This document has been prepared on behalf of **Shoalhaven Starches Pty Ltd** by:

Northstar Air Quality Pty Ltd,

Suite 1504, 275 Alfred Street, North Sydney, NSW 2060

Riverina Office: PO Box 483, Albury, NSW 2640

northstar-env.com | Tel: 1300 708 590

Shoalhaven Starches, Independent Odour Audit (25/26)

May 2025 to April 2026

Addressee(s):	Shoalhaven Starches Pty Ltd
Report Reference:	27.1007.FR1V2
Date:	29 September 2026
Status:	Final

Quality Control

Study	Status	Prepared by:	Checked by:	Authorised by:
Shoalhaven Starches - Independent Odour Audit (25/26) - May 2025 to April 2026	Final	Northstar	MD, GD, JS	GCG

Report Status

Northstar References		Report Status	Report Reference	Version
Year	Job Number	(Draft: Final)	(R*x*)	(V*x*)
27	1007	Final	R1	V2
Based upon the above, the specific reference for this version of the report is:				**27.1007.FR1V2**

Final Authority

This report must by regarded as draft until the above study components have been each marked as final, and the document has been signed and dated below.

G. Graham **29 September 2026**

© Northstar Air Quality Pty Ltd 2026

Copyright in the drawings, information and data recorded in this document (the information) is the property of Northstar Air Quality Pty Ltd. This report has been prepared with the due care and attention of a suitably qualified consultant. Information is obtained from sources believed to be reliable, but is in no way guaranteed. No guarantee of any kind is implied or possible where predictions of future conditions are attempted. This report (including any enclosures and attachments) has been prepared for the exclusive use and benefit of the addressee(s) and solely for the purpose for which it is provided. Unless we provide express prior written consent, no part of this report should be reproduced, distributed or communicated to any third party. We do not accept any liability if this report is used for an alternative purpose from which it is intended, nor to any third party in respect of this report.

Contents

1. INTRODUCTION 6

1.1. Auditing Period 6

1.2. Consultation 7

1.2.1. Environment Protection Authority (EPA) 7

1.2.2. Department of Planning, Housing and Infrastructure (DPHI) 8

1.3. Site Inspection 8

2. ODOUR AUDIT REQUIREMENTS 9

2.1. Audit Procedure 9

2.2. Audit Compliance Status Descriptors 9

2.3. Audit Recommendations 10

2.4. Consolidated Odour Conditions and Summary of Compliance 10

3. ODOUR AUDIT EVIDENCE 11

3.1. Review of Management Plans 11

3.1.1. Odour Management Plan 11

3.1.2. Pollution Incident Response Management Plan 12

3.2. Odour Complaints 12

3.3. Review of Production Data 18

3.4. Independent Environmental Audit 19

3.5. Biofilter Capacity and Condition Assessments 19

3.6. Odour Monitoring Results 21

3.6.1. Process Conditions during the Monitoring 21

3.6.2. Summary of Measurements – Annual Testing 23

3.6.3. Summary of Measurements – Quarterly Testing 23

3.6.4. Variability of Measurements 25

3.7. Odour Modelling 28

3.8. Pollution Reduction Program 28

4. ODOUR AUDIT FINDINGS 29

5. SUMMARY 39

5.1. Identified Non-Compliances 39

5.2. Recommendations 39

6. REFERENCES 41

Appendices

Appendix A – Director General's Letter of Appointment

Appendix B – Biofilter Photographs

Appendix C – DDG Biofilter & Capacity & Condition Assessment Reports

Appendix D – Annual and Quarterly Odour Emission Surveys

Appendix E – Odour Complaint Records (Redacted)

Tables

Table 1	Odour audit compliance criteria	9
Table 2	Odour complaints over the audit period	13
Table 3	Odour monitoring and production rates	18
Table 4	Inter-year comparison of ethanol production during emission testing	19
Table 5	Biofilter capacity and condition report (#28) – operating parameters	19
Table 6	Biofilter capacity and condition reports – odour measurements	20
Table 7	Odour sources not tested or with limitations during the audit period	22
Table 8	Summary of annual odour monitoring results	23
Table 9	Summary of quarterly odour monitoring results	24
Table 10	Observed variability in the measured odour emission rate (by quarter)	25
Table 11	Observed variability in the measured mean odour emission rate (by audit year)	27
Table 12	Observed variability in the measured odour concentration and volumetric discharge rate	28
Table 13	Consolidated odour conditions and summary of compliance (MOD 33, Schedule 3)	30
Table 14	Independent odour audit non-compliances	39
Table 15	Independent odour audit recommendations	39

Figures

Figure 1	Data sources audited in this audit period	7
Figure 2	Variation in measured emission rates (range and mean)	26

Units Used in the Report

All units presented in the report follow the International System of Units (SI) conventions, unless derived from references using non-SI units. In this report, units formed by the division of SI and non-SI units are expressed as a negative exponent, and do not use the solidus (/) symbol.

For example, 20 odour units cubic metres per second would be presented as 20 $OU \cdot m^3 \cdot s^{-1}$ and not 20 $OU \cdot m^3/s$.

1. INTRODUCTION

Shoalhaven Starches Pty Ltd (on behalf of the Manildra Group) has engaged Gary Graham (Director, Northstar Air Quality Pty Ltd (Northstar)) to perform the independent odour audit (IOA) (May 2025 to April 2026) of the Shoalhaven Starches Facility (the Facility) operated by Manildra Group located at Bolong Road, Bomaderry, NSW.

The purpose of the IOA is to satisfy Condition 5 of Schedule 3 of Ministers Condition of Approval (MCoA) (06_0228-Mod-29, 19 December 2024), as reproduced below:

Independent Odour Audit

5. Within 3 months of the implementation of the mandatory odour controls (see Appendix 3), and annually thereafter unless the **Secretary** directs otherwise, the Applicant shall commission and pay the full cost of an Independent Odour Audit of the development. This audit must be conducted by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the **Secretary**. During the audit, this expert must:
   a) consult with **EPA** and the Department;
   b) audit the effectiveness of the odour controls on site in regard to protecting receivers against offensive odour;
   c) review the Applicant's production data (that are relevant to the odour audit) and complaint records;
   d) review the Odour Management Plan for the development;
   e) measure all key odour sources on site, and compare the results of these measurements against the predictions in the EA;
   f) determine whether the development is complying with the requirements in this consent; and, if necessary,
   g) recommend and prioritise measures to either improve the odour controls on site and/or the Odour Management Plan, such that receivers would be protected against offensive odour from the site.

   *Note: The **Secretary** may vary the frequency of the audit depending on the performance of the development.*

The Independent Audit Declaration Form, and the Director General's Letter of Appointment is attached in Appendix A of this report.

The requirement for an Independent Odour Audit is prescribed within Schedule 3 of the consolidated conditions of Project Approval 06_0228. For clarity, the consolidated conditions are reproduced in their entity in Table 13 (Section 4), with a reference to the sections of the report that provide evidence and commentary on the compliance (or otherwise) with each condition related to odour.

1.1. Auditing Period

This odour audit covers the period from May 2025 to April 2026, aligned to the Environment Protection Licence (EPL) reporting period. With reference to the NSW Environment Protection Authority (EPA) website[1], it is noted that anniversary date for EPL 883 is stated as 30 April. Correspondingly, this report covers the period from May 2025 to April 2026 inclusive.

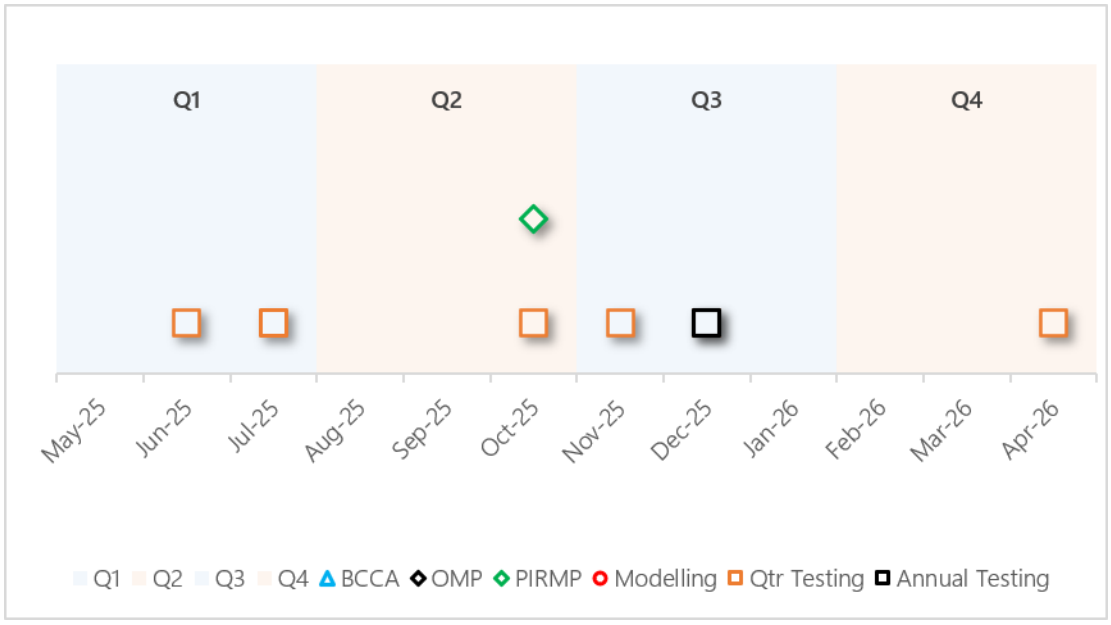
[1] http://www.epa.nsw.gov.au/prpoeoapp/

The quarters of the reporting year covered by this audit are therefore:

- Quarter 1 (Q1): May 2025 to July 2025;
- Quarter 2 (Q2): August 2025 to October 2025;
- Quarter 3 (Q3): November 2025 to January 2026; and
- Quarter 4 (Q4): February 2026 to April 2026.

The various reports relating to plant performance and odour emissions (including the quarterly and annual odour emissions test, biofilter capacity and condition assessments, management plans and modelling assessments) are discussed in the relevant sections of this audit report, and for ease of understanding how these data sources relate to the audit period, a summary has been provided in Figure 1.

Figure 1 Data sources audited in this audit period



Notes: BCCA – Biofilter Capacity and Condition report, Qtr Testing – Quarterly odour source monitoring, OMP – Odour Management Plan, Annual testing – Annual odour source monitoring, PIRMP – Pollution Incident and Response Management Plan, Modelling – Odour modelling

1.2. Consultation

As required under Condition 5, consultation with the relevant regulatory bodies (EPA and NSW Department of Planning, Housing and Infrastructure [DPHI]) was performed as part of this odour audit.

1.2.1. Environment Protection Authority (EPA)

The EPA was contacted by email on 11 August 2026, and an email response was provided on 14 August 2026 which is reproduced below:

"Thank you for your email regarding the upcoming annual odour audit at Shoalhaven Starches.

The EPA has the following comments for your consideration:

- *Shoalhaven Starches provided the Stage 3 odour pollution reduction study report (prepared by GHD) to EPA in July 2025 (Project No 12582891). An updated version (Revision 1 – dated 29 April 2026) was submitted following comments from the EPA on the previous revision. The EPA is currently reviewing Revision 1. The study was a requirement of Condition U3 of the Environment Protection Licence (EPL) No 883. The report included a dispersion modelling study and a series of recommendations. These included (but not limited to):*
  - *Undertake a focus source mitigation investigation*
  - *Biofilter performance review; and*
  - *Investigate the potential feasibility for real-time monitoring of key odour sources and sensitive areas.*
- *The odour audit could consider which of these recommendations have been implemented in the audit period.*
- *During a site familiarisation inspection in February 2025, EPA officers noted odours near the ethanol storage area and fermenters. The odour smelt like cheap dark rum (i.e. solvent).*
- *During a site inspections on 30 May 2025 and 30 September 2025, EPA officers inspected biofilter 3 and noted the following:*
  - *Potentially offensive solvent odours coming from the biofilter. The odours were considered more offensive than the sweeter bread/dough type odours identified in the biofilter inlet pipe.*
  - *The media in biofilter 3 contained some rocks and larger pieces of mulch/timber that may have been above the size designed to be placed in the beds.*
  - *By comparison, biofilter 1 and 2 were less odourous.*
- *The EPA are not aware of any offensive odour reports during the audit period."*

Reference should be made to Section 3.2 that summarises the odour complaints as reported by Manildra over the audit period. Section 3.5 discusses the biofilter condition assessments and observations, and Section 3.7 discusses the odour modelling studies performed over the audit period.

1.2.2. Department of Planning, Housing and Infrastructure (DPHI)

DPHI was contacted by email on 11 August 2026.

1.3. Site Inspection

An audit opening meeting and site inspection was performed on 14 August 2026. The site inspection was facilitated by [redacted] and attended by Gary Graham (Northstar). Following submission of the draft audit findings, an audit close-out meeting was held via MS Teams with [redacted] on 21 September 2026.

2. ODOUR AUDIT REQUIREMENTS

2.1. Audit Procedure

The procedure followed during the audit was derived from NSW Department of Planning, Housing and Infrastructure (2026) Independent Audit – Post Approval Requirements (PAR) (DPHI, 2026). The requirements for an audit are prescribed in Appendix B of the PAR. The methodology adopted in this audit has followed this guidance. An additional column 'recommendations / actions' has been included to discuss remedial actions and/or recommendations where necessary, as required under Section 4.2.4 of the guidance.

For each **non-compliance,** a unique identification number (UIN) has been assigned as required under the PAR (DPHI, 2026). As this odour audit is performed against the conditions presented in Schedule 3 of the Consolidated Conditions of Project Approval, each UIN has been labelled as **25/26-NC-n** where *n* is the Condition Number derived from MOD 28 and replicated in the first column of Table 13. Reference to UINs in previous odour audit reports will adopt the same nomenclature as previously reported (as sequential numbers rather than condition numbers) to avoid any confusion.

2.2. Audit Compliance Status Descriptors

As presented in NSW DPHI PAR (DPHI, 2026), the criteria outlined in Table 1 have been adopted for the independent odour audit:

Table 1 Odour audit compliance criteria

Status	Description
Compliant	The auditor has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with within the audit period.
Non-compliant	The auditor has determined that one or more specific elements of the conditions or requirements have not been complied with within the audit period.
Not triggered	A requirement has an activation or timing trigger that has not been met during the audit period (may be a retrospective or future requirement), therefore an assessment of compliance is not relevant.

The following is also noted:

> *"The terms noted, partial compliance, partial non-compliance, not verified, administrative noncompliance or other similar terms must not be used as a compliance descriptor.*
>
> *Risk assessing the compliance status of every condition and introducing new risk or priority management terms is not allowed.*

As part of the Independent Audit process, the audit team may make observations, including identifying any opportunities for improvement in relation to any compliance requirement or any other aspect of the project. Any observations or notes are in addition to the compliance status descriptor assigned to each compliance requirement, limited to the descriptors listed in Table 2." (as reproduced in Table 1).

2.3. Audit Recommendations

Where recommendations are noted, these are expressed in Section 3 and are not replicated in Section 5.2 which relates to the compliance with the Consolidated Conditions of Project Approval only. These are designated UIN and do not carry the Condition reference to avoid compliance issues. Recommendations are provided for any observed opportunity for improved odour performance and are not solely related to compliance with the Consolidated Conditions of Project Approval.

2.4. Consolidated Odour Conditions and Summary of Compliance

Section 5.1 and Table 13 presents a list of odour conditions, as prescribed in Schedule 3 of the Consolidated Conditions of Project Approval.

These conditions have been repeated *verbatim* and are accompanied with a summary of the sections of this report that provide additional evidence and commentary, and a summary of compliance (or otherwise) with that specific condition.

3. ODOUR AUDIT EVIDENCE

3.1. Review of Management Plans

As required to comply with Condition 5d of PA 06_0228, the following relevant management plans in place during the audit period have been reviewed:

- Shoalhaven Starches (2025) Shoalhaven Starches Ethanol Upgrade Odour Management Plan (ref: EN-P-247 1.0.I. April 2025) (TOU, May 2025); and
- Shoalhaven Starches (2025) Pollution Incident Response Management Plan (ref: EN-P-248 1.0.R. Oct 2025) (Manildra, 2025)

3.1.1. Odour Management Plan

The version of the Odour Management Plan (OMP) in force during the audit period was revision 1.0.I (April 2025 (TOU, May 2025).

At the request of NSW EPA during the 2020/21 audit, the odour complaint procedure presented in the OMP has been reviewed, to facilitate a review of how the reported complaints have been recorded and responded to.

The procedure for responding to odour complaints is presented in section 4.3.1 of the OMP which is unchanged from previous iterations:

> *"1. The Environmental Complaints Handling procedure must reflect the requirements of Licence No. 883 set out in sections M5 of the licence.*
> *2. The Environmental Manager and Site Manager have ownership of the system and have authority and responsibility to ensure that necessary corrective actions are taken.*
> *3. Environmental complaints can be received through any of the following avenues:*
> *a. Environment Protection Authority (EPA)*
> *b. 24 hour a day complaints hotline*
> *c. Ringing main office*
> *4. The following procedure is followed when a complaint is received:*
> *a. All environmental complaints must be directed immediately to the Environmental Manager.*
> *b. If the Manager is not available, then directed to Farm Manager and then if not available to the Site Manager.*
> *c. The following details are recorded (where given by the complainant) in the Environmental Complaints Database*
> *i. Name of complainant and contact details (if they want to be identified). Details are required to enable Shoalhaven Starches to report back to the person once the complaint is investigated.*
> *ii. Nature of complaint – noise, dust/smoke, odour, spill, incident etc*
> *iii. Duration of the problem (dates and times)*
> *d. The Environmental Manager then investigates the complaint and if applicable initiates corrective action. This information is recorded in the Environmental Complaints Database.*
> *e. Once the investigation is complete, the details are give to the Quality Assurance department and the details entered into the Environmental Complaints section in the Fastrack Document Control system.*

f. A copy of the complaint is forwarded to the Site Manager and relevant Plant Manager as required.

