



About Credible Risk and Hazards A Primer for GIP Investigators

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This document is intended to assist investigators hired by Blacksmith Institute to conduct Initial Site Assessments for the Global Inventory Project. Other parties that would like additional information on this work should contact Blacksmith at info@blacksmithinstitute.org

In reviewing a site for the Global Inventory Process, our purpose is to estimate whether there is a credible risk to human health from the pollution that we observe. Credible risks are real risks – existing pollution that has a clear pathway into human bodies.

Our reason for this is simple. In the hierarchy of importance, pollution that affects human (and especially children) lives is our top priority. While pollution that affects biodiversity is also tragic, in this project it comes second. We have also decided, for the time being, to not deal with pollution risks associated with occupational health and safety. Occupational health problems will probably be a priority for us at some time in the future.

Test Results

For the purposes of this project, we base our evaluation on whether health effects are likely to exist on widely accepted and peer-reviewed Western literature. In other words, we do not undertake health studies, but look to existing studies from other sites, and assume similar health impact based upon those studies.

We use well-accepted standards as our baselines. The website has downloadable spreadsheets (<http://www.blacksmithinstitute.org/coordinator-resources.html> and then download Screening Risk Assessment in Excel) that list acceptable levels of pollutants found in air, water, and soil, as calculated by the U.S. Environmental Protection Agency (EPA), the European Union, and others. These levels form the basis of our evaluation.

Health studies conducted by local authorities at sites you will visit are of anecdotal interest, but are less important than pollutant test results. These studies should always be copied, scanned and uploaded. However, this data is less important than test results. Remember, **credible test results, compared against international standards, are our basis for determining the existence of a health risk.** Other local studies should be collected, scanned, and appended to the ISA if available, but they are not critical.



Population Affected

The investigator is responsible for estimating the population affected when he/she visits the site. This number is the likely number of people in the pathway of the pollutant. For input to the GIP database a rough estimate only is needed, to the nearest order of magnitude.

For example, Population Affected could be the local population in a neighborhood with contaminated soil. Or it is the entire population of a city with air quality problems. Or it is the population drinking contaminated groundwater. Or the population downwind from a point source chimney that emits a pollutant above the standard.

Please note that the pathway defines the population. Once a pollutant has been estimated to be above the standard, consider how it gets inside of humans. Are people absorbing it by drinking it, breathing the air, inhaling dust, eating foodstuffs, etc? This pathway will help you ask the right questions and determine the population at risk.

Finally, remember that this assessment in general is not expected to be precise for the purposes of GIP. You only need to estimate populations to within an order of magnitude. It is sufficient to make a best educated guess and leave it at that.

Hazardous Sites

Some sites do not have immediate exposures to humans, but are at risk of doing so. For example, a leaky storage tank of ammonia is threatening to burst, and then poison a local population. While there are no test results that show an immediate pathway to a population, clearly these problems are ones that fit within our concern.

In these circumstances, list the affected population as being that which has a risk of exposure at catastrophic failure. Your best estimate should be given. List as much information related to the potential hazard as you can – describing the issue to others so they can visualize the problem, and your thinking on your assessment.

List the level of the toxin so that it is 100 times above the standard. Also note that this is not an accurate number in the text box, but just input for simplicity.

Blacksmith Index

The initial site assessment process attributes a score (the Blacksmith Index) (based on the chemical, population and pathway) that helps to rank the projects against each other. When you input credible test data and population at risk data, the system will calculate this for you.