

# **GAP EnviroMicrobial Services Ltd.**

**APPROVAL FORM FOR RELEASE OF  
ANALYTICAL STANDARD OPERATING PROCEDURE (SOP) FOR ROUTINE USE**

## **SOP #44: OPERATION OF THE BIOTEST RCS AIR SAMPLER**

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- ❖ **The approval of this document is valid for one year at which time it will be subject to review to determine if any updates or modifications are warranted.**

## OPERATION OF THE BIOTEST RCS AIR SAMPLER

### 1. PURPOSE:

1.1. This procedure describes how to operate the BIOTEST RCS Centrifugal Air Sampler.

### 2. GENERAL INFORMATION:

2.1. The Biotest RCS air sampler operates on the impaction principal. The function of the air sampler is to deposit airborne microorganisms onto the culture medium. The air under examination is drawn into the sampler from a distance of at least 40cm by means of an impeller. The air enters the impeller drum concentrically and in a conical form. It is then set in rotation and the particles contained in the air are impacted via centrifugal force onto the agar surface. The air then leaves the drum in a spiral form around the outside of the cone of air entering the sampler. After sampling, the agar strip is incubated and the colonies are identified and enumerated.



### 3. PROCEDURE:

3.1. The sampling time determines the volume of air sampled. There are four selectors for the desired volume used. The four (4) minute sampling time is the preferred sampling time for indoor routine air sampling. During warm weather, it is preferred to sample for 1 or 2 minutes when sampling outdoor (control) locations.

3.1.1. Selector 1 "ON" – 30 seconds = 20 litres

3.1.2. Selector 2 "ON" – 1 minute = 40 litres

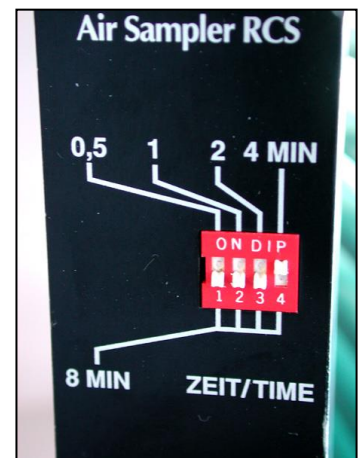
3.1.3. Selector 3 "ON" – 2 minutes = 80 litres

3.1.4. Selector 4 "ON" – 4 minutes = 160 litres

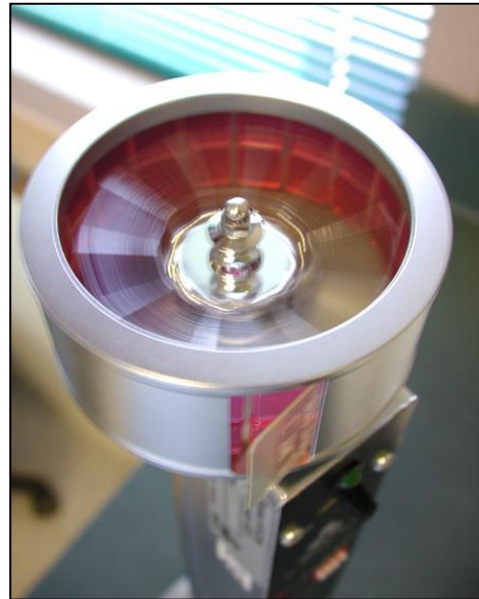
3.1.5. All Selectors "DOWN" – 8 minutes = 320 litres

3.1.6. Only one selector switch should be in the "ON" position at any given time. If more than one is on, the shortest sampling time will be selected.

3.2. Disinfecting the unit head and blade are required before use. Before initial sampling and between all samples, invert the RCS air sampler and spray the head lightly with 70% ethanol or isopropanol and allow to air dry. Keep the unit inverted until the solution has completely dried so the ethanol solution does not drip down into the main body of the unit. Ethanol solution is provided in a spray bottle in the air sampling kit cooler. To prevent contamination, do not touch inside the drum or blades. The unit



is calibrated annually therefore, please do not drop the sampling unit. The air-sampling unit can be hand held or the sampling stand can be used. A sampling stand is provided which screws into the bottom of the air sampler.



