Adventist HealthCare

TRAINING UPDATE

Lab Location:	Shady Grove Medical Center	**Date Distributed:**	3/6/24
Department:	Chemistry	**Due Date:**	4/6/24
		Implementation:	**3/1/24**

DESCRIPTION OF PROCEDURE REVISION

Name of procedure:
SGMC.C3074 Evoqua Water System for Atellica Solution
Description of change(s):
Maintenance (section 5D) added monthly reading of water quality; document on Atellica Maintenance log. AG.F590 Atellica Solution Maintenance Log

Document your compliance with this training update by taking the quiz in the MTS system.

SGMC.C 3074 EVOQUA Water System for Atellica Solution

Copy of version 2.0 (approved and current)

Last Approval or Periodic Review Completed	3/4/2024
Next Periodic Review Needed On or Before	3/4/2026
Effective Date	3/4/2024

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Printed By Demetra Collier (110199)

Organization Adventist HealthCare

Approval and Periodic Review Signatures

Type	Description	Date	Version	Performed By	Notes
Approval	Lab Director	3/4/2024	2.0	Nicolas Cacciabeve MD Nicolas Cacciabeve	
Approval	Core lab approvals	3/4/2024	2.0	Robert SanLuis Robert SanLuis	
Approval	Lab Director	11/7/2023	1.0	Nicolas Cacciabeve MD Nicolas Cacciabeve	
Approval	Core lab approvals	11/1/2023	1.0	Robert SanLuis Robert SanLuis	

Version History

Version	Status	Type	Date Added	Date Effective	Date Retired
2.0	Approved and Current	Major revision	2/22/2024	3/4/2024	Indefinite
1.0	Retired	Initial version	10/24/2023	11/7/2023	3/4/2024

Non-Technical SOP

Title	**EVOQUA Water System for Atellica Solution**	
Prepared by	Ashkan Chini	Date: 10/24/23
Owner	Robert SanLuis	Date: 10/24/23

Laboratory Approval		
Print Name and Title	**Signature**	**Date**
Refer to the electronic signature page for approval and approval dates.		
Local Issue Date:	Local Effective Date:	

TABLE OF CONTENTS

1. PURPOSE

This procedure outlines the maintenance and trouble shoot steps for the EVOQUA Water System (the name of the instrument is MEDICA) of the Siemens Atellica Solution instrument.

2. SCOPE

This procedure applies to all Core Laboratory personnel working with the Siemens Atellica Solution instrument.

3. RESPONSIBILITY

Core Laboratory Personnel are responsible for performing and complying with this procedure.

4. DEFINITIONS

None

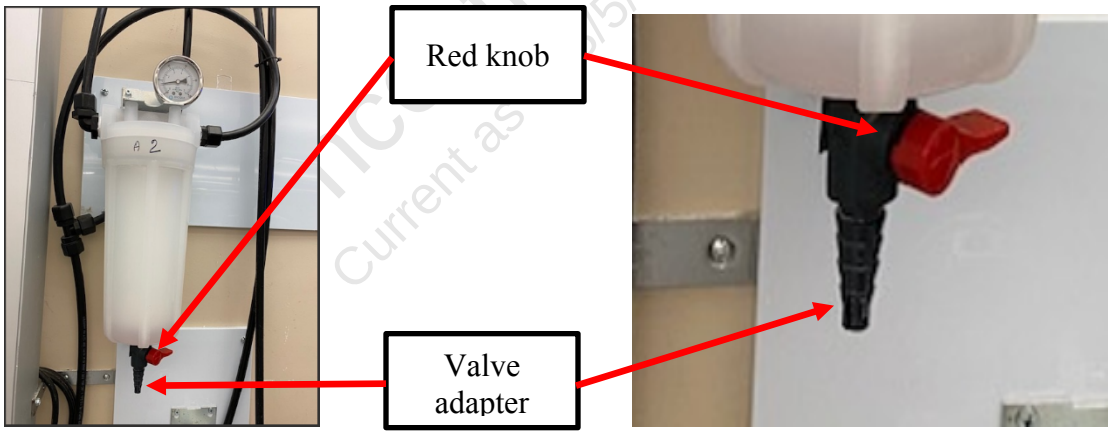
5. PROCEDURE

A. Water Culture

Refer to SOP "Atellica Solution Operating, QC, Calibration, and Maintenance" for LIS instructions.

