



Categories of Flood Water, Including Sewage

Assessment and investigation of indoor air quality issues, water damage claims, occupant health complaints and remediation efforts associated with errant water and debris flows begin with water source identification. IICRC (*Institute of Inspection, Cleaning and Restoration Certification*) has classified water damage into three (3) different *categories* that take into consideration the source, contents, history and characteristics of the water. Proper *identification* and *scoping* of water damage is imperative to the health and safety of the occupants as well as to the remediation worker restoring the structure and its contents.

Clean Water (Category 1) does not pose health risks on its own; it does not contain contaminants. Examples of clean water *sources* include broken water lines, malfunctioning appliances, toilet tanks (supply water), snow, rainwater and melting ice. Clean water can pick-up contaminants as it *washes* through structures and can accordingly, progress to Category 2 water.

Gray Water (Category 2) can pose health risks because it can contain significant levels of chemical and biological contaminants. Water discharged from dishwashers, washing machines, sinks, showers, aquariums and waterbeds are all examples of suspect sources. Extensive gray water flooding or gray water exposed to the open environment can progress to Category 3 water in as little as 48 hours with the onset of biological activity.

Black Water (Category 3) can pose health risks because it can contain *sewage*, other forms of bio-effluence and environmental contaminants, including decaying materials, pesticides, heavy metals, toxic organic and inorganic chemicals, and more. More than 120 different viruses, parasitic agents (such as Giardia, Cryptosporidium, and Entamoeba histolytica) and bacterial organisms (such as Klebsiella, Salmonella, Escherichia coli and Enterobacter) can be found in Category 3 black water. Black water originates from domestic and industrial wastes, as well as outdoors-sourced flooding surface water.

Health effects from exposure to gray and black water range from allergic reactions to infectious diseases, including gastroenteritis, respiratory infection, eye infections and inflammation of the liver.

Testing for Escherichia coli (E. coli), Enterococcus and total coliforms has been the industry standard for the indication of possible sewage and/or black and gray water contamination in environmental samples. Positive results for any one of the three indicators imply the presence of disease causing organisms, sewage contamination or water pollution. Alternatively, negative results indicate that the microbiological quality of the sample is acceptable.

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