

Compliance Assessment Report CAR_NRW0042075

Permit being assessed: BP1772IZ.

For: Poeton Cardiff, **held by:** Poeton (Cardiff) Limited

At: Poeton (Cardiff) Ltd, 283 Penarth Road, Cardiff, Cardiff, CF11 8UL.

Type of assessment: Report/Data Review,

Reason: Routine.

On: 15/06/2023 between 11:25 and 13:15.

Parts of permit assessed: Effluent treatment operations.

NRW Lead Officer: Dale Padfield.

Report sent to: Jason Hamling, HSE & Facilities Manager, on 05/07/2023.

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

Part of permitted activity assessed (compliance criteria)	Assessment result	Permit condition
IR1A - Management - General management	C3 Minor	1.1.1(b)
IR1A - Management - General management	C3 Minor	1.1.1(a)

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

Total non-compliances recorded	Total non-compliance score
2	8

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	Ensure staff are adequately trained to operate the ETP.	Already completed
IR1A	Review the planned preventative maintenance regime and ensure all relevant plant and equipment is captured and adequate frequency of checks and maintenance are conducted.	31/12/2023

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

Poeton Cardiff

EPR/BP1772IZ

This Compliance assessment report (CAR) details the following.

- Poeton's response to the actions and questions raised in CAR NRW_0041684
- The site visit conducted on the 15th of June 2023 with Dwr Cymru Welsh Water (DCWW)

Response to actions from CAR NRW_0041684

The actions / questions are re-listed below for ease of reference.

Action 1 - Poeton – 18th of April 2023. Poeton to conduct a gap analysis of their drag-out procedures against those stated within the surface treatment of metals and plastics BAT reference document. Poeton should use the results of this analysis and put in place a plan to improve any areas identified as being deficient. Please provide NRW with the results of the gap analysis and with any plan Poeton intend to implement as a result of their findings.

Question 1: Further to this, how often are the drag-out / rinse tanks tested? Does this form part of the preventative maintenance regime and at what concentration(s) of cadmium etc trigger an action / replacement of water?

Question 2:

- (a) How will the new neutralisation tank provide better control over the effluent quality?
- (b) How does the tank differ to the existing tank?
- (c) When will the new tank be operational?

Question 3: Have Poeton considered determining the average parameter conditions of each influent stream, to gain a better understanding of how the onsite operations influence the effluent and the pH variability witnessed within the neutralisation tank?

Question 4: Is there any reason why Poeton have omitted the hazardous waste data in their 2022 waste minimisation report?

Question 5: Have Poeton conducted a duty of care audit on their waste carriers, and do Poeton know the fate of their hazardous waste? Have Poeton investigated possible recovery options for the hazardous waste generated at the site?

Question 6: Have Poeton investigated the root cause for the increased levels of cadmium being released from the facility? DCWW monthly spot sample analysis appears to indicate increased concentrations occurring from April 2022. Did anything change in April 2022?

Question 7: With regards to the formula that was provided that has historically been used to calculate total mass release of cadmium – can you provide some clarification on this formula; how does the formula provide an accurate estimation of the cadmium released, why is the sum of the monthly average concentrations divided by 50?

Question 8: Is there a reason Poeton have opted to use the monthly DCWW results opposed to the weekly internal cadmium analysis results?

Response to action 1: Poeton have provided copies of their procedures for the cadmium plating activities and have provided a statement on drainage times above the process tanks, process flow, including the cadmium tanks top-procedure and counterflow rinses. However, the ask from Poeton in relation to action 1 was for Poeton to conduct a gap analysis on their procedures against the techniques referenced within the surface treatment 'Best Available Techniques' (BAT) reference document for the surface treatment of metals and plastics, and to provide NRW with their evaluation and outcome of the analysis. The response received hasn't satisfied the action required.

However, it's appreciated that Poeton are currently investing significant time and resources to address the issues with the ETP. Although effluent quality may be improved by ensuring contaminant load is reduced to as low as reasonably practicable at the source, by ensuring the application of BAT, no further response in relation to this action is requested at the moment. From the procedures received, it appears that the primary areas such as drainage times, and counterflow top-up techniques are in use, and further improvements may be limited. Instead, this topic will be the subject of an audit at a later date, to allow Poeton to concentrate on the design and implementation of their ETP upgrades as a priority.

Response to question 1: Poeton have stated that no testing of the tanks is routinely conducted, however the drag outs are used continuously to top up the cadmium processing tanks, which is deemed BAT and is accepted.

Response to question 2 – a, b & c: Poeton submitted a document titled 'New Neutralisation stage' which details the issues with the existing neutralisation stage and the improvements seen with the new neutralisation stage tank in place.

Poeton have installed an additional neutralisation tank above the existing neutralisation pit. Effluent is pumped from the pit and neutralisation / pH adjustment by sodium hydroxide is now conducted in the new tank.

Poeton have stated that the new neutralisation stage appears to be maintaining the pH between 8.8 and 10.7, an improvement on the highly variable pH previously witnessed in the old neutralisation pit. Poeton have supplied some preliminary data showing improved results of cadmium, chromium, and nickel in the effluent, which all appear to be significantly reduced. DCWW spot sampling has also shown an improvement in the results, with no breaches to the effluent trade consent detected since the improvement has been in place, which is promising.

