QUICK FACTS

The Institute
Pure Earth (formerly Blacksmith Institute) is a New York-based not-for-profit organization that partners with governments, NGOs, and community groups to solve life-threatening pollution problems in low- and middle-income countries. In addition to leading the Toxic Site Identification Program, Pure Earth conducts cleanup projects to mitigate health risks at toxic sites. See Pure Earth’s website at www.pureearth.org. Pure Earth has been tasked by the Asian Development Bank (ADB) and the Department of Environment and Natural Resources (DENR) to undertake the regional technical assistance (TA) 6458: “Mitigation of Hazardous Wastes Contamination in Urban Areas: Supporting Inclusive Growth” in Indonesia and the Philippines.

The Project
Beginning in 2009, the Asian Development Bank (RETA 7395), European Commission, Green Cross Switzerland, United Nations Industrial Development Organization, and World Bank supported Pure Earth’s “Toxic Sites Identification Program” (TSIP) to make preliminary investigations into the scope of hazardous wastes in Indonesia and the Philippines. Find out more about the Program by logging on to www.pureearth.org/projects/toxic-sites-identification-program-tsip. This TA builds on the gains of previous engagements and continues to capacitate key stakeholders in mitigating hazardous waste contamination in urban areas. Several key barriers exist to achieving the environmentally sound management of hazardous wastes, and the subsequent planning for urban revitalization in the project countries. These include the following:

• Need for further training and information sharing on size and scope of hazardous waste contamination and potential health risks
• Insufficient financial resources, technical expertise and capacity for enforcement
• Informal livelihood implications inadequately addressed
• Substandard operations and limited capacity of formal/licensed industry
• Communities and industries often inadequately engaged
• Known benchmarks for urban planning elements lacking provisions for hazardous waste management or pollution remediation

The overall objective of the TA is to improve environmental management of industrial activities in urban areas of the Philippines and Indonesia. The TA will contribute to four major outcomes:

1. Increased awareness of the scope of the problem;
2. Capacity improved among environmental regulators, industrial stakeholders and artisanal operators;
3. Plans, strategies and policies to integrate environmental management with urban redevelopment; and ultimately,
4. The mitigation of hazardous waste exposures in urban environments.

QUICK FACTS

Contaminated river-dam due to mining in Mankayan, Benguet.
What’s this primer for?

Chances are, you’re reading this primer because your work puts you in the frontline of your community’s safety and wellbeing!

We at Pure Earth focus on solving pollution problems in low- and middle-income countries where human health is most at risk. While we might be a leader in global toxic pollution cleanup, we espouse a highly participatory approach in all our initiatives and project engagements. We provide resources and technical expertise, but it is really locals passionate about environmental issues (that’s you!) who champion the implementation of such programs.

As part of the implementation of TA 8458, this short primer was put together to raise awareness on the need for quick response and safety protocols for hazardous materials or waste incidents especially at the community level.

Let this handbook serve as a supplementary resource to the training events you have attended or will attend. Together, let’s make our community a healthier and safer place!
We have to be alert and on-guard at all times when it comes to dealing with hazardous materials (hazmat). Thus, we cannot discount the importance of quick response and safety protocols for hazardous incidents. During hazmat incidents, the lives of community members depend on first responders like you!

Hazmat incidents are unlike other emergencies. Thus it is important that you respond safely, slowly, and methodically. To easily remember your responsibilities as a first responder, always keep "RIP-Not" in mind! RIP-Not stands for:

- **Recognition and Identification**
  - Recognize the presence of hazmat.
  - Identify the material, if possible.
  - Gather information.

- **Isolation**
  - Set perimeters/zones.
  - Deny entry.
  - Evacuate.

- **Protection**
  - Initiate the incident command system.
  - Protect responders/public.
  - Initiate decontamination.
  - Initiate defensive actions only.

- **Notification**
  - Notify the proper authorities.
  - Call for assistance.
  - Provide updates.

So that we’re on the same page, let’s refresh ourselves with some basic terminologies.

- **Hazardous materials**—any substance (solid, liquid, or gas) capable of causing harm to people, property, and the environment
- **Hazardous incidents**—those that involve the actual or potential release of hazmat; depending on the nature of the hazard, require different protective equipment, operational approaches, skills, and attitudes; not the same as fire suppression or other “normal” emergency operations
- **Hazardous wastes**—substances that are without any safe commercial, industrial, agricultural, or economic usage and are shipped, transported, or brought from the country of origin for dumping or disposal into or in transit through any part of the territory of the Philippines; by-products, side-products, process residues, spent reaction media, contaminated plant or equipment, or other substances from manufacturing operations and as consumer discards of manufactured products which present unreasonable risk and/or injury to health and safety and to the environment (DENR, 2004)
- **First responder**—the individual who arrives first on the scene of the hazmat incident, with the responsibility to act; emergency response personnel—NOT a member of the public who might have first arrived on the scene.
HAZARD RECOGNITION AND IDENTIFICATION

As a first responder, it is crucial to be methodical in identifying hazards. To confirm the presence of hazmat, remember these six basic clues to recognition:

- **Clue #1: Occupancy and Location**
  - It is through community pre-planning that hazardous sites are identified (i.e., which occupancies - residential, commercial, industry, storage, agriculture, etc. in the community use hazmat).
  - Responders should also be in the know of areas in the community which are prone to hazmat or hazardous waste dumping (e.g., vacant lots, open dump sites, water streams, etc.)

