Water Pollution & Flooding Events

Learning from Events Week

1 – 7 June 2020

02-Jun-20

Regulator interventions – Water Pollution

SEPA Interventions – Water Pollution

The temporary dam at diversionary channel was overtopped, which resulted in flooding of worksite in the permanent channel

What Happened: During works in the River Wamphray, the worksite flooded due to overtopping following severe rainfall, which resulted in down stream silt pollution and damage to the site and riverbanks.

SEPA issued a warning letter for a breach of the site CAR[1] Licence conditions; namely not informing SEPA about an incident (flood event) and failure to control transport of sediment downstream

Why it Happened: The temporary diversion channel was insufficient to cope with the increased flow & the project team were not aware of the reporting requirement. Original negotiations occurred over a protracted time to meet SEPA & the WFD[2] requirements

Shared learning: Sites at risk of flooding should sign up to the SEPA / EA flood line; &, when working in rivers, consider damming off in small sections only; &, ensure awareness of reporting requirements

[1] The Water Environment (Controlled Activities) (Scotland) Regulations 2011, commonly known as the **Controlled Activity Regulations**

[2] The Water Framework Directive (EU legislation) applies in Scotland, England and Wales

SEPA Interventions – Water Pollution

Works were halted but newly implemented mitigation measures at site and downstream were unable to contain sediment

Background: Following severe damage caused by Storm Frank, emergency works were required at Lamington viaduct. A temporary access in the river was built to inspect & repair the viaduct piers. Planned structural repairs to the viaduct had been scheduled to take place prior to the storm damage impacts & the CAR license was extended to include these consecutively.

What Happened: SEPA received repeated complaints from different 3rd parties, of sediment & silt pollution downstream from the worksite which resulted in a number of site visits & several interventions by SEPA. Following these informal warnings, SEPA issued a warning letter for breach of the site CAR Licence conditions

Why it Happened: Failure to select BPEO[3] at initial planning stage.

Significant measures were installed but were unable to prevent silt transportation downstream, & failure to monitor the mitigation / pollution & to stop work / report impacts required in CAR Licence

[3] Best Practicable Environmental Options (Normally referenced in legislation as; BPM [Best Practicable Means], (Scotland); or, BAT [Best Available Techniques] (England and Wales)).

EA Interventions – Water Pollution

Polluted water contained within the site compound was now hazardous waste

What Happened : A compound at Warden Bridge was inundated by water & levels rose to 1.5 metres high within the site cabins. Significant damage occurred to site infrastructure (welfare/offices, etc.)

Paperwork & hardware was lost along with company & personal equipment. A fuel bowser was over turned with up to 4k litres spill estimated & septic waste was included in the mix

Why it Happened: Site location was selected due to need for proximity to the bridge & anticipated protection from the existing flood defences.

Shared Learning: The Environment Agency were notified of the incident immediately, communicated with the site teams & were informed of developments.

The existing flood defences contained the contaminated water within the compound footprint which minimised damage to the water environment. The water was now classed as hazardous waste & was cleared by vactor units. The soil was extensively sampled & results shared

The EA were satisfied with being informed & receiving sight of remediation actions

Warden Bridge Applied Learning

Locations of site compounds relative to the bridge demonstrate why these needed to remain in existing proximity

Event Learning: Moving the compounds location was not a practical option for the project due to need for access and type of supporting plant required to carry out the work activities

