

Franklaw lessons learned

Chapter 4: Supplementary document



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This is a handout provided to attendees at our The Lancashire water quality incident dissemination seminars which presents the lessons learned and challenges other organisations to consider their resilience.

Franklaw lessons learned

In early August 2015, routine water quality tests at Franklaw water treatment works in Lancashire uncovered traces of cryptosporidium – a microscopic bug. As a precaution, we issued a boiled water notice to over 712,000 customers in the affected area.

What caused this to happen?

The root cause was rainwater running off agricultural land grazed by livestock. A small amount was able to enter an underground treated water tank at Barnacre; this is some five miles from Franklaw water treatment works.

Despite regular inspections in line with industry best practice, it's likely the joint was affected by small ground movements in the tank structure. This, coupled with significant rainfall, led to a small amount of rainwater run-off entering the underground storage tank. This rainwater would have carried traces of the bug which is present in livestock.



Some of the things we've been doing...

We've learnt a lot of valuable lessons from what happened, and have put technology and processes in place to guard against a repeat of this type of incident. Here are some of the improvements we've been making:

- Invested in a programme to **install automatic shutdown and start up** at every one of our water treatment works across the North West. This means water that isn't of the quality fit to use is stopped from entering the water network in the first place
- Developed and implemented a more robust approach to **flood testing** of all our underground service water tanks which are now considered industry best practice
- Installed **UV treatment** at Franklaw water treatment works. UV light neutralises the crypto bug. UV treatment has also been installed at other key strategic water treatment sites. We're going to employ mobile rigs which can be deployed to any part of the network
- **Tested water in all 364 underground storage tanks** across the North West. All of them have been found to be free of cryptosporidium. A new, more rigorous structural inspection process for storage tanks has now been introduced
- **Reviewed risk management processes** at water treatment sites and improved automation, telemetry controls and resilience at strategic sites
- Improved our **people's technical training**
- Launched a new **Priority Services scheme** for vulnerable customers. The service gives customers access to a specially trained team of call handlers, and a range of support services, including additional support during a water supply issue. More than 40,000 customers have been signed up to the scheme in the past two years
- Invested in a **larger fleet of 'Water on Wheels' tankers** that pump treated drinking water into the local network in the event of a water outage. We now have 12 tankers on standby at all times, capable of reducing the customer impact of large water supply interruptions. This will grow to 24 by May 2018

Facts and figures...



Boiled water advice to 320,000 properties



UV was installed at strategic locations to inactivate any cryptosporidium



We sent out 30,000 compensation cheques a day



We contacted 400 schools, visited 207 of them, provided 958,800 500ml bottles of water, supplied 724 water cooler refills and delivered over 60,000 UU branded sports bottles to 66 schools



DWI were fully involved throughout, working closely with the incident management team



Over 37,000 tweets, with a daily average of 1,100



Over 3,000 Facebook posts



Over 5 million visits to the UU website



Over 70 broadcast items on TV and radio



Regular contact with the nine local MPs in the impacted areas

Have you got the right processes and procedures in place to prevent an incident like this happening in your business?

In this pack you will find 19 topics from our experience on Franklaw. These reflect the presentations provided across the seminars and are structured in a way to allow you to pose these as questions to your own organisation.

You'll see each lesson is linked to the seminars where you can find out more information on these topics.

Seminar 1 : Water industry overview

An executive overview covering the timeline and root cause of the incident followed by key learnings from and after the incident.

This overview event touches on all aspects of the incident and the work undertaken since, from both a customer and vulnerable customer approach to the incident management, resilience and operational activity.

Seminar 2 : Water industry scientific and engineering

A detailed technical session exploring the solutions and approaches used during the incident and the work delivered since to enhance the water system, together with new operating practices and methodologies for hazard, risk and resilience.

This also includes a special session on our experience and research into cryptosporidium.

Seminar 3 : Water industry incident management and customer experience

A detailed session exploring the approaches taken with customers, stakeholders and organisations during the incident and what key learning points came from this. The event also covers unique insights into how to prepare and plan for a major water incident with multi-agency respondents and the role and experience of media and government relations during and after the event.



