Basic Details

Publish Date

27 November 2025

Case ID#

3342

Title

Scour damage to spillway channel following storms

Nation

Wales

Regulator Reference No.

80

Legal Status

Statutory

Reservoir Type

Impounding

Reservoir Capacity

10 - 24,999m3

Year of Construction

1800 - 1849

Main Construction Type

Earth fill embankment

Dam Height

2 - 4.99 metres

Dam Flood Category

B

Hazard Class

High-risk reservoir

Reservoir Use

- Recreation or general amenity

Owner Type

Public body

Incident Details

Date & Time of Incident

14 January 2025 - 12:00

Date Incident Closed

09 December 2025

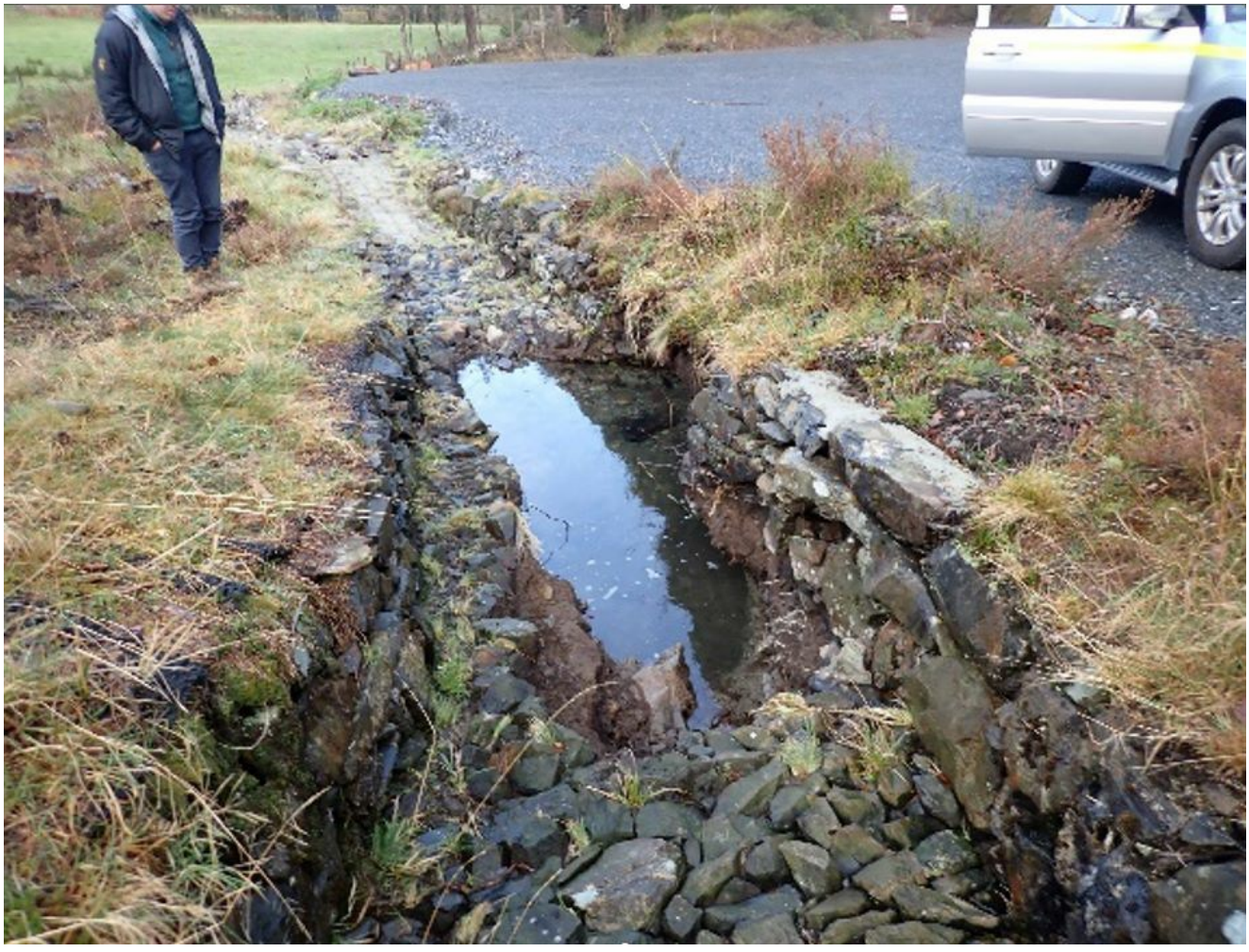
Observations that Caused the Incident to be Declared