To collect the water for culture testing:

- Prepare a 1:10 bleach concentration solution.
- Use a sterile gauze and the concentrated bleach solution to clean the outside of the valve adapter.
- Use a sterile cotton swab and the concentrated bleach solution to clean the inside of the valve adapter.
- Get a clean bucket and hold it under the valve; turn the red knob and let the water run for several seconds. This step washes off the bleach that was used to clean inside of the valve adapter.
- Use the LIS label prepared earlier and label a sterile cup. Collect 50 mL of water directly from valve in the cup.



B. Emergency By-Pass System

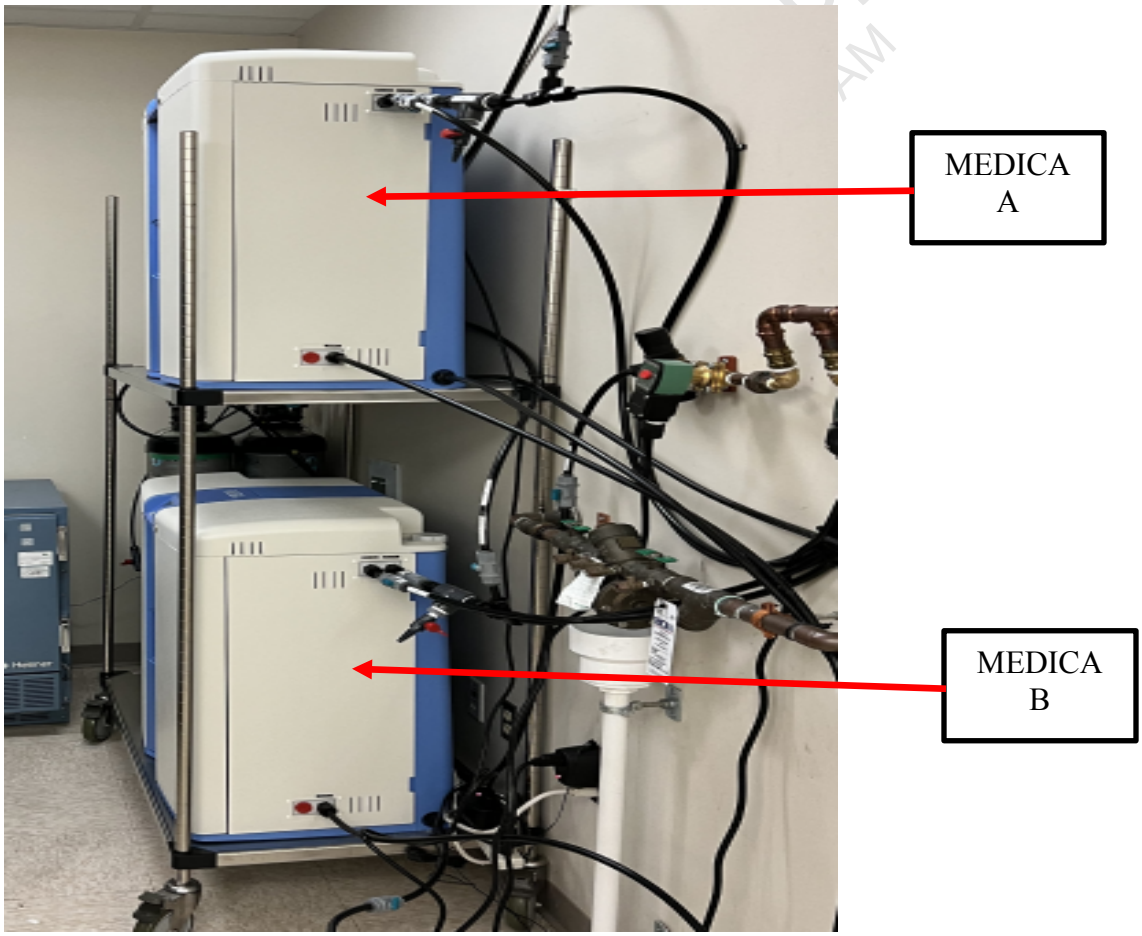
If the MEDICA instrument goes down, the Emergency By-Pass system which holds up to 800 liters of reserved water needs to be activated. The Emergency By-Pass enables the Atellica Solution system to continue to function without any interruptions.

