

# Bioaerosol Sampling Report

FCC Environment Ltd

Llanddulas Composting Facility

23<sup>rd</sup> July 2024

---

## Approval Sheet

Customer: FCC Environment

Site: Llanddulas Composting facility.  
Abergele Road,  
Llanddulas,  
Conwy,  
LL22 8HP

Project title: Bioaerosols Sampling

Project Manager: J.Taylor

Project Staff: R. Chau  
C. Wilson

Address: Enitial  
Enterprise Drive  
Four Ashes  
Wolverhampton  
WV10 7DE

Tel: 01902 798798  
Fax: 01902 798711

| Issue | Status | Date      | Prepared By       | Signature                                                                            | Date       |
|-------|--------|-----------|-------------------|--------------------------------------------------------------------------------------|------------|
| 1     | Final  | 4/08/2024 | A. Balkwill-white |  | 04/08/2024 |
|       |        |           | Approved By       | Signature                                                                            | Date       |
|       |        |           | J.Taylor          | J.Taylor                                                                             | 04/08/2024 |

## Foreword

Enitial has used its best endeavours, experience, and expertise to provide a meaningful, accurate and relevant representation of the works carried out. The works were based on a defined programme and scope of works and terms and conditions agreed with the Client.

Enitial cannot accept responsibility to any parties whatsoever, following the issue of this report, for any matters arising which may be considered outside the agreed scope of works.

This report is issued solely to the Client. Enitial does not accept any responsibility to any third parties to whom this report may be circulated, in part or in full, and any such parties rely on the contents at their own risk.

## Contents

|      |                                          |    |
|------|------------------------------------------|----|
| 1.0  | Scope of Work.....                       | 5  |
| 2.0  | Background .....                         | 6  |
| 3.0  | Methodology .....                        | 7  |
| 3.1  | Sampling Locations.....                  | 7  |
| 3.2  | Agar Plates.....                         | 7  |
| 3.3  | Equipment .....                          | 7  |
| 3.31 | List of Equipment.....                   | 7  |
| 3.32 | Cleaning of Equipment .....              | 8  |
| 3.33 | Setup and Operation .....                | 8  |
| 3.34 | Laboratory .....                         | 9  |
| 4.0  | Presentation of Data.....                | 10 |
| 4.1  | Field Sampling Report .....              | 11 |
| 4.11 | Meteorological Conditions .....          | 11 |
| 4.12 | Site Description .....                   | 11 |
| 4.2  | Sampling Locations & Field Comments..... | 11 |
| 4.3  | Deviations from Methods .....            | 12 |
| 4.4  | Field Sampling Record.....               | 13 |
| 4.5  | Process Contribution Results .....       | 16 |
| 5.0  | Summary of Analytical Results .....      | 17 |
| 5.1  | Discussion of results.....               | 18 |

## List of Tables

|                                             |    |
|---------------------------------------------|----|
| Table 1: Weather Conditions.....            | 11 |
| Table 2: Sampling Locations .....           | 12 |
| Table 3: Deviations .....                   | 12 |
| Table 4: Field Sampling Results .....       | 13 |
| Table 5: Process Contribution Results ..... | 16 |

## Appendices

- Appendix A - Aerial Plan
- Appendix B - Meteorological Conditions
- Appendix C - Photograph Sheet
- Appendix D - Laboratory Certificate

## 1.0 Scope of Work

Enitial was tasked with providing Bioaerosol monitoring for FCC at their Llanddulas facility near Conway in North Wales.

Due to the potential health risks posed by the facility to nearby receptors, the testing was conducted to assess the amount of airborne bioaerosols being generated by the site that is released into the local environment. The monitoring is to ensure that this exposure is below the industry standard threshold set by the Environmental Agency.

The work was carried out on 23<sup>rd</sup> July 2024. This document is a presentation of the resulting data.

## 2.0 Background

The bioaerosol monitoring was specifically undertaken to enumerate the quantity of micro-organisms that can be cultured from representative samples of ambient air, collected at pre-determined monitoring points in the locality of the site.

The monitoring was undertaken in accordance with Environment Agency Technical Guidance Note (Monitoring) M9 – Environmental monitoring of bioaerosols at regulated facilities – July 2018.

Pre-prepared agar sample plates for *Aspergillus fumigatus*, mesophilic micro-organisms (bacteria) were directly impacted with ambient air using an Andersen sampler at the four selected sampling locations.