- 3.3. Using aseptic technique, peel back the wrapper of the agar strip by about 4 cm. and remove the agar strip. Do not touch the agar surface.
- 3.4. Insert the agar strip into the slot in the open-end drum with agar surface facing toward the impeller blades. Continue inserting so the impeller drum is completely enclosed and the grip tab of the agar strip protrudes by about 2cm.
- 3.5. To start sampling after selecting your sampling time, move the main switch to the (I) position. Check that the green light is on. Start the unit by pressing the (Start) button. If the light flickers on and off and the blade fluctuates, replace the batteries.
- 3.6. After the selected time has finished and the impeller has stopped turning, move the main switch to the (0) position.
- 3.7. The strip is removed from the drum by the grip tab. **Please refer to Attachment 1: Handling of Agar Strips Post Sampling.** Seal the wrapper with the adhesive tape provided to prevent drying out during transportation and incubation. This also prevents any contamination of the strip.
- 3.8. Label each strip with your identification number and the amount of sampling time used. Please fill out the appropriate information on the GAP Chain of Custody form provided and return it with your air strips.
- 3.9. Place the strips in the small cooler provided in the sampling kit with an ice pack and return to the laboratory immediately.



**4. HISTORY OF CHANGES:**

- 4.1. Revision 7 – May 1, 2006
  - 4.1.1. Minor formatting changes were made. The **History of Changes** and **Reference** sections were added.
  - 4.1.2. Removed reference to the Monthly Laboratory Air Quality Monitoring. The procedure was placed in a separate SOP, SOP#92, Monthly Laboratory Air Quality Monitoring.
- 4.2. Revision 8 – June 27, 2007
  - 4.2.1. Revised the cover page to be same as all existing SOP's.
- 4.3. Revision 9 – November 20, 2007
  - 4.3.1. Revised the SOP to reflect the company name change.
- 4.4. Revision 10 – June 19, 2008
  - 4.4.1. Revision 10 was reviewed and no changes were required.
- 4.5. Revision 11 – July 9, 2009
  - 4.5.1. Revision 11 was reviewed and a few grammatical changes were required.

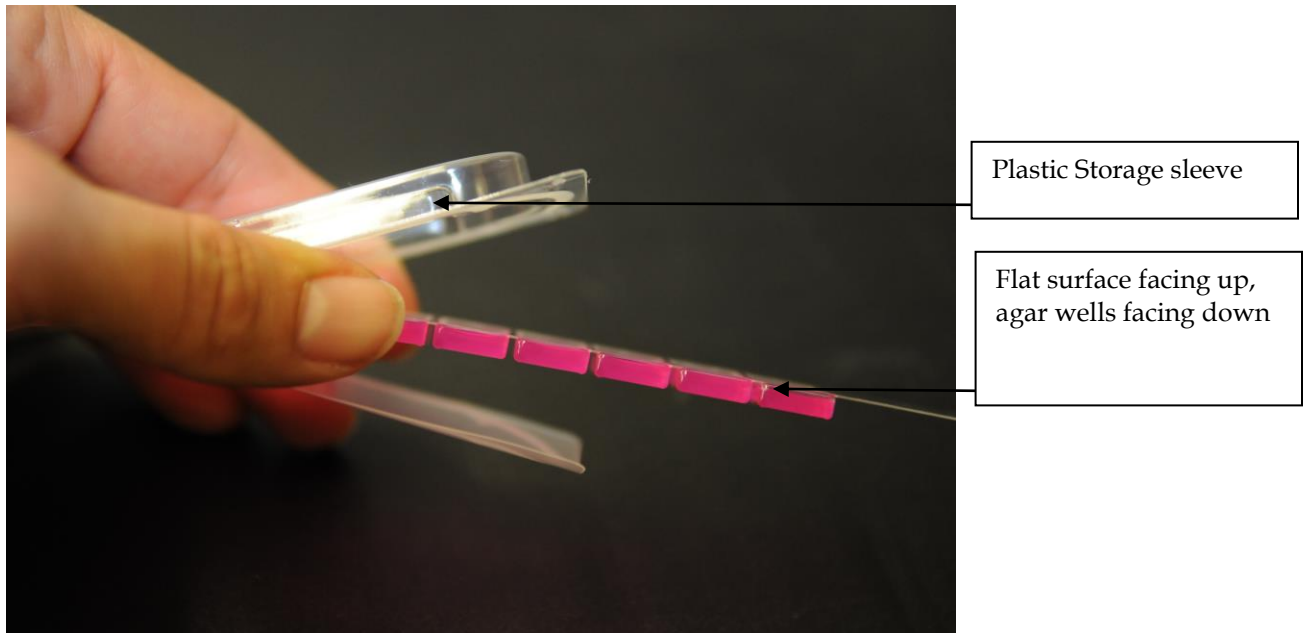
**5. REFERENCE :**

- 5.1. Operating Manual "Standard RCS Air Sampler".

### ATTACHMENT 1: HANDLING OF AGAR STRIPS POST SAMPLING

When the sampling process is finished, pull the agar strip out of the sampler and replace it into its original plastic sleeve. **It is most important that the surface of the agar strip be placed correctly back into the plastic sleeve or analysis of the strip may not be possible due to sample smearing** – Please refer to the diagram below:

### CORRECT ORIENTATION:



### INCORRECT ORIENTATION:

