



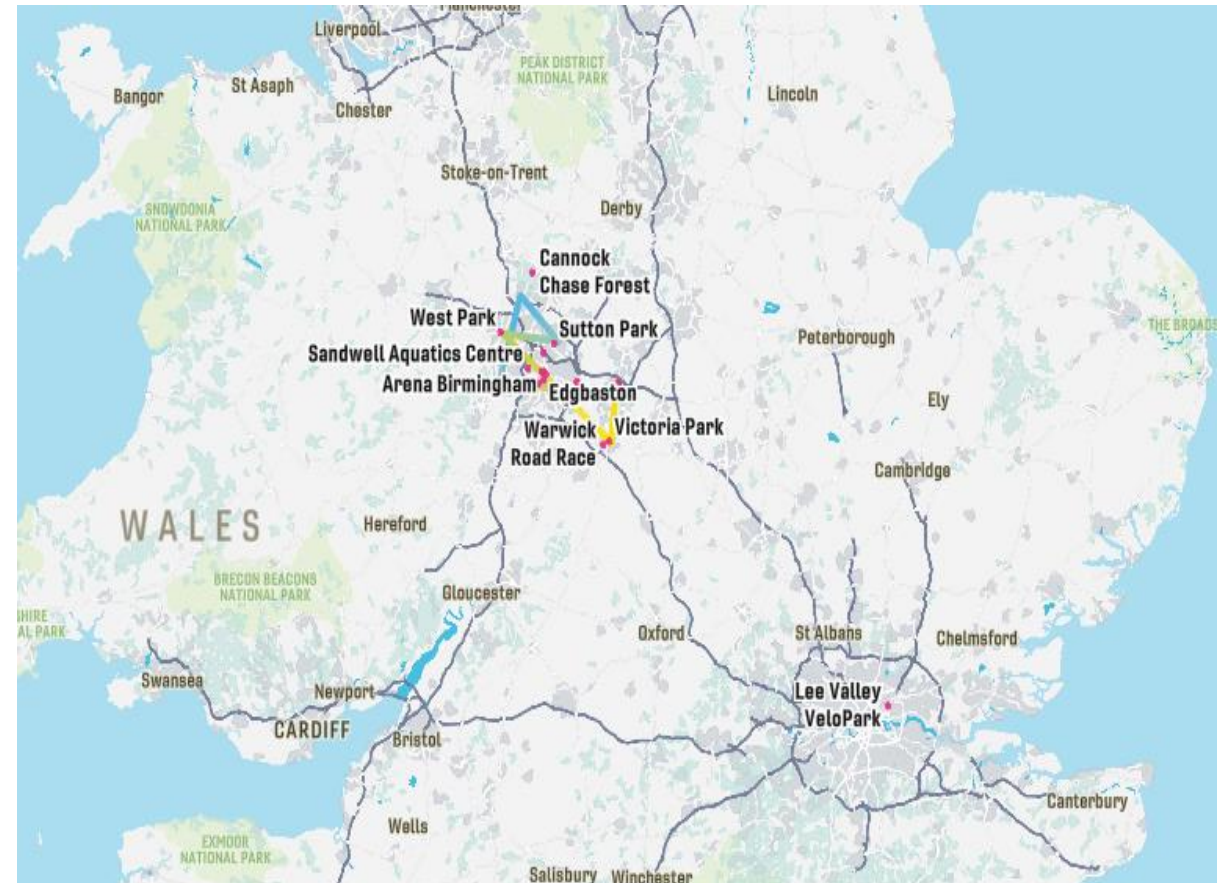
UK Health  
Security  
Agency

# Issues encountered for (at) the Birmingham Commonwealth Games - especially for Legionella

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# Commonwealth Games 2022; July 28<sup>th</sup> to August 8<sup>th</sup>

- Birmingham host city to the Commonwealth Games 2022
- Events also hosted across the West Midlands region including Coventry, Sandwell and Warwickshire
- Cycling at the velodrome in London
- With 11 days of swimming and diving, eight days of cricket, eight days of gymnastics and seven days of athletics, including the marathon
- Estimated that 1.5 million people visited the region for the Games



# Commonwealth Games 2022; July 28<sup>th</sup> to August 8<sup>th</sup>

Typical issues from previous games and 2022;

- Building works – continuing up until the games commenced
- Security issues and logistical concerns
- Risks of infectious diseases – from COVID-19, food service issues, water contamination etc
- Monsoon downpours cause water to seep through the roof and walls of the swimming pool complex