- **Clue #2: Container Shape**
  - Containers may indicate the presence of hazmat. It pays to examine a container's shape, size, and composition.

- **Clue #3: Markings/Colors**
  - Pay close attention to container markings and stencils.
  - Certain transportation vehicles display official markings, including identification numbers.
  - The National Fire Protection Association has designed a marking scheme (NFPA 704M System) that identifies hazard characteristics of materials

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**Clue #4: Placards/labels**
- Placards are diamond color-coded signs applied to sides and ends of containers. They serve to warn of a possible hazard, the hazard to be found, and the injury that could be caused.
- It is likely that you will first notice the hazard’s color. This corresponds to a type of hazard (i.e., orange for explosives, red for flammables and combustibles).
- Also study the symbol printed (i.e., fire for flammables) and the number or class (i.e., class 2 corresponds to gases).

![Placards](image)

There are nine hazard classes. Refer to the appendix for the hazard classification system. Aside from the appendix mentioned, you may also refer to the new Global Harmonized System of Classification and Labeling of Chemicals developed by the United Nations. You can access it at http://bit.ly/GHSchemicals.

- Labels, on the other hand, are scaled down versions of placards. These square signs specify hazardous materials stored in smaller packages.
- Not all hazardous substances, however, are labeled. Some locations in the community may be contaminated with not-so-obvious pollutants, such as heavy metals. Lead-contaminated soil, for instance, poses a risk to children who play in the dirt. Household members who tend to their gardens may also bring, through their footwear, lead-contaminated soil into the house.

**Clue #5: Papers**
- You may have access to papers detailing the contents of shipments (e.g., shipping papers) and/or the hazards associated with these materials. Lead-contaminated soil, for instance, poses a risk to children who play in the dirt. Household members who tend to their gardens may also bring, through their footwear, lead-contaminated soil into the house.

- Other facility documents include emergency response plans and emergency action plans.

**Clue #6: Senses**
- Exercise caution when you use your senses. Use binoculars to assess hazards from a safe distance. Numerous hazmat have odors or produce visible clouds yet these are not reliable indicators of potential toxicity.
- Bear in mind the risk level associated with the type of sense:

![Risk Level](image)
This primer serves to offer quick information on hazmat quick response and safety protocols, but your best reference for comprehensive information on the subject matter is the Emergency Response Guidebook developed by Transport Canada, the US Department of Transportation, and the Secretariat of Transport and Communications of Mexico.

The Emergency Response Guidebook is divided into five color-coded sections:
- White - basic information, instructions, placard table
- Yellow - ID number index
- Blue - name of material index
- Orange - safety recommendations
- Green - isolation distances and protective actions

Your organization/agency should have on hand a copy of the Emergency Response Guidebook. You may also access it by logging on to https://www.tc.gc.ca/eng/canutec/guide-menu-227.htm.

It is important to note, however, that the Emergency Response Guidebook (as well as this primer) is not an absolute means of acquiring knowledge on hazmat emergency preparedness and response plans. For one, it is limited to the initial response phase and it does not address all possible circumstances associated with hazmat incidents. Moreover, there is still no substitute for proper hazmat response training.

Let’s keep our community healthy and fine, we are up to task, as we are in the front line!
Sources


Appendix

Hazard Classification System

<table>
<thead>
<tr>
<th>Color</th>
<th>Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange- Explosive</td>
<td>CLASS 1 Explosives</td>
</tr>
<tr>
<td>Red &amp; white- Flammable liquids or gas</td>
<td>CLASS 2 Gases (flammable)</td>
</tr>
<tr>
<td>Red- Flammable solid</td>
<td>CLASS 3 Liquids (flammable)</td>
</tr>
<tr>
<td>Yellow- Oxidizer/organic peroxide</td>
<td>CLASS 4 Solids (flammable)</td>
</tr>
<tr>
<td>White- Poison</td>
<td>CLASS 5 Oxidizers</td>
</tr>
<tr>
<td>Black &amp; white- Corrosive</td>
<td>CLASS 6 Poisons</td>
</tr>
<tr>
<td>Blue- Water reactive</td>
<td>CLASS 7 Radioactive</td>
</tr>
<tr>
<td>Yellow &amp; white- Radioactive</td>
<td>CLASS 8 Corrosive</td>
</tr>
<tr>
<td>Green- Non-flammable gas</td>
<td>CLASS 9 Miscellaneous</td>
</tr>
</tbody>
</table>