American Water Works Association
Rocky Mountain Section

**OUTSTANDING WATER LABORATORY AWARD**
**NOMINATION FORM**

This award recognizes an outstanding water laboratory within the Rocky Mountain Section of American Water Works Association (RMSAWWA). It is awarded annually to recognize a water laboratory for exceptional performance, dedication and teamwork.

INSTRUCTIONS: All blanks must be completed for Award eligibility, additional sheets may be attached if needed. A copy of the application must be submitted by June 15th of each calendar year to the Awards Committee Chair, Karen Burgi, who can be reached at (720) 834-4259. Applications may be submitted electronically to burgikc@bv.com or by hard copy to Karen Burgi, Black & Veatch Corporation, 4600 S Syracuse St., Ste. 800, Denver, CO 80237. You will receive a phone call or e-mail acknowledging receipt of the application. *If you do not receive confirmation of receipt of the application within one week, please contact Karen Burgi by phone.* Applications including supporting documentation will not be returned.

GUIDELINES: This award nomination form has been developed as a self check based on the honor system. The person responsible for lab operations and another person not associated with laboratory operations will act as auditors and should complete the form together. Any pertinent supporting information that is submitted in addition to this nomination form is welcome.

In order to permit fair competition between labs that do not have the same processes, analyses or equipment, all final scores will be calculated as a percentile of maximum points available to the areas that pertain directly to each facility. So if a lab has a process "A" but not process "B" as does a competitor, the total maximum points available would be the sum of all maximum items within each area that pertains directly to that specific lab. Final scores will be calculated by dividing the total number of points earned by the maximum applicable points for that specific laboratory. Mark N/A in the score column for items that are not applicable. Also consider providing a brief explanation for non-applicable items to better clarify why the item is non-applicable.

American Water Works Association
Rocky Mountain Section

# Water Laboratory Information

Name of Laboratory _____

Employer: _____

Employer Mailing Address:_____

E-mail Address:_____

Employer Telephone Number_____

Summary of Water Treatment Facility (WTF) treatment processes:_____

_____

_____

Average and Peak Capacity of WTF: _____

Name of Laboratory Supervisor _____

Name of additional inspector _____

Number of laboratory employees _____

Names and Titles _____

_____

_____

_____

_____

Number of water quality tests performed per year _____

Analytical methods laboratory is certified to perform

_____

_____

_____

Additional tests laboratory performs that are not certified _____

_____

_____

_____

_____

Type and models of test equipment

_____

_____

_____

_____

_____

Describe any violations the laboratory has had in the last year and the corrective actions that were made to address them. _____
_____
_____

Provide date of the most recent State performed audit. Describe any findings of the audit and actions made to address the findings. _____
_____
_____

Describe interesting facts or accomplishments about your laboratory that have occurred in the last year. _____
_____
_____
_____