In the UK no statutory limits have been set for ambient concentrations of bioaerosols. However, as per the Environmental Agency Technical Guidance Note M17, guideline levels have been set for acceptable levels at sensitive receptors as the following:

- Total bacteria: 1000 cfu/m<sup>3</sup>
- *Aspergillus Fumigatus*: 500 cfu/m<sup>3</sup>

## 3.0 Methodology

### 3.1 Sampling Locations

The sampling locations were determined to achieve:

- One sampling location directly upwind of the centre of the composting facility.
- One location directly downwind of the composting facility.
- Two downwind locations aiming to achieve 30 degrees out from the line between the centre of the composting facility and the primary downwind location positioned to provide a fan-shaped arrangement to detect the position of the flume.

### 3.2 Agar Plates

The types of Agar used were:

Mesophilic micro-organisms: (Total Viable Count [TVC]) – Half Strength Nutrient Agar (also known as 93's – white in colour)

*Aspergillus Fumigatus* / Total Fungi: (colony-forming unit [cfu]) – Malt Extract Agar (also known as 94's – light yellow in colour)

The impacted agar plates were subsequently delivered to a specialist laboratory within 24 hours via a cool box with ice packs where they were cultured and enumerated.

## 3.3 Equipment

### 3.31 List of Equipment

The equipment used is as follows:

- Continuous operation mobile weather station (wind speed, direction, temperature, humidity) and tripod
- Digital stopwatch
- GPS device
- 4 x single-stage Andersen samplers
- 4 x tripods
- 4 x hemicylindrical baffles
- 4 x stoppers for Andersen samplers
- 4 x fully charged vacuum pumps (individual capacity of at least 35l per min) and connecting tubing
- Rotameter to fit vacuum pump

- Agar plates – variety dependent on required test
- 2 x sealable airtight sterile plastic containers
- Cool box with ice packs for transport
- 70% v/v aqueous solution / wipes of ethanol or industrial methylated spirits cleaning solution or other suitable disinfectants

### 3.32 Cleaning of Equipment

All parts of the sampling equipment that were in contact with the samples, work surfaces or storage containers were cleaned with a 70% aqueous solution or wipes of ethanol or methylated spirits, or other suitable disinfectants prior to use. Equipment was completely dried, through air drying before the sampling exercise was commenced.

On completion of cleaning the Andersen single-stage samplers, a stopper was placed in the cone entrance to stop any contamination occurring before the sampling event.

### 3.33 Setup and Operation

- The pumps were Pre-run for a specified time at the required flow rate of 28.3l/min ( $\pm 2\%$ ). This pump test was undertaken once before the start of the monitoring exercise.
- The Andersen single-stage samplers were mounted on to the tripods securely at a height of 1.5-1.8m above ground and the baffles were fitted on the tripod to form a rear shield when aligned to the desired sampling direction.
- The vacuum pump was connected to the rotameter using an appropriate length and diameter of the tubing. Using the rotameter, the flow rate was adjusted to ensure it is running at a constant flow of 28.3l/min ( $\pm 2\%$ ) for each pump.
- On completion of the pump test, the tubing from the dry gas flow meters was disconnected from the rotameter then connected to the inlet on the corresponding Andersen single-stage sampler.
- Fresh sample plates were installed in turn by removing the lid and being placed within the Andersen single-stage sampler
- The stoppers in the inlet of the Andersen single-stage samplers were removed.
- When the Andersen single-stage samplers were fitted with plates the vacuum pumps were activated and the start time recorded on the stopwatch. All pumps were switched on/off at the same time or at a maximum interval of up to 10% of the total run time.
- When the sample duration was completed the pumps were stopped and the finish time recorded.
- The plates were carefully removed ensuring that no contact was made with the exposed agar surface,
- The dish cover was replaced on to the plate and secured with masking tape.

- Each plate was placed into an individual plastic bag and sealed.
- The plates were stored in an upright, protective, and cooled container and transported to the laboratory within 24 hours.
- Control blank samples were taken at the site. The steps stated above were adhered to however the sample pump was not switched on. One of each sample media was inserted within the Andersen single-stage samplers, left in for the same period of sampling time, then packaged.
- Field blank samples were taken. The sample media were placed in re-sealable packaging without being opened.