- Water flowing outside of engineered channels

Describe the Incident

Following routine surveillance, the Supervising Engineer was alerted of scour dam to the old narrow masonry spillway channel following storms in early January 2025 and resulting in reservoir impoundments. The hole in the spillway started at around 4pm from the upstream entrance of the spillway, which was approximately 4.5m in length / 1.5m in width and around 1m deep. SE attended site and initiated telephone discussions with the QCE. Remedial works were agreed on later that day, including MIOS improvement works to replace the existing spillway.

Supporting Photos



Causes and Impacts

Natural Processes which Initiated or Contributed to the Incident

- Heavy/persistent rain (no flood)

Main Contributing Factors to the Incident Occurring

Dam Factors

- Deterioration of materials

External Factors

- None

Shortcomings

- Construction shortcoming

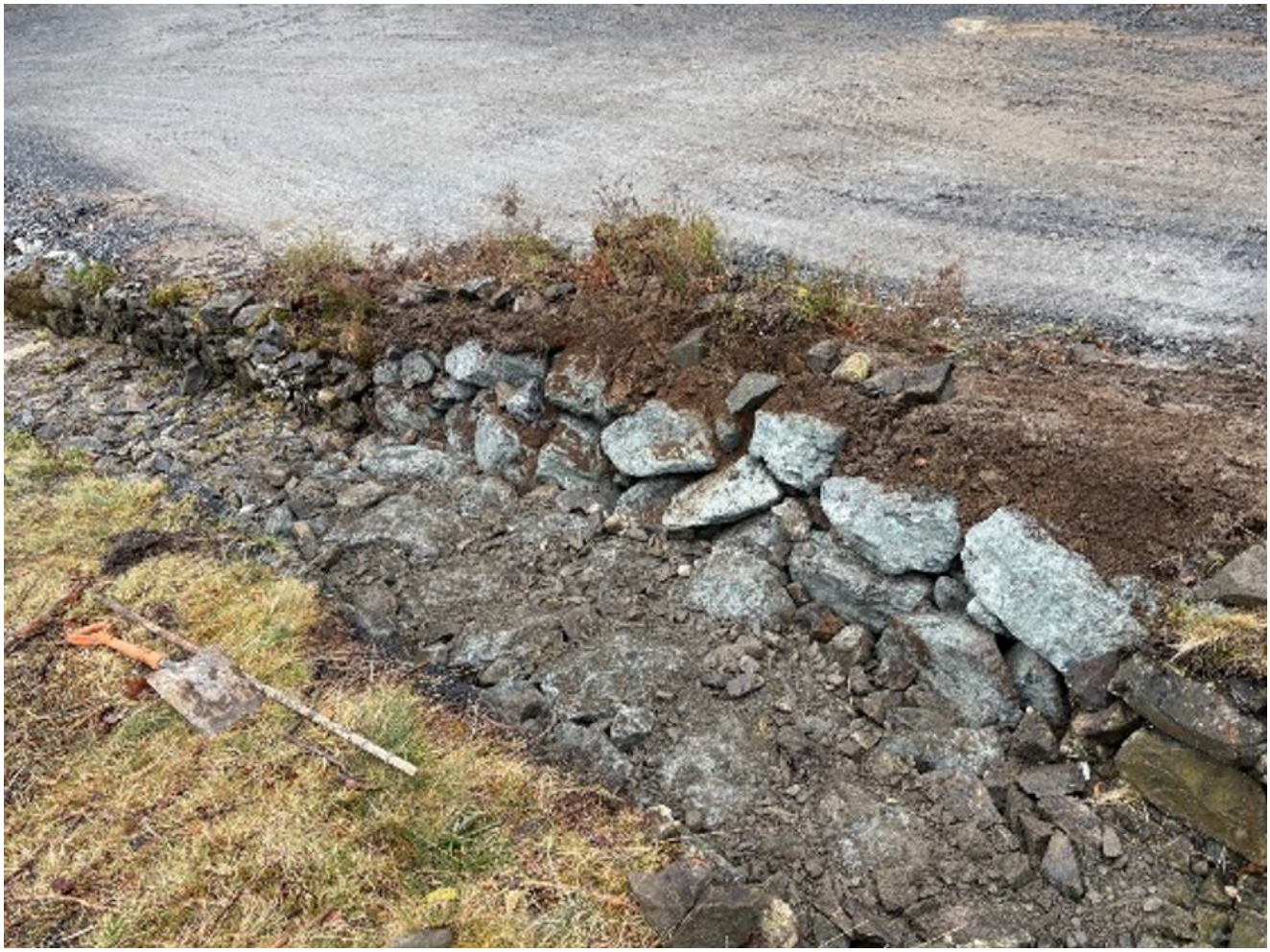
Root Cause of the Incident

Old narrow and inadequate masonry spillway channel deteriorating following storm / flood events, leading to scour damage. Effectiveness of permanent measures :- the new spillway facilities and channel were successfully tested during a heavy rainfall event (albeit at a very low water level compared to the safety check flood level) in September 2025, with a water depth of 140mm observed flowing through the new main spillway structure and channel.

Impacts on the Reservoir

- Spillway or overflow - failure or instability

Supporting Photos



Supporting Contributions and Studies

Human Factors which Influenced the Incident