American Water Works Association
Rocky Mountain Section

# Water Laboratory Self Check

| **Organization** | Inadequate or Not Available | Adequate or Available | Good | Very Good | Excellent | Score |
|---|---|---|---|---|---|---|
| An organizational chart is available indicating the chain-of-command. Administrative staff, technical staff and support staff are identified. | **0** | N/A | N/A | N/A | **4** | |
| A job description defining the job duties of each employee is available. | **0** | **1** | **2** | **3** | **4** | |
| Percentage of Lab employees that are Rocky Mountain Water Quality Analyst Association certified Level I, or equivalent. | **0** | 1-25% | 2-50% | 3-75% | 4-100 % | |
| Percentage of Lab employees that are Rocky Mountain Water Quality Analyst Association certified Level II, or equivalent. | **0** | 1-25% | 2-50% | 3-75% | 4-100 % | |
| Percentage of Lab employees that are Rocky Mountain Water Quality Analyst Association certified Level III, or equivalent. | **0** | 1-25% | 2-50% | 3-75% | 4-100 % | |
| Records are maintained which document staff technical training. | **0** | **1** | **2** | **3** | **4** | |
| The laboratory is sufficiently staffed for the numbers and types of analyses performed. | **0** | **1** | **2** | **3** | **4** | |
| **MAXIMUM POINTS IN THIS SECTION 28** | **Total Points This Section** | | | | | |
| **Education - Microbiology** | Inadequate or Not Available | Adequate or Available | Good | Very Good | Excellent | Score |
| Supervisor of analyst or senior analyst has a bachelors degree in microbiology, biology, or equivalent with at least one college-level laboratory course in environmental microbiology. | **0** | N/A | N/A | N/A | **4** | |
| Analyst has a high school education, 3 months bench experience in microbiology, training in microbiological analysis of drinking water acceptable to the State/EPA and a minimum of 30 days on the job training under an experienced analyst. | **0** | N/A | N/A | N/A | **4** | |
| Analyst demonstrates acceptable results for unknown Performance Testing (PT) samples before analyzing compliance samples. | **0** | N/A | N/A | N/A | **4** | |
| **MAXIMUM POINTS IN THIS SECTION 12** | **Total Points This Section** | | | | | |

| **Education – Chemistry** | Inadequate or Not Available | Adequate or Available | Good | Very Good | Excellent | Score |
|---|---|---|---|---|---|---|
| Supervisor (same as above) of analyst has a bachelors degree with a major in chemistry or equivalent and at least one year of experience in the analysis of drinking water. | **0** | N/A | N/A | N/A | **4** | |
| Analyst has a bachelors degree with a major in chemistry or equivalent and at least on year of experience in the analysis of drinking water. | **0** | N/A | N/A | N/A | **4** | |
| If the analyst is responsible for the operation of analytical instrumentation, he/she should have completed specialized training offered by the manufacturer or another qualified training facility or served a period of apprenticeship under an experienced analysts. | **0** | N/A | N/A | N/A | **4** | |
| The laboratory technician should have at least a high school diploma or equivalent, complete a method training program under an experienced analyst and have six months bench experience in the analysis of drinking water samples. | **0** | N/A | N/A | N/A | **4** | |
| **MAXIMUM POINTS IN THIS SECTION 16** | **Total Points This Section** | | | | | |
| **Equipment** | Inadequate or Not Available | Adequate or Available | Good | Very Good | Excellent | Score |
| Separate refrigerators and freezers are used for samples and for reagents/standards. | **0** | N/A | N/A | N/A | **4** | |
| All equipment is in good operating condition and is protected from rust, corrosion, laboratory contamination and other causes of deterioration. | **0** | **1** | **2** | **3** | **4** | |
| An instrument maintenance log is maintained for each instrument. | **0** | **1** | **2** | **3** | **4** | |
| Calibration records are maintained for the instruments that require calibration and the records are up-to-date. | **0** | **1** | **2** | **3** | **4** | |
| **MAXIMUM POINTS IN THIS SECTION 16** | **Total Points This Section** | | | | | |
| **Safety** | Inadequate or Not Available | Adequate or Available | Good | Very Good | Excellent | Score |
| A written Chemical Hygiene Plan is established and available and is updated as necessary. | **0** | **1** | **2** | **3** | **4** | |
| Safety goals and accomplishments are documented. A Safety Officer is identified and responsible for maintenance of the Chemical Hygiene Plan and safety functions. | **0** | N/A | N/A | N/A | **4** | |
| Written procedures are in place for reporting accidents and correcting safety deficiencies. | **0** | **1** | **2** | **3** | **4** | |

