

JUVENILE COURT HEALTH SERVICES DENTAL PROCEDURES

Subject: DENTAL UNIT WATERLINE (DUWL)		Original Issue Date:	Procedure # 034
		Supersedes:	Effective Date: 5/01/18
Departments Consulted:	Approved By: (Signature on File) Head Dentist (Signature on File) Medical Director	Approved by: (Signature on File) Health Services Administrator	

PURPOSE:

To describe the purpose of the Dental Unit Waterline and its utilization.

DEFINITION:

A dental unit waterline consists of tubes in the dental chair unit that connect from a self-contained water bottle which supplies water to the dental handpieces, ultrasonic scaler (Cavitron), and air/water syringe. Due to the nature of the tubing, microbial colonization and biofilm accumulation on the inner lining of the tubes may occur. The Centers for Disease Control and Prevention (CDC) recommends that dental unit water used in non-surgical procedures measure ≤ 500CFU/mL of water, a standard set for drinking water by the Environmental Protection Agency (EPA). Although the self-contained water bottle is filled with drinking quality distilled water, the water should be treated with an EPA-registered filtration device or non-toxic waterline cleaner to minimize waterline contamination with heterotrophic bacteria.

The waterline system must be regularly maintained and monitored to ensure the water quality is safe for patient and staff. Water quality testing is performed with an in-house water testing kit quarterly (every three months). Water samples are collected from each waterline annually and are tested by a third-party testing service vendor for quality assurance.

PROCEDURE:

Waterline Treatment (2 methods)

Method A

1. Waterlines from each dental chair are initially “shocked” with **Sterilex® Liquid Ultra by Crosstex**.
2. Mix one bottle of *Sterilex Liquid Ultra Solution 1* with a bottle of *Solution 2* (forming a pink color solution) into the emptied self-contained water bottle equipped on the dental chair. Flush each waterline (high speed handpiece, ultrasonic scaler, and air/water syringe) until the “pink” solution comes out through the line into a collecting container.
3. Leave the lines with residual “pink” solution overnight.
4. At the beginning of the next day, discard any “pink” solution remaining in the bottle and rinse the bottle with clean distilled water.
5. Fill the water bottle with clean distilled water. Flush each line until the water bottle is empty or the water is no longer pink when discharged from the lines.

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6. The chair waterline is ready to use with a filtration device by **DentaPure® Dental Unit Water Purification System by Crosstex**.
7. Remove the cartridge from the package. Follow the manufacturer's instructions (YouTube video) to install the cartridge to the tube that is connected to the self-contained water bottle. Fill the water bottle with clean distilled water.
8. Flush each waterline for at least 30 seconds. The water in the bottle is ready to be used.
**Reminder: All waterlines must be flushed for at least 1-2 minutes at the beginning of each morning, and 30 second in between patients (for treatment).*
9. Manufacturer recommends the filtration cartridge to be replaced annually.

Method B

1. Perform this method when the DentaPure filtration cartridge is not available or the cartridge filtration system is not effective to keep the waterline clean.
2. Perform Step 1 to 5 in Method A at the end of each month to "shock" the waterlines.
3. Add 3 pumps of non-toxic **MicroCLEAR® Waterline Cleaner by RowPar Pharmaceuticals** in the emptied clean self-contained water bottle, and then fill the bottle with clean distilled water on a daily basis.
4. Flush the waterlines for 30 seconds to a minute after Step 3. The water is ready to use.

Waterline Monitoring

In-House (Quarterly)

1. Water samples must be collected randomly from the waterlines quarterly (every three months).
2. Staff must wear gloves during the water testing procedures.
3. Select a waterline to collect a water sample, i.e. line for high speed handpiece, use alcohol wipe to clean the tip of the line (where water is discharging), flush the water for 30 seconds, and repeat this step once more.
4. Collect water sample into the in-house water testing kit container (see the attached picture and the manufacturer's instruction guide) by **Aquasafe Water Test Kit HPTC**.
5. Leave the membrane filter with the water collected in the container. Lay the sampler case horizontally for 30 seconds to 2 minutes.
6. Discard the water sample from the container, re-insert the paddle to the case with the filter side down, and incubate the testing kit in room temperature for seven days.
7. Examine the filter, perform the colony counts and record the result in the log binder.
8. If the colony count is over 500 CFU/mL or too numerous to count, then (all) waterlines from the testing chairs must be treated as per the "shocking" procedure (Waterline Treatment, Method A, Step 1 to 5). ***NOTE: The chair is not safe to use for treatment until re-test procedures are performed and the result is at optimum or zero colony count.**

Third-party Test Service (Annually)

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1. Obtain ***Dental Unit Waterline Testing Service by ProEdge Dental Products*** from the dental supply vendor.
2. Collect water sample from each waterline on the dental chair that is used for treatment.
3. Perform Steps 2 and 3 of the In-house water testing procedures before collecting the water samples.
4. Pack the testing samples (collected in the plastic tubes) in an ice-packed container or envelope. Complete the log form that was included.
5. Mail the package on the same day the samples are collected by an over-night freight service, i.e. FedEx or UPS.
6. The service vendor will mail the test result. Keep the result for record.

REFERENCES:

Centers for Disease Control and Prevention (CDC). Guidelines for Infection Control in Dental Health-Care Settings 2003

American Dental Association (ADA): Oral Health Topics on Dental Unit Waterlines, Infection Control