### 3.34 Laboratory

The impacted agar plates were subsequently delivered to a specialist laboratory via a cool box with an ice pack. The analysis took place within 24 hours from sample collection.

The agar samples were then cultured and counted by a specialist laboratory for both *Aspergillus fumigatus* and mesophilic micro-organisms. The count result provides a quantification of the potential health risks posed by the facility to nearby receptors.

## 4.0 Presentation of Data

The following pages consist of meteorological conditions found on site, a presentation of the estimated concentrations of airborne micro-organisms, a plan displaying sample locations and the laboratory data.

## 4.1 Field Sampling Report

Site: Llanddulas Composting Facility

Site Operator: FCC Environment

Date: 23<sup>rd</sup> July 2024

Start Time: 12:40

Finish Time: 13:50

Monitoring Technician ID: R. Chau, C. Wilson

### 4.11 Meteorological Conditions

The table below shows the weather conditions used during this monitoring survey,

*Table 1: Weather Conditions*

| Parameter | Wind Direction | Wind Speed (m/s) | Pressure (mb) | Temperature (°C) | Cloud Cover (0-8) |
|-----------|----------------|------------------|---------------|------------------|-------------------|
| Start     | NW             | 4.91             | 1021          | 17               | 2                 |
| Finish    | NW             | 4.91             | 1021          | 18               | 3                 |

### 4.12 Site Description

Llanddulas composting facility is located in a quarry, near Conway in North Wales. The nearest sensitive receptor are residential farm buildings to the west of the composting facility located within 250 metres.

During the sampling period the site was under normal operations with turning of windrows taking place. The Screener was in operation and movements of green waste were observed.

## 4.2 Sampling Locations & Field Comments

The locations were chosen on the day of sampling according to the wind direction and agreed with site management.

The three downwind samples were set up as far apart as possible in order to achieve a 30° (+/- 3°) angle from the upwind/downwind axis.

Table 2: Sampling Locations

| Location          | Description                                                                      | Comments |
|-------------------|----------------------------------------------------------------------------------|----------|
| Upwind<br>UW001   | Beside BH22, on grass verge East of compost pad.                                 | No odour |
| Downwind<br>DW002 | To the East of the compost pad on grass verge by cliff edge.                     | No odour |
| Downwind<br>DW003 | On the path to GW35, Northeast of the compost pad.                               | No odour |
| Downwind<br>DW004 | Southeast of compost pad, on grassy verge by cliff edge. Next to perimeter fence | No odour |

An aerial plan, as well as photographs of the locations are presented in *Appendix A* and *Appendix B* respectively.

### 4.3 Deviations from Methods

The locations were assessed to take into account the effect of features and obstructions which may impact the effectiveness of the monitoring. The sampling locations were restricted to where safe physical access was possible along with being legally accessible. Any deviations to the locations, as well as other potential impacts to the assessment are presented in *Table 3* below.

Table 3: Deviations

| Location              | Deviation                                                                       | Reason                                                                                                                                                            |
|-----------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Upwind<br>Location    | Deviation in distance and location.                                             | Location limited due to restricted access due to private land, and water droplets from the deodorizer system.                                                     |
| Downwind<br>Locations | Distance and shape of plume of downwind locations                               | Location limited to edge of quarry due to health and safety. Health and safety restrictions of vegetation and terrain.                                            |
| Downwind<br>Locations | Deviation in time<br>DW003 and DW004 sampled concurrently after UW001 and DW002 | In order to achieve spread of the downwind locations as per M9 document. No access between downwind locations for simultaneous sampling due to health and safety. |

