AN ILLUSTRATIVE SELECTION OF SITE-SPECIFIC VARIABLES

Input Category	Variable	Relevance
Ore and mineralization characteristics	- Underground vs. surface	- Waste volumes, surface disturbance, type of reclamation required
	- Stripping rate	- Affects waste volume
	- Ore grade	- Affects tailings volume
	- Sulfur content	- Need for acid plants, potential for acid generation
	- Sulfide vs. oxide	- Recoveries in concentrator/type of processing
	- Identity and concentration of impurities	- Waste stream composition/by-products/processing required
	- Hard rock mineralogy	- Potential for acid formation
Situation/location variables	- Terrain	- Air contaminant dispersion characteristics/ dumps and tailings ponds location etc.
	- Proximity to population	- Population exposed
	- Extent of integration at facility	- Opportunity for and economics of recycle
Ground and surface water	- Aquifers and locations	- Potential contamination pathways and exposure
	- Background water quality	- Significance of incremental exposure
	- Uses of aquifers	- Potential contamination pathways and exposure
Soils/substrate	- Permeability	- Potential contamination and exposure
	- Alkalinity	- Capability to neutralize acidity, attenuation of heavy metals
	- Bedrock	- Stability of waste and tailings impoundments potential barrier to contaminant migration
	- Other physical properties	- Stability of waste and tailings impoundments

Input Category	Variable	Relevance
Meteorology/climate	- Rainfall distribution	- Stability of impoundments, likelihood of fugitive dust episodes, potential for acid formation
	- Wind speed distribution	- Air dispersion, frequency and severity of fugitive dust expisodes
	- Atmospheric stability class distribution	- Air dispersion, frequency and severity of fugitive dust exposides
Technology	- Pollution controls in place	- Type and quantity of pollution
	- Presence and extent of leaching operations	- Type and quantity of pollution
	- Grind in beneficiation	- Recoveries, tailings characteristics
	- Smelting method	- Feasibility of air pollution controls, need, and opportunity for slag recycle
	- Type of processing, e.g., pyrometallurgy vs. hydrometallurgy	- Type and quantity of wastes
State regulatory framework	- Reclamation standards - Groundwater programs - Bonding requirements - Numbers and competence of staff	- Ability to ensure environmentally sound operation