Compliance Assessment Report CAR_NRW0053386

Permit being assessed: PP3338CQ.

For: Nant-y-caws Landfill Site (Phase 1 Effluent Treatment Plant), **held by:** Carmarthenshire County Council

At: Nant-y-caws Landfill Site (Phase 1 Effluent Treatment Plant) Llanddarog Road , CARMARTHEN, Dyfed, SA32 8BG.

Type of assessment: Site Inspection,

Reason: Routine.

On: 06/10/2026 between 09:45 and 11:45.

Parts of permit assessed: See Section 4.

NRW Lead Officer: Benjamin Taylor, accompanied by Elliot Jones.

Report sent to: Waste Strategy & Policy Officer, Camarthenshire County Council, on 29/10/2026.

1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (compliance criteria)	Assessment result	Permit condition
IR1A - Installations - Management - General Management	Action only (X)	
IR2B - Installations - Operations - The site	Action only (X)	

Result types are explained in more detail in the 'Important Information' section below.

Total non-compliances recorded	Total non-compliance score
0	0

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

2. What action is required?

Criteria	Action needed	Complete by
IR1A	Carmarthenshire County Council must ensure that appropriate remedial works are undertaken to prevent further deterioration and potential failure of aeration equipment within the MBBR vessels. NRW must be kept informed of progress throughout the implementation of the work and once completed. Relevant plans and procedures must be updated	05/02/2027

Criteria	Action needed	Complete by
	and submitted to NRW soon after completion.	
IR2B	Carmarthenshire County Council must ensure that a permit variation application is submitted to NRW that accurately reflects all site processes, infrastructure, discharge points, and features associated with the installation. The application must be submitted within the specified timeframe, unless otherwise authorised in writing by NRW (action ongoing from CAR_NRW0053024).	04/12/2026

Compliance criteria codes are listed in the 'Important information' section below.

3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

At this time, we do not intend to take any further action.

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

4. Details of our assessment

Introduction

This Compliance Assessment Report (CAR) is regarding the Site Inspection undertaken by Natural Resources Wales (NRW) on the 6th of October 2026, the Inspection was on the Nantycaws Phase 1 Effluent Treatment Plant (ETP). The Site is managed by Excal Ltd (the Operator), who operate the Site on behalf of Carmarthenshire County Council (CCC), who as the permit holder is ultimately responsible for EPR/PP3338CQ.

Scope

This was a pre-arranged site visit undertaken in order for NRW to gain familiarisation with the newly constructed denitrification reedbed, which had been commissioned several weeks prior to the inspection. The denitrification stage was introduced in response to persistent exceedances of the permitted Emission Limit Value (ELV) for Total Nitrogen, as specified within *Schedule 3(b): Table S3.1*.

The visit also provided an opportunity to facilitate discussions regarding the permit variation requirements necessary to reflect the recent modifications to the leachate treatment system.

Site Observations

Denitrification Reedbed

NRW Officers arrived onsite at 09:45 and were met by representatives of Excal Ltd and Carmarthenshire County Council.



Image 1: View of Denitrification System Reedbed 2

NRW Officers inspected the new denitrification reedbed (Denitrifying System Reedbed 2), which is located between the existing overflow lagoon and the Afon Bantwen. The reedbed is of a horizontal flow design and consists of an impermeably lined trench filled with 10mm gravel substrate to approximately waist height. Common reed (Phragmites australis) has been planted throughout the gravel substrate to facilitate the removal of total nitrogen from the effluent through a range of biological and chemical processes.



Image 2: Overflow pipework between Reedbed 2 and the SAF2 Reedbed

Following the incorporation of the new denitrification process, the effluent treatment system has been modified so that Reedbed 2 now provides a secondary 'polishing' stage to the existing treatment process. NRW understands that effluent from the Main Plant System is now directed to Denitrifying System Reedbed 2 before being gravity fed via a pipe overflow (see Image 2 above) to the north-western corner of the existing SAF2 reedbed system. Treated effluent is then discharged to controlled waters via emission point W1.

NRW understands that the total capacity of the new system is approximately 175m³. Excal Ltd anticipates that this additional denitrification capacity will provide sufficient retention time to achieve compliance with the BAT - AELs for Total Nitrogen at W1. Should additional treatment capacity be required in the future, Excal Ltd suggested that increasing the depth of the SAF2 reedbed system could be considered. NRW remains uncertain regarding the feasibility of this proposal and should be consulted prior to the commencement of any such works.

As Reedbed 2 is still in the early stages of operation, NRW was informed that optimisation of the process is ongoing and that the ideal retention time has yet to be determined. During this commissioning period, Excal Ltd is undertaking an enhanced monitoring programme to compile data that will inform process optimisation and provide an indication of the system's performance. However, it is acknowledged that the effectiveness of the system may be reduced during the winter months as colder temperatures are expected to result in the seasonal dieback of common reed (*Phragmites australis*) in addition to reduced microbial activity.