5. *Details of complaints received direct from the EPA are sent to the Environmental Manager for investigation and dealt with as per the above procedure.*
6. *If the complaint is the same as one received directly by the company, then the EPA reference Number is added to the existing complaint (hence so doubling up does not occur).*
7. *Environmental Complaints are reviewed on an annual basis as part of the company's Annual Environmental Report. This annual review includes comparison with previous years."*

3.1.2. Pollution Incident Response Management Plan

The versions of the PIRMP relevant to the audit period are revisions 1.0.Q (Oct 2024) and revision 1.0.R (Oct 2025).

The document revision record on p2/48 of the PIRMP outlines the changes in the versions in place during the audit period as:

- 1.0.Q (Oct 2024): *"Review of PIRMP following pollution incident"*
- 1.0.R (Oct 2025): *"Annual review & Minor changes to plan"*

The updates have been reviewed and are not considered to be significant in terms of the Odour Audit.

3.2. Odour Complaints

Odour complaints may be reported through two principal routes:

(i) directly as a telephone call to Shoalhaven Starches (via the 24-hr/day hotline or directly to the Environmental Manager); or

(ii) indirectly through the NSW EPA.

Table 2 below presents a summary of the odour complaints received over the reporting period with some information relating to the complainant and/or location removed. Details of the complaints recorded from direct calls, response and follow-up are presented (in full, but redacted for personal information) in Appendix E.

Table 2 Odour complaints over the audit period

Date	Route	Complaint Ref (CC-ESCHOAL-)	Location	Description	Likely Cause	Action	Review	Complaint Status
10 Sep 2025	EPA	124	N/D	The complainant reported severe rotten egg-like odours from the Manildra processing swamp/dam located in the paddock opposite the old Shoalhaven Paper Mill site on Thursday 4th September at approximately 11am. The complainant noted this differed from the usual strong yeast smell from the main Manildra site, which regularly affects areas as far as Shoalhaven Heads and is often detected at residential properties in early morning hours. The incident involves the Manildra industrial site on the Shoalhaven River, with odour impacts affecting the local community and surrounding environment.	This event caused by inflation of the Anerobic Digestor as a safety precaution during periods of high biogas generation. Biogas generation spiked on this day as the result of a major blackout occurring the day before leading to increase organic load for treatment	Email to site operation managers informing on the complaint and requesting any information to help investigation	Source of odour was known and was a safety precautionary thing and is not common occurrence. Increased capacity of the WWTP is currently being explored through the MOD process to provide extra buffer in extreme rare circumstances like that which occurred on this day.	Logged

20 Oct 2025	EPA	128	Bomaderry	There is a very strong and acrid (like vomit) odour that is coming from the Manildra plant in Bomaderry and up [redacted] Nobody can go outside or open their windows. It has been a hot day and we were hoping to cool down our house. This is repulsive and needs to be investigated. There is an intermittent yeasty smell that occurs from Manildra. We can't continue to tolerate this odour pollution. Please could you investigate as this needs to stop. Thank you in advance. I returned home from the central Nowra shopping area and there was no smell there. As soon as I got out of the car at my home in Bomaderry an acrid smell like vomit (butanoic acid) which is a very distinct smell hit me. I smelt it again at around 6pm tonight at my home in Bomaderry but it was not strong. It was definitely coming from Manildra. Please could this	Unknown but likely Biofilter as the wind direction and description matches on the days described	- Reviewed wind direction which matches to the direction of the complainant - Emailed Managers asking if any known disruptions	Likely to be from Shoalhaven Starches	Logged

Date	Route	Complaint Ref (CC-ESCHOAL-)	Location	Description	Likely Cause	Action	Review	Complaint Status
				be investigated. Thank you for your help and support.				
20 Oct 2025	Direct	129	Bomaderry	[Complainant] called reception directly to complain of Odour in Bomaderry which had been particularly noticeable over the last few days (from Saturday she said). Described the smell as yeasty and "over ripe". Lives up at [redacted]. Has lived in the area 50 years. Was going to ring EPA but called us first to let us know	Unable to determine source of odour	- Email to Managers asking about any known issues - Wind direction very still on this day - Drove to site to verify smell but was masked by lawn mowing at the time.	Possible to have been from Shoalhaven Starches but location of complainant is very far away and on other side of town	Logged

Date	Route	Complaint Ref (CC-ESCHOAL-)	Location	Description	Likely Cause	Action	Review	Complaint Status
7 Nov 2025	Direct	130	Bomaderry	The odour from Manildra at the Bomaderry shops today is just awful. When it is humid the smell stays in the air and it makes me feel quite sick. I don't know how the people working in the shop can stand it. Surely more can be done about this. I have just viewed your independent odour audit and it seems you were working on issues of exceeding acceptable limits in May. It is now November.	Unable to determine source of odour	- Email to managers to inform them of Odour Complaint - Email to complainant asking for more details. but didn't hear back	Possible to be from Shoalhaven Starches	Logged

Date	Route	Complaint Ref (CC-ESCHOAL-)	Location	Description	Likely Cause	Action	Review	Complaint Status
29 Dec 2025	Direct	132	Bomaderry	It has been noted this week especially 24/12/25 that one of your processes manufacturing or cleaning is sending a chemical smell into the air. I live in the area and thought this was a one time event. Apparently it is not. It gives me headaches from it effect. This odour is new as I have been familiar with others produced at your site. Please investigate my query. I can be contacted for further information regarding this. Complainant lives at [redacted]	Unable to determine source of complaint - Complainant never smelt it again - Unlikely to Shoalhaven Starches	- Email to Managers sent 29/12 asking if any known issues on the evening of 24th and morning 25th. - Wind direction predominantly SE which lines up with coming from site	- Given smell description unlikely to be from Shoalhaven Starches	Logged
25 May 2026	Direct	136	Nowra	There was also a strong smell of starch over the same weekend. I would consider these observations to be a complaint.	Unable to determine the source of the compliant	- Complainant received 3 weeks post incident so hard to consider operating conditions and sentiment from the day. - Review of wind data showed various directions across weekend, without more accurate times hard to infer relationship	N/D	Logged

Details of the complaints recorded from direct calls, response and follow-up are presented in Appendix E. These have been reviewed with regard to the complaint procedure discussed in Section 3.1.1, and no discrepancies have been identified.

3.3. Review of Production Data

As required, a review of the facility's production data at the times of the odour monitoring (refer Section 3.6) has been performed.

The production data correspond to the periods of emission testing, as reported in:

- Daily Ethanol Production Volumes 2015-2026

Copies of the monitoring reports are presented in Appendix D of this report. The production volumes relevant to the odour monitoring events are presented in Table 3.

Table 3 Odour monitoring and production rates

Quarter	Date of Quarterly Odour Sampling	Daily Ethanol Production ($L \cdot day^{-1}$)	Annual Production Rate Equivalent ($ML \cdot yr^{-1}$)
1	26/06/2025	854 293	312
	8/07/2025	730 555	267
	15/07/2025	896 812	327
2	2/10/2025	992 747	362
	13/10/2025	741 113	271
	20/10/2025	1 005 810	367
3	27/11/2025	742 620	271
	9/12/2025	752 954	275
	10/12/2025	821 002	300
4	16/12/2025	806 501	294
	1/04/2026	825 593	301
	9/04/2026	705 538	258
Minimum		623 159	227
Maximum		1 005 810	367
Mean		807 592	295
Range (Max/Min)		1.6	1.6

For comparison purposes only, the production rates contemporaneous with the quarterly and annual testing reported in the previous audit periods are reported in Table 4.

Table 4 Inter-year comparison of ethanol production during emission testing

Aduit Period	Ethanol Production Rates (kL·day^{-1})		
	Minimum	Mean	Maximum
2025 – 2026 (this audit)	623	808	1 006
2024-2025	208	706	1 019
2023-2024	594	784	952
2022-2023	562	777	994

The mean production rate during the May 2025 to April 2026 audit period was approximately 14 % higher than the previous audit year.

3.4. Independent Environmental Audit

Whilst some developments documented in the independent environmental audit report (Malo Sustainability Consulting (2024) *Independent Environmental Audit*) have a direct implication on the management of odour from the facility, most of the content in the audit report is outside of the scope of the Independent Odour Audit, and no comment is offered.

It is understood that the most recent IEA covers the period from June 2022 to June 2025 and is ongoing.

3.5. Biofilter Capacity and Condition Assessments

DDG Biofilter Capacity and Condition Assessment (BCCA) report #29 was completed in May 2026. **It is noted that this is outside of the audit period**.

A copy of DDG BCCA #29 performed by The Odour Unit is presented in Appendix C. This has not been replicated in the main body of this audit report but presented below is a summary of the key observations and measurements.

The design airflow of the installed biofilter system is stated as 15 000 $m^3 \cdot hr^{-1}$ per biofilter.

The operating conditions of the biofilters are summarised in Table 5.

Table 5 Biofilter capacity and condition report (#28) – operating parameters

Date	Position	Airflow ($m^3 \cdot hr^{-1}$)	RH (%)	Air Temp (°C)	UB Pressure (Pa)
5 May 2026 (#28)	Main duct	19 890	100	49.5	315
	DDG 4&5 duct	4 550	100	29.9	532
	Biofilter A inlet duct	4 160	100	46.8	164
	Biofilter B&C common duct	13 320	100	46.1	84

Date	Position	Airflow ($m^3 \cdot hr^{-1}$)	RH (%)	Air Temp (°C)	UB Pressure (Pa)
	Biofilter B - Cell 1 inlet dropper	2 660	100	46.2	24
	Biofilter B - Cell 2 inlet dropper	3 430	100	46.1	24
	Biofilter C	9 370	100	46.5	63

Table 6 presents the measured odour concentrations. The geometric mean odour concentrations at all biofilters exceeds the *de facto* standard of 500 OU, although it is noted to be achieving a 82 % destruction efficiency.

Table 6 Biofilter capacity and condition reports – odour measurements

Sample Location	Odour Concentration (OU)	Odour Character
DDG 4 & 5 Inlet Duct	176 000	yeast, bread, grainy, sour
Main duct (pre DDG 4 & 5)	25 500	yeast, bread, grainy, sour
Main duct (post DDG 4&5)	14 300	yeast, bread, grainy
Biofilter A Cell 1 Outlet	892	meaty, nutty, grainy
Biofilter A Cell 2 Outlet	2 660	meaty, nutty, grassy, grainy
Biofilter A Outlet (Geomean)	**1 540**	-
Biofilter B Cell 1 Outlet	3 330	meaty, nutty, grainy
Biofilter B Cell 2 Outlet	8 930	meaty nutty, grainy
Biofilter B Outlet (Geomean)	**5 450**	-
Biofilter C Cell 1 Outlet (closest to inlet duct)	6 320	meaty, nutty, grainy
Biofilter C Cell 1 Outlet (furthest from inlet duct)	1 550	meaty, nutty, grainy
Biofilter C Cell 2 Outlet (closest to inlet duct)	956	meaty, nutty, grainy
Biofilter C Cell 2 Outlet (furthest from inlet duct)	1 350	meaty, nutty, grainy
Biofilter C Outlet (Geomean)	**1 890**	-
Global Geomean Biofilter Outlet Result	**2 510**	-
Mean Odour Destruction Efficiency	**82 %**	-

Recommendation A (25/26)

Based upon the data presented in Table 6, the biofilters are not achieving the *de facto* 500 OU standard. It is recommended that the biofilters are operated to achieve lower odour outlet concentrations.

During the consultation with the NSW EPA (see Section 1.2.1), the EPA noted *"potentially offensive solvent odours coming from the biofilter solvent-like odour from the biofilters. The odours were considered more offensive than the sweeter bread/dough type odours identified in the biofilter inlet pipe."* During the site inspection, the odour around the biofilters was anecdotally observed to be characterised as yeasty or bready.

The NSW EPA also note that during site inspections on May 2025 and September 2025, biofilter 3 (biofilter C) had some rocks in the biofilter media. Photographs of the biofilter 3 were taken during the site inspection and rocks were not noted on the surface of the media of biofilter 3 (see Appendix B).

3.6. Odour Monitoring Results

The results of the monitoring programs performed over the audit period are presented in Table 8, Table 9 and Table 10. Copies of the monitoring reports are presented in Appendix D of this report.

These data are taken from the following reports:

- Ektimo (2025) R019010 Odour Emission Testing Report Quarter 1 2025-2026 (measurements taken during June and July 2025) (Ektimo, Sep 2025);
- Ektimo (2025) R019414 Odour Emission Testing Report Quarter 2 2025-2026 (measurements taken during October 2025) (Ektimo, Nov 2025);
- Ektimo (2026) R019730 Odour Emission Testing Report Quarter 3 2025-2026 (measurements taken during November and December 2025) (Ektimo, Jan 2026); and
- Ektimo (2026) R020180 Odour Emission Testing Report Quarter 4 2025-2026 (measurements taken during April 2026) (Ektimo, May 2026).

3.6.1. Process Conditions during the Monitoring

The Ektimo monitoring reports (see Appendix D) provide comments relating to the plant operation conditions during testing. From the monitoring data summary (see Section 3.6.3), it is noted that the following EPL discharge points were not tested and/or had other limitations during the testing:

Table 7 Odour sources not tested or with limitations during the audit period

EPA ID	Source	Reason (as stated in the test report)
Q1		
12	No 1 dryer	Not in operation on the date of odour sampling.
35	Combined boiler 5 & 6	Not in operation on the date of odour sampling
Q2		
12	No 1 dryer	Not in operation on the date of odour sampling
35	Combined boiler 5 & 6	Not in operation on the date of odour sampling
Q3		
12	No 1 dryer	Not in operation on the date of odour sampling
19	Effluent Pond 1	Not tested(A)
20	Effluent Pond 2	Not tested(A)
21	Effluent Pond 3	Not tested(A)
22	Effluent Pond 4	Not tested
42	Boiler 4	Not in operation on the date of odour sampling
Q4		
9	No 2 gluten dryer	Not in operation on the date of odour sampling
12	No 1 dryer	Not in operation on the date of odour sampling
42	Boiler 4	Not in operation on the date of odour sampling

Note (A) It is advised that Effluent Ponds 1-3 (EPL 19, 20, 21) are no longer in operational use.

The IOA for the 24/25 audit period identified a recommendation for the discussion with NSW EPA regarding the retention of Effluent Ponds 1-4 on the EPL as discharge points EPL 19, 20, 21 and 22. As part of this IOA, it has been advised that those discussions have been addressed, partly through a MOD application that is currently being determined. On this basis, it is considered that the recommendation has been resolved pending the determination of that matter.

The IOA for the 24/25 audit period also provided a recommendation that the access arrangements to EPA ID 8 are reviewed to avoid sampling from the exit of the stack. As part of this IOA, it has been advised that a temporary work-around has been provided to enable gaseous sampling, but not direct volumetric flow measurements. It was also advised that the ID fan serving EPA ID 8 is a fixed-speed fan and as such that the flow rate is not likely to vary significantly which reduces this deficiency. It was also advised that EPA ID 8 may be decommissioned to replaced by a alternative dryer that would resolve this deficiency.

Recommendation B (25/26)

With regard to flow measurements at EPA ID 8 the odour monitoring reports state: "*Sampling was undertaken at the exit of the stack as it was the only accessible area for the samples to be taken. No temperature or flow rate readings could be taken due to access issues.*" It is recommended that the access restrictions to EPA ID 8 are resolved to enable compliant odour monitoring to be performed.

3.6.2. Summary of Measurements – Annual Testing

Table 8 presents a summary of the annual odour tests over the reporting period, conducted on the effluent storage dams (EPA ID nos 19-24) and the sulphur oxidation pond (EPA ID 25).

Table 8 Summary of annual odour monitoring results

EPA Ref	Location	Frequency	Q3 and Annual (OU)
19	Effluent Pond 1	Annual	nd (see Table 7)
20	Effluent Pond 2	Annual	nd (see Table 7)
21	Effluent Pond 3	Annual	nd (see Table 7)
22	Effluent Pond 4	Annual	nd (see Table 7)
23	Effluent Pond 5	Annual	83
24	Effluent Pond 6	Annual	120
25	Sulphur Oxidation Pond	Annual	90

Note: nd no data.

3.6.3. Summary of Measurements – Quarterly Testing

Table 9 presents a summary of the quarterly monitoring results measured over the reporting period. The table has been presented by source (EPA source ref) and by testing quarter (Q1 to Q4). The data is presented as odour concentrations (OU) and as mass odour emission rates (MOER) (OU·Nm^3·s^{-1}).

Note: It is noted that the MOER stated in the quarterly monitoring reports are presented at standard temperature and pressure (STP) as stated in Appendix A of the test reports.

