

Compliance Assessment Report CAR_NRW0043315

Permit being assessed: BW5103201

For: LLANTWIT MAJOR WWTW (STW) WICK ROAD, held by DWR CYMRU CYFYNGEDIG

At: LLANTWIT MAJOR WWTW (STW), WICK ROAD, LLANTWIT MAJOR, ,, .

Type of assessment carried out: Audit, Reason: Incident Response (Incident number: 2309773).

On 14/12/2023.

Parts of permit assessed: Relevant conditions

NRW Lead Officer: Harry Warburton, accompanied by: Hannah Jenkins.

Report sent to: CARS Mailbox, CARS Mailbox, on 14/02/2024.

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

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
WQ-B1 - Operations - Permitted activities	C3 Minor	1(a) & 1(d)
WQ-B2 - Operations - The site	C3 Minor	21

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

2. What action is required?

Criteria	Action needed	Complete by
WQ-B1	Action comply with Condition 21 of the permit requiring 'Full stand-by power generation facilities shall be provided and maintained by the consent holder in good working order to enable automatic resumption of power to the UV disinfection system in the event of external power supply failure to the UV disinfection plant', to prevent reoccurrence of this incident in the future.	Already completed
WQ-B2	As set out in condition 21 of the permit, have permanent back up power available on site in the event that another power outage occurs. Provide a plan with timeframes for the installation of permanent back up power. Keep us updated on any progress.	25/03/2024

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.

You are non-compliant with your permit.

At this time, we are issuing you with a warning for the non-compliance recorded above. Warnings may influence future enforcement response for continued or further non-compliance.

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

Background:

On the 14th of December 2023 NRW received an OPNOT and UVNOT from DCWW for Llantwit Major STW stating "Unplanned power interruption on site due to National Grid issue."

We were subsequently informed that around 09:45, there was a failure in the power supply to the STW. The loss of power resulted in all the treatment processes shutting down. Flow continued to be pumped from the terminal pumping station which led to a prolonged discharge from the works without treatment nor UV disinfection. Dwr Cymru informed NRW that National Grid attended and installed a back-up power generator that restored power to the works at roughly 16:15. UV treatment was not operational between 09:45 and 16:15. Due to a further issue with the PLC, treatment processes were operational manually, then restored automatically at 19:00 once PLC issues were resolved. National Grid back up power was in place until 18th December.

This CAR follows the questions and actions requested in CAR_NRW0043138. The questions from the previous CAR and answers Dwr Cymru provided regarding the incident are below.

1 - The 'exceptional circumstances' report included a table showing all treatment processes being non-operational, including the inlet screens. Can you confirm whether the discharge from the works remained unscreened for the duration of the power outage?

DCWW response:

Between approximately 09:45 and 16:15 there was no power supply to the STW so the inlet screens would not have had any power to provide wash water, escalator rotation or brushing of the screen. Due to the power failure and PLC failing the inlet level instruments did not record any measurements for the period of the power failure but there was no evidence reported that the inlet works had become blocked and surcharged. There is a bypass channel between the two screens so it is reasonable to assume that this would have operated at some point during the power outage once the screens had blinded but we are not able to determine when this was.

2 - Once the standby generator was implemented and the works running again was the effluent that was in the treatment works then recirculated to undergo treatment before it was discharged?

DCWW response:

Once standby power was in place the process resumed operation in manual control. There is no facility to recirculate the final effluent at the works so this was not carried out. The effluent quality was checked and confirmed to be within permit limit for BOD and suspended solids. The turbidity reading was 25 which equates to an estimated BOD of 17.5mg/l. The UV plant resumed operation when standby power started so the final effluent

was disinfected.

3 - Condition 21 of the permit states "Full standby power generation facilities shall be provided by the consent holder in good working order to enable automatic resumption of power to the UV disinfection system in the event of external power supply failure to the UV disinfection plant" Furthermore, under the UV code of practice which forms part of the permit states: "The UV disinfection system and standby power facilities shall be operated so as to minimise the frequency and duration of an emergency discharge of sewage effluent which has not been subjected to the required UV dose" Please provide an explanation as to why was there no standby power already in place and available at the works as required under the permit?

DCWW response:

Llantwit Major STW was commissioned around 1998 and the scheme never delivered a standby generator as part of the design. We cannot confirm the reason why this was not included in the scheme but we have now installed a temporary standby generator as an interim measure until a permanent unit can be installed.

4 – The OPNOT received stated under the Environmental impact section "None expected", please explain the rationale behind this statement given there was no treatment in place at the works.

