

Compliance Assessment Report CAR_NRW0040590

Permit being assessed: KP3135KV.

For: Royal Mint EPR/KP3135KV, held by The Royal Mint Ltd

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

Type of assessment carried out: Report/Data Review, Reason: Routine.
On 24/10/2022.

Parts of permit assessed: Monitoring data previous actions variations

NRW Lead Officer: Andi Kemp.

Report sent to: Martyn Grant, Environmental Manager on 24/10/2022.

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

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
A1 - Specified by permit	Assessed (A)	
B1 - Infrastructure - Engineering for prevention and control of emissions	Assessed (A)	
C2 - General Management - Management system and operating procedures	Assessed (A)	
E3 - Emissions - Surface water	Assessed (A)	
E4 - Emissions - Sewer	Assessed (A)	
G1 - Monitoring and Records, Maintenance and Reporting - Monitoring of emissions and environment	Assessed (A)	
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	Assessed (A)	

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

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

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

2. What action is required?

No action required.

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

Compliance Assessment Report: The Royal Mint – KP3135KV, 20th October 2022**Purpose Of Compliance Assessment**

This compliance assessment report (CAR) covers the following regulatory aspects under environmental permit (EPR 2016) KP3135KV (the water Operator Monitoring assessment (OMA) conducted on 29th July 2022 will be written up separately):

- Previous Actions
- Routine Submissions
- Updates on
 - Electrokinetic (EKR) NP1 remediation
 - Additional surface water (SW) and groundwater (GW) monitoring
 - Site Protection & Monitoring Programme
- Schedule 5 Notifications
- Waste Trial Update
- Permit Variation and Application Updates

The only current open actions are the three issued in CAR 25th March 2022. Responses to these have all been received and the regulator's response is below.

Action 1 Royal Mint 24th March 2022: *Operator to provide justification for installing against manufactures recommendations and whether this could represent a potential future performance / accuracy issue. See text from Critical Flow Dec. 2021 report:*

"flow meter has been installed a downward flowing section of pipe. This is not recommended by the manufacturer, although there appears to be enough back pressure in the system to maintain satisfactory hydraulics"

Due: 30th April.

A response was received on the 11th April against a deadline of 30th April 2022 and is copied below in italics:

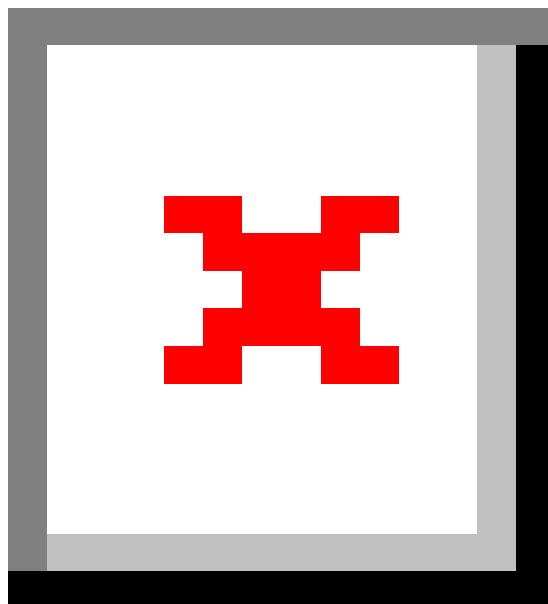
The Royal Mint installed the Siemens SITRANS F M MAG 8000 (Serial Number (654405H148) at the river abstraction point in July 2018.

Siemens's information on the SITRANS F M MAG 8000 flow meter identify it as a high precision flow meter engineered for maximum flexibility without sacrificing accuracy and can be used for a wide range of water applications.

In installing the flow meter, The Royal Mint considered the manufacturer's mechanical installation requirements, of which an essential one is to have minimum straight lengths to achieve most accurate flow measurement.

Also, that the sensor is positioned so no air is in the pipe, a partially filled pipe or air in the pipe can impact

on accuracy of the readings. [see drawings below]



It was recognised that although the position chosen was not the ideal position but there was a limit on where the meter could be fitted to meet the essential prerequisite of the required straight lengths either side of the flow meter.

Therefore, as a downward flowing section of pipe was chosen, for the installation, the decision was made to fit non return valves into the pipe to ensure pipe always has water within it and keeping the meter sensor submerged. This also maintains the back pressure in the system to maintain satisfactory hydraulics, which is highlighted in the Critical Flow calibration report.

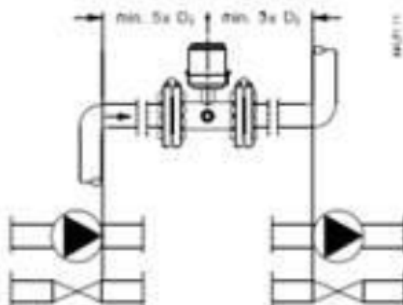
In addition, The Royal Mint carries out regular checks on the meter which are recorded on The Royal Mint's maintenance management system Dynaway and there is monitoring of the pulse signal from the flow meter to identify if there are any issues.

The Royal Mint believes the identified controls in the time period that the equipment has been installed and operating in its current location and the use of a certified MCERTS inspection company to conduct the

inspections and calibration of flow meter are sufficient to indicate that the positioning of the flow meter does not represent a potential performance / accuracy issue.

Inlet and outlet condition

To achieve most accurate flow measurement it is essential to have certain straight inlet and outlet pipe lengths as shown (D_s : sensor diameter).

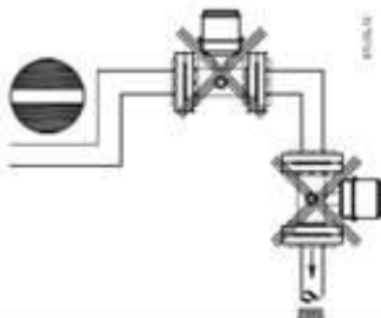


Sensor must be completely full of liquid



Therefore avoid:

- Air in pipe.
- Installation at the highest point in pipe system.
- Installation in vertical pipes with free outlet.



The regulator accepts this response and acknowledges the non-return valves and maintenance of backpressure, keeping the pipe full at the flow meter sensor. The accuracy on the last inspection report was well within the +/- 8% uncertainty. **Action 1 March 2022 closed.**

Action 2 Royal Mint 24th March 2022: *Operator to provide some basic information on the coolant sump design, structure and details on the maintenance regime for the sump and associated pipework.* **Due: 31st July 2022**

The operator submitted a response on 27th July (deadline 31st July) in italics below and also submitted a follow up inspection report, which is discussed separately below under a separate bold heading:

I have attached original drawings related to the structure of the sump, which date back to their construction

circa 1973 /74. Drawing 7139/SD/2060 Rev 2 (attached) identifies the chambers are of concrete construction using Structural Concrete with a specified compressive strength of $4 - 21 \text{ MNm}^{-2}$ and 600 mm thickness. The blinding base concrete is 75 mm thick and with a specified compressive strength of $3 - 14 \text{ MNm}^{-2}$.

In relation to maintenance no actual maintenance has taken place on the chambers, as the inspections which have been undertaken previously, have not identified any corrective action required. The inspections have been mostly visual and records have not been maintained or cannot be retrieved. To address this error an inspection was arranged and took place on the weekend of 15th – 16th July 2022. This inspection involved entry into the chamber to inspect the integrity of the concrete. The written report on this inspection is awaited and will be supplied to NRW on receipt, however the verbal report did not highlight any corrective action was required at the time of the inspection.

Going forward the inspection of the chamber will be added to the asset integrity programme. The frequency of reinspection will be determined from the information within the written inspection report.

The regulator accepts this response and welcomes the inspection and future maintaining of records. **Action 2 March 2022 closed.**

Inspection Report BLD2 Sump Tank Excal August 2022 The inspection took place on 17th July 2022 and has an appendix with elevation drawings and photographs. Both tanks were emptied and cleaned before inspection. The materials of construction (refer to above text off TRM and original drawing No. 7139/SD/2060 rev.2) and condition are described. The condition being good and not requiring any repairs or immediate work. There are remarks about an inlet pipe being blocked and a “hole between 1 and 2” on one of the walls. This looks fairly high up from the tank base, however the following action is raised:

Action 1 Royal Mint 20th Oct. 2022: *Operator to confirm if this hole represents a pathway for fluids and whether the intention is to seal the hole. The apparently blocked inlet should also be unblocked preventing fluid back up and seepage elsewhere – confirm when this will be done.* **Due: 30th Nov. 2022**

Action 3 Royal Mint 24th March 2022: *TRM to forward these SOPs from Celtic & Raboll.* **Due: 30th April 2022**
A response was received on 11th April (deadline 30th April) and is copied below in italics:

In response to action 3 – “TRM to forward these SOPs (surface water and ground water sampling) from Celtic and Ramboll”. Please find attached the documents supplied by Celtic. These documents were previously supplied 17th March and following your comments on the documents “I think the Celtic documents were more their safe systems of work and referred to other sampling SOPs”, Celtic responded with the following:

“In ‘SAR-PC-04- Surface Water Sampling’; tools required are in section 4.0 and container, temperature and labelling requirements in Section 7.5. In C1813-MS003-GW Sampling; tools required etc are in section 4.0, and section 7.5 outlines sampling requirements. These documents refer to our company standard operating procedure ‘SOP-07 Solid, Liquid and Vapour Sampling’ which was included, and outlines our standard sampling procedures (in section D and E, which were referenced) including purging 3 borehole well volumes, the flow rate required for pumping samples, cleanliness of equipment, use of laboratory supplied containers, method for surface water sampling.

I can confirm we only use laboratory supplied containers, store samples in the supplied cool boxes with ice packs and samples are usually sent to the laboratory the same day they are taken by the laboratories

courier."

Ramboll procedures are detailed in the Guidance on Field Procedures Royal Mint, which is attached.

The Ramboll *Guidance On Field Procedures* document is particularly useful. The regulator accepts the response – GW well purging; sample preservation and custody; non disturbance of sediment in SW samples; field measurements etc. are described and broadly align to guidance and best practice. **Action 3 Mar. 2022 closed.**

Routine Submissions

The monitoring points and reporting periods covered here are: S1 Jan. – Sep. 2022; W1 Jan. – Jun. 2022.

S1 releases – Jan. – Mar. 2022 – all compliant with monitoring, analysis and reporting.

S1 releases Apr. – Jun. 2022 - all compliant except the free cyanide result of 0.21 mg/l against an emission limit value (ELV) of 0.2 mg/l. A schedule 5 notification was submitted on 16th May for a sample analysed on the 16th May. This notification stated that a total cyanide analysis result gave a result of 0.19 mg/l. Additionally the regulatory officer (AK) raised the point about method uncertainty, whereby when the uncertainty associated with the analytical method and analysis range is applied, the actual result would be +/- the % uncertainty of the reported value. So, on the basis of a total cyanide result reporting less than free cyanide and applying method uncertainty (see Part B Schedule 5 notification 26th Jun. 2022) of 23.5 %, this is not deemed a non-compliance or breach of permit.

S1 releases July – Sep. 2022 – all results compliant and monitoring and reporting as required by the permit conditions.

W1 releases Jan. – Jun. 2022 – all sampling, reporting and results compliant.

Note an OMA for water was conducted on 29th July 2022 and will be written up in a separate CAR1 form.

Electrokinetic (EKR) NP1 remediation

In July 2021 an email discussion between Englobe and AK (NRW) agreed the following: that the NP1 EKR installation would be deactivated, but left in situ, with 6 months of surface water monitoring to commence in October 2021 (the EKR switch off) at designated river monitoring points and discrete outfalls in the southeast corner of the site with the Nant Muchudd. On the 6th May 2022 Englobe sent through the surface water monitoring report: LC1813_KS_AK_April 2022_1. On the 23rd May 2022 AK emailed Englobe to agree that the NP1 EKR installation could be removed and the abstraction permit associated (but never used) with this be surrendered. On the 27th July 2022 Martyn Grant (MG) of the Royal Mint emailed to confirm the boreholes used in the NP1 EKR remediation were now decommissioned (backfilled and sealed) by Englobe, thus preventing a pathway to groundwater for other surface sources of contamination.

Below is the data from each location for each of the 6 months and the second data table shows the average, minimum and maximum concentrations against the WfD annual average and DQRA GW criteria.

Sample Location:	26/10/21	22/11/21	13/12/21	18/01/22	22/02/22	15/03/22
SWA	1.4	0.64	1.1	0.61	0.74	0.71
SW0	1.2	0.72	1.3	0.64	0.65	0.67
SW1	1.1	0.69	1.3	0.63	0.64	0.69
SW2	1.3	0.69	1.1	0.53	0.73	0.66
SW3	1.1	0.74	1.2	0.63	0.61	0.76
SW4	1.1	0.77	1.1	0.61	0.73	0.77
Outfall (Upstream)	1.0	0.67	1.3	0.59	0.63	0.79
Outfall (Downstream)	1.1	0.59	1.2	0.51	0.69	0.73

Sample Location:	Average	Min	Max	Compliance Criteria	
SWA	0.87	0.61	1.40	WFD Criteria (Annual Average)	4 μ g/l
SW0	0.86	0.64	1.30	Controlled waters compliance criteria for groundwater (from DQRA)	20 μ g/l
SW1	0.84	0.63	1.30		
SW2	0.84	0.53	1.30		
SW3	0.84	0.61	1.20		
SW4	0.85	0.61	1.10		
OUTFALL U/S	0.83	0.59	1.30		
OUTFALL D/S	0.80	0.51	1.20		

All results are below these standards. The UKAS schedule of accreditation was also checked and found to be proof of analytical accreditation for nickel and hardness in surface waters. The outcome appears to support the assertion that Ni contamination is not adversely affecting the Nant Muchudd. The regulator welcomes the proactive approach adopted by the Royal Mint Team.

Additional surface water (SW) and groundwater (GW) monitoring

This additional GW and SW monitoring has now changed to have the exceeding GW boreholes subsumed within the annual Site Protection & Monitoring Programme (SPMP), with exceeding EQS surface water locations continuing to be monitored every six months into the first half of 2023.

On the 2nd of August 2022 via TRM, Ramboll submitted the latest 6 monthly additional surface water and groundwater monitoring report for the first of the two periods (June and November 2022), i.e. June 2022. The data shows consistency with the previous sets, with monitoring point 7A showing the exceedances of zinc and nickel. A decision and conclusion will be made when the November 2022 round is assessed by AK. Inputs into point 7A may need to be looked at in more detail as this runs under the Royal Mint, but there could be other sources. The sampling was done in accordance with normal best practice (Ramboll assertions to adoption of best practise) and UKAS accredited laboratories used.

Site Protection & Monitoring Programme

As previously agreed, some exceeding boreholes from the “additional monitoring of SW and GW” programme will be incorporated into the SPMP and this will be an annual round of monitoring surveillance, with the 18th Round expected over the next few months. The operator has previously been advised about guidance in H5 and RGN9 on when and where intrusive data is required and when, after a site condition

baseline has been established, a life-time records approach can be adopted. Of course, it may be appropriate for sites to continue actual GW and SW monitoring, especially where there has been an initial baseline and subsequent remediation / improvements, and so there may be required additional physical in situ monitoring to describe the site condition at various points in time, before a stable Site Condition Report can be established.

Schedule 5 Notifications

There have been no Schedule 5 Notifications – see comments about the submission for a free cyanide increase, that after applying method uncertainty, was deemed compliant.

Waste Trial Update

NRW were updated on 29th April 2022 that the first WEEE loads arrived at site: 27th and 28th April 2022; 3 loads totalling 1700 kg. Recovery equipment supply still pending. Some of this waste, a small amount, will be used on bench scale additional process development tests.

A further waste trial update was received on 8th June 2022, where an update on permit application documentation and receiving / treatment building preparation progress, equipment and processes was given. After a joint round of communications between NRW NPS, TRM and AK, it was decided that TRM could apply for an authorised treatment facility WEEE permit alongside the Direct Brass project as they are not linked. If, however, the WEEE permit introduces aspects that are not currently addressed by the ongoing DB application, then they would have to be incorporated into the permit at the DB stage, to ensure all aspects of emissions and emission points, ETP ELVs etc. are included.

The final update in this CAR report is copied below from 31st August 2022:

On the 16th August, The Royal Mint submitted an application to vary the existing environmental permit to cover the processes required to implement the full scale project. In acknowledging the receipt of the application NRW have indicated there will be a delay before the application can be assessed. The current estimated delay is 3 months.

With regards to the trial The Royal Mint has continued ordering of equipment to start a scaled up process, and continued to work on production areas and buildings to receive equipment. To date the only waste received on site remains the 1.66 Tonnes received during week commencing 25th April 2022. A small quantity of this waste material has been used in onsite trials and factory acceptance trials.

Permit Variation and Application Updates

A separate permit for the third party operated CHP plant has been successfully determined and issued on: 17th June 2022.

The WEEE permit application to vary the existing Royal Mint permit has been submitted, this will bring the waste trial to a close in due course.

The DB variation application is in the final stages and will be issued before the WEEE Approved Authorised Treatment Facility variation.

Even though on the face of it the DB variation and the WEEE variation are not linked in the sense of the aspects they seek to vary in the overall Royal Mint permit, any aspects that may have a bearing on the prior varied DB permit, e.g. additional substances or an increase in already permitted substances associated with effluent treatment, will need to be reconciled when the WEEE is varied into the DB consolidated permit.

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.