### **Overview of Pulp & Paper Industry Waste**

#### **Types of Waste Generated**

* **Wastewater**: Washing, pulping, bleaching.
* **Solid Waste**: Handling, screening, sludge.
* **Air Emissions**: Sulfur, SO₂, NOx.

#### **Environmental Impact**

* **Water**: Pollution.
* **Soil**: Contamination.
* **Air**: Degradation.

### **Waste Audit Procedures**

#### **Wastewater Treatment Analysis**

* **Primary**: Clarifiers.
* **Biological**: Aeration, sludge.
* **Segregation**: Targeted.

#### **Solid Waste Management**

* **Reuse**: Recycling.
* **Sludge**: Dewatering.

### **Pollution Prevention Opportunities**

#### **Process Optimization**

* **Water**: Recycling.
* **Bleaching**: Recirculation.
* **Housekeeping**: Efficient.

#### **Chemical Recovery Techniques**

* **Black Liquor**: Recovery.
* **Relime**: Reuse.
* **Lime**: Optimization.

#### **Use of Alternative Raw Materials**

* **Bagasse**: Renewable.
* **Enzymes**: Biodegradable.
* **Recycling**: Fibers.

### **Waste Audits in the Electroplating Industry**

* **Overview of Electroplating Industry Waste**
  + **Types**: Cyanide, chromium, cadmium, solvents, sludges.
  + **Impact**: Groundwater, air, and soil contamination.
* **Waste Audit Procedures**
  + **Chemical Usage**: Evaluate inefficiencies.
  + **Wastewater**: Analyze pollutants.
* **Pollution Prevention Opportunities**
  + **Process Modification**: Optimize systems.
  + **Recovery & Recycling**: Reuse chemicals.
  + **Non-toxic Alternatives**: Safer substitutes.