

US EPA ARCHIVE DOCUMENT

# EPA REGION 6 CORRECTIVE ACTION STRATEGY

## Groundwater Issues

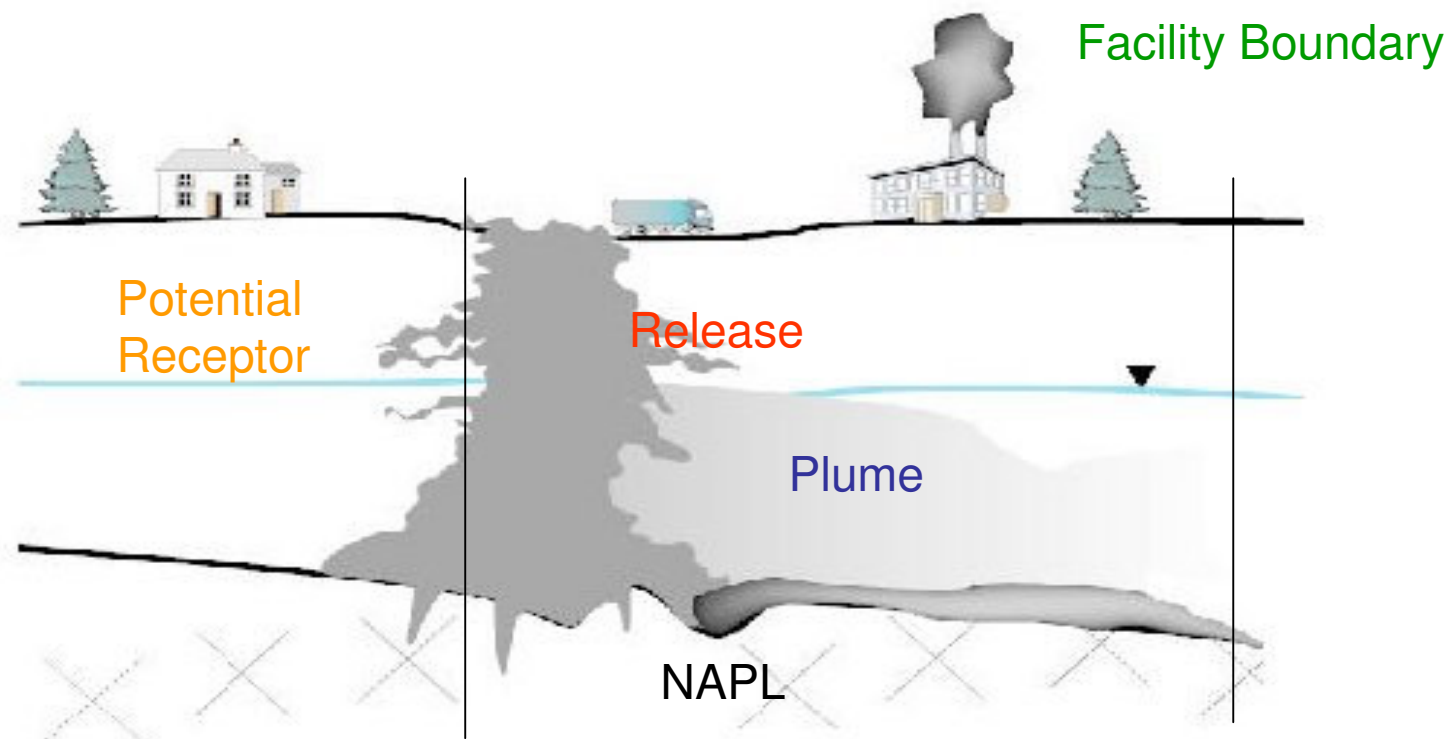
### Refinery Corrective Action Stakeholder Conference

*USEPA Region 6*

Lisa Marie Price

*July 30- August 1, 2002*

# CAS Groundwater





# Policy Considerations

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- Land use
- Groundwater – classification, restoration, movement and exposure protection
- Setting POC / POE
- Level of Protection
- Risk Management- Options for Remedies
- Public Participation



