Compliance Assessment Report CAR_NRW0049254

Permit being assessed: KP3135KV.

For: The Royal Mint, **held by:** The Royal Mint Limited

At: Llantrisant, Pontyclun, Rhondda Cynon Taf, CF72 8YT.

Type of assessment: Site Inspection,

Reason: Routine.

On: 13/08/2025 between 09:30 and 16:30.

Parts of permit assessed: 1.1.1(a), 2.1.1, 2.2.1, 3.3.1, 3.4.1, 3.1.1.

NRW Lead Officer: Greg Gardner, accompanied by Andi Kemp.

Report sent to: SHE Manager, SHE Manager, on 29/01/2026.

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	C3 Minor	1.1.1
IR3A(2) - Installations - Emissions and monitoring - Emissions to air	C3 Minor	3.1.2
IR3A(2) - Installations - Emissions and monitoring - Emissions to air	C3 Minor	3.1.2
IR3A(2) - Installations - Emissions and monitoring - Emissions to air	C3 Minor	3.1.2
IR2A - Installations - Operations - Permitted activities	Assessed (A)	
IR2B - Installations - Operations - The site	Assessed (A)	
IR3C - Installations - Emissions and monitoring - Odour	Assessed (A)	
IR3D - Installations - Emissions and monitoring - Noise and vibration	Assessed (A)	

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

Total non-compliances recorded	Total non-compliance score
4	16

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	A clear timeline for restoring compliance, including dates for system reconfiguration, selection and installation of additional filtration, and consultation with approved specialists. Interim measures to minimise environmental impact and protect sensitive receptors while the stack remains non-compliant. Proposals for additional monitoring, particularly during likely worst-case operating scenarios, to better understand the scale and variability of emissions. A schedule for reporting progress to NRW, including key milestones and contingency actions if further exceedances occur. An assessment of the likely mass emissions during the period of non-compliance, based on process type (continuous vs batch) and emission concentrations	27/03/2026
IR3A(2)	Restore compliance of the A32 emissions stack through targeted maintenance activities and ongoing performance monitoring and report investigation findings as well as preventative / mitigation measures to NRW	27/03/2026
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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

Site Inspection Report – The Royal Mint (Permit Ref: EPR-KP3135KV)				
Date	**of**	**Visit:** 13	August	2025

Location: The Royal Mint, Llantrisant, Pontyclun, Rhondda Cynon Taf, CF72 8YT
Time: 09:00 AM
Weather Conditions: Dry, overcast, and mild

Attendees:

- **Natural Resources Wales (NRW):**
  - Andi KEMP – Lead Specialist Industry Regulation
  - Greg GARDNER – Senior Officer Industry Regulation
- **The Royal Mint:**
  - SHE Manager
  - Process Safety Manager
  - SHE Specialist

Purpose of Visit
The inspection was part of a planned routine site visit, primarily to facilitate a handover of responsibilities from Officer Kemp to Officer Gardner and to familiarise the incoming officer with site operations, processes, and layout. Discussions included current operational activities, future business plans, and scheduled maintenance.

Key Observations and Discussions - Particulate Matter Exceedance – Emissions Stack A32

During the meeting, an exceedance of particulate matter (PM) emissions from Stack A32 on **29 January 2025** was discussed. The Royal Mint had notified NRW via a **Schedule 5 Notice** on **27 February 2025** reporting an exceedance of **10.5 mg/m³**, with an uncertainty margin of **±0.63 mg/m³**. The permitted threshold is **5 mg/m³**.

The site has undertaken maintenance efforts to restore compliance, with re-testing conducted on **30 July 2025** and a subsequent report issued on **21 August 2025**.

Following the re-test, The Royal Mint submitted another Schedule 5 Notice on **22 August 2025**, reporting an exceedance of **11.2 mg/m³**, with an uncertainty margin of **±1.7 mg/m³**. The site indicated that further system configuration is required and plans to introduce additional filtration, to be selected in consultation with an approved specialist.

A further retest was conducted on Stack A32 on 17/11/25 with the Royal Mint reporting an exceedance of **11.2 mg/m³**, with an uncertainty margin of **±1.7 mg/m³**. The site have also indicated that further root cause investigation work is required for both an interim and a long-term solution.