None - MIOS improvement works to replace the old spillway structure and channel were already programmed to be carried out in Spring / Summer 2025 (ahead of the MIOS deadline), to take advantage of more favourable weather conditions for the construction works).

Instrumentation at the Reservoir

N/A with regards to instrumentation. The routine and reactive surveillance visits to the site proved to be very effective in detecting the issue and promptly alerting the SE and Undertaker.

Was Instrumentation Effective?

Not Applicable

Assistance by External Parties and Impacts on Downstream Population

N/A

Summary of Studies or Investigations Undertaken

None following incident :- the new main spillway structure and channel, including the new auxiliary spillway facility, which were built in Summer 2025, have been designed to reservoir category B standards in terms of capacity and construction material (i.e. design flood 1 in 1000 year and safety check flood 1 in 10,000 year), and subsequently signed off and certified by the QCE – the new spillway facilities are therefore a vast improvement in terms of capacity and robustness. The reservoir freeboard was also improved during the Summer 2025 works.

Supporting Photos

No images provided.

Lessons Learnt

Lesson 1

- Human factors

Continued routine and reactive surveillance of the dam is essential, especially at times of flood and impoundment. The system the undertaker worked well, with the incident being immediately escalated to the SE, who in turn immediately made contact with ARPE / QCE. On the same day as the initial call from the undertaker from site, a meeting had been held between the SE, undertaker and QCE, and appointed contactor, to agree the required remedial works and timescale. By the 21st January 2025, the temporary repairs to the spillway were complete