| | | | | | | |
|---|---|---|---|---|---|---|
| The laboratory has written procedures for disposal of hazardous reagents, samples and chemicals. | **0** | **1** | **2** | **3** | **4** | |
| Appropriate fire extinguishers are available and are subject to regular preventative maintenance and recharging which is recorded. | **0** | **1** | **2** | **3** | **4** | |
| Adequate eyewash and safety showers are available. | **0** | **1** | **2** | **3** | **4** | |
| Material Safety Data Sheets (MSDS) for all chemicals used in the laboratory are maintained and readily available. | **0** | N/A | N/A | N/A | **4** | |
| Appropriate safety equipment is available for use, i.e. safety shields, gloves, first aid kits, fire blankets, chemical spill kits. | **0** | **1** | **2** | **3** | **4** | |
| All chemicals are stored in a safe manner. Acids, bases, flammables, oxidizers, organics, etc. are segregated in storage areas as appropriate. | **0** | **1** | **2** | **3** | **4** | |
| "No eating" signs are displayed at the entrances to the laboratory. | **0** | **1** | **2** | **3** | **4** | |
| Evacuation plans are posted in the laboratory. | **0** | **1** | **2** | **3** | **4** | |
| Warning signs are posted in hazardous areas. | **0** | **1** | **2** | **3** | **4** | |
| Regular safety classes are held and attendance is documented. | **0** | **1** | **2** | **3** | **4** | |
| Eye protection is worn by all personnel in all areas that require eye protection and these areas are clearly defined and labeled. | **0** | **1** | **2** | **3** | **4** | |
| **MAXIMUM POINTS IN THIS SECTION 56** | **Total Points This Section** | | | | | |
| **Data Reporting and Documentation** | Inadequate or Not Available | Adequate or Available | Good | Very Good | Excellent | Score |
| Chain-of-custody records are maintained for each sample indicating location, time, date, and person collecting the sample, the type of container and any preservation used. The time, date and person receiving custody of the sample in the laboratory is clearly indicated. | **0** | **1** | **2** | **3** | **4** | |
| Bench sheets or computer worksheets are kept for each analytical batch indicating the person performing the test, the date and time of the test, the method used and any other information critical to the method. | **0** | **1** | **2** | **3** | **4** | |
| If a calculation procedure is used to obtain the final results of a test, it is listed on the bench sheet, or in the Standard Operating Procedure (SOP), along with the final results. | **0** | **1** | **2** | **3** | **4** | |
| All records are written in waterproof ink. Errors are lined out with a single line with the initials of the person making the change and the date written beside the line-out. | **0** | **1** | **2** | **3** | **4** | |
| Does the laboratory have a policy to address manual integrations? | **0** | N/A | N/A | N/A | **4** | |
| Are all documents and records readily retrievable? Can the history of the sample from receipt to disposal be traced? | **0** | N/A | N/A | N/A | **4** | |
| All records are maintained by the laboratory in accordance with Federal & State regulations and written record disposal procedures are in place. | **0** | **1** | **2** | **3** | **4** | |
| **MAXIMUM POINTS IN THIS SECTION 28** | **Total Points This Section** | | | | | |

| Miscellaneous, Resources and Text's | Inadequate or Not Available | Adequate or Available | Good | Very Good | Excellent | Score |
|---|---|---|---|---|---|---|
| The laboratory is maintained in a neat, clean and well organized manner. | **0** | **1** | **2** | **3** | **4** | |
| Controlled access security is provided for samples, either as part of the treatment facility security or the lab itself. | **0** | **1** | **2** | **3** | **4** | |
| Access (via hard copy, CD or internet) to the current edition of the Standard Methods for Examination of Water and Wastewater is available depending on testing procedure. | **0** | N/A | N/A | N/A | **4** | |
| Access (via hard copy, CD or internet) to the Methods of Chemical Analysis of Water and Wastes, USEPA 600/4-79-020 (Revised March 1983) is available. | **0** | N/A | N/A | N/A | **4** | |
| Access (via hard copy, CD or internet) to the Handbook for Analytical Quality Control in Water and Wastewater, USEPA600/4-79-019, March 1979 is available. | **0** | N/A | N/A | N/A | **4** | |
| Access (via hard copy, CD or internet) to 40 CFR 136 or most current edition, is available. | **0** | N/A | N/A | N/A | **4** | |
| **MAXIMUM POINTS IN THIS SECTION 24** | **Total Points This Section** | | | | | |

