

On behalf of: Anglian Water Services Limited

Witness: Mark Frogatt

Statement: 1

Exhibit: MF1

Date: 13 April 2022

**Application Name: Eastern Northants Management Facility Western
Extension**

Application Ref: WS010005

PROOF OF EVIDENCE

MARK FROGATT

I, MARK FROGATT of professional address Lancaster House, Lancaster Way, Ermine Business Park, Huntingdon, Cambridgeshire PE29 6XU state as follows:

1. I am the Chief Engineer at Anglian Water Services Limited ("Anglian Water"). I am duly authorised to make this statement on behalf of Anglian Water, who are an interested party to this application ("the Application").
2. I have been employed by Anglian Water for approximately 14 years coming in as the Head of Engineering and more recently being promoted to Chief Engineer with a total of 30 years' experience in the design and delivery of major infrastructure, in addition working for BNFL as a designer of waste treatment facilities.
3. The facts and matters set out in this statement are within my own knowledge unless otherwise stated, and I believe them to be true. Where I refer to information supplied by others, the source of the information is identified; facts and matters derived from other sources are true to the best of my knowledge and belief.
4. There is now produced and shown to me a paginated bundle of true copy documents marked "**MF1**". All references to documents in this statement are to Exhibit **MF1** unless otherwise stated.

Background and Initial Concerns

5. This statement relates to Augean South Limited's ("Augean") development consent order ("DCO") application for the alteration and construction of hazardous waste and low-level radioactive waste facilities at the East Northants Resource Management Facility, Stamford Road, Northamptonshire ("the Proposed Development").
6. Anglian Water have two critical 800mm steel diameter transfer mains located within the area of the Proposed Development which function at a pressure of 8 bars ("the Mains"). The Mains convey wholesome water, for human consumption and supply a significant portion of Peterborough city area to be circa 80,000 customers. A plan showing the Mains in their current location can be found at page 1. This water supply (previously only one pipe) had been relocated from the black line on this plan to ultimately facility initial works on this site (phases 1-11).
7. Having initially been referred this matter by my colleagues within Anglian Water, I have reviewed the application for the Proposed Development. From my review I have concluded that there is no evidence that Augean has taken into consideration the risk of radioactive landfill to the Mains either at construction stage, longer term and the implications in the event of failure.
8. In view of this concern, I attended the first DCO hearing on 29 March 2022 and the site meeting shortly thereafter 5 April 2022. On both occasions I voiced my concerns (set out further below) in relation to the risk of leaving the Mains in situ.
9. Prior to my direct involvement on this matter, Anglian Water asked Augean to highlight the section of relevant Environmental Statement where consideration has been given.
10. On 17 February 2022 via email Augean's Environmental Specialist, Sophie Serdetschniy, pointed to the Section 17 of their Environmental Statement dated September 2021.
11. "Water resources is addressed in Section 17 of the Environmental Statement (<https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/WS010005/WS010005-000301-5.2%20Environmental%20Statement.pdf>) It is concluded in Paragraph 17.7 that:

"It is concluded that there will be no significant impact on groundwater quality or flows beneath the site or at receptors down hydraulic gradient of the site and no significant impact on surface water flows and quality including at springs and issues, in the Willow

Brook, the Wittering Brook or the River Nene as a result of the development in the proposed western extension either singularly or cumulatively with the existing ENRMF. It is concluded that taking into consideration the baseline conditions and the nature of the proposed development together with the proposed mitigation measures that there will be no residual significant effects on surface water or groundwater flow or quality at or in the vicinity of the site."

A copy of this email can be found at page 2.

12. The above clearly does not address the potable water supply, the risk to human health or the impact on human health in the event that the construction or operation of the Proposed Development causes a burst in one or both pipes.
13. Notwithstanding reiterating my concerns I do not believe that Augean have changed their view in relation to moving the Mains.