Now that the denitrification reedbed system is operational, CCC must ensure that appropriate management and maintenance procedures are in place to support optimal system performance.

NRW understands that Excal Ltd is currently updating the Environmental Management System (EMS) to incorporate the denitrification reedbed and has revised the Site Plan to reflect changes to the site layout. NRW requested a copy of these updated plans, which were provided by the Operator (*SitePlanWithReedBed*) via email on the 6th of October 2026.

NRW communicated at the time, that whilst the additional treatment process is covered by the existing permitted S5.4 A1 (a)(i) activity, a permit variation was still required in order to capture changes to the layout amongst other required changes separate from the project (i.e. extension of the site boundary to include the SAF2 Reedbed). NRW understands that work on this application is already underway. However, CCC advised NRW that complications in completing this application may arise as the contract between CCC and Excal Ltd has ended, and a procurement process is currently being undertaken to appoint a new contractor which is not guaranteed to be Excal Ltd.

Main Plant System



Image 3: View of Moving Bed Bio Reactors (MBBRs) associated with the Main Plant

NRW Officers then inspected the Main Plant Area, which comprises the subterranean Submerged Aerated Filter (SAF) plant and a series of Moving Bed Bio Reactors (MBBRs). The treatment process operates sequentially, with Tank 1 functioning as the SAF plant, MBBR Tanks 2 and 3 operating in parallel, and MBBR Tanks 4 and 5 operating in series prior to entry into the dentification stage.

During the visit, NRW Officers enquired about the failure of one of the aerators within Tank 4, which was outlined by Excal Ltd in Section 2 of the *Leachate Treatment Plant Report – January to June 2026*. Within the report, Excal Ltd stated that they were developing a more robust and maintainable system in order to mitigate this issue going forward. The Report claims that the failed aerator in Tank 4 has not had an adverse effect on the performance of the plant.

Excal Ltd explained that they had identified that the media balls within the MBBR tanks were degrading the aeration equipment. Despite mitigation measures having been implemented, the aerator within Tank 4 had subsequently failed. Excal Ltd advised that, due to the design of the tanks and the presence of media carriers within the vessels, confined space entry was not considered viable for undertaking repairs.

To address this issue, Excal Ltd informed NRW that they are proposing to retrospectively install a manifold system incorporating individual aeration columns that can be isolated, removed and replaced without the need for confined space entry. The proposed system would be installed within the existing vessels, with access points located on the tank roofs to facilitate maintenance activities. The aerator upgrade project is intended to be delivered in phases, commencing with Tank 4 due to the current aerator failure. At the time of the visit, implementation of the proposal remained subject to acceptance of the quotation by CCC.

Action:

Carmarthenshire County Council must ensure that appropriate remedial works are undertaken to prevent further deterioration and potential failure of aeration equipment within the MBBR vessels. NRW must be kept informed of progress throughout the implementation of the work and once completed. Relevant plans and procedures must be updated and submitted to NRW soon after completion.

It was also noted within the *Leachate Treatment Plant Report – January to June 2026* that the treatment plant had been affected by a number of power outages during the first half of 2026. Given that the treatment process does rely upon pumping infrastructure to transfer leachate between some stages, NRW Officers sought clarification on the potential impacts of such outages on plant performance. In particular, whether prolonged power outages could compromise the operation of the treatment system and whether there was an increased risk of environmental pollution, especially during periods of heavy rainfall events.

NRW were informed that there was a backup generator located up in the adjacent CWM Environmental Ltd Site which can provide power to the ETP. Furthermore, the overflow lagoon would provide a contingency measure for leachate entering the plant to be stored temporarily whilst the plant was offline. As an emergency measure, NRW was informed that there is provision for the utilisation of vacuum tankers to manage the levels within the overflow lagoon to prevent any losses of containment.

Southern Lagoon



Image 4: View of Southern Lagoon, partitioned off from the Reedbed System 2

Finally, NRW Officers inspected the Southern Lagoon, which is located adjacent to the Main Plant Area and Reedbed System 2. Although the lagoon lies within the permitted Installation boundary, it does not form part of the leachate treatment process and is understood to function solely as natural surface water attenuation. Owing to perceived ecological benefits, it was excluded from the denitrification reedbed system during it the design stage.

During the inspection, NRW Officers identified the potential for the Southern Lagoon to act as an overflow pathway from Reedbed System 2 should a blockage occur within the downstream pipework. Following site discussions, it was therefore considered essential that the lagoon remains within the permitted Installation boundary, despite not serving an active role in the leachate treatment process.

NRW is already aware of an unpermitted overflow pipe connecting the Southern Lagoon to a drainage ditch that ultimately discharges to the Afon Bantwen. Whilst it is acknowledged that the lagoon does not form part of the operational treatment system, the overflow constitutes an unauthorised discharge point. It is therefore imperative that all direct pathways to the water environment are appropriately captured within the permit, which would reduce the likelihood of unexpected losses to the water environment in emergency scenarios as an example. This has previously been communicated with CCC/Excal Ltd in July 2025 and work is underway to include it as part of the permit variation application which is expected to be submitted imminently.

Action:

Carmarthenshire County Council must ensure that a permit variation application is submitted to NRW that accurately reflects all site processes, infrastructure, discharge points, and features associated with the installation. The application must be submitted within the specified timeframe, unless otherwise authorised in writing by NRW (action ongoing from CAR_NRW0053024).

AOB – Waste Returns

During the visit, discussions were held regarding the submission of Quarterly Waste Returns, which had been subject of non-compliance scores for contravention of permit condition 4.2.5, as is detailed within CAR_NRW0053024.

NRW explained the requirements of permit condition, and the expectation going forward, which involves the submission of all waste received and removed at the Installation over the course of the Quarter. This information needs to be submitted using the correct form, to the correct email address (see guidance: Natural Resources Wales / Submit your waste return)

Since this visit, on the 28th of October 2026, Excal Ltd retrospectively submitted Quarterly Waste Returns dating back to 2020. It is considered that the requirements of the following action (detailed within CAR_NRW0053024) have been met, and this action is now completed.

'All outstanding historic waste tonnage returns dating back to 2021 are be submitted retrospectively to NRW by the specified deadline. Any issues envisaged by the Operator must be communicated to NRW at the earliest opportunity.'

The expectation going forward now is that the Operator (which included CCC) ensures compliance with permit condition 4.2.5 in future monitoring submissions.

The Site Inspection concluded at 11:45.

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

Important information

Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found
Action only (X)	Action required for the permit condition assessed to avoid non-compliance. No non-compliance scored at this time
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

How we use assessment scores
The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

If your assessment result in Section 1 is suspended, what does this mean?
In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

Full list of Industry compliance criteria (used in section 1 and 2):

1. Management
- IR1A – General management
- IR1B – Finance (only applicable to Landfill)
- IR1C – Energy efficiency
- IR1D - Efficient use of raw materials
- IR1E - Avoidance, recovery and disposal of wastes produced by the activities
- IR1F - Multiple operator installations

2. Operations
- IR2A – Permitted activities
- IR2B – The site
- IR2C – Operating techniques
- IR2D – Technical requirements
- IR2E – Improvement programme
- IR2F – Pre-operational conditions
- IR2G – Landfill engineering (only applicable to Landfill)
- IR2H – Waste acceptance (only applicable to Landfill)
- IR2I – Leachate levels (only applicable to Landfill)
- IR2J – Closure and aftercare (only applicable to Landfill)
- IR2K – Landfill gas management (only applicable to Landfill)

3. Emission and Monitoring
- IR3A(1) – Emissions to water
- IR3A(2) – Emissions to air
- IR3A(3) – Emissions to land
- IR3B – Emissions of substances not controlled by emission limits
- IR3C – Odour
- IR3D – Noise and vibration
- IR3E – Monitoring
- IR3F – Pests
- IR3G – Air quality management plans
- IR3H – Monitoring for the purposes of the Industrial Emissions Directive (this heading includes Large Combustion Plants)
- IR3I – Fire

4. Information
- IR4A – Records
- IR4B – Reporting
- IR4C – Notification

Enforcement response
Any non-compliance with a permit condition is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

Data protection notice
You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

Disclosure of information – this report will be available to view on-line
If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within twenty working days to let you know if we agree to your request.

Disputing the Content of this Compliance Assessment Report Form
If you disagree with the content of this Compliance Assessment Report form, you should submit your concerns, in writing, to the regulating officer who issued it within **15 working days** of its issue. This will be treated as a **Stage 1 review**.

If you are not satisfied with the outcome of the stage 1 review, you may request a **Stage 2 appeal**. This request must be submitted **within 21 working days** of receiving the response from the stage 1 review.

Further details on our review and appeal process are available at: Natural Resources Wales / Appeal a regulatory decision from Natural Resources Wales

Concerns Not Related to the Content of this Compliance Assessment Report Form
If your concerns do not relate to the content of the Compliance Assessment Report form, you should first attempt to resolve the issue with the regulating officer or their line manager.

If the issue remains unresolved, please contact our **Customer Contact Team**:

- **Telephone**: 0300 065 3000 (Monday to Friday, 09:00–17:00)
- **Email**: enquiries@naturalresourceswales.gov.uk

They will provide details on how to escalate your concerns through our **Complaints and Commendations procedure**.

If you are dissatisfied with our response, you may contact the **Public Services Ombudsman for Wales**:

- **Telephone**: 0300 790 0203
- **Email**: ask@ombudsman.wales

Welsh Language Standards

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.