



# U.S.EPA AGENDA

(7PM to 9PM)

Introduction of attendees

Explanation of the comment process

Discussion of the proposed plan and four alternatives

Questions

Discussion of the on going removal action

Questions





# United States Environmental Protection Agency Region III





# UGI Columbia Gas Plant Superfund Site Columbia Borough, PA

U.S. EPA  
Proposed Plan  
Public Participation Meeting  
July 19, 2007





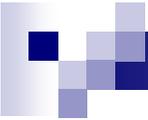
# EPAContacts



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**EPA Remedial Project Manager**  
**(215) 814-3216**





The public has 30 days to submit comments on EPA's Proposed Plan. Comments will be accepted from:

**June 27 to July 26, 2007**



**Please mail comments to:**

**U.S. ENVIRONMENTAL PROTECTION AGENCY**

**Region III**

**1650 Arch Street**

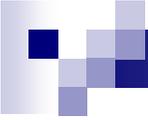
**Philadelphia, PA**

**ATTN: David Turner 3HS22**

**You may also send them via e-mail, to:**

**[turner.david@epa.gov](mailto:turner.david@epa.gov)**





# Evaluation of Alternatives “The Nine Criteria”

## Threshold

- 1- Overall Protection of Human Health and the Environment
- 2- Compliance with ARARs  
(**A**pplicable or **R**elevant and **A**ppropriate **R**equirements)  
(Or Provide a Basis of Waiver)

## Balancing

- 3- Long-term Effectiveness and Permanence
- 4- Reduction of Toxicity, Mobility or Volume
- 5- Short-Term Effectiveness
- 6- Implementability
- 7- Cost

## Modifying

- 8- State Acceptance (PADEP)
- 9- Community Acceptance

(40 CFR § 300.430 (e)(9)(iii))





# EPA's Preferred Groundwater Alternative

## GW-2: Monitored Natural Gradient Flushing and Institutional Controls

- **Technical Impracticability (TI) Waiver for Groundwater Cleanup ARARs**
  - Coal Tar DNAPL and its 27 contaminants ,TI Waiver applied in “DNAPL ZONE”
- **Natural Gradient Flushing**
- **Groundwater Monitoring** (12 wells) (includes 4 new wells)
- **Institutional Controls (ICs)** : Restriction on future well placement / use
- **Cost: \$796,000**
- **Time to Implement: Weeks-Months**
- **EPA will Conduct 5 Year Reviews**



# Restoration of Groundwater and Technical Impracticability



## Primary Objective of Superfund

- “EPA expects to return usable groundwaters to their beneficial uses wherever practicable, within a timeframe that is reasonable give the particular circumstance of the Site”
  
- Generally, restoration cleanup levels in Superfund established by Applicable or Relevant and Appropriate Requirements (ARARs)
  - Federal or State standards for drinking water quality (i.e. MCLs)
  - Where no standard exists for a specific contaminant, EPA establishes a level protective of human health and the environment
  
- Technical Impracticability (TI) Waiver for Groundwater Cleanup ARARs
  - ARARs can not be met at the Site due to the nature of the contaminant and the physical conditions (Fractured bedrock) of the Site
  - Technology Does Not Exist to Effectively Extract the Coal Tar DNAPL from Fractured Bedrock and Source Remains trapped in bedrock