Response to question 3: Poeton haven't determined the average parameter conditions of each influent stream, however they have stated that the new tank and mixer has been operational for a few weeks which

has improved the balance of the pH.

Response to question 4: Poeton have amended and re-submitted the waste minimisation report to include hazardous waste, this is accepted.

Response to question 5: Poeton conduct licence checks to ensure their waste carriers are suitably authorised to remove and accept the waste generated at site. Poeton have also provided a description of the treatment processes their waste undergoes once removed from site and are aware of the fate of the waste.

Response to question 6: Poeton identified the root cause as insufficient employee knowledge. Poeton lost senior and knowledgeable members of staff, which resulted in an overall lack of knowledgeable and experienced staff remaining to operate the ETP. During the site visit on the 15th of June, Poeton Identified this weakness and have plans to implement a more robust system to prevent a similar situation occurring in the future. This would include detailed procedures including flow diagrams for correct operation and troubleshooting sheets detailing potential issues with the ETP and corrective actions. Poeton also plan on having a minimum of two staff fully trained in all aspects of the ETP operation. The implications of the identification of this root cause are discussed below.

Response to question 7: Poeton stated that the formula was left by the old technical manager Ian James, who unfortunately passed away suddenly a few years ago. As such they are unable to provide any clarification on the formula. Going forward, Poeton are asked to continue to calculate the mass balance release using the effluent discharge volumes and data from the sampling results.

Response to question 8: Poeton have used the DCWW sampling data as this comes from an independent body, which was considered the preferred approach. This is accepted.

Site visit / New ETP discussion

On the 15th of June NRW officer Dale Padfield and DCWW trade effluent officer Heather Pepper attended the Poeton installation at their request, to discuss the improvements Poeton have planned for their effluent treatment plant.

Poeton gave a presentation detailing the issues they had identified, the corrective actions already taken, and the improvements planned at the installation. A summary of the main points of discussion are given below.

Poeton identified several issues surrounding their effluent treatment operations,

- Concerns regarding the integrity of the subsurface treatment pits and transfer pipes, a crack in the 'neutralisation pit' wall was discovered in 2022.
- Broken equipment within the effluent treatment process, including mixers and blocked dosing lines.
- Effluent streams entering at the wrong stages, resulting in in-efficient use of treatment chemicals.
- A lack of understanding of the treatment process by the staff at the Cardiff facility, a result of losing experienced staff.
- Poor chrome treatment on the effluent arising from the anodising shop, due to leak in acid dosing

system.

- Difficulty assessing how well the effluent treatment process is functioning due to poor accessibility / limitations of visual and other inspections.

The above findings indicate that there has been a lack of planned preventative maintenance (PPM) on the ETP, and various plant and equipment has been allowed to fall into a state disrepair. The management system should incorporate a robust PPM regime, whereby inspection and maintenance frequencies are identified and conducted for all plant and equipment. Given the state of disrepair it would appear that the PPM regime for the ETP is inadequate or its implementation has been neglected. The standards seen are not what NRW expects from an installation.

These findings, along with Poeton's response to 'question 6' above are breaches of permit condition 1.1.1, whereby the lack of preventative maintenance has resulted in Poeton failing to manage and operate the activities in accordance with a written management system, that identifies and minimises the risk of pollution. The lack of appropriately trained staff is a breach of permit condition 1.1.1(b), which requires the operator to use sufficient competent persons and resources. As such, the following minor non-compliances will be issued for these breaches.

Non-compliance: A category 3 minor non-compliance is given for the lack of preventative maintenance resulting in the failure to manage and operate the activities in accordance with a written management system, that identifies and minimises the risk of pollution. Permit condition 1.1.1(a). **It is an offence under Regulation 38(2) of the Environmental Permitting Regulations (consolidated 2016) to breach a permit condition or emission limit. Non-compliance score CCS3.**

Non-compliance: A category 3 minor non-compliance is given for failing to use sufficient competent persons and resources. Permit condition 1.1.1(b). **It is an offence under Regulation 38(2) of the Environmental Permitting Regulations (consolidated 2016) to breach a permit condition or emission limit. Non-compliance score CCS3.**

These non-compliances are likely the true root cause of the emission limit value (ELV) breaches seen over the last year. Poeton now have a plan to rectify these issues, with significant improvements proposed for the ETP. The lack of sufficient competent persons is already being addressed; however, a robust PPM regime will also need to be developed and implemented to ensure this situation doesn't reoccur.

Poeton have put in place several measures to prevent further breaches of the permit and trade effluent consent limits. A new neutralisation tank has been placed above the existing neutralisation pit (as previously mentioned within this report), staff have been trained in the chemistry of each stage of the effluent treatment process and the leak in the acid dosing system has been fixed, resulting in better control over the chrome treatment stage. These improvements appear to have improved the effluent quality, with no breaches of the permitted limits being identified since the above was implemented.