DCWW response:

The final effluent sample was tested at 09:20 (approximately 30 minutes prior to the power failure) and the sample was less than 5 on the x tube reading. This would suggest a BOD below 10mg/l and similar suspended solids level. The final tanks in Llantwit Major are 912m³ volume and the aeration lanes are 4300m³ volume. The contents of both the final tanks and the activated sludge plant would have contained biologically treated effluent so once the activated sludge had settled (which it would have done once the air delivery stopped during the power failure), the effluent leaving the works would remain at similar quality to that measured at 09:20 for many hours until the incoming sewage had displaced the contents of the treatment process (a combined volume of 5212m³). The total flow arriving at the works during the 6.5 hours when no power was supplied to site was 1771m³ so this would not have displaced the volume of liquid held in the ASP and final tanks combined. Some mixing occurred which resulted in a slight deterioration in final effluent quality which was recorded at the end of the power cut (at 16:15) but this was still only an x tube of 25 which equates to a BOD of 17.5mg/l. The discharge of non disinfected effluent during this 6.5 hour period occurred outside the bathing season so it was assumed there would be little or no impact due to this.

5 – please provide an explanation as to why was the OPNOT was not upgraded to an incident and reported as such.

DCWW response:

Opnots and UVnots were sent to NRW to confirm the details of the incident at approximately 13:45. Notwithstanding the details concerning final effluent quality in response 4, we appreciate that this should have been self reported as an incident. We have since reviewed the incident in detail to fully understand the cause and this has provided a learning opportunity for all those involved with the operation and maintenance of Llantwit Major STW.

6 – The ‘exceptional circumstances’ report states “Operations took samples of the final effluent leaving the treatment process during the afternoon of 14th December 2023 and the results are shown below: - 14/12/2023 at 16:15 FE x tube = 25 FE TSS = 17mg/l
14/12/2023 at 19:15 FE x tube = 25 FE TSS = 19mg/l The sample results indicate that compliance with the BOD and suspended solids limits would have been met throughout the period when the power supply was off” Please provide the BOD sample results referred to, furthermore any monitoring which was undertaken during the power failure. From the timings supplied, it appears that these samples were taken after the power was restored via the back up generator.

DCWW response:

There were no samples of final effluent collected between 09:20 and 16:15 during the power failure. Our claim that the final effluent would have been compliant during the power failure is based on the explanation provided for question 4 which is based on the fact that the contents of the final and activated sludge tanks would have been fully biologically treated and provided adequate buffer to dilute any untreated sewage entering the process to a level that it would have remained within compliance during the power failure. The final effluent quality at 16:15 when the standby generator started was still well within permit limits.

We have considered all the available information and based on the events that transpired concluded that DCWW have contravened Environmental Permitting Regulations 2016, Section 38(2) by failing to comply with their environmental permit, namely Conditions 1(a) that the discharge shall consist of tertiary treated sewage effluent which has been disinfected by means of ultra violet irradiation, and Condition 21 in which full back up power facilities should have been available in the event of a power outage.

As disinfection of treated effluent by UV was not carried out for approximately 6.5 hours, non-compliance with condition 1(d) that no more than 10% of measurements taken consecutively during any 24 hour period should fall below 12mWs/cm², is also recorded.

These have been scored as a category 3 which would have likely had a minor environmental effect, this incident would have had a more severe impact if it had occurred during the bathing season.

The permit requires standby power generation which had not been installed at the site, had it been in place the incident would not have occurred, consequently we are unable to accept the ‘exceptional circumstances’ claim for the UV ‘day failure’ against Condition 1(d) nor claim of third party responsibility against National Grid for the incident.

A formal warning is issued via this CAR

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 to 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
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property

If your assessment result in Section 1 is suspended, what does this mean?

In line with our guidance, we may suspend non-compliance for up to six months to allow time for remedial action to be taken. These will be re-instated if the action is not completed.

Full list of water quality action criteria (used in section 1 and 2):**WQ A: Management**

- WQ-A1 General management

WQ B: Operations

- WQ-B1 Permitted activities
- WQ-B2 The site
- WQ-B3 Operating techniques
- WQ-B4 Improvement programme
- WQ-B5 Pre-operational conditions

WQ C: Emissions and monitoring

- WQ-C1 Emissions to water
- WQ-C2 Emissions to land
- WQ-C3 Emissions of substances not controlled by emission limits
- WQ-C4 Installation of monitoring boreholes

WQ D: Information

- WQ-D1 Records
- WQ-D2 Reporting
- WQ-D3 Notifications

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.