## 4.4 Field Sampling Record

Table 4: Field Sampling Results

| Ambient Sampling: Estimated concentration of bioaerosols                                                                                                                   |                                                                                      |                                         |                                                                                         |                                                                                                                                                       |                                                    |                                                    |                                         |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|-----------------------------------------|----|
| Site: Llanddulas<br>Sampling Date: 23/07/2024<br>Estimated Mass of Materials: 3500-4000 tonnes<br>Activities affecting the concentration of Bioaerosols: on site processes |                                                                                      |                                         |                                                                                         | Site Operator: FCC<br>Monitoring Contractor: Enitial<br>Type of Materials Processed on Site: Green waste/ compost<br>Site Activity: Normal activities |                                                    |                                                    |                                         |    |
| Location and grid reference                                                                                                                                                | Sample reference number                                                              | Distance from centre of active area (m) | Difference in bearing between location of samplers and mean direction wind blows to (°) | Sampling start/end times (HH:MM)                                                                                                                      | Concentration of bioaerosols (CFU/m <sup>3</sup> ) | Concentration of bioaerosols (CFU/m <sup>3</sup> ) | Median of samples (CFU/m <sup>3</sup> ) |    |
|                                                                                                                                                                            |                                                                                      |                                         |                                                                                         |                                                                                                                                                       | Total Count (TVC)                                  | Aspergillus Fumigatus (YM)                         | TVC                                     | YM |
| Upwind (1)<br><br>SH 90169 77192                                                                                                                                           | LL001BIOAEM.<br><br>Upwind location directly upwind of site facility on centre line. | 119m                                    | 168°                                                                                    | 12:40-12:45                                                                                                                                           | 119                                                | -                                                  | 119                                     | <7 |
|                                                                                                                                                                            |                                                                                      |                                         |                                                                                         |                                                                                                                                                       | -                                                  | <7                                                 |                                         |    |
|                                                                                                                                                                            |                                                                                      |                                         |                                                                                         | 12:46-12:51                                                                                                                                           | 91                                                 | -                                                  |                                         |    |
|                                                                                                                                                                            |                                                                                      |                                         |                                                                                         |                                                                                                                                                       | -                                                  | <7                                                 |                                         |    |
|                                                                                                                                                                            |                                                                                      |                                         |                                                                                         | 12:52-12:57                                                                                                                                           | 476                                                | -                                                  |                                         |    |
|                                                                                                                                                                            |                                                                                      |                                         |                                                                                         |                                                                                                                                                       | -                                                  | <7                                                 |                                         |    |

| Location and grid reference    | Sample reference number                                                               | Distance from centre of active area (m) | Difference in bearing between location of samplers and mean direction wind blows to (°) | Sampling start/end times (HH:MM) | Concentration of bioaerosols (CFU/m <sup>3</sup> ) | Concentration of bioaerosols (CFU/m <sup>3</sup> ) | Median of samples (CFU/m <sup>3</sup> ) |    |
|--------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------|----------------------------------------------------|-----------------------------------------|----|
|                                |                                                                                       |                                         |                                                                                         |                                  | Total Count (TVC)                                  | Aspergillus Fumigatus (YM)                         | TVC                                     | YM |
| Downwind (2)<br>SH 90530 77146 | LL002BIOAEM.<br><br>Centre downwind directly downwind of site facility on centre line | 267m                                    | 50°                                                                                     | 12:40-12:45                      | 119                                                | -                                                  | 119                                     | <7 |
|                                |                                                                                       |                                         |                                                                                         |                                  | -                                                  | <7                                                 |                                         |    |
|                                |                                                                                       |                                         |                                                                                         | 12:46-12:51                      | 133                                                | -                                                  |                                         |    |
|                                |                                                                                       |                                         |                                                                                         |                                  | -                                                  | <7                                                 |                                         |    |
|                                |                                                                                       |                                         |                                                                                         | 12:52-12:57                      | 7                                                  | -                                                  |                                         |    |
|                                |                                                                                       |                                         |                                                                                         |                                  | -                                                  | <7                                                 |                                         |    |
| Downwind (3)<br>SH 90487 77211 | LL003BIOAEM<br><br>Left downwind location 30° left of the centre line                 | 238m                                    | 67°                                                                                     | 13:30-13:35                      | 56                                                 | -                                                  | 35                                      | <7 |
|                                |                                                                                       |                                         |                                                                                         |                                  | -                                                  | <7                                                 |                                         |    |
|                                |                                                                                       |                                         |                                                                                         | 13:36-13:41                      | 28                                                 | -                                                  |                                         |    |
|                                |                                                                                       |                                         |                                                                                         |                                  | -                                                  | <7                                                 |                                         |    |
|                                |                                                                                       |                                         |                                                                                         | 13:42-13:47                      | 35                                                 | -                                                  |                                         |    |
|                                |                                                                                       |                                         |                                                                                         |                                  | -                                                  | <7                                                 |                                         |    |