NRW consolidate non-compliance scores based on reporting periods to ensure consistency across operators. For emission limit value (ELV) breaches, we record one non-compliance per ELV per quarter, regardless of when the breach occurred within that period. Each quarter is treated as a separate reporting period, and any subsequent breaches in a new quarter are scored again. In this case, Stack A32 exceeded the particulate matter ELV in Q1 (Jan–Mar), Q3 (Jul–Sep), and Q4 (Oct–Dec). As these breaches occurred in different quarters, they cannot be consolidated and must be scored separately. This approach ensures fairness and aligns with the principle that consolidation only applies within a single reporting period, not across multiple quarters

Under NRW's categorisation guidance for Pollution Air, a Category 3 impact is defined as a shorter-term, localised effect on air quality arising from transient visible impact (e.g., dust or particulate fallout), where any elevated ambient air quality results do not contribute to exceedances of National Air Quality Standards and the impact is generally confined to the site or its immediate locality.

Although the Royal Mint has reported repeated breaches of the particulate matter ELV, these are point-source exceedances at the stack, not evidence of widespread or persistent deterioration in ambient air quality. There have been no confirmed off-site impacts, complaints, or breaches of national standards, and the foreseeable environmental impact remains minimal and localised. For this reason, each breach is scored as Category 3 rather than a Category 2 or 1, which require significant or major deterioration in air quality over a wider area or sustained period.

The site have been scored 3 Category 3 breaches, one for each exceedance recorded and submitted to NRW. The rationale for these breaches are as follows:

- The exceedance of particulate matter recorded in February and subsequently, following retesting, again in August and in November of 2025 (3 recorded exceedances in 10 months).
- The site have acknowledged that further system configuration and filtration upgrades are required, which suggests that the issue may be **ongoing or systemic.**
- Sustained exceedance of PM emissions has the potential to **raise background levels**, contributing to cumulative environmental and public health impacts, even if not immediately substantiated by complaints.

The Royal Mint must submit a detailed, time-bound compliance plan to NRW for Stack A32 by 27/03/26. This plan must include:

- A clear timeline for restoring compliance, including dates for system reconfiguration, selection and installation of additional filtration, and consultation with approved specialists.
- Interim measures to minimise environmental impact and protect sensitive receptors while the stack remains non-compliant.
- Proposals for additional monitoring, particularly during likely worst-case operating scenarios, to better understand the scale and variability of emissions.
- A schedule for reporting progress to NRW, including key milestones and contingency actions if further exceedances occur.
- An assessment of the likely mass emissions during the period of non-compliance, based on process type (continuous vs batch) and emission concentrations

Photo 1: Emissions Stack A32 at the de-population facility

ACTION: Restore compliance of the A32 emissions stack through targeted maintenance activities and ongoing performance monitoring and report investigation findings as well as preventative / mitigation measures to NRW. - DEADLINE - 27/03/26

Root Cause Analysis

NRW guidance requires us to go beyond simply recording a non-compliance and undertake a root cause investigation. Exceedances are often symptoms of deeper issues, such as inadequate maintenance, poor operational controls, or weaknesses in management systems. Addressing only the immediate cause risks recurrence. By identifying underlying factors, we ensure corrective actions are effective, proportionate, and sustainable, supporting long-term compliance and reducing environmental risk. This approach aligns with NRW's regulatory principle of prevention rather than reaction.

In the case of the Royal Mint, repeated particulate exceedances and the operator's acknowledgement of systemic issues (e.g., need for filtration upgrades) demonstrate why root cause analysis is essential to prevent ongoing breaches.

Root Cause of Excessive PM Emissions from Stack A32

The excessive particulate matter (PM) emissions from Stack A32 are primarily linked to the Depopulation Furnace process, which heats printed circuit boards to remove solder and large components. This process inherently generates particulates from solder residues, flux, and degraded coatings. Historically, emissions remained within permitted limits because throughput was relatively low.