Table 9 Summary of quarterly odour monitoring results

EPA Ref	Location	Frequency	Q1		Q2		Q3		Q4	
			OU	OU·Nm³·s⁻¹	OU	OU·Nm³·s⁻¹	OU	OU·Nm³·s⁻¹	OU	OU·Nm³·s⁻¹
8	No 1 Gluten Dryer	Quarterly	240		280		130		630	
9	No 2 Gluten / Starch Dryer	Quarterly	220	3 080	150	2 250	110	1 540	580	36 540
10	No 3 Gluten Dryer	Quarterly	690	32 430	770	37 730	530	25 440	830	25 730
11	No 4 Gluten Dryer	Quarterly	830	25 730	490	15 680	250	7 500		
12	No 1 Starch Dryer	Quarterly								
13	No 3 Starch Dryer	Quarterly	75		68		180		45	
14	No 4 Starch Dryer	Quarterly	88		68		71		430	
16	CO_2 Scrubber Outlet	Quarterly	30 000	69 000	36 000	54 000	20 000	28 000	12 000	21 600
--	CO_2 Scrubber Inlet	Quarterly	33 000	75 900	39 000	58 500	22 000	30 800	20 000	36 000
35	Combined Stack Boilers No5&6	Quarterly					1 700	27 200	1 200	19 200
39	Inlet Pipe Biofilters A&B (DDG1-3)	Quarterly	23 000	69 000	15 000	46 500	14 000	37 800	14 000	46 200
39A	Inlet Pipe Biofilters A&B (DDG#4)	Quarterly	46 000	46 000	43 000	47 300	37 000	44 400	130 000	143 000
40	Outlet of Biofilter A (east)	Quarterly	2 000		1 800		4 600		3 600	
	Outlet of Biofilter A (west)	Quarterly	1 300		1 800		4 200		2 100	
41	Outlet of Biofilter B (east)	Quarterly	2 200		2 100		4 600		22 000	
	Outlet of Biofilter B (west)	Quarterly	31 000		1 800		5 100		27 000	
42	Boiler 4	Quarterly	2 500	22 500	3 100	26 970				
44	Fermenters	Quarterly	23 000	2 530	11 000	1 089	12 000	2 280	1 900	171
46	DDG Pellet Plant Stack	Quarterly	6 000	156 000	6 500	169 000	9 400	235 000	1 800	50 400
47	No 5 Starch Dryer	Quarterly	340	17 340	160	8 800	91	5 096	480	24 000

Regarding biofilters A and B, it is noted that biofilter odour concentration measurements taken during the Q1, Q2 and Q4 tests exceed the *de facto* emission standard of 500 OU.

3.6.4. Variability of Measurements

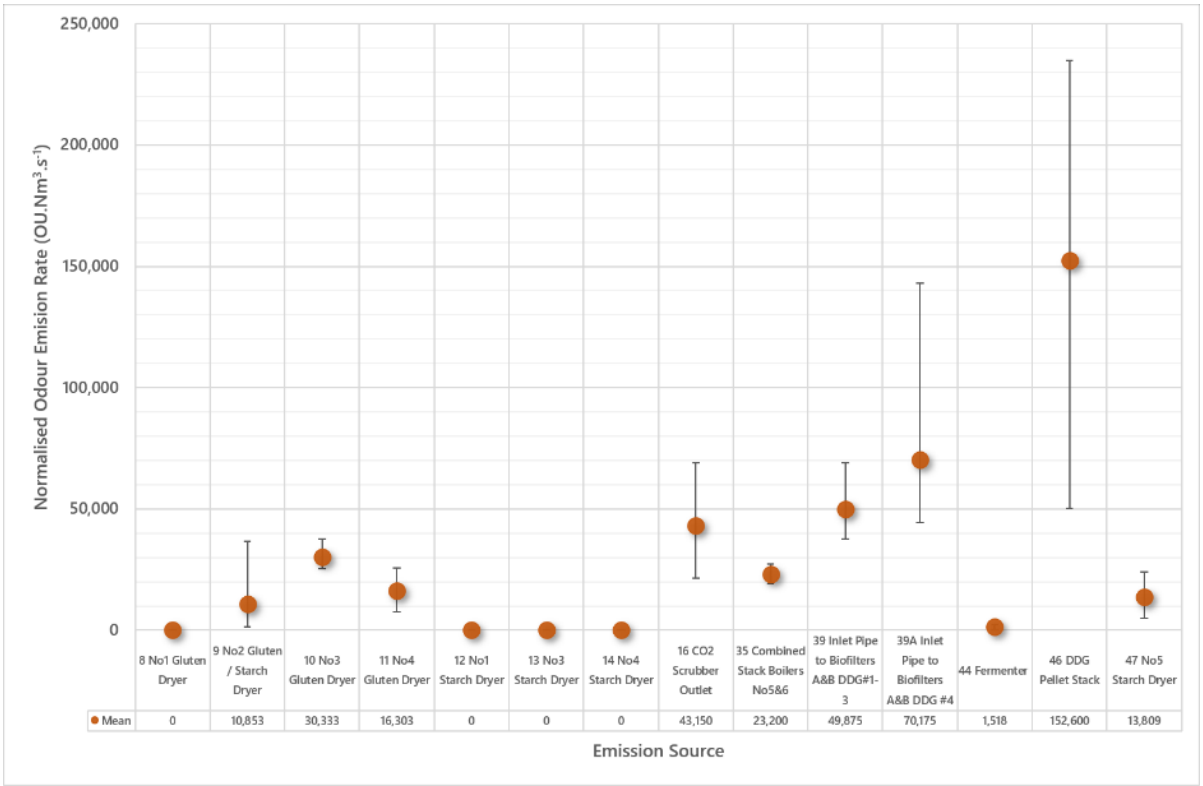
In terms of assessing the odour emission variability, the MOER (as $OU \cdot Nm^3 \cdot s^{-1}$) is the critical metric and is the product of the measured odour concentration (OU) and the measured volumetric discharge rate ($Nm^3 \cdot s^{-1}$). The variability in the MOER across the audit period is presented in Table 10. Any variability (max/min) greater than a factor of 10 (nominal threshold) are identified.

Table 10 Observed variability in the measured odour emission rate (by quarter)

EPA Ref	Location	MOER ($OU \cdot Nm^3 \cdot s^{-1}$)					
		Count	Min.	Max.	Mean	±STDev	Max/ Min
8	No 1 Gluten Dryer	0					
9	No 2 Gluten / Starch Dryer	4	1 540	36 540	10 853	17 137	23.7
10	No 3 Gluten Dryer	4	25 440	37 730	30 333	5 895	1.5
11	No 4 Gluten Dryer	3	7 500	25 730	16 303	9 131	3.4
12	No 1 Starch Dryer	0					
13	No 3 Starch Dryer	0					
14	No 4 Starch Dryer	0					
16	CO_2 Scrubber Outlet	4	21 600	69 000	43 150	22 210	3.2
35	Combined Stack Boilers No5&6	2	19 200	27 200	23 200	5 657	1.4
39	Inlet Pipe to Biofilters A&B	4	37 800	69 000	49 875	13 372	1.8
39A	Inlet Pipe to Biofilters A&B (DDG4)	4	44 400	143 000	70 175	48 564	3.2
42	Boiler 4	2	22 500	26 970	24 735	3 161	1.2
44	Fermenter	4	171	2 530	1 518	1 096	14.8
46	DDG Pellet Stack	4	50 400	235 000	152 600	76 409	4.7
47	No 5 Starch Dryer	4	5 096	24 000	13 809	8 511	4.7

The variation in odour emission rates, as range (represented by the observed minimum and maximum) and the arithmetic mean is illustrated in Figure 2.

Figure 2 Variation in measured emission rates (range and mean)



As noted in the previous independent odour audit reports, the atypical odour emission profile highlights an inherent potential variability in the emission rate subject to process operations. It is further noted that the odour measurement uncertainty, as performed in accordance with AS4323.3 and AS4323.4 is (generally) within the range of $0.7OU < OU < 1.4OU$. The Ektimo test reports present upper and lower uncertainty limits for odour measurements which confirms this uncertainty (at the 95th percentile confidence limits).

The data comparing the mean measured odour concentration as compared to the previous five odour audit periods are presented in Table 11 below:

Table 11 Observed variability in the measured mean odour emission rate (by audit year)

EPA Ref	Source	MOER (mean OU·Nm^3·s^{-1})						
		25-26	24-25	23-24	22-23	21-22	20-21	19-20
8	No1 Gluten Dryer	nd	nd	nd	nd	nd	7 979	6 375
9	No2 Gluten / Starch Dryer	10 853	10 893	2 980	8 793	6 520	6 287	6 225
10	No3 Gluten Dryer	30 333	54 977	38 195	67 810	23 050	23 780	15 675
11	No4 Gluten Dryer	16 303	29 288	23 498	29 265	14 578	12 923	11 600
12	No1 Starch Dryer	nd	13 680	7 720	10 523	5 683	4 353	3 130
13	No3 Starch Dryer	nd	nd	902	10 105	1 940	5 181	9 513
14	No4 Starch Dryer	nd	nd	1 804	11 103	2 989	3 549	6 285
16	CO_2 Scrubber Outlet	43 150	36 498	69 267	25 685	41 330	14 470	19 950
35	Combined Stack Boilers No5&6	23 200	47 450	57 285	37 440	17 315	55 982	52 750
39	Inlet Pipe to Biofilters A&B	49 875	100 000	41 130	31 185	22 165	46 149	56 900
39A	Inlet Pipe to Biofilters A&B DDG#4	70 175	84 367	47 705	29 380	23 260	15 307	8 500
44	Fermenter 15/16[(A)]	1 518	6 915	13 548	9 128	4 355	2 168	3 412
46	DDG Pellet Plant Stack	152 600	147 175	69 300	28 900	27 653	66 514	40 167
47	No5 Starch Dryer	13 809	15 875	23 108	42 128	33 153	17 676	21 621

The MOER is the product of the measured odour concentration (OU) and the volumetric discharge rate (Nm^3·s^{-1}) expressed as OU Nm^3·s^{-1}. Table 12 below presents a breakdown of the two component factors to the MOER, to add some light on whether the odour concentration and/or the volumetric discharge rate is overly influencing the variability in the MOER. Any variability (max/min) greater than a factor of 10 (nominal threshold) are identified.

Table 12 Observed variability in the measured odour concentration and volumetric discharge rate

EPA Ref	Location	Odour Concentration (OU)				Volumetric Discharge Rate ($Nm^3 \cdot s^{-1}$)			
		Max	Mean	Min	Max/ Min	Max	Mean	Min	Max/ Min
8	No1 Gluten Dryer	630	320	130	4.8				
9	No2 Gluten / Starch Dryer	580	265	110	5.3	63.0	26.5	14.0	4.5
10	No3 Gluten Dryer	830	705	530	1.6	49.0	43.8	31.0	1.6
11	No4 Gluten Dryer	830	523	250	3.3	32.0	31.0	30.0	1.1
12	No1 Starch Dryer								
13	No3 Starch Dryer	180	92	45	4.0				
14	No4 Starch Dryer	430	164	68	6.3				
16	CO_2 Scrubber Outlet	36 000	24 500	12 000	3.0	2.3	1.8	1.4	1.6
35	Combined Stack Boilers No5&6	1 700	1 450	1 200	1.4	16.0	16.0	16.0	1.0
39	Inlet Pipe to Biofilters A&B	23 000	16 500	14 000	1.6	3.3	3.0	2.7	1.2
39A	Inlet Pipe to Biofilters A&B DDG4	130 000	64 000	37 000	3.5	1.2	1.1	1.0	1.2
44	Fermenter	23 000	11 975	1 900	12.1	0.2	0.1	0.1	2.1
46	DDG Pellet Stack	9 400	5 925	1 800	5.2	28.0	26.3	25.0	1.1
47	No5 Starch Dryer	480	268	91	5.3	56.0	53.0	50.0	1.1

3.7. Odour Modelling

During the audit period, no odour modelling was performed.

3.8. Pollution Reduction Program

The Odour Pollution Reduction Study (Stage 3) was completed in July 2025, as required by Condition U32. It is understood that this is currently being reviewed by NSW EPA.

4. ODOUR AUDIT FINDINGS

The compiled audit table of the above information is presented in Table 13.

Table 13 Consolidated odour conditions and summary of compliance (MOD 33, Schedule 3)

Condition	Requirement	Evidence	Independent Audit Findings and Recommendations	Compliance Status & UIN
Offensive Odour				
1	The Applicant shall not cause or permit the emission of offensive odours from the site, as defined under Section 129 of the POEO Act.	Section 3.2 provides a summary of the odour complaints, and these are replicated (with redaction) in Appendix E. The number of odour complaints received in this period is eight (8) (see Section 3.2), which have been investigated and are closed.	NSW EPA has not issued any infringement notices against EPL 883 regarding offensive odour, as defined in Section 129 of the POEO Act.	Compliant
Implementation of Mandatory Odour Controls				
2	Prior to increasing ethanol production rates on site above 126 million litres a year or within 12 months of this approval, whichever is sooner, the Applicant shall implement all the mandatory odour controls listed in Appendix 3 and described in detail in the Odour Management Plan (see condition 4 below), to the satisfaction of the Secretary.	Controls implemented as evidenced in previous IOA.	None.	Compliant

Condition	Requirement	Evidence	Independent Audit Findings and Recommendations	Compliance Status & UIN
3	The Applicant shall implement additional mandatory odour controls as may be directed by the Secretary, arising from the Department's assessment of any:	Controls implemented as evidenced in previous IOA.	None.	Not triggered
	a) Independent Odour Audit (see condition 5 below);	None.	None.	--
	b) Independent Environmental Audit (see condition 4 of schedule 4); or	None.	The Independent Environmental Audit is addressed in Section 3.4.	--
	c) any monitoring results, incidents or complaints related to the project.	None.	None.	--
3A	Prior to commissioning the duct work that directs additional emissions from the evaporator plant area and load-out chute to the bio-filter (as identified in the amended modification proposal) the Applicant must demonstrate to the satisfaction of the Secretary and the EPA that the bio-filter can accommodate the additional load while maintaining acceptable treatment performance.	Controls implemented as evidenced in previous IOA.	Completed.	Compliant

Condition	Requirement	Evidence	Independent Audit Findings and Recommendations	Compliance Status & UIN
3B	Should the Applicant opt to install a DDG pelletising plant as identified in the additional odour controls in Appendix 3 the plant must comply with all regulatory requirements including air and odour emissions standards that are in force at the time of installation. Compliance must be demonstrated to the satisfaction of the Secretary and EPA before installation work begins.	Controls implemented as evidenced in previous IOA.	Completed.	Compliant
3C	Deleted	None.	None	--
3D	Prior to construction of any part of MOD 11 and MOD 12 as described in Schedule 2, Condition 2, the Applicant shall implement odour mitigation controls on the gluten dryers 3 and 4. The controls shall include re-orienting the discharge vents and increasing the velocity of discharges to improve odour dispersion, as described in MOD 11 and MOD 12. The Applicant shall provide evidence to the satisfaction of the Secretary to demonstrate that the odour mitigation controls have been successfully implemented.	The plant modifications, including the re-orientation of the discharge vents have been implemented, although it is noted that neither of the modified discharges are vertical.	A letter from DPI&E (ref: 10/06422-11, dated 24/10/17) provides evidence of DPI&E satisfaction on the installation of the odour controls on gluten dryers 3 and 4.	Compliant

Condition	Requirement	Evidence	Independent Audit Findings and Recommendations	Compliance Status & UIN
Odour Management Plan				
4	The Applicant shall prepare an Odour Management Plan for the project to the satisfaction of the Secretary. This plan must: a) be prepared in consultation with EPA by a suitably independent, qualified and experienced expert whose appointment has been endorsed by the Secretary, and submitted to the Secretary for approval within 3 months of the date of this approval;	The OMP is discussed in Section 3.1.1.	It has been completed by The Odour Unit, who are a suitably qualified and experienced expert in odour management. It is noted that the OMP has been subject to DPHI review.	Compliant
	b) describe in detail the measures that would be implemented on site to control the odour impacts of the project, and to ensure that these controls remain effective over time;	The OMP is discussed in Section 3.1.1.	Section 2 and 3 of the OMP adequately addresses odour control.	Compliant
	c) identify triggers for remedial action; and	The OMP is discussed in Section 3.1.1.	Section 3 of the OMP addresses upset conditions that would prompt remedial actions to assist reduce the resultant potential impacts.	Compliant
	d) include a program for monitoring the odour impacts of the project.	The OMP is discussed in Section 3.1.1.	Section 4 of the OMP presents details of the system monitoring program.	Compliant

Condition	Requirement	Evidence	Independent Audit Findings and Recommendations	Compliance Status & UIN
4A	Prior to increasing ethanol production the Odour Management Plan for the project must be updated to the satisfaction of the Secretary to include the additional Appendix 3 mandatory odour controls specified in the modification approval MOD 1 – Deletion of DDG Pelletiser.	None.	Completed.	Compliant
Independent Odour Audit				
5	Within 3 months of the implementation of the mandatory odour controls (see Appendix 3), and annually thereafter unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Odour Audit of the project. This audit must be conducted by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the Secretary. During the audit, this expert must:	The Letter of Endorsement from the Director General is provided in Appendix A.	The Letter of Endorsement from the Director General is provided in Appendix A.	Compliant
	a) consult with the EPA and the Department	Section 1.2 presents a summary of the consultation with the EPA and DPHI.	Consultation performed and recommendations for the odour audit adopted.	Compliant

Condition	Requirement	Evidence	Independent Audit Findings and Recommendations	Compliance Status & UIN
	b) audit the effectiveness of the odour controls on site in regard to protecting receivers against offensive odour;	Section 3 presents the collated information regarding odour control.	The information provided and reviews includes a wide range of ongoing compliance monitoring data to quantify and evaluate the odour control performance of the plant.	Compliant
	c) review the Applicant's production data (that are relevant to the odour audit) and complaint records;	Section 3.3 presents a summary of the production data corresponding to the monitoring program dates. Section 3.2 presents a summary of the odour complaints for the audit period.	The production data provided by Shoalhaven Starches has been reviewed and is tabulated in Table 3. The number of odour complaints received in this period is six (6) (#124, #128, #129, #130, #132, #136). All complaints are closed out i.e. adequately actioned.	Compliant
	d) review the Odour Management Plan for the project;	Section 3.1.1 provides a summary of any relevant updates to the OMP.	During this audit period OMP revision 1.0.I was in force. There are no material changes to the OMP relevant to this IOAQ from the last revision.	Compliant
	e) measure all key odour sources on site, and compare the results of these measurements against the predictions in the EA;	Audit of monitoring data presented in Sections 3. The comparison against modelling assessment provided in Section 3.7.	The quarterly and annual emission testing has been completed over the auditing period.	Compliant