Grounds of Objection

14. It is Augean's proposal to leave the Mains in situ and allow a buffer zone around the same. Initially a buffer zone of 7 meters either side of the Mains was proposed which would include within it a high voltage transmission cable within 3 meters of the Mains. Anglian Water's initial concerns were that 7 meters would not be sufficient. It was then mooted that 20 meters maybe more appropriate however on closer consideration a buffer zone of any distance in these particular circumstances would be wholly unsuitable. Primarily this is because if the Mains were to fail (i.e breach) the consequences would be extremely severe damaging both the Mains themselves (likely beyond repair) as well as the Proposed Development.
15. Other factors to consider would be the Mains would be on a strip through a live waste facility which causes issues over access as well as short and long term impacts on the Mains such as potential damage during the construction phase and corrosion of the Mains, respectively.
16. After reviewing the position further with Anglian Water's Network Managers they are extremely concerned, as am I, as to the prospect of having the Mains hemmed in by a waste storage facility. Mains of this nature need to be secured, free from external factors and above all accessible at all times.
17. Whilst Anglian Water maintain and manage the water supply network diligently, established mains of this size and pressure can, and do, rupture with devastating effect. Augean's current proposal to retain the Mains in their current location takes no account for this potential.

18. In the event of a major burst, the occurrence would be noted by monitoring equipment and alarms within Anglian Water's network and raised to the operational team. The water would not generally be turned off. As this is a gravity feed from Wing Water Treatment Works, the Works would respond to the falling reservoir levels by increasing water production accordingly. In the interim period, the operational team would start to restrict flows from the Works whilst simultaneously checking the route from delivery points backwards to locate the issue; or as often the case responding to customer feedback as to the burst location.
19. Due to the critical nature of the Mains, the water would not be turned off as it is unacceptable to leave circa 80,000 customers without running water. Anglian Water do not turn off water for two key reasons:
 - a. Customers' supplies cannot be interrupted as, in this case, it would leave a vast swathe of the city of Peterborough containing schools, hospitals etc without water. Further there would not be sufficient supply to rezone from other areas to meet demand; and
 - b. The Mains would also not be allowed to 'flatten', i.e. have no pressure within them. If the Mains were to depressurise in an uncontrolled manner, there would be a risk of external water being introduced into the Mains and contaminating them.
20. In the event of a catastrophic failure, we believe that several scenarios could occur.
21. Firstly, given that the Mains runs at 8 bar pressure, the uncontrolled release of water would cause significant destruction to the adjacent area. So much so, that given the proximity of the Mains to each other, both would likely fail by undermining of the parallel pipe's foundation, further exacerbating the issue. It is also noted that the proposed diversion of the high voltage main could also be compromised following such an event.
22. Secondly, I do not believe the landfill basin is designed to resist this form of external impact from unrestrained water flow in either the temporary or permanent condition, and as such, the water would breach the adjacent phases and the constructed waste cell wall (north side phase 19-12, south side 18-15 – document drawing no AU/KCW/03-22/23067, a copy can be found at page 4). Such a release of water would inundate the waste cell, contaminate the released water by exposure to the radioactive stored waste and overwhelm the current system to maintain a maximum level of 1m of leachate to the cell base.
23. Thirdly, in the event of a localised pipe failure and the subsequent release of uncontrolled water which may not initially be detectable, this could develop over time leading to bank stability issues within the

proposed easement area. In turn, this may lead to major catastrophic failure and difficulty in accessing with large plant and machinery needed.

