Environmental samples. Environmental samples such as snow, sand, soil, vegetation, surface water, concrete, etc. should be collected from several sites in the contaminated area. Since experiments have shown low vertical diffusion rates for chemical warfare agents in solid samples, only the top layer (about 2 cm) should be collected.

Biological samples may be of interest, but may be more difficult to collect for religious or ethical reasons. Such sampling also requires special techniques and should be carried out by medical personnel.

Body liquids. Blood, urine or other body liquids should be collected from humans or animals exposed to the chemical warfare agents, since hydrophilic compounds will be concentrated in such liquids. The cholinesterase activity in blood should be measured to indicate possible exposure to nerve agents.

Cadavers. Tissues or organs from dead humans or animals believed to have been exposed to the chemical warfare agents should be collected. The organs which provide most information are the kidneys, liver, heart and fatty tissue. These organs concentrate lipophilic compounds. Absorbed chemical agent my also be found in hair samples. In addition, samples from the skin or lungs should be collected to document any damage caused by vesicants. Nervous tissue could be collected to document exposure to nerve agents or other agents affecting the nervous system.