1970	Edinburgh	 Scotland
1974	Christchurch	 New Zealand
1978	Edmonton	 Canada
1982	Brisbane	 Australia
1986	Edinburgh	 Scotland
1990	Auckland	 New Zealand
1994	Victoria	 Canada
1998	Kuala Lumpur	 Malaysia
2002	Manchester	 England
2006	Melbourne	 Australia
2010	Delhi	 India
2014	Glasgow	 Scotland
2018	Gold Coast	 Australia
2022	<i>Birmingham</i>	 <i>England</i>
2026	Victoria	 Australia

# FW&E Testing in Preparation for The CWG 2022

**Considerations before the Games - where to focus resource and where to carry out targeted food, water and environmental sampling?**

## **Considered:**

- Temporary potable water supplies ... liaison with supplier gave assurance
- Food and hygiene swab testing at outlets at venues ... liaison with food hygiene auditor gave assurance
  
- **Newly built Aquatics Centre** – general water quality and Legionella
- **Triathlon lake** – Bathing Water Regulation standards required by CWG OC
- **Legionella testing at accommodation sites** - athletes and **visitors**: for athletes villages CWG Organising Committee managed including H&S

**These became the areas of FW&E testing focus**



# FW&E Testing in Preparation for the CWG 2022



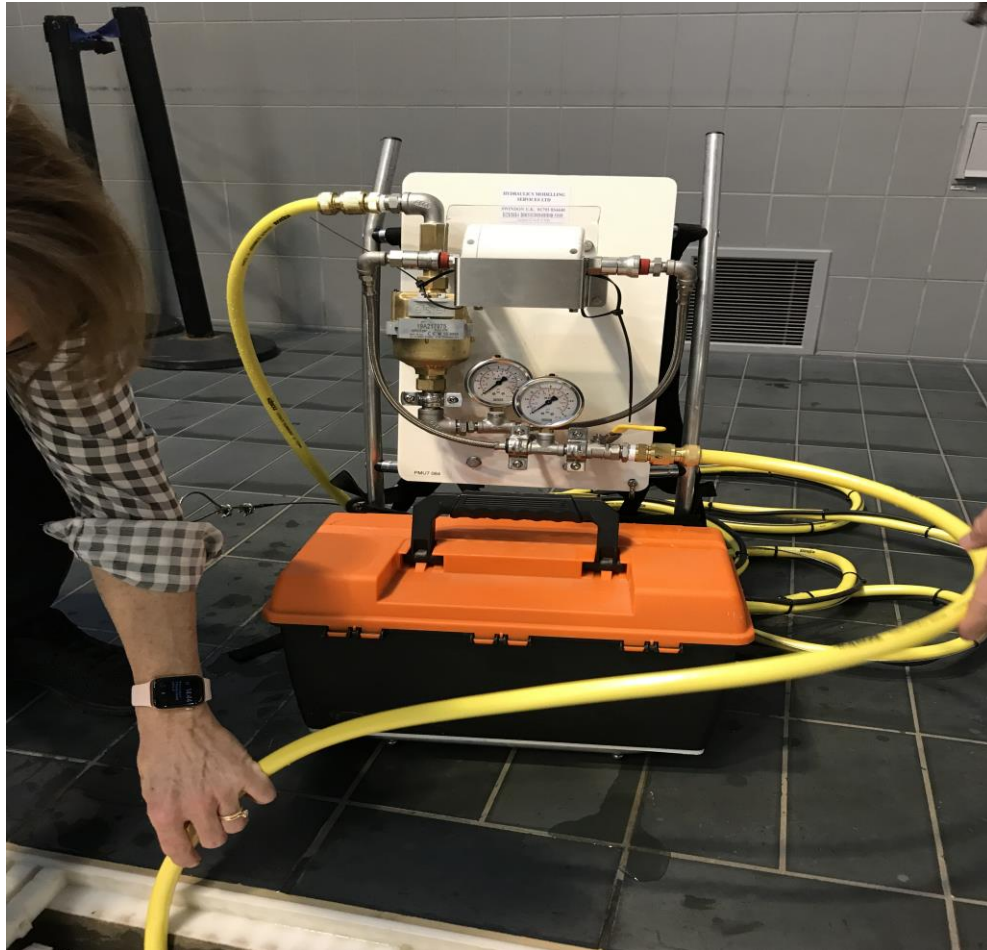
2012 – even new pools can require interventions