The plant was originally designed with a throughput capacity of 4,000 tonnes per year under the initial Management of Change (MoC) assessment. However, actual throughput has remained significantly below this level (around 1,000 tonnes per year) due to equipment reliability and efficiency constraints. In 2025, improvements in reliability and efficiency enabled a substantial increase in throughput, combined with variations in feedstock composition (high-grade PCBs), which led to higher particulate generation. The existing

extraction and filtration systems were designed for lower volumes and have not been fully optimised for the current operational profile.

While short-term mitigation measures (e.g., improved duct cleaning and additional extraction) have been implemented, the persistence of exceedances indicates a systemic issue requiring long-term engineering solutions, such as enhanced filtration and process control.

Any change in throughput or feedstock type should have triggered a formal MoC review. MoC is a structured process designed to identify, assess, and mitigate risks before implementing operational changes. Best practice highlights that failures in MoC are a leading cause of compliance breaches and safety incidents. Common failures include:

- Assuming changes are “within design capacity” and therefore low risk.
- Neglecting to reassess environmental controls when operational intensity changes.
- Failing to update operating procedures and train staff.

These gaps often result in uncontrolled emissions, regulatory non-compliance, and reputational damage. In this case, the increase in throughput, even if within original design limits, represents a material change in operational intensity that should have triggered a formal MoC review. This would have ensured that abatement systems were evaluated and upgraded in line with the new operating profile, preventing repeated exceedances.

NRW guidance states that when a root cause non-compliance is identified, it must be categorised on its own merits, not automatically given the same category as the original breach. In the Royal Mint case, the emission breaches themselves are Category 3 (minor, localised impact), but the root cause, an inadequate management system and failure to apply MoC, could foreseeably lead to more serious environmental risks if not addressed. Therefore, this root cause non-compliance has been be assessed separately and justified based on its potential impact.

ACTION: Through review of EMS, MOC process and maintenance procedures, restore compliance of the A32 emissions stack through targeted maintenance activities and ongoing performance monitoring and report investigation findings as well as preventative / mitigation measures to NRW - DEADLINE - 27/03/26

Additional Topics Discussed

1. Permit Variation – Addition of Waste Codes
Discussions were held regarding the potential need to vary the site's environmental permit to include additional waste codes. This would reflect proposed changes in site operations, particularly in relation to the handling, processing, and repurposing of incoming materials. The inclusion of new waste codes would ensure regulatory compliance and provide clarity on the types of waste the site is authorised to manage. NRW advised that any variation application should be supported by a clear operational rationale and relevant technical assessments.

2. Noise Management Plan – Survey Requirements
The site’s Noise Management Plan was reviewed, with emphasis on the requirement for updated noise surveys. These surveys are essential to assess the impact of site operations on the surrounding environment and to ensure continued compliance with noise-related

permit conditions. NRW highlighted the importance of conducting surveys during representative operational periods and suggested that any changes to site layout or equipment should trigger a reassessment of noise emissions.

Improvement Items IP22(a), IP22(b), and IP23 (Noise)
A baseline survey was previously conducted with all processes inactive. The next step is to carry out a survey with the processes operating. The former A9 monitoring point may also serve as the PMR point (subject to consultant confirmation). In either case, work related to the former A9 process can be discontinued. If the new survey indicates that one or both receptor points exceed the defined standards, the site will need to undertake a sensitivity analysis to determine which unit(s) are contributing to the impact.

If the second survey results are within acceptable limits, a revised Noise Management Plan (NMP) must be prepared for IP23 to reflect these findings. NRW anticipates this will require minimal effort. However, if the survey confirms that one or both receptors are adversely affected, more detailed work will be necessary. This will include identifying and implementing mitigation measures and updating the NMP accordingly.

3. Soil Monitoring Obligations
Soil monitoring requirements under the permit were discussed, particularly in relation to areas where waste is stored or processed. NRW reminded the site of its obligation to carry out periodic soil sampling and analysis to detect any potential contamination. The Royal Mint confirmed that soil monitoring is scheduled and that results will be submitted as part of their routine environmental reporting. NRW recommended that monitoring locations be reviewed to ensure they remain representative of current site activities.