Poeton have set several objectives with the aim of upgrading the entire effluent system. These objectives are,

- To fit double skinned tanks in all below ground treatment pits.
- Replace below ground gravity transfer pipes with double skinned, above ground pumped transfer.
- Create a single point control and monitoring system for the entire system.
- Reroute effluent flow to increase chemical use efficiency.

- Produce chemical flow and control schematics for effluent plant
- Install low level alarms chemical dosing tanks.
- Repair and replace broken equipment.
- Investigate viability of installing water re-use equipment and filter press.
- Investigate viability of installing temporary holding tank (to divert and hold effluent if not within consent limits or hold effluent in the event that part of the system is un-operational).

The objectives have been split in to two phases. Phase one primarily consists of improving and repairing current infrastructure. As mentioned during the site visit, these aspects are unlikely to require a permit variation, however, any substantial changes will require a permit variation to be in place before the changes are made. Poeton should also consider the effect of multiple small changes. A small change may not be considered significant; however, multiple small changes may collectively result in a significant change. During the visit Poeton stated that they were already in discussions with a consultant regarding a permit variation application, which would include the additional cadmium plating lines.

It is appreciated that the space available at the Cardiff facility is limited, and the continued use of the sub surface pits may be a necessity. However, as discussed during the visit, above ground containment tanks should be considered where possible as this would be deemed BAT, these are the preferred option as they allow for easier inspections, maintenance, and leak detection and as a result are less of a risk to the environment. Should the subsurface pits continue to be used, Poeton should consider installing the double-skinned tanks, particularly in the neutralisation pit, as a priority. Given that this pit is noted to be in a poor condition and has remained this way since its condition was discovered in June 2022. It's noted that Poeton are controlling the effluent level within this pit, ensuring the level is kept to a minimum to reduce risk and the most recent leak test didn't show any sign of the pit leaking. Although Poeton are confident the pit is not causing pollution, the poor state of the pit is a concern. As discussed during the visit, Poeton will need to ensure that secondary containment or other appropriate measures are put in place for any existing or proposed new primary containment vessels. Detailed information and guidance can be found in the '*CIRIA c736 containment systems for the prevention of pollution*' document.

Poeton stated that detailed procedures will be developed and implemented for all aspects of the effluent treatment process, including trouble shooting procedures for common issues. Having robust and detailed procedures for the ETP operation should help prevent a similar situation arising in the future, whereby the loss of experienced staff left a knowledge gap, resulting in poor ETP operation. Further to this, Poeton intend to have a minimum of two staff trained in all aspects of the ETP operation, which should help build and maintain resilience.

As previously mentioned, Poeton should review their planned preventative maintenance (PPM) regime and ensure all new plant and equipment is captured within it. As highlighted by Poeton, several issues surrounding broken and ineffective equipment were found during their review of the ETP. A robust PPM regime should already be in place to ensure equipment remains operational and functioning as expected. The PPM regime should encompass all plant and equipment, including items such as the mixers and dosing lines, this will help mitigate similar issues arising in the future.

Poeton plan on re-routing the effluent flow, the current set-up requires multiple pH adjustments by addition of acids and alkalis due to where each influent stream enters the ETP process. Although some additional chemical dosing will still be required, the proposed new design will make better use of the effluent streams resulting in a reduced need to dose additional chemicals, making the process more efficient. In addition to this, Poeton plan to remove solid cadmium waste earlier in the process (after the cadmium reduction phase) via filtration, reducing the quantity required to be precipitated out of solution at a later stage. Poeton also intend to install low level alarms on the dosing tanks and create a single point control and monitoring system

which will allow the operator to view the entire system from one location. The replacement of the current unground gravity fed drainage with an above ground pumped system is a welcome change and should allow for easier maintenance and inspection and is considered BAT.

Poeton also described the difficulty in accessing some stages / areas of the ETP, which were awkward to reach to conduct visual inspections, either due to poor accessibility or poor design. Poeton have identified these areas and the issues they pose and are working on solutions as part of the ETP upgrades.

Beyond the improvements to the ETP, Poeton are going to investigate the feasibility of installing a water re-circulation system. Such a system will allow Poeton to reduce their water consumption by as much as fifty percent, with an estimated saving of more than 10,000 m³ per year. Providing both financial and environmental benefit. Poeton will also evaluate the benefits of installing a filter press system, reducing the volume of the waste by de-watering the sludge, which may also provide financial and environmental benefits.

Summary

Poeton to ensure a permit variation is in place before any significant changes are made to the ETP.

Poeton are advised to review their PPM regime, and ensure all current and new infrastructure, plant and equipment is captured with adequate frequency of checks in place, a register of critical equipment should be in place. This will be subject to an audit at a later date.

Poeton should consider making the installation of the double skinned tanks a priority, particularly the neutralisation pit given its poor condition.

NRW appreciate the effort that has been shown to address the issues surrounding the ETP and the planned improvements are a welcomed change at the installation. Please keep NRW informed and updated with any progress.

END.

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 only relating to the activity assessment
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 – Emissions to water, air or 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.

What do I do if I disagree with the report or have a complaint?

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 to 18:00), or email enquiries@naturalresourceswales.gov.uk for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at 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.