

Compliance Assessment Report CAR_NRW0037903

Permit being assessed: AN0280002

For: COG MOORS STW CDIFF RD DINAS POWYS, held by DWR CYMRU CYFYNGEDIG

At: COG MOORS STW, CARDIFF ROAD, DINAS POWYS, BARRY, CF64 5RP.

Type of assessment carried out: Report/Data Review, Reason: Routine.

On 31/12/2020.

Parts of permit assessed: Relevant conditions

NRW Lead Officer: Hannah Jenkins.

Report sent to: CARS Mailbox, CARS Mailbox, on 27/04/2021.

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

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
WQ-D2 - Information - Reporting	Action only (X)	
WQ-D1 - Information - Records	Action only (X)	
WQ-A1 - Management - General management	Action only (X)	
WQ-C1 - Emissions and monitoring - Emissions to water	Action only (X)	
WQ-D1 - Information - Records	Action only (X)	
WQ-D1 - Information - Records	Action only (X)	
WQ-C1 - Emissions and monitoring - Emissions to water	Action only (X)	
WQ-A1 - Management - General management	Action only (X)	
WQ-C1 - Emissions and monitoring - Emissions to water	Action only (X)	
WQ-D2 - Information - Reporting	Action only (X)	

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

2. What action is required?

Criteria	Action needed	Complete by
WQ-D2	Action 1: provide a reason for erroneous readings on magflow between 28-Jun 12:15 to 29-Jun 08:00 and an explain how this occurred, including any remedial action taken.	14/05/2021
WQ-D1	Action 2: provide an explanation for the discrepancies in the flow data reported	14/05/2021
WQ-A1	Action 3: provide evidence that the weir flow and magflow monitors are properly calibrated and operating effectively to accurately record flow readings	14/05/2021
WQ-C1	Action 4: provide an explanation for period of zero UV dose	14/05/2021

Criteria	Action needed	Complete by
	during an otherwise continuous period of treatment on 25-Aug.	
WQ-D1	Action 5: provide an explanation for the lack of warm up sequence and explain the discrepancies in flow and level readings on 08-Jul.	14/05/2021
WQ-D1	Action 6: provide an explanation for the variance in the data in the recorded UV Dose.	14/05/2021
WQ-C1	Action 7: Could you clarify how channel 3 is operated and if on a standby basis how do you ensure that the UV treatment remains operational throughout the season should this channel be required?	14/05/2021
WQ-A1	Action 8: Ensure all plant, equipment and instrumentation is in working order prior to the start of the bathing season.	14/05/2021
WQ-C1	Action 9: Provide explanation for the data discrepancies and clarify the sequence of events on 27 Aug, including answers to the following: 1.Why was no flow measured at the magflow after 10:30am, despite levels increasing and spill reportedly occurring from 11:40?. 2 Why the discharge was bypassing the UV plant earlier in the day prior to the recorded pump failures?	14/05/2021
WQ-D2	Please submit future compliance data return and bathing water reports to NRW via the Operator Self Monitoring mailbox. OSM@cyfoethnaturiolcymru.gov.uk	30/11/2021

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

2020 Bathing Water Return Compliance:

As part of routine compliance we have reviewed data submitted as required by environmental permit AN0280002 for the discharge of settled storm treatment with UV disinfection under certain conditions during the Bathing Water Season. The Bathing Water Compliance report and associated data were received by an NRW officer via email on 12 Oct 2020.

Conditions considered compliant under normal operating conditions:

Compliance Reporting:

11.1: Data was provided for the required period 4-days prior to Good Friday (6th April 2020) until the 30th September 2020

14. Report was submitted promptly and within 2 months of the end of the reporting period

Disinfection

11.3 The medium pressure UV lamps must be operated at a power level of at least 30%

Observations and queries with actions following analysis of the data return entitled 'UVBathingWaterReport2020.xlsx' listed below:

Erroneous Data self-reported:

The report states that 'Erroneous Flow Readings. UV System not in storm conditions' between 28-Jun 12:15 to 29-Jun 08:00, however no explanation has been provided. **Action 1:** provide a reason for erroneous readings on magflow and explain how this occurred, including any remedial action taken.

