WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION

Form #1

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OFFICE OF WEST VIRGINIA
SECRETARY OF STATE

NOTICE OF PUBLIC HEARING ON A PROPOSED RULE

AGENCY: Department of Commerce, Labor and Environmental Resources, Division of Natural Resources TITLE NUMBER: 47

RULE TYPE: Legislative ; CITE AUTHORITY 20-5E-1 et seq., 20-5F-1 et seq., 20-5G-1 et seq., 20-5H-1 et seq., 20-5M-1 et seq.

AMENDMENT TO AN EXISTING RULE: YES ____ NO X

IF YES, SERIES NUMBER OF RULE BEING AMENDED: ____

TITLE OF RULE BEING AMENDED: ____

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: 10

TITLE OF RULE BEING PROPOSED: Regulations Governing Environmental Laboratories Certification and Standards of Performance

DATE OF PUBLIC HEARING: January 16, 1992 TIME: 7:00 P.M.

LOCATION OF PUBLIC HEARING: Water Resources Board Conference Room
1260 Greenbrier Street
Charleston, WV 25311

COMMENTS LIMITED TO: ORAL ____, WRITTEN ____, BOTH X

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS:
Chief, Water Resources Section
1201 Greenbrier street
Charleston, WV 25311
Attn: Jim Waycaster,
Information Representative

The Department requests that persons wishing to make comments at the hearing make an effort to submit written comments in order to facilitate the review of these comments.

The issues to be heard shall be limited to the proposed rule.

5.40

ATTACH A **BRIEF** SUMMARY OF YOUR PROPOSAL

FISCAL NOTE FOR PROPOSED RULES

Rule Title: Laboratory Certification Regulation

Type of Rule: XX Legislative _____ Interpretive _____ Procedural

Agency NR - Water Resources Address 1201 Greenbrier Street

Charleston, WV 25311

1. Effect of Proposed Rule	ANNUAL Increase	Decrease	FISCAL YEAR Current	Next	Thereafter
Estimated Total Cost	$ 200,000	$	$ 0	$ 200,000	$ 200,000
Personal Services	100,000			100,000	100,000
Current Expense	76,000			76,000	76,000
Repairs and Alterations	6,000			6,000	6,000
Equipment	18,000			18,000	18,000
Other					

2. Explanation of above estimates.

These funds will support three positions in the Water Resources Qualtiy Assurance Program. These chemists will investigate and inspect laboratories operating in the state and other states that perform analyses for state permit holders.

3. Objectives of these rules:

The rules will provide for consistency and quality in the analyses of pollutant limits for permittees under the States various water programs and solid and hazardous waste programs..

4. Explanation of Overall Economic Impact of Proposed Rule.

A. Economic Impact on State Government.

This rule will be implemented by fees generated by the program. It is not anticipated to impact state revenues.

B. Economic Impact on Political Subdivisions; Specific Industries; Specific groups of citizens.

Permittees from the DNR agencies affected by the rule will be required to improve laboratory operations and pay fees to obtain annual certification.

C. Economic Impact on Citizens/Public at Large.

There will be minimal impact on the public at large. The environmental improvement will be beneficial.

Date: August 23, 1991

Signature of Agency Head or Authorized Representative

REGULATIONS GOVERNING ENVIRONMENTAL LABORATORY CERTIFICATION and STANDARDS of PERFORMANCE

DIVISION OF NATURAL RESOURCES
Water Resources Section
Quality Assurance Program Office
1201 Greenbrier Street
Charleston, West Vriginia 25311

WEST VIRGINIA DEPARTMENT OF COMMERCE, LABOR AND ENVIRONMENTAL RESOURCES

NOTE-This proposed rule is new-underscoring has been omitted.

CONTENTS

REGULATIONS GOVERNING ENVIRONMENTAL LABORATORIES

CERTIFICATION AND STANDARDS OF PERFORMANCE

Title 47, Series_____

Section 1 - GENERAL PROVISIONS

1.1 Scope

These Regulations, adopted by the Division of Natural Resources govern certification of laboratories conducting environmental analysis performed as referenced by regulations or orders issued pursuant to those acts. These regulations establish the procedures for obtaining and maintaining certifications and the criteria and procedures laboratories shall follow in analyzing samples.

1.2 Authority

West Virginia Code Chapter 20-5E-1 et seq.
Chapter 20-5F-1 et seq.
Chapter 20-5G-1 et seq.
Chapter 20-5H-1 et seq.
Chapter 20-5M-1 et seq.

1.3 Filing Date _____

1.4 Effective Date _____

1.5 Construction

These regulations shall be liberally construed to permit the Division of Natural Resources to discharge its statutory functions and to effectuate the purposes of the laboratory certification program.

1.6 Purpose of the Regulations

(a) These Regulations are promulgated to insure that the results of environmental analyses are accurate, reproducible and verifiable. This purpose will be achieved by:

(1) Establishing the administrative procedures to be

followed by certified laboratories and laboratories seeking certification.

(2) Establishing the categories and parameters in which laboratories may be certified.

(3) Establishing the minimum requirements, criteria and procedures for laboratory equipment and supplies, practices, methodology, quality control, personnel, facilities, data reporting, laboratory and record maintenance, which a certified laboratory shall continually meet.

(4) Establishing the enforcement procedures the Division shall follow to ensure that all certified Laboratories or laboratories seeking certification are in compliance with this chapter.

1.7 Certification Program Requirements

(a) Any laboratory wishing to analyze samples for compliance with adopted regulations, permits, or orders issued pursuant to an applicable act shall follow the procedures set forth herein in order to obtain and maintain certification.

(b) Certified laboratories and laboratories seeking certification shall analyze all samples requiring testing under these regulations in accordance with the procedures and methods required by these regulations.