24. As outlined previously if the now contaminated flooded area were to be exposed to the Mains, even in a controlled close-down, there remains a real risk of contaminating the Mains risking recovery in which case the Mains would have to be completely replaced as we are unsure as to the nature of contamination risk as it is not fully considered in the initial report.
25. In relation to the integrity of the Mains themselves, the Proposed Development poses an undefined risk such as increased external corrosion and I am made aware by our network team that there has been a recent issue of corrosion and leakage on a part of this local network relatively recently.
26. Public perception is also an important factor here. In this regard, there is also a very strong argument as to our customers' perception to allow their wholesome supply of water to be potentially compromised by allowing radioactive waste to be stored in such close proximity.
27. Other factors which we do not believe Augean have considered in relation to the Proposed Development site include:
 - a. Stability concerns on long term bank exposure during the cut and re-fill of cells adjacent to the Mains.
 - i. Anglian Water are not aware of the details for the transition periods considering heave and contraction of exposed highly shrinkable clays of this region and the impact of differential loading to the stability of the corridor containing the Mains. This is particularly important given the Anglian region is the driest in the country and climate change is leading to more intensive weather events.
 - ii. The proposal does not contain long-term stability monitoring plans, understanding that timescales between excavation and it is noted that fill and capping may take years.
 - b. External loading and frequency of loading of the Mains outside of the original design remit also significantly increases the risk of a breach. When the Mains were laid this was agricultural land with expected loading and frequency from agricultural equipment. Under Augean's proposal, the Mains will dissect two phased working areas requiring some form of undefined crossing point over them. The Environmental Statement (September 2021) does not consider the impact of such a crossing in either loading nor frequency impact and the stability of the Mains beneath.

- c. The location of proposed adjacent surface water run-off lagoons either side of the Mains would hinder future access and may, in the event of significant rainfall, impinge on the Mains bedding and stability.
 - d. If the Mains were to remain the temporary and final corridor for access to them would only be from outside of the landfill operational area. In the event of a failure, this area would be a flooded (affectively creating a canal) impeding access and further compromising the Mains stability and integrity as well as undertaking any repair.
28. For context, I have attached links to some examples indicating the impact of major water main ruptures to offer some context to Anglian Water's concerns:
- a. [Report: The Impact of Environmental Factors on Leakage in the Anglian Water Region](#)
 - Extract from this report page 32:
*"Concluding remarks
 "We set out to determine if regional differences played a part in Anglian Water's good leakage performance. We found that there are, indeed, environmental differences between the Anglian Water region and the rest of the UK. However, far from being an environmentally benign part of the country, we found that the Anglian Water region has disproportionately aggressive soil conditions and extreme and variable weather patterns. Our analysis, and published research demonstrate that both aggressive soils and extreme weather are associated with higher rates of pipe failure"*

"We have seen that the water pipes in the Anglian Water region are already experiencing the impacts of global climate change"
 - b. [REDACTED]
 - This shows a home which collapsed due to Tipton water main bursts
 - c. [REDACTED]
 - Breach in Manchester of 36 inch mains burst.



Summary and Counter-Proposal

29. The current proposal does not fully consider or eliminate the risks described above and I believe that if the Mains remain in situ they would present an unacceptable risk to Anglian Water and its Customers. Therefore, as has been the case previously (the Mains have already been relocated once to allow for works on this site), the Mains should again be diverted outside of the working area.

30. In the circumstances it appears the only reasonably practical solution is for the Mains to be diverted to avoid any risk of the above situations arising and potentially 80,000 customers' water supplies being affected.

Statement of truth

I believe that the facts stated in this witness statement are true. I understand that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth.

Signed **M Frogatt**

Mark Frogatt

Date **13th April 2022**

On behalf of: Anglian Water Services Limited

Witness: Mark Frogatt

Statement: 1

Exhibit: MF1

Date: 13 April 2022

**Application Name: Eastern Northants Management Facility Western
Extension**

Application Ref: WS010005

EXHIBITS TO PROOF OF EVIDENCE

MARK FROGATT

Plan of the Mains



Claire Trolove

Subject: FW: ENRMF

From: Sophie Serdetschniy <[REDACTED]>
Sent: 17 February 2022 15:42
To: Darl Sweetland <[REDACTED]> [uk](#)>
Subject: RE: ENRMF

EXTERNAL MAIL - Please be aware this mail is from an external sender - THINK BEFORE YOU CLICK

Afternoon Darl

Water resources is addressed in Section 17 of the Environmental Statement (<https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/WS010005/WS010005-000301-5.2%20Environmental%20Statement.pdf>) It is concluded in Paragraph 17.7 that:

'It is concluded that there will be no significant impact on groundwater quality or flows beneath the site or at receptors down hydraulic gradient of the site and no significant impact on surface water flows and quality including at springs and issues, in the Willow Brook, the Wittering Brook or the River Nene as a result of the development in the proposed western extension either singularly or cumulatively with the existing ENRMF. It is concluded that taking into consideration the baseline conditions and the nature of the proposed development together with the proposed mitigation measures that there will be no residual significant effects on surface water or groundwater flow or quality at or in the vicinity of the site.'