Additional Data queries following NRW data analysis:**Flow readings:**

There are a number of occasions where the weir flow records a figure of greater than 200 l/s but the magflow reads zero flow.

e.g.

30-Apr-2020 at 23:45 Channel 2 reads 1 l/s and Channel 3 records a flow of 16384 l/s but the Magflow reads 0 l/s

07-Sep-2020 01:45 Channel 2 records 1200 l/s Magflow reads 0 l/s

09-Sep-2020 23:45 Channel 2 records 413 l/s Magflow reads 0 l/s

10-Sep-2020 at 00:15 & 00:45 - 01:45 Channel 2 records 1200 l/s Magflow reads 0 l/s

11-Sep-2020 at 00:45, 01:15 & 01:30 Channel 2 records 1200 l/s Magflow reads 0 l/s

There are also numerous readings of 1 or 2 l/s in the weir flow but no flow is registered in the magflow.

Action 2: provide an explanation for the discrepancies in the data reported,

Action 3: provide evidence that the weir flow and magflow monitors are properly calibrated and operating effectively to accurately record flow readings.

UV Dose data:

25-Aug 08:15 - The UV plant records applying 0mj/cm² dose in both Channel 1 & Channel 2 for a period of 15 minutes, appears to be a 'warm up' sequence, despite dosing as normal prior to and after this time period. This is potentially non-compliant with condition 11.2 When the flow exceeded 200 l/s, a measured applied UV dose of 15 mJ/cm² must be exceeded at all times; score pending explanation. **Action 4:** provide an explanation for period of zero UV dose during an otherwise continuous period of treatment on 25-Aug.

Other than on 25 Aug, the report shows that the minimum dose of 15mj/cm² is met for the recorded data where flows are over 200 l/s in normal operating conditions.

08-Jul 03:30 - there was no 15 minute warm up recorded on the UV plant prior to dosing commencing. In addition prior to this time no flow had been recorded on the magflow, despite the level sensors at the inlet measuring 1.86m and 1.85m respectively, at 3:30 the magflow records a flow of 842l/s. **Action 5:** Provide an explanation for the lack of warm up sequence and explain the discrepancies in flow and level readings on 08-Jul.

27-Jul at 12:45 - there was no 15 minute warm up recorded on the UV plant prior to dosing commencing, again there is a sudden increase in flows measured from 56 l/s to 663l/s. On this date the UV plant treats between 12:45 and 15:30, however at 13:45 flows

drop below 200l/s and there appear to be significant elevated calculated UV dose recorded. Additionally on the 27-Jul, the level remains high on the inlet level sensor but the magflow reads zero flow, these correspond with unusually high measured dose readings.

In the dataset there are a number of occasions where flow readings are less than 200l/s or often zero on the magflow and the Calculated UV Dose is significantly higher than the normal range, jumping up to 3277mj/cm2 in several instances as observed on 27-Jul, this also occurs on the 19-Aug (after the level sensor was repaired), 25-Aug, 28-Aug and 30-Sep., whilst some instances correspond with UV plant testing as notified under UVNOTS held on record, that is not the case in these examples **Action 6:** Please provide an explanation for the variance in the data in the recorded UV Dose.

Channel 3

Channel 3 doesn't record any treatment and occasionally records some flow. **Action 7:** Could you clarify how channel 3 is operated and if on a standby basis how do you ensure that the UV treatment remains operational throughout the season should this channel be required?