|                                       | Sample reference number                                                 | Distance from centre of active area (m) | Difference in bearing between location of samplers and mean direction wind blows to (°) | Sampling start/end times (HH:MM) | Concentration of bioaerosols (CFU/m³) | Concentration of bioaerosols (CFU/m³) | Median of samples (CFU/m³) |    |
|---------------------------------------|-------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------|---------------------------------------|---------------------------------------|----------------------------|----|
|                                       |                                                                         |                                         |                                                                                         |                                  | Total Count (TVC)                     | Aspergillus Fumigatus (YM)            | TVC                        | YM |
| Downwind (4)<br><br>SH 90478<br>76987 | LL004BIOAEM<br><br>Right downwind location 30° right of the centre line | 257m                                    | 13°                                                                                     | 13:30-13:35                      | 189                                   | -                                     | 98                         | <7 |
|                                       |                                                                         |                                         |                                                                                         |                                  | -                                     | <7                                    |                            |    |
|                                       |                                                                         |                                         |                                                                                         | 13:36-13:41                      | 28                                    | -                                     |                            |    |
|                                       |                                                                         |                                         |                                                                                         |                                  | -                                     | <7                                    |                            |    |
|                                       |                                                                         |                                         |                                                                                         | 13:42-13:47                      | 98                                    | -                                     |                            |    |
|                                       |                                                                         |                                         |                                                                                         |                                  | -                                     | <7                                    |                            |    |
| Control                               | LLControlBIOAEM                                                         | N/A                                     | N/A                                                                                     | N/A                              | <1                                    | -                                     | N/A                        |    |
|                                       | At same location as Upwind                                              |                                         |                                                                                         |                                  | -                                     | <1                                    |                            |    |
| Field                                 | LLFieldBIOAEM                                                           | N/A                                     | N/A                                                                                     | N/A                              | <1                                    | -                                     | N/A                        |    |
|                                       | Not removed from package. For QA/QC                                     |                                         |                                                                                         |                                  | -                                     | <1                                    |                            |    |

## 4.5 Process Contribution Results

The median is routinely used for statistics and probability theory as the results are less likely to be skewed by extremely high or low values that are not representative of the data set. The median is located by finding the middle value by evenly separating the data set. The median for each location has been calculated and then the highest result for the downwind locations identified. The process contribution has then been calculated by subtracting the upwind median value from the highest downwind median value. The process contribution shows the input the activity of the site has on the ambient bioaerosols concentrations. In the table below the process contribution is shown.

Table 5: Process Contribution Results

| Sample Type                       | Upwind Median Results | Downwind Median Highest Results | Process Contribution |
|-----------------------------------|-----------------------|---------------------------------|----------------------|
| Total Bacteria viable Count (TVC) | 119                   | 119                             | 0                    |
| Aspergillus fumigatus (YM)        | <7                    | <7                              | 0                    |

## 5.0 Conclusion

### 5.1 Summary of Analytical Results

The above reports indicate that at the time of sampling:

1. Mesophilic micro-organisms - Total Viable Count (TVC) shows higher readings at the downwind locations compared to the upwind location.
2. Aspergillus readings were not detected at upwind or downwind sample locations.
3. Upwind location median results remained below the industry standard threshold values of 1000cfu/m<sup>3</sup> for Total Bacteria.
4. Downwind location median process contribution remained below the industry standard threshold values of 1000cfu/m<sup>3</sup> for Total Bacteria.
5. Upwind location median results remained below the industry standard threshold values of 500cfu/m<sup>3</sup> for Aspergillus Fumigatus.
6. Downwind location median process contribution results remained below the industry standard threshold values of 500cfu/m<sup>3</sup> for Aspergillus Fumigatus.
7. Control and Field blanks for QA/QC did not show any evidence of contamination.

## 5.2 Discussion of Results

1. Distribution of sample locations were limited to accessible areas around the edge of the cliff face above the composting facility located within the quarry. The site was assessed during a site walkover to ensure locations complied with the relevant predominant wind direction and any health and safety concerns due to terrain.
2. The sampled wind direction was selected by observing the site weather station, as well as observed conditions by the Enitial technicians in the vicinity of the composting site.
3. Higher readings at the downwind sampling locations compared to the upwind location show the downwind locations did effectively catch the plume of bioaerosols during the sampling period.