1.8 Incorporation by Reference

The Division hereby adopts and incorporates into these regulations the approved "Guidelines Establishing Test Procedures for the Analysis of Pollutants" 40 CFR 136, in effect on the date of approval of these regulations or the currently accepted procedure cited in these guidelines.

1.9 Program Information

Unless otherwise specified, any questions concerning the requirements of this chapter should be directed to the Division of Natural Resources, Water Resources Section, Quality Assurance Office, 1201 Greenbrier Street, Charleston, WV 25311. Telephone Number (304) 348-2837.

1.10 Definitions

The following words and terms, when used in these regulations, shall have the following meanings unless the context clearly

indicates otherwise.

1.10.1 Accredited-approval conferred upon institutions or programs where appropriate by a nationally recognized accrediting agency or association as determined by the Division.

1.10.2 Analytical Reagent (AR) grade, ACS reagent grade, and Reagent Grade-synonymous terms for reagents which conform to the current specifications of the Committee on Analytical Reagents of the American Chemical Society.

1.10.3 Category-a group of parameters for which certification is offered.

1.10.4 Certification parameter-a parameter which is identified in a performance evaluation sample test and is used to evaluate the overall analytical performance of a laboratory on the specific method.

1.10.5 Certification year-that period of time following the date upon which the laboratory first receives certification for any parameter or category and lasting for 365 consecutive days.

1.10.6 Certified thermometer-a thermometer that has documentation from the manufacturer showing that it has been compared against a National Institute for Testing Standards (NITS) thermometer covering the temperature ranges employed by the laboratory.

1.10.7 CFR-Code of Federal Regulations

1.10.8 Chief-the Chief of the Division's Water Resources Section.

1.10.9 Compliance analysis-the analysis of a sample that is required to be analyzed by a division regulation, permit or order.

1.10.10 Division-the West Virginia Division of Natural Resources.

1.10.11 EPA and USEPA-the United States Environmental Protection Agency.

1.10.12 Laboratory pure water-distilled or deionized water which is free of contaminants that may interfere with the analytical test in question.

1.10.13 Laboratory seeking certification-an uncertified laboratory which has submitted an acceptable application and the

appropriate fee.

1.10.14 Performance evaluation sample-a sample containing a known amount of a specific or combination of parameters used in part to evaluate the performance of a laboratory.

1.10.15 Person, Persons, or applicant-any industrial, public or private corporation, institution, association, firm or company organized or existing under the laws of this or any other state or country; state of West Virginia; governmental agency, including federal facilities; political subdivision; county commission; municipal corporation; industry; sanitary district; public service district; drainage district; soil conservation district; watershed improvement district; partnership; trust; estate; person or individual; group of persons or individuals acting individually; or as a group; or any legal entity whatever.

1.10.16 Personal and direct supervision-means that a qualified supervisor is available at all times when laboratory procedures are being performed.

1.10.17 Primary Standard-a highly pure reagent used as a reference for standardizing other reagent solutions.

1.10.18 Quality Assurance Office-a subdivision of the Division of Natural Resources.

1.10.19 Replicate sample-a sample prepared by dividing a homogeneous sample into separate parts so that each part is also homogeneous and representative of the original sample.

1.10.20 Standard curve-a curve plotting concentrations of a known parameter standard minus a blank, versus the standard's absorbance or percent transmittance or other instrument response.

1.10.21 Standard methods-those written analytical or test methods cited in the Code of Federal Regulations as being approved by EPA or such other methods as shall be approved by the Chief.

1.10.22 Supervisor-that designated person responsible for the technical adequacy and quality of data for a certification category.

1.11 Severability

If any section, subsection, provision, clause, or portion of this chapter is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of this chapter shall not be affected thereby.

Section 2 - PROGRAM, PROCEDURES, AND REQUIREMENTS

2.1 Requirements of Certification

(a) All sample analyses performed for the purpose of determining compliance with chemical, microbiological, aquatic toxicity and radiological requirements of the State's natural resources and environmental programs or when required by order issued by the Division shall be performed in laboratories certified for this purpose pursuant to these regulations. Analyses performed in laboratories not so certified shall not be accepted by the Division as being in compliance with the requirements, regulations or orders of the Division.

(b) Laboratories in other states where the certifying agency grants reciprocal certifications to laboratories located in West Virginia, certified under conditions equivalent to those required by these regulations, by the agency having primary enforcement responsibility under Federal programs delegated to such other state, shall be considered to be certified for the purpose of this chapter once they have complied with the provisions of Section 2.4.

(c) Only laboratories certified pursuant to these regulations or maintained by the EPA may be called West Virginia Certified Environmental Laboratories and no laboratory may adopt any name or make any oral or written statement intended or likely to mislead the public with respect to its certification status.

2.2 Categories for Certification

A laboratory may apply for certification in one or more of the following categories, and shall be certified in those parameters within the category for which it demonstrates acceptable performance on performance evaluation samples, where available, and meets all other requirements of this chapter. The laboratory certificate shall specify the categories and the parameters within each category for which the laboratory is certified and it shall be displayed in a location visible to the public. The certification categories are:

1. Atomic Absorption, Emission Spectroscopy, and Flame Photometry, which comprises tests or analyses for which the atomic absorption methods are applicable or required. Tests for this category must be conducted in accordance with the method and procedures specified in 40 CFR 136 or EPA SW-846 as appropriate.

2. Limited Chemistry, which comprises chemical tests or analyses except those for which the atomic absorption, gas chromatography and/or mass spectrometry methods are specifically required. This category includes testing

for Hazardous Waste Characteristics. Tests for the Limited Chemistry category must be conducted in accordance with the methods and procedures specified in 40 CFR 136 or EPA SW-846 as appropriate.