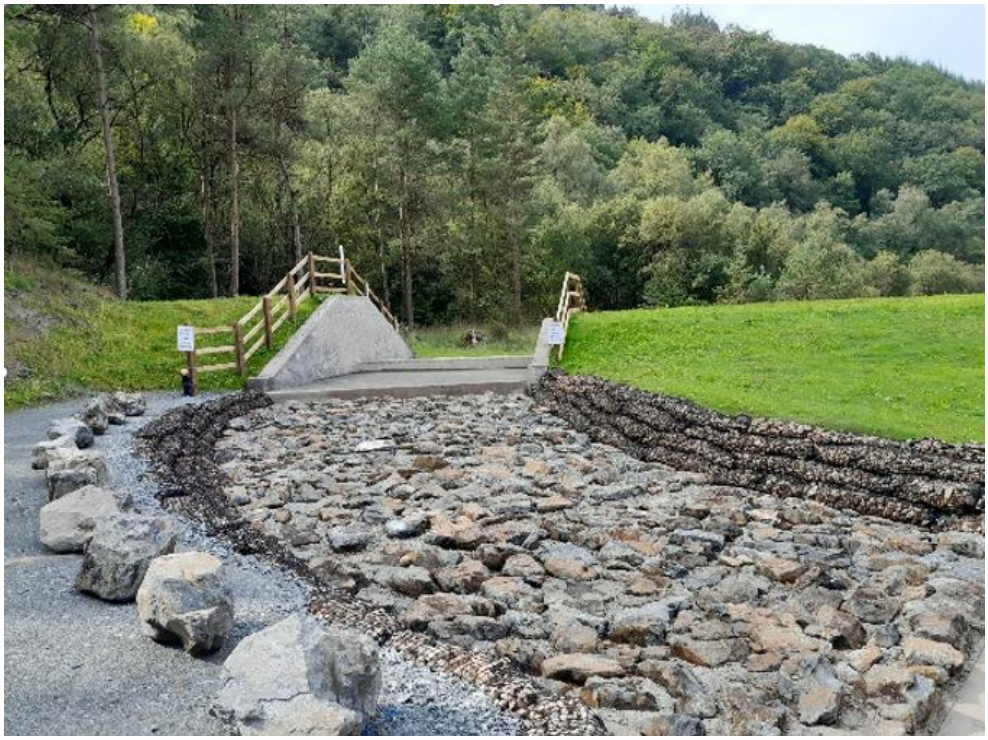
Lesson 2

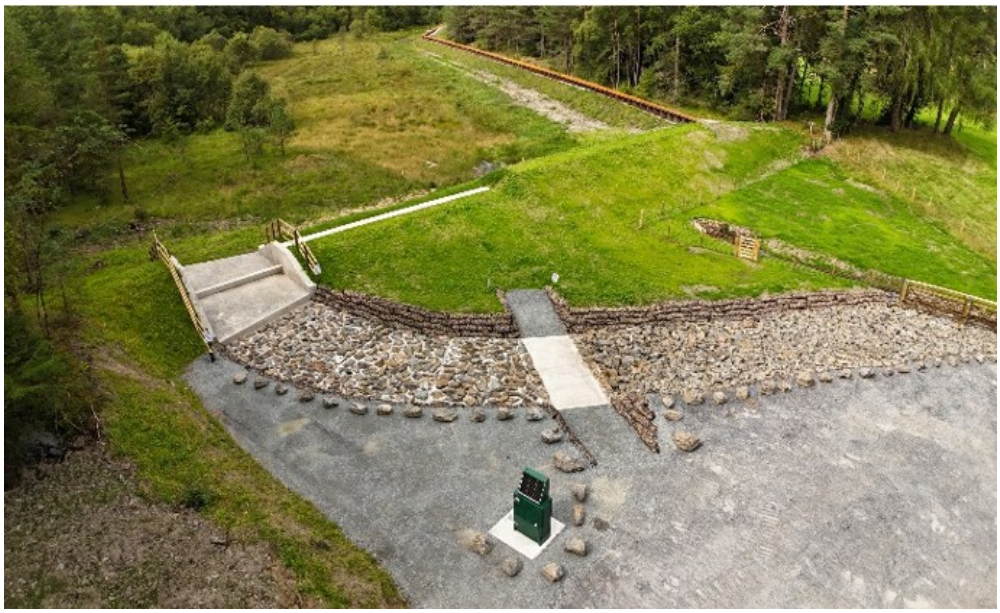
Lesson 3

Lesson 4

Closing Comments

Supporting Photos





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