## **APPENDIX A**

### **Aerial Plan**

### Key

1 – Upwind

2 – Downwind Centre

3 – Downwind Left

4 – Downwind Right

Blue area – Emission  
source

Red Box – Site area



FCC – Llanddulas Quarry 23/07/2024  
Aerial Plan Showing Bioaerosol Sample Locations

## **APPENDIX B**

### **Meteorological Conditions**

## METEOROLOGICAL CONDITIONS

| SITE:                        |                         | Llanddulas                                                                                                      | SITE OPERATOR:                                                                         |                                                                                                              | FCC                                   |                                         |                                          |
|------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------|------------------------------------------|
| SAMPLING DATE:               |                         | 23/07/2024                                                                                                      | COMMISSIONING LABORATORY:                                                              |                                                                                                              | Southern Microbiological Services     |                                         |                                          |
| ESTIMATED MASS OF MATERIALS: |                         | 3500-4000 tonne                                                                                                 | TYPE OF MATERIALS PROCESSED ON SITE:                                                   |                                                                                                              | Compost/ Green waste                  |                                         |                                          |
| Location                     | Sample Reference Number | Bearing of samplers from boundary of operational area or turning/ screening operation (° from true north) - GPS | Mean direction the wind blows <u>to</u> during the sampling period (° from true north) | Difference in bearing between location of samples from boundary/ source and mean direction wind blows to (°) | Mean wind speed during sampling (m/s) | Arithmetic mean of air temperature (°C) | Arithmetic mean of relative humidity (%) |
| Upwind                       | LL001BIOAEM             | 119<br>SH 90169 77192                                                                                           | 135                                                                                    | 168                                                                                                          | 4.91                                  | 17.5                                    | 75.5                                     |
| Downwind                     | LL002BIOAEM             | 85<br>SH 90530 77146                                                                                            | 135                                                                                    | 50                                                                                                           | 4.91                                  | 17.5                                    | 75.5                                     |
| Downwind                     | LL003BIOAEM             | 68<br>SH 90487 77211                                                                                            | 135                                                                                    | 67                                                                                                           | 4.91                                  | 17.5                                    | 75.5                                     |
| Downwind                     | LL004BIOAEM             | 122<br>SH 90478 76987                                                                                           | 135                                                                                    | 13                                                                                                           | 4.91                                  | 17.5                                    | 75.5                                     |

## **APPENDIX C**

### **Photograph Sheet**

## MONITORING PHOTOGRAPH RECORD

**Site:** FCC Llanddulas

**Date:** 23/07/2024



**Title:** Bioaerosol Sampling



Upwind 001 location looking towards site



Upwind 001 location looking away from site



Downwind 002 location looking towards site



Downwind 002 location looking away from site



Downwind 003 location looking towards site



Downwind 003 location looking away from site

## MONITORING PHOTOGRAPH RECORD

**Site:** FCC Llanddulas

**Date:** 22/07/2024

**Title:** Bioaerosol Sampling



Downwind 004 location looking towards site



Downwind 004 location looking away from site

**APPENDIX D**  
**Laboratory Certificate**



## SOUTHERN MICROBIOLOGICAL SERVICES LTD

Unit3, Georges Farm, West Buckland, Wellington, Somerset, TA21 9LE

Telephone: 01823 662062 Fax: 01823 660505

Email: [smsreception@tentamus.com](mailto:smsreception@tentamus.com) Website: [www.smslab.co.uk](http://www.smslab.co.uk)