To activate the Emergency By-Pass system:

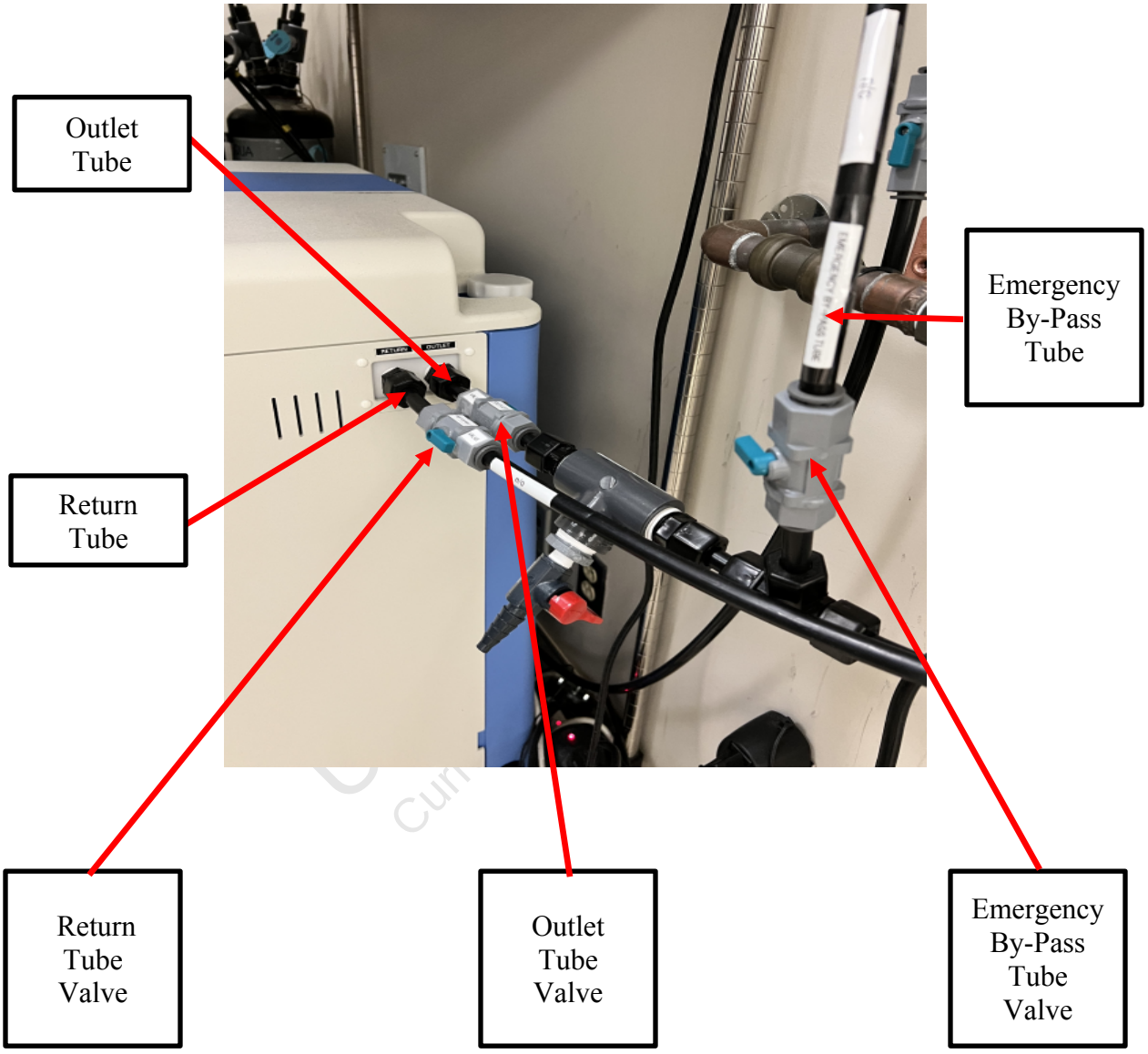
1. Stand in front of the MEDICA water system. There are two separate instruments:

   - MEDICA A (sits on the top shelf)
   - MEDICA B (sits on the bottom shelf)

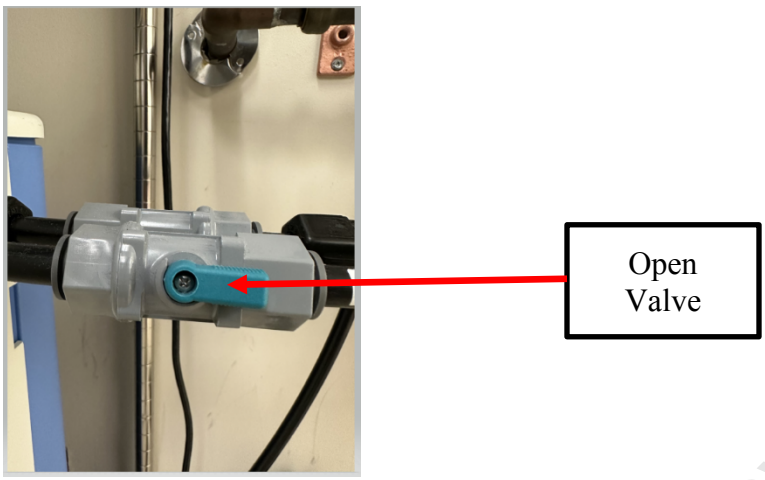
   Identify which instrument is out of service, the Emergency By-Pass system of the unit that is not working needs to get activated.

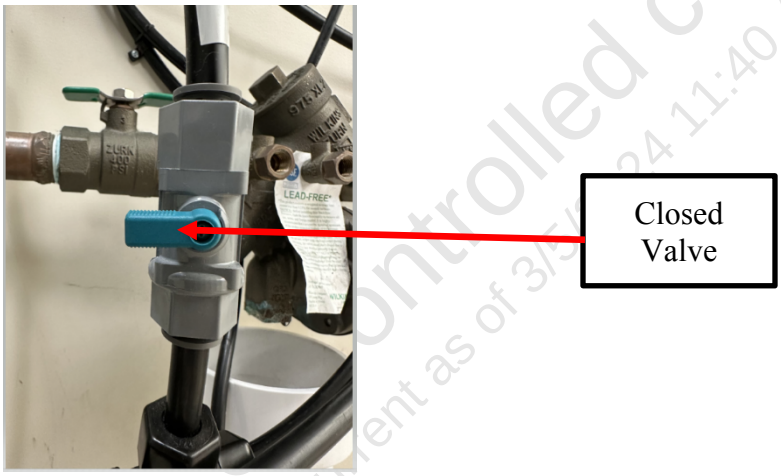


2. Look on the right side of the MEDICA and locate the three tubes and their valves listed below:
   - Return tube and its valve
   - Outlet tube and its valve
   - Emergency By-Pass tube and its valve



3. During normal operations the valves of both Return and Outlet tubes remain open. The valve of the Emergency By-Pass tube remains closed.





4. First close the valves of both Return and Outlet tubes, and then open the valve of the Emergency By-Pass tube.
5. Emergency By-Pass system is now activated.

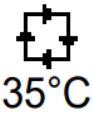
To deactivate the Emergency By-Pass system:

1. First close the valve of Emergency By-Pass tube, and then open the valves of both Return and Outlet tubes.

C. Trouble Shoot

If a problem occurs the unit will normally sound an alarm and the respective icon will flash. The audible alarm can be silenced by pressing the mute button.