Condition	Requirement	Evidence	Independent Audit Findings and Recommendations	Compliance Status & UIN
	f) determine whether the project is complying with the requirements in this approval; and	Reference should be made to the rest of the document.	Reference should be made to the rest of the document in which specific compliance (or otherwise) is documented.	--
	g) if necessary, recommend and prioritise measures to either improve the odour controls on site and/or the Odour Management Plan, such that receivers would be protected against offensive odour from the site.	Section 5 provides a summary of this Independent Odour Audit. Section 5.1 provides a summary of non-compliances and Section 5.2 provides recommendations.	Recommendations as documented in Section 5.2.	Compliant
	Note: The Secretary may vary the frequency of the audit depending on the performance of the project.	None.	None.	--
6	Within 6 weeks of the completion of this audit, the Applicant shall submit a copy of the audit report to both EPA and the Secretary with a response to any recommendations contained in the audit report.	Outside the scope of the Independent Odour Audit.	None.	--

Condition	Requirement	Evidence	Independent Audit Findings and Recommendations	Compliance Status & UIN
Odour verification (MP 06_0228 MOD 2)				
6A	The Applicant shall ensure that any Independent Odour Audit submitted to the Secretary in accordance with Condition 5 of this Schedule includes: a) 3 monthly (quarterly) odour monitoring with samples taken from the carbon dioxide/ethanol recovery scrubber inlet/s and outlet/s; and	The quarterly odour monitoring reports are discussed in Section 3.6, and attached as Appendix D to this audit report.	The quarterly and annual emission testing has been completed over the auditing period.	Compliant
	b) quarterly odour monitoring with samples taken of single vent stack (direct to atmosphere) emissions from a filling fermenter tank.	The quarterly odour monitoring reports are discussed in Section 3.6, and attached as Appendix D to this audit report.	The quarterly and annual emission testing has been completed over the auditing period.	Compliant
6B	Deleted	None required.	The quarterly and annual emission testing has been completed over the auditing period.	--
6C	The Applicant shall conduct quarterly odour monitoring from the DDG exhaust stack and report the results in the independent odour audit required under Condition 5 of Schedule 3.	The quarterly odour monitoring reports are discussed in Section 3.6, and attached as Appendix D to this audit report.	The quarterly and annual emission testing is summarised in Table 9. It is observed that EPA ID 46 (DDG Pellet Plant Stack) was tested during each quarter of the audit period.	Compliant

Condition	Requirement	Evidence	Independent Audit Findings and Recommendations	Compliance Status & UIN
6D	The Applicant shall conduct odour monitoring on the relocated starch dryer described in MOD 7 in accordance with the requirements of the EPL and report the results in the independent odour audit required under Condition 5 of Schedule 3.	The quarterly odour monitoring reports are discussed in Section 3.6, and attached as Appendix D to this audit report.	MOD7 relates to the No5 Starch Dryer (as captured in the EPL variation dated June 2018). EPA 47, No5 Starch Dryer was tested during each quarter of the audit period.	Compliant
6E	If the results of odour monitoring show any odour impact greater than that predicted by the odour dispersion modelling in the EA and the modification proposals referred to in Condition 2 of Schedule 2, the Applicant shall investigate and implement further odour treatment options as directed by the Secretary or the EPA.	Odour modelling is discussed in Section 3.7.	Modelled odour emission rates were estimated to represent approximately 91 % of measured odour emission rates (at assumed normalised conditions).	Compliant
6F	The Applicant shall conduct odour validation monitoring on the gluten dryers 3 and 4, following implementation of the mitigation controls required by Condition 3D. Results of the odour validation monitoring shall be included in the independent odour audit required under Condition 5 of Schedule 3.	The quarterly odour monitoring reports are discussed in Section 3.6, and attached as Appendix D to this audit report.	The quarterly and annual emission testing has been completed over the auditing period.	Compliant

5. SUMMARY

Based upon the information reviewed the following recommendations are proposed.

5.1. Identified Non-Compliances

Table 14 below presents the observed non-compliances against the consolidated odour conditions (see Table 13).

Table 14 Independent odour audit non-compliances

UIN	Condition and Requirement	Evidence & Independent Audit Findings and Recommendations	Compliance Status
None	None	None	None

5.2. Recommendations

Recommendations from this audit period (May 2025 to April 2026) and any remaining unresolved recommendations from the previous audits are summarised in Table 15.

Table 15 Independent odour audit recommendations

Reference	Recommendation	Implementation
2025-26 Odour Audit Recommendations		
Recommendation A (25/26) [(A)]	Section 3.5 Based upon the data presented in Table 6, the biofilters are not achieving the de facto 500 OU standard. It is recommended that the biofilters are operated to achieve lower odour outlet concentrations.	Identified in this audit
Recommendation B (25/26) [(B)]	With regard to flow measurements at EPA ID 8 the odour monitoring reports state: "*Sampling was undertaken at the exit of the stack as it was the only accessible area for the samples to be taken. No temperature or flow rate readings could be taken due to access issues.*" Shoalhaven Starches have advised that access is limited due to the addition of a silencer on this discharge point for noise control purposes. It is recommended that the access restrictions to EPA ID 8 are resolved to enable compliant odour monitoring to be performed.	Identified in this audit
2024-25 Odour Audit Recommendations		
Recommendation A (24/25)	Section 3.2: It is recommended that the line of communication between the EPA and the Manildra complaint record is reviewed	In progress

Reference	Recommendation	Implementation
	to ensure that complaints reported to the EPA are communicated and recorded as complaints in the Manildra complaint system.	
Recommendation B (24/25)	Section 3.5: Based upon the data presented in Table 6, the biofilters (BF A, B, C) are not achieving the *de facto* 500 OU standard. It is recommended that the biofilters are operated to achieve a lower odour outlet concentration, although it is noted that BCA #27 demonstrates improved odour destruction efficiency compared to BCA #26.	Ongoing
Recommendation D (24/25)	It is recommended that the EPL monitoring requirements for Effluent Ponds 1-4 (EPL 19, 20, 21, 22) are discussed with NSW EPA due to their non-operation.	Ongoing. See Section 3.6.1
Recommendation E (24/25)	It is recommended that the EPL monitoring requirements for No3 and No4 starch drier are discussed with NSW EPA due to the health and safety risks identified.	Ongoing. See Section 3.6.1.

Note: (A) See also previous IOA recommendations: Recommendation B (24/25), 23/24-REC-A, 22/23-REC-B, 21/22-REC-A, 20/21-REC-A, 2019-20-IOA-A, 2018-19-IOA-B, 2017-18-IOA-C

(B) See also previous IOA recommendations: Recommendation F (24/25), 23/24-REC-B, 22/23-REC-D, 21/22-REC-C

6. REFERENCES

DPHI. (2026). Independent Audit – Post Approval Requirements (SF25/81439).

Ektimo. (Jan 2026). Odour Emission Testing Report, Quarter 3 2025-26 (R019730).

Ektimo. (May 2026). Odour Emission Testing Report, Quarter 4 2025-26 (R020180).

Ektimo. (Nov 2025). Odour Emission Testing Report, Quarter 2 2025-26 (R019414).

Ektimo. (Sep 2025). Odour Emission Testing Report, Quarter 1 2025-26 (R019010).

Manildra. (2025). Pollution Incident Response Management Plan (Rev R).

TOU. (May 2025). Shoalhaven Starches Ethanol Upgrade Odour Managament Plan (N1511L version 1.0.I).

Appendix A – Director General's Letter of Appointment

Department of Planning, Housing & Infrastructure

NSW GOVERNMENT

Our ref: Portal reference

Mr John Studdert
Quality Assurance & Environmental Coordinator
Shoalhaven Starches Pty Ltd
36 Bolong Road
BOMADERRY NSW 2541
16/09/2025

Subject: Shoalhaven Starches Plant, Annual Independent Odour Auditor 2025

Dear Mr Studdert

I refer to your request of 7 September 2025 seeking approval of Mr Gary Graham of Northstar Air Quality Pty Ltd as the independent auditor for the upcoming Annual Independent Odour Audit of Shoalhaven Starches Plant (the development), in accordance with Schedule 3, Condition 5 of the development consent MP 06_0228, as modified (the consent).

Having considered the qualifications and experience of Mr Graham, I, as the nominee of the Planning Secretary endorse the appointment of Mr Graham to undertake the Annual Independent Odour Audit in accordance with Schedule 3, Condition 5 of the consent. This approval is conditional on Mr Graham being independent of the development and maintaining the relevant qualifications and/or certification.

The NSW Department of Planning, Housing and Infrastructure (NSW Planning) reserves the right to request an alternate auditor or audit team for future audits.

Please ensure this correspondence is appended to the Audit Report.

The audit is to be conducted in accordance with AS/NZS ISO 19011 Australian/New Zealand Standard: Guidelines for quality and/or environmental management systems auditing. Auditors may wish to have regard to the Independent Audit Guideline dated May 2020. A copy of this guideline can be located at https://www.planning.nsw.gov.au/sites/default/files/2023-02/independent-audit-par-202005.pdf.

The Audit Report is to include the following:

- consultation with NSW Planning and the Environment Protection Authority (EPA);
- audit of the effectiveness of the odour controls on site in regard to protecting receivers against offensive odour;
- review of the production data (that are relevant to the odour audit) and complaint records;
- review of the Odour Management Plan for the development;
- measure all key odour sources on site, and compare the results of these measurements against the predictions in the EA;
- determine whether the development is complying with the requirements in this consent; and
- recommend and prioritise measures to either improve the odour controls on site and/or the Odour Management Plan, such that receivers would be protected against offensive odour from the site.

Within six weeks of the completion of the Annual Independent Odour Audit, you are to submit a copy of the Audit Report to the Planning Secretary and the EPA, together with your response to any recommendations contained in the Audit Report and a timetable to implement the recommendations. Prior to submitting the

Audit Report to the Planning Secretary, it is recommended that you review the report to ensure it complies with the relevant approval condition.

Failure to meet these requirements will require revision and resubmission of the Audit Report.

Should you have any enquiries in relation to this matter, please contact Georgia Dragicevic, Senior Compliance Officer, on (02) 4247 1852 or by email to Georgia.Dragicevic@planning.nsw.gov.au.

Yours sincerely

Jennifer Rowe
A/Team Leader Compliance - South
Compliance

As nominee of the Planning Secretary

Final Independent Audit Report Declaration Form

Project Name	Shoalhaven Starches
Application Number	06_0228
Project Address	160 Bolong Road, Bomaderry, NSW 2541
Proponent	Shoalhaven Starches Pty Ltd
Title of Audit	Shoalhaven Starches Independent Odour Audit (2025-2026)
Date	22 September 2025

I declare that I have undertaken the Independent Audit and prepared the contents of the attached Independent Audit Report and to the best of my knowledge:

i. the audit has been undertaken in accordance with relevant condition(s) of consent and the Independent Audit Compliance Requirements (Department 2019);

ii. the findings of the audit are reported truthfully, accurately and completely;

iii. I have exercised due diligence and professional judgement in conducting the audit;

iv. I have acted professionally, objectively and in an unbiased manner;

v. I am not related to any proponent, owner or operator of the project neither as an employer, business partner, employee, or by sharing a common employer, having a contractual arrangement outside the audit, or by relationship as spouse, partner, sibling, parent, or child;

vi. I do not have any pecuniary interest in the audited project, including where there is a reasonable likelihood or expectation of financial gain or loss to me or spouse, partner, sibling, parent, or child;

vii. neither I nor my employer have provided consultancy services for the audited project that were subject to this audit except as otherwise declared to the Department prior to the audit; and

viii. I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from payment for auditing services) from any proponent, owner or operator of the project, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so.

Notes:

a) Under section 10.6 of the Environmental Planning and Assessment Act 1979 a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000; and

b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both)

Name of Auditor	Gary Graham
Signature	
Qualification	BSc(hons), MSc, CSci, CEnv, CAQP
Company	Northstar Air Quality Pty Ltd
Company Address	Suite 1504, 275 Alfred Street, North Sydney NSW 2060

APPENDIX B – BIOFILTER PHOTOGRAPHS

APPENDIX C – DDG BIOFILTER & CAPACITY & CONDITION ASSESSMENT REPORTS

TO: **GAVIN DOSTAL**
COMPANY: **MANILDRA GROUP, SHOALHAVEN STARCHES**
FROM: **ISAAC FARRUGIA & MICHAEL ASSAL**
DATE: **10 AUGUST 2026**
SUBJECT: **DDG BIOFILTER SYSTEM PERFORMANCE AND CONDITION ASSESSMENT 29: 5 MAY 2026**

1. Introduction

In December 2011, Shoalhaven Starches commissioned The Odour Unit (**TOU**) to undertake routine inspections of the biofilter-based odour control system (**OCS**) servicing the Dried Distillers Grain (**DDG**) operations at 160 Bolong Road, Bomaderry, New South Wales (the **Manildra Facility**). The objective of these assessments is to provide feedback to Shoalhaven Starches on the condition and performance of the OCS on an as-required basis. The assessments are currently carried out on a half-yearly basis. The following report covers the findings of Assessment 29 completed on 5 May 2026 by TOU.

1.1 Relevant Background and Context

The biofilters at the Manildra Facility, including Biofilter A, Biofilter B, and Biofilter C, are ordered from North to South. Biofilter C was constructed in January 2024 to increase the airflow load treated by the OCS to keep up with the demand required by the Manildra Facility, including the treatment of DDG Lines 4 and 5, and is included as part of Assessment 29.

2. Biofilter Design – DDG Biofilters A, B & C

The designs for Biofilters A & B are identical and summarised as follows:

Construction:	Concrete, twin-cells
Bed area:	Two cells, each 55 m^2, total surface area of 110 m^2
Bed depth:	1.8 m
Medium:	Proprietary bark/green waste compost blend
Design airflow:	15,000 m^3/hr per biofilter
Design loading rates:	137 m^3/m^2/hr, 76 m^3/m^3/hr, 48 seconds EBRT at 15,000 m^3/hr per biofilter

The design for Biofilter C is summarised as follows:

Construction:	Concrete, twin-cells
Bed area:	Two cells, 114 m^2, total surface area of 228 m^2
Bed depth:	2.0 m
Medium:	Oversized timber mulch/pine bark
Design airflow:	30,000 m^3/hr
Design loading rates:	133 m^3/m^2/hr, 67 m^3/m^3/hr, 54 seconds EBRT at 30,000 m^3/hr

All inlet air flowing to the biofilter system is pre-humidified and saturated.

2.1 Biofilter Condition Status

At the time of Assessment 29, it is understood that the status of each biofilter system is as follows:

- Biofilter A has not been refurbished since middle 2019;
- Biofilter B medium was replaced in September 2022;
- Biofilter C medium was installed in January 2024; and
- All three (3) biofilters were online and in operational condition.

3. Assessment Methodology

Assessment 29 followed an identical methodology to that used in all previous assessments conducted by TOU, namely:

- Velocity and airflow into each biofilter and from both inlet lines;
- Temperature and relative humidity measurements into the biofilters and both inlet lines;
- Pressure readings in each inlet duct;
- Visual inspection and pressure reading at biofilter drain sumps;
- Spatial surface outflow readings on the biofilter beds; and
- A visual and olfactory assessment of the biofilters by the assessor/s.
- A visual inspection of the biofilter medium.

The spatial testing involves the use of a TOU sampling hood, systematically placed at selected locations on the biofilter surface. The readings for velocity are taken from the 100 mm Polyvinyl Chloride (**PVC**) vent pipe on the lid of the hood. Due to the low velocities in the vent pipe and the exposed location on the biofilter surface, the measurement technique is prone to the effects of high ambient wind conditions.

At the time of Assessment 29, the prevailing winds were considered suitable for the undertaking of spatial testing on the DDG biofilter system. The meteorological conditions during testing on 5 May 2026 were clear skies and calm (< 0.5 m/s) to light (0.5 – 2.0 m/s) wind speeds, with no rainfall.

4. Physical Assessment Results – 5 May 2026

The physical measurement results are summarised in **Table 1**. The ambient conditions were 24-25°C with a relative humidity of 50-60%.

Table 1 – Physical measurement results from the biofilter system: 5 May 2026							
Location	**Duct Dimensions (mm)**	**Velocity (m/s)**	**Airflow (m^3/hr)**	**Pressure (Pa)**	**Temperature (°C)**		**Relative Humidity (%)**
					Dry-bulb	**Wet-bulb**	
Main duct (pre-DDG 4 & 5 duct)	600	19.5	19,890	+315	49.5	49.5	100
DDG 4 & 5 duct	300	17.9	4,550	+532	29.9	29.9	100
Biofilter A inlet duct	600	4.1	4,160	+164	46.8	46.8	100
Biofilter B & C common duct	600	13.1	13,320	+84	46.1	46.1	100
Biofilter B - Cell 1 inlet dropper	440	4.9	2,660	+24	46.2	46.2	100
Biofilter B - Cell 2 inlet dropper	440	6.3	3,430	+24	46.1	46.1	100
Biofilter C inlet duct	1,200	2.3	9,370	+63	46.5	46.5	100

4.1 Key Findings

The total airflow entering the biofilter system is the combined airflows of the main duct (pre-DDG 4 & 5) and the DDG 4 & 5 inlet duct. This airflow, based on physical measurements obtained, was calculated as approximately 24,400 m^3/hr. The distribution of airflow into Biofilters A, B & C was 4,160 m^3/hr, 6,090 m^3/hr and 9,370 m^3/hr, respectively. These are within each biofilter design airflow capacity of 15,000 m^3/hr for Biofilter A & B, and 30,000 m^3/hr for Biofilter C. The summed airflow for the individual biofilters does not reconcile exactly with the measured total airflow due to measurement uncertainty and cumulative error across the measurement points. However, the individual airflow measurements still provide a reasonable indication of relative airflow distribution and loading across each biofilter system.

The inlet humidity measurements indicate that the incoming airstreams to the OCS are saturated, which is ideal for maintaining optimum biofilter bed moisture conditions. The measured inlet temperature of the incoming airstreams is notably lower than in the previous assessment conducted by TOU in May 2025 but remains above the desired target of 45°C or less. It is recommended that measures are made to reduce the overall inlet temperature to the OCS as far as reasonably practicable. This is further discussed in **Section 12**, as it is likely to be affecting odour removal performance when considered alongside the composition and concentration of odorous compounds present in the inlet airstream.

