Long Branch Coal Gas Site
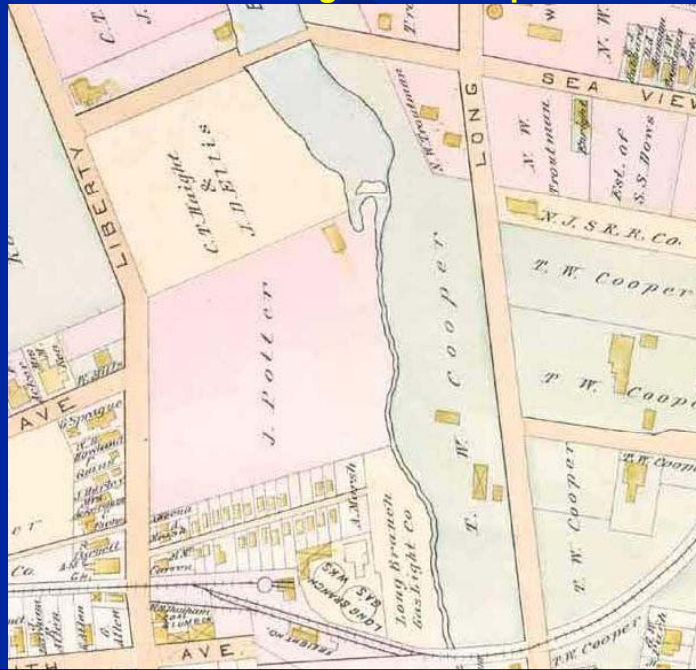## ♦ Troutmans Creek Remediation

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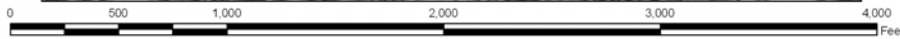

Long Branch Coal Gas Site

- ◆ Long Branch, Monmouth County, NJ
- ◆ 17 Acre Site
- ◆ Operated Approximately 1870-1961
- ◆ Surrounding Land Use – light industrial, commercial, residential
- ◆ Adjacent Sewage Treatment Plant

1889 Long Branch Map

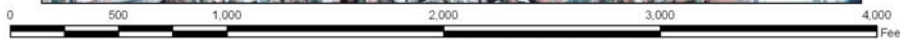Long Branch Coal Gas Site
1930 Aerial Photograph Base Map

Long Branch Coal Gas Site
1995-97 Aerial Photograph Base Map

Long Branch Coal Gas Site
2002 Aerial Photograph Base Map

Long Branch Coal Gas Site
2003 Coastal Aerial Photograph Base Map

Long Branch Coal Gas Site
2007 Aerial Photograph Base Map

Characterization (Seaview to Joline Avenues)

◆ Transect Sampling via Vibracore (five transects, 3 locations per transect)

◆ Observation and Mapping of Free Phase Product

◆ Sample Collection and Analysis of Surface Sediment (0"-6" below surface debris) and Deep Core (depth based on field conditions)

Remedial Strategy

- Excavation of Free-Phase Product in First 500 feet of Troutmans Creek from Seaview Avenue to Joline Avenue

- Thermal Desorption and Daily Landfill Cover for Excavated Sediment

- Removal of Elevated PAHs and Gelatinous Material of last 50 feet of Troutmans Creek up to Joline Avenue

- Risk Assessment Allowed Natural Attenuation for Area North of Joline Avenue (Contaminants Consistent with Background)

Lessons Learned

- Sandbags did not hold back product
- Sandbags became contaminated and had to be disposed adding to waste stream
- Continued recontamination of backfilled material lead to over excavation
- Very labor intensive process

ICON Boxes

- ◆ Reduced volume of add mix material (kiln dust) used in order to obtain the acceptable moisture content for transport
- ◆ Enabled smaller managed portions of the creek to be excavated and backfilled with compacted clean fill material on a daily basis
- ◆ Enabled the discrete visual confirmation of the vertical and lateral limits of MGP product impacts in each cell
- ◆ Prevented cross contamination of adjacent, backfilled and compacted excavation cells
- ◆ Safe accessible, work area for field and NJDEP personnel, while also allowing surveyor access for proper field as-built documentation

PLANT SPECIES	
Common Name	**Scientific Name**
UPLAND TREES	
American Elm	*Ulmus americana*
Northern Red Oak*	*Quercus rubra*
Persimmon	*Diospyros virginiana*
Pin Oak	*Quercus palustris*
Red Maple*	*Acer rubrum*
River Birch	*Betula nigra*
White Oak	*Quercus alba*
Willow Oak	*Quercus phellos*
Wild Black Cherry	*Prunus serotina*
Sweetgum	*Liquidambar styraciflua*

PLANT SPECIES	
Common Name	**Scientific Name**
UPLAND SHRUBS	
Arrowwood	*Viburnum dentatum*
Flowering Dogwood	*Cornus florida*
Ironwood	*Ostrya virginiana*
Spicebush	*Lindera benzoin*
Staghorn Sumac	*Rhus typhina*
Sweet Pepperbush	*Clethra alnifolia*
Witchhazel	*Hamamelis virginiana*
Redosier Dogwood	*Cornus stolonifera*
American Hornbeam	*Carpinus caroliniana*
Winterberry	*Ilex verticillata*

PLANT SPECIES	
Common Name	**Scientific Name**
BANK SLOPE SHRUBS	
Common Elderberry	Sambucus canadensis
Beach Plum	Prunus maritima
Groundsel Tree	Baccharis halmifolia
Marsh Elder	Iva frutescens
Northern Bayberry	Myrica pensylvanica
Sweet Pepperbush	Clethra alnifolia
Rugosa Rose	Lindera benzoin
Redosier Dogwood	Cornus stolonifera
Winterberry	Ilex verticillata

PLANT SPECIES	
Common Name	**Scientific Name**
RIPARIAN TREES	
Eastern Red Cedar	Juniperus viginiana
Northern Red Oak*	Quercus rubra
Persimmon	Diospyros virginiana
Willow Oak	Quercus phellos
RIPARIAN SHRUBS	
Arrowwood Viburnum	Viburnum dentatum
Flowering Dogwood	Cornus florida
Spicebush	Lindera benzoin
Staghorn Sumac	Rhus typhina
Common Elderberry	Sambucus canadensis
Beach Plum	Prunus maritima
Northern Bayberry	Myrica pensylvanica
Rugosa Rose	Rosa rugosa
Redosier Dogwood	Cornus stolonifera
Spicebush	Lindera benzoin
Sweet Pepperbush	Clethra alnifolia
Winterberry	Ilex verticillata
LOW MARSH COASTAL WETLAND	
Smooth Cordgrass	Spartina alterniflora

Ecological Enhancements

- ◆ Eliminated Bulkheads and Sloped Western Bank
- ◆ Eliminated Phragmites and Added Spartina Wetland on Eastern Bank
- ◆ Eliminated Invasive Shrubs/Herbaceous Layer and Added Native Species in Upland
- ◆ Resulted in Greater Aerial Extent of Wetlands with Increased Value
- ◆ Upland Habitat had Increased Value