Beyond Inspection Targeting:
Lessons From Pascoag, RI

Kim Schweisberg, EPA New England
UST/LUST Team

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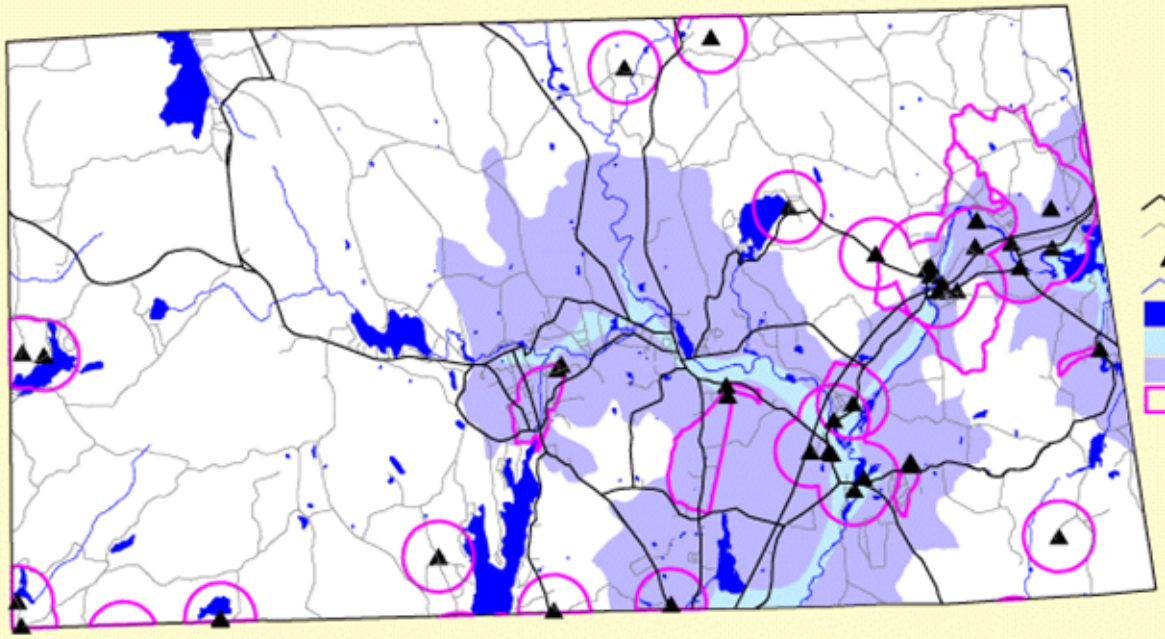
The purpose of this talk

- Targeting UST work in drinking water source areas is not a new concept
- The UST system release in Pascoag, RI happened 1700 feet from a PWS wellhead
- The source was identified in the SWAP as one of the two highest risk PSOCs in the WHPA
- The source was inspected just months before the contamination was found in the water supply; the facility had some noncompliance but there was no reason to suspect that a major release had occurred
- What lessons can we learn regarding the UST/LUST and SWAP programs from this event?

Pascoag, RI is actually one of 7 villages in the town of Burrillville, RI

Groundwater Resources



Primary Roads
Secondary Roads
Wells
Rivers
Ponds
Groundwater Aquifers
Groundwater Recharge
Wellhead Protection Areas

