



# South River Remedial Options Program

South River Science Team

January 21, 2009



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# South River Remedial Options Program (ROP)

**Purpose: Review, evaluate and test promising remediation strategies for the South River**

## **Site Characterization is ongoing**

- Continuing characterization of sources and loadings
- Developing an understanding of system methylation potential and other processes

## **Remedial Options and Technologies**

- Allows optimization of current investigations
- Identifies additional studies or investigations to refine the range of feasible alternatives.

## ROP Team

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# ROP Team Status

## Conference Call December

- Remedy Evaluation Paradigm
- Spreadsheet of Technologies and Revisit
- Discussion of ROP Innovative Task Team

March 4 Next ROP Meeting (conference call)

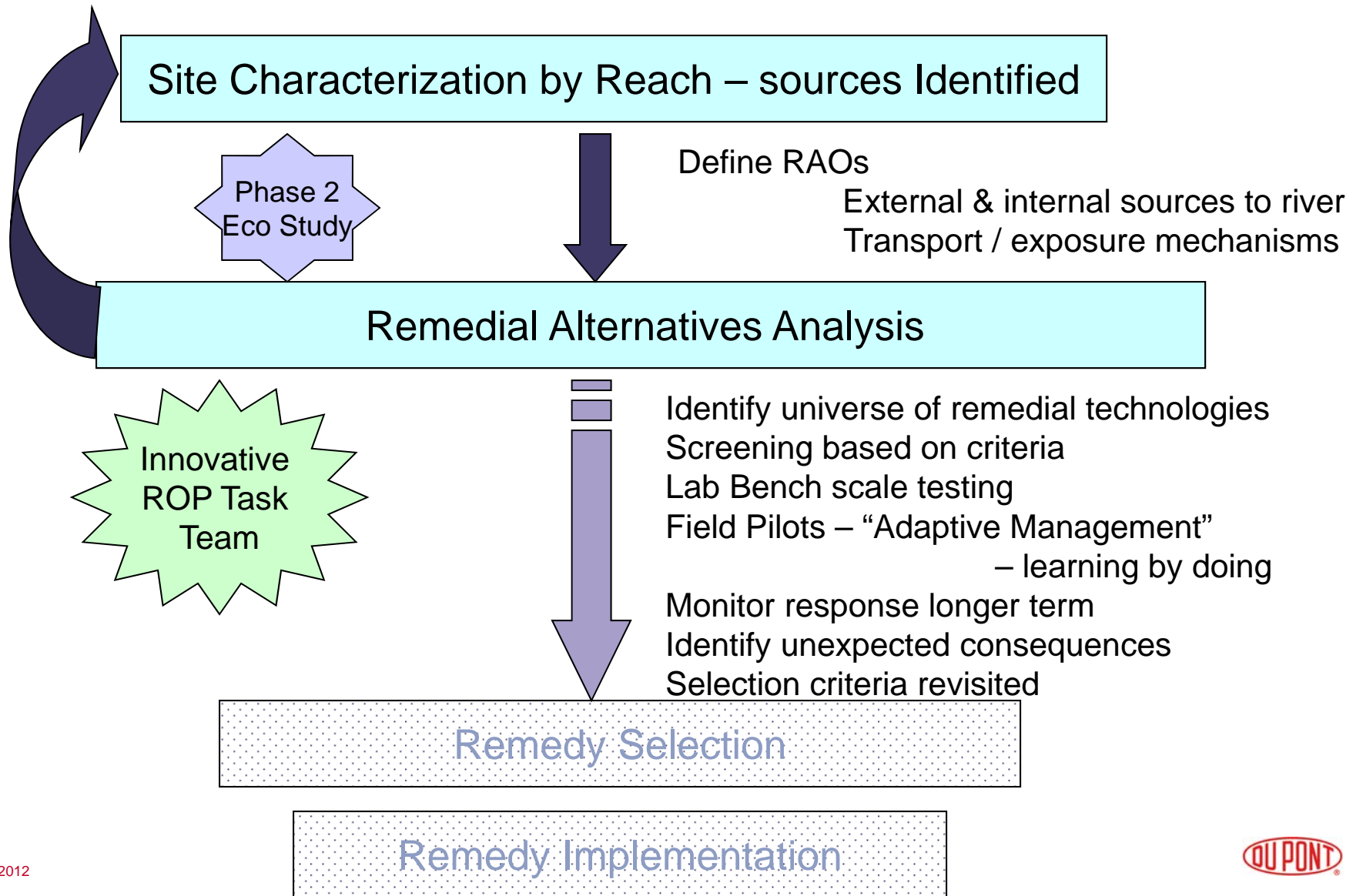
# South River Remedial Action Objectives

**Reduce fish tissue Hg levels to concentrations that would allow consumption by humans**

**Ensure protection of aquatic and terrestrial ecology with respect to Hg exposure**

# Remedial Options Program

## Proposed Remedial Action Selection Process for SR



# Criteria for Evaluation of Actions\*

## The remedial action:

- Achieves the remediation objectives
- Complies with laws and regulation
- Is effective in the long-term in protecting human health and the environment
- Reduces toxicity (bioavailability), mobility or volume
- Is technically feasible and can be implemented
- Protects workers, the community and environment during and after implementation
- Has associated costs that are commensurate with risk reduction
- Is accepted by the Public and by Regulators

***DOES NO HARM!***

\*Based on USEPA National Oil and Hazardous Substances Pollution Contingency Plan (NCP) Remedy Selection Threshold Criteria

# Remediation Challenge

## Innovative ROP Task Team ~1 year program

### Innovative Technology (ies)?

- Are there innovative chemical or other treatment technologies that can be used to reduce the bioavailability of mercury in the river system, without harming the biota?
- Are there ways to feasibly deploy this technology in a relatively high energy sinuous bedrock and gravel bed river?

What critical data or testing is recommended?

### Next Steps

1. Consultant selection and contracting
2. Grounding – SR Conceptual System Model
3. Data Evaluation by Innovative ROP team
4. Brainstorm Innovative Technologies
5. Recommendations for lab testing or collection of additional site data
6. Refinement of Innovative Technologies recommended for testing



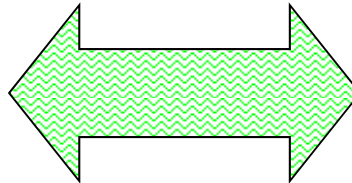
## Remedial Options – Linking with the TMDL

### Baseline Condition

- Monitored Natural Recovery

### Engineering and Treatment

- Physical
  - Hydraulic Modification
  - Physical Isolation from receptors
  - Removal
- Treatment of water or solids
- Biological



### Source / Options Categories

#### A. Monitored Natural Recovery

#### B. Manage Sources External to River

- Banks
- Floodplain
- Plant Site
- Groundwater
- Atmospheric Deposition

#### C. Manage Sources Internal to River

#### D. Innovative Approaches

- Control Methylation / Demethylation Processes
- Reduce Bioavailability of Mercury
- Interrupt Trophic Transfer

### Administrative Controls

- Fish exchange program
- BMPs for cattle / erosion control
- Floodplain conservation easement
- Providing alternate food supply for fish