| Quality Assurance and Quality Control | Inadequate or Not Available | Adequate or Available | Good | Very Good | Excellent | Score |
|---|---|---|---|---|---|---|
| The laboratory has a written Quality Assurance Manual and the QA Manual covers the following topics from the Manual for the Certification of Laboratories Analyzing Drinking Water USEPA 815-R-05-004, Fifth Edition 2005. | **0** | **1** | **2** | **3** | **4** | |
| Are the following in either the Quality Assurance (QA) or Standard Operating Procedure (SOP) manuals: | | | | | | |
| Sample collection and handling. | **0** | N/A | N/A | N/A | **4** | |
| Preservation techniques. (Methods of preserving samples before analysis) | **0** | N/A | N/A | N/A | **4** | |
| Maximum holding times for samples before analysis. | **0** | N/A | N/A | N/A | **4** | |
| Analytical methods used. | **0** | N/A | N/A | N/A | **4** | |
| Calibration procedures for each analytical test. | **0** | N/A | N/A | N/A | **4** | |
| Calculations required to reach a final result for each analytical test. | **0** | N/A | N/A | N/A | **4** | |
| Acceptance criteria for each analytical test. | **0** | N/A | N/A | N/A | **4** | |
| Documentation includes references used for establishing methods for calculating accuracy, calculating precision, detection limits and expression of results. | **0** | N/A | N/A | N/A | **4** | |
| Procedures for preparation of correction action reports. Detailed info on when corrective action is necessary and what corrective action is taken for common failures. | **0** | N/A | N/A | N/A | **4** | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Data review & rejection (policies on outliers, cross checking & calculations for rejection) | **0** | N/A | N/A | N/A | **4** | |
| Instruments Preventative Maintenance measures and frequency. | **0** | N/A | N/A | N/A | **4** | |
| Procedures and frequency of system audits. | **0** | N/A | N/A | N/A | **4** | |
| The QA Manual is reviewed and updated on a regular basis and the date of last review/update, revision number, and signatures are on the first page of the manual. | **0** | N/A | N/A | N/A | **4** | |
| Analysts have access to the most recent QAP or SOP. | **0** | N/A | N/A | N/A | **4** | |
| SOP's for each test performed in the laboratory are available. | **0** | N/A | N/A | N/A | **4** | |
| SOP's are reviewed at regular intervals with the last review date listed on each SOP. | **0** | N/A | N/A | N/A | **4** | |
| Each SOP must list the reference method. | **0** | N/A | N/A | N/A | **4** | |
| Significant deviations from the reference method are emphasized and EPA validated | **0** | N/A | N/A | N/A | **4** | |
| Does QA Manual or SOPs contain information about the safety hazards to be encountered in each method? | **0** | N/A | N/A | N/A | **4** | |
| Chemical containers, including solutions prepared in the laboratory, are labeled with the date of receipt, the date of opening and the expiration date, with initials included with all three labels. | **0** | N/A | N/A | N/A | **4** | |
| Analytical SOPs detail chemical purity requirements if reagent grade chemicals are not acceptable for the method. | **0** | N/A | N/A | N/A | **4** | |
| Logs exist detailing the preparation of all reagents. Log must include the date, the lot number of the chemicals, the person performing the preparation, volumes and weights of materials used. They may include details and results of any standardization procedure followed and time of preparation. | **0** | N/A | N/A | N/A | **4** | |
| Reagent traceability – is it clear in all analytical documentation which standards and reagents that have been prepped were used with that batch. | **0** | N/A | N/A | N/A | **4** | |
| All balances are checked for accuracy against the certified weights on a daily basis when in use. | **0** | N/A | N/A | N/A | **4** | |
| Balance calibrations by service technicians are performed on a regular basis (at least once every five years for analytical balances) and records are maintained of the calibration. | **0** | N/A | N/A | N/A | **4** | |
| Analyte-specific control limits are established by the lab using control charts or the limits specified by the method reference. | **0** | N/A | N/A | N/A | **4** | |