Emergency Notifications

We acknowledge two incidents which occurred during the season submitted in document 'Compliance UV2020.xlsx' report that on 19 Aug 2020 there was a level sensor fault and on 27 Aug 2020 there were multiple pump failures at the intermediate stage pumping station in the treatment works which meant that storm discharges over 200l/s occurring between 11:30 - 12:45 on 19 Aug and on or after 10:30 to 22:00 on the 27 Aug were not treated with UV disinfection.

Both these situations were self-reported promptly by the operator (UVNOT ref: 315581359 and WATPOL (DCWW SAP Ref: 315589072/NRW WIRS ref: 2006269) respectively). The discharge on 27 Aug has been considered under CAR_NRW0037016 against permit AN0280003 for the discharge of sewage in an emergency from Cog Moors Wwtw.

We consider you to be compliant with Condition 17 Emergency Notification under this permit AN0280002, however a query relating to the operation of the UV plant on 27 Aug and wider compliance with permit AN0280002 on 19 Aug are considered below.

19-Aug UVNOT ref: 315581359

NRW were notified of an issue at Cog Moors UV plant 19 Aug, follow up email explanation and reason provided via email 26 Aug 20: *"found the fault to be a level controller had frozen, this had given the PLC an incorrect reading, thus the PLC system thought the Channels had not reached the activation point. We rectified the fault immediately, the UV system started operating correctly. The failure event lasted from approximately 12:15 until 14:00, from 14:00 we dosed with UV until 17:00. Instruments can sometime freeze due to long periods of inactivity, this year we have experienced extended period of hot dry weather. The instrument (now obsolete) has been installed since the commissioning of the UV plant, its age might have contributed to its failure. The instrument has now been changed."*

This report was assessed against Condition 15 - Emergency discharges of settled storm effluent not subjected to UV disinfection. Taking into consideration that the treatment

system was being monitored by operatives at time of the fault and that the issue was swiftly dealt with, we will accept that this occurrence fell within the spirit of the emergency provisions of the permit.

However, please note that the emergency condition is in place in the event of catastrophic failure and the environmental risk posed by such an overflow should be managed to minimise the likelihood of a discharge occurring. The disinfection by UV is in place to protect bathing water quality during the bathing season at the designated beaches in Barry. We expect that you make adequate provisions to check instrumentation is in working order and could be considered reliable within its reasonable life expectancy prior to the start of the bathing season. **Action 8:** Ensure all plant, equipment and instrumentation is in working order prior to the start of the bathing season.

Data discrepancy & queries of events on 27 Aug: An emergency discharge occurred on 27 Aug reportedly owing to multiple pump failures at the intermediate pump station, analysis of information and data provided as part of the incident investigation and the data submitted as part of the bathing water report for the UV plant do not entirely correlate.

- The BW return data shows the UV plant had not reached the levels required for treatment at 10:30 but this is the last recorded flow at Magflow until 19:30-20:00 when the UV plant was operated manually, then no flow recorded until 22:00.
- Chart '27AugStormBypass' provided via email shows a discharge from 11:40 of storm sewage bypassing the UV treatment process until 23:00 (with the exception of manual intervention between 19:30-20:00).
- The alarm list shows that at 11:45 the intermediate pumping station float activates and at 11:49 the UV plant initiates emergency overflow conditions and the storm spill is bypassing the UV system. However intermediate stage pumps are not showing as failing until 13:37 and 16:02 respectively.

Action 9: Provide explanation for the data discrepancies and clarify the sequence of events on 27 Aug, including answers to the following: 1. Why was no flow measured at the magflow after 10:30am, despite levels increasing and spill reportedly occurring from 11:40?. 2 Why the discharge was bypassing the UV plant earlier in the day prior to the recorded pump failures?

Future Compliance data return and bathing water reports should be submitted to NRW via the Operator Self Monitoring mailbox. OSM@cyfoethnaturiolcymru.gov.uk

Please submit all requested information to Hannah.Jenkins@cyfoethnaturiolcymru.gov.uk should you require additional time to collate this information, please contact me.

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.