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| **Environmental Enlightenment #111** By Ami Adini - Reissued November 18, 2015   |  | | --- | | This is a SHORT, LIGHT and SIMPLE newsletter. Its purpose is to rekindle in the initiated terminology they have once learned, and enlighten the uninitiated on terms they may have heard but never known the meaning of. | | **Polychlorinated Biphenyls (PCBs)**   |  |  | | --- | --- | | http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image002.jpg | During the 1930s electrical engineers expressed the need for a synthetic electrical insulation fluid for transformer and capacitor installations where fire was a particular hazard. |  |  |  | | --- | --- | | The new fluid had to have the some performance and electrical strength as mineral oil but must be fire-resistant. The resulting fluid was PCB which enabled transformers to be positioned anywhere the engineer wished but, unfortunately, this new coolant was environmentally hazardous. | http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image004.jpg |  |  | | --- | | PCBs persist in the environment and tend to accumulate in food chains with possible adverse effects on animals at the top of the chain, including man. |   http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image002.gif   |  |  | | --- | --- | | The source of PCBs is generally related to products or materials manufactured and used prior to the 1980’s. | http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image007.jpg |   Potential PCB sources include older dielectric oils commonly used in electrical equipment such as transformers, capacitors, and oil-filled switches.  http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image008.jpg   http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image010.jpg   No PCBs over transformer  PCBs were also commonly used in hydraulic oils and light ballasts manufactured before 1979.  http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image012.jpg http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image016.jpg http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image014.jpg  Commercial products containing PCBs were widely distributed between the mide-1950’s and mid-1970’s, and may be present within hydraulic systems and electrical equipment used during this time period.  http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image018.jpg   http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image020.jpg   |  |  | | --- | --- | | http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image022.jpg | Contamination problems associated with PCB equipment are generally associated with spills or leakage of PCB fluid. As a result, PCB becomes distributed to surrounding areas, including floors, walls and equipment pits, or soils in exterior areas.  http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image024.jpg |  |  |  | | --- | --- | | Because of the historical presence of PCB compounds and equipment at a wide variety of operations, contamination of soils in exterior areas must be considered.  Therefore, the potential for such contamination associated with existing or previous operations should be considered and investigated in the Phase One Environmental Site Assessment process. |  |  |  |  | | --- | --- | | http://amiadini.com/NewsletterArchive/151118-NL111/envEnl-111_clip_image026.jpg | When subject to high temperature PCB can produce polychlorinated dibenzofurans (PCDFs) and, in the presence of tri- or tetra-chlorobenzene some polychlorinated dibenzodioxins (PCDDs) can be formed too.   Some of these substances are **extremely toxic - much worse than PCB.**  Thus PCBs involved in a fire can **produce long-lasting contamination of buildings.** | | | You can find past issues of our "Environmental Enlightenment" at [amiadini.com](http://www.amiadini.com/) Wealth of information about environmental site assessments in the real estate transactions and issues concerning assessment and cleanup of contamination in the subsurface soil and groundwater. |  |  | | --- | | Call me if you have any questions. There are **no obligations.**  Ami Adini Environmental Services, Inc. Environmental Consultants & General Engineering Contractors California Lic. #1009513 A B HAZ ASB **818-824-8102**; [**mail@amiadini.com**](mailto:mail@amiadini.com) [www.amiadini.com](http://amiadini.com/)  Ami Adini is a veteran environmental practitioner with over 40 years of experience. He carries a Bachelor of Science degree (B.Sc.) in Mechanical Engineering including academic credits in Nuclear and Chemical Engineering and postgraduate education in these fields. His career includes design and construction of nuclear plant facilities, chemical processing plants and hazardous wastewater treatment systems. He is a former California Registered Environmental Assessor Levels I & II in the 1988-2012 registry that certified environmental professionals in the assessment and remediation of environmentally impacted land, and a Registered Environmental Professional (REP) since 1989 with the National Registry of Environmental Professionals (NREP). He is a California Business & Professions Code Qualifying Responsible Managing Officer (RMO) in the General Engineering Contractor classification with Hazardous Substance Removal and Asbestos certifications, and president of AMI ADINI ENVIRONMENTAL SERVICES, INC. (AAES), a general engineering contractor and consulting firm specializing in environmental site assessments, rehabilitation of contaminated sites and removal of environmental risks from real-estate transactions. (Contact Ami for a complete resume.) **AAES provides practical solutions to environmental concerns using the highest standards of ethics and integrity while providing its clients with maximum return on their investments.** | |