| A minimum of a three point calibration (Method Detection Limit (MDL), mid-range and upper calibrated point) is used for each analytical procedure. If a blank is included in the calibration, a minimum of 3 other points must be used. | **0** | N/A | N/A | N/A | **4** | |
| Is the calibration of mechanical pipettes and burettes verified at least quarterly? | **0** | N/A | N/A | N/A | **4** | |
| Do glass microliter syringes come with a certificate certifying their accuracy, or is their initial accuracy verified in the laboratory? | **0** | N/A | N/A | N/A | **4** | |
| Are instrument calibrations verified through the analysis of a second-source standard obtained from a different manufacturer or lot number? | **0** | N/A | N/A | N/A | **4** | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Is the lowest calibration standard the lowest level at which quantitative results are reported? | **0** | N/A | N/A | N/A | **4** | |
| Is the highest calibration standard the highest level at which quantitative results are reported (except as permitted in the method). | **0** | N/A | N/A | N/A | **4** | |
| Laboratory contamination is monitored through analysis of a reagent blank in each analytical batch. | **0** | N/A | N/A | N/A | **4** | |
| Quality control measures for each batch are analyzed at a frequency prescribed in the method. | **0** | N/A | N/A | N/A | **4** | |
| Are matrix spikes/matrix spike duplicates performed as required by methods? | **0** | N/A | N/A | N/A | **4** | |
| A NIST traceable certified thermometer is available. A record is maintained of the annual calibration of other thermometers in the laboratory against the NIST thermometer.(Reference thermometer must be certified at least every five years) | **0** | N/A | N/A | N/A | **4** | |
| The temperature of refrigerators is logged daily using a thermometer calibrated against an NIST thermometer. | **0** | N/A | N/A | N/A | **4** | |
| The bulb of the thermometer used is submerged in water or other suitable liquid. | **0** | N/A | N/A | N/A | **4** | |
| Laboratory pure water is checked annually for suitability and heavy metals. | **0** | N/A | N/A | N/A | **4** | |
| A monthly check of lab water for residual chlorine, conductance or resistivity, plate count and pH is performed. | **0** | N/A | N/A | N/A | **4** | |
| Records are maintained of these lab water checks. | **0** | N/A | N/A | N/A | **4** | |
| Laboratory pure water should have a conductivity value < 2.0 µS at 25°C. Records are kept of regular QC checks of the laboratory water. | **0** | N/A | N/A | N/A | **4** | |
| Each lot number of membrane filters and sample bottles is checked for sterility prior to use or on a quarterly basis, and the check recorded. | **0** | N/A | N/A | N/A | **4** | |
| Sterile buffered water is prepared in accordance with the current version of Standard Methods and preparation data recorded. Sterility of purchased buffered water is checked. | **0** | N/A | N/A | N/A | **4** | |
| Each batch of dilution water is checked for sterility and records maintained. | **0** | N/A | N/A | N/A | **4** | |
| A thermometer calibrated against an NIST traceable thermometer is used to monitor incubator temperatures. If used to monitor a 44.5+0.2°C incubator, the thermometer is calibrated in at least 0.2 °C increments. Incubator temperatures are logged twice daily. | **0** | N/A | N/A | N/A | **4** | |
| All procedures requiring the use of blanks, calibration checks, duplicate samples and other QC data are clearly recorded on the bench sheets. | **0** | N/A | N/A | N/A | **4** | |
| A QA Manager or Officer is identified and responsible for the QA Manual and other QA functions. | **0** | N/A | N/A | N/A | **4** | |
| Reagent water used in trace metals analysis must have a resistivity of >16.5 megohm-cm at 25°C and a log is kept of the daily readings. Records are kept of regular QC checks (blanks) of the laboratory water. | **0** | N/A | N/A | N/A | **4** | |
| A functional fume hood is used and its face velocity is checked yearly and the check recorded. | **0** | N/A | N/A | N/A | **4** | |