# CAS Policy Box

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**Source Control**

**Point of Compliance**

**Cleanup Timeframe**

**Groundwater  
Use Designations**

**Land Use**

**Data Requirements**

**Institutional Controls**

**Groundwater  
Cleanup Goals**

**Risk**

**Performance Monitoring**

**Point of Exposure**

**ECO**

**Technical  
Impracticability**

**Monitored Natural Attenuation**



# CAS Land Use

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- **Based on actual use and realistic future use**
- **On-site: commercial / industrial or residential;** State / facility has option of segregating onsite land use
  - Institutional Control: required for any cleanup to other than residential or unrestricted use
- **Off-site: land use based on existing use**
  - Institutional Control: required for any cleanup to other than residential or unrestricted use



# Some Old Favorite Groundwater Paradigms

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- Pump and treat is the best solution for groundwater contamination
- All groundwater shall be cleaned to MCLs or other residential drinking water standards
- Something must be done- must have an engineered solution and quick
- No degradation - must leave no contaminants in the water

# Experience May Have Changed Some Perspectives

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- Always Pump and Treat? Or maybe.....
- Source removal and Monitored Natural Attenuation
- Containment strategies and institutional controls
- Technical Impracticability Waivers
- Long-term monitoring
- Acknowledgment of non-usable groundwater





# Handbook of Groundwater Policies - our National Perspective

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- More recent interpretation of policy - not a regulation
- Introduces more flexible guidance for cleanups
- Furthers RCRA Cleanup Reforms for faster, more focused, creative fixes



# Some Concepts Emphasized

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- Differing roles of HQ, Regions, Authorized States
- Concept of a “timely” cleanup
- Point of Compliance flexibility
- Groundwater use designations
- Alternatives to MCLs

# Groundwater Use Designations

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- Based on no adverse effects to human health and ecological receptors
- “Reasonably expected uses” of groundwater
- States make the call; should be consistent, with future uses in mind
- States with “no-degradation” encouraged to prioritize resources and protect more sensitive first

# CAS Performance Standards



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- **1) Source Control**
- **2) Statutory and Regulatory Requirements**
- **3) Site-Specific Final Risk Goal(s)**