NRW and the Royal Mint looked at permit condition 3.1.3 – 5 year ground water (GW) and 10 year soil monitoring – this effectively replaces the former voluntary SMPM GW monitoring. Although all the previous data will be relevant and the data on categorising the site into zones of little likelihood or likelihood of pollution will also be relevant still as part of your overall Site Condition Report. Nickel remediation ceased and the surface water monitoring also ceased or to be ceased. NRW has sufficient data for both projects.

4. Classification and Handling of Refurbished Items
A detailed conversation took place regarding the classification of items brought onto site that may be considered either waste or non-waste, depending on their condition and intended use. The Royal Mint outlined its process for assessing incoming WEEE (Waste Electrical and Electronic Equipment) to determine whether items can be refurbished and sold as products. NRW advised that clear documentation and traceability are essential to demonstrate compliance with waste legislation and to avoid misclassification. It was agreed that the Royal Mint should undertake further internal review to determine when, or if, the recovered precious metals cease to be classified as waste. This is necessary because the metals enter the waste stream as part of the PCBs, while all other outputs from the process are disposed of as waste. Consultation may also be required to ensure consistent application of classification criteria.

5. Decommissioning
The SHE Manager agreed to submit a brief headline summary of decommissioning processes – again all to be included in ongoing site condition report. See below extract from

email sent from the SHE Manager on 20th August 2025:

"Following the decision to downscale operations, therefore, significantly reducing coin production operations on site, the decommissioning of several process lines are being undertaken. The primary process lines to be decommissioned are as follows with all associated infrastructure being removed from site:

- *Copper Plating Lines - CP2 and CP3;*
- *Zinc Plating Line;*
- *Armour 1 and Armour 2 (partial); and*
- *Brass Plating Line, cyanide treatment plant and associated tanks.*

The processing lines being decommissioned have all been in operation for varying amounts of time and as such, present different environmental risks. The Copper Plating Lines,CP2 and CP3, and Zinc Plating Line (ZP1) have all been in operation for between 10-20 years, whereas the Direct Brass line (and subsequent Cyanide Treatment Plant and associated tanks) were commissioned between 2020 and 2022. Figure 1.1 provides the areas of decommissioning on site.

All decommissioning on site will follow the hierarchy defined below:

- *Reduction in process inventory and chemicals;*
- *Production operations cease;*
- *Isolation of equipment and systems associated with the plant;*
- *Draining and removal of any substances;*
- *Cleaning of plant and equipment; and*
- *Ongoing monitoring and investigation."*

Facility Tour and Observations

De-population Facility

NRW officers were escorted to the de-population facility, where Printed Circuit Boards (PCBs) are manually and mechanically processed to recover valuable materials, including precious metals. The facility appeared well-organised, with clear segregation of operational areas and appropriate signage in place. Housekeeping standards were high, with no visible accumulation of waste or debris. In the areas that NRW Officers ventured into, the environmental controls were effective, as no offensive odours, excessive noise, or airborne dust were detected during the inspection. Containers storing liquids were observed to be correctly labelled and positioned within secondary containment systems, reducing the risk of spills or environmental contamination.

Photo 2 - Depopulation facility within The Royal Mint

Photo 3 - PCB's ready for the depopulation process within The Royal Mint

WEEE Processing Area

The next area visited was the Waste Electrical and Electronic Equipment (WEEE) intake and processing zone. Here, whole units are assessed for salvageability. Items deemed suitable for reuse are refurbished and sold as products, while non-salvageable units are dismantled, with PCBs removed and transferred to the de-population facility for further processing. The area was clean and well-maintained, with clear operational workflows and no signs of uncontrolled waste. Environmental conditions were satisfactory, with no noticeable odours, excessive noise, or dust emissions. The site demonstrated good practice in managing incoming materials and maintaining separation between waste and product streams.

Brass Plating and Armour Plating Line

The final part of the tour included the brass plating and armour plating lines, where surface treatment processes are carried out. These areas were also found to be in good working order, with well-maintained equipment and clean operational zones. No excess debris was

present, and environmental controls appeared to be functioning effectively. As with other areas, there were no offensive odours, excessive noise, or dust observed. Liquid chemicals used in the plating processes were stored in appropriate containers with secondary containment measures in place, ensuring compliance with pollution prevention requirements.

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

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 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.