5. Spatial Testing Results

The spatial testing locations and results are shown in **Figure 5.1**, **Figure 5.2** and **Figure 5.3** for Biofilter A, Biofilter B and Biofilter C, with the spatial testing results presented in **Table 5.1**, **Table 5.2 and Table 5.3**, respectively. The spatial testing results for Biofilter A, Biofilter B & Biofilter C are visually depicted in **Figure 5.4, Figure 5.5** and **Figure 5.6**, respectively.

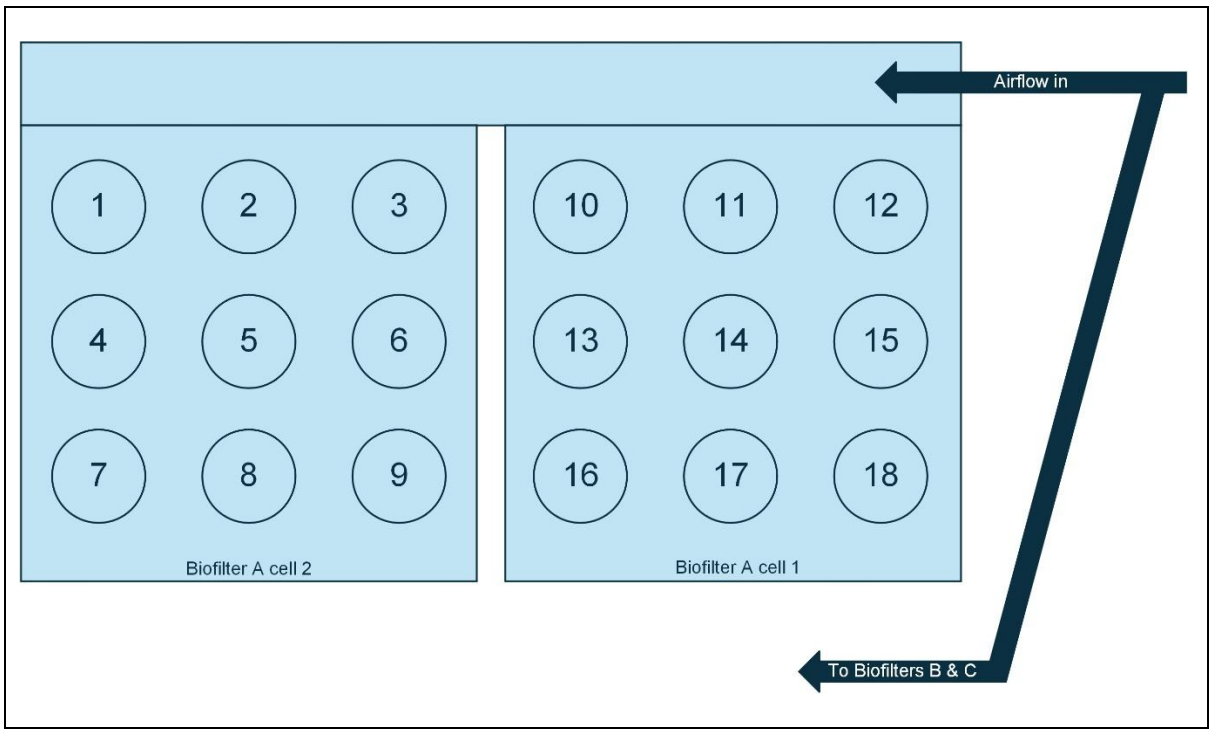


Figure 5.1 – Spatial Testing Locations – Biofilter A

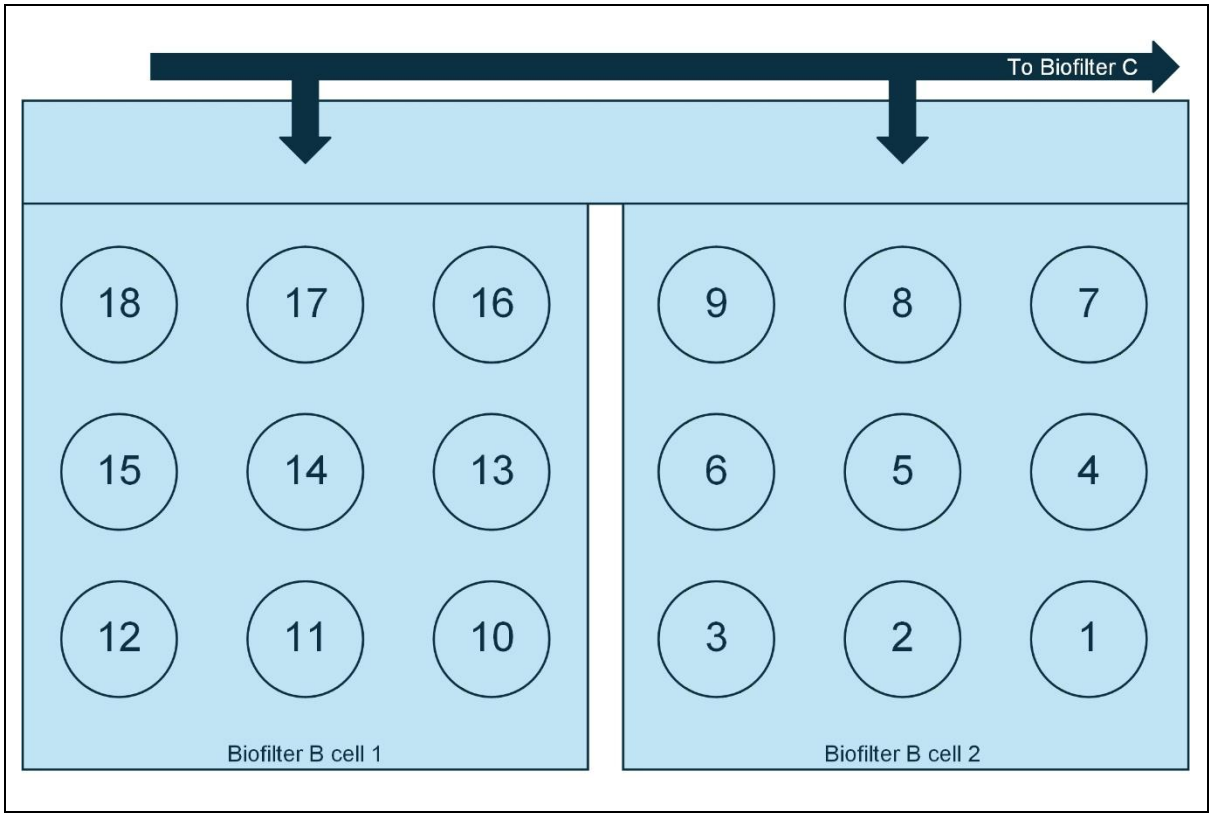


Figure 5.2 – Spatial Testing Locations – Biofilter B

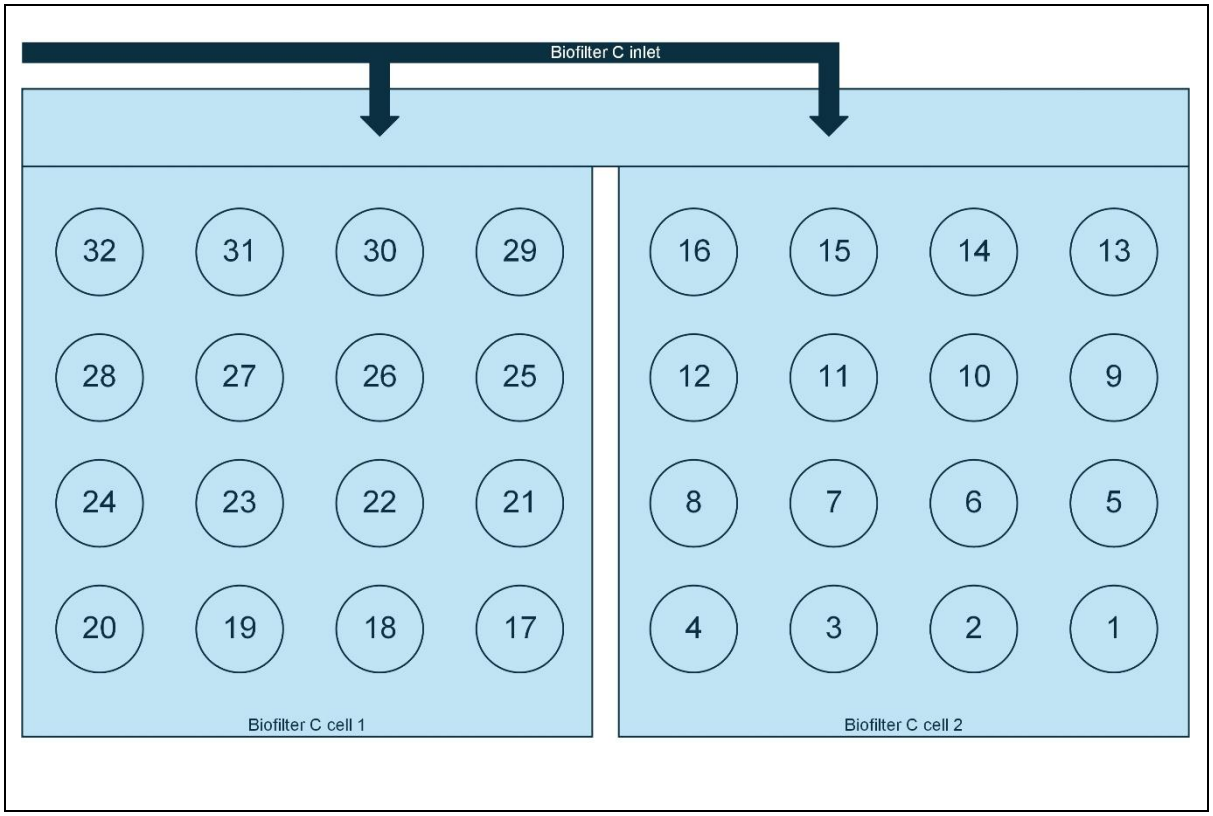


Figure 5.3 – Spatial Testing Locations – Biofilter C

Table 5.1 – Spatial airflow results for Biofilter A: 5 May 2026		
Biofilter A Cell	**Location ID**	**Outflow Velocity (m/s)**
Cell 2	Location 1	0.00
	Location 2	0.44
	Location 3	0.41
	Location 4	0.48
	Location 5	0.41
	Location 6	0.39
	Location 7	0.35
	Location 8	0.40
	Location 9	0.34
Cell 1	Location 10	0.42
	Location 11	0.45
	Location 12	0.48
	Location 13	0.39
	Location 14	0.41
	Location 15	0.41
	Location 16	0.46
	Location 17	0.49
	Location 18	0.42
Spatial Outflow Statistical Analysis		
Average (m/s)		0.397
Standard deviation (m/s)		± 0.107
Percentage variation (%)		± 27%

Table 5.2 – Spatial airflow results for Biofilter B: 5 May 2026		
Biofilter Cell	**Location ID**	**Outflow Velocity (m/s)**
Cell 2	Location 1	0.53
	Location 2	0.66
	Location 3	0.53
	Location 4	0.47
	Location 5	0.42
	Location 6	0.59
	Location 7	0.44
	Location 8	0.60
	Location 9	0.48
Cell 1	Location 10	0.83
	Location 11	0.68
	Location 12	0.57
	Location 13	0.68
	Location 14	0.48
	Location 15	0.64
	Location 16	0.52
	Location 17	0.59
	Location 18	0.63
Spatial Outflow Statistical Analysis		
Average (m/s)		0.574
Standard deviation (m/s)		± 0.103
Percentage variation (%)		± 18%

Table 5.3 – Spatial airflow results for Biofilter C: 5 May 2026		
Biofilter Cell	**Location ID**	**Outflow Velocity (m/s)**
Cell 2	Location 1	0.47
	Location 2	0.39
	Location 3	0.48
	Location 4	0.48
	Location 5	0.44
	Location 6	0.35
	Location 7	0.65
	Location 8	0.51
	Location 9	0.55
	Location 10	0.53
	Location 11	0.54
	Location 12	0.42
	Location 13	0.57
	Location 14	0.46
	Location 15	0.46
	Location 16	0.45
Cell 1	Location 17	0.65
	Location 18	0.54
	Location 19	0.49
	Location 20	0.38
	Location 21	0.56
	Location 22	0.6
	Location 23	0.63
	Location 24	0.55
	Location 25	0.42
	Location 26	0.52
	Location 27	0.5
	Location 28	0.54
	Location 29	0.49
	Location 30	0.55
	Location 31	0.73
	Location 32	0.54
Spatial Outflow Statistical Analysis		
Average (m/s)		0.514
Standard deviation (m/s)		± 0.083
Percentage variation (%)		± 16%

