

Essay on waste management

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Waste Management

HAZWOPER stands for Hazardous Waste Operations and Emergency Response. It is a standard meant to protect three employee populations: workers participating in operations at hazardous waste sites being decontaminated; those employed at hazardous waste treatment, storage and disposal facilities; and employees who are acting in response to emergencies concerning chemical spills or releases (Christian, Ellsworth, & Matthew, 2002). The major components of HAZWOPER are preliminary characterization and analysis of the site; monitoring activities on water, air and soil; training of employees; medical monitoring of the workers; and emergency disaster response if the activities at the site get out of control (Shriver, 2000).

When one has to evaluate an abandoned industrial paint manufacturing facility the key components that come into play are environmental contamination especially soil, surface and groundwater contamination, and the apparent public health risk due to human exposure to these sites. Paint wastes and sludge cause heavy contamination of the environment with heavy metals such as lead and these could be potentially harmful especially in children if a human exposure pathway exists. The safety of the employees that will be working in the area as well the home and inhabitants living near the facility should also be considered.

The effectiveness of Methyl Tertiary Butyl Ether (MTBE) treatment and remediation methods are directly related to its physical and chemical characteristics. Among the factors that complicate the remediation of

properties contaminated with fuels, containing MTBE is its increased solubility in water, its Henry's constant, and its biodegradability. MTBE's Henry's constant is roughly an order of degree, which is less than that of BTEX (benzene, toluene, ethyl benzene, and xylene) compounds; this makes application of air stripping method in remediation more difficult and more costly. Furthermore, MTBE has been found to be more resistant to biodegradation than other compounds. When MTBE is present in the soil because of petroleum spill, it may filter from the rest of petroleum, and hence it reaches groundwater faster than the BTEX compounds and dissolves rapidly. After MTBE is in the groundwater, it is much less likely to adsorb to soil or organic carbon travels since it travels at about the same rate as groundwater (Moyer & Kostecki, 2003).

References

- Christian, H., Ellsworth, H., & Matthew, H. (2002). Hazardous Waste Operations & Emergency Response Manual and Desk Reference. New York, NY: McGraw-Hill.
- Moyer, E. E., & Kostecki, P. T. (2003). MTBE Remediation Handbook. New York, NY: Springer.
- Shriver, J. (2000). HAZWOPER Compliance: What It Means To Employers. Occupational Hazards, 62(10): 113-116.