

Compliance Assessment Report CAR_NRW0040620

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 carried out: Site Inspection, Reason: Routine.

On 04/10/2022 between 10:00 and 12:00.

Parts of permit assessed: Site Inspection / Sampling Procedures

NRW Lead Officer: Dale Padfield, accompanied by Geraint Harris.

Report sent to: Jason Hamling, HSE & Facilities Manager on 28/10/2022.

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

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
E4 - Emissions - Sewer	C3 Minor	3.1.2
A1 - Specified by permit	C3 Minor	1.1.1
G1 - Monitoring and Records, Maintenance and Reporting - Monitoring of emissions and environment	Action only (X)	
G3 - Monitoring and Records, Maintenance and Reporting - Maintenance records	Action only (X)	

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

Total number of 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
E4	Please refer to Actions 2 and 3 within the report.	15/12/2022
A1	Please refer to Actions 1, 2 and 3 within the report.	15/12/2022
G1	Please refer to Actions 4, 5, 6 & 7 within the report.	15/12/2022
G3	Please refer to Action 8 within the report.	15/12/2022

Action 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

Site Inspection and Handover 04th of October 2022.

In attendance: Dale Padfield (NRW), Geraint Harris (NRW), Jason Hamling (Poeton HSE and Facilities Manager), Bryce Marshall (Poeton Research and Development Manager).

The purpose of this compliance visit was to hand regulation of the site under EPR from Geraint Harris to Dale Padfield, conduct a visual inspection of the site to familiarise the new regulatory officer with the site lay-out and activities and to discuss a Schedule 5 notification submitted by Poeton on the 30th of September 2022.

The Schedule 5 notification submitted on the 30th of September notified NRW that the emission limit values (ELV's) for both Cadmium and Chromium had been breached. The results submitted were ~ Cadmium 0.316 mg/l (ELV = 0.3 mg/l) and Chromium ~ 2.246 mg/l (ELV = 2.0 mg/l). The following explanation was provided for the elevated results,

"We believe this result is due to a build up of solution in the composite sample collection point, which had not emptied from the week before. Thus, this result is from a two-week sample not a weekly, and the result is roughly double the preceding weeks results, which are within limits. Looking at the workload going through there is nothing out of the ordinary to justify the over limit result."

During the meeting Poeton were asked to provide further explanation for the elevated results, given that collecting two weeks' worth of samples would not simply double the concentration. If the samples for both weeks were individually compliant then the overall combined two-week sample would also be compliant. As such, since the sample from the first week was confirmed as compliant then the second weeks composite sample was likely much higher than both the permitted ELV and the reported result, since the first weeks' worth of composite sample would have diluted the true value.

A further explanation was provided by Poeton by email on the 07th of October 2022 stating,

"We have realised that the best technique of having a closed vessel is not being followed. This means our evaporation losses were roughly doubled in this time frame. This would cause the composite sample to concentrate and cause a higher than permitted reading."

If the overall through-put of the effluent treatment plant (ETP) was similar over both weeks and the evaporation rate from the sample container during the second week was consistent with the preceding week, then this second explanation has the same issue as first one provided. Since there is presumably always a loss from evaporation, and this didn't cause elevated results in the sample from the preceding week or at any other another sample period. Then the addition of a second weeks' worth of composite sample and an additional week of evaporation loss would not elevate the concentrations beyond the normal elevation that's been occurring over the standard weekly sampling period. This explanation is effectively the same as the first, the fact that there's been two weeks' worth of evaporation loss and two weeks' worth of composite sample collected does not explain the elevated results.

These results are in breach of the emission limit values for the discharge to sewer as given in section 3 of your permit. As such a minor non-compliance will be issued for failing to comply with permit condition 3.1.2.

