 3) – Indicate whether or not supporting data (chromatograms, sequence printouts, etc.) are attached and if not, why.

6.5 Approvals

6.5.1 Upon completion of training, testing and documentation, the trainer reviews the documentation for completeness and accuracy, determining if the applicant has met all requirements. If the trainer is not the primary supervisor for the procedure, he/she should initial and date the IDF on page 2 above the fields for "Supervisor Approval" initials and date and pass the package on to the primary supervisor.

6.5.2 The primary supervisor reviews the documentation for completeness and accuracy determining if the applicant has met all requirements. If approved, the supervisory initials and dates page 2 as is appropriate and passes the package to the Laboratory Manager.

6.5.3 The Lab Manager reviews the documentation, and if approved, initials or signs where appropriate on pages 1 and 2 and passes the package to the QA Manager for final approval.

6.5.4 The QA Manager reviews the documentation, and if approved, initials or signs where appropriate on pages 1 and 2 and returns the package to the Lab Manager for filing in the respective labs.

7 Criteria:

7.1 Most methods contain or reference quality assurance criteria required for Initial Demonstrations of Capability. In the event these criteria conflict with the requirements of this document, the specific SOP for the procedure should indicate appropriate criteria and procedures for obtaining IDC certification.

8 Records Management:

8.1 IDFs and supporting documentation are filed as part of the applicant's permanent training records and will retained as long as the applicant is employed at the GA EPD Lab and will be disposed of only after termination of the applicant's employment or after the appropriate program required archiving period has expired, whichever is longer.

8.2 Routine Drinking Water – 10 Years

8.3 Lead and Copper – 12 Years

8.4 Air Monitoring – 7 Years

8.5 Hazardous Waste Projects – 5 Years

8.6 Water Quality Projects – 10 Years

9 Quality Control/Quality Assurance:

9.1 Prior to analysis of regular samples without direct and close supervision, an analyst must complete all IDC requirements and a completed certificate must be approved and issued by the QA Manager.

9.2 Certifications must be renewed periodically. Scientist and technicians must recertify within six months of the QA Manager approving an IDF and every six months thereafter of the Lab Manager approving CDFs. Supervisors must recertify within 12 months of the QA Manager approving and IDF and every 12 months thereafter of the Lab Manager approving CDFs. Laboratory Managers are not required to receive certifications to perform analyses within the scope of their lab and overall experience.

9.3 Calculations:

9.3.1 LCS Percent Recovery (%):

9.3.1.1 $$\% = \frac{LCS_{Calculated\ Conc.}}{LCS_{Expected\ Conc.}} * 100$$

9.3.1.2 Where:

9.3.1.3 $LCS_{Calculated\ Conc.}$ = Calculated concentration of an individual LCS replicate

9.3.1.4 $LCS_{Expected\ Conc.}$ = Expected concentration of the LCS(s)

9.3.1.5 See specific SOPs for LCS calculated and expected concentration calculations

9.3.2 Percent Relative Standard Deviation (%RSD):

9.3.2.1 $\%RSD = \frac{\sigma_{n-1}}{\overline{LCS}} * 100$

9.3.2.2 Where:

9.3.2.3 $\overline{LCS}$ = Average of four LCSs

9.3.2.4 σ_{n-1} = Sample Standard Deviation (n – 1)

10 References:

10.1 Georgia EPD Laboratory Quality Assurance Plan, online revision.

10.2 Georgia EPD Laboratory SOP "Continuing Demonstration of Capability", SOP 6-002 online revision.

10.3 Georgia EPD Laboratory Safety/Chemical Hygiene Plan & Fire Safety Plan, online revision.

10.4 Georgia EPD Laboratory SOP – EPD Laboratory Waste Management SOP, SOP 6-015, online revision.

10.5 Manual for the Certification of Laboratories Analyzing Drinking Water, EPA/815-R-05-004, January 2005 or most current revision.

11 **Appendices:**

11.1 Chemistry IDF

11.2 Protozoan IDF

11.3 Bacteriological IDF

11.4 Blank Drinking Water IDC MDL Form

11.5 Spiked Drinking Water IDC MDL Form

Updates:

Online revision statement added.
Section 6.3.2.22 – 6.3.2.23 – Drinking Water MDL requirements updated.
Section 11 – Appendices 11.4 and 11.5 added.

11.1 Appendix: Chemistry IDF Form 12.1

Initial Demonstration of Capability Certification Statement

Date: 08/18/2021

Effective Date: _____

Analyst: _____

Matrix: Drinking Water

Method Number, and Analyte or Class of Analytes or Measured Parameters:

Standard Operating Procedure ID: SOP_____ Rev._____

We, the undersigned, CERTIFY that:

1. The analyst identified above, using the cited test method, which is in use at this facility for the analyses of samples, has met the Initial Demonstration of Capability.