3. Gas Chromatography (GC) and/or Mass Spectrometry (MS), which comprises tests for which the GC and/or MS method is applicable or required. Tests for this category must be conducted in accordance with the methods and procedures specified in 40 CFR 136 or EPA SW-846 as appropriate.

4. Microbiology, which comprises tests for Coliform bacteria and Fecal Streptococci must be conducted in accordance with the methods and procedures specified in 40 CFR 136.

5. Aquatic Toxicity testing must be conducted in accordance with the methods and procedures specified in Standard Methods or EPA 600/4-85-013 (acute) or EPA 600/4-89-001 (chronic) or other methods that may be approved by the Chief.

6. Radiological testing must be conducted in accordance with the methods and procedures specified in 40 CFR 136.

2.3 Application Procedures and Requirements for Laboratories Located in West Virginia

(a) The owner of a laboratory in West Virginia who wishes to be certified in any or all of the categories and parameters thereof or, if already certified, who wishes to add a category or a parameter within a category, shall apply for certification to the West Virginia Division of Natural Resources, Quality Assurance Office (1.9). The applicant shall submit the appropriate fee with the Application for Certification.

(b) If the applicant fails to submit all the information requested or fails to submit the appropriate fee, the Division shall reject the application without prejudice.

(c) If the applicant submits a complete application, the appropriate fee, and the information submitted meets the minimum requirements of this chapter for the category or categories for which certification is requested, the application shall be accepted. Acceptance of the application does not authorize the laboratory to perform analyses regulated by this chapter. The applicant shall be notified of the acceptance and the laboratory inspected

to determine if it is in compliance with the requirements of this chapter.

(d) Performance evaluation samples shall be a part of this inspection. Proficiency testing shall be in accordance with Section 2.10. If the laboratory's analytical values for the performance evaluation samples are acceptable, the Quality Assurance Office shall contact the laboratory to arrange a mutually acceptable date for an on-site inspection.

1. Certified laboratories that desire to extend the range of tests or analyses offered shall demonstrate satisfactory results in testing Performance Evaluation samples for the additional parameters desired. Inclusion of this (these) additional parameter(s) may then be added to the list of tests or analyses for which proficiency has been established.

(e) The results of the analysis or testing of performance evaluation samples shall be considered in determining whether the certification of the laboratory should be granted, renewed, denied, revoked, or suspended.

(f) An applicant for certification who either does not perform acceptably on the performance evaluation samples or does not meet the requirements of this chapter shall be notified by Certified Mail that certification has been denied. Laboratories notified of denial of certification must immediately cease performing analyses required to be performed in a certified laboratory for compliance with the Acts and Regulations covered by these regulations.

1. Applicants receiving such a notification may not reapply for certification until the laboratory assures the Quality Assurance Officer in writing that all reasons for denial of certification have been rectified.

2. Owners, principal officers, managers and supervisors may not reapply for certification of this same facility by the simple expedient of changing the company or laboratory name.

3. Certification is nontransferrable. The laboratory facility may reapply by preparing a new application if the facility is sold or has a change of principal officer, managers and supervisors.

(g) Certifications may contain conditions requiring correction of minor deficiencies identified by the Quality Assurance Office by a date or dates specified therein.

(h) The following special provisions are applicable to the phase-in of the West Virginia Environmental Laboratory Certification Program:

1. All laboratories currently operating under the Interim Approval Program may continue operating under this program until the expiration of their Interim Approval certificate. They must make application for certification at least 60 days prior to the expiration of their Interim Approval;

2. During the phase-in period all laboratories that desire to continue performing analyses that the Division will find acceptable and to receive interim approval must contact the Quality Assurance Office for an Interim Status Environmental Laboratories Certification form, complete, and submit the form with the appropriate fee to the Quality Assurance Office within 60 days after these regulations become final;

3. The laboratory that has been granted an interim approval is authorized to perform analysis for the programs covered by this chapter while the laboratory is being evaluated for certification providing:

   i. Such laboratories follow the procedures and meet the requirements of all previous subsections of this section;

   ii. Interim approvals shall be valid until the laboratory is audited and an approval or denial decision is made or until three (3) years after promulgation of these regulations, whichever is earlier;

   iii. A laboratory that fails to acceptably analyze the performance evaluation samples or otherwise fails to meet the requirements of this chapter for certification shall be allowed to remain in an interim approved status for 60 days after being notified of deficiencies if, within 10 days of notification, the laboratory submits an acceptable plan to correct the deficiencies to the Division Quality Assurance Office.

2.4 Application Procedures and Requirements for Laboratories Not Located in West Virginia

(a) The owner of a laboratory, located in a state other than West Virginia, which has been certified by the state where it is located, under conditions equivalent to those required by this chapter, by the agency having primary enforcement responsibility for the programs covered by this chapter and who wishes to perform analyses covered by this chapter for West Virginia Clients shall:

1. Annually complete the application form provided by the Division's Quality Assurance Office.

2. Have the form certified to by the agency having primary enforcement responsibility, and

3. Return the form with the proper fee to the Quality Assurance Office of West Virginia (1.9).

(b) The application will be reviewed and if found to be complete and the appropriate fee has been paid, the laboratory shall become certified or recertified.

(c) If the laboratory's certification is revoked by the agency having primary enforcement responsibility, the West Virginia certification is automatically canceled. The laboratory manager shall notify the West Virginia Quality Assurance Office and all clients in West Virginia of the revocation within 48 hours of receipt of notice of revocation.

(d) The owner of a laboratory in a state other than West Virginia which is not certified by that state or is certified under conditions not equivalent to those required by this chapter and who wishes to perform analyses for West Virginia clients shall apply for certification in accordance with the procedure set forth in section 2.3. In addition, prior to conducting the on-site laboratory inspection, the laboratory shall submit to the Quality Assurance Office as an additional fee the sum the Division determines to be sufficient to cover the travel, room, and board expenses of the certification inspector(s).

