Review of Sampling Data and Reports
DuPont Pompton Lakes Works
Pompton Lakes, New Jersey

A presentation by
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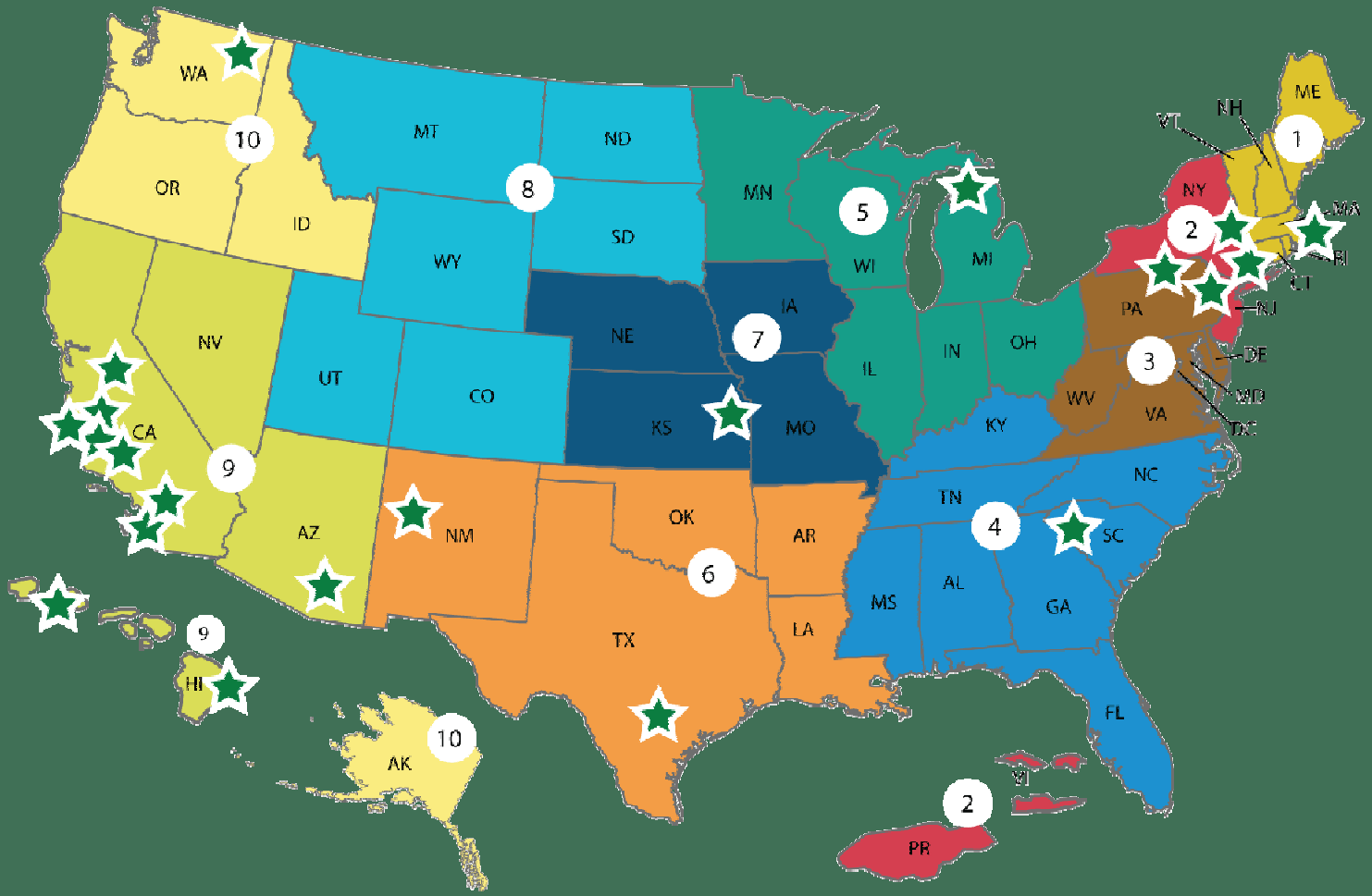
Agenda

- Introduction to TASC
- Site background
- How chemicals move in the environment and risk management
- TASC’s review of ground water sampling

Introduction to TASC

- **T**echnical **A**ssistance **S**ervices for **C**ommunities
- EPA-sponsored program
- Independent services provided by Skeo Solutions
  - Information assistance
  - Community education
  - Technical expertise
  - Technical assistance needs evaluation & plan development
  - Superfund Job Training Initiative (SuperJTI)
  - Guidance through Superfund process

Introduction to TASC



Site Background

- Located in the boroughs of Pompton Lakes and Wanaque in central Passaic County in northern New Jersey
- About 570 acres
- Operated from 1902 to 1994
- Generated a variety of explosives and explosive products. Process wastes were discharged to unlined ponds and lagoons.

What Happens When Chemicals Spill?