2. A copy of the test method is available to and the laboratory-specific SOP has been issued to the analyst, the analyst's supervisor and the analyst's manager.

3. The data associated with the initial demonstration capability are true, accurate, complete and self-explanatory.

4. All raw data (including a copy of this certification form) necessary to reconstruct and validate these analyses have been retained at this facility, and that the associated information is well-organized and available for review by authorized inspectors.

5. All those undersigned below verify that sufficient training has occurred for the analyst to properly meet the conditions and requirements established by the EPA for the method and SOP cited above.

Lab Scientist/Technician: _____ Date:_____

Laboratory Supervisor: _____ Date:_____

Laboratory Manager: _____ Date:_____

Quality Assurance Manager: _____ Date:_____

Initial Demonstration of Capability Form (IDF)
Chemical Analysis

Date: 08/18/2021

Supervisor Approval (☐ NA) – Initials: _____ Date: _____
Manager Approval – Initials: _____ Date: _____
QA Manager Approval – Initials: _____ Date: _____

Effective Date: _____

Analyst Name: _____ Position Number: _____

Class of Analytes: _____ Matrix: Drinking Water

Documentation Review

Method Reference(s): _____

"I have reviewed the method(s). I am familiar with terminology, acronyms, and requirements of the method(s)."

Analyst Initials: _____ Date: _____

SOP(s) – Title(s) & Revision(s): _____

SOP Rev.

"I have reviewed the SOP(s). I am familiar with and understand the terminology, acronyms, and requirements of the SOP(s). I am aware of, and understand the reasons for any discrepancies or contradictions between the method(s) and the SOP(s)."

Analyst Initials: _____ Date: _____

Quality Assurance Plan (QAP) – Date and Revision: _____

"I have participated in ongoing training on the QAP within the last six months."

Analyst Initials: _____ Date: _____

MSDS Review(s):

"I have reviewed the MSDSs for all chemicals associated with this procedure. I understand the health and safety risks associated with each chemical, including steps that should be taken in the event of a spill or accident involving these chemicals.

Analyst Initials: _____ Date: _____

Waste Management

Waste Stream(s) – EPD Lab Waste Mgmt SOP, 6-015 Rev. 2, Appendix A Rev. 2 Tables A.1 – A.5:

Waste streams and final disposition of the wastes associated with this procedure:

Waste Stream Source	Primary Waste Stream Hazardous Components	Final Laboratory Disposition

Method Proficiency

Calibration Criteria:

Analyst has performed appropriate calibrations for this procedure, meeting calibration criteria:
☐ Yes ☐ No ☐ NA

MDL Criteria (Drinking Water Analysis Requiring MDLs Only):

Analyst has performed appropriate MDLs for this procedure, meeting MDL criteria:
☐ Yes ☐ No ☐ NA

Reference Sample Recovery:

Analyst has successfully performed the procedure on four reference samples achieving required accuracy and precision:

Accuracy: Individual - ☐ Yes ☐ NA Average - ☐ Yes ☐ NA

Precision (20% RSD unless otherwise specified): - ☐ Yes ☐ NA

Unknown (Blind) Sample Analysis within Control Limits (Blind ID #): ☐ Yes ☐ NA

Procedure Requirements Met: ☐ Yes ☐ No If no explain:

Comments:

Supporting Documentation

Copies of all raw data necessary to reconstruct and validate these analyses are attached: ☐ Yes ☐ No If no explain:

11.2 Appendix: Bacteriological IDF Form 12.2

Initial Demonstration of Capability
Protozoan
Certification Statement

Date: 08/18/2021

Effective Date: _____

Analyst:

Matrix: Drinking Water

Method Number, and Analyte or Class of Analytes or Measured Parameters:

Standard Operating Procedure ID: SOP Rev.

We, the undersigned, CERTIFY that:

1. The analyst identified above, using the cited test method, which is in use at this facility for the analyses of samples, has met the Initial Demonstration of Capability.

2. A copy of the test method is available to and the laboratory-specific SOP has been issued to the analyst, the analyst's supervisor and the analyst's manager.

3. The data associated with the initial demonstration capability are true, accurate, complete and self-explanatory.

4. All raw data (including a copy of this certification form) necessary to reconstruct and validate these analyses have been retained at this facility, and that the associated information is well-organized and available for review by authorized inspectors.

5. All those undersigned below verify that sufficient training has occurred for the analyst to properly meet the conditions and requirements established by the EPA for the method and SOP cited above.