UNIVERSITY OF RHODE ISLAND

Burrillville, RI

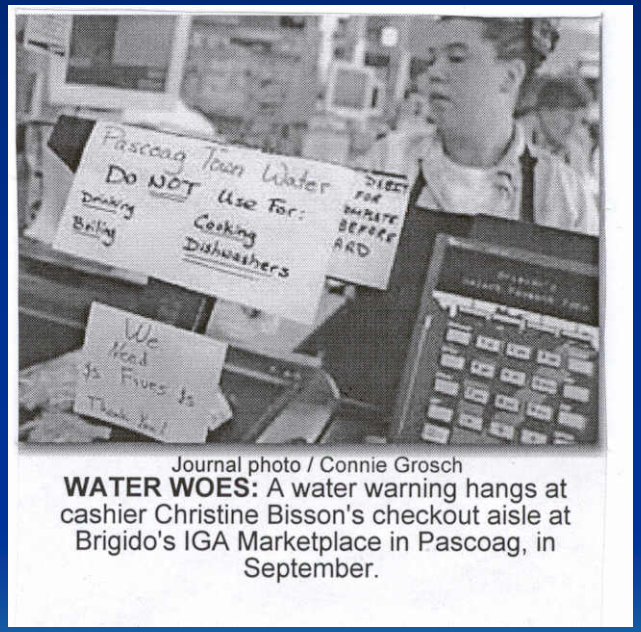
RIGIS

MtBE is found in Pascoag's water supply

- The Pascoag Utility District serves approximately 5000 people, and draws water from both the bedrock and overburden aquifers
- A new well was activated in February, 2001
- In August, 2001, a private citizen concerned about water odor had a test done
- Over 400 ppb MtBE was detected in the water supply, 10 times the RI health standard

The RIDOH response

- Over a 3-month period following the discovery, RIDOH issued several health advisories as the levels of MtBE kept rising
- Advisories included statements to not drink the water, to limit other uses, and to properly ventilate use areas
- The final advisory added the provision to not use the water to bathe children under 6
- Angry citizens poured bottles of contaminated water down the state house steps in protest



Journal photo / Connie Grosch
WATER WOES: A water warning hangs at cashier Christine Bisson's checkout aisle at Brigido's IGA Marketplace in Pascoag, in September.

The RIDEM response to the contamination discovery

- RIDEM immediately began investigating for a contamination source; dozens of properties were evaluated over 2 days before Main Street Mobil was identified as the source
- Floating gasoline over 6 inches thick was found over 500 feet away from the source in shallow bedrock; significant deep overburden contamination was found up to 1200 feet away
- Following an early period of distributing donated water, bottled water deliveries were provided using LUST Trust funds
- In November, 2001, carbon filtration units were installed allowing bathing and some non-drinking water use to resume, but this was not intended as a long term solution

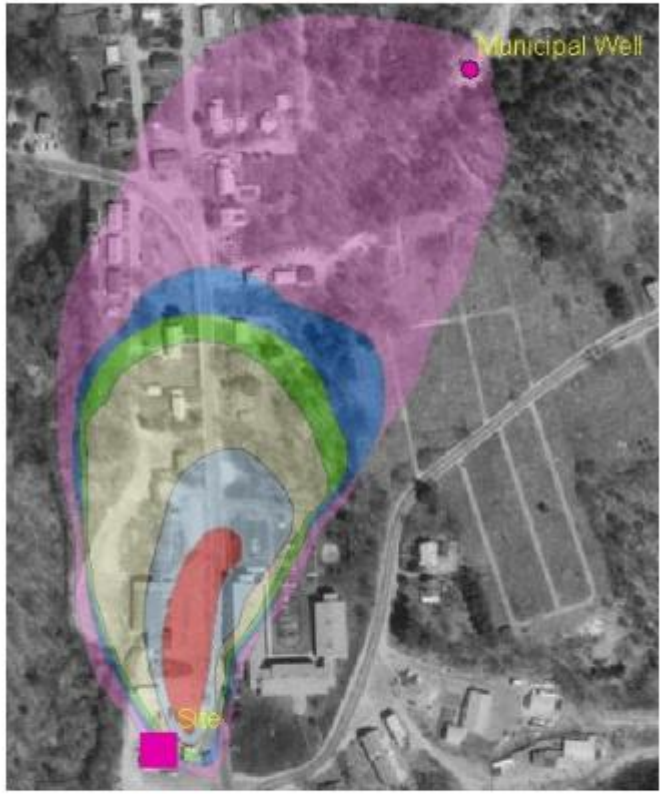
Reduce home exposure & supply potable water

Providing potable tap water

- The well was shut down in January, 2002, by order of a Superior Court judge in response to a citizens suit, and an interconnection with the neighboring village's water supply was established

- MtBE levels had exceeded 1100 ppb at time of well shut down

TOTAL MTBE INITIAL



TOTAL MTBE CURRENT

MTBE (ppb)

- 40-1000
- 1000-5000
- 5000-15000
- 15000-100000
- 100000-1000000
- 1000000+

0 300 600 1,200 Feet

OUST to the rescue

- RIDEM pursued the station operator in Superior Court to expand their minimal site assessment activities
- The operator fought back and then filed for bankruptcy
- EPA has awarded $2 million to date to RIDEM for assessment & remedial activities
- EPA New England provided sampling, sample analysis, and Geoprobe site work

Pascoag SWAP

- Prepared June 7, 2000 by the RIDOH
- The recharge area for the existing well was found to be highly vulnerable and highly susceptible
- Main Street Mobil was one of the two highest ranked PSOCs (out of 60+ inventoried) relative to risk

A look at the UST system

- The tank system was bare steel upgraded with lining and impressed current CP; action was pending against the facility for piping related noncompliance
- When the tank system was removed, no “smoking gun” was discovered
- I observed that the ball float cages were empty and had solid, orange drips of some polymer on them
- Spill bucket integrity was very questionable
- There was a concretion of rusted pea gravel on the tank top and the spill and overfill piping

Providence Journal article

- “R.I. Water supply seen still at risk”, 2/4/02, a lengthy article touching on both tank program and watershed protection issues
- “State officials admit that what happened in Pascoag when MTBE contaminated its drinking water could happen again somewhere else in the state”
- Quotes a RIDEM manager acknowledging that the inspection frequency is too low
- “In Pascoag, however, the problem was not just inspection but enforcement. Local officials were surprised and dismayed to find out the DEM had had its eye for years on the village gas station…”

Brown University Study

- “Pascoag: Lessons Learned”, 10/15/02, is a web-based thesis; the thesis and two summary *. files can be found at: http://envstudies.brown.edu/projects/pascoag/sitemap.htm
- Contains: a timeline of the contamination event unfolding; summaries of agency roles and interviews with citizens and officials; MtBE information; a discussion of communication disconnects and sources (or lack thereof) of financial support; and, it makes recommendations for both prevention and preparedness
- The study concludes that the accountability for gas station owners and operators should match the high risk level these facilities pose to the surrounding communities
- The recommendations include the training and licensing of UST operators and the reconciliation of product balance sheets

Current Situation

- RIDEM has developed and is conducting training for a compliance self-certification “Environmental Results Program”
- The Pascoag Utility District wants to eventually return the well to service and not have to purchase water from the neighboring village
- RIDOH is concerned that this highly vulnerable, highly susceptible recharge area should not be returned to service without measures like land acquisition, more extensive hydrogeological modeling, and remedial measures beyond pump and treat
- RIDEM has made significant remediation progress and extensive pump testing of the closed wells has resulted in MtBE levels an order of magnitude lower than when the well shut down; they are confident that further remediation and wellhead treatment could provide potable water

Looking for UST/SWAP lessons

- After reviewing SWAP guidance and plans, I asked myself “where does the responsibility to know more than locational information about PSOCs lie?

- A recent NEIWPCC publication “Protecting Drinking Water Sources in Your Community: Tools for Municipal Officials” (p.22) contains a discussion that suggests the responsibility is with the municipal officials/water suppliers

Ideas for sites in SWPAs

- UST Compliance: require physical verification of operational overfill devices (e.g., is a ball float valve really installed and functioning?); look closely at spill bucket integrity; extract as much history as possible from the ATGS and write down the serial number for the unit
- UST Enforcement: screen cases for sites of concern (e.g., a history of non-compliance) and review the need for additional action (e.g., a case for operational shut down?)
- LUST site closure: consider the value of taking an autopsy approach to tank system closure

Ideas for sites in SWPAs (con't)

- UST, LUST and SWAP program discussions: who is ultimately responsible for PWSs having more than just locational data on USTs and LUST sites?
- PWSs: 1) take initiative to research all available data regarding the top UST PSOCs in their SWPAs, and 2) review their authority to act at UST sites of concern (e.g., can they install down gradient monitoring wells?)
- Contingency Planning & Communication: know what state and local authorities and financial resources are available to bring to bear upon a situation not otherwise financially covered

In Conclusion:

- _ _ _ _ _ HAPPEN, therefore…
- Roles and responsibilities need to be defined at all organizational levels for protection of PWSs with respect to UST/LUST data dissemination & retrieval (beyond the locational data)
- **Financial** contingency planning for PWSs & communication strategies in place

Who will bail you out?