| | | | | | | |
|---|---|---|---|---|---|---|
| The results of the most recent PT study, or equivalent, were acceptable. Reward 2 points for acceptable results all certified methods, and 4 points if additional PT studies are performed on non-certified methods. | **0** | N/A | N/A | N/A | **4** | |
| Initial Demonstration of Capability (IDCs) – Method performance is demonstrated as specified by the published method or if not specified, a minimum of four replicates of a quality control or reference sample are processed through all steps of the analytical procedure. | **0** | N/A | N/A | N/A | **4** | |
| IDCs are performed for each analyst and each instrument. Yearly ongoing proficiency with blind Quality Control samples or PT samples is demonstrated. | **0** | N/A | N/A | N/A | **4** | |
| MDLs are calculated, annually or as method specifies, for all chemistry analytes and system background is below the MDL. | **0** | N/A | N/A | N/A | **4** | |
| Electronic calculations are verified initially and periodically by manual calculations. | **0** | N/A | N/A | N/A | **4** | |
| Access to computer programs and electronic data is limited to appropriate personnel. An active security system is in place. | **0** | N/A | N/A | N/A | **4** | |
| Spreadsheets and other calculations programs are locked to prevent alteration of formulas, where possible. | **0** | N/A | N/A | N/A | **4** | |
| Computerized data has a backup system. | **0** | N/A | N/A | N/A | **4** | |
| **MAXIMUM POINTS IN THIS SECTION 240** | **Total Points This Section** | | | | | |
| **Microbiology Testing** | Inadequate or Not Available | Adequate or Available | Good | Very Good | Excellent | Score |
| Each lot of sterile sample collection containers and sterile Petri dishes are checked for sterility. | **0** | N/A | N/A | N/A | **4** | |
| Laboratory media preparation records include: date of preparation; type of medium; lot number; sterilization time and temperature; final pH; technician's initials. Media is checked for sterility and appropriate reactions using appropriate QC organisms. | **0** | N/A | N/A | N/A | **4** | |
| All prepared media meets guidelines as specified in Standard Methods. | **0** | N/A | N/A | N/A | **4** | |
| Expired media, reagents, chemicals, etc. are not used in analyses and are discarded appropriately. | **0** | N/A | N/A | N/A | **4** | |
| For the Total Coliform Rule, all total coliform positive samples are tested for the presence of either fecal coliforms or E. coli. | **0** | N/A | N/A | N/A | **4** | |
| For the Total Coliform Rule, proper authorities are notified promptly by laboratory of positive total coliform, fecal coliform or E. coli results and documentation is provided. | **0** | N/A | N/A | N/A | **4** | |
| For the Total Coliform Rule, a written site and sampling plan exists and is followed. | **0** | N/A | N/A | N/A | **4** | |
| **MAXIMUM POINTS IN THIS SECTION 28** | **Total Points This Section** | | | | | |

# SCORE SHEET

| AREA | Maximum Applicable Points | Maximum Applicable Points This Laboratory | Actual Points Earned |
|---|---|---|---|
| **Organization** | **28** | | |
| **Education - Microbiology** | **12** | | |
| **Education - Chemistry** | **16** | | |
| **Equipment** | **16** | | |
| **Safety** | **56** | | |
| **Data Reporting and Documentation** | **28** | | |
| **Miscellaneous** | **24** | | |
| **Quality Assurance and Quality Control** | **240** | | |
| **Microbiology Testing** | **28** | | |
| **Total Points** | **448** | | |

| | **Total Applicable Points** | **Total Points Earned** |
|---|---|---|
| | | |

**Final Score = Total Earned/Total Applicable * 100**

Submitted by: (Signature) _____

Printed Name and Title: _____

Company/Employer: _____

Mailing Address: _____

Work Telephone No.: _____

Date: _____