Alarm	Display ID	Icon	Recommended Action
Leak Detection	672-98	⚠	- PRESS mute to silence alarm - REMOVE power rectify leak and dry sensors - Dry the contacts - POWER on to reset.
Reservoir Level Controls	672-97	⚠	- PRESS mute to silence alarm - REMOVE power - Contact Technical Support
High Loop Pressure	672-96	⚠	- PRESS mute to silence alarm - REMOVE power - Contact Technical Support
Permeate Over Temperature	672-95	⚠	- PRESS mute to silence alarm - Potable feed temperature is unacceptably high >50°C - Contact Technical support
Recirc. Loop Over Temperature	672-94	⚠	- PRESS mute to silence alarm - Water temperature is unacceptably high >50°C - Contact Technical support
Protek L1 Incorrectly Installed	-93	LC175/LC177	- PRESS mute to silence alarm - CONFIRM Protek is correctly installed - POWER OFF/ ON to reset
Medpure L1 Incorrectly Installed	-92	LC174	- PRESS mute to silence alarm - CONFIRM Medpure L1is correctly installed - POWER OFF/ ON to reset
Water Purity Alarm	-90	1MΩ.cm	- PRESS mute to silence alarm - CONFIRM purity displayed is suitable for application. - CHANGE Medpure L1 if water purity is insufficient

Water Temperatur e Alarm	-89		- PRESS mute to silence alarm - CONFIRM temperature is suitable for application. - ADJUST alarm set point or DIRECT water to drain to Introduce cool water
Permeate Purity Alarm	-88		- PRESS mute to silence alarm - CONFIRM purity displayed is suitable for application. - ADJUST alarm set point or contact local service provider.
Permeate Temperatur e Alarm	-87		- PRESS mute to silence alarm - CONFIRM temperature is suitable for application. - ADJUST alarm set point or confirm potable supply temperature is suitable
Break Tank Low	-86		- PRESS mute to silence alarm. - CONFIRM pressure and flow of potable supply - If problem persists contact local service provider
UV Lamp Fail	-85		- PRESS mute to silence alarm - CHANGE lamp at the next opportunity

D. Maintenance

Monthly - Record the water quality reading on Atellica maintenance log. If the purity level falls below the set point (10MΩ.cm) an alarm will activate but will not stop the unit. If the purity level recovers, the alarm will automatically reset. Call service if the water purity level remains < 10MΩ.cm.

Note: ALWAYS CHECK THAT THE MAINS ELECTRICAL POWER AND FEED WATER ARE SWITCHED OFF BEFORE ATTEMPTING ANY MAINTENANCE PROCEDURE.

Replacing Composite Vent Filter (L136):
The Composite Vent Filter (CVF) should be replaced when indicated by the alarm (screen prompt) or after a maximum of six months.

- ENSURE process is OFF and isolate power.
- OPEN front doors and locate CVF.
- UNSCREW old CVF and discard
- UNPACK new CVF.
- WRITE the installation date on the label of the filter for future reference.

- INSTALL filter.
- SWITCH on power.
- RESET

Replacing Medpure L1 (LC174)
It is done when the purity of water from the unit starts to deteriorate and when indicated by the consumable alarm or after a maximum of six months.

- ENSURE process is OFF and isolate power.
- OPEN right hand door and LOCATE Medpure cartridge.
- PUSH Medpure FORWARD, then LIFT, finally PULL to remove the used cartridge.
- UNPACK new Medpure.
- REMOVE sealing plugs from inlet and outlet ports.
- Wet 'O' rings and SLIDE new cartridge into position pushing upwards against pack reader contacts.
- EASE back and ENSURE that the pack is fully engaged (down) in the retainers.
- SWITCH on power. FOLLOW screen prompts to accept new cartridge replacement date
- START unit and allow to circulate until water quality is achieved.

Replacing Ultra-Microfilter (LC109)
The Ultra-Microfilter (UMF) should be replaced when indicated by the consumable alarm, after a maximum of 12 months of use, when product flow is no longer adequate, and when product water bacterial content is too high.

- ISOLATE power
- OPEN front doors and LOCATE UMF
- UNSCREW lower connection Note: At this stage a small quantity of water may spill.
- UNSCREW UMF from top connection
- INSTALL new UMF
- RECONNECT
- RINSE water to drain to recommission the system.
- RESET

Replacing UV lamp (LC105)
The UV lamp should be replaced when indicated by the consumable alarm or after a maximum of 12 months of use.
Note: When handling the lamp cut-resistant gloves need to be worn.

