Remediating MGP Impacted Soil and Sediment Along Tidal River

Presented by:
Michael Shaw
GZA GeoEnvironmental, Inc.
Agenda

- MGP Overview
- Remedial Decision Making
- Overview of Our Site
- Site Remediation – The Details
- Remedial Costs
- Closing Thoughts
MGP Overview - Process

- Heating Coal, Coke and/or Oil to make a combustible gas.

**Common Components:**
- Coal Shed
- Generator or Retorts
- Carburetor
- Scrubber
- Condenser
- Purifier
- Relief holder or gas holder
- Meter
- Tar well or Separator
MGP Overview – Where?

• Everywhere!!
Remedial Decision Making

- It’s all about Risk Management

Risk Strategy

- Regs
- Costs
- Stakeholders
- Tech.
Remedial Decision Making

<table>
<thead>
<tr>
<th>Factor</th>
<th>Remedial Cost</th>
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</thead>
<tbody>
<tr>
<td>Property Ownership</td>
<td>Strict</td>
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<tr>
<td>3rd Party</td>
<td>High</td>
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<tr>
<td>Regulations</td>
<td>Low</td>
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<tr>
<td>Plant Age</td>
<td>Soil</td>
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<tr>
<td>Soil Permeability</td>
<td>Soil, GW, Sed</td>
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<tr>
<td>Impacted Media</td>
<td>10 yrs</td>
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<tr>
<td>100 yr</td>
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MGP-Related Structures

- Tar Tank
- Below Grade Holder
Existing Conditions

25' Embankment
Behind Failed RW

Failed Bulkhead
Existing Conditions

RESIDENTIAL

Heating Oil Co.

Retail (Constr Supply)

Retail (Constr Supply) (Purchased by Client)
Environmental Investigations
Remedial Action

- Sediment  2’ – 8’ bgs
- 4’ bgs
- ~3’ – 8’ bgs
- ~9’ – 12’ bgs
- ~15’ – 21’ bgs
- Bulkhead & Retaining Wall
- Outboard Sheeting
- ~6’ – 9’ bgs
- ~2’ – 8’ bgs
Sensitive Receptors
Sensitive Receptors
Retaining Wall

14.5'
Bulkhead Alignment
Start of Driving (Near Bank)

5 Days Later
Bulkhead Alignment

Permitted
Utility Re-location
Dewatering
Dewatering – Model Design

Permitted Wellpoint System

Proposed Deep Well System
Sediment Remediation
Remediation in Progress
Restoration
Remedial Costs

- Air Monitoring & Vapor/Odor Control
- Sediment Excavation & Disposal
- Utility Relocation & Restoration
- Earth Support and Dewatering
- Excavation and Soil Treatment and Disposal
- Site Restoration

Sediment Excavation & Disposal
Utility Relocation & Restoration
Earth Support and Dewatering
Air Monitoring & Vapor/Odor Control
Site Restoration
Excavation and Soil Treatment and Disposal
Closing Thoughts

- MGP Sites present distinct challenges to property redevelopment.
- Good remedial decision making is a multi-dimensional, optimization process.
- Don’t underestimate the ancillary support costs.
- Make sure you retain an experienced project team.