GMH Electronics NPL Site

Toxic Chemicals Associated with the Site and Potential Health Effects (January 2011)

1,2-Dichloroethane: It is a man made compound that does not occur naturally in the environment. Common uses include chemical manufacturing, varnishes, as a solvent to clean oil or grease from metal and in household products. People may be exposed to this chemical by breathing, drinking, or through the skin. Adverse health effects in humans from drinking or breathing high concentrations include liver, kidney, and nervous system damage. Studies in animals also showed damage to the liver, kidney, central nervous system, and the immune system. An increased incidence of cancer was observed in animal studies. It is considered a probable human carcinogen (cancer causing chemical) based on animal studies.

1,1-Dichloroethane**:** It is a chemical used in chemical manufacturing and as a paint or varnish remover. It also may occur as 1,1,1-trichloroethane breaks down. There is no data on the health effects on humans. Animal inhalation studies show high amounts can produce kidney damage. No animal data was available on adverse effects of drinking 1.1-dichloroethane. Animal data is inconclusive regarding its ability to cause cancer.

1,1-Dichloroethylene: It is a man made chemical that is not naturally found in the environment. It is used in manufacturing chemicals, adhesives, and carpet. It can get in the environment from the break down of other chlorinated solvents. Exposure to this chemical can occur by breathing, drinking, or through the skin. Limited data is available on the health effects in humans. Animal studies showed that drinking 1,1-dichloroethane produced liver and kidney damage. There was an increase in heart malformations in babies of animals that were exposed to this chemical before and during pregnancy. Breathing high amounts of this chemical caused liver, lung, and kidney damage in animals. The Environmental Protection Agency (U.S. EPA) considers it a possible carcinogen.

1,4-Dioxane: It is a chemical used as a solvent, laboratory reagent, and chemical intermediary. Exposure to this chemical can occur by breathing, drinking, or skin contact. Human and animal studies show the liver and kidneys as the target organs. Animal studies show that drinking it can cause cancer in animals. Breathing it did not show an increase in the number of cancers in studies of people at work or animal

studies. Based on animal ingestion data, EPA considers it a probable human carcinogen. The International Agency for Research on Cancer (IARC) lists it as a possible carcinogen.

Carbon Tetrachloride: It is a clear liquid that does not occur naturally in the environment. It was used as a cleaning solution, fumigant, and refrigerant. Exposure can occur by breathing, drinking or through the skin. High amounts can cause liver, kidney, and central nervous system damage. Animal studies show it can cause cancer. The U.S. Department of Health and Human Services (U.S. DHHS) has determined it may reasonably be anticipated to cause cancer. The IARC has classified carbon tetrachloride as possibly carcinogenic to humans. U.S. EPA has determined it is a probable human carcinogen.

Methylene Chloride: It is a widely used industrial chemical that is often present in the air. Methylene chloride has been used in spray paint, cleaners, automotive products and household products. There is limited human data from studies of people at work. The studies showed that breathing large amounts in a short period of time can harm the central nervous system, the blood, and reduce sperm count in men. Cancer studies in humans produced mixed results. Animal studies showed changes to the liver, kidney and immune system. Animal studies also showed an increased risk of liver and lung cancer among some species tested. U.S. DHHS classifies it as "reasonably anticipated' to cause cancer. IARC considers it a possible carcinogen and U.S. EPA classifies it as a "probable" carcinogen.

1,1,2-Trichloroethane: It is a man-made compound that is used as a solvent or is sometimes present as an impurity with other solvents. Exposure to high amounts can cause liver and kidney damage, gastrointestinal system damage, and skin irritation. Some animal studies showed it could produce liver cancer in mice. It was not shown to produce cancer in rats. U.S. EPA classifies it as a possible human carcinogen. IARC lists it as not classifiable because of limited data.

Benzene: Benzene is a chemical that is both man made and occurs naturally. It is used to manufacture chemicals, rubber, pesticides, and drugs. It is a component of gasoline and a by-product of burning tobacco. Natural sources include crude oil and forest fires. Exposure can occur by breathing, drinking, or through the skin. Contact with it for a long time can affect the bone marrow and result in anemia and excess bleeding. It can affect the immune system and is associated with acute myeloid leukemia (a type of cancer of the blood cells). U.S. DHHS classifies benzene as a known human carcinogen. EPA and IARC classify it as a human carcinogen.