Non-compliance: A category 3 minor non-compliance is given for exceeding the emission limits given in section 3 of your permit. **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.**

During the meeting it was stated that there were no 'out of the ordinary operations' taking place on site at the time of the ELV breach, and the ETP was operating within its parameters. However, during the site inspection some observations were made which are of some concern. The pH of the neutralisation tank was observed to be reading a pH of 2.54 when the lower limit should be pH9. As you are aware metal hydroxides precipitate out in the alkaline range (pH9-11). Therefore, at pH 2.54 the ability of the plant to treat is significantly reduced. The ETP relies on visual checks by staff to ensure it's operating within the correct parameters, there is no automation on the plant, nor are there any visual or audible alarms installed on the plant. It was stated that the pH is only checked once daily, this means the plant could potentially be operating out of scope for a considerable amount of time before any corrections are made. In the absence of alarms and automatic controls it is expected that an operator has more hands-on control of the treatment plant including operational procedures and check sheets requiring frequent ETP checks (See Action 2).

The lack of operational control Poeton have over the ETP, along with the deficiencies in procedures are likely to be the root cause of the breach of the ELVs. As such a minor non-compliance will be issued for failing to comply with permit condition 1.1.1.

Non-compliance: A category 3 minor non-compliance is given for failure to implement a written management system that identifies and minimises risks of pollution, resulting in a lack of control over the ETP and insufficient sampling procedures. **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.**

The fact that the sample container was allowed to build up two weeks' worth of sample initially highlighted some potential deficiencies with site procedures. However, after further investigation several concerns have come to light regarding the entire sampling programme. Several issues have been identified; these have been broken down into the sections below.

Sample Preservation

The sample may be susceptible to changes as a result of physical, chemical or biological reactions which may take place between the time of sampling and the commencement of analysis. The extent of these changes will depend on the nature of the sample but can be affected by factors such as storage time, temperature, pH, exposure to light and sample container material. As such precautions must be taken to ensure the sample is preserved, following best practise. Currently the composite sample is collected over a 7-day period, in an open top container with no temperature, pH or light exposure control. No sample preservation techniques are applied to the sample over the period in which it accumulates.

Sample preservation of cadmium and chromium requires the sample to be acidified to pH1 or pH2. Sample preservation for cyanide requires a pH adjustment to pH 11 or pH 12. Volatilisation of cyanide at a pH of <10.5 is a major source of free cyanide loss. Cyanide preservation also requires the sample be stored under cool and dark conditions and to be analysed within 7 days. This can be extended to 14 days if preserved and

stored appropriately.

The current method employed by Poeton of allowing the composite sample to accumulate over a 7-day period in an open top holding tank with no controls in place is likely to affect the quality of the sample. As such, NRW have deemed this sampling approach to be unsuitable. Poeton need to design and implement a new procedure to ensure quality standards are met and the reporting of accurate data is achieved (see Action 3).

Poeton may want to consider extracting, preserving and appropriately storing 24-hour composite samples then combining these to achieve the weekly composite. The sample could be split daily into two samples for the separate sample preservation requirements of cyanide and metals. Alternatively, each 24-hour composite sample could initially be treated to the pH 12 range, once 7 days' worth of samples have been collected the samples could be split and the metals portion could then be acidified to redissolve the metals. These are only suggestions, and ultimately Poeton are responsible for designing and implanting a new procedure. Best practice guidance should be consulted when designing the new procedure. There is a collection of 4 documents on the GOV.UK website (<https://www.gov.uk/government/collections/monitoring-discharges-to-water-environmental-permits>) that provide information on what is required of operators conducting self-monitoring.

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Sample container material and cleaning procedures.

Dissolved metals can be irreversibly adsorbed on the surface of containers as such it's important to ensure the sample holding tank is constructed of the appropriate material. This also applies to any containers used to transport the samples prior to analysis (see Action 4).

In 'Process Control Document 54' it details the cleaning procedure for the 'sample pot', presumably this is the container used to decant the weekly sample from the composite holding tank. However, there is no mention of a cleaning procedure for the holding tank itself. The cleaning procedure states that the pot "must be cleaned with pure, polished water before and after every use". Best practice, particularly when metals are concerned, require sample containers to undergo a series of rinses. This usually involves an initial clean with phosphate free detergent, rinsed with deionised water, rinsed or soaked in acid and a final rinse with de-ionised water. Poeton should update and implement more robust and detailed cleaning procedures for the sampling pot and sample holding tank (See Action 5). It was observed that there is a tick sheet in the lab that states that the weekly sample has been taken, a procedure and sign-off sheet should also be developed and implemented to say that the composite sampler has been emptied and cleaned following the sample extraction (see Action 6).