2.5 Renewal of Certification

Applications for renewal of certification shall be submitted no later than 60 days before the expiration date of either interim approval or certification and shall be on the forms provided therefore and shall be accompanied by the appropriate fee.

2.6 Fees

(a) Owners of Laboratories applying for certification or renewal of certification, shall submit the appropriate fee obtained from the annual schedule below along with the required application materials. Fees are nonrefundable.

(b) Laboratories owned or operated by the State of West Virginia or an agency of the Federal Government are exempt from this fee requirement, but shall make appropriate application for certification in accordance with the other provisions of these regulations.

ENVIRONMENTAL LABORATORY CERTIFICATION ANNUAL FEE SCHEDULE

Certification Category	Fee ($)
Atomic Absorption	100.00
Limited Chemistry	100.00
Microbiology	100.00
Gas Chromatography/Mass Spectroscopy	500.00
Radiology	500.00
Aquatic Toxicity	500.00

(c) This section is also applicable to interim approved laboratories.

(d) All application fees collected under these regulations shall be paid into the state treasury into a special fund designated "the Water Quality Management Fund" for defraying the cost of administering these regulations.

2.7 Required Laboratory Personnel Qualifications

(a) One individual shall be designated as the person in responsible charge and irrespective of any local title or designation, is herein referred to as the laboratory manager.

(b) Current employee records shall be maintained, which shall include a resume documenting each employee's training, degrees held, experience, duties, and date(s) of relevant employment.

(c) EDUCATION & EXPERIENCE REQUIREMENTS FOR SUPERVISORS

CERTIFICATION CATEGORY	EDUCATION (years)(1)	+	EXPERIENCE (Years)(2)	SPECIAL REQUIREMENTS
Limited Chemistry	12	+	2	ETC Certificate(3)
&	14	+	1	
Microbiology	16	+	1	
Atomic Absorption	16	+	2	2 years of which must be in atomic absorption
Gas Chromatography	16	+	2	2 years of which must be in gas chromatography
Mass Spectrometry	16	+	2	2 years of which must be in mass spectrometry
Aquatic Toxicity	16	+	2	2 years of which must be in aquatic toxicity testing
Radiology	16	+	2	2 years of which must be in radio-chemistry

Notes:

(1) 12 years = High School diploma or GED
14 years = 2 years of college with emphasis in laboratory technology or a natural science
16 years = Bachelors degree in Chemistry, Biology Physics, or Environmental Science

(2) Substitution: 1 year of laboratory experience within the specific certification category may be used for 1 year of education beyond 12 years.

(3) ETC Certificate = Environmental Training Center Laboratory Technician Certificate required of all POTW supervisors.

(d) A laboratory supervisor who is also the laboratory technician and who does not have the required laboratory experience shall be considered a Supervisor-in-Training and must have his work reviewed by an individual meeting the education and experience requirements.

(e) Those persons now in a supervisory position who do not meet the minimum education and experience requirements may remain in that position as a Supervisor-in-Training until such time as education and experience requirements have been met.

2.8 Duties and Responsibilities of Laboratory Personnel

(a) The laboratory manager or his designee shall administer the operations of the laboratory including the approval of test and analysis results.

(b) Each laboratory supervisor shall provide personal and direct supervision for technical personnel and for the reporting of tests and analyses.

2.9 Management of Laboratories

(a) A certified laboratory may offer as a service those laboratory tests, analyses, or procedures that are within the category or categories for which it is certified.

(b) A laboratory that is certified shall only report to the State any analytical data for samples which are properly labeled, and for which there is assurance the samples have been collected, preserved, stored and transported in such a manner as to assure identity, stability of the sample, and proper ananysis.

(c) This section is also applicable to laboratories holding interim approvals.

2.10 Proficiency Testing

(a) Except when determined by the Quality Assurance Office that an appropriate performance evaluation test is not readily available, all certified laboratories or laboratories seeking certification shall participate in a performance evaluation testing program covering all tests and analyses made available within the category or categories in which the laboratory is certified or seeks certification.

(b) The Quality Assurance Officer shall send or have his agent send to the laboratory, at the laboratory's expense, a set of performance evaluation samples, if available, for the parameters for which certification is requested, after acceptance of the laboratory's application by the Division.

(c) Laboratories certified or those seeking certification shall test or analyze the performance evaluation samples and

submit the results to the Quality Assurance Office or its authorized agent within 30 calendar days (60 days for GC and/or GC/MS samples) of receipt of the samples for evaluation. Any laboratory found to send performance evaluation samples to another laboratory for testing shall be denied certification and not allowed to reapply for certification for a period of five (5) years from the date of the denial.

(d) The laboratory shall have satisfied the requirements for testing for a parameter when it acceptably analyzes both high and low values for that parameter within a given set of performance evaluation samples.

(e) The laboratory shall be informed of the results of such evaluation by the agency providing the test samples and if the laboratory has failed to successfully analyze the samples the Quality Assurance Office may request the laboratory to analyze additional samples.

(f) Acceptable analysis for a value occurs when the reported value falls within the 99 percent confidence interval calculated for that sample from available performance evaluation data.

(g) The laboratory shall have three separate opportunities within 120 days to acceptably analyze one of three different sets of performance evaluation samples for each parameter. Labs that fail to successfully analyze the samples in the time period will not be reevaluated for a period of one year from the last failure.

2.11 Laboratory Inspections

(a) As a condition of obtaining and maintaining certification, a laboratory shall permit and facilitate inspections by personnel of the Division.

(b) The Division shall conduct at least one on-site inspection of a laboratory seeking certification to determine whether or not the laboratory meets the Quality Assurance Office standards as set forth in this chapter.

