PURPOSE: To provide instructions for the general maintenance of all equipment in the microbiology laboratory. All Microbiology staff are responsible for maintaining good working condition of all microbiology laboratory equipment.

O_2 INCUBATOR MAINTENANCE:

1. **Daily:**
   - Record the digital reading temperature and internal thermometer temperature of the incubator.
   - Record on QUA40491.3.

2. **Weekly:**
   - Check the humidity pan. If water level is low, remove the pan and clean with Accel TB wipes. Fill with tap water and replace in the incubator.
   - Record date and initials on QUA40491.3.
   - Result as complete in TQC.

3. **Monthly:**
   - Inspect the gray door gasket for any cracks or tears. Notify the Technologist II if present.
   - Record date and initials on QUA40491.3.
   - Result as complete in TQC.

4. **Bi-annually:**
   - Clean interior of the incubator: Wipe the interior of incubator, including shelves, with Accel TB wipes. Rinse with gauze soaked with sterile water to remove any residue.
   - Clean exterior of the incubator: Use Accel TB wipes to wipe down exterior of incubator. Rinse with gauze soaked with sterile water to remove any residue.
   - Record date and initials on QUA40491.3.
   - Result as complete in TQC.

CO_2 INCUBATOR MAINTENANCE:

1. **Daily:**
   - Record the digital reading temperature, internal thermometer temperature and CO_2 level of the incubator.
   - Record on QUA40491.5, 40491.6, 40491.7 and 40491.8.

2. **Weekly:**
   - Change the temperature charts. Store used charts in the folder on the side of the incubator.
   - Check the humidity pan. If water level is low, remove the pan and clean with Accel TB wipes. Fill with tap water and replace in the incubator.
   - Record date and initials on QUA40491.5, 40491.6, 40491.7 and 40491.8.
   - Result as complete in TQC.

3. **Monthly:**
   - Inspect the gray door gasket for any cracks or tears. Notify the Technologist II if present.
   - Perform the FYRITE CO_2 measurement. Refer to appendix for the FYRITE procedure.
   - Record date and initials on QUA40491.5, 40491.6, 40491.7 and 40491.8.
   - Result as complete in TQC.

4. **Bi-annually:**
   - Clean interior of the incubator: Wipe the interior of incubator, including shelves, with Accel TB wipes. Rinse with gauze soaked with sterile water to remove any residue.
   - Clean exterior of the incubator: Use Accel TB wipes to wipe down exterior of incubator. Rinse with gauze soaked with sterile water to remove any residue.
   - Record date and initials on QUA40491.5, 40491.6, 40491.7 and 40491.8.
   - Result as complete in TQC.

REFRIDGERATOR MAINTENANCE:

1. **Daily:**
   - Record the digital reading temperature and the internal thermometer temperature of the refrigerator.
   - Record on QUA40491.1, 40491.2 and 40491.10.

2. **Monthly:**
   - Inspect the seal on the door gasket for any cracks or tears. Notify the Technologist II if present.
   - Record date and initials on QUA40491.1, 40491.2 and 40491.10.
   - Result as completed in TQC.

3. **Bi-annually:**
   - Clean interior of the refrigerator: Wipe the interior of refrigerator, including shelves, with Accel TB wipes. Rinse with gauze soaked with sterile water to remove any residue.
   - Clean exterior of the refrigerator: Use Accel TB wipes to wipe down exterior of incubator. Rinse with gauze soaked with sterile water to remove any residue.
   - Record date and initials on QUA40491.1, 40491.2 and 40491.10.
   - Result as complete in TQC.

BIOLOGICAL SAFETY CABINET MAINTENANCE:

1. **Daily:**
   - Refer to LSM30200.
   - Record on LSM30210.

2. **Weekly:**
   - Refer to LSM30200.
   - Record date and initials on LSM30210.
   - Result as complete in TQC.

3. **Bi-annually:**
   - Refer to LSM30200.
   - Record date and initials on LSM30210.
   - Result as complete in TQC.

4. **Annually:**
   - BSCs are inspected, tested and certified annually by a qualified technician.

MICROSCOPE MAINTENANCE:

1. **Daily:**
   - Perform Kohler illumination. Refer to Leica handout.
   - When you are finished viewing the slide, move the objective turret to bring the 10X objective into position over the viewing area. Then remove the slide from the stage. Do not go back to the 40X objective to prevent it from coming into contact with immersion oil. If this does occur, immediately remove any immersion oil as the 40x objective is not sealed against oil penetration, and any immersion oil left in contact with this objective will penetrate the lens and be deposited on the inside of the lower lens.
   - Do not allow the 100X oil objective lens to sit above the condenser when changing slides as oil will drip off the objective.
   - The microscope should be cleaned after each use when immersion oil is used. Wipe off the immersion oil with a gauze pad and then repeat with lens paper moistened with lens cleaner.
   - To protect the microscope against dust, cover the microscope with the dust cover after each use.

2. **As-needed:**
   - To change the fuse, refer to Leica DM 2000 operating manual for instructions.
   - To change the bulb, refer to Leica DM 2000 operating manual for instructions.

3. **Annually:**
   - Performed annually by a qualified microscope technician.

REFERENCES:

- Forma Scientific Technical Manual, Model 3932 Reach-In Incubator, July 1987
- Thermo Electron Corporation Manual, Model 3100 Series, 2003
- LABCONCO Biological Safety Cabinet Manual, 2018
- Sanyo Pharmaceutical Refrigerator Manual, Model MPR-311D(H)
- Thermo Scientific Refrigerator Manual, Model TSG5055A, April 2018
- Thermo Scientific Refridgerator Manual, Model FRGL404, 2010
- Thermo Scientific Refridgerator Manual, Model TSX 2305 and 4505, Sept 2016

APPENDIX (APPENDICIES):

I. Performing FYRITE gas analysis:

1. Hold FYRITE upright and away from face. Depress the plunger valve (momentarily) to vent FYRITE and release.
2. Invert FYRITE. Hold at slight angle to drain fluid into top reservoir.
3. Turn upright. Hold FYRITE at 45° angle momentarily to allow fluid droplet drainage into bottom reservoir.
4. Hold FYRITE in upright position and away from face. Depress the plunger valve (momentarily) and release.
5. While holding the FYRITE upright, loosen the locknut at the rear of scale. Slide scale until top of fluid column lines up with zero line on scale. Tighten the scale locknut.
6. To pump gas sample into FYRITE, insert open end of the plastic tube into the sampling port of the incubator. Hold FYRITE in an upright position and place the rubber connector tip of the sampling assembly over the plunger valve. Depress the plunger valve firmly with the connector tip. Pump the sample by squeezing and releasing the aspirator bulb 18 times. During the 18th squeeze (with bulb held deflated) release the connector tip and the plunger valve.
7. Absorb sample gas into FYRITE by inverting until fluid drains into top reservoir. Then turn upright to drain fluid into bottom reservoir. Repeat this step once.
8. Momentarily hold FYRITE at 45° angle to allow fluid droplets to drain into the bottom reservoir.
9. With FYRITE held upright, permit fluid in column to stabilize a few seconds, then immediately read % carbon dioxide on scale at the point corresponding to top of the fluid column.

REVISION HISTORY:

REVISION	DATE	Description of Change	REQUESTED BY
1.0		Initial Release	L. Steven