Enitial  
Enterprise Drive  
Four Ashes,  
Wolverhampton  
WV10 7DE

### TEST REPORT

**Enitial Anderson Plates PO No:ENI105274 emailed Site: Llanddulas Client: FCC**  
**Date Sampled: 23.07.24**

Report Reference: 1240704320

Date Reported: 30 July 2024

Page 1 of 3

\* \*

| <u>SMS<br/>Reference</u> | <u>Date<br/>Tested</u> | <u>Sample Code</u>        | <u>Sample<br/>Details</u> | <u>Ltrs of Air<br/>filtered</u> | <u>Further<br/>Details 2</u> | <u>TVC<br/>cfu/m3 (2<br/>day pr</u> | <u>Asp<br/>fumigatus<br/>cfu/m3</u> |
|--------------------------|------------------------|---------------------------|---------------------------|---------------------------------|------------------------------|-------------------------------------|-------------------------------------|
| 1240722325               | 24/07/24               | LL<br>001BIOAEM<br>(93.)  | ---                       | 141.5                           | ---                          | 119 cfu/m3                          |                                     |
| 1240722326               | 24/07/24               | LL<br>001BIOAEM<br>(94.)  | ---                       | 141.5                           | ---                          |                                     | < 7 cfu/m3                          |
| 1240722327               | 24/07/24               | LL<br>001BIOAEM<br>(93.A) | ---                       | 141.5                           | ---                          | 91 cfu/m3                           |                                     |
| 1240722328               | 24/07/24               | LL<br>001BIOAEM<br>(94.A) | ---                       | 141.5                           | ---                          |                                     | < 7 cfu/m3                          |
| 1240722329               | 24/07/24               | LL<br>001BIOAEM<br>(93.B) | ---                       | 141.5                           | ---                          | 476 cfu/m3                          |                                     |
| 1240722330               | 24/07/24               | LL<br>001BIOAEM<br>(94.B) | ---                       | 141.5                           | ---                          |                                     | < 7 cfu/m3                          |

Enital Anderson Plates PO No:ENI105274 emailed Site: Llanddulas Client: FCC  
Date Sampled: 23.07.24

Report Reference: 1240704320

Date Reported: 30 July 2024

Page 2 of 3

\* \*

| <u>SMS Reference</u> | <u>Date Tested</u> | <u>Sample Code</u>        | <u>Sample Details</u> | <u>Ltrs of Air filtered</u> | <u>Further Details 2</u> | <u>TVC cfu/m3 (2 day pr</u> | <u>Asp fumigatus cfu/m3</u> |
|----------------------|--------------------|---------------------------|-----------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
| 1240722331           | 24/07/24           | LL<br>002BIOAEM<br>(93.)  | ---                   | 141.5                       | ---                      | 119 cfu/m3                  |                             |
| 1240722332           | 24/07/24           | LL<br>002BIOAEM<br>(94.)  | ---                   | 141.5                       | ---                      |                             | < 7 cfu/m3                  |
| 1240722333           | 24/07/24           | LL<br>002BIOAEM<br>(93.A) | ---                   | 141.5                       | ---                      | 133 cfu/m3                  |                             |
| 1240722334           | 24/07/24           | LL<br>002BIOAEM<br>(94.A) | ---                   | 141.5                       | ---                      |                             | < 7 cfu/m3                  |
| 1240722335           | 24/07/24           | LL<br>002BIOAEM<br>(93.B) | ---                   | 141.5                       | ---                      | 7 cfu/m3                    |                             |
| 1240722336           | 24/07/24           | LL<br>002BIOAEM<br>(94.B) | ---                   | 141.5                       | ---                      |                             | < 7 cfu/m3                  |
| 1240722337           | 24/07/24           | LL<br>003BIOAEM<br>(93.)  | ---                   | 141.5                       | ---                      | 56 cfu/m3                   |                             |
| 1240722338           | 24/07/24           | LL<br>003BIOAEM<br>(94.)  | ---                   | 141.5                       | ---                      |                             | < 7 cfu/m3                  |
| 1240722339           | 24/07/24           | LL<br>003BIOAEM<br>(93.A) | ---                   | 141.5                       | ---                      | 28 cfu/m3                   |                             |
| 1240722340           | 24/07/24           | LL<br>003BIOAEM<br>(94.A) | ---                   | 141.5                       | ---                      |                             | < 7 cfu/m3                  |
| 1240722341           | 24/07/24           | LL<br>003BIOAEM<br>(93.B) | ---                   | 141.5                       | ---                      | 35 cfu/m3                   |                             |
| 1240722342           | 24/07/24           | LL<br>003BIOAEM<br>(94.B) | ---                   | 141.5                       | ---                      |                             | < 7 cfu/m3                  |

Enitial Anderson Plates PO No:ENI105274 emailed Site: Llanddulas Client: FCC  
Date Sampled: 23.07.24

