RT ENVIRONMENTAL & CONSTRUCTION PROFESSIONAL

ENVIRONMENTAL RISK PROFILE

CONSTRUCTION PROJECTS

A risk profile is a structured management tool for identifying the various exposures associated with an operation. Typically, a risk profile will encompass a review of an organization's operations with a focus on administrative strategies / protocol for reducing or managing particular risks. Environmental risk should not be exempt from this process. In fact, many organizations create stand-alone Environmental Risk Profiles (ERPs) to specifically address the area of environmental liability. This process adds to an organization's ability to systematically identify environmental risk and effectively manage it. Below is an excerpt from an ERP for Construction Projects, which identifies some major exposures. A completed ERP can show the impact such exposures can have on the organization, as well as the risk management strategies available.

Construction Projects confront environmental liability every day. Specifically, they face environmental exposures in four major areas: job site operations, historical site conditions / future operations, transportation, and disposal liabilities. Each area must be explored to identify risks that may expose the organization to environmental liability. This hypothetical ERP identifies some of the major exposures and associated claims.

EXPOSURES

JOB SITE OPERATIONS

- Accepting supposedly "clean" fill from unknown origins and finding out at a later date that it was contaminated with petroleum or other hazardous substances.
- Water infiltration arising from construction defects in roofing systems, window systems, sprinkler systems, etc. that eventually leads to mold / fungal growth.
- Inadvertent disturbance of pre-existing contamination / product:
  - Asbestos-containing materials
  - Naturally-occurring asbestos in subsurface soils
  - Lead paint
  - Contaminated soils, surface or groundwater
  - Silica dust created from the earth / dirt work
- On site release from improper or inadequate storage of lubricant oils and other fluids from equipment.
- Completed operations exposures from incomplete heating, ventilation, and air conditioning (HVAC) system hook-up, including incomplete line hook-up, improper system construction, improper balancing, etc., which could lead to release of airborne bacteria and fungus.
- Fumes, emissions and spills from chemicals (volatile organic compounds) applied during construction (finishers, sealants, curing compounds, floor coatings, adhesives, etc.) that cause respiratory hazards for third parties.

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EXPOSURES (CONT'D)

- "Toxic" mold exposure from the improper grading or excavation during site preparation that results in improper drainage of the site - causing water to enter the substructure or basement of a building.
- HVAC construction or maintenance errors, causing release of airborne bacteria, mold or carbon monoxide build-up, in addition to mold resulting from water intrusion or moisture encapsulation. Other exposures associated with mold:
- Incomplete remediation of a structure exposing residents to mold.
- Misidentification of mold in structure prior to demolition.
- In the event total demolition does not take place, the part of the structure not demolished will be exposed to the elements.
- "Re-growth" of mold as a result of not addressing potential structural changes needed to reduce / remove moisture and / or water intrusion.
- Over application of solutions used to remove mold resulting in inhalation hazards.
- Establishment of regulation that may lead to additional remediation of structures already remediated.
- Release from improper or inadequate storage of fuel tanks on site.
- Release of oils / fuels from tanks / drums as a result of vandalism.
- Site preparation / excavation work through pre-existing contaminated soil (e.g., unknown residual contamination such as petroleum contamination from leaking underground tanks) exacerbating the extent of contamination.
- Spills from application of primer oil / tack coat from asphalt operations.
- Impacting underground utility lines and other underground structures.

HISTORICAL SITE CONDITIONS / FUTURE OPERATIONS

Whether it is known or unknown to the owner or contractor, many project sites have environmental problems associated with them - and it doesn't matter where these sites are located. Give some thought to the major movements in redevelopment that are occurring nationally, such as urban renewal and Brownfield development. Many organizations want to move back to the city and do so on "used" land. When considering Brownfields alone, the number in the United States has been approximated at 500,000 sites and most states have incentive programs to redevelop these properties. The likelihood that contamination will be encountered on typical construction projects increase significantly. Below are some examples of environmental issues owners and contractors may experience:

- Errors and / or omissions created by the environmental engineering firm during the environmental assessment process. Typically, Phase I assessments are limited in scope and therefore can easily miss areas of contamination or concern.
- Undocumented disposal ("midnight dumping") of hazardous waste / materials at, on, or near the job site.
- Improper handling of waste found on-site.
- Leaking underground tanks or other contamination on the perimeter or near the job site that may contribute to contamination on the jobsite.
- Excavation disturbing naturally-occurring asbestos or silica, creating inhalation hazards.
- Residual contamination from historical operations:
    - Leaking underground / aboveground storage tanks
    - Minor spills of oils, fuel, lubricants, etc., and poor housekeeping.
    - Improper disposal of waste materials from past owners.
- Exposures associated with existing structures:
    - Asbestos in ceiling tiles, floor tiles, insulation, etc.

EXPOSURES (cont'd)

- Polychlorinated biphenyls (PCBs) in capacitors or light ballasts and transformers.
- Lead paint, pipes, etc.
- "Toxic" molds from poor maintenance.

TRANSPORTATION EXPOSURES

- Inadvertent transport and subsequent disposal of unknown contaminated soil.
- Spills of contents (e.g., fuel, asphaltic cement, etc.) during transport.
- * Resulting pollution from collisions with various structures (e.g., pole mounted transformers, aboveground tanks, etc.)
- Fuel / oil spills / leaks from vandalism.

DISPOSAL EXPOSURES

- Superfund liability for the inadvertent disposal of waste materials or unknown contaminated soil.
- Improper disposal of waste contaminated soil on the project site or at unregulated facilities.
- Vicarious liability from subcontractors that dispose of waste materials or soil.

CONSTRUCTION PROJECTS

Name of Organization: _____

Lasts Updated: _____

SAMPLE ENVIRONMENTAL RISK PROFILE

Below is the start of a sample ERP for Construction Projects. A complete ERP can be added to provide a detailed profile: reference documents, website links, details on prior claims / incidents and the organization's response.

A complete ERP can be used to help risk and insurance managers better identify, manage, reduce and even eliminate the organization's exposures to environmental liability and the related costs.

EXPOSURE	IMPACT ON ORGANIZATION	RESPONSIBILITY	RISK MANAGEMENT TECHNIQUE	PRIOR INCIDENTS
OPERATIONAL EXPOSURES: **1. Exacerbation of pre-existing contaminated soil or other material**	Financial impact associated with the cost to clean up the problem, legal defense and any resulting damage to property or injury to others. Such claims can have a dramatic impact on our reputation if we were to truly injure someone or cause extensive damage	Project manager or other on site personnel, environmental manager and/or safety manager.	• Contract documents with owner or GC requesting disclosure of existing environmental issues / problems. • Contractual indemnities for pre-existing contamination. • Environmental data search to identify problems with the site and around the project site. • Acceptance requirements, including lab analysis of suspect fill material. • Environmental insurance for both subcontractors and the organization. • Partner with environmental remediation firm. If any problems occur at a job site, we'll have an expert we can rely on.	In connection with the construction of a parking structure the drilling operations for the shoring, encountered a black, sludge substance coming from the borehole. Construction was stopped. The owner called in an environmental consultant to assess the situation. The consultant concluded it was an unidentified 55-gallon petroleum drum. We felt we had little to no liability since we only identified the problem and agreed to work with the owner on identifying the problem. We were directed to excavate and remove the drum under the auspices of the environmental firm. When we hit the source it was not a drum rather a 5,000 gallon underground tank apparently used to heat a previous building. After the UST was removed extensive environmental studies were conducted. It was concluded that petroleum leaked for years causing extensive groundwater and subsurface soil contamination that extended off site and underneath a major highway. A multi-million dollar remediation ensued but we were never brought in as a "contributor" because we only found the problem. This was a good example of what could have happened to us.
TRANSPORTATION EXPOSURES: **1. Refueling vehicles**				
DISPOSAL EXPOSURES: **1. Non-owned disposal sites**				