(c) Regular inspections of laboratories certified in accordance with this chapter shall be conducted during reasonable hours at intervals of not more than two years.

(d) Authorized representatives of the Division may make an announced or unannounced inspection of a certified or an interim approved laboratory whenever the Division in its

discretion considers such an inspection necessary. Any refusal to allow entry to the Division's representative shall be grounds for revocation of certification.

(e) During inspections, consideration will be given to staff competence, working conditions, testing or analytical methods used, quality control procedures, maintenance of records and compliance with the requirements of this chapter.

(f) The laboratory will be furnished with a copy of the inspection report which shall list deficiencies found, and a listing of the parameters for which the laboratory has demonstrated proficiency during the inspection

(g) Whenever deviations from the requirements of this chapter are found, the laboratory shall be afforded not less than fifteen, nor more than thirty days to correct such deviations. If deficiencies affecting the accuracy of results are found, the certification shall be immediately suspended or revoked, in accordance with the provisions of section 2.12.

2.12 Cancellation, Suspension, and Revocation of Certification

(a) Any certified laboratory may cancel its certification in any category or parameter by notifying the Quality Assurance Office in writing of the laboratory's decision to cancel its certification. The laboratory shall enclose its Environmental Laboratory Certification with the letter of notification. This cancellation notification shall not entitle the laboratory to any refund of fees paid.

(b) The Quality Assurance Office may suspend or revoke a laboratory's certification in any or all categories or in any parameter when the laboratory fails to fully meet the requirements of these regulations. The Quality Assurance Office shall notify the laboratory by letter of its suspension and the reason therefor.

2.13 Effect and Duration of Suspension and Revocation

(a) The results of any tests or analyses performed after issuance of a suspension or revocation order for any category or parameter shall not be accepted by the Division as compliance with the requirements for NPDES reporting.

(b) Suspension or revocation shall not be withdrawn until all basis for the suspension or revocation have been eliminated or rectified.

2.14 Notice of Changes

In the event there are any changes in the name, location, ownership, address, telephone number or supervisory personnel of the laboratory to which the provisions of this chapter apply, then the laboratory shall immediately submit written notice thereof to the Division. This section applies only to those supervisory personnel whose responsibilities include compliance monitoring analyses.

2.15 Appeal to Water Resources Board

Any person aggrieved or adversely affected by a revocation order of the chief made and entered in accordance with the provisions of these regulations or by issuance or denial of certification under the provisions of these regulations, may appeal to the Water Resources Board in the same manner as appeals are taken under West Virginia Code Chapter 20-5A-15. A hearing request does not suspend a revocation or denial notice. The Water Resources Board shall be reimbursed from the Water Quality Management Fund for expenses incurred for appeal hearings filed with the Board under this Section.

Section 3 - LABORATORY REQUIREMENTS

This section establishes the Division's requirements which a certified laboratory or a laboratory seeking certification shall continually meet and follow.

Laboratories shall have on the premises and under the control of the laboratory manager all of the equipment and instruments necessary to analyze each parameter in which the laboratory is certified, or is seeking certification. All equipment must meet the minimum standards required by the test method used.

3.1 General Requirements for All Laboratories

(a) Laboratory space and facilities shall be adequate to properly carry out the services performed in, or offered by, the laboratory.

(b) Laboratory work areas shall be arranged so as to minimize problems in contamination, transportation and communication.

(c) Workbench space within the laboratory shall be ample for the tests or analyses to be performed, shall be well lighted and convenient to a sink, water, gas, suction and electrical outlets as are necessary to properly carry out the specific tests or analyses performed in the laboratory.

(d) The temperature and humidity within the laboratory shall be maintained within the limits required for the proper performance of each test or analysis, the proper operation of the various instruments, and the proper storage of expendible supplies.

(e) Each laboratory shall have available equipment and instruments which shall be adequate to properly perform the tests and analyses for the parameters within the categories for which the laboratory is certified or is seeking certification.

(f) The laboratory shall be adequately ventilated to exhaust the gases produced by the tests or analyses performed by and the types of materials handled by the laboratory.

(g) Adequate fire precautions shall be taken, including but not limited to having available a fire extinguisher rated for the types of fires that may be expected.

(h) Appropriate Occupational Safety and Health laws shall be posted and observed. Material Safety Data Sheets shall be made available to all personnel.

(i) pH meters shall have an accuracy of and scale graduations within 0.1 standard unit.

(j) Analytical and pan balances shall be clean, not corroded, and be provided with Class-S weights. Analytical balances shall be capable of weighing to 0.1 milligram minimum. Pan balances shall be capable of weighing to 100 milligrams.

1. The analytical balance must be mounted on a heavy, shockproof table. The balance level must be checked frequently and shall be adjusted as necessary;

2. The analytical balance must be located in an area that is not near laboratory traffic and is protected from sudden drafts and humidity changes;

3. Two Class-S weights shall be available for checking the analytical balance (one in the gram range and one in the milligram range).

(k) Glass or metal thermometers shall be graduated in one degree centigrade increments and readable to 0.5 degrees centigrade for all analyses except fecal coliform analysis; in which case glass or metal thermometers shall be readable to 0.2 degrees centigrade.

1. Continuous temperature recording devices shall be sensitive and accurate to within 1.0 degree centigrade.

2. The column of liquid in glass thermometers shall have no separation.

3. A certified thermometer shall be available for use by the laboratory to calibrate the working thermometers which must be done annually for glass and quarterly for metal thermometers.

(l) Sample storage refrigerators shall maintain an internal temperature of 1 to 4 degrees centigrade.