- ENSURE process is OFF and ISOLATE power.
- OPEN the front doors.
- REMOVE Medpure pack to improve access to the UV lamp assembly
- LOCATE UV assembly on right-hand side of unit.
- REMOVE retaining spring clips from top and bottom of the lamp assembly
- REMOVE electrical connectors from top and bottom and take lamp from housing.
- DISCARD lamp.

- REMOVE new lamp from packaging and follow instructions included for cleaning.
- REFIT into UV assembly.
- RECONNECT to electrical connectors top and bottom.
- REFIT retaining spring clips top and bottom
- REPLACE Medpure pack (if fitted).
- RESET

Replacing Protek L1 (LC175) or Protek L2 (LC177) Pre-treatment Cartridges
The replacement frequency of the pre-treatment cartridge is dictated by the purity of the feed water. It should be replaced when indicated by the consumable alarm, when indicated by the alarm 75, or after replacement of RO modules

- ENSURE process is OFF and ISOLATE power.
- OPEN front doors
- LOCATE Protek
- Remove lid from break tank and RELEASE any residual system pressure by OPERATING float valve.
- TWIST to RELEASE clip and OPEN retaining clamp at top of cartridge
- PULL Protek forward
- DISCARD used cartridge in accordance with local regulations
- REMOVE new cartridge from packaging.
- REMOVE sealing plugs from inlet and outlet ports.
- Wet ‘O’ rings and SLIDE Protek until it is fully engaged
- CLOSE retaining clamp and fasten CLIP
- The unit will automatically recognize the new cartridge and date.

Replacing E- Cartridge (LC181)
Standard on RE variant only The E- cartridge should be replaced when indicated by the alarm

- ENSURE process is OFF and ISOLATE power.
- OPEN front doors
- LOCATE E – cartridge
- DISCONNECT tubing to air pump and inlet and outlet tubing from the E cartridge.
- REMOVE used cartridge from clip and discard in accordance with local regulations.
- TAKE new cartridge
- REMOVE sealing plugs from inlet and outlet ports
- LOCATE new cartridge in clip
- RE-CONNECT tubing

6. RELATED DOCUMENTS

1. Atellica Solution Operating, QC, Calibration and Maintenance SOP

7. REFERENCES

1. MEDICA Pro 30/60/120 – US Operator Manual, VEOLIA Water Solutions & Technologies, revised 10/2015

8. REVISION HISTORY

Version	Date	Reason for Revision	Revised By	Approved By
1	2/22/24	Section 5D. Added record water quality monthly	M Belay	R SanLuis

9. ADDENDA AND APPENDICES

Adventist HealthCare

Atellica Solution Maintenance Log

Shady Grove Medical Center

Month: _____ Year: _____ Instrument Serial Number: _____

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Daily																															
Sample handler and magline transport auto check (√)																															
CH IMT daily cleaning (√)																															
CH inspect washer probes (√)																															
CH daily maintenance [1] (√)																															
IM daily maintenance[1] and autocheck (√)																															
Tech Code																															

[1] cuvette, probe, mixer, and drain cleaning autocheck and reaction ring bath refresh daily.
[2] Auto reagent probe cleaning and daily wash block water lines.

Weekly

Chemistry Module weekly maintenance (√)					
Check lamp coolant (√)					
CH weekly maintenance[1]					
IM weekly maintenance[2]					
Inspect and empty IM water trap and dryer					
Clean the IM sample tip drip tray					
Clean IM exterior reagent probe					
Tech Code / Date					

Monthly

	Tech Code / Date
Clean CH & IM fan filter	
Inspect and clean probe wash stations	
Inspect and clean CH probe and mixer impellers	
Collect water for bacterial content.	
Evoqua-water quality. Set point >10MΩ-cm	
As needed	
Replacing dilution ring cuvette segment	
Replacing CH reaction ring cuvette segments	

Bacterial Content

Acceptable value: ≤ 10 CFU/mL Document corrective action if unacceptable	**Result**

Comments:

_____

_____

Weekly review:	Weekly review:	Weekly review:
Weekly review:	Weekly review:	Monthly review: