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Area	Laboratory
Applicability	Taylor + Trenton + Wayne

Clinical Laboratory Reagent Water (CLRW) Quality

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

The purpose of this document is to describe the process of monitoring Clinical Laboratory Reagent Water (CLRW). CLRW is used for routine laboratory tests in chemistry, hematology and other areas. It is also used for preparation of quality control materials and ~~and~~ to reconstitute specimens from College of American Pathologists (CAP) surveys. Minimum monitoring of water includes resistivity and microbiology cultures.

II. PROCEDURE:

A. **Resistivity**
Daily measurement of resistance is an indirect measure of dissolved ions, and is required to assure water quality. It is important that water used to prepare reagents, calibrators, etc., in the medical laboratory, be free of dissolved ions. The resistance of water decreases in proportion to the amount of dissolved ions present. As ionized impurities are removed, resistance increases. Measurement of resistance reflects the efficiency of the deionizing filters and resins in removing dissolved ions.

1. Read and document the resistance on the Medica unit once each day.
2. Water resistance must equal or exceed > 5 MΩ.cm.

B. **Microbiology Cultures**
Bacteria may inactivate reagents, contribute to total organic contamination, or alter optical properties of test solutions.

1. Water cultures are collected and submitted to Microbiology ~~once a month~~at least quarterly, or as needed, from Hematology, Chemistry, and any CLRW water source.

2. Medica Water Culture: Wipe the water outlet spigot with a sterile 70% alcohol prep pad or use a swab saturated with 70% alcohol. Allow water to run for up to 2 minutes. Fill a sterile urine container.
3. CLRW Source Culture: After cycling the water for 60 seconds, fill a sterile urine container with CLRW.
4. Place a sterility culture order for each water system in the LIS.
5. Results are printed and reviewed for acceptability (<10 colony forming units/ milliliter).
6. If results are not acceptable (>10 colony forming units/milliliter):
    a. Repeat the water culture once, making sure to properly clean the water outlet spigot as stated above.
    b. If the water culture fails a second time:
        i. Perform the sanitization procedure. See the Laboratory Water Supply (Medica) Maintenance procedure.
        ii. If water culture fails after sanitization, the outlet tubing may need to be replaced. This may be performed by laboratory staff if replacement tubing is available. Otherwise, Evoqua service may need to be called to replace the tubing.
        iii. Call Evoqua for additional service as needed.
7. Results are stored in appropriate file.

C. **Service**

1. Service is performed by the manufacturer of the system (Evoqua Water Technologies). The phone number and site number are posted on the instrument.
2. Reports should be emailed to the Laboratory Manager or Lead Medical Technologist and filed appropriately.

D. **Corrective Action**
Records of corrective action when water quality does not meet specifications is required for all of the above.

Attachments

Canton Water Quality Control

Deionized Water Quality - Trenton

Deionized Water Quality -Wayne

Deionized Water Quality-Taylor

Laboratory Water Culture Collection Form

Approval Signatures

Step Description	Approver	Date
Medical Director	Muhammad Arshad: Chief, Pathology	5/30/2024
Policy and Forms Steering Committee Approval (if needed)	Tanya Williams: Medical Technologist Lead	5/20/2024
	Christopher Ferguson: Dir, Lab Operations B	5/20/2024
	Kristen DiCicco: Mgr, Laboratory	5/20/2024
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Applicability

Taylor, Trenton, Wayne