(m) Laboratory glassware, plastic ware, and metal utensils shall meet the following requirements:

1. Glassware and metal utensils shall resist corrosion, high temperatures, and vigorous cleaning;

2. Flasks, beakers, dilution bottles, culture dishes, culture tubes and other glassware shall be of borosilicate glass and free of chips, cracks, and excessive etching;

3. Volumetric glassware should be Class A and need not be calibrated before use. Non Class A glassware must be

calibrated before use;

4. Metal utensils must be made of stainless steel or other inert material.

(n) Pipettes shall meet the following requirements:

1. Glass pipettes shall be made of borosilicate glass.

2. Plastic pipettes shall be compatable with the reagents being measured (shall not dissolve or show signs of etching or numbers being removed);

3. Plastic pipettes may be used for microbiological procedures;

4. Pipettes shall deliver the required volume quickly and accurately within a 2.5 percent tolerance;

5. Pipettes shall not be excessively etched, mouthpiece or delivery tips shall not be chipped, and graduation marks shall be legible.

(o) Magnetic stirrers shall have variable speeds, and a Teflon coated stirring bar.

3.2 Laboratory Pure Water

Laboratory pure water shall be analyzed for the parameters listed in the table below. If the test results for any of the substances exceed the standards set forth in the table, then corrective action shall be taken and the water retested.

QUALITY OF PURIFIED WATER USED IN MICROBIOLOGY AND TOXICITY TESTS

Test	Monitoring Frequency	Limit
Chemical Tests:		
Conductivity	With each use	>0.5 megohms resistance or <2 umhos/cm at 25 degrees centigrade
pH	With each use	5.5-7.5
Total Organic Carbon	Monthly	<1.0 mg/L
Heavy Metals (single)		
Cd, Cr, Cu, Ni, Pb, Zn	Monthly	<0.05 mg/L
(total)	Monthly	<1.00 mg/L
Ammonia/Organic N	Monthly	<0.10 mg/L
Total Chlorine Residual	With each use	< detection limit

TABLE CONTINUED ON NEXT PAGE

TABLE CONTINUED FROM PREVIOUS PAGE

Bacteriological Tests:		
Heterotrophic plate count	Monthly	<1000 colonies/mL
Water Quality Test	Annually and for new sources	0.8-3.0 ratio
Use Test	Annually and for new sources	Student's t $\leq$ 2.78

3.3 Criteria for Chemical, Gas Chromatography and Mass Spectrometry Testing and Analysis

The Division incorporates from the latest approved edition of Standard Methods, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, and US-EPA SW-846 manuals, or such other methods as shall be approved by the Chief, all the standards, criteria, sample and analytical procedures and methodology, quality assurance and quality control specifications for evaluation and certification purposes under this section.

3.4 Criteria and Procedures for Toxicity Testing

All work shall be performed in accordance with procedures outlined in Standard Methods and/or in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, EPA 600/4-85-013, March 1985 or Short Term Methods for Estimating Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA 600/4-89/001 or such other methods as shall be approved by the Chief for the test to be performed.

3.5 Criteria and Procedures for Radiological Testing

The types of radiation counting systems needed to comply with this chapter are described in 40 CFR 136. Laboratories shall have on the premises and under the control of the laboratory manager those instruments needed to analyze for those activities or specific radionuclides for which the laboratory is certified.

Laboratories shall use the analytical procedures specified in 40 CFR 136 or such other procedures as shall be approved by the Chief.

Section 4 - METHODOLOGY, QUALITY CONTROL and RECORD KEEPING

4.1 Methodology

(a) Sample collection, handling, and preservation techniques specified in 40 CFR 136 shall be followed unless stated otherwise.

1. Samples requiring preservation shall be preserved at the time of collection.

2. Sample collection, handling and preservation techniques specified by the analytical methods shall be followed for the organic parameters analyzed by those methods.

3. The sample report form (chain of custody) shall be completed immediately after collection and shall state the sampling location, date and time of collection, collector's name, and any remarks.

4. After the sample has been collected, the appropriate information as to identity of the sample shall be written on the label. The label shall remain affixed to the sample container and shall not be removed until the required analyses have been completed and the surplus sample has been discarded.

5. Immediately upon delivery of the sample to the laboratory, the sample collector shall complete the appropriate chain of custody section of the sample report form or chain of custody form. A chain of custody form is not required where the sampler is also the analyst and in situations where the laboratory and the sample site(s) are contiguous.

6. Prior to accepting custody of the sample, the laboratory personnel shall be reasonably assured that the sample has met the preservation requirements. If the sample fails to meet these requirements, the sample shall be refused and the chain of custody form so marked.

7. When it is necessary to send samples by mail, bus, courier service, or private shipping, the chain of custody form shall be completed by the sampler and it shall accompany the samples during shipping. Upon receipt of the samples in the laboratory, step (6) shall be followed.

(b) Test procedures identified in 40 CFR 136, shall be utilized for the analysis of NPDES and compliance monitoring parameters.

1. All procedures other than those set forth in subsection (b) are considered alternative analytical methods.

Laboratories shall make special application to the Division for the use of alternative analytical methods and such application shall include a showing of acceptable comparability data.

2. All laboratories which have previously been granted approval to use an alternate analytical method by the USEPA shall be allowed to continue using such method after it submits written proof of the approval to the Division.

(c) General laboratory practices:

1. Chemistry

i. Laboratories utilizing visual comparison devices shall calibrate the standards incorporated into such devices at least once every four months. The laboratory shall make and maintain records of the date and method of each such calibration.

ii. Distilled and deionized water shall have at a minimum, resistivity values between 0.5 - 2.0 megohms-cm (2.0 - 0.5 umhos/cm) at 25 degrees centigrade.

iii. Analytical Reagent grade chemicals should be used for most analyses. Detailed information on reagent grades is set forth in the standard methods and their recommendations must be followed for the reagent quality to be used for each test or analysis.