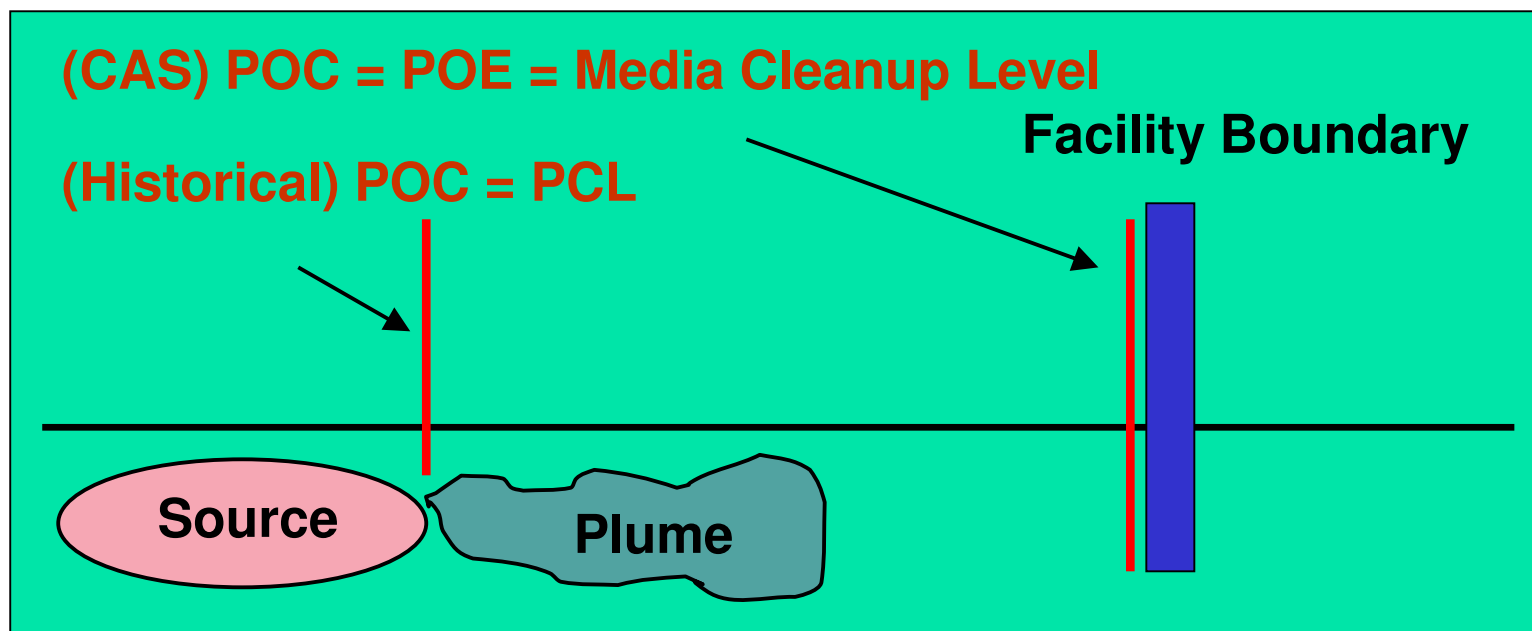
# CAS Groundwater Plume Management

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- **On-site:** not allowed if beneficial resource
- **On-site Movement:** allowed utilizing a plume management zone concept; must be protective at the point of exposure
- **Off-site Movement:** not allowed if beneficial resource

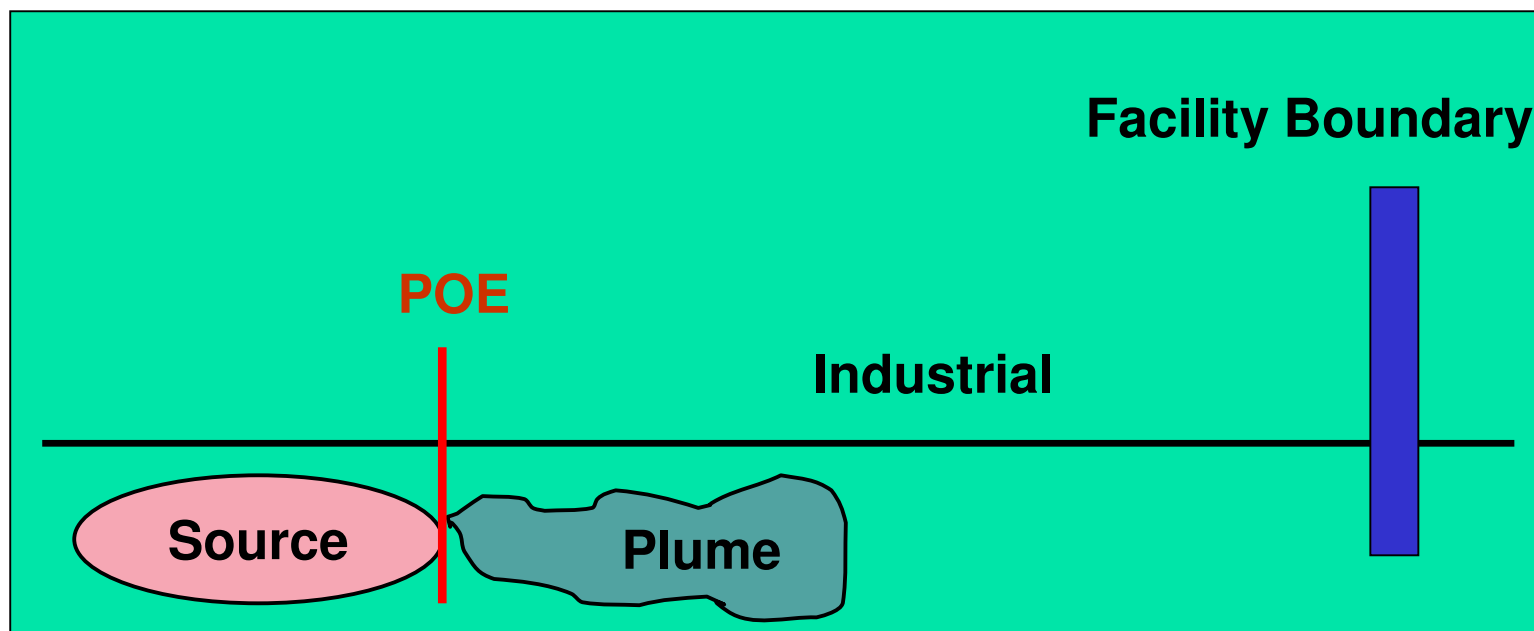
# Point of Compliance

Definition: Point of Compliance (POC) = Protective Concentration Level (PCL)



# POE At Source Boundary...

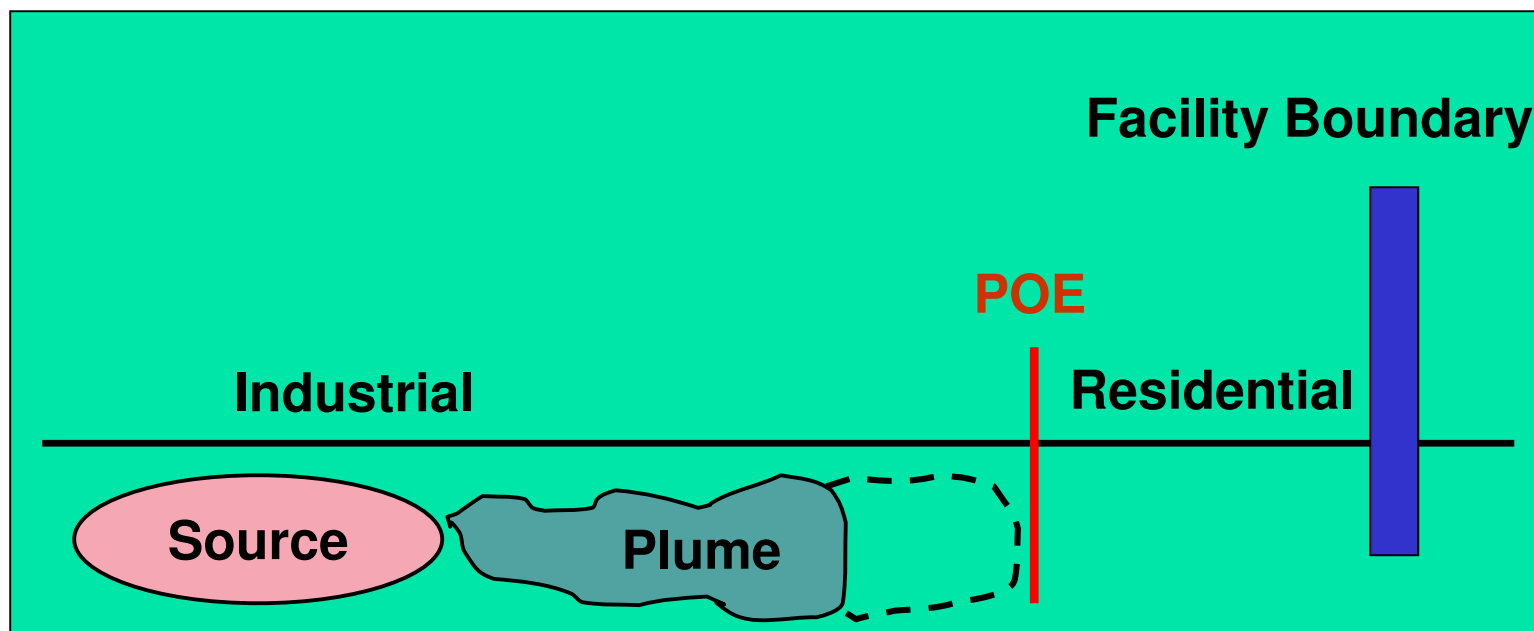
if groundwater is considered a beneficial resource



- plume management zone is not appropriate

# POE Inside Facility Boundary...

if on-site undeveloped property is classified as residential or groundwater is a beneficial resource

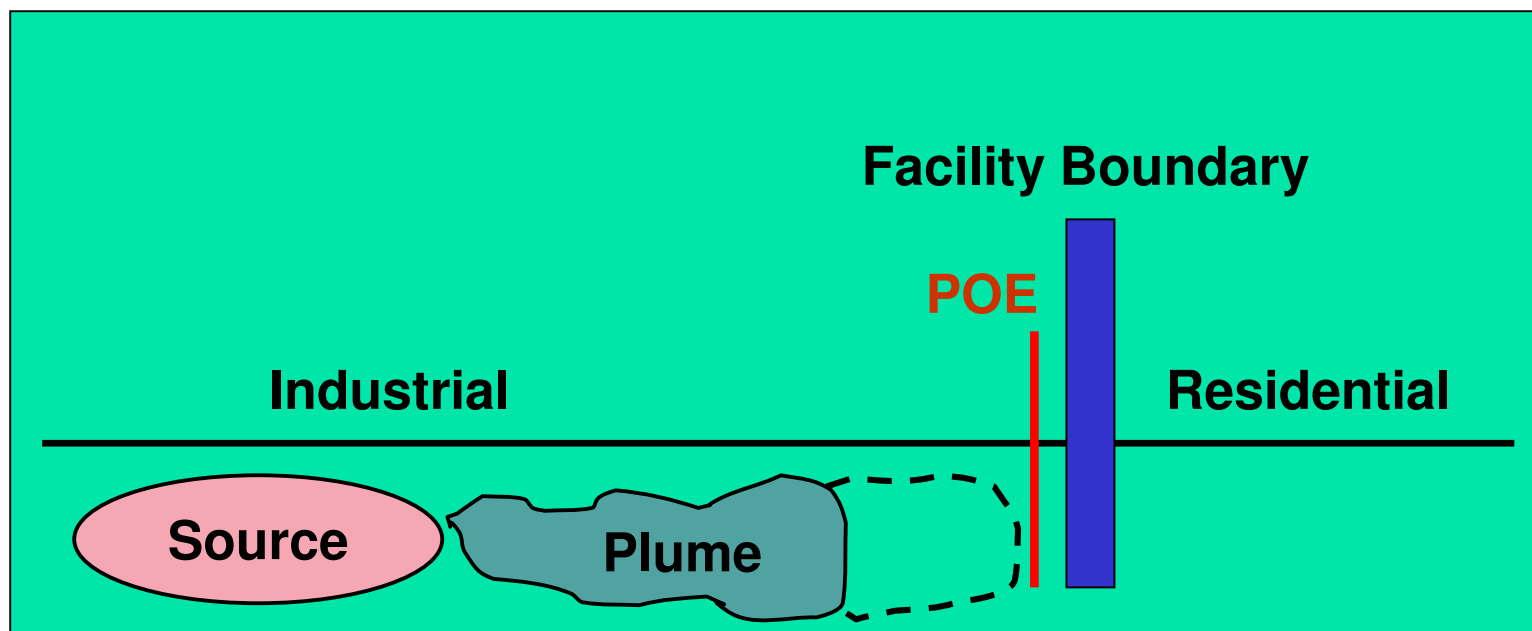


- facility decides to limit extent of plume management zone and on-site institutional control (IC)



# POE At Facility Boundary...

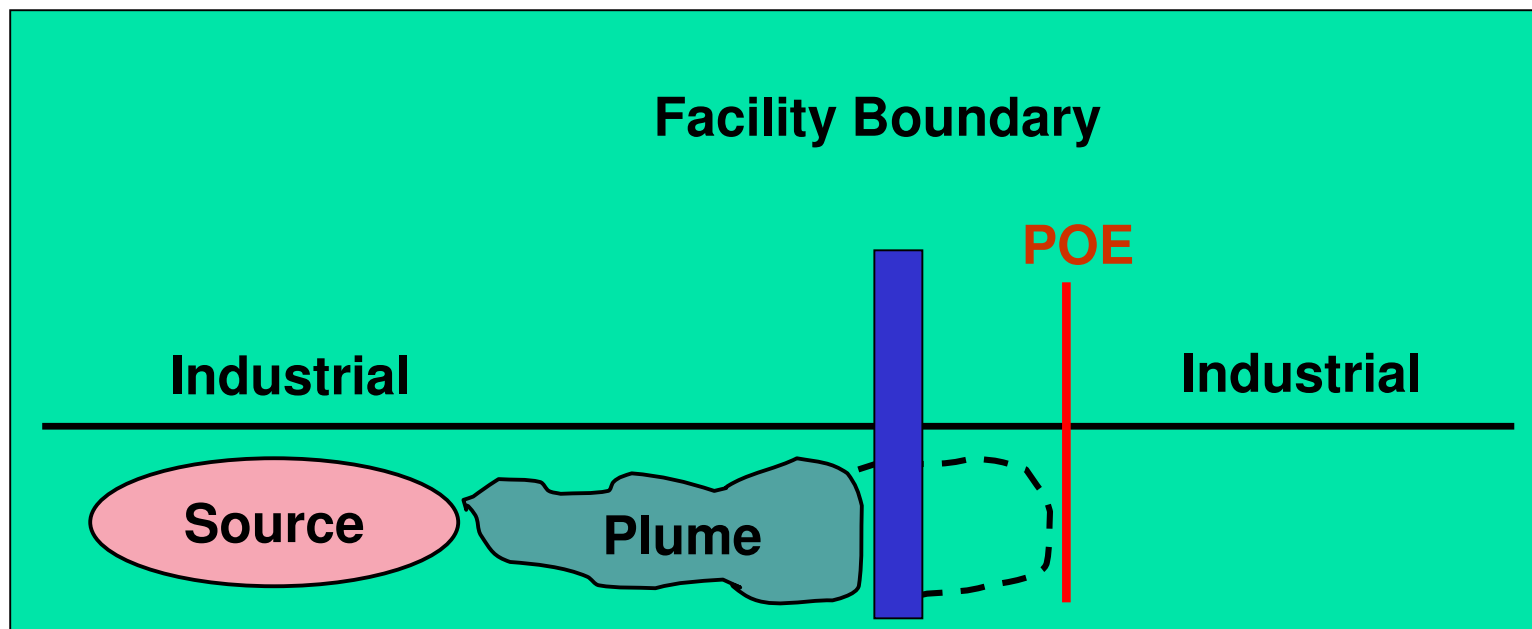
if on-site property is classified as industrial and off-site is classified as residential or groundwater is a beneficial resource



- off-site residential or groundwater is a beneficial resource
- plume cannot exceed residential health based levels at the POE

# POE Beyond Facility Boundary...

if both on-site and off-site property are classified as industrial



Off-site movement may occur if:

- groundwater is not a beneficial resource, with off-site property owners permission, AND IC in place for the affected property(s)



# Level of Protection

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- Contaminant concentrations based on facility specific objectives and circumstances
- Consider state groundwater use, land use, exposures, and cross media transfer
- Use statutory or regulatory levels where appropriate
- Cleanups should fall within the EPA risk range at the point of exposure (higher or lower could be appropriate)
- Protect ecological receptors



# Risk Management Options for Remedies

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- **Active Remediation** (source control, pump & treat, SVE) to meet health-based goals for final remedy, including ecological issues
- **Engineering Control** (barrier that limits exposure and/or controls migration)
- **Institutional Control** (legal mechanism to prevent exposure)

# Risk Management Activity Evaluation and Selection

