Preventing Another Elk River
Improving knowledge and awareness among water suppliers, first responders, and facility owners

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NH Water & Watersheds Conference
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Granite State Rural Water Association

- Membership based water utility association
- NH State affiliate of NRWA
- 400+ Members
- Water and Wastewater
- Primarily serving small systems
- Training/Technical Assistance
- Funding from USDA/EPA
Services we Offer

• Training
  -Operator Field Day (Sept 12, 2017)
  -Training Credit Classes Offered Around the State

• On-Site Technical Assistance
  -Leak Detection
  -Line Location
  -Valve Maintenance
  -Management Guidance

• Source Water Protection Planning
• Legislative Representation
• Merrimack River, NH
  - Coordination between emergency responders, water suppliers, and industrial facilities.
The Merrimack River - A Natural Resource

- 116 Miles long
- 4,635 Sq Mi watershed
- Source: Pemigewasset and Winnipesaukee Rivers
- Groundwater resources
- Drinking water supply for 168,000 in NH
- 114,000 served by PWS
- 54,000 served by private wells
The Merrimack River- A Threatened Resource

• 19\textsuperscript{th} and 20\textsuperscript{th} Century Industrialization
• AST/UST’s
• Industrial Sites
• Urbanization
• 2009- USFS: 4\textsuperscript{th} Most threatened river in US
• 2016- American Rivers: 8\textsuperscript{th} Most threatened river in US
Industrial Development- A WQ Concern

- Industrial sites can present a hazard to PWS’
- Hazardous materials or wastes stored in large quantities
- Leaky AST’s or UST’s
- Spills or Releases
- Industrial disasters
- Improper waste disposal
- Small releases over time
Bhopal India Gas Disaster

• 30 Metric tons of methyl isocyanate gas released overnight: 2-3 Dec. 1984 from a Union Carbide plant
• Result of a runaway chemical reaction
• 2,259 Killed immediately
• Estimated 15,000 total deaths
• 558,000 Injured, many with permanent disabilities
• Groundwater remains contaminated around the site
• $470 Million settlement, no criminal penalties
• Catalyst for the passage of EPCRA in 1986
EPCRA- A Response to Industrial Hazards

- Emergency Planning and Community Right to Know Act of 1986
- Administered by states (NHDOS)
- Local Emergency Planning Committees (LEPC’s)
- Emergency notification requirements
- Chemical and facility reporting requirements
- Emergency planning requirements
- Accommodations for trade secrets
- Most states require Tier II reporting
EPCRA Tier II Chemical Reporting Requirements

• 10,000 lbs or greater of any hazardous substance
  - Section 311(e)

• 500 lbs or greater of any extremely hazardous substance
  - Section 302

• SDS (MSDS) sheets for substances in reportable quantities

• Emergency contact information

• Storage types/volumes

• Storage locations
  - GPS points
  - Floor plans
EPCRA – An Imperfect Law

- Self-reported
- Limited resources for compliance monitoring/enforcement
- Complicated/confusing reporting instructions
- Changing chemical inventories complicate reporting
- Changing facility ownership or management
Elk River Disaster – January 2014

- Jan. 9th, 2014: 7,500 gallons MCHM released into the Elk River in Charlestown WV
- Discovered by water users
- Primary drinking water supply for Charleston, WV
- 300,000 without drinking water for 4 days
- 169 Sickened, 14 hospitalized
- Freedom Industries declares bankruptcy
What Went Wrong on the Elk River?

• Water system not informed of the spill for 4 hours
• Freedom Industries never notified water supplier directly
• Spill discovered by WV DEP after water user complaints
• EPCRA Tier II report submitted by Freedom Industries in 2013
  -BUT no emergency plans submitted
• Water system unaware of the presence of MCHM
• Reporting ≠ Preparing
Meanwhile in New Hampshire..........

• Evaluating and addressing the risks of hazardous materials storage became a major goal

• The Merrimack River was identified as particularly vulnerable

• Table-top exercises and workshops identified shortcomings in EPCRA Tier II reporting

• Verifying/improving the current inventory is an important first step

• End goals: Improve EPCRA compliance through education and outreach

• Improve communication between PWS’, facilities, and first responders
Improving Tier II Inventories

- 2015 NH DES Source Water Protection Grant
- Verify inventory of existing EPCRA Tier II facilities
- Goals: Provide water suppliers and first responders with verified data on hazardous materials storage and improve communication between involved parties
Project Area

- Hydrologic Area of Concern - Pennichuck Water Works
- Includes Merrimack Village District Wells
- Manchester, Bedford, Merrimack, Londonderry, Nashua
- Includes Rt. 3, I-93, and NH 101 Corridors
- Manchester-Boston Regional Airport
- Downtown Manchester
Project Tasks