2. Microbiology

i. Laboratory sterilization procedures shall meet the requirement of 121 degrees centigrade and the time adjusted for the type and volume of material to be sterilized as specified in the standard methods.

ii. Membrane filter assemblies shall be sterilized after each sample filtration series, the end of which is marked by the lapse of 30 minutes or more between sample filtrations.

iii. At least two minutes of ultraviolet light or boiling water may be used on a membrane filter assembly to prevent bacterial carry-over between filtrations.

iv. Dried glassware may be sterilized in a hot air oven at 170 centigrade for a minimum of two hours.

v. Media may be prepared from dehydrated media stock or commercially prepared ampouled media may be used for routine bacteriological procedures.

vi. Rinse water and dilution water used by the laboratory shall be prepared according to instructions in the standard methods and the final pH adjusted to 7.2 ± 0.1.

3. Aquatic Toxicity Testing

i. Natural or artificial sources of water may be used, but natural sources are preferred.

ii. Natural sources shall be free of pollution, low in turbidity, high in dissolved oxygen, low in B.O.D., and the pH shall be favorable to the maintenance of the organisms.

iii. Municipal water supplies are acceptable. Water from a municipal source must be passed through a filter to remove organic chemicals and chlorine before use, and conditioned for the species under test.

iv. Test organisms shall be fed as outlined in Methods of Measuring Acute Toxicity, EPA manual 600/4-85-013.

v. Treatment of diseased or parasitized organisms shall be in accordance with the procedures given in Standard Methods and Methods for Measuring Acute Toxicity, EPA manual 600/4-85-013.

vi. Organisms treated for disease or parasites shall not be used in aquatic toxicity tests for at least 10 days after treatment.

4. Radiological

i. Analytical reagent grade (AR) chemicals shall be used for all analyses, unless otherwise required for an individual analytical procedure.

ii. Radioactive standards and radioactive wastes shall be stored in an enclosed and properly labeled area, either within the laboratory or in a separate room or facility. All radioactive materials shall be safely stored in suitable containers.

iii. Standards and samples shall be prepared in an area of the laboratory specifically designated for and

exclusively used for the preparation of radioactive standards and samples. Adequate precautions shall be taken in this area to ensure against radioactive contamination.

5. Gas Chromatography / Mass Spectrometry

i. Equipment must be capable of meeting the quality control requirements specified in Section 4.2(a)6.

4.2 Quality Control Programs

(a) Each laboratory shall develop, and have on file and available for inspection a written description of the current laboratory quality control program. Such written description shall outline the procedures which the laboratory will use in meeting the quality control requirements set forth in this section. Management, supervisors, and analysts should participate in developing the quality control program. Each participant within the laboratory should have access to a copy of the quality control program and detailed guidelines for implementation of the participant's responsibility. A record of analytical control tests and quality control checks on media, materials, and equipment shall be prepared by the laboratory and retained for at least three years.

1. The written description shall include, but need not be limited to, the following for each category:

i. Procedures which the laboratory will use in meeting the quality control requirements of this chapter pertaining to laboratory equipment and instrumentation, and the frequency with which such procedures will be performed.

ii. Each laboratory shall develop a written laboratory procedures manual which shall set forth, in detail, the methods which the laboratory will use in chemical analyses for all parameters for which the laboratory is seeking certification.

iii. Each laboratory shall record and retain all raw data and calculations derived from analyses and quality control procedures in a manner that shall provide easy verification of the data and calculations during on-site inspections.

2. Limited Chemistry and Atomic Absorption laboratories

shall perform the following internal quality control checks:

i. Each analytical balance, with the exception of electronic balances without internal calibration controls, shall be checked and adjusted annually by a balance service technician. The accuracy of each analytical balance shall be checked on each day of use using at least two Class-S weights, one in the gram range and one in the milligram range. The weights used, weight detected, dates on which checks were performed, analyst, and other pertinent information shall be recorded in a log book. The daily weighing check will be used as an indication of proper operation of electronic balances.

ii. The wavelength setting of the spectrophotometer shall be checked yearly by comparing the wavelength setting to the absorption maxima of colored standards of filters such as didymium glass. The check data shall be recorded in a log book.

iii. pH meters shall be calibrated prior to usage with two pH buffer standards bracketing the value to be measured and the calibration recorded.

iv. Conductivity meters shall be checked over the range of the instrument using at least five concentrations of standard solutions yearly. The cell constant, k, shall be determined from this data. The meter must be calibrated using at least one standard with each use. The results of these calibrations must be recorded in a log book.

v. A daily record of the drying oven temperature shall be maintained for each day on which the drying oven is in use.

vi. The temperature of each refrigerator and each incubator shall be either recorded continuously or recorded daily from in-place thermometers immersed in liquid and placed on one of the shelves being used.

vii. The accuracy of all thermometers used to monitor temperatures shall be verified by comparing the readings of such thermometers with the readings of a certified thermometer. Glass thermometers shall be verified yearly and metal thermometers shall be verified quarterly. A record of each thermometer

identification and the results of the test shall be kept in a log book.

viii. Standard curves consisting at a minimum of one reagent blank and 4 standards shall be prepared for each analysis requiring such a curve. This curve shall be verified in each subsequent analyses by using at least one reagent blank and one standard at or near the concentration levels normally encountered in such analyses. Such verifications shall be considered satisfactory if the results are within 10 per cent of the original curve.

ix. Standard curves used in the analysis of parameters in the Atomic Absorption category shall be prepared as stated above in paragraph viii except that a minimum of one reagent blank and 2 standards are required.

x. In all cases where possible, replicate sample analyses shall be conducted for parameters in the Limited Chemistry and Atomic Absorption categories to verify the precision of the method. Replicate analyses shall be performed at a frequency of 5 percent. Where less than 20 samples are analyzed at one time the analyst shall verify the precision once per analysis batch.

xi. In all cases where possible, spiked sample analyses shall be conducted to verify the accuracy of the method at the same frequency as set forth in paragraph x above. Documentation shall be made of both precision and accuracy testing.

xii. In all cases where possible, standard deviations shall be calculated and documented for all applicable measurements being conducted in the Limited Chemistry and Atomic Absorption categories (spiked sample recoveries). Standard deviations shall be documented in either tabular form or, preferably on control charts.