# ArialView UGIColumbia Site



**DNAPL ZONE FIGURE**

**EPA Preferred Alternative:**

**GW-2 Groundwater**

TI Waiver: Coal tar in Fractured Bedrock

Coal Tar Contains PAHs & Inorganics

PAHs are carcinogenic

TI Waives ARARs of 27 Contaminants

DNAPL Zone 7 Acres, 160 Ft Deep

Groundwater Monitoring

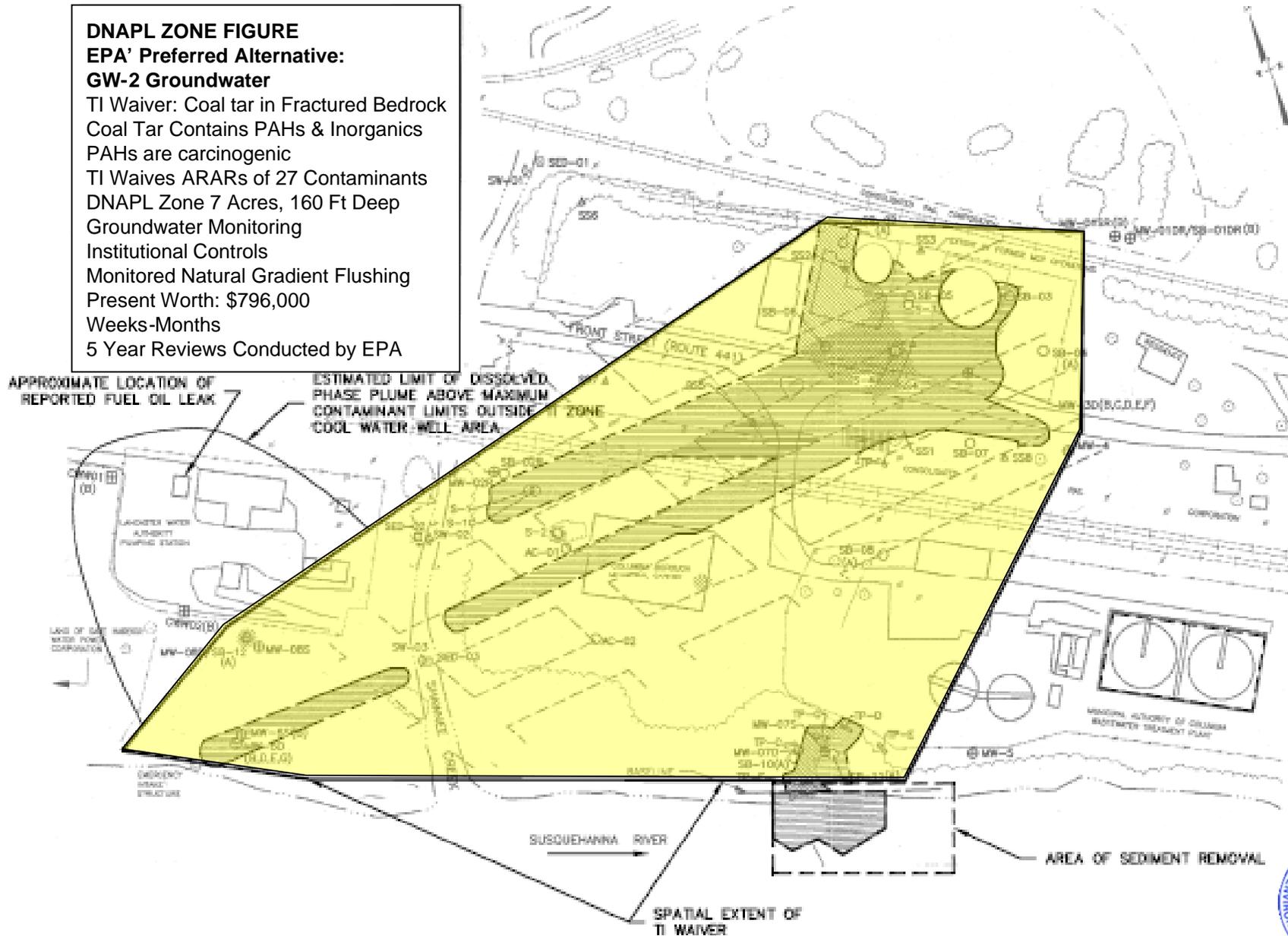
Institutional Controls

Monitored Natural Gradient Flushing

Present Worth: \$796,000

Weeks-Months

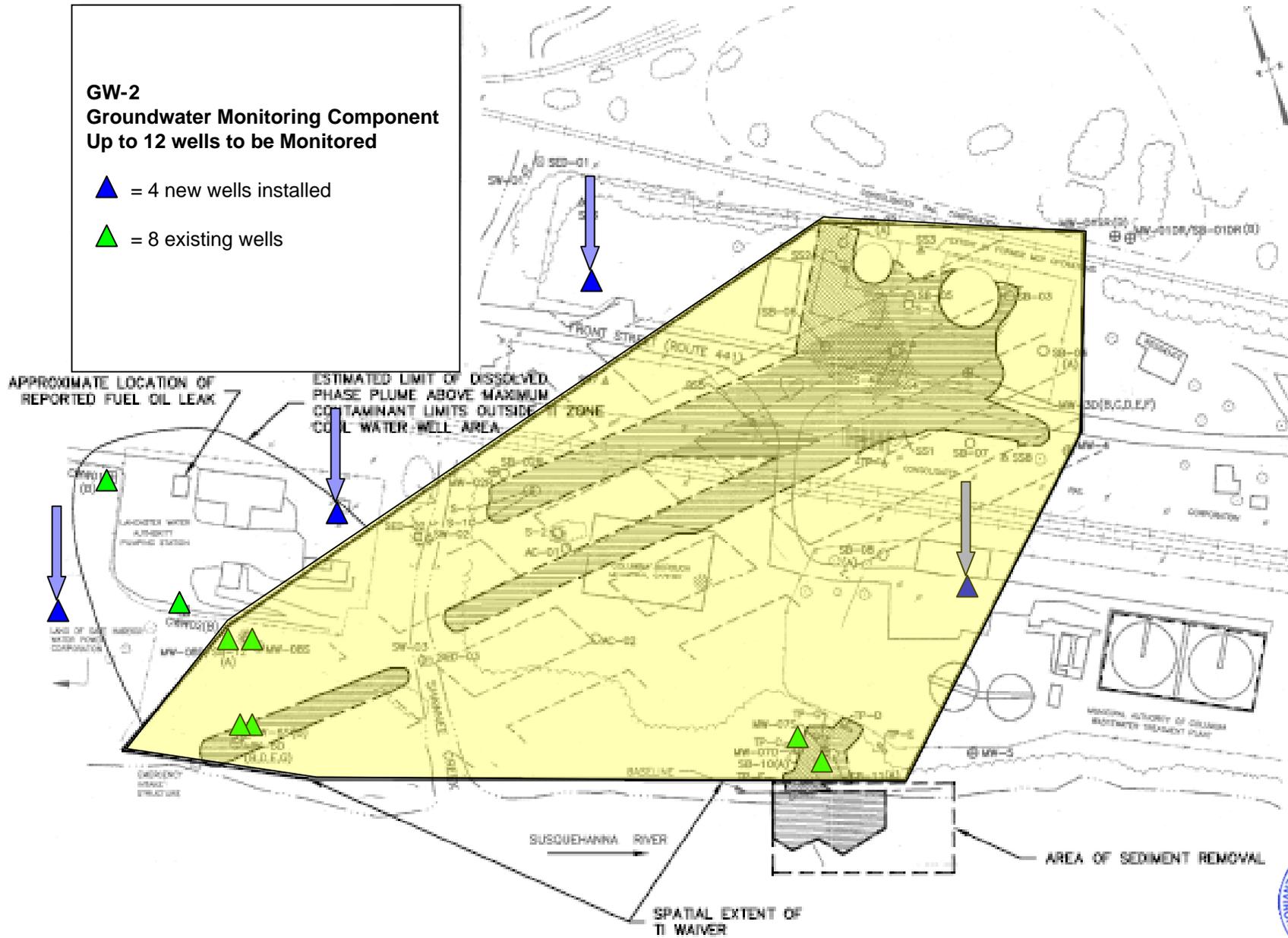
5 Year Reviews Conducted by EPA



**GW-2  
Groundwater Monitoring Component  
Up to 12 wells to be Monitored**

▲ = 4 new wells installed

▲ = 8 existing wells



# Main Contaminant: MGP Waste Liquid Coal Tar



- Coal Tar is Viscous and Heavier Than Water
- Forms a DNAPL trapped in the Site's Fractured Bedrock
  - Insoluble in Water
- **Technically Impracticable** to restore site groundwater
- MGP Waste: Coal Tar (Mix of Chemicals such as):
  - VOCs : BTEX (benzene, toluene, ethyl benzene, xylene)
  - Semi-Volatile Compounds (SVOCs): such as PAHs
    - Poly Aromatic Hydrocarbons (PAHs )
  - Inorganics: metals and cyanide
  - Carcinogenics in Coal Tar