• Develop an inventory of known Tier II reporters
• Attempt to identify potential non-reporting facilities
• Conduct site visits to update:
  - Chemical inventories
  - Facility contact information
  - GPS chemical storage locations
• Provide facilities with updated contact information for near-by PWS’
• Provide final report to NHDES, NHDOS, EPA Region 1, Local Fire Departments
Project Oversight

- Funding provided by NHDES and USDA-FSA
- Project advisory committee provided oversight, guidance, and comment on the final report
- State/federal agencies, local fire/emergency departments, drinking water providers, industry representatives (large facility managers), regional planners
- Two GSRWA staff members performed field work and created final report
Getting Started

- June 25, 2015: Project kick-off meeting
- Stakeholders invited to participate
- Initial Tier II inventory obtained from NHDOS and presented at meeting
- Support and buy-in from stakeholders sought
- Project advisory committee formed
- July-August, 2015: Letters of introduction sent out by local FD’s
- Efforts made to identify potential non-reporting facilities
  - Windshield Surveys
  - Permits/NHDES records reviewed
Communicating with Facilities

- Appointments made to visit facilities after letters of introduction were sent out
- Facility owners were asked for permission to visit to verify Tier II data
- Voluntary nature of project was stressed
- Some facilities declined
- Two attempts to contact per facility
On-Site Data Collection

- Emergency and Tier II information contacts updated
- Chemical inventories and MSDS sheets reviewed
- Storage sites visited and GPS points taken
- Facilities provided with:
  - Map showing their location relative to PWS
  - Contact information for FD’s and PWS
- Data recorded on Tier II reporting form
- All data collected kept confidential
Final deliverables

• Updated contact information
  - Emergency/ 24hr
  - Tier II information
• Specific GPS points for AST’s/Storage locations
• Updated container volumes/average quantities on site
• Clarification on lead-acid batteries
• Education and outreach to facility owners
Participation from facilities

• 109 Facilities identified
  - 100 known Tier II reporters
  - 9 potential reporters

• 63 Allowed site visits

• 4 Reviewed information by phone

• 29 Provided no response
  - Lack of accurate contact information

• 6 Unable to be contacted
  - Contact information

• 7 Declined a site visit
  - National security concerns
  - Trade secrets
Contact Information

- Often inaccurate
- Call-centers as emergency contacts
  - Sometimes overseas
- Many emergency contacts listed
  - Not all actually being EC’s
- Round Robin
  - Directories or answering services
- Emergency or information contact personnel change - not always updated
Chemical Inventories

• Overall, facilities were accurately reporting
  - Changing inventories/processes
• Lead-Acid Batteries
• Storage locations often lacking detail
• GPS points often inaccurate
  - Only one point required for Tier II
  - Individual AST’s/storage locations not mapped
  - Average discrepancy: 1,600ft
  - Max discrepancy: 12 miles
Reception from Facilities

- Overall positive
- An opportunity to review their Tier II data for accuracy
- Being a good neighbor
- Opportunity to provide feedback on the reporting process
- Facility owners and managers want to be responsible community members
  - Not responsible for a spill
- Knowledge and understanding of near-by drinking water supplies was useful
Reception from Emergency Responders

• An opportunity to refresh knowledge of EPCRA/Local facilities
• Improved chemical inventories and locations vital for life safety
• Updated contact information important for response
• Education and outreach reinforces the importance of reporting and planning
Reception from Water Suppliers

• An opportunity to become more familiar with chemical storage in their SPA’s
• Increased awareness of water quality concerns among facilities
• Education and outreach encouraged communication between facilities, emergency responders and water suppliers
Major Takeaways

• Facilities should be vigilant in updating emergency contact information
  - Tier II reporting instructions should be specific as to who should be the emergency contact

• Facilities should submit GPS points for specific AST’s or storage locations, especially for large facilities
  - Tier II reporting software should allow for this and encourage detailed descriptions of storage locations

• Communication and cooperation between emergency responders, water suppliers and facility managers should continue
  - Increased understanding of one another’s roles and responsibilities in the event of a release or spill
Major Takeaways

• Advisory committee provided a forum for emergency responders, water suppliers, and facility owners to communicate and share concerns

• Brought to light the concerns of drinking water suppliers

• Identified difficulties facilities were having with Tier II reporting

• Provided first responders with updated inventory and contact information

• Recent developments highlight relevancy of Tier II reporting, notification, and communication
Next Steps

- Table top exercises including emergency responders, water suppliers, and facility owners
- Geographic Response Planning to coordinate the response to a spill
- Continued cooperation between facilities, responders, and water suppliers
- Continued education and outreach
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- Eversource Energy
- Nashua Regional Planning Commission
- New England Interstate Water Pollution Control Commission