Agenda

- Portfolio Overview
- Exposures – Real Estate Ownership and Development
- Environmental Site Assessments
- Environmental Risk Transfer

© 2018-2020 USI Insurance Services. All rights reserved.

Portfolio Overview

- **Portfolio Makeup**
  - Habitational (apartments, and condominiums)
  - Hospitality (hotels – divested)
  - Retail
  - Office
  - Vacant land
  - Warehouse/light industrial
  - Development (Brownfields)
- **Complexion of Portfolio**
  - Overall consists of clean properties; however, the complexion has changed in recent years with increased urban infill development and more complex risks
  - Most proposed locations have RECs, HRECs or CRECs

© 2018-2020 USI Insurance Services. All rights reserved.

Habitational (Apartments/Condos)

- Mold
- Lead-based paint and asbestos
- Above and underground storage tanks
- Contamination from past use of property (built on brownfield)
- Migration from off-site sources (vapor intrusion)
- Carpets, paints, cleaning chemicals, herbicides, pesticides
- Violent crimes (Biological Hazards)
- Meth labs

© 2018-2020 USI Insurance Services. All rights reserved.

Retail Properties

- Dry cleaners
- Gas stations
- Auto servicing and oil lube centers
- Contamination from adjacent properties
- Mold
- Asbestos and Lead-based Paint

© 2018-2020 USI Insurance Services. All rights reserved.

Commercial (Office, Hotel, Casinos)

- Legionella
- Indoor air quality
- Medical use and medical wastes
- Mold
- Pollutants in the cooling systems

© 2018-2020 USI Insurance Services. All rights reserved.

Warehousing/ Light Industrial

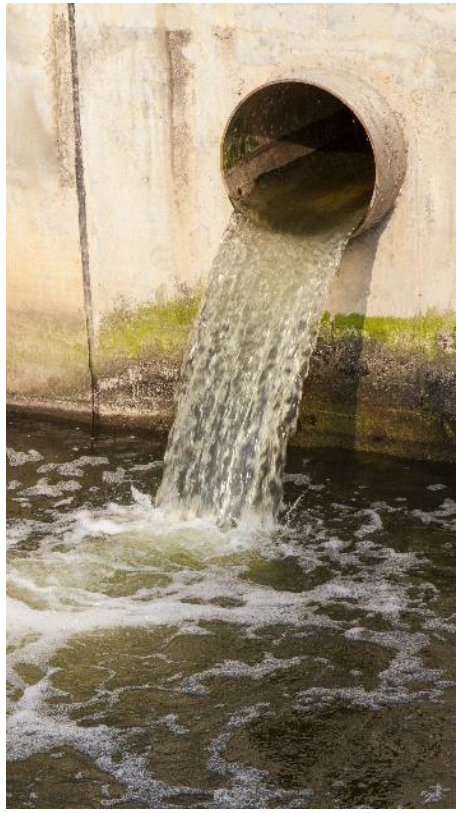
- Pollution from storage of raw materials and wastes
- Releases during processing
- Air emissions
- Emerging pollutants (PFOA)
- Fires
- Adjacent Properties
- Illicit Abandonment (Self-Storage)
- Transportation and waste liabilities

© 2018-2020 USI Insurance Services. All rights reserved.

Exposures

© 2018-2020 USI Insurance Services. All rightsreserved.

Every Company Faces Environmental Exposure



- Discharge of treated water from a manufacturing site into an adjacent river altering the pH level of water, killing fish.
- Milk released from a tanker into a water system exposed to high temperatures causing milk to spoil, smell and cause damage to aquatic environment.
- A refrigerator at a catering hall released Freon and refrigerant gases into structures and the atmosphere that resulted in a violation of environmental laws and public health rules requiring air monitoring and remediation.
- Mold resulting from water intrusion events at commercial and habitational facilities which can result in 3rd party claims for bodily injury, property damage as well as 1st and 3rd party claims for business interruption and clean up.
- A vacation resort was cited by the local public health authority for exposing a patron to legionella via its water system causing death from legionnaires disease. Environmental regulators required a complete investigation and clean up of the water delivery and filtration system.

© 2018-2020 USI Insurance Services. All rights reserved.

Every Company Faces Environmental Exposure
(Continued)

- A university was improperly storing and disposing animals used for laboratory research dissection. The university was required to remediate and received fines and penalties from environmental regulators for violations of law.
- Sediment consisting of dirt particles when introduced into water systems change the turbidity of water disrupting pH balances and creating a murkiness to the water resulting in non-compliance with environmental standards and disrupting and/or causing death to aquatic life.
- Excavation and demolition companies face exposure to clean up orders if they disturb naturally occurring materials, such as serpentine rock, that can increase the levels of other naturally occurring materials in the environment above acceptable background levels.
- Certain pressed wood products, building materials and flooring can be sources of air emissions.