Temporary supplies can come in all forms – but poor management can be an infectious disease concern



# FW&E Testing in Preparation for the CWG 2022



Having capacity and capability to procure samples of the recreational water – for protozoan targets



Advice to training pool on scheduled maintenance – of pool filters and floating floor

# Sandwell Aquatics Centre – a brand new site for the 2022 Commonwealth Games

- Sampling visits were delayed due to construction work and access
- Initial visit 12<sup>th</sup> July but pool not in use
- Follow up visit 25<sup>th</sup> July when pools in use (events due to start 29<sup>th</sup> July!)
- 19 waters from pools and showers for routine hygiene: ACC; coliforms; E. coli; Pseudomonas aeruginosa – all negative with ACCs of 2 cfu/ml or less
- **19 waters for Legionella – all negative (including PCR)**

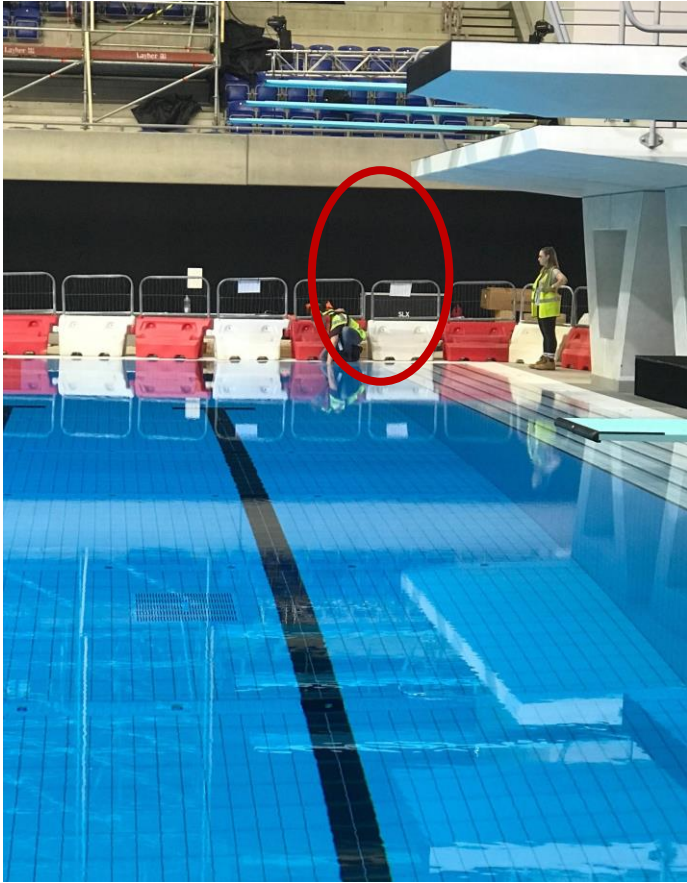
... results all very reassuring



Main pool, diving pool and temporary 25m training pool with separate plant room.  
Temporary spa pool for the divers