Please let me know if you need anything further.

Regards

Sophie

[REDACTED]
MJCA
Baddesley Colliery Offices

[REDACTED]

[REDACTED]

MJCA
Technical advisers on environmental Issues

Established in 1983
Over 35 years of reliability in a changing environment

Our Ref: 1724

From: Darl Sweetland [redacted]
Sent: 17 February 2022 09:21
To: Sophie [redacted] >
Subject: ENRMF

Morning Sophie

We've been asked about possible contamination of water supplies from the landfill construction and operation.

Can you send me the references in the ES which consider and address this risk and any supporting documents/ reports referred to.



Darl Sweetland MRTPI
Spatial Planning Manager

Mobile: [redacted]

Web: [redacted]

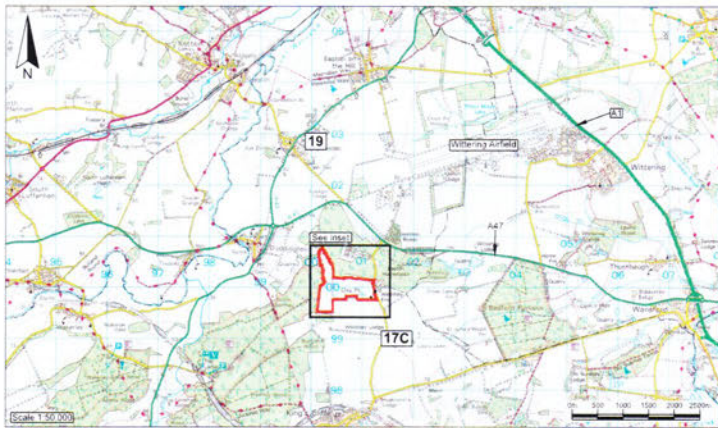
Pronounced: dahl-sweetlund (he/him)

Anglian Water Services Limited

Lancaster House, Lancaster Way, Ermine Business Park, Huntingdon, Cambridgeshire, PE29 6XU

Our Purpose
To bring environmental and social prosperity to the region we serve through our commitment to **love every drop.**

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Key / Notes

- Boundary of the area the subject of the application for the Development Consent Order (Location 7)
- Approximate phase boundaries for the existing ENRMF already constructed
- Approximate phase boundaries for the existing ENRMF to be constructed
- Approximate phase boundaries to be constructed in the proposed western extension (Location 16)
- Approximate route of water pipelines (Location 10)
- Approximate route of an oil pipeline
- Approximate route of an overhead electricity cable (to be diverted) (Location 12)
- Approximate location of a high pressure gas pipeline (Location 10)
- Location of an existing borehole (Location 5)
- Location of a new groundwater and landfill gas monitoring borehole (Location 5)

- Approximate location of a dust and particulate matter monitoring point (Location 4)
- Constructed surface water management ponds (Location 6C)
- Site access/haul road
- Gas flare (Location 6B)
- Ecological stand off area during the operational stage (Location 13)
- Accompanied site visit locations

- Work areas**
- Work No. 1A
 - Work No. 1B
 - Work No. 2 (Location 6A)
 - Work No. 3
 - Work No. 4
 - Work No. 5

Final	KR	14/03/2017
Rev	Station	Drawn/Checked/Date
EAST NORTHANTS RESOURCE MANAGEMENT FACILITY 		
Locations for the Accompanied Site Visit		
Figure A6-1	Issue	As shown
<small> Project No: ALM/WRCS 2012067 Version: 01 Prepared by: [Name] Checked by: [Name] Approved by: [Name] Date: 14/03/2017 Scale: 1:50,000 Drawing No: 100178-0 </small>		

