



THREE VALLEYS WATER

Contaminated Groundwaters - The Water Company Perspective

Rob Sage

Asset Manager (Water Resources)

Veolia Water Partnership, UK

Mike Pocock

Asset Strategy Manager

Veolia Water Partnership, UK



- Groundwater, Our Hidden Asset
- Current Activity
- Linkages with Land use
- Industry View
- Will the Polluter ever pay?
- Possible Solutions

Out of sight - out of mind



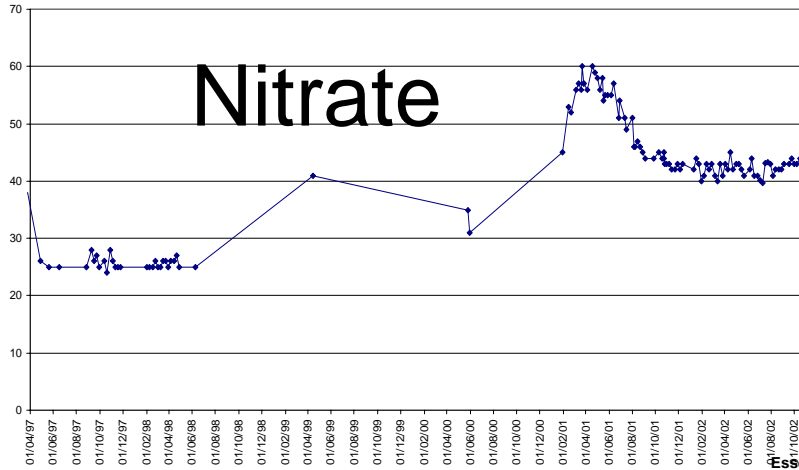
THREE VALLEYS WATER

- 27% of UK public water supply - 5000 MI/d - Locally 100%
- Quality deteriorating - approx 50% impacted by quality issues
- Costs of this are significant
- Legacy of pollution slow to show, long time to clean up
- -Assuming some one does!

