Environmental Due Diligence Associated with Property Transaction

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(This presentation includes forward-looking statements. Actual future conditions (including economic conditions, energy demand, and energy supply) could differ materially due to changes in technology, the development of new supply sources, political events, demographic changes, and other factors discussed herein.")

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Environmental Due Diligence

- Environmental Due Diligence
  - Is an accepted business practice used to define environmental impacts
- Goal of Environmental Due Diligence is to:
  - Define impacts caused by historical operations
  - Quantify cost to remediate contamination to protective standards
- Impacts are Generally Defined as:
  - Soil and/or groundwater contamination that exceeds clean-up standards and should be remediated to protect people working on the site and the surrounding environment
- Environmental Impacts are Managed through:
  - Remediating the contamination to the appropriate standards
  - Engineering controls used in buildings/improvements
  - Institutional controls/zoning used to limit property use

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Defining Environmental Impacts

- Phase I Investigations Include:
  - Site visit
  - Sensitive receptor survey
  - Defining potential contaminated areas
- Phase II Investigations Include:
  - Drilling soil borings and groundwater monitoring wells
  - Collecting soil and groundwater samples for chemical analysis
- Phase III Investigations Include:
  - Remediation pilot test
  - Risk assessment
  - Costing

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Quantifying Environmental Impacts

- Remediation Standards
  - In country
  - Generally accepted international
  - Site specific
- Site Specific Risk Based Remediation Standards
  - Based on site specific risk assessment
  - Uses site specific environmental data
  - Defines potential local receptors
  - Defines potential contaminate migration pathways
  - Bases exposure scenarios on future land use
- ASTM RBCA Generally Accepted Standard in USA for Performing Site Specific Risk Assessments

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Reducing Environmental Impacts

- Remediation
  - Excavation
  - Bioremediation
  - Air technologies including soil vapor extraction/air sparging
- Engineering Controls
  - Vapor/liquid impermeable barriers
  - Vapor ventilation systems
  - Slurry walls/sheet piling barriers
- Institutional Controls
  - Land use restrictions
  - Residential use on former industrial property should be restricted

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