Report Reference: 1240704320

Date Reported: 30 July 2024

Page 3 of 3

\* \*

| <u>SMS Reference</u> | <u>Date Tested</u> | <u>Sample Code</u>        | <u>Sample Details</u> | <u>Ltrs of Air filtered</u> | <u>Further Details 2</u> | <u>TVC cfu/m3 (2 day pr</u> | <u>Asp fumigatus cfu/m3</u> |
|----------------------|--------------------|---------------------------|-----------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
| 1240722343           | 24/07/24           | LL<br>004BIOAEM<br>(93.)  | ---                   | 141.5                       | ---                      | 189 cfu/m3                  |                             |
| 1240722344           | 24/07/24           | LL<br>004BIOAEM<br>(94.)  | ---                   | 141.5                       | ---                      |                             | < 7 cfu/m3                  |
| 1240722345           | 24/07/24           | LL<br>004BIOAEM<br>(93.A) | ---                   | 141.5                       | ---                      | 28 cfu/m3                   |                             |
| 1240722346           | 24/07/24           | LL<br>004BIOAEM<br>(94.A) | ---                   | 141.5                       | ---                      |                             | < 7 cfu/m3                  |
| 1240722347           | 24/07/24           | LL<br>004BIOAEM<br>(93.B) | ---                   | 141.5                       | ---                      | 98 cfu/m3                   |                             |
| 1240722348           | 24/07/24           | LL<br>004BIOAEM<br>(94.B) | ---                   | 141.5                       | ---                      |                             | < 7 cfu/m3                  |

Unless otherwise indicated, all samples were received in good condition, tests were performed at the above address and results apply to the sample as received. Date tested equals date received.



Carol Macready

Technical Administration Manager

Where there is a greater than 40% difference in bacterial duplicates, these are genuine results. Where there is a greater than 40% difference in bacterial duplicates, these are genuine results.

\* Tests marked with a \* in this report are not included in the UKAS Accreditation Schedule for our laboratory



## SOUTHERN MICROBIOLOGICAL SERVICES LTD

Unit3, Georges Farm, West Buckland, Wellington, Somerset, TA21 9LE

Telephone: 01823 662062 Fax: 01823 660505

Email: [smsreception@tentamus.com](mailto:smsreception@tentamus.com) Website: [www.smslab.co.uk](http://www.smslab.co.uk)

Enital  
Enterprise Drive  
Four Ashes,  
Wolverhampton  
WV10 7DE

### TEST REPORT

**Enital Anderson Plates Controls PO No: 105274emailed Site: Llanddulas**  
**Client: FCC Date Sampled: 23.07.24**

Report Reference: 1240704321

Date Reported: 30 July 2024

Page 1 of 2

| <u>SMS Reference</u> | <u>Date Tested</u> | <u>Sample Code</u>       | <u>Sample Details</u> | <u>Ltrs of Air filtered</u> | <u>Further Details 2</u> | <u>TVC/plate</u> | <u>Asp. Fumigatus Plate</u> |
|----------------------|--------------------|--------------------------|-----------------------|-----------------------------|--------------------------|------------------|-----------------------------|
| 1240722349           | 24/07/24           | LL_CONTROL BIOAEM (93-C) | ---                   | -                           | ---                      | < 1 cfu / plate  |                             |
| 1240722350           | 24/07/24           | LL_CONTROL BIOAEM (94-C) | ---                   | -                           | ---                      |                  | < 1 cfu / plate             |
| 1240722351           | 24/07/24           | LL_FIELDBIO AEM (93-F)   | ---                   | -                           | ---                      | < 1 cfu / plate  |                             |
| 1240722352           | 24/07/24           | LL_FIELDBIO AEM (94-F)   | ---                   | -                           | ---                      |                  | < 1 cfu / plate             |

Enithal Anderson Plates Controls PO No: 105274emailed Site: Llanddulas  
Client: FCC Date Sampled: 23.07.24

Report Reference: 1240704321  
Date Reported: 30 July 2024  
Page 2 of 2

| <u>SMS</u><br><u>Reference</u> | <u>Date</u><br><u>Tested</u> | <u>Sample Code</u> | <u>Sample</u><br><u>Details</u> | <u>Ltrs of Air</u><br><u>filtered</u> | <u>Further</u><br><u>Details 2</u> | <u>TVC/plate</u> | <u>Asp.</u><br><u>Fumigatus</u><br><u>Plate</u> |
|--------------------------------|------------------------------|--------------------|---------------------------------|---------------------------------------|------------------------------------|------------------|-------------------------------------------------|
|                                |                              |                    |                                 |                                       |                                    |                  |                                                 |

Unless otherwise indicated, all samples were received in good condition, tests were performed at the above address and results apply to the sample as received. Date tested equals date received.

  
Carol Macready  
Technical Administration Manager