Customer and stakeholder learning

Seminar One
and Three

1. Customer communication

- a. How quickly can you scale your social media teams and how would you ensure they communicate key information consistently?
- b. Are you clear on all the channels you would use and how quickly can you activate them?
- c. How scalable are your carding and postage arrangements, how quickly can you activate them and what are your contingency places for Sundays?
- d. Are your letter templates on the shelf and ready to go in a format that your suppliers can activate quickly, including language translations?
- e. What audit processes and records are in place to ensure that you can “prove” delivery?
- f. Do you have trained people that can be on a customer hub? Your customer service staff will be too busy dealing with calls, so have you got a list of trained company volunteers you can deploy? How are you going to coordinate and manage them to ensure there is two way communication back to your incident centre?
- g. Have you got Q&As written by incident type – no water, do not drink, boil etc.... and can they be segmented by customer type?
- h. Have you got your freephone incident numbers with recording and messaging systems ready to go and how quickly can you activate them? It could be the middle of the night on a Sunday.
- i. How scalable are your IT systems and how sufficient are your support agreements? They will need to be 24 hours a day and stress tested to cope.
- j. Do not miss the opportunity to legitimise word of mouth and talk about it as a channel in your company - the more times you say it the more legitimate it becomes.

Customer and stakeholder learning continued

Seminar One
and Three

2. Have you tested how you would access and manage incident related customer data and information?

- a. When you start an incident be clear about data points; so, the difference between customers, properties and services points. Seek clarity all the way through and think about the data sources you use. You need to be clear on the differences between delivery address and billing address too, especially for communications.
- b. Do you have the ability to cut data at multiple boundary levels? You will need it to communicate impact at multiple levels and to multiple stakeholder views.
- c. Have you got sensitive customers mapped on your geographic information systems? It's your obligation to know where they are and how they will be affected.
- d. Do you know where master data will be hosted and do you have a senior owner at director level who has to sanction its distribution or replication? Losing control of your data will mean you lose control of your incident response and trust.
- e. Always own and master your data. DO NOT let others communicate it for you; you need to stay in control and be clear what the sources of data are and how they can be accessed. Don't fall into the trap of letting "helpful" partners communicate your data. It's your licence and your obligation. Ensure they link into your customer data sources and they don't ever replicate or communicate their own and be clear with partners as to the reasons why.

3. How well do you manage customers in vulnerable circumstances?

- a. Have you got a clear definition with a clear service proposition defined that you have stress tested internally and externally? If you haven't, you will waste too much time defining and not enough time implementing quickly.
- b. Are you clear who would lead your vulnerable customer task team (you will need more than one) and do they have the right skills?
- c. Have you got your escalation points in third sector organisations defined and ready to go?
- d. Are you clear on your sensitive customer strategy and how it will be managed? Is the data mapped and are the policy and processes clear?

Customer and stakeholder learning continued

4. What is your policy on bottled water?

- a. How effective is your bottled water delivery and logistics management and how would you cope?
- b. Do you have the infrastructure available, both in terms of transportation and delivery?
- c. Are you clear about the impacts of customer demographics and how you would tailor your approach accordingly?
- d. What is your plan for waste management of used bottles if you have to supply schools?

5. How would you manage compensation?

- a. Have you defined your approach to compensation? Will your customers be paid pro-actively regardless of their credit position?
- b. How would you manage and support business claims?
- c. Are you clear how you would engage with CCWater and YourVoice to test the amount of compensation and approach?
- d. Have you got arrangements in place to help those that don't have bank accounts and those who deal with landlord and tenant payment differences?

Incident management learning

Seminar One
and Three

6. How do you know your organisation is capable of running a major incident?

- a. When did you last test your processes and people in a major incident scenario?
- b. How do you work with your Civil Contingencies Act partners in planning and exercising to ensure efficiency, trust and capability is there for the major incidents?
- c. Do your Local Resilience Forums have multi-agency water emergency plans and how open are you about your vulnerabilities and risks?
- d. How flexible are your incident management procedures to operate as a leading organisation in a major multi-agency incident with you as the focal point?
- e. What formal training do your senior managers and executives have on your own incident processes and on best practice, externally recognised incident management?
- f. In a worst case scenario, do you have trained and qualified senior managers and executives to manage a long running major incident during peak holiday/absence periods?

7. How responsive is your organisation to a major incident scenario?

- a. Can you access address and contact details for customers served by you in a large distribution area (e.g. details for all customers served from one water treatment works with data available in 30 minutes?)
- b. How quickly can you align your operational data and local community data (e.g. can you determine how many schools are in the affected area and do you have contact details for them? Do you know how MP boundaries overlay against your water distribution areas?)
- c. What contingency plans do you have in place for removing/altering large groups of customers from a single water treatment works?
- d. How does your incident management process allow for extendibility assessments to happen?

