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January 21st 2025

Sir Jon Cunliffe
Independent commission on the water sector regulatory system
Department for Environment, Food and Rural Affairs
2 Marsham Street
London
SW1P 4DF

Dear Sir Jon,

Independent commission on the water sector regulatory system

Thank you for giving me the opportunity to meet you and discuss the water commission and my own work.

I will provide copies of each of my 14 analysis reports in anticipation of the call for evidence that Minister Emma Hardy mentioned in the Water (Special Measures) Bill Committee last week. I think it is important that I demonstrate the quality and quantity of the evidence on which I base my analysis and findings.

I have provided some notes and thoughts below and hope they might help focus our conversation.

Kind regards,

Peter Hammond

TOPICS COVERED IN REPORTS DURING THE PERIOD 2018-2025

- illegal discharges of untreated sewage and inadequate regulation
- industry claims about Victorian sewerage networks
- volume estimates of untreated sewage
- unreliability of EDM data used to detect and report untreated sewage spills
- potential abuse of Operator Self-Monitoring (OSM) of treated sewage
- Water Industry Greenwashing (with Alex Ford, Andrew Singer, Jamie Woodward)

MOTIVATION environmental pollution and **animal health** initially but now also **human health**

FOCUS river quality initially and then, over 7 years, water industry, **regulation**, finance and legislation

CONCERNS

1 Weak regulation allowing water industry to game the system

1.1 permitted discharges of untreated sewage (spills)

1.1.1 confusion over "**dry**" spilling and rainfall threshold

ECJ: "exceptional circumstances"; **EA**: 0.25 mm/day; **NRW**: 4 mm in 1 of previous 24 hrs
Which should apply to rivers crossing borders?

1.1.2 "**early**" spilling requiring continued treatment at STW/pass forward flow from SPS
slow introduction of metering and lack of rigour in location specification

1.2 Operator Self-Monitoring of quality of treated sewage

1.2.1 use of "private" continuous monitoring to influence statutory, monthly "spot" testing

1.2.2 abuse of "no flow/no sample" get out to gain default compliance

1.3 Metrics and monitoring devices for reviewing performance

counting spills is fundamentally flawed as a metric

spills can be dribbles or torrents
carbon expensive tankering can be used to transfer potential spills to larger works
avoidance of spills by pushing treatment to limit producing inferior final effluent

EDMs produce unreliable frequency/duration inconsistent with sewage flow and rainfall
VOLUME is a more scientifically valid metric and flow meters are more reliable

2 Access and quality standards for data and regulatory permits

2.1 automated check for data interference, completeness, resolution, consistency

2.2 online access should be given to

a) flow to treatment, final treated effluent data
b) EDM individual spill start-stop times **AND VOLUME**
c) operator reports recording site visits whether routine or troubleshooting
d) telemetry exchanges between WaSC assets and control centres

2.3 Public registers of discharge permits and compliance reports

EA: physical attendance at local office; online permit order up to 10 day delay; **no reports**
NRW: good, immediate online viewing/download of **permits** and unredacted **reports**
SEPA: still suffering from cyber attack – are EA and NRW protected?

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3 Animal and human health issues not receiving sufficient attention

3.1 Micro- and nano-plastics from treated and untreated sewage

If sewage is treated fully, microplastics are taken out but end up in sewage sludge/agriculture.
Otherwise, 95% of microplastics enter river silt & are consumed by invertebrates & fish
next storm washes silt & microplastics out to sea to join an even more complex food chain.
Microplastics are regularly found in invertebrates, fish and dolphin carcasses
Microplastics -> nanoplastics
- cross the placenta
- interfere with methylation (gene switching)
- affect early embryo development

Female embryos develops germ cells, precursors to sperm & eggs, which become grandchildren

3.2 Anti-microbial resistance (AMR)

Sewage works are a perfect breeding ground for AMR
AMR ends up in sewage sludge/agriculture
Micro-plastics are a vector for AMR

3.3 Forever chemicals, drug residues, contaminants and nature-based "solutions"

PFOS
Drug residues
Heavy metals
Legacy of "Nature based solutions" could be toxic with health and safety implications

REPORTS AVAILABLE AT www.peter-hammond.com/sewage_pollution.html

1 Apr 2021 Detection of untreated sewage discharges to watercourses using machine learning

2 Oct 2021 735 "illegal" discharges of untreated sewage from 13 Thames Water STWs 2018-2020

3 Jan 2022 7 water companies made, in total, over 2,405 "illegal" spills from 44 STWs (2017-21)

4 Sep 2022 Are sewage discharges reported accurately and openly by water companies?

5 Feb 2023 The failure of Operator Self-Monitoring

6 May 2023 Effective regulation of untreated sewage spills needs volumetric & catchment monitoring

7 Aug 2023 Sewage spills and infrastructure: don't blame the Victorians

8 Oct 2023 2,274 days with illegal sewage discharges to 11 Welsh rivers 2018 to 2023

9 June 2024 Event duration monitors are not fit for purpose

10 Oct 2024 United Utilities illegality

11 Oct 2024 Severn Trent illegality

12 Oct 2024 Operator Self-Monitoring default compliance

13 Nov 2024 Illegal spills in Lake District

14 Dec 2024 Government rejects volumetric measurement of untreated sewage spills again

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