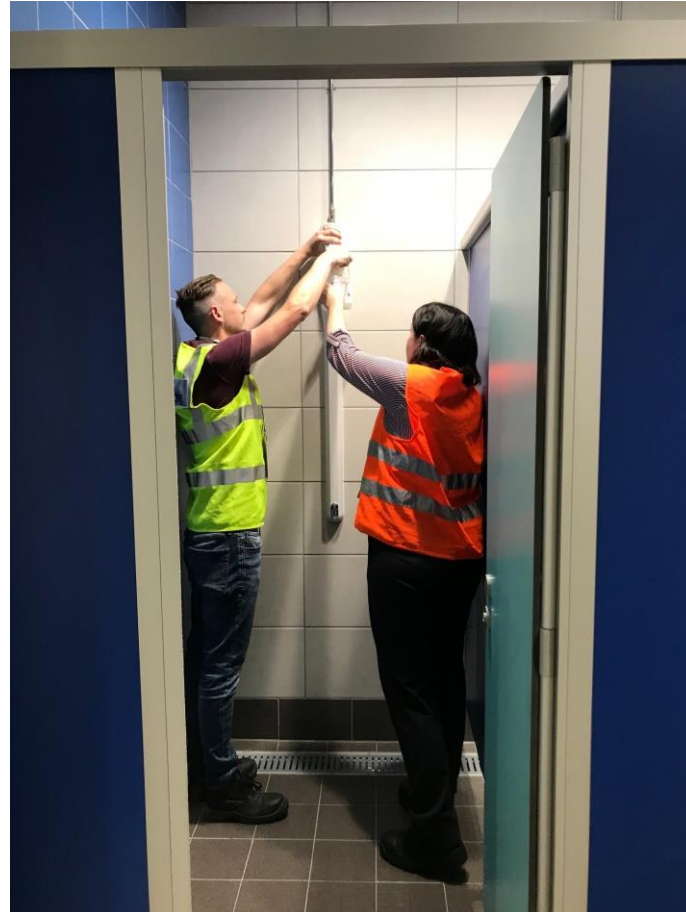


# Sampling – Aquatics Centre



This sampling officer has a life jacket on!

Sampling into a 1 litre bottle from a shower on a timer is tricky



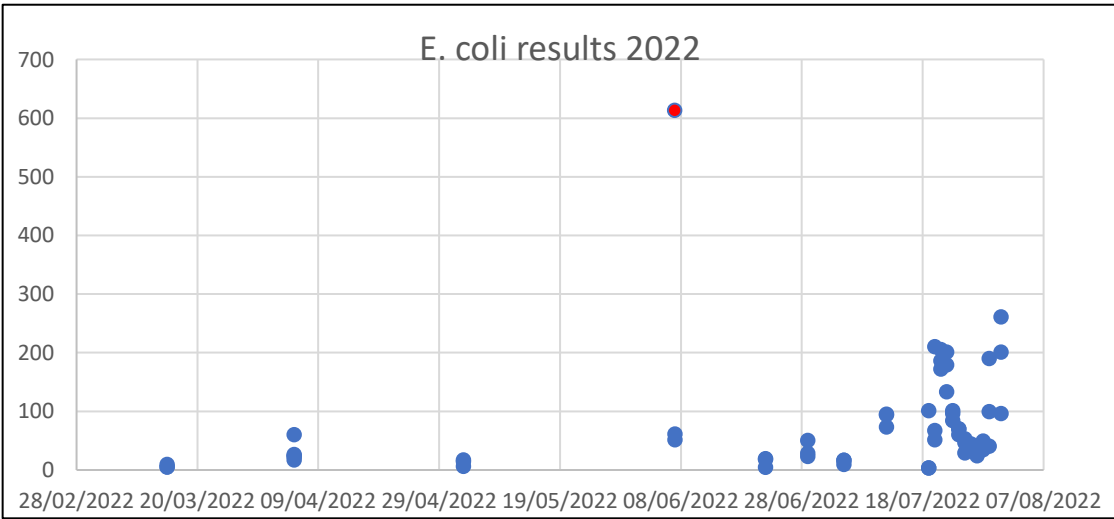
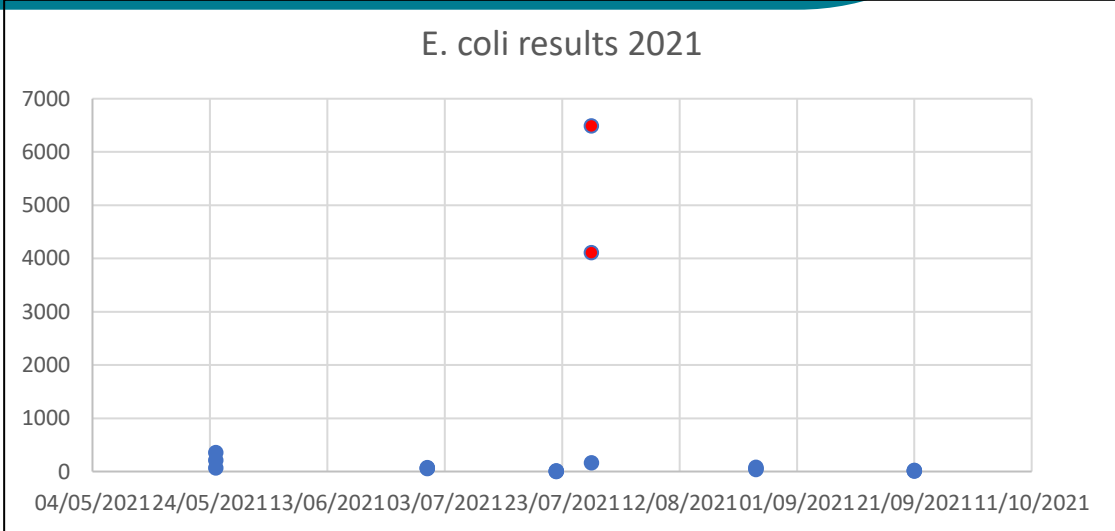
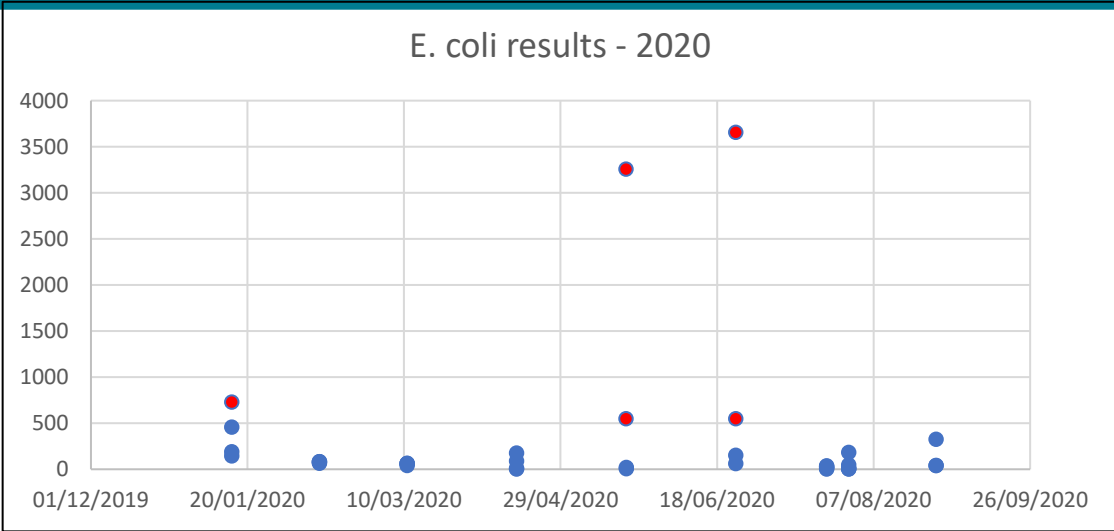
The plant room for the temporary training pool