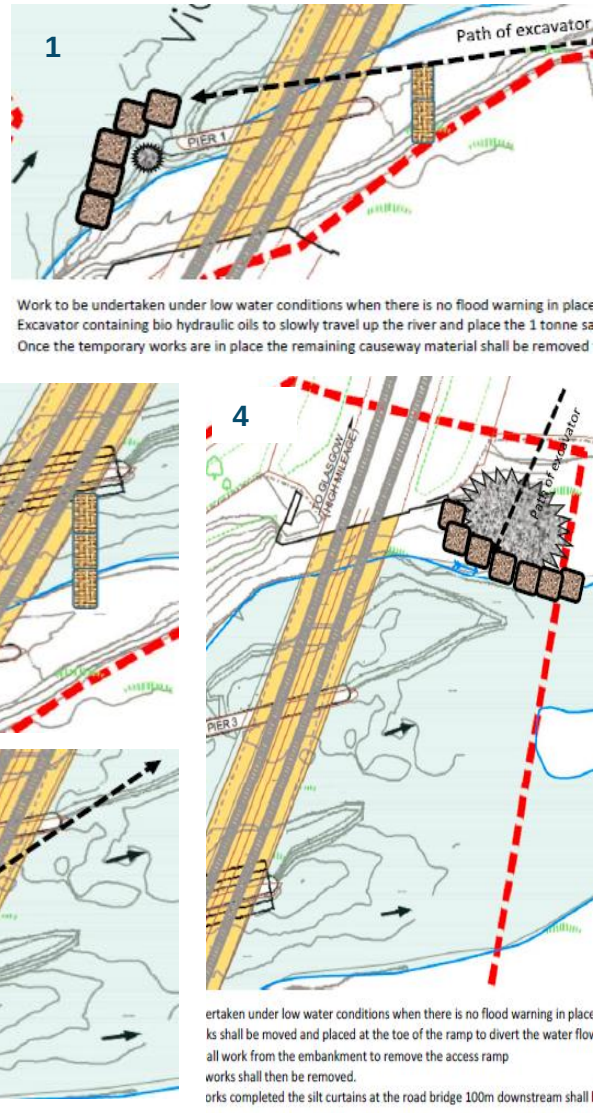
A risk of flooding recurrence remained and this had to be managed

Simple but effective arrangements which were applied included;

- Double stacking of accommodation in the main compound meant that key site documentation & records along with technical, office & IT equipment could be stored well above any possible flood peak level.
- A concrete raft & bowser restraint foundation allowed for straps to be attached to the tank reduce risk of recurrence of spill
- The fuel breather pipes were extended to a height above likely future floodwater levels.

Regulator positions

Phased approach with temporary cofferdams in situ to mitigate impacts



SEPA & The EA are willing to accelerate licence application timescales, provide local knowledge / advice & maintain a pragmatic approach. Failure to notify, or engage puts working relations at risk

Extracts from the regulators included;

- "… short term pollution of the water environment in exchange for a reduction in project working time and the need for additional mitigation management is unacceptable."
- "If SEPA are aware of any issues we will always try assist and advise where possible, which is more favourable than learning of issues through a number of complaints."

Case Study & Useful Links

- No Cofferdam or protection upstream
- Excessive amount of silt washed downstream of silt curtains,
- No CAR license on site (Required)
- Limited key documentation available
- Significant amounts of waste and detritus in water and no skips or waste management on site

Lessons from other Linear Infrastructure Sectors, include pollution event at AWPR (Aberdeen Western Peripheral Route)

Pollution event resulted in a £280,000 remediation compensation undertaking

SEPA Major Enforcement Undertaking

Case Study & Useful Links

United Utilities Water Limited (UU) has been fined £600,000 and its contractor, KMI+ £333,000 at Bolton Crown Court after pleading guilty to polluting a brook.

Both companies were also ordered to pay a total of £45,262 in costs (United Utilities £19,090 and KMI+ £26,172) following a prosecution by the Environment Agency.

The court heard how KMI+ was contracted by UU to carry out improvement works at Wayoh water treatment works at Turton Bottoms. In December 2013, as part of the works, KMI + emptied and removed a tank which had been used to store sodium hypochlorite in 10% solution. Sodium hypochlorite is used in the water purification process and is also the principle ingredient of household bleach. It is very corrosive and is highly toxic to aquatic organisms.

Recent prosecution as a result of water pollution, HSQE August HSQE Newsletter

- Temporary Construction Methods:

http://www.sepa.org.uk/media/150997/wat_sg_29.pdf

- Sediment Management:

https://www.sepa.org.uk/media/151049/wat-sg-26.pdf

- Silt Control Guidance:

https://www.sepa.org.uk/media/153290/sepa-silt-control-guidance.pdf

PPG5 Works and Maintenance in or Near Water:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/485199/pmho1107bnkg-e-e.pdf

PPG 6 Working at Construction and Demolition Sites:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/485215/pmho0412bwfe-e-e.pdf

http://www.hsqe.co.uk/

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