Basic Details

Publish Date

16 December 2025

Case ID#

3358

Title

Backflow Incident at Flood Alleviation Scheme due to outfall flap obstruction. (Flood defence designed to keep water out as opposed to storing water)

Nation

Wales

Regulator Reference No.

79

Legal Status

Statutory

Reservoir Type

Impounding

Reservoir Capacity

25,000 - 99,999m3

Year of Construction

1990 - 2009

Main Construction Type

Earth fill embankment

Dam Height

2 - 4.99 metres

Dam Flood Category

A

Hazard Class

High-risk reservoir

Reservoir Use

- Flood risk management

Owner Type

Public body

Incident Details

Date & Time of Incident

09 December 2024 - 12:00

Date Incident Closed

10 December 2025

Observations that Caused the Incident to be Declared

- Other (including pollution and unplanned scour release)

Describe the Incident

Backflow through surface water outfall observed during flood risk incident response & monitoring of assets. This was causing increased flooding on the road behind the impounding structure and could have resulted in flooding to properties if actions not taken.

Supporting Photos

Causes and Impacts

Natural Processes which Initiated or Contributed to the Incident

- Flood - within dam design capability

Main Contributing Factors to the Incident Occurring

Dam Factors

- Spillway or overflow - blockage

External Factors

- Damage by floating debris

Shortcomings

- No apparent shortcoming

Root Cause of the Incident

Debris obstruction in the culvert/outfall flap caused the flap to remain slightly open, allowing backflow through the structure into the area behind the defence.

Impacts on the Reservoir

- None - near miss

Supporting Photos

Supporting Contributions and Studies

Human Factors which Influenced the Incident

There were no human factors that caused or contributed to this incident.

Instrumentation at the Reservoir

No site-specific automated instrumentation aside from staff gauges at demountable crossings. Nearby telemetered level gauges used to trigger operational response. Crest level monitoring pins surveyed annually.

Was Instrumentation Effective?

Yes

Assistance by External Parties and Impacts on Downstream Population

No emergency services involvement. Undertaker communicated with local residents for awareness and reassurance. Downstream impacts limited to minor road/ditch flooding.

Summary of Studies or Investigations Undertaken

Post-incident inspection after flood recession found the flap in good condition; timber debris was recovered and identified as the likely cause of jamming. Photographs were taken to document findings.

Supporting Photos

No images provided.

Lessons Learnt

Lesson 1

Investigate installation of an upstream weed screen to prevent debris ingress.

Lesson 2

Consider an upstream penstock at/near the manhole to isolate backflow and improve resilience.

Lesson 3

Review response plans and resource availability (internal and supply-chain) for future incidents.

Lesson 4

Closing Comments

On-site emergency plan available. Actioned and effective.

Supporting Photos

No images provided.

Information provided has been sent from reservoir owners and engineers, and cleansed of personal information by the enforcement authority. We cannot guarantee the accuracy of the data, but if you find an error please contact the relevant enforcement authority.