UGIColumbia GasPlant SuperfundSite

Background

BackgroundLocation andUse

- Former 2 acre *Manufactured Gas Plant (MGP)* on South Front Street in Columbia Borough
- 400 Feet Northeast Susquehanna River, next to Shawnee Creek
- Operated from 1851-1949
  - The Property had different owners over the years, Columbia Gas Company, PP&L , Lancaster Gas, UGI Corp
  - Used a Coal gasification Process
  - Currently owned by PPL Electric Utilities Corp
  - A portion was used retail sales of boats: 80s-90s

MGPWaste CoalTar isViscous andHeavier ThanWater

- **Coal tar Main Contaminant**
- MGP Waste: Coal Tar (Mix of Chemicals such as:)
  - Volatile Organic Compounds (VOCs), Semi Volatile Compounds (SVOCs), Inorganics (i.e. Naphthalene)
  - VOCs : BTEX (benzene, toluene, ethylbenzene, xylene)
  - Semi-Volatile Compounds (SVOCs): PAHs
  - PAHs Poly Aromatic Hydrocarbons
  - Inorganics: metals and cyanide
  - Carcinogenics in Coal Tar
- Forms DNAPL, contained in Fractured Bedrock

Releasesto theEnvironment

- Coal Gasification Process
  - Coal Tar Produced During the Gas Manufacturing Process
  - Coal Tars from separator stored in Relief Pit Holder 30 feet deep .
  - Coal Tar Relief Holder Area is source of contamination
  - Liquid Coal Tar Overflowed form the Relief Holder occurred during heavy rains, also discharged to River in an open ditch or pipe

Investigations/ Actions

- Characterization study 1985
- River Sediment Study 1987
- EPA PA/SI 1991/93
- Added to EPA Superfund List 1994

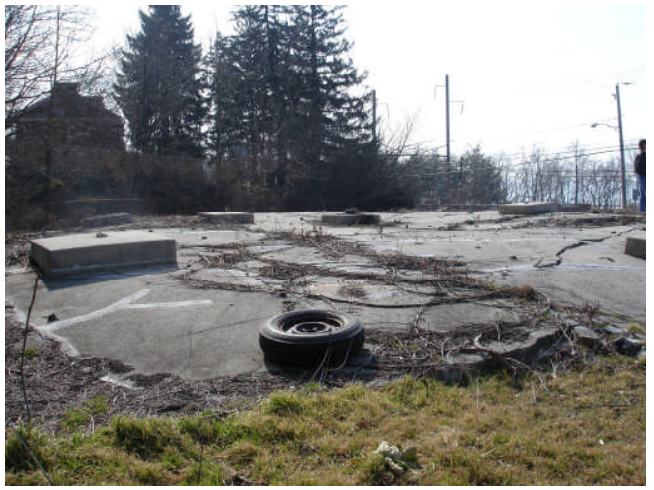
- 1996 PADER (now PADEP) and PPL enter into Consent Order for Remedial Investigation/ Feasibility Study (RI/FS)

NumerousInvestigations /Reports

- 1998 Risk Assessment
- 2002 Feasibility Study
- 2000-Present TI Demonstration
- 2003 River Pore water Study
- 2005 Shawnee Creek Sediments
- 2006 Groundwater Engineering Analysis Report
- 2006-2007 EPA Removal action

PADEPRemoval Actions

- **Early Actions by PPL**
- **1997 Holders: Source**
  - Used the CROW Process (Hot water and steam) subsurface to mobilize the coal tar
  - (3,350 gals of Coal tar removed – offsite thermal treatment and disposal)
  - Some Coal Tar still remains. Holders injected with Grout and Cement to stabilize the unit
- **1998 Sediments**
  - Removal on Susquehanna (700 tons removed / shipped offsite treatment and disposal)



KeyRemedial Investigation(RI) Findings(Groundwater)

- Groundwater
  - Coal Tar forms a DNAPL: Dense Non-Aqueous Phase Liquid
    - DNAPL Contains MGP Wastes and has Low Solubility,
    - 345 to 34,500 Gallons in Fractured Bedrock
    - Under the Site and the Surrounding Land
    - DNAPL found in two Distinct Fracture Zones
    - East-west Direction, extent 880 ft away from Former Holder (source) area.
  - Dissolved Phase (forms a Small Plume)
    - In immediate Vicinity of DNAPL due to its low solubility

Groundwater COPCs Contaminantsof PotentialC oncern

- RI GroundwaterSampling results indicate
- MCL or RBC exceeded
  - MCL= Maximum Contaminant Level
  - RBC= Risk Based Concentration
- 27 COPCs identified
- VOCs, SVOCs, PAHs, Inorganics

KeyRemedial Investigation Findings(Soils)

- Soils
  - Approximately 15,000 cubic feet of contaminated soils identified at site.(PAHs and Inorganics)
  - Soils on-site are contaminated at depth of 10 feet
  - DNAPL coal tar has migrated off-site depth of 15-20 ft
  - Evidence extends to the area beneath the riverbank and behind the WWTP
  - Tar / tar odors continue to be present along bedrock fractures to 67 feet

Sedimentsand SurfaceWater

- Shawnee Creek
  - The Feb 2005 sampling results indicated MGP-related wastes not the source of PAHs detected. (most likely coming from upstream)
- Susquehanna River
  - During 2003 sampling event determined MGP wastes not impacting River
  - VOCs and PAHs non-detect
- Surface waters : No MGP COPCs

Summary:Groundwater

- Groundwater:
  - Former Residential wells sampled no MGP wastes detected
  - All Residents on Public Water
  - Unacceptable concentration levels of MGP related wastes in Groundwater
  - Currently no exposure pathway
  - Future Use in DNAPL Zone, Unacceptable
  - ICs will prevent installation / use of wells

Summary:Soil

- MGP Site Soils Future Use Scenario
  - Caps installed pursuant to EPA Removal Action will eliminate exposure to soils
  - Hypothetical Residential Use at the site surface and subsurface soils would pose unacceptable risk
  - ICs to prevent Residential use and protect integrity of caps

Summary:Sediments andEco -Risk

- Sediments: No Site Related Impacts
  - Susquehanna River-No Action Necessary
    - 1998 Sediment Removal Eliminated Threat to Human Health and Environment
  - Shawnee Creek: No Action Necessary
- Surface Water;
  - No Site Related Wastes Present :No Action Necessary
- Eco-Risk
  - Not necessary – Levels Below Screening Values

EPAContacts

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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:

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