# Triathlon Lake

- Requirement of World Triathlon Committee for testing
- Samples must be submitted 2 months before, 7 days before and day of event
- E. coli, Enterococci, pH and blue-green algae tests
  
- Inland waters:
  - Enterococci not more than 200 per 100 ml(ufc/100ml)
  - E. Coli not more than 500 per 100 ml(ufc/100ml)
  
- In this case testing began in 2020 to gain a reasonable picture of water quality
- 168 samples submitted with 26 (15%) above acceptable limits

# Triathlon Lake



High results observed in the warmer summer months





# FW&E Commonwealth Games Legionella Study

- Lockdowns during 2020 and 2021 – were water systems lying stagnant?
- FW&E study post 2020 lockdown showed 6% of non-hotel venues with unsatisfactory levels of Legionella compared with 15% of hotel/B&B venues
- Secondment of Environmental Health Officer from Birmingham City Council to UKHSA FW&E for 12 months enabled most of this sampling to take place



# FW&E CWG Legionella Study

- Sampling started March 2022 – time for remedial actions
- Focus on accommodation sites for visitors (hotels/B&Bs)
- Included short assessment of water safety management at each site
- Up to 12 samples from each site, focus on showers – as a significant outlet for aerosols

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**UK Health Security Agency** Hygiene of Food Businesses Serving to Visitors of the Commonwealth Games 2022  
 (up to 4 samples per form – use additional forms if necessary)

**BIRMINGHAM 2022**  
 commonwealth games

<b>Sender details</b>		<b>Premises Details</b>	
Local Authority:		Name of premises	
Address		Address	
Contact Tel No:		Post code	
Samples collected by:		Cool box ID:	Tag No(s):
Senders ref:		Date:	Time:

Q1 Catering premises type: Restaurant  Pub/bar  Café  Hotel  Takeaway   
 Q2 Catering premises type: Eat in only  Takeaway only  Eat in and takeaway   
 Q3 FHRS of the premises 0  1  2  3  4  5  Awaiting inspection   
 Q4 Is the premises visibly clean? (allowing for food prep activity at the time of the visit) Yes  No   
 Q5 Does the business have a documented Food Safety Management System? Yes  No   
 Q6 Is there a documented cleaning regime? Yes  No   
 Q7 Are all food and hand touch points part of the cleaning regime? Yes  No  Not known   
 Q8 Do cleaning products\* used on surfaces comply with BS EN 1276 or BS EN13897? Yes  No  NK   
 Q9 Are cleaning products\* used diluted according to manufacturer's instructions? Yes  No  NK   
 Q10 Are cleaning products\* used allowed contact time according to manufacturer's instructions?  
 Yes  No  NK   
 Q11 Are reusable cloths (rather than disposable) used for any food surface cleaning? Yes  No  NK   
 Q12 Does the WHB have hot water, soap and drying materials? Yes  No  - State missing items: .....

\*cleaning products refers to all sanitisers/disinfectants .....

Template surface swab from surface used with cooked RTE food Details .....	Affix Lab Number Here (lab use)
Template surface swab from surface used with raw RTE food (salad, fruit, veg) Details .....	
Random touch point swab Details .....	
Random touch point swab Details .....	

Lab use only:  
 Date received: ...../...../.....  
 Time received: .....  
 Received by: .....  
 Received from: .....

Data logger / probe ID: .....  
 Air / In between pack (delete as appropriate)  
 Temp. on receipt: .....°C  
 Samples & Receipt:  SATIS  
 UNSATIS

Comments:  
 In STARLIMS associate with Study:  
 LO22030501056



# Sampling - Hotels



# Interpretation of Results – HSG 274 Part 2

Legionella not detected or <100 cfu/l	<b>Satisfactory</b>
Legionella detected >100 cfu/l – <1,000	<b>Borderline</b> If a minority of samples are positive, the system should be resampled. If similar results are repeated, a review of the control measures and risk assessment should be carried out to identify any remedial actions necessary. If the majority of samples are positive, the water system may be colonised, albeit at a low level. An immediate review of the control measures and legionella risk assessment should be carried out to identify any other remedial action required. Disinfection of the system should also be considered.
Legionella detected >1,000 cfu/l	<b>Unsatisfactory</b> The water system should be resampled and an immediate review of the control measures and legionella risk assessment carried out to identify any remedial actions, including disinfection of the system. Retesting should take place a few days after disinfection and at frequent intervals afterwards until a good level of control is achieved.

<https://www.hse.gov.uk/pubns/priced/hsg274part2.pdf>



# FW&E CWG Legionella study - Results

- **607** screening samples taken from premises, **279** follow up samples
- Of screening samples 540 were from hotels or B&Bs, 67 were from non-hotel sites such as leisure centres to be used for athlete training & the Aquatics Centre
- **Screening samples:**
  - 25 out of 607 (**4.1%**) showed **unsatisfactory** results
  - 30 out of 607 (**4.9%**) showed **borderline** results
- Follow-up samples:
  - 36 out of 279 (**12.9%**) showed **unsatisfactory** results
  - 41 out of 279 (**14.7%**) showed **borderline** results

... **we always knew Legionella is difficult to eradicate**
- Overall, for the initial screening, **17 out of 90 premises investigated (18.9%) showed unsatisfactory results in one or more samples taken**
- All of the unsatisfactory and borderline results were from **hotels** with the exception of one training leisure centre site with unsatisfactory results

# FW&E Games Legionella study – Remedial Actions

- **Two prohibition notices issued** on hotels by LA:
  - Failure to demonstrate a satisfactory water management system coupled with multiple unsatisfactory results
  - Closure notices focused venue management's minds and priorities!
- Other hotel sites were followed up by LAs to ensure suitable water management system in place and that ***areas identified for improvement were being actioned***
- **Leisure centre site failures:**
  - Showers taken out of use until remedial works carried out
  - Legionella RA due renewal and lack of evidence that issues raised in current RA had been addressed
  - Boiler replacement identified – overdue for a while
  - Follow up samples satisfactory except one borderline (200cfu/L) ... acceptable ... on-going monitoring

- Prior preparation and planning was essential (with Covid-19 challenges – there may have been a little slippage in preparation )
- On-call arrangements developed - to be ready to respond to incidents
- Consideration of risk areas associated with the Games; the attendees and athletes and previous events
- Securing resources and expertise to sample, investigation and require public health / health & safety interventions
- FW&E Microbiology capacity for testing samples and providing advice
- Working with partners within UKHSA, local authorities etc to **survey, inspect, respond and react**





UK Health  
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# Thanks

Deborah Fenelon and UKHSA FW&E Microbiology  
Laboratories, UKHSA colleagues, Birmingham City Council  
Environmental Health and West Midlands Environmental  
Health Teams