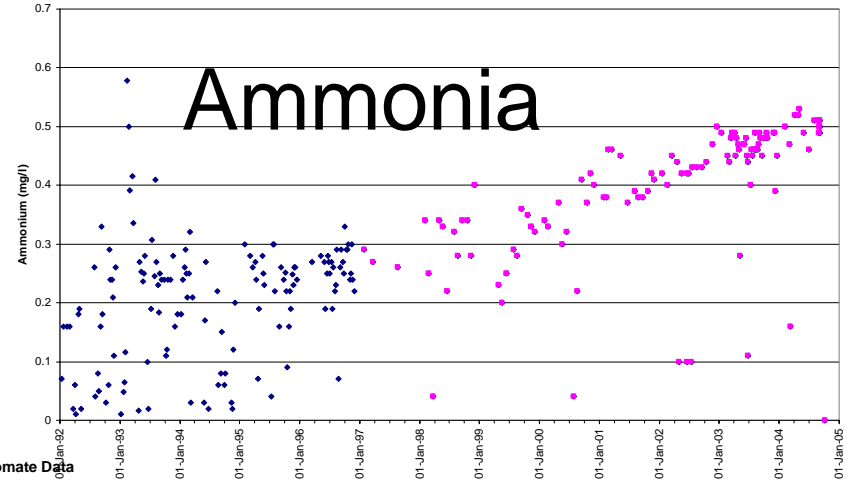
Changing Water Quality



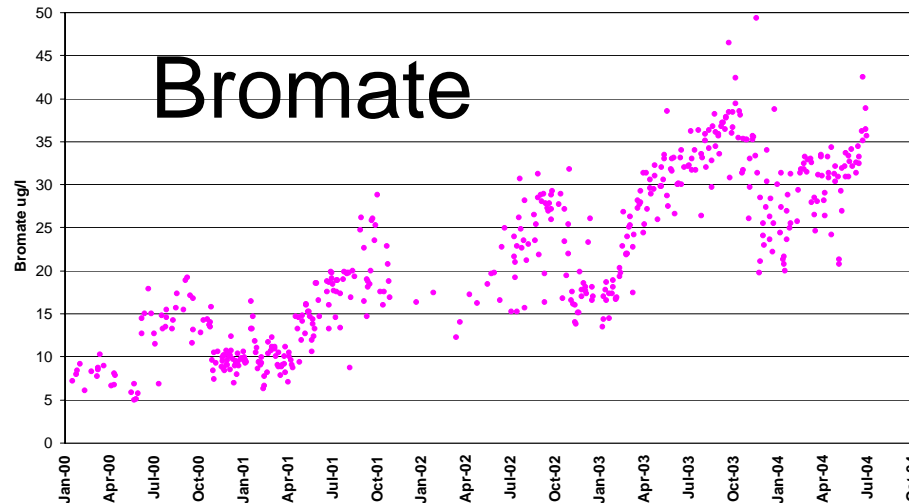
Offley Bottom Nitrate



Runley Wood Chalk Raw Water Ammonium



Essendon Bromate Data



10th Nov 2004





- Problem has been caused by indifferent historic practices and lack of joined up thinking
- Catchment management has not been viewed in a holistic way
- Stopping pollutants entering the system must be the primary target we should aim for



- Small recent local spills have been dealt with
- Larger point source and diffuse pollution has not
- Still have large legacy of historic pollution, thus remediation is required
- but, largely ignored if an orphan site

- Plethora of initiatives
 - Control of Pollution Regs
 - Groundwater Regulations
 - Good Agricultural Practice
 - Contaminated Land Regs
 - Nitrate Vulnerable Zones
- Little evidence of positive impact - yet



- Recent consultation on catchment sensitive farming did not address groundwater
- Traditional solutions for dealing with contamination have been to
 - Treat
 - Blend
 - Close source

- These 'End of pipe', solutions have cost over £745m over past 28 years
- Who has paid? Water customers, not polluter
- We are subsidising the poor practice of other industries
- Very little funding put into prevention



- Not all bad news, there have been some positive developments
- Railtrack Initiative, preventing pesticide use on selected reaches of track has resulted in locally significant reductions in Atrazine
- Demonstrates the benefits of cooperation and partnership

- Agency has successfully prosecuted modern polluters, particularly fuel spills
- We would question if the levels of fines act as a deterrent
- Still much to do

- Our nightmare is continuing deterioration of groundwater quality, with no treatment option, no money to fund alternative solutions and thirsty customers
- We have already run out of good quality water for PWS

- If it were not for the development of integrated networks for security of supply there would already be some communities without water due to contamination of their local sources

- Regulators have differing stances
- Threat of pollution real
- Responding to pollution incidents
- Dealing with actual pollution
- Should water customers continue to pay for pollution caused by others?

- Tighter standards require more treatment, eg Crypto, Arsenic
- Environmental pressures on abstraction are likely to reduce availability of alternative sources and blend waters

Will the Polluter ever pay?



- Recent, small scale spills have been paid for by the polluter
- Cost recovery on historic and legacy spills are not enforced
- Common law recovery of costs difficult
- 'Not knowingly allowing pollution' used as defence

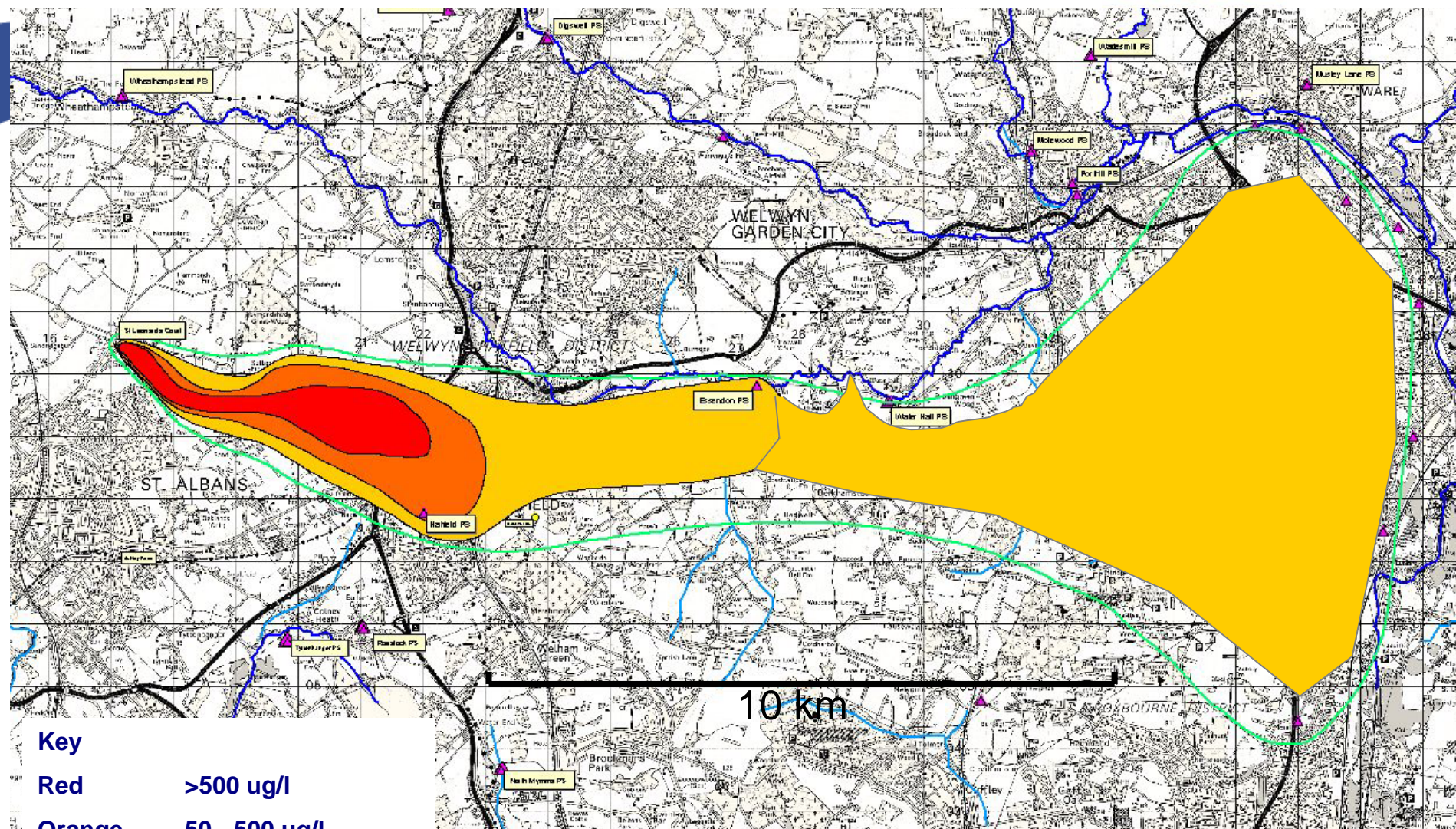
Will the Polluter ever pay?



THREE VALLEYS WATER

- We discovered large scale pollution of Chalk aquifer in 2000
- Impacted on two sources, 18 MI/d
- Identified source as former chemical works, now a housing estate
- Designated under part 2a of Regs 2002

Extent of Bromate plume



Key

Red	>500 ug/l
Orange	50 - 500 ug/l
Yellow	10 - 50 ug/l



Will the Polluter ever pay?



- Remediation Notice yet to be served
- Over £2m to date, no cost recovery
- Solutions to be funded in AMP4
- Consequential damage not provided for in part 2A, thus civil action required

- Action required now, bearing in mind 'memory' in aquifers
- Collective, partnership working a must
- Use of derogation in WFD terms is not a solution
- Remediation must be undertaken where cost effective for long term sustainability



- Scope for conventional resource development limited
- Regional schemes can take as long as some aquifers to clear up naturally
- We must supply water in the meantime
- Strong reliance on leakage savings and demand management, these are unproven and at what cost?

- De-salination has potential, but is not universally possible
- Reuse, is increasingly attractive, but still has acceptability issues
- Relocation of STW outfalls to smaller-in catchment works may well be viable

More Exotic Solutions?



THREE VALLEYS WATER

- Sacrificial Catchments?
- Reduce supply to non-potable and supply bottled water for drinking?
- Whatever the solution, we need to act now and ensure appropriate funding is put in place

Any Questions?

A large landscape photograph showing a sunset over a body of water. The sun is low on the horizon, creating a bright reflection on the water. The sky is filled with soft, golden clouds. In the foreground, there is a grassy field with a wooden fence. The text "Thank you for listening" is overlaid in large, yellow, sans-serif font.

Thank you for
listening

10th Nov 2004