Chemicals can:

- volatilize into the air
- stick to the soil
- run off into streams or lakes
- percolate down through the soil
  - float on the water table
  - sink under the aquifer
  - dissolve in the ground water
- degrade naturally

What Happens When Chemicals Spill?

- VOCs (volatile organic compounds)
  - Volatilize into the air
  - Percolate through the soil and dissolve slowly into ground water, creating a ground water plume
  - Pool in crevices in the subsurface and become a source for ground water contamination
- PAHs (polycyclic aromatic compounds) and PCBs (polychlorinated biphenyls)
  - Less likely than VOCs to dissolve in water or to percolate into the ground water
  - Tend to stick to soil particles

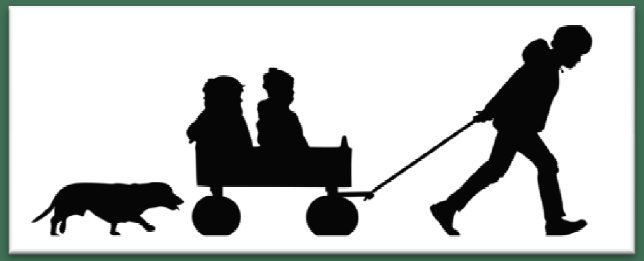
What Happens When Chemicals Spill?

- Metals
  - Depends on soil conditions
  - Generally, more acidic conditions mobilize metals
- Explosive compounds
  - Depends on the specific chemical and soil conditions
  - Can contaminate soil and ground water

Risk happens when ...

1. Contaminants exist
2. Concentrations are high enough

3. There is a pathway for exposure (a way for people to come into contact with contamination)



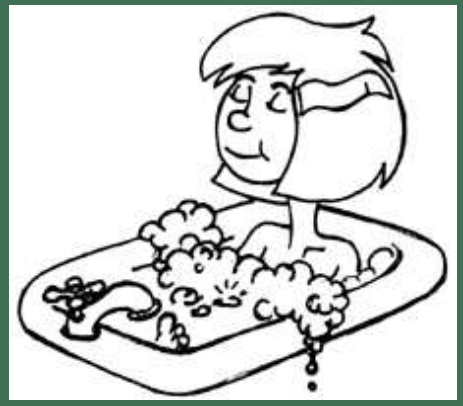
4. There are receptors (people, animals, a sensitive ecosystem)

Exposure Pathways

Inhalation

Ingestion

Skin Contact



Risk Management

Every contaminated site is different. Decisions need to be made based on the specific conditions of the site and specific risk factors.

Risk Management

Goal – to reduce contaminant concentrations at the point of exposure to acceptable levels by:

- Removing the source
- Treating and containing contamination
- Eliminating exposure pathways

TASC's Review of Ground Water Sampling

- Goal:
  - to determine whether the 10 ground water contaminants being tested for by DuPont are an appropriately comprehensive list of ground water contaminants migrating off site

TASC Document Review

- 1982 Superfund scoring package
- November 1995 *Comprehensive Groundwater Monitoring Plan*
- 2000 ground water report
- 2004 ground water report
- 2009 ground water sampling data
- January 2010 *Remedial Technology Evaluation for Offsite Groundwater Contamination*
- June 2010 *Remedial Investigation Report*
- December 2010 *Vapor Intrusion Remedial Investigation Report*

DuPont's Ground Water Sampling

312 analytes

34 above Class II-A standards

11 contaminants of concern

10 contaminants of concern

Groundwater COCs

- Volatile organic compounds (VOCs)
  - tetrachloroethene (PCE)
  - trichloroethene (TCE)
  - *cis*-1,2-dichloroethene (*cis*-1,2-DCE)
  - *trans*-1,2-DCE
  - 1,1-DCE
  - 1,1,1-trichloroethane
  - 1,1-dichloroethane (1,1-DCA)
  - 1,2-DCA
  - vinyl chloride
  - carbon tetrachloride

PCE and daughters

- Lead (eliminated from sampling in 2000)

Soil Contaminants

- Metals
  - lead, mercury and copper are primary contaminants of concern (COCs)
- VOCs
- Polycyclic aromatic hydrocarbons (PAHs)
- Polychlorinated biphenyls (PCBs)
- Explosives (only 3 samples exceeded New Jersey residential direct contact soil cleanup criteria)

Findings

- No significant deficiencies in the processes used to identify COCs
- Ground water analyses for many different chemicals were completed
- Adequate sampling and analyses of soil in different locations of the PLW
- In general, care has been taken to analyze for appropriate chemicals based on known activities in different locations of the PLW

Recommendations 1

- Compare all sampling data against **current** New Jersey ground water quality standards
  - Some chemicals did not have a ground water quality criterion in 1995, but now do
  - Some chemicals now have more stringent ground water quality criteria
- Recalculate health-based screening levels

Recommendations 2

- Consider testing ground water for:
  - perchlorate
  - organic explosives: PETN, RDX, TNT, tetryl and HMX
  - benzene

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