Lab Scientist/Technician: _____ Date:_____

Laboratory Supervisor: _____ Date:_____

Laboratory Manager: _____ Date:_____

Quality Assurance Manager: _____ Date:_____

Initial Demonstration of Capability Form (IDF)
Protozoan Analysis

Date: 08/18/2021

Supervisor Approval (☐ NA) – Initials: _____ Date: _____
Manager Approval – Initials: _____ Date: _____
QA Manager Approval – Initials: _____ Date: _____

Effective Date: _____

Analyst Name: Position Number:

Class of Analytes: Matrix: Drinking Water

Documentation Review

Method Reference(s):

"I have reviewed the method(s). I am familiar with terminology, acronyms, and requirements of the method(s)."

Analyst Initials: _____ Date: _____

SOP(s) – Title(s) & Revision(s):

SOP Rev.

"I have reviewed the SOP(s). I am familiar with and understand the terminology, acronyms, and requirements of the SOP(s). I am aware of, and understand the reasons for any discrepancies or contradictions between the method(s) and the SOP(s)."

Analyst Initials: _____ Date: _____

Quality Assurance Plan (QAP) – Date and Revision:

"I have participated in ongoing training on the QAP within the last six months."

Analyst Initials: _____ Date: _____

MSDS Review(s):

"I have reviewed the MSDSs for all chemicals associated with this procedure. I understand the health and safety risks associated with each chemical, including steps that should be taken in the event of a spill or accident involving these chemicals."

Analyst Initials: _____ Date: _____

Waste Management

Waste Stream(s) – EPD Lab Waste Mgmt SOP, 6-015 Rev. 2, Appendix A Rev. 2 Tables A.1 – A.5:

Waste streams and final disposition of the wastes associated with this procedure:

Waste Stream Source	Primary Waste Stream Hazardous Components	Final Laboratory Disposition

Method Proficiency

Cryptosporidium/Giardia

☒ Analyst has successfully performed the procedure as prescribed by the method SOP while being observed by a certified analyst:

50 samples (Analyst)

Number of samples _____ Date: _____ Supv. Initials:_____

☒ Analyst successfully performed the procedure on four IPR blind samples achieving required accuracy.

Cryptosporidium Average Mean Recovery: _____ Date completed:_____ Supv. Initials: _____

Giardia Average Mean Recovery: _____ Date completed:_____ Supv. Initials: _____

Accuracy within method control limits: ☒ Yes ☐ No ☐ NA

☒ Analyst has performed matrix spike samples.

Number of samples _____ Date: _____ Supv. Initials:_____

Accuracy within method control limits: ☒ Yes ☐ No ☐ NA

☒ Method Blank Sample Analysis Meets Criteria: ☒ Pass ☐ Fail

☐ For Turbidity: Unknown (Blind) Sample within acceptable range: ☐ Yes ☐ No

☐ For pH: Unknown (Blind) Sample within acceptable range: ☐ Yes ☐ No

Microscopy Training

NA Date completed:_____ Supv. Initials: _____

☐ Analyst reviewed microscopy modules. Date completed:_____ Supv. Initials: _____

Procedure Requirements Met: ☒ Yes ☐ No If no explain:

Comments:

Supporting Documentation

Copies of all raw data necessary to reconstruct and validate these analyses are attached: ☐ Yes
☒ No If no explain:

11.3 Appendix: Bacteriological IDF Form 12.3

Initial Demonstration of Capability
Bacteriological
Certification Statement

Date: 08/18/2021

Effective Date: _____

Analyst:

Matrix: Drinking Water

Method Number, and Analyte or Class of Analytes or Measured Parameters:

Standard Operating Procedure ID: SOP Rev.

We, the undersigned, CERTIFY that:

1. The analyst identified above, using the cited test method, which is in use at this facility for the analyses of samples, has met the Initial Demonstration of Capability.

2. A copy of the test method is available to and the laboratory-specific SOP has been issued to the analyst, the analyst's supervisor and the analyst's manager.

3. The data associated with the initial demonstration capability are true, accurate, complete and self-explanatory.

4. All raw data (including a copy of this certification form) necessary to reconstruct and validate these analyses have been retained at this facility, and that the associated information is well-organized and available for review by authorized inspectors.

5. All those undersigned below verify that sufficient training has occurred for the analyst to properly meet the conditions and requirements established by the EPA for the method and SOP cited above.

Lab Scientist/Technician: _____ Date: _____

Laboratory Supervisor: _____ Date: _____

Laboratory Manager: _____ Date: _____

Quality Assurance Manager: _____ Date: _____

Initial Demonstration of Capability Form (IDF)
Bacteriological Analysis

Date: 08/18/2021

Supervisor Approval (☐ NA) – Initials: _____ Date: _____	
Manager Approval – Initials: _____ Date: _____	
QA Manager Approval – Initials: _____ Date: _____	

Effective Date: _____

Analyst Name: Position Number:

Class of Analytes: Matrix: Drinking Water

Documentation Review

Method Reference(s):

"I have reviewed the method(s). I am familiar with terminology, acronyms, and requirements of the method(s)."

