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Liability Ownership: Routine GC Data Can Provide Erroneous Data for Source Identification

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Analyses of contaminated groundwater is usually performed by private laboratories at the request of consultants, working on behalf of industry. Analyses are performed using the CCME method for F1-F4 hydrocarbon fractions as stipulated in the standard method. EPA priority pollutant PAHs may also be determined using US-EPA or provincial protocols. These are largely parent PAHs and not the alkylated forms which may be more prevalent. This information is essential for determining compliance and the need to cleanup a site. Based upon a Phase I audit, it is sometimes realized that contamination may be from more than one source. If this can be proven, there is the opportunity for cost sharing by the responsible parties thus reducing the cleanup costs for the industry in question. In order for this to be realized, proof must be provided to demonstrate more than one responsible parties contributed to the contamination.

Providing the proof usually falls upon the consultant. In many instances, the consultant passes this responsibility on to the routine testing laboratory. The expectation is that the laboratory can provide definitive proof of varying source inputs using the F1-F4 hydrocarbon data generated. In some instances priority pollutant PAH data is generated and the expectation is that the lab can use this information to determine sources.

One should realize that these are matters of civil liability. Strong evidence is required in order to glean a cost sharing settlement among responsible parties. The use of F1-F4 hydrocarbon data, along with priority pollutant PAH provides very weak evidence and as such will likely be challenged during discovery.

We present a case study in which industry was required to perform an expensive cleanup of diesel contaminated soil. Using routine methods we came to the erroneous conclusion that the client was the sole responsible party. However, using appropriate forensic methods we determined that the client was not responsible for any of the contamination. The evidence is very defensible and provides their legal counsel with ample evidence to negotiate shared cleanup costs.

Stephanie Hoeppner, B.Sc., M.BA.

Ms. Hoeppner holds a Bachelor of Science degree in Earth Science and an MBA. She is currently working on a PhD in Medical Public