8. Do you have the right technical capabilities to reduce the risk of, and if necessary respond to, a major incident?

- a. Do you have the right level of technical cover, 24/7, for an escalated complex water quality event?
- b. How many key technical individuals do you have that can deal with complex water quality events and what is the succession plan?
- c. When was the last time you checked the up-to-date understanding and awareness of front line (and support) staff on water quality risk management?
- d. How do you ensure that the technical capability of your front line process and network staff is continuously refreshed?
- e. Do you have an extended competent supply chain capable of responding at pace?

9. How robust are your processes for managing water quality risks?

- a. When was the last time you audited the implementation at site level of operational risk management?
- b. Are water quality risks assessed consistently across the teams?
- c. Do you have up-to-date network models and sufficient internal knowledge on their effective use in a major incident?

10. Do you understand all of the risks to water quality associated with your end-to-end supply system?

- a. Do you have a clear up-to-date knowledge of the assets on all of your sites – understanding their connectivity and the impact of major, minor and operational changes?
- b. Do you understand those sites that are “too critical to fail” and have robust contingency plans in case they do?
- c. Do you understand the real ingress risk of your service reservoirs and other underground water retaining structures?
- d. Can you effectively visualise water quality events to provide effective customer service?

Risk and resilience learning

11. Do you have a common currency for risk?

- a. Do your bottom-up and top-down risk management processes align?
- b. How do you aggregate your risks to understand the bigger picture?
- c. Are you making risk-based decisions, rather than cost or performance-based decisions? How do you know this?

12. How are you assessing your resilience?

- a. Do you know all of your single points of failure?
- b. Have you assessed them against a wide range of hazards?
- c. Do you have contingency plans in place to minimise service impact on customers? When were they last exercised?

The science of crypto

Seminar Two

13. Can your laboratory cope with the number of incident and routine samples?

- a. Do you have outsourcing arrangements with other laboratories?
- b. Do you have sufficient staff trained in the method to operate 24/7 for extended periods?
- c. Can staff be re-allocated from other disciplines?
- d. Are there sufficient stocks of key reagents?
- e. Do you have enough equipment for cryptosporidium particularly filter housings and swage lock fittings?

14. Can you implement continuous filter sampling at multiple points within process and in the network?

- a. Do you have portable continuous filters available that can be installed promptly?
- b. Are suitable representative sampling locations available on all assets, particularly flow and pressure?
- c. Can samples be collected and delivered effectively for analysis?

15. Is the methodology used for detection of cryptosporidium effective?

- a. Do you have arrangements in place for confirming the species of cryptosporidium using PCR promptly?
- b. Are all aware of possible interferences on the cryptosporidium method?

Haz-rev process and transforming water quality

Seminar Two

16. Do you understand all your assets and how they have been built up over the years?

- a. Have changes been made on site that haven't been fully documented or risk assessed?
- b. Do you have any single points of failure on sites?
- c. Has all equipment been decommissioned properly?

17. Are you confident that your inspection, cleaning and monitoring regimes for service reservoirs and treated water storage tanks would identify potential issues?

- a. Are your service reservoir flood testing techniques robust and would they indicate all the required remedial work?
- b. How frequently are your service reservoirs and treated water storage tanks inspected?
- c. Do you inspect all treated or partially treated water storage tanks?
- d. Are the remedial works completed to the required standard?

Installation of UV

Seminar Two

18. Could you install large scale UV treatment in a short time period?

- a. Can you design and install UV reactors and associated equipment to meet the required validation for the reactor type (USEPA, DVGW)?
- b. Do you have a UV kit framework in place or strong relationships with national and international UV suppliers to rapidly access equipment?
- c. How quickly can you procure, install and commission UV reactors across your water treatment works and key potable water assets?
- d. Do you have the ability to remotely monitor and record data from UV reactors for the purpose of regulatory reporting and operation of the reactor?
- e. Do you have access to multi-disciplined staff who can install and commission the equipment?
- f. How flexible are your procurement procedures during an incident?
- g. Can you quickly access all of your asset data to identify key water mains and valves to simplify installation?
- h. Do you have a robust resource plan to sustain and support long term incidents with enough suitably qualified and trained staff?

Media and stakeholders

Seminar Three

19. How effective is your stakeholder and media management?

- a. How well developed are your one-to-one relationships with journalists?
- b. Do you have a process to set up a daily news conference for long running events?
- c. How quickly can you publish digital in-house news videos? Is this a capability you use regularly?
- d. Have you practised identifying and using outside broadcast locations?
- e. Have you exercised the media cell approach in real incidents or in exercises with key stakeholders?
- f. Are you set up to monitor every news outlet and have you gone through the process of issuing media advisories?
- g. Can you overlay your water supply maps on MP constituency boundary maps?
- h. How strong are your relationships with your local MPs?