Analyst Initials: _____ Date: _____

SOP(s) – Title(s) & Revision(s):

SOP Rev.

"I have reviewed the SOP(s). I am familiar with and understand the terminology, acronyms, and requirements of the SOP(s). I am aware of and understand the reasons for any discrepancies or contradictions between the method(s) and the SOP(s)."

Analyst Initials: _____ Date: _____

Quality Assurance Plan (QAP) – Date and Revision:

"I have participated in ongoing training on the QAP within the last six months."

Analyst Initials: _____ Date: _____

MSDS Review(s):

"I have reviewed the MSDSs for all chemicals associated with this procedure. I understand the health and safety risks associated with each chemical, including steps that should be taken in the event of a spill or accident involving these chemicals."

Analyst Initials: _____ Date: _____

Waste Management

Waste Stream(s) – EPD Lab Waste Mgmt SOP, 6-015 Rev. 2, Appendix A Rev. 2 Tables A.1 – A.5:

Waste streams and final disposition of the wastes associated with this procedure:

Waste Stream Source	Primary Waste Stream Hazardous Components	Final Laboratory Disposition

Method Proficiency

Presence/Absence

☐ Spiked Samples Examined and Met: ☐ Yes ☒ NA

5 Sets of 25 PA Date Completed: _____ Supv. Initials: _____

☐ Two Blind Samples

☒ NA ☐ Passed ☐ Failed Date: _____ Supv. Initials:_____

OR

☐ Analyst has successfully performed the procedure as prescribed by the method SOP:

Date: _____ Supv. Initials:_____

QC Passed NA Accuracy NA

OR

☐ For pH: Unknown (Blind) Sample within acceptable range: ☐ Yes ☐ No

Interpretation of Results

☒ Number of Runs (P/A) read with Supervision: 11Date: 12/16/20 Supv. Initials: _____

OR

☐ a. Presumptive Test:

Frequency read with Supervision: _____ Days Date: _____ Supv. Initials: _____

b. Confirmation Test:

Frequency read with Supervision: _____ Days Date: _____Supv. Initials: _____

Procedure Requirements Met: ☐ Yes ☐ No If no explain:

Comments:

Supporting Documentation

Copies of all raw data necessary to reconstruct and validate these analyses are attached: ☒ Yes
☐ No If no explain:

11.4 Appendix: Blank Drinking Water IDC MDL Worksheet

Georgia Department of Natural Resources
Environmental Protection Division Laboratory

MDL Study (MDL$_{blanks}$ Drinking Water IDCs)

Analyst: _____ **Intial & Date:** _____ **Prep Date(s):** _____
Analysis Method(s): _____ _____
Prep Method(s): _____ **Instrument:** _____ _____

Units: _____

			Dates Analyzed							
			Replicate Concentrations							
Item #	**Analytes**	**True Conc.**	**Conc. 1**	**Conc. 2**	**Conc. 3**	**Conc. 4**	**Conc. 5**	**Conc. 6**	**Conc. 7**	**Conc. 8**
		0								

Select Test Code

Georgia Department of Natural Resources
Environmental Protection Division Laboratory

MDL Study (MDL$_{blanks}$ Drinking Water IDCs)

Comments and Notes (Associated Test Codes and Methods):

Highlight all calculated MDLblank values that are higher than MDLspiked values. These calculated MDLblank values will be used in Labworks for reporting sample data.

Analytes	Average	Standard Deviation (n-1)	*Student's t Value*	MDL Includes Average		LW Current PQL/RL
0	#DIV/0!	#DIV/0!	Error	Error		

11.5 Appendix: Spiked Drinking Water MDL Worksheet

Georgia Department of Natural Resources
Environmental Protection Division Laboratory

MDL Study (MDLspiked Drinking Water IDCs)

Analyst: _____ **Intial & Date:** _____ **Prep Date(s):** _____
Analysis Method(s): _____
Prep Method(s): _____ **Instrument:** _____
Units: _____

			Dates Analyzed							
			Replicate Concentrations							
Item #	**Analytes**	**True Conc.**	**Conc. 1**	**Conc. 2**	**Conc. 3**	**Conc. 4**	**Conc. 5**	**Conc. 6**	**Conc. 7**	**Conc. 8**

Select Test Code

Georgia Department of Natural Resources
Environmental Protection Division Laboratory

MDL Study (MDLspiked Drinking Water IDCs)

Comments and Notes (Associated Test Codes and Methods):

Highlight all calculated MDLspike values that are higher than MDLblank values. These calculated MDLspike values will be used in Labworks for reporting sample data.

Analytes	Average Recovery	Standard Deviation (n-1)	*Student's t Value*	MDL		LW Current PQL/RL
0	#DIV/0!	#DIV/0!	Error	Error		