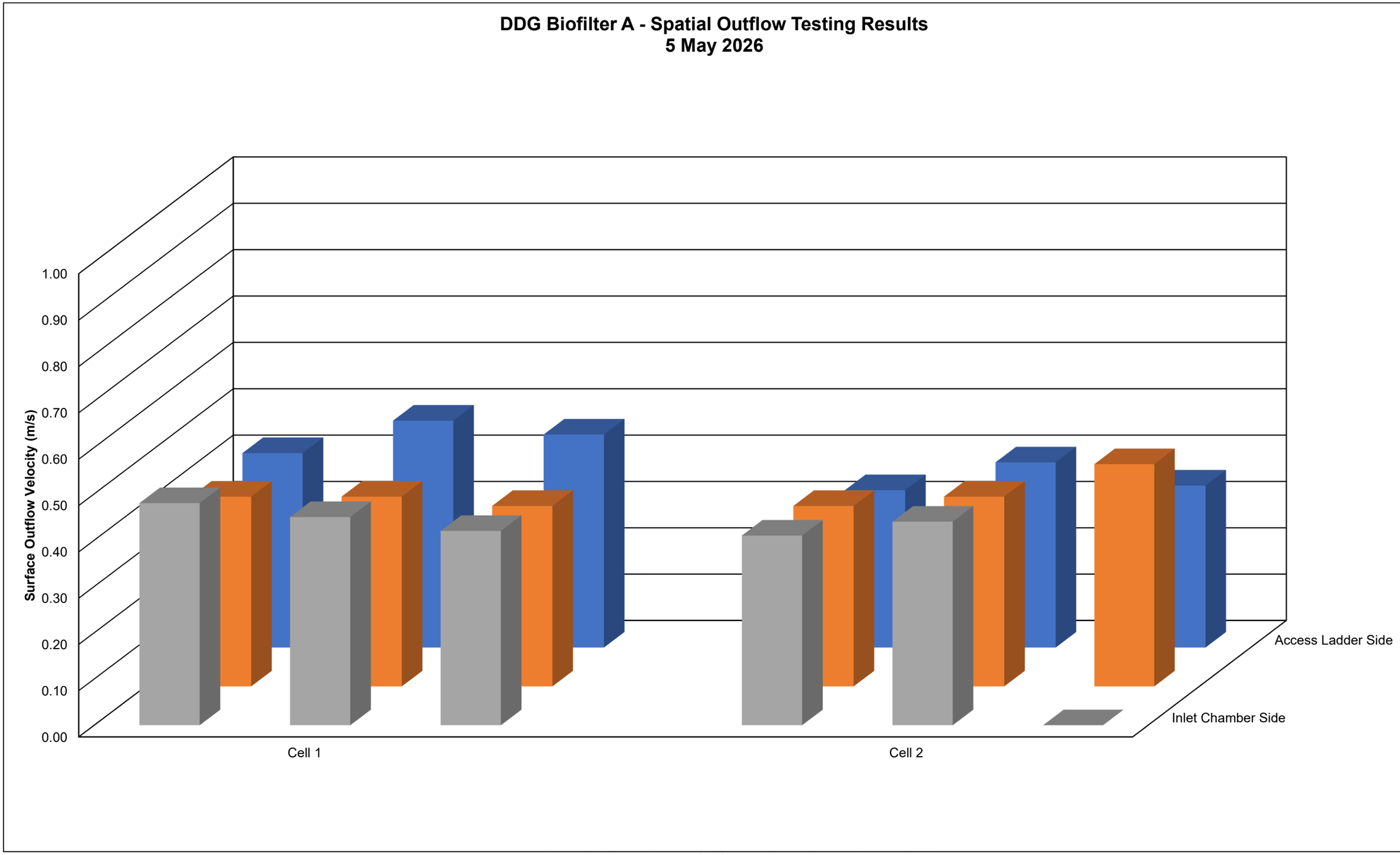


Figure 5.4 – Biofilter A Spatial Outflow Testing Results: 5 May 2026

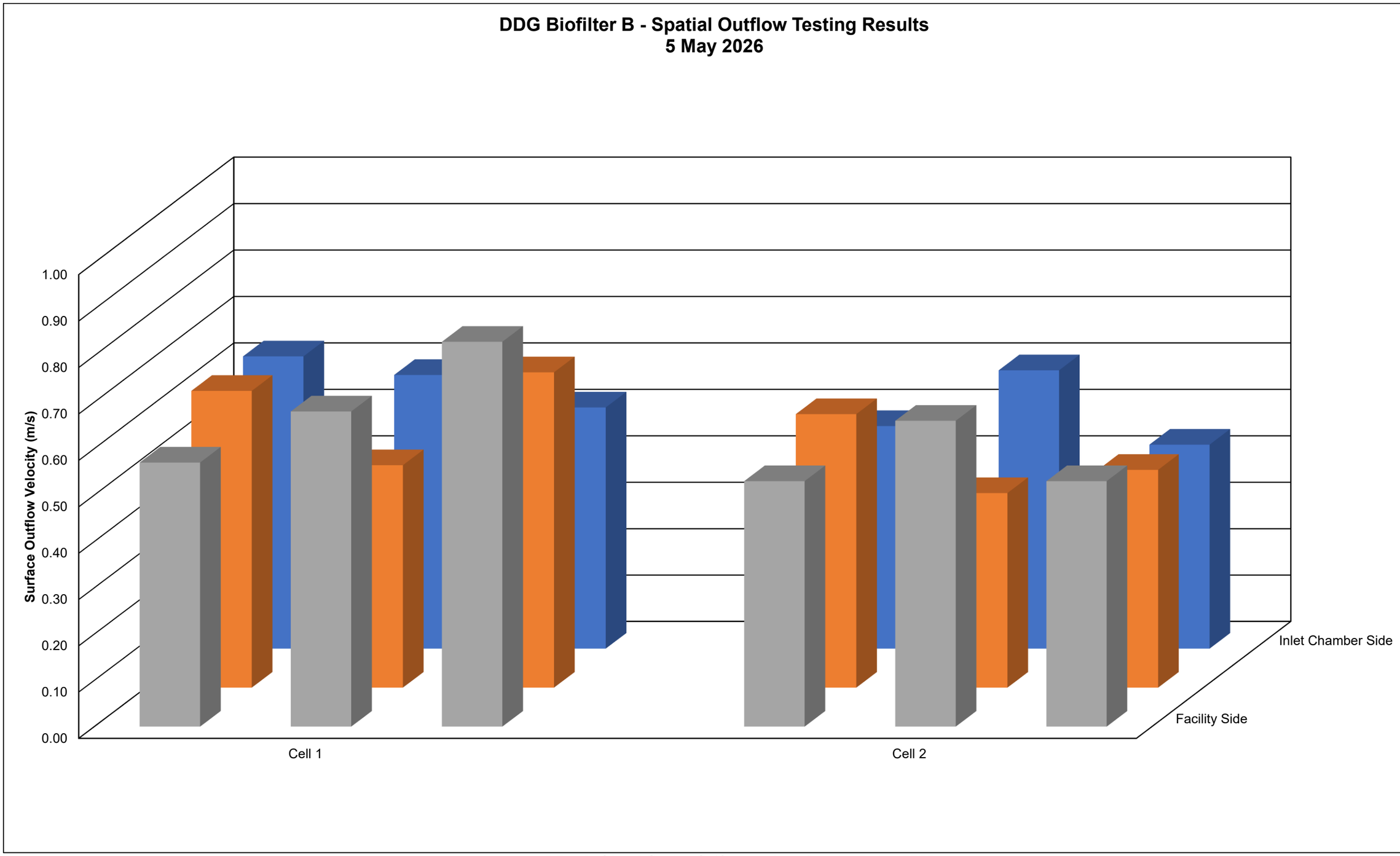


Figure 5.5 – Biofilter B Spatial Outflow Testing Results: 5 May 2026

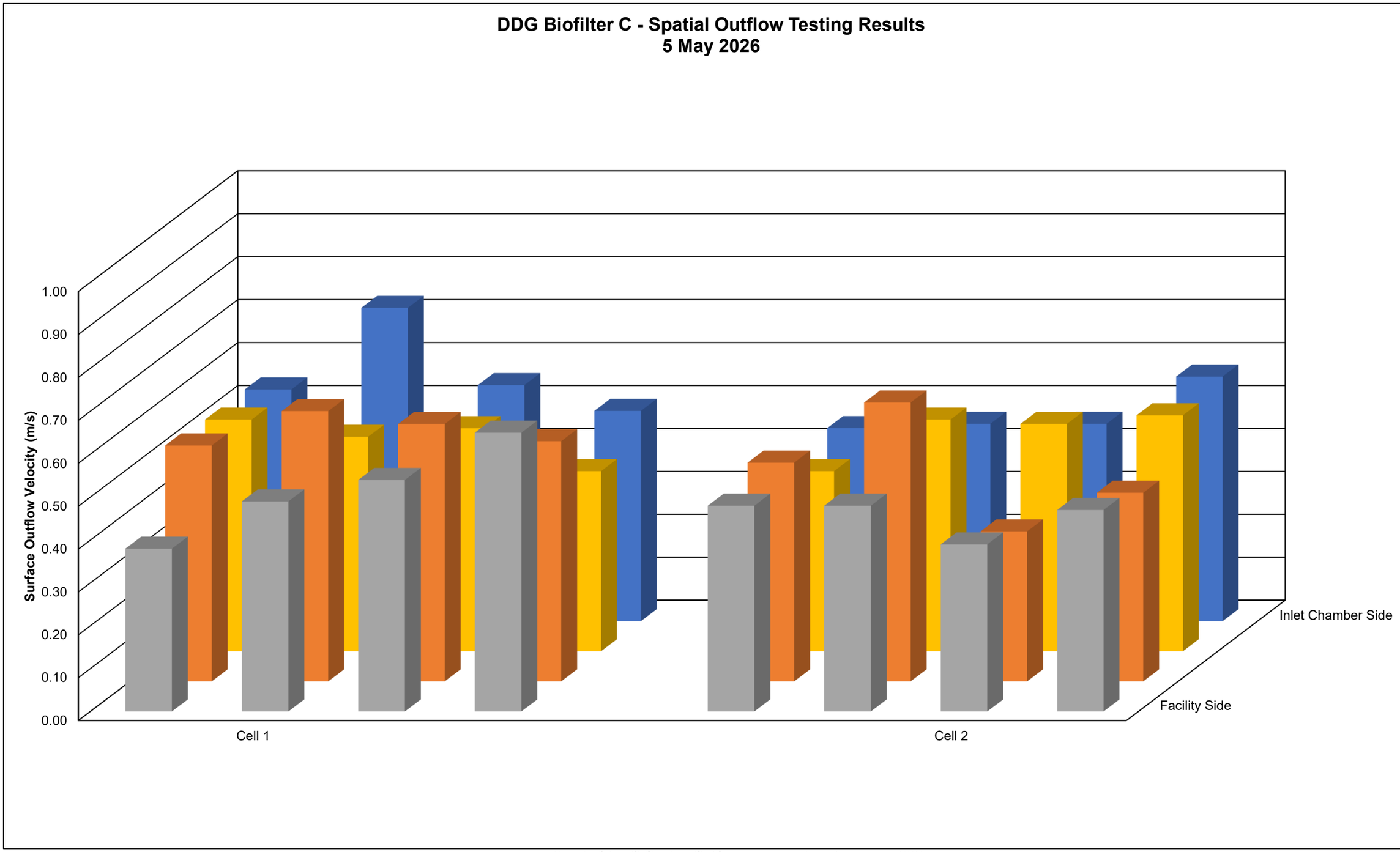


Figure 5.6 – Biofilter C Spatial Outflow Testing Results: 5 May 2026

6. Trend Data Analysis

Since the commissioning of Biofilter B in October 2011, results from the routine assessments have been plotted for key parameters to identify potentially adverse trends as they occur over time. These have been plotted in **Figure 7.1** to **Figure 7.5**, including temperature, actual airflow, back-pressure, and odour concentrations. Biofilter C has been included following its commissioning after June 2024.

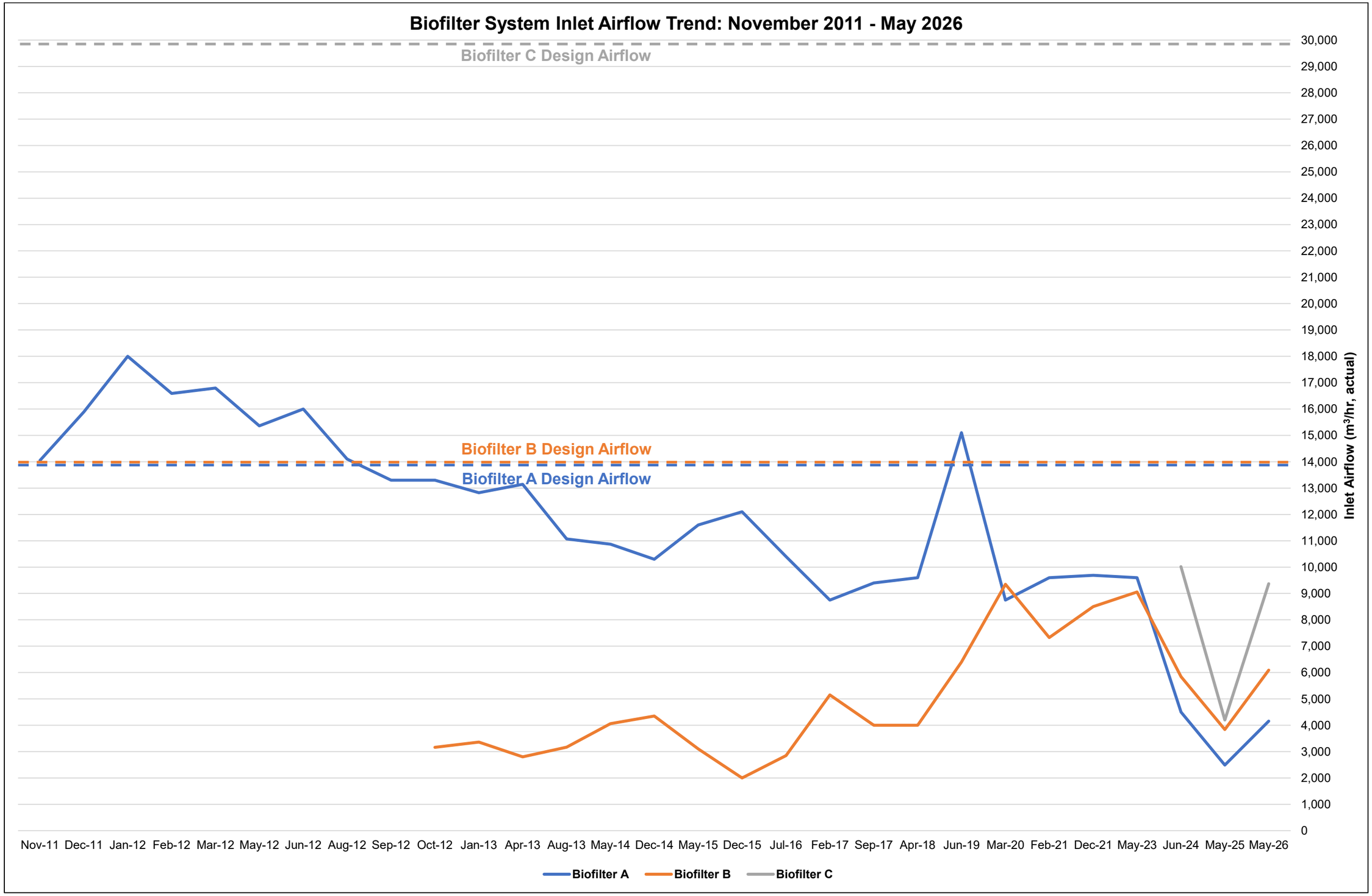


Figure 7.1 – Biofilters A, B & C common inlet actual airflow monitoring trend to 5 May 2026

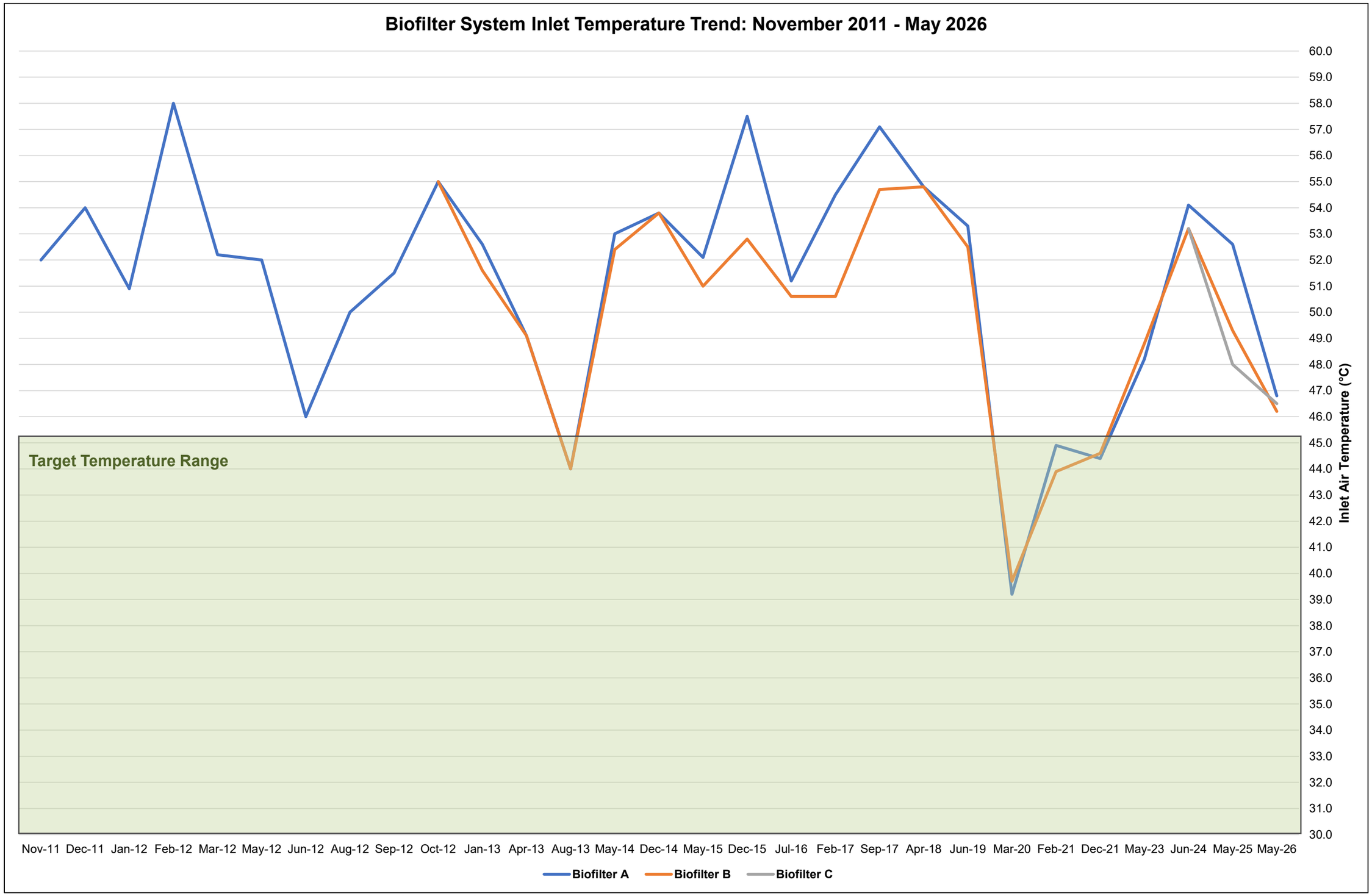


Figure 7.2 – DDG Biofilters A, B & C inlet air temperature trend with a nominal target temperature range from 37-45°C to 5 May 2026