# TI ARAR Waiver: 27 Contaminants

## VOCs

- Benzene
- Ethylbenzene
- Tetrachloroethene
- Toluene
- Trichloroethene
- 1,2,4-Trimethylbenzene
- Xylenes (Total)

## INORGANICS

- Aluminum
- Barium
- Cyanide
- Iron
- Lead
- Manganese

## SVOCs (PAHs)

- Acenaphthene
- Acenaphthylene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Chrysene
- Fluoranthene
- 1-MethylNaphthalene
- 2-Methyl Naphthalene
- Naphthalene
- Phenanthrene
- Pyrene

## SVOCs (OTHER)

- Bis(2-ethylhexyl phthalate -also called- di(2-ethylhexyl)phthalate or DEHP
- Dibenzofuran

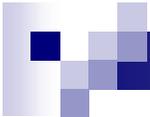




# Remedial Action Objectives (RAOs) Groundwater

- The Presence of Coal Tar DNAPL in fractured bedrock prevents restoration of aquifer
  
- Groundwater Remedial Action Objectives (RAOs)
  - Prevent human exposure
  - Prevent further migration of dissolved phase plume
  - Implement ICs to prevent use / future use
    - (i.e. Deed Notices)





# Other Groundwater Alternatives Considered in the Proposed Plan

- GW-1

- No Action

- Cost: \$0
- Time to Implement: Immediate
- Not Protective of Human Health the Environment

- GW-3:

- Groundwater Extraction and Treatment

Dissolved Phase Treatment, TI waiver for DNAPL

- Cost: \$10,700,000
- Time to Implement: 1-2 years
- Treatment and Monitoring Time: Indefinitely
- 5 year Reviews conducted

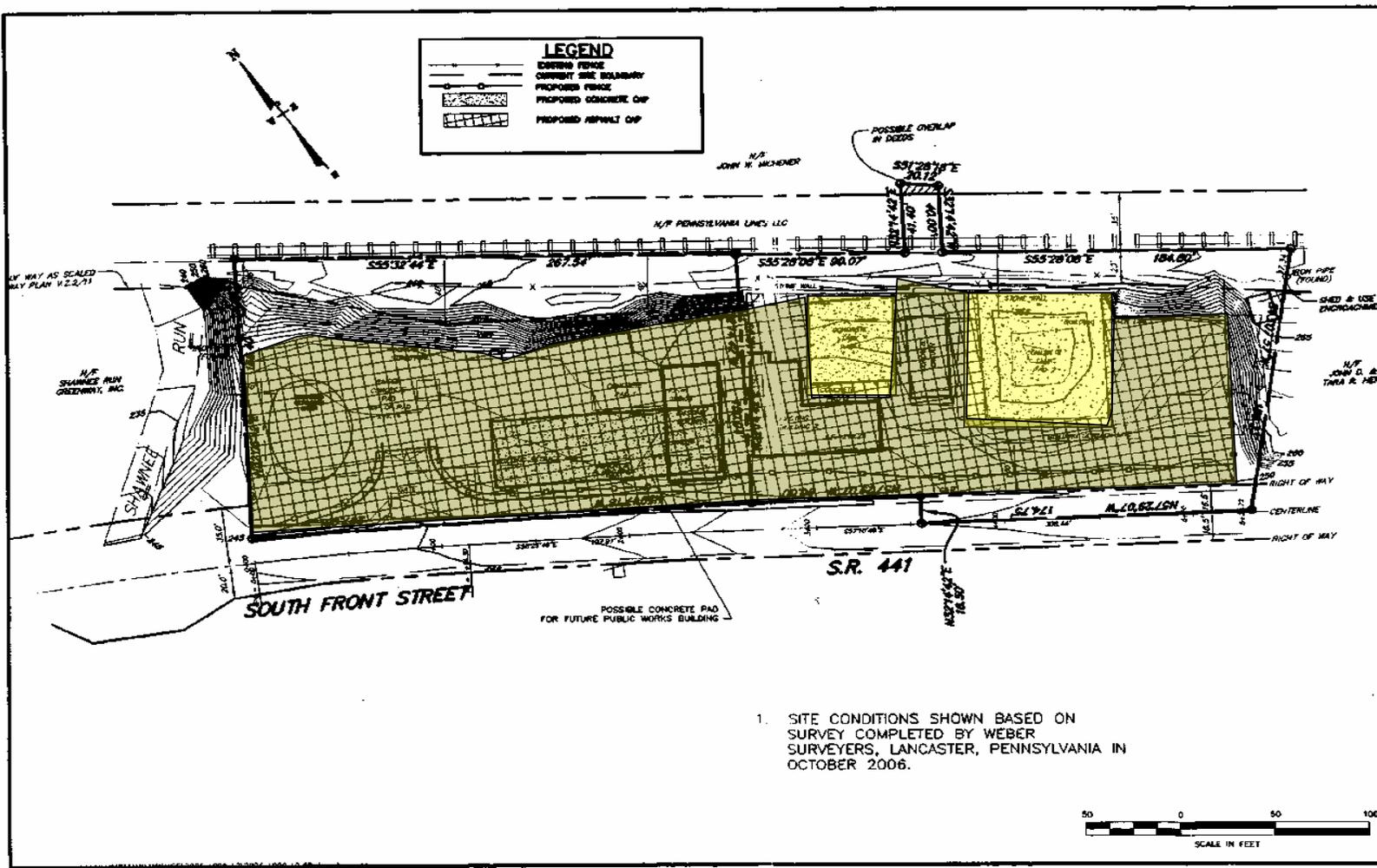
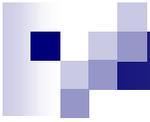




# EPA's Preferred Soil Alternative

- Soil (S-2) No Further Action with ICs
  - Institutional Controls (ICs) to protect the integrity of the Concrete and Asphalt Caps being installed at Site by the in-progress Removal Action,
  - ICs prohibiting current / future Site property owners from using Site property for future residential
  - Time to Implement: weeks to months
  - Cost: \$167,522
  - EPA will perform 5-year Reviews - Waste remains at Site
  - Allows for Potential re-use of the MGP Site





1. SITE CONDITIONS SHOWN BASED ON SURVEY COMPLETED BY WEBER SURVEYERS, LANCASTER, PENNSYLVANIA IN OCTOBER 2006.

PPL ELECTRIC UTILITIES CORP.  
ALLENTOWN, PA





# Other Soil Alternative Considered

- (S-1) No Action

- Cost \$0
- Time to Implement: Immediate

- This Alternative is Not Protective of Human Health and the Environment





# UGI Columbia Gas Plant Superfund Site

## Removal Action



# Removal Action Components

- Demolition Buildings and Proper Disposal of wastes
- Grading Site
- Installation of Concrete Cap Holder Area
- Asphalt Cap on remainder of site
- Storm water management system
- Installation of 4 new deep wells around DNAPL Zone
- Property Reuse potential
- Operation Requirements - The concrete pads and asphalt will be periodically inspected and maintained
- August 2007 Completion

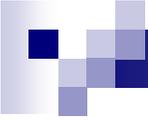




# What Happens Next?

- The public comments will be addressed in a document called the Responsiveness Summary, which is part of the Record of Decision (ROD)





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# For More Information



## On the Internet:

[www.epa.gov/arweb](http://www.epa.gov/arweb)

To find the Site documents, select 'PA' for State, 'UGI Columbia' for Site Name. Click on 'Search' and then 'Search Results.' The PRAP is listed near the end

## Public Repository:

Columbia Public Library  
24 South Sixth Street  
Columbia PA 17512-1599





# U.S. Environmental Protection Agency

EPA Administrative Records Room

1650 Arch Street

ATTN: (3HS42)

Philadelphia, PA 19103

US EPA OSC Web Site (Removal Action)

[www.epaosc.net/ugicolumbia](http://www.epaosc.net/ugicolumbia)

