

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 Mining Industry, 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.

The Mining Industry confronts environmental liability every day. Specifically, they face environmental exposures in four major areas: operational, 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

### OPERATIONAL EXPOSURES

- Liability arising from both on- and off-site historical use, such as improper disposal of waste materials, underground tanks, residual contamination from small leaks or spills, etc.
- Liability associated with local or regional soil / groundwater contamination, regardless of the source of contamination.
- Residual contamination of soil / groundwater from the use of hazardous and non-hazardous materials. Simple, non-reportable spills that go unaddressed can lead to greater first- and third-party environmental claims.
- Air emissions from processes – crushing, leaching, smelting, etc. – including:
  - Carbon dioxide, nitrous oxides and sulfur dioxide
  - Particulates (heavy metals and dusts)
  - Volatile Organic Compounds (VOCs)
  - Acid mist
- Improper housekeeping and preventive maintenance resulting in residual contamination.
- Malfunctioning pollution control equipment, leading to untreated discharge of air emissions or wastewater.
- Inadequate underground and aboveground tank inventory and / or management programs can lead to groundwater contamination.

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## EXPOSURES (CONT'D)

- Inadequate or improper waste / raw materials storage / handling practices.
- Improper storage of incompatible materials may lead to on-site releases and / or potential explosion.
- Improper treatment or disposal of wastewater and sludge from water treatment operations.
- Malfunction of oil / water separators releasing petroleum contaminated water into bodies of water or waste streams.
- Natural Resource Damages, resulting in substantial costs for state- and federal-mandated cleanup requirements and potential fines.
- Release of byproduct (e.g., sodium cyanide) from piping structure in the leaching process, resulting in soil and groundwater contamination.
- Improper storage, resulting in release of:
  - Acids / alkalines
  - Compressed gases, including cyanide and hydrogen chloride
  - Diesel fuel and lubricant oils
  - Flammable paints and solvents
- Erosion due to removal or lack of vegetation, causing direct or perceived environmental concerns associated with the appearance of the property.
- Exhaust and dust from construction vehicles, causing the spread of airborne particulates.
- Stormwater runoff collecting various on-site contamination and exacerbating the conditions to contiguous properties.
- Acid rock drainage, causing environmental damage to streams and nearby bodies of water.
- Soil and groundwater contamination associated with leaks in the liner system of holding ponds, leach ponds / fields, etc.

## TRANSPORTATION EXPOSURES

- Inadvertent transport and subsequent disposal of unknown contaminated soil or tailings from onsite activities.
- Loading and unloading of product from rail cars, trucks, etc.
- Spills of contents (e.g., fuel, product, equipment maintenance fluids, process materials, etc.) during transport.
- Resulting pollution from collisions with various structures (e.g., pole mounted transformers, aboveground tanks, etc.)
- Fuel / oil spills / leaks from vandalism during transport.

## DISPOSAL EXPOSURES

- Inadequate disposal of tailings, slag, spent chemicals, sludge and other waste from onsite operations.
- Clean up and liability associated with the disposal of waste / materials at disposal facilities or recyclers. This may expose the organization to Superfund liability.
- Improper “disposal” or sale of production by-products.

# MINING INDUSTRY

Name of Organization: \_\_\_\_\_

Lasts Updated: \_\_\_\_\_

## SAMPLE ENVIRONMENTAL RISK PROFILE

Below is the start of a sample ERP for Mining Industry. 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
<b>OPERATIONAL EXPOSURES:</b> <b>1. Breach of liner system in leach pond.</b>	<ul style="list-style-type: none"> <li>Costs associated with the cleanup of the site and contiguous parcels of property.</li> <li>Liability associated with third party bodily injury and property damage.</li> <li>Liability associated with contamination as the current owner of property. Possible Superfund liability.</li> </ul>	<ul style="list-style-type: none"> <li>Site manager, legal counsel, environmental manager or risk manager.</li> </ul>	<ul style="list-style-type: none"> <li>Routine inspection of liner system and “re-use” process.</li> <li>Groundwater monitoring system.</li> <li>Environmental insurance to protect from liability associated with on- and off-site contamination.</li> </ul>	<p>The company was sued as a result of the cyanide leaching process used for a precious metal surface mine. A leak in the liner system went undetected for many years, causing extensive damage, resulting in millions of dollars in cleanup costs and associated liability expenses.</p>
<b>OWNED PREMISES EXPOSURES:</b> <b>1. Fab Shops</b> <b>2. Maintenance facility</b>				
<b>TRANSPORTATION EXPOSURES:</b> <b>1. Refueling vehicles</b>				
<b>DISPOSAL EXPOSURES:</b> <b>1. Non-owned disposal sites</b>				

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