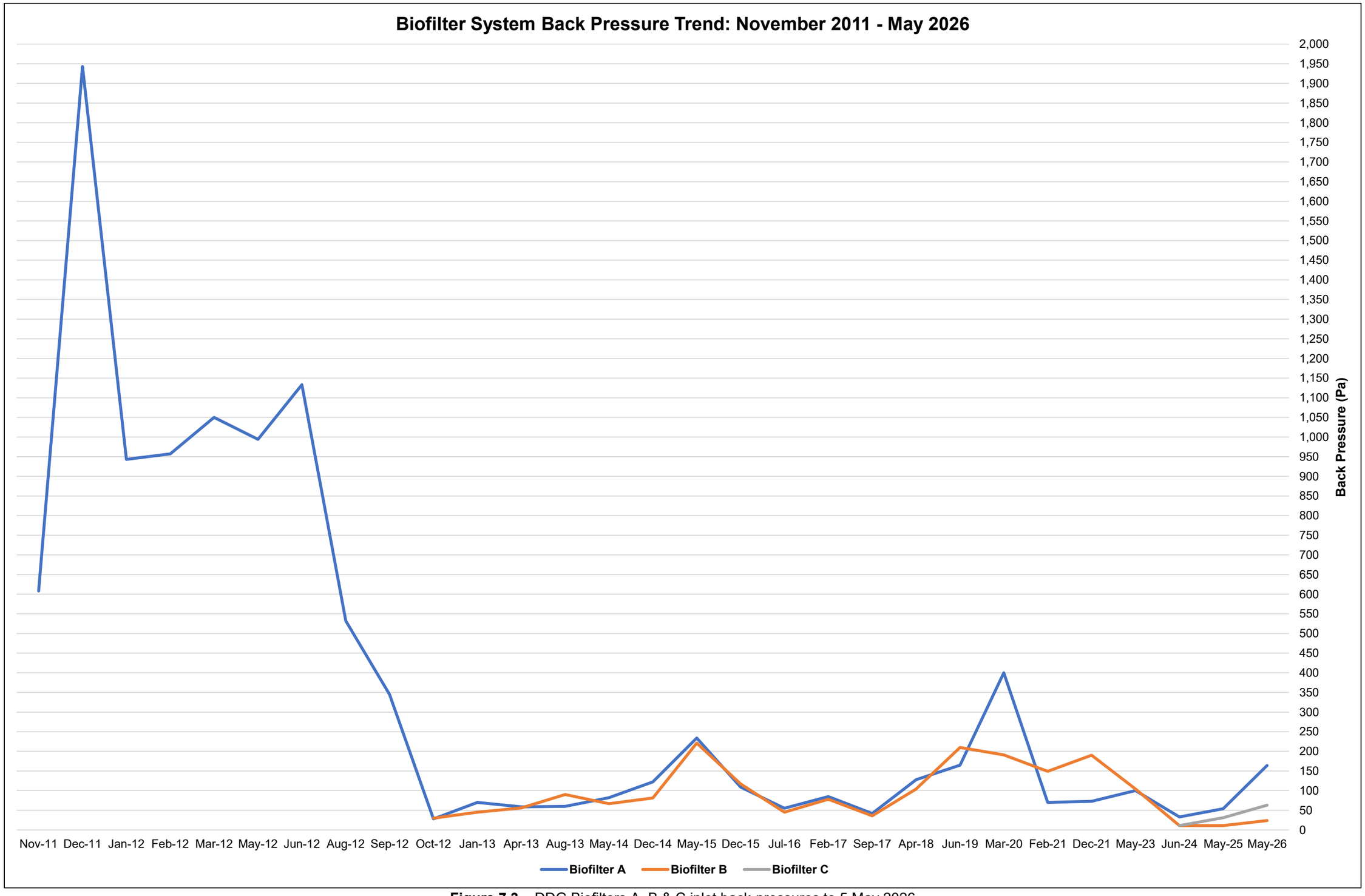


Figure 7.3 – DDG Biofilters A, B & C inlet back-pressures to 5 May 2026

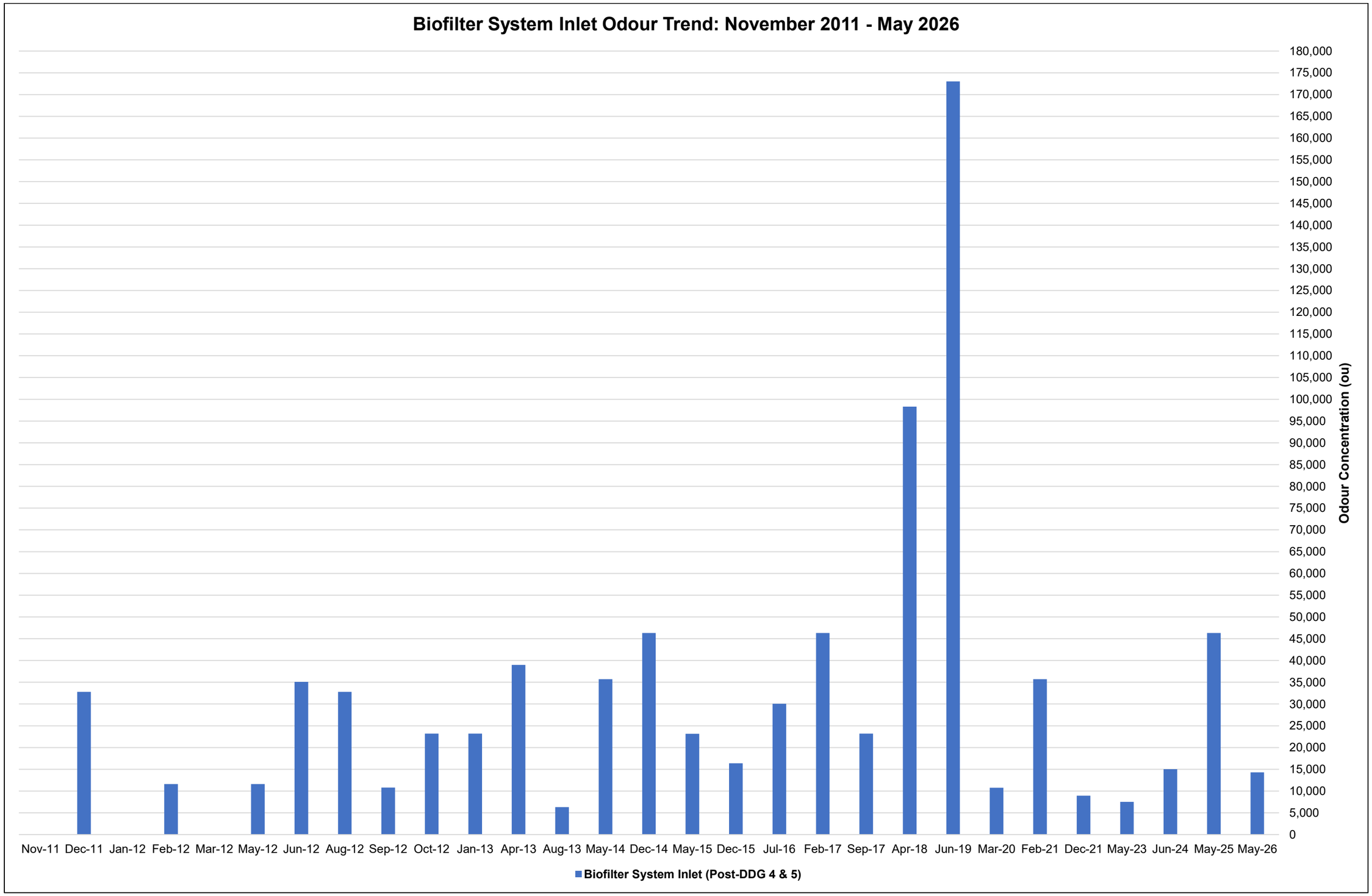


Figure 7.4 – DDG Biofilters A, B & C common inlet odour concentration

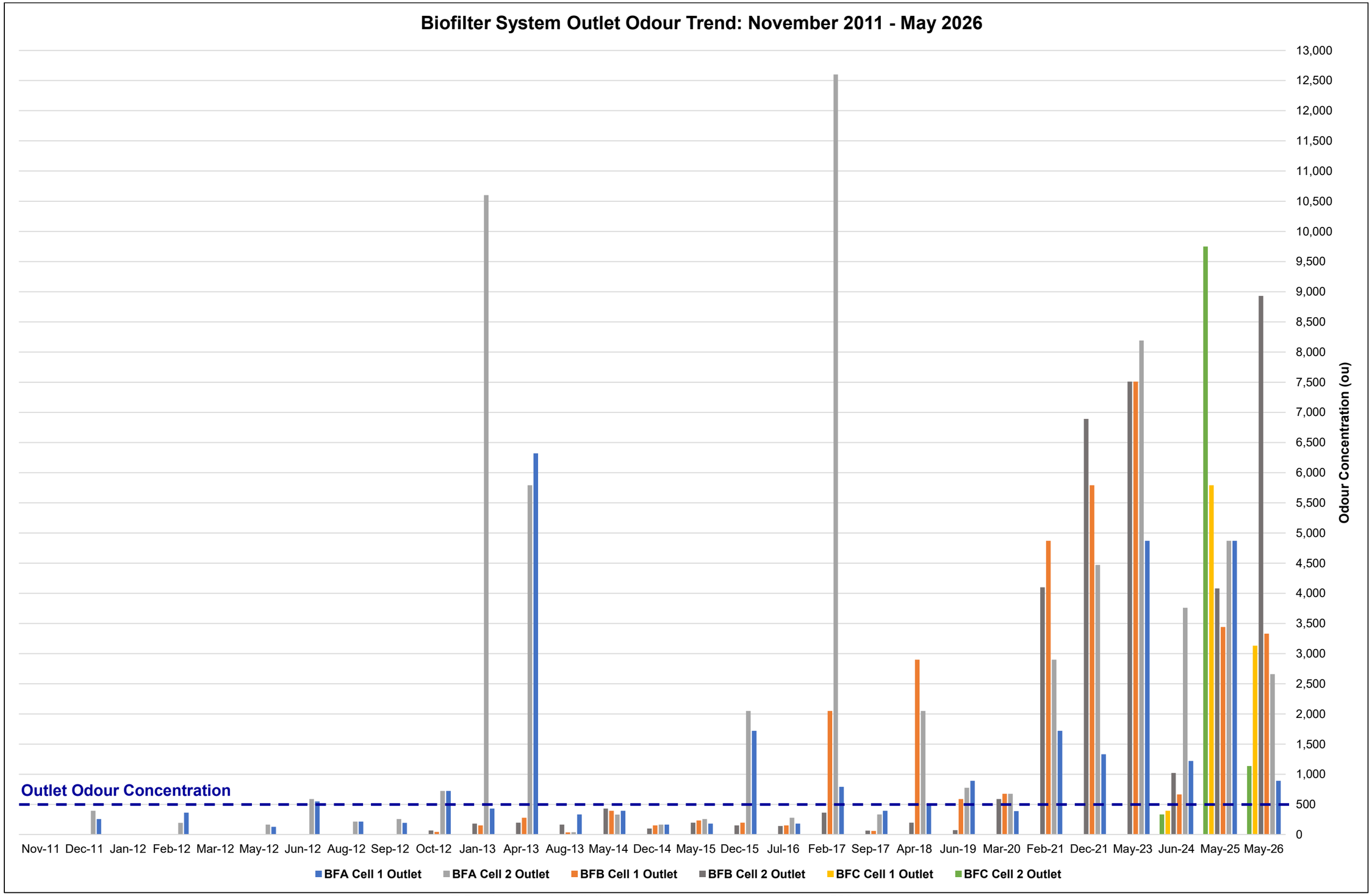


Figure 7.5 – Biofilters A, B & C outlet odour concentrations with a 500 ou nominal target

7. Odour Destruction Efficiency Results

A total of three (3) inlet gas samples were collected as part of Assessment 29, including:

- DDG 4 & 5 inlet duct connection;
- Main Duct and the ductwork (prior to the DDG 4 & 5 inlet duct connection); and
- Post DDG 4 & 5 Inlet which includes both airstreams.

As with previous assessments, all outlet samples were collected as composite samples from two (2) different locations across the biofilter surface. For Biofilter A & B, these samples were taken on each of their two cells, giving two (2) odour results per biofilter cell.

Due to the large size of Biofilter C, two (2) composites were taken per cell, resulting in a total of four (4) samples collected. The results of the odour testing of these samples are **appended** to the report and are summarised in **Table 7.1**.

Table 7.1 – Biofilter System Odour Testing Results: 6 May 2026

Sample Location	Odour Concentration (ou)	Odour Character
DDG 4 & 5 Inlet Duct	176,000	yeast, bread, grainy, sour
Main Duct - Pre-DDG 4 & 5	25,500	
Main Duct - Post-DDG 4 & 5	14,300	yeast, bread, grainy
Biofilter A Cell 1 Outlet	892	meaty, nutty, grainy
Biofilter A Cell 2 Outlet	2,660	meaty, nutty, grassy, grainy
Biofilter A Outlet (Geomean)	**1,540**	
Biofilter B Cell 1 Outlet	3,330	meaty, nutty, grainy
Biofilter B Cell 2 Outlet	8,930	
Biofilter B Outlet (Geomean)	**5,450**	
Biofilter C Cell 1 Outlet (closest to inlet duct)	6,320	meaty, nutty, grainy
Biofilter C Cell 1 Outlet (furthest from inlet duct)	1,550	
Biofilter C Cell 2 Outlet (closest to inlet duct)	956	
Biofilter C Cell 2 Outlet (furthest from inlet duct)	1,350	
Biofilter C Outlet (Geomean)	**1,890**	
Global Geomean Biofilter Outlet Result	**2,510**	
Mean Odour Destruction Efficiency	82%	

The above results indicate that the odour destruction efficiency is 82%. However, the outlet odour concentration results are well above the target of 500 ou or less. This is further discussed in **Section 12**.

8. Visual and Olfactory Assessment

During Assessment 29, the condition of the biofilter medium was visually assessed, with the performance also assessed by an olfactory evaluation. A view of the DDG biofilter system at the Manildra Facility is shown in **Photo 8.1**.

Photo 8.1 – A view of Biofilter A as found on 5 May 2026

Photo 8.2 – A view of Biofilter B and Biofilter C as found on 5 May 2026

The observations for Biofilter A were as follows:

- Soft and spongy medium, showing a significant quantity of fine particulate matter at the surface;
- The biofilter bed was moist;
- The biofilter medium depth was approximately 400 mm from the top of the wall; and
- There was a significant patch of gravel in one corner of the biofilter with no airflow (refer to **Table 5.1** and **Figure 5.4**).

The observations for Biofilter B were as follows:

- Soft and spongy medium, showing a moderate quantity of fine particulate matter at the surface;
- The biofilter bed was moist; and
- The biofilter medium depth was approximately 200 – 300 mm from the top of the wall.

The observations for Biofilter C were as follows:

- The medium for Biofilter C is in good condition with little indication of fine particulates at the surface;
- The biofilter bed was moist; and
- The biofilter medium depth was approximately 300 – 400 mm from the top wall, lower around the front of the biofilter walls.

9. Biofilter Drainage

The drainage flows from the Biofilter A and Biofilter B to the sump pits appeared normal. The drainage to Biofilter C was not observable.

10. Assessment Findings

The following comments are made based on the results obtained as part of Assessment 29:

- Of the total airflow from the common inlet measurement locations of the biofilter system, 24,400 m^3/hr, a sum of 19,600 m^3/hr was measured directly entering the distribution chambers of the biofilters, or the total derived airflow. The summed airflow for the individual biofilters does not reconcile exactly with the measured total airflow due to measurement uncertainty and cumulative error across the measurement points. However, the individual airflow measurements still provide a reasonable indication of relative airflow distribution and loading across each biofilter system;
- Biofilter A, B and C are receiving 21%, 31% and 48% of the total derived airflow of 19,600 m^3/hr, respectively. This data is backed up by the spatial testing averages taken from each biofilter surface, which correlate velocities recorded within proportion to these airflows;

- The common inlet odour concentration of 14,300 ou is significantly lower than May 2025 (46,300 ou) but within the lower portion of historical results;

- The geomean for Biofilter A outlet odour concentration is 1,540 ou, which is greater than the nominal 500 ou targeted concentration;

- The geomean for Biofilter B outlet odour concentration is 5,450 ou, which is significantly greater than the nominal 500 ou targeted concentration;

- The geomean for Biofilter C outlet odour concentration is 1,890 ou, which is greater than the nominal 500 ou targeted concentration;

- The temperature of the inlet air has reduced to approximately 46-47°C, from 52°C in May 2025. This remains within the historical mean for inlet air temperature for this biofilter system. These minor variations are likely due to changes in operating and ambient weather conditions and are normal for this biofilter system. However, given the odour removal performance, these operating temperatures are considered higher than otherwise desirable. It is recommended that measures are made to reduce the overall inlet temperature to the biofilter system as far as reasonably practicable to optimise biofilter performance. This is further discussed in **Section 12**, as it is potentially impacting odour removal performance;

- Biofilter back-pressures results are within the normal range and are acceptable. Each biofilter inlet back pressure has marginally increased, as expected of biofilter systems. No clear short-circuiting or wall effects were observable;

- The mean percentage variation for the spatial outflow distribution for Biofilters A, B & C is 27%, 18%, and 16%, respectively. This result is very similar to Assessment 28, with Biofilter A being notably higher than Biofilter B and C. The spatial outflow distribution is within satisfactory tolerance for Biofilter A (25%), while Biofilter B and Biofilter C are within design tolerance; and

- The inlet air relative humidity remains in a saturated condition, which is ideal for maintaining optimum bed moisture.

11. Concluding Remarks

The physical measurement data are within the historical performance of the biofilter system, and the outlet odour testing results were higher than 500 ou, with Biofilter B (5,450 ou) being relatively higher than Biofilter A (1,540 ou) and Biofilter C (1,890 ou). The overall geometric mean for the biofilter surface outlet concentration was 2,510 ou with a derived odour removal efficiency of 82%

The airflow distribution across the three (3) biofilter cells remains within their respective rated design capacities, indicating that sufficient gas residence time is being maintained to support effective biological treatment. This is consistent with previous assessments. As such, it is considered unlikely that mass transfer limitation associated with insufficient residence time within the biofilter beds is the primary cause of the residual odour emissions from the biofilter surface. Rather, the elevated inlet temperatures are considered likely to be increasing the volatility of specific odorous compounds, resulting in the partial mobilisation of residual, partially treated odorous emissions from the aqueous phase to the biofilter surface.

12. Assessment Recommendations

Based on the observations and findings documented in Assessment 29, the following recommendations are made:

- Develop and implement a strategic plan to provide engineered cooling of the DDG process airstream to reduce the overall inlet air temperature flowing to the biofilter system. This will assist in optimising biofilter treatment performance and extending the operating medium life in the long term; and

- As part of the above recommendation, it is proposed that up to 10,000 m³/hr of fresh dilution air be introduced to the inlet process airstream (which can be sourced upstream at multiple locations or fresh ambient air). The objective of this measure is to reduce the inlet air temperature to the desirable range of less than 45°C and lower the concentrations of targeted odorous compounds prior to biofiltration. This approach is proposed as a practical alternative to mechanical cooling, which is understood to be not currently feasible. It is expected that this measure would reduce outlet odour concentrations, improving the overall biofilter system performance at the Manildra Facility.

The next assessment is due in **November/December 2026**.

The Odour Unit

Report Prepared By:

Isaac Farrugia B.Chem.Eng
Consultant Engineer

Report Reviewed and Approved By:

Michael Assal MEngSc, B. Eng (Hon)/B.Sc, AMIChemE, MIEAust, CAQP
Operations Manager

Attachment:

- Odour Concentration Laboratory Results: 6 May 2026

☒ **Sydney Laboratory**
The Odour Unit Pty Ltd
Level 3, 12/56 Church Avenue
MASCOT NSW 2020
P: +61 2 9209 4420
E: info@odourunit.com.au
ABN: 53 091 165 061

☐ **Brisbane Laboratory**
The Odour Unit (QLD) Pty Ltd
2/57 Neumann Road
CAPALABA QLD 4165
P: +61 7 3245 1700
E: qldinfo@odourunit.com.au
ABN: 87 102 255 765

Odour Concentration Measurement Report

Sampling and Laboratory Information

Organisation	Manildra Group	Telephone	02 4423 8200
Contact	G. Dostal	Email	gavin.dostal@manildra.com.au
Sampling Site	160 Bolong Rd, Bomaderry, NSW	Sampling Personnel	TOU (MA & IF)
Sampling Method	AS/NZS 4323.3	Laboratory Location	Mascot NSW

Order and Project Information

Order requested by	G. Dostal	Order accepted by	M. Assal
Date of order	Refer to correspondence	TOU Project #	N1752
Order number	Refer to correspondence	Project Manager	M. Assal
Signed by	Refer to correspondence	Panel Operator	J. Vo

Investigated Item	Odour concentration in odour units 'ou', determined by sensory odour concentration measurements, of an odour sample supplied in a sampling bag. Samples were analysed as received from the client and/or The Odour Unit. Results relate specifically to the samples as received.
Identification	The odour sample bags were labelled individually. Each label recorded the testing laboratory, sample number, sampling location (or Identification), sampling date and time, dilution ratio (if dilution was used) and whether further chemical analysis was required.
Method	The odour concentration measurements were performed using dynamic olfactometry according to the Australian/New Zealand Standard: Stationary source emissions – *Part 3*: '*Determination of odour concentration by dynamic olfactometry* (AS/NZS 4323.3). The odour perception characteristics of the panel within the presentation series for the samples were analogous to that for butanol calibration. Any deviation from the Australian standard is recorded in the 'Comments' section of this report.
Measuring Range	The measuring range of the olfactometer is $2^2 \leq \chi \leq 2^{18}$ ou. If the measuring range was insufficient the odour samples will have been pre-diluted. The machine is not calibrated beyond dilution setting 2^{17}. This is specifically mentioned with the results.
Environment	The measurements were performed in an air- and odour-conditioned room. The room temperature is maintained at 22 °C ±3 °C.
Measuring Dates	The date of each measurement is specified with the results.
Instrument Used	The olfactometer used during this testing session was: TOU-OLF-004
Laboratory Precision	The precision of this laboratory (expressed as repeatability) for sensory quality must be $r \leq 0.477$ in accordance with the AS/NZS 4323.3. $r = 0.135$ Compliance – Yes
Laboratory Accuracy	The accuracy of this laboratory for sensory quality must be $A \leq 0.217$ in accordance with the AS/NZS 4323.3. $A = 0.208$ Compliance – Yes
Lower Detection Limit (LDL)	The LDL for the olfactometer has been determined to be 16 ou, which is 4 times the lowest dilution setting.
Traceability	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. The assessors are individually selected to comply with fixed criteria and are monitored in time to keep within the limits of the standard. The results from the assessors are traceable to primary standards of n-butanol in nitrogen. Note Disclaimers on last page of this document.