It was also highlighted during the meeting that the effluent sampling procedure does not give instructions for the sampler to agitate the contents of the sample holding tank. Appropriate agitation should be provided to the sample to ensure any contaminants that have settled to the bottom of the tank are captured within the sample, this ensures the sample is homogenous and truly representative of what is being discharged to sewer. This should be incorporated into the new sampling procedure (Action 3).

MCERTs requirements

A requirement of your environmental permit, under condition 3.3 Monitoring, is for the monitoring equipment employed on site for undertaking the monitoring as specified in condition 3.1.1 shall have MCERTS certification. Please could you provide information regarding the MCERTS status of the effluent flow meter, effluent pH meter and the composite sampler system (See Action 7).

Current analysis schedule and reporting agreements.

It's understood that Poeton currently take weekly samples which are analysed in-house by a sister site situated in Gloucester, to provide data for internal use. Dwr Cymru Welsh Water (DCWW) extract a sample from the weekly composite container once per month to satisfy the requirements of their trade effluent consent. NRW agreed to allow Poeton to submit the results of the DCWW analysis to satisfy the monitoring requirements under schedule 3 of the environmental permit. The maximum (or minimum where required) values obtained from DCWW and the in-house analysis are both currently submitted in the bi-annual S1 form. This current arrangement does not satisfy the requirements of permit condition 3.3.3, whereby MCERTS certification or accreditation is required for the personnel, equipment and techniques employed in the emissions monitoring programme. However, NRW will continue to accept the above agreement providing Poeton can provide NRW with confidence in the quality and integrity of self-monitoring being employed on site. This includes the equipment used and the procedures in place. As the regulator we must ensure that the operators self-monitoring is performed correctly and to an acceptable standard, providing confidence in the accuracy and reliability of data.

Action 1: Poeton 28th October 2022. Please provide NRW with an update regarding the alarm systems for the ETP, and whether Poeton have deemed these finically viable. **Due 15th December 2022.**

Action 2: Poeton 28th October 2022. NRW need to be assured that the treatment plant is being operated within its required operational parameters at all times. Consequently, please develop and implement a written procedure for continuously operating and checking the ETP. A check sheet should also be created to log these checks. The procedure should detail the required checks, actions to be taken in the event of an issue being discovered, adequate frequency of checks, who has responsibility for conducting the checks. Please provide copies of these new written procedures with justifications for your appropriate control measures by **15th December 2022.**

Poeton should also consider if there are adequate numbers of staff trained to undertake the required checks and any associated maintenance. Appropriate numbers of trained staff should be available to undertake these tasks when the primary responsible persons are unavailable due to leave or sickness, or implications of shift patterns – night shifts, weekends etc.

Action 3: Poeton 28th October 2022. Poeton to develop and implement a new sampling procedure to replace the current procedure that has now been deemed unsuitable. The procedure needs to consider the sample preservation requirements of the different parameters that are monitored as part of the permit. Consideration needs to be given on how greater quality control will be achieved when collecting the weekly composite sample, and the procedure should be based on best practise guidance. The design and location of the tank also needs to be assessed with regards to the current open-top design and temperature control. Also include the requirement to agitate the composite sample before extracting the final sample. Please send the new sampling procedure for NRW to review before implementing any changes on site. **Due 15th December 2022.**

Action 4: Poeton 28th October 2022. Please provide details on the composite sample holding tank and sampling pot, what are they made of? Do they meet the required specifications with regards to the quality assurance of the samples? **Due 15th December 2022.**

Action 5: Poeton 28th October 2022. Poeton to implement a cleaning procedure for the sample holding tank and amend the cleaning procedure for the sample pot based on best practice guidance. **Due 15th December 2022.**

Action 6: Poeton 28th October 2022. Poeton to develop and implement a sign-off sheet to show that the sample holding tank has been emptied and cleaned following sample extraction. **Due 15th December 2022.**

Action 7: Poeton 28th October 2022. Please provide information regarding the MCERTS status of the effluent flow meter, effluent pH meter and the composite sampler system. Please include any relevant certification and inspection reports. **Due 15th December.**