3. Microbiology

i. A start and finish MF sterile control test of rinse water, media and supplies shall be conducted for each sample filtration series. If the control tests indicate contamination, then all data which has been generated through tests involving the use of the contaminated materials shall be rejected and the

laboratory shall request immediate resampling of those waters involved in the laboratory error.

ii. The MPN test shall be carried through the "confirmed" stage. For Fecal Coliform, confirmation shall be carried out on a minimum of ten percent of the positive samples from the Brilliant Green Lactose Bile Broth using EC medium.

4. Aquatic Toxicity Testing

(a) An acceptable degree of precision for definitive toxicity tests shall be the 95 percent confidence level or fiducial intervals within less than ± 30 percent of the 48 hour or incipient LC50 value.

i. A reference toxicant test shall be performed to establish the validity of effluent toxicity data generated by bioassay laboratories.

ii. Reference toxicant materials are available from the Environmental Protection Agency, Environmental Support Laboratory, Cincinnati, Ohio. Instructions for their use and the expected LC50 values are provided with the samples.

iii. The reference toxicant test must be conducted within 7 days immediately preceding an effluent toxicity test or concurrently with the toxicity test.

iv. A control chart, as described in Methods of Measuring Acute Toxicity-EPA manual should be prepared for each reference toxicant/organism combination, and successive LC50's plotted and examined to determine if the results are within prescribed limits.

v. If the LC50 of reference toxicant does not fall in the expected range for the test organisms, the sensitivity of the test system are suspect. In this case, the test procedure should be examined for defects, and a different batch of test organisms should be employed in repeating the reference toxicant and effluent toxicity test.

5. Radiological

(a) Permanent records shall be maintained of preventive maintenance, periodic inspections, testing, and calibration

for the proper operation of radiation instruments and analytical balances; validation of methods; evaluation of reagents and volumetric equipment; surveillance of results; and remedial actions taken in response to detected defects.

Such records must be kept on file by the laboratory for a period of at least five years.

i. To verify internal laboratory precision, duplicate analyses equal to ten percent of sample analyses shall be performed. The differences between duplicate measurements shall be less than twice the standard deviation of the specific analysis as described in Environmental Radioactivity Laboratory Intercomparison Studies Program, EPA 600/4-77-001

ii. One background and one calibration standard must be tested each day at a 5 percent level or fraction thereof.

iii. Work records of quantitative tests shall indicate final results together with all corresponding instrument readings and calculations. Where instrumentation produces tracings or printouts, such tracings or printouts may serve as the work record.

6. Gas Chromatography and Mass Spectrometry

(a) The frequency and procedures for satisfying each of the requirements in (b) and (c) below are described in detail in EPA publication SW-846, 40 CFR 136 and/or in the USEPA Contract Laboratory Program Statement of Work for Organics Analysis.

(b) Minimum quality control operations necessary to satisfy the analytical requirements associated with the determination of semi-volatile and volatile organic compounds by gas chromatographic methods will include the following:

i. Evaluation of Appropriate Blank Materials

ii. Surrogate Spike Response Monitoring

iii. Matrix Spike and Duplicate Analyses

iv. Verification of Response and Calibration

v. Confirmational Analysis

(c) Minimum quality control operations to satisfy the analytical

requirements associated with gas chromatographic/mass spectrometry determinations of semi-volatile and volatile compounds shall be as follows:

i. Documentation of GC/MS Mass Calibration and Tune Abundance Patterns

ii. Documentation of GC/MS Response Factor Stability

iii. Internal Standard Response and Retention Time Documentation

iv. Surrogate Spike Recovery Monitoring

v. Matrix Spike and Duplicate Analyses

4.3 Records and Data Reporting

(a) Records of analyses, including but not limited to all raw data, calculations, quality control data, and laboratory reports, shall be kept by the laboratory for at least three years unless otherwise specified.

(b) The following information shall be retained by the laboratory as part of the records of analysis and the records of custody:

1. The laboratory number or other form of identification of the sample;

2. The date, time, specific site of sampling, and the name of the person who collected the sample or the laboratory which submitted the sample;

3. The date and time when the laboratory received the sample, whether the sample was received preserved or unpreserved;

4. The date and time of analysis of the sample;

5. The person or persons who performed the analysis;

6. The type of analysis performed and the analytical method or methods employed;

7. The results of the analysis and the raw data generated by the analysis; and

8. The name and address of the laboratory to which the

sample was forwarded, if the analysis was not performed at the laboratory which first received the sample.

(c) If the chain of custody information is reported on a chain of custody form, a copy of the form shall be attached to the sample report form.

(d) The results of each analysis shall be calculated and entered on the sample report form which is to be forwarded to the person requesting the analysis of the sample. A careful check shall be made to assure that each result entered on the sample report form is the same as the result entered on the bench sheet.

(e) The original or true duplicate of the results of the test or analysis shall be sent promptly to the person who requested such tests or analysis, and shall be signed by the laboratory manager or a designee whose designation is in writing and has been submitted to the Division.

(f) Whenever a laboratory refers samples to another laboratory, the person ordering the examination shall receive the original laboratory report or a true duplicate of that report on the form of the laboratory that actually performed the test or analysis.

(g) If results are entered into a computer storage system, a printout of the data should be verified with the raw data.