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced, except in full.

Date: Wednesday, 20 May 2026

Panel Roster Number: SYD20260506_030

Accreditation Number: 14974

I. Farrugia
Authorised Signatory

THE ODOUR UNIT

Accreditation Number: 14974

Odour Sample Measurement Results
Panel Roster Number: SYD20260506_030

Sample ID / Location	Laboratory ID	Sampling Date & Time	Analysis Date & Time	Panel Size	Valid ITEs	Nominal Sample Dilution	Actual Sample Dilution	Dilution Equipment ID	Diluted Odour Concentration (ou)	Final Odour Concentration (ou)
1752-01-012 Biofilter A outlet: Cell 1	SC26211	05/05/2026 1235-1244 hrs	06/05/2026 0937 hrs	5	10	--	--	--	--	892
1752-01-013 Biofilter A outlet: Cell 2	SC26212	05/05/2026 1247-1257 hrs	06/05/2026 1006 hrs	5	8	--	--	--	--	2,660
1752-01-014 Biofilter B outlet: Cell 1	SC26213	05/05/2026 1302-1312 hrs	06/05/2026 1039 hrs	5	10	--	--	--	--	3,330
1752-01-015 Biofilter B outlet: Cell 2	SC26214	05/05/2026 1314-1326 hrs	06/05/2026 1112 hrs	5	8	--	--	--	--	8,930
1752-01-016 Biofilter C outlet: Cell 1 (closest to inlet)	SC26215	05/05/2026 1334-1345 hrs	06/05/2026 1148 hrs	5	8	--	--	--	--	6,320
1752-01-017 Biofilter C outlet: Cell 1 (furthest from inlet)	SC2621	05/05/2026 1349-1401 hrs	06/05/2026 1255 hrs	5	10	--	--	--	--	1,550

Samples Received in Laboratory – From: TOU (I. Farrugia) Date: 05/05/2026 Time: 1815 hrs

Note: The following are not covered by the NATA Accreditation issued to The Odour Unit:

1. The collection of samples by a method that is not prescribed by AS/NZS 4323.3.
2. Final results that have been modified by the dilution factors where parties other than The Odour Unit have performed the dilution of samples.

THE ODOUR UNIT

Accreditation Number: 14974

Odour Sample Measurement Results
Panel Roster Number: SYD20260506_030

Sample ID / Location	Laboratory ID	Sampling Date & Time	Analysis Date & Time	Panel Size	Valid ITEs	Nominal Sample Dilution	Actual Sample Dilution	Dilution Equipment ID	Diluted Odour Concentration (ou)	Final Odour Concentration (ou)
1752-01-018 Biofilter C outlet: Cell 2 (furthest from inlet)	SC26217	05/05/2026 1404-1414 hrs	06/05/2026 1331 hrs	5	10	--	--	--	--	1,350
1752-01-019 Biofilter C outlet: Cell 2 (closest to inlet)	SC26218	05/05/2026 1420-1434 hrs	06/05/2026 1406 hrs	5	10	--	--	--	--	956
1752-01-022 Main duct, post-DDG 4 & 5	SC26219	05/05/2026 1423-1433 hrs	06/05/2026 1431 hrs	5	10	--	--	--	--	14,300
1752-01-021 Main duct, pre-DDG 4 & 5	SC26220	05/05/2026 1440-1450 hrs	06/05/2026 1505 hrs	5	10	--	--	--	--	25,500
1752-01-020 DDG 4 & 5 inlet duct	SC26221	05/05/2026 1409-1419 hrs	06/05/2026 1611 hrs	5	10	5:1	25 L:1 L	SYD-DRM-001 SYD-GSM-001 SYD-ASP-001	29,300	176,000

Samples Received in Laboratory – From: TOU (I. Farrugia) Date: 05/05/2026 Time: 1815 hrs

Note: The following are not covered by the NATA Accreditation issued to The Odour Unit:

1. The collection of samples by a method that is not prescribed by AS/NZS 4323.3.
2. Final results that have been modified by the dilution factors where parties other than The Odour Unit have performed the dilution of samples.

THE ODOUR UNIT

Accreditation Number: 14974

Odour Panel Calibration Results

Reference Odorant	Reference Odorant Panel Roster Number	Concentration of Reference gas (ppb)	Panel Target Range for n-butanol (ppb)	Measured Concentration (ou)	Measured Panel Threshold (ppb)	Does this panel calibration measurement comply with AS/NZS 4323.3 (Yes / No)
n-butanol	SYD20260506_030	46,000	$20 \leq \chi \leq 80$	813	57	Yes

Comments

Odour characters (non-NATA accredited) as determined by odour laboratory panel:

Sample ID	Laboratory ID	Odour Character
1752-01-012	SC26211	meaty, nutty, grainy
1752-01-013	SC26212	meaty, nutty, grassy, grainy
1752-01-014	SC26213	meaty, nutty, grainy
1752-01-015	SC26214	meaty, nutty, grainy
1752-01-016	SC26215	meaty, nutty, grainy
1752-01-017	SC26216	meaty, nutty, grainy

Sample ID	Laboratory ID	Odour Character
1752-01-018	SC26217	meaty, nutty, grainy
1752-01-019	SC26218	meaty, nutty, grainy
1752-01-022	SC26219	yeast, bread, grainy
1752-01-021	SC26220	yeast, bread, grainy, sour
1752-01-020	SC26221	yeast, bread, grainy, sour

Disclaimers

1. Parties, other than The Odour Unit, responsible for collecting odour samples have advised that they have voluntarily furnished these odour samples, appropriately collected and labelled, to The Odour Unit for the purpose of odour testing.
2. The collection of odour samples by parties other than The Odour Unit relinquishes The Odour Unit from all responsibility for the sample collection and any effects or actions that the results from the test(s) may have.
3. Any comments included in, or attachments to, this Report are not covered by the NATA Accreditation issued to The Odour Unit.
4. This report shall not be reproduced, except in full, without written approval of The Odour Unit.

Report Status

Status	Version	Prepared by	Date	Checked by	Date	Change	Reason
Draft	0.1	I. Farrugia	20/05/2026	A. Schulz	20/05/2026	--	--
Final	1.0	I. Farrugia	20/05/2026	A. Schulz	20/05/2026	--	--
Revised	1.1	--	--	--	--	--	--

END OF DOCUMENT

APPENDIX D – ANNUAL AND QUARTERLY ODOUR EMISSION SURVEYS

Reports provided under separate cover due to file restrictions in those reports

APPENDIX E – ODOUR COMPLAINT RECORDS (REDACTED)

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL124

Customer Code: SCUST90123 **Date Lodged:** 10-Sep-2025

Customer: Environmental Protection Authority (EPA) Queanbeyan

Batch No.: N/A **Product:** N/A

Complaint Detail: Odour Complaint - Bomaderry 4th September 2025

Problem: The complainant reported severe rotten egg-like odours from the Manildra processing swamp/dam located in the paddock opposite the old Shoalhaven Paper Mill site on Thursday 4th September at approximately 11am. The complainant noted this differed from the usual strong yeast smell from the main Manildra site, which regularly affects areas as far as Shoalhaven Heads and is often detected at residential properties in early morning hours. The incident involves the Manildra industrial site on the Shoalhaven River, with odour impacts affecting the local community and surrounding environment.

Cause Cat: ODOUR Odour

Cause: This event caused by inflation of the Anerobic Digestor as a safety precaution during periods of high biogas generation. Biogas generation spiked on this day as the result of a major blackout occurring the day before leading to increase organic load for treatment

Who To Do: Gavin Dostal

Action Required By: 10-Sep-2025

Action: - Email to site operation managers informing on the complaint and requesting any information to help investigation

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL124

Customer Code: SCUST90123 **Date Lodged:** 10-Sep-2025

Review: Source of odour was known and was a safety precautionary thing and is not common occurrence. Increased capacity of the WWTP is currently being explored through the MOD process to provide extra buffer in extreme rare circumstances like that which occurred on this day.

Status:	0 Logged	**Dept:**	SHOQA
Approved By:		**Manufacturing Site:**	Shoalhaven Starches
Date:		**Product Rejected:**	No
Recorded By:	gdostal	**Potential Claim:**	No

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL123

Customer Code: SCUST90123

Date Lodged: 10-Sep-2025

Customer: Environmental Protection Authority (EPA) Queanbeyan

Batch No.: N/A

Product: N/A

Complaint Detail: Odour Complaint - Bomaderry 6th September 2025

Problem: Caller advised she lives next to the Manildra plant and there is a horribly offensive smell like human faeces mixed with mouldy cheese. She has been noticing the type of smell more often for the last month or so. The smell was bad enough that it made them gag. They are noticing the smell when wind is blowing in a north-easterly direction and in the afternoons at approximately 3pm

Cause Cat: ODOUR Odour

Cause: Likely caused by Bomaderry WWTP based on description of odour

Who To Do: Gavin Dostal

Action Required By: 10-Sep-2025

Action:
- Email to site operation managers informing on the complaint and requesting any information to help investigation
- Review wind direction at time of incident 6pm 6/9 was predominantly ENE however light
- Investigation into source of odour underway.

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL123

Customer Code: SCUST90123 **Date Lodged:** 10-Sep-2025

Review: Further information received from the EPA suggest resident lives along the rail line in Bomaderry.

From a description of the smell it is more likely the odour was caused by the Bomaderry WWTP located along the rail line.

A trip along the road on 15/9 couldnt identify the source and only noted that the Council biosolids pit was fairly full but can't confirm that is the source

Status:	0 Logged	**Dept:**	SHOQA
Approved By:		**Manufacturing Site:**	Shoalhaven Starches
Date:		**Product Rejected:**	No
Recorded By:	gdostal	**Potential Claim:**	No

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL128

Customer Code: SCUST90123 **Date Lodged:** 20-Oct-2025

Customer: Environmental Protection Authority (EPA) Queanbeyan

Batch No.: N/A **Product:** N/A

Complaint Detail: Odour Complaint - Bomaderry 16th October 2025

Problem: There is a very strong and acrid (like vomit) odour that is coming from the Manildra plant in Bomaderry and up Bunberra Street. Nobody can go outside or open their windows. It has been a hot day and we were hoping to cool down our house. This is repulsive and needs to be investigated. There is an intermittent yeasty smell that occurs from Manildra. We can't continue to tolerate this odour pollution. Please could you investigate as this needs to stop. Thank you in advance. I returned home from the central Nowra shopping area and there was no smell there. As soon as I got out of the car at my home in Bomaderry an acrid smell like vomit (butanoic acid) which is a very distinct smell hit me. I smelt it again at around 6pm tonight at my home in Bomaderry but it was not strong. It was definitely coming from Manildra. Please could this be investigated. Thank you for your help and support.

Cause Cat: ODOUR Odour

Cause: Unknown but likely Biofilter as the wind direction and description matches on the days described

Who To Do: Gavin Dostal

Action Required By: 20-Oct-2025

Action:
- Reviewed wind direction which matches to the direction of the complainant
- Emailed Managers asking if any known disruptions

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL128

Customer Code: SCUST90123

Date Lodged: 20-Oct-2025

Review: Likely to be from Shoalhaven Starches

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL128

Customer Code: SCUST90123 **Date Lodged:** 20-Oct-2025

Status:	0 Logged	**Dept:**	SHOQA
Approved By:	gdostal	**Manufacturing Site:**	Shoalhaven Starches
Date:		**Product Rejected:**	No
Recorded By:	gdostal	**Potential Claim:**	No

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL129

Customer Code: SCUST90124 **Date Lodged:** 20-Oct-2025

Customer: Community Environmental Complaint - Direct

Batch No.: N/A **Product:** N/A

Complaint Detail: Odour Complaint - Bomaderry 20th October 2025

Problem: [redacted] called reception directly to complain of Odour in Bomaderry which had been particularly noticeable over the last few days (from Saturday she said). Described the smell as yeasty and "over ripe". Lives up at [redacted] Has lived in the area 50 years. Was going to ring EPA but called us first to let us know

Cause Cat: ODOUR Odour

Cause: Unable to determine source of odour

Who To Do: Gavin Dostal

Action Required By: 20-Oct-2025

Action:
- Email to Managers asking about any known issues
- Wind direction very still on this day
- Drove to site to verify smell but was masked by lawn mowing at the time.

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL129

Customer Code: SCUST90124 **Date Lodged:** 20-Oct-2025

Review: Possible to have been from Shoalhaven Starches but location of complainant is very far away and on other side of town

Status:	0 Logged	**Dept:**	SHOQA
Approved By:		**Manufacturing Site:**	Shoalhaven Starches
Date:		**Product Rejected:**	No
Recorded By:	gdostal	**Potential Claim:**	No

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL130

Customer Code: SCUST90124 **Date Lodged:** 07-Nov-2025

Customer: Community Environmental Complaint - Direct

Batch No.: N/A **Product:** N/A

Complaint Detail: Odour Complaint - Bomaderry 7th November 2025

Problem: The odour from Manildra at the Bomaderry shops today is just awful.

When it is humid the smell stays in the air and it makes me feel quite sick. I don't know how the people working in the shop can stand it.

Surely more can be done about this.

I have just viewed your indepependent odour audit and it seems you were working on issues of exceeding acceptable limits in May. It is now November.

Cause Cat: ODOUR Odour

Cause: Unable to determine source of odour

Who To Do: Gavin Dostal

Action Required By: 10-Nov-2025

Action:
- Email to managers to inform them of Odour Complaint
- Email to complainant asking for more details. but didn't hear back

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL130

Customer Code: SCUST90124 **Date Lodged:** 07-Nov-2025

Review: Possible to be from Shoalhaven Starches

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL130

Customer Code: SCUST90124 **Date Lodged:** 07-Nov-2025

Status:	0 Logged	**Dept:**	SHOQA
Approved By:		**Manufacturing Site:**	Shoalhaven Starches
Date:		**Product Rejected:**	No
Recorded By:	gdostal	**Potential Claim:**	No

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL132

Customer Code: SCUST90124 **Date Lodged:** 29-Dec-2025

Customer: Community Environmental Complaint - Direct

Batch No.: N/A **Product:** N/A

Complaint Detail: Odour Complaint - Bomaderry 25th December 2025

Problem: It has been noted this week especially 24/12/25 that one of your processes manufacturing or cleaning is sending a chemical smell into the air. I live in the area and thought this was a one time event. Apparently it is not. It gives me headaches from it effect. This odour is new as I have been familiar with others produced at your site. Please investigate my query. I can be contacted for further information regarding this. Complainant lives at [redacted]

Cause Cat: ODOUR Odour

Cause: Unable to determine source of complaint - Complainant never smelt it again - Unlikely to Shoalhaven Starches

Who To Do:

Action Required By: 29-Dec-2025

Action: - Email to Managers sent 29/12 asking if any known issues on the evening of 24th and morning 25th.
- Wind direction predominantly SE which lines up with coming from site

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL132

Customer Code: SCUST90124 **Date Lodged:** 29-Dec-2025

Review: - Given smell description unlikely to be from Shoalhaven Starches

Status:	0 Logged	**Dept:**	SHOQA
Approved By:		**Manufacturing Site:**	Shoalhaven Starches
Date:		**Product Rejected:**	No
Recorded By:	gdostal	**Potential Claim:**	No

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL136

Customer Code: SCUST90124 **Date Lodged:** 25-May-2026

Customer: Community Environmental Complaint - Direct

Batch No.: N/A **Product:** N/A

Complaint Detail: Odour Complaint - Nowra 5th May 2026

Problem: There was also a strong smell of starch over the same weekend. I would consider these observations to be a complaint.

Cause Cat: ODOUR Odour

Cause: Unable to determine the source of the compliant

Who To Do:

Action Required By: 26-May-2026

Action: - Complainant received 3 weeks post incident so hard to consider operating conditions and sentiment from the day.
- Review of wind data showed various directions across weekend, without more accurate times hard to infer relationship

MANILDRA GROUP OF COMPANIES

No Title

Complaint No: CC-ESHOAL136

Customer Code: SCUST90124 **Date Lodged:** 25-May-2026

Review:

Status:	0 Logged	**Dept:**	SHOQA
Approved By:		**Manufacturing Site:**	Shoalhaven Starches
Date:		**Product Rejected:**	No
Recorded By:	gdostal	**Potential Claim:**	No