Action 8: Poeton 28th October 2022. With regards to **CAR Form CAR_NRW0039747 21/04/2022.** Please ensure details of the degraded pits, and subsequent potential for contamination is captured in the site closure plan. It's good practice to ensure the site closure plan is updated throughout the lifetime of the permit. **Due 15th December.**

CAR Form CAR_NRW0040157

Poeton were issued with CAR Form CAR_NRW0040157 on the 21st of July 2022, as a result of elevated Cadmium levels within their effluent discharge to sewer. They were subsequently issued the following action:

Action 1: Please provide an update on the special project's teams investigation and the measures that will be taken to ensure that barrel cadmium plating doesn't cause a breach in sewer discharge ELV's. Due 31st August 2022 or sooner if Barrel plating is to resume before this date.

NRW received a response to this action on the 16th of September 2022. Poeton have sought the advice from their Special Projects team and have decided to implement the following actions:

1. Change layout of the Cadmium (Cd) plating area and install new drag out / rinse lines and passivate lines.
 - New drag out lines will consist of three drag outs (Drag out 1, 2 & 3) for each Cd line with a counterflow rinse at the end of each line.
 - The components will drain over the Cd tank then go through the drag outs in sequence 1, 2, 3, with draining over each drag out before going to the next, then through the counterflow rinses before going to the next process.
 - Drag out 1 will be used to top up the Cd tank, drag out 2 used to top up drag out 1, drag out 3 used to top up drag out 2, and fresh water used to top up drag out 3.
 - All 3 drag outs in each line will get pumped out periodically and replaced with fresh water, the frequency of this will depend on the workload and testing.
2. Only our most skilled operators to carry out barrel plating, with extra information / training given prior to any barrel plating resuming.
3. 2 x new plating barrels on order with larger holes to aid draining.
4. Extra effluent testing to take place when/if barrel plating resumes.

Orders have been placed for the new lines and barrels, as attached; lead time is currently 6-8 weeks for completion of project.

Poeton are to be commended for their approach to understanding the root cause of this incident. These proposed improvements should significantly reduce the likelihood of any repeated Cadmium ELV breaches when undertaking Cadmium barrel plating.

Action 9: Poeton 28th October 2022. Please keep NRW updated with the progress of these works. **Due: As and when updates are available.**

CAR Form CAR_NRW0039747 21/04/2022

Since a crack has now been discovered please ensure that work is undertaken to prevent effluent from escaping its confinement.

Action 1: Please keep NRW updated with the progress of the liner quote and installation.

During the visit on the 4th of October Poeton stated that the work in purchasing new liners for the degraded pits is still ongoing and that they are awaiting quotes.

Action 10: Poeton 28th October 2022. Please continue to keep NRW updated on the above works. **Due: As and when updates are available.**

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.

What are suspended scores?

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

A: Permitted activities

- A1 Specified by permit

B: Infrastructure

- B1 Infrastructure – Engineering for prevention and control of emissions
- B2 Infrastructure – Closure and decommissioning
- B3 Infrastructure – Site drainage engineering (clean and foul)
- B4 Infrastructure – Containment of stored materials
- B5 Infrastructure – Plant and equipment

C: General management

- C1 General management – Staff competency/training
- C2 General management – Management system and operating procedures
- C3 General management – Materials acceptance
- C4 General management – Storage, handling, labelling and segregation

D: Incident management

- D1 Incident management – Site security
- D2 Incident management – Accidents, emergency and incident planning

E: Emissions

- E1 Emissions – Air
- E2 Emissions – Land and groundwater
- E3 Emissions – Surface water
- E4 Emissions – Sewer
- E5 Emissions – Waste

F: Amenity

- F1 Amenity – Odour
- F2 Amenity – Noise
- F3 Amenity – Dust/fibres/particulates and litter
- F4 Amenity – Pests/birds and scavengers
- F5 Amenity – Deposits on road

G: Monitoring and records, maintenance and reporting

- G1 Monitoring and records, maintenance and reporting – Monitoring of emissions and environment
- G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events
- G3 Monitoring and records, maintenance and reporting – Maintenance records
- G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales

H: Resources efficiency

- H1 Resource efficiency – Efficient use of raw materials
- H2 Resource efficiency – Energy efficiency

Enforcement response

Any permit condition non-compliance 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 20 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 – 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.