Compliance Assessment Report CAR_NRW0051947

Permit being assessed: AP3990LR.

For: St Modwen Developments Ltd, **held by:** St Modwen Developments Limited

At: Llancoed House, Llandarcy, N P T, SA10 6HJ.

Type of assessment: Report/Data Review,

Reason: Routine.

On: 21/05/2026.

Parts of permit assessed: Hydrogeological Risk Assessment version C.

NRW Lead Officer: Sally Wakeford.

Report sent to: Regional Director Wales - Real Estate, Revantage Real Estate/Management of Crymlyn Tip Landfill, on 21/05/2026.

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

Part of permitted activity assessed (compliance criteria)	Assessment result	Permit condition
W2G - Waste - Operations - Improvement programme	C2 Significant	2.4.1

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

Total non-compliances recorded	Total non-compliance score
1	31

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
W2G	Provide a Hydrogeological Risk Assessment Review for submission to Natural Resources Wales considering all points within this CAR	30/11/2026

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.

You are non-compliant with your permit.

We are currently considering taking enforcement action against you for the non-compliance recorded above. We will contact you in due course.

4. Details of our assessment

In Compliance Assessment Report CAR_NRW0049401 the Operator was required to provide an adequate Hydrogeological Risk Assessment (HRA) as required by Improvement Condition IP1 of the permit. Comments and “next steps” were provided to in the CAR for inclusion within the baseline HRA.

It was agreed that a traditional modelled HRA wouldn’t work at this site which was built on the principals of dilute and disperse, and therefore, in the email of 18 October 2024 that the production of a baseline HRA to understand what is currently happening at the site would be an appropriate way forward to support the restoration of the landfill and the production of a closure and aftercare plan.

The following points were required to be included:

1. Definition of success metrics (dynamic and amendable); In order to define the success metrics, you will need to confirm at this stage what baseline conditions are both within the tip and within the surface waters for both dissolved phase and free phase NAPL. Some information on the surface water quality (compared against the EQS) has been provided, but the next submissions should clearly outline this.
2. NAPL thickness across the site and volumes recovered in the trench and at what frequency should also be included to keep track of NAPL recovery volumes and rates throughout and beyond the remediation.
3. PFAS monitoring suite confirmation;
4. Consideration of impermeable cap requirements;
5. Updated Baseline HRA with the comments above;

These points are detailed further within CAR_NRW0049401.

A Regulation 36 enforcement notice was issued on 18/12/2025 providing the points above which the HRA needed to cover. Document “04020-PJA-25-XX-RP-R-0113 Crymlyn Tip Baseline HRA_RevC_” was submitted within the deadline of the enforcement notice. This Compliance Assessment Report covers the review of the HRA provided.

In relation to each of the points listed above NRW has the following comments to make:

1. a) Success metrics have not been included for groundwater. Those which have been provide are quite vague and lacking in detail. In the previous CAR form NRW provided examples, such as including orders of magnitude e.g. 50% in comparison to the baseline, something tangible that can be assessed for compliance, as stated these are allowed to be amendable.

b) The generic risk assessment has been expanded, and comparison has been made between concentrations of contaminants from the groundwater datasets against

Environmental Assessment Levels (in addition to the surface water datasets previously compared). Any trends, or lack of, in the concentrations or distribution are discussed within the report. However, it is considered that this discussion could be supplemented via visual/graphical representation for example hotspot plots of contaminants, and trend analysis graphs for contaminant concentrations over time.

2. NAPL: Recorded NAPL thicknesses in boreholes are presented in Appendix D. Total volumes of NAPL recovered from the site each year are provided; however, the report does not specify recovery volumes from each location (trenches, sumps and boreholes). It was previously suggested that this information could be used as part of the baseline to allow comparisons against going forward. PJA responded that this would be provided within the Closure and Aftercare Management Plan. This should have been presented within the HRA as requested in the previous CAR form and enforcement notice.

3. The updated February 2026 HRA contains the addition of PFAS monitoring. The only PFAS compound sampled for is PFOS. However, there are 15 PFAS compounds classified as Hazardous Substances.

    a. The justification for which PFAS compounds could be present at the site associated with the waste and past site use should be provided.
    b. The risk (and baseline) associated with PFAS does not seem to have been established yet, and PFAS has not been identified within the HRA as an established contaminant of concern.
    c. Currently minimal details are provided with regards to how PFAS will be managed. Noting, the maximum PFOS concentrations across three sampling rounds were recorded in borehole CBH2 within the waste.
    d. In Section 4.6 of the report, it states that "*supplementary"* monitoring for PFOS will be carried out in groundwater and surface water, but it is unclear exactly what this will entail, for example will this form part of the monthly monitoring schedule going forward? As per our comment above, consideration should be given to which PFAS compounds could be present and the appropriate sampling suite to reflect this.

4. Consideration of Impermeable cap:
    a. The updated HRA seems to imply that a permeable cap constructed from site-won materials would limit infiltration to satisfactory levels. However, it does not specify or justify the permeability limits necessary to achieve this while also ensuring landfill gases are managed appropriately. Such limits are needed to show that a level of performance equivalent to that of an impermeable cap is achievable under the current proposal. When defining these limits, consideration should also be given to the long-term performance of the proposed drainage and surface water management controls. (See below for Geotechnical comments which were provided in June 2023 relating

to the design permeability of the cap (comments 1&2) and the absence of a surface water management plan (comment 3)).

a. It appears that with the switch to a permeable cap, the introduction of a partial cut-off wall, and a lack of clarity around long-term surface water management controls, the assumptions that were made when modelling groundwater for the stability analysis may no longer hold. The stability assessment should therefore be reviewed and updated as necessary to consider the implications for long-term global and restoration soil slope stability. (See June 2023 comments on the Stability Risk Assessment below).

In PJA's response (dated 06/02/26) to our previous comments on the November 2025 HRA, PJA advised that a number of items will be managed/provided within a Closure and Aftercare Management Plan (CAMP). This included further details on success metrics, NAPL recovery volumes & frequency, and details of risk and mitigation associated with the proposed barrier.

Other general comments:

- At what stage will potential for future risks from climate change be addressed? Climate change and extreme weather events have the potential to create new pathways, mobilise historic contamination and alter the conceptual site model. For example, more frequent extreme rainfall events could mobilise contaminants and create new pathways. Longer term changes also have the potential to alter contaminant behaviour.
- The HRA has been reviewed from a Geoscience perspective and an Ecological perspective. Noting that the Crymlyn Bog is a key receptor, it is vital that this is assessed prior to any works commencing on remediation. As part of your assessment into remediation of this site, a **Habitats Regulations Assessment** will be required to show that the planned infrastructure and restoration of the tup will not impact the bog.
    - As yet we have not seen evidence to confirm if the bog is dependant on groundwater flow from the landfill. (groundwater flow is reportedly to the north and northwest, from the tip towards the bog).
    - detail is required regarding the relationship between the bog as a receptor and groundwater flow (including shallow and deeper groundwater bodies)

Whilst undertaking this review, we have also reviewed the comments made by NRW regarding the Closure and Aftercare Management Plan and Stability Risk Assessment made in June 2023. Those parts highlighted in **bold** are our updated comments related to the current HRA review.

We cannot find record of these being addressed as they may be relevant to the HRA:

- Is the site considered to be, in its current condition, at steady state conditions? The data presented in the 2020 – 2022 period, supported by the narrative, suggest that

pumping activities are still on-going and are influencing groundwater elevations. This is a fundamental consideration within the conceptual understanding of the Site and the subsequent assessment of contaminant fate and transport and risk to receptors. Considerations such as *is it ongoing, where is it occurring, when is it due to cease?* This has profound impacts on the hydrogeological regime (as evident by the latest graph of groundwater elevation). NRW need to be provided with information on steady state conditions if they exist. **The HRA does not discuss if pumping activities had/has any influence on groundwater elevations**.

- NRW need to be provided with a better understanding of the surface water and groundwater interactions / continuity, and shallow and deeper groundwater interactions & continuity. With regard to the latter, the CAMP indicates that the deeper groundwater is not anticipated to be in direct continuity with the shallow groundwater, however the Atkins report suggests there is likely to be some hydraulic interaction between the two water bodies. **Looking at the conceptual site model presented in the HRA it suggests that the two groundwater bodies are in continuity, although it is not specifically mentioned within the HRA text.**
- Query regarding the Factual Site Investigation Report (Englobe, 2022) relating to 11 groundwater monitoring boreholes constructed to investigate ground conditions of the periphery of the site, and whether these are subject to any groundwater monitoring and sampling? Within the factual report, data was only provided for one groundwater monitoring event undertaken on 10th November 2022. **These boreholes don't seem to have been used for the sampling data compiled within the HRA, with the exception of ENBH08 which has been sampled for PFOS.**
- There is no offsite sampling to understand how far off site is being impacted. **Has this been considered to support the baseline and potential impacts following restoration/remedial works?**

*Relevant (geotechnical) NRW comments from June 2023:

1. Summary comment: *"Following the Landfill Gas Assessment there has been a fundamental change in the proposed restoration design from an engineered impermeable cap to more permeable media. There has not been an analysis of how this may affect contaminants leaving the tip area."*
2. *Comment on CQA plan: "Exec summary: Para 10 states 'There is no recommendation for impermeable liners or drainage layers'. The change from the initial design for an impermeable cap is explained as due to landfill gas concerns. Does the gas permeability of the reprofiling/restoration soils therefore need to be specified to avoid low gas permeability clay soils? If an impermeable capping liner is desirable, could gas emissions be controlled in other ways as with other landfill sites?"*
3. *Comment on CQA plan: "3. There is no surface water management plan for the proposed reprofiled tip. A perimeter drain, for example, may be required to control*

surface water drainage from the new slopes"

4. *Comment on SRA: "The slope stability analyses carried out concludes the tip slopes will be stable after the proposed reprofiling of the tip. However, the models for the stability analyses have not included the proposed cut-off wall that will formed in the Ash Bund or considered the scenario of a raised groundwater level that may be caused by the partly confining effect of the cut-off wall. The analyses need to be repeated for these potential destabilising effects unless it can be demonstrated they can be screened out."*

SUMMARY AND CONCLUSIONS:

NRW have reviewed the HRA, in line with previous comments provided on CAR forms and comments on the previous CAMP and stability assessments. Whilst some aspects of the Notice were covered within the HRA, some areas were lacking in the specific information required.

NRW do NOT accept this HRA as adequate.

The 5 points listed within the enforcement notice have not been presented as fully considered within the HRA.

W2G – Waste – Operations – Improvement Programme – Permit Condition 2.4.1 – CAT 2 breach

As you have failed to provide adequate information by the agreed deadline, you have been scored a category 2 breach of permit condition 2.4.1:

Permit Condition 2.4.1: "*The Operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency."*

Table S1.3 IP1: *"Review of Hydrogeological Risk Assessment… report shall be undertaken by the operator at key stages of the development of the landfill as agreed with the Environment Agency and shall be submitted to the Environment Agency for written approval."*

ACTION: Provide a Hydrogeological Risk Assessment Review for submission to Natural Resources Wales considering all points within this CAR by 30 November 2026 unless otherwise agreed in writing.

NRW will also consider serving a further Regulation 36 Notice regarding this breach of permit.

Failure to comply with Regulation 36 Enforcement Notice:

NRW will now consider the enforcement action regarding the failure to fully comply with the Regulation 36 EPR (2016) Enforcement Notice.

END

Any compliance criteria not highlighted in the above summary should be considered as not assessed.

In this document 'Natural Resources Wales' means the Natural Resources Body for Wales established by Article 3 of the Natural Resource Body for Wales (Establishment) Order 2012.

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 Waste compliance criteria (used in section 1 and 2):

1. Management
- W1A – General management
- W1B – Energy Efficiency (MCP/SG facilities only)
- W1C – Avoidance, recovery and disposal of wastes produced by the activities

2. Operations
- W2A – Permitted activities
- W2B – Waste recovery plan
- W2C – Operating techniques
- W2D – The site
- W2E – Waste acceptance
- W2F – Technical requirements
- W2G – Improvement programme
- W2H – Pre-operational conditions

3. Emission and Monitoring
- W3A(1) – Emissions to water
- W3A(2) – Emissions to air
- W3A(3) – Emissions to land
- W3B – Emissions of substances not controlled by emission limits
- W3C – Odour
- W3D – Noise and vibration
- W3E – Monitoring
- W3F – Pests
- W3G – Fire

4. Information
- W4A – Records
- W4B – Reporting
- W4C – 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.