© 2018-2020 USI Insurance Services. All rights reserved.

Environmental Exposures of Real Estate Ownership and Development

- Historical Operations/Use
- Underground Storage Tanks/Aboveground Storage Tanks
- Asbestos Containing Materials/Lead-based Paint
- Indoor Air Quality (Mold, Legionella, Radon/Vapor intrusion)
- Tenant-Caused Contamination
- Urban Fill Material
- Human Error
- Wetlands, Endangered Species, Cultural/Archeological Resources
- Midnight Dumping/Illicit Abandonment

© 2018-2020 USI Insurance Services. All rights reserved.

Historical Operations/Use

- Unreported spills, leaks, releases (on-site and adjoining property)
- Unregistered underground features (USTs, oil/water separators, septic tanks, oil/gas wells, pipelines)
- Landfills, junkyards, surface impoundments, buried debris, fill material
- Commercial/industrial use – defense plant, trucking terminal, filling/service station, dry cleaners, contractors' yard . . . To name a few
- Agricultural/Orchard – pesticides/herbicides use
- Engineering Controls – impermeable surface (asphalt/concrete), vapor barrier
- Institutional Controls – land use (commercial only), groundwater use prohibition

© 2018-2020 USI Insurance Services. All rights reserved.

Aboveground and Underground Storage Tanks

Background

- Regulated under United States Environmental Protection Agency, who has delegated responsibility to the states
- Regulatory compliance mandated – leak detection, tank tightness testing, and financial assurance
- Phantom USTs
- Current locations of USTs: freight distribution facilities (vehicle fueling), office/apartment buildings (heating oil)
- Historic locations of USTs: gasoline filling stations, industrial facilities, manufactured gas plants, dry cleaners, military bases, railyards, freight distribution facilities
- Many USTs historically were of steel construction and were prone to rust and cause releases of fuel or hazardous substances to the shallow soil and groundwater

Issue

- Tanks Leak

Impact

- Main exposures: Cleanup and Property Damage, Bodily Injury to a lesser degree
- Costs for assessment and cleanup: $250,000 to $1,000,000

© 2018-2020 USI Insurance Services. All rights reserved.

Asbestos Containing Material (ACM)

Background

- Any material which contains more than 1% asbestos by weight
- ACMs commonly used in pre-1989 construction for fire retardant and insulation (pipe insulations, drum brake linings, vinyl floor tile and mastic)
- Most uses of asbestos are not banned. A few are banned under existing regulations
- Sampling required prior to renovation or demolition
- Federal or State licensed or certified personnel required to sample, air monitor, abate, or supervise in commercial buildings/structures

Issue

- Friable ACMs, when damaged, can release particles to the atmosphere where they can impact lungs and surfaces

Impact

- Health affects include chronic conditions such as asbestosis and mesothelioma
- For buildings/structures containing ACMs and will not undergo renovation or demolition, should have an ACM Operations and Maintenance Plan prepared and implemented

© 2018-2020 USI Insurance Services. All rights reserved.

| 13

Lead-Based Paint

Background

- Potential for LBP in pre-1978 constructed buildings/structures
- EPA's Lead Renovation, Repair and Painting Rule
  - Requires that firms performing renovation, repair, or painting projects that disturb LBP in homes, childcare facilities, and pre-schools built before 1978 have their firm certified by EPA or an EPA authorized state, use certified renovators who are trained by EPA-approved training providers and follow lead-safe work practices

Issue

- Historic use of LBP, peeling paint, dust, inhalation and absorption (eating)

Impact

- Real Estate Disclosure
- Health affects, particularly for young children:
  - Damage to brain and nervous system,
  - kidney damage,
  - slowed growth,
  - hearing problems, etc.
- Bodily Injury claims $250,000 to $3,000,000

© 2018-2020 USI Insurance Services. All rights reserved.

Indoor Air Quality: Mold

Background

- Exists in nature – cannot eliminate all mold
- Forms on surfaces due to moisture
- Growth arises from a water event
- Can be discovered during renovations
- Key to success with mold is to control/stop the source of moisture and remove water-impacted materials where mold can form

Issue

- Lack of response to a water event increases
- Can cause health problems that range from allergic reaction, irritations to potentially toxic effects

Impact

- RO&M – Mold and Management Plan (WIMMP)
- Defense and bodily injury costs of the immuno-compromised, young and old
- The average cost of mold remediation — $2,000 – $6,000 per room, and up to $20,000

© 2018-2020 USI Insurance Services. All rights reserved.

Indoor Air Quality: Legionella

Background

- Bacterium that causes Legionnaires' disease – a serious and sometimes fatal lung infection from breathing in small droplets of water
- Locations with water features – Indoor spa, swimming pool, hot tubs, fountains, humidifiers, cooling towers or obsolete plumbing systems
- Vulnerable properties – senior housing, health care, schools, hotels, shopping malls and nursing homes

Issue

- Can occur in building water systems with improper disinfectant levels or water temperatures, or stagnant water

Impact

- O&M – Risk management plan for legionella
- In New York City, due to multiple outbreaks, registration of buildings with cooling towers, condensers, chillers, etc. is mandatory
- Most Legionella outbreak costs/settlements have been kept confidential, recent class action lawsuits have sought compensatory and punitive damages between $193 – $600 million

© 2018-2020 USI Insurance Services. All rights reserved.

Indoor Air Quality: Vapor Intrusion

Background

- Occurs when chemical (mostly volatile organic compounds – VOCs) or petroleum products are spilled on the ground or leak from an underground storage tanks
- These substances contaminate the soil and groundwater, then off gas vapors that can penetrate cracks in basements, foundations, sewer lines or other openings and become trapped within building envelopes
- Can be a result of when naturally occurring substances found in the earth off gas and penetrate the building envelope
- Radioactive radon gas is one of the most common naturally occurring culprits of vapor intrusion

Issue

- Vapors and gases from contaminated groundwater, soil and soil gas have the potential to seep into indoor spaces and cause health problems

Impact

- Costs of vapor migration claims
  - Remediation costs to clean up sources
  - Installation of vapor migration systems at property itself or at surrounding properties costing $5 – $15/sq. ft. with maintenance costs of $2 – $5 /sq. ft./year
  - Third-party bodily injury costs
  - Third-party property damage costs including loss of use
  - Business interruption
  - Defense costs
- Total costs can range from a $100,000 – $100,000,000

© 2018-2020 USI Insurance Services. All rights reserved.

Tenant Caused Contamination

Background

- Warehouse: spills, punctures of containers, releases from truck during transportation
- Freight Distribution: releases from USTs, oil/ water separators, wash bays, service/ maintenance centers
- Multi-family Residential: clandestine meth labs, heating oil releases, hydraulic oil from elevators, unreported water leaks
- Light Industrial: chemical storage/waste management, USTs/ASTs
- Shopping Centers: dry cleaners utilizing tetrachloroethylene (PCE), dental/medical clinics with red bag waste, restaurants with grease waste

Issue

- Regulator will require landowner to conduct assessment and cleanup regardless of private indemnification between tenant and landowner

Impact

- Your bottom line

© 2018-2020 USI Insurance Services. All rights reserved.

Urban Fill

Background

- With scarcity of green space, developers focused on urban land environments where underused or abandoned properties are converted to new construction
- Historically, fill material utilized to raise land elevation for flood prevention or reclaim land from wetlands (e.g., San Francisco used fill soil and debris from 1906 earthquake to expand city boundaries)
- May contain contaminants including PAHs, metals, asbestos, dioxins, dredged materials, construction and demolition debris

Issue

- Cost overruns and delays due to increased costs of disposal and special handling of contaminated fill for site Owners and Developers
- Exacerbation during earthwork by contractors and subcontractors
- Pollution insurance coverage for urban fill is limited because of its unpredictable, often uncharacterized nature

Impact

- O&M – During development, soil management plans utilized as the mitigation tool to evaluate, handle, and characterize urban fill material
- Expensive claims for unexpected cleanup and construction delays as well as bodily injury and property damage claims
- State and local requirements regarding historical urban fill (e.g., New Jersey Historic Fill and San Francisco MAHOR ordinance)

© 2018-2020 USI Insurance Services. All rights reserved.

Human Error

Issue

- Lack of knowledge or training in environmental regulations – spills, releases
- Disgruntled employees/tenants
- Illicit abandonment
- Economic – “It’s cheaper to just dump it out back”
- Laziness
- Terrorism

Impact

- Bodily injury, property damage, natural resource damages, fines and penalties

© 2018-2020 USI Insurance Services. All rightsreserved.

Environmental Site Assessments

© 2018-2020 USI Insurance Services. All rights reserved.

Phase I Environmental Site Assessment – Background

- In 2006, the EPA issued the All-Appropriate Inquiries (AAI) rule (40 CFR 312), which is the process of evaluating a property's environmental conditions and assessing potential liability for any contamination.
- The American Society for Testing and Materials (ASTM) has developed standards for a Phase I Environmental Site Assessment. The most recent is the E1527-13, which was updated in 2013.
- Will satisfy the requirements of AAI.

© 2018-2020 USI Insurance Services. All rights reserved.

Phase I Environmental Site Assessment

- **Purpose:** to identify recognized environmental conditions (REC) in connection with the property
- **REC:** the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to a release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment
- **Controlled REC (CREC):** REC that is closed by regulatory agency but with contamination remaining in place that require environmental controls (i.e., engineering/institutional controls)
- **Historical REC (HREC):** REC that is closed by regulatory agencies with no controls
- CREC added to the 1527-13 edition while REC and HREC were redefined

© 2018-2020 USI Insurance Services. All rights reserved.

Phase I Environmental Site Assessments – Components

- ASTM Scope – RECs, CRECS, HRECs
  - Physical description – site reconnaissance
  - Site and adjoining properties' history
  - Site and adjoining properties' operations
  - Off-site exposures
  - Records review/public agency contacts
  - User Questionnaire
  - Environmental Lien Search
  - Vapor Encroachment Condition

© 2018-2020 USI Insurance Services. All rights reserved.

Phase I Environmental Site Assessments – Components (Continued)

- ASTM Non-Scope – Business Environmental Risks
  - Asbestos Containing Materials
  - Lead-Based Paint
  - Indoor Air Quality – Mold/Water Intrusion
  - Indoor Air Quality – Legionella
  - Indoor Air Quality – Radon
  - Wetlands, Endangered Species, Cultural/Archeological
  - Drinking Water Testing
  - Urban Fill
  - High Transmission Power Lines

© 2018-2020 USI Insurance Services. All rights reserved.

Phase II Environmental Site Assessments

- A site investigation performed to identify the nature, and if present, delineate and quantify the amount of environmental contamination at a site
- Typically conducted in response to RECs identified during a Phase I
- Note: ASTM has prepared a guidance document for Phase II ESA, E1903-11

© 2018-2020 USI Insurance Services. All rights reserved.

Phase II Environmental Site Assessments – Components

- Soils sampling and analysis
- UST tightness testing
- Indoor air quality sampling
- Lead or asbestos building material surveys
- Water sampling and analysis
- Radon tests
- Groundwater sampling and analysis
- Soil sampling and lab analysis
- Transformer oil sampling for PCBs
- Magnetometer studies for buried tanks

© 2018-2020 USI Insurance Services. All rights reserved.

Phase II Environmental Site Assessments – Value

- Produces:
  - Specific knowledge of site conditions
  - Confirm/deny if there is a site impact
  - Redevelopment Goals/Targets
  - Pathway to No Further Action from regulatory agency

© 2018-2020 USI Insurance Services. All rights reserved.

Environmental Site Assessments – Drivers

- Proactive Risk Management
- Liability Protections (BFPPs, CPOs, ILOs)
- Cost/Value (Asset Protection)
- Protection by Performing Due Diligence

© 2018-2020 USI Insurance Services. All rights reserved.

Environmental Site Assessments

A well-designed ESA sets the stage for the Environmental Risk Management process by establishing site conditions.

This is the starting point for determining the legal liabilities, threats to human health and ecological receptors, and the required remedial techniques to be applied.

© 2018-2020 USI Insurance Services. All rights reserved.

© 2018-2020 USI Insurance Services. All rights reserved.

You may **never** be able to **rid** yourself fully of the **legal liability** but may be able to **transfer** the **financial liability** related to environmental exposures.

© 2018-2020 USI Insurance Services. All rights reserved.

Environmental Risk Management Process

Business Objectives

- Transfer
- Indemnification
- Retention
- Funding
- Management
- Mitigation

Risk/Liability Identification Potential Sources of Claims

Substance Specific
- Asbestos
- Lead
- LAQ
- VOCs
- Other contaminants

Operations
- Waste Disposal
- Manufacturing
- Construction
- Transportation
- Contingent
- Contractual

Environmental Regulations
- Clean Water Act
- Clean Air Act
- RCRA
- CERCLA
- EPCRA
- Other

Evaluate Liability Flow
Evaluate Liability Type

- Criminal
- Fines
- Toxic Tort
- Clean Up Costs
- Diminution in Value
- Civil
- Penalties
- Property Damage
- NRDs
- Defense Costs

Indemnity Evaluation

- Governmental
  - EPA/DOE/DOD
- Private

Insurance Evaluation

Historical, Existing, Derivative

- Coverage Scope
- Exclusions
- Definitions
- Program Structure
- Security

Risk Management Program Philosophy

Findings/Recommendations

Risk Control/Transfer/Retention

- Modify Existing Insurance
- Replace Existing Insurance
- Add to Existing Insurance
- Use Government Indemnity
- Use Private Indemnity
- Develop Specific Product to meet client exposures
- Modify Existing Operations

Implement/Manage
Measure effectiveness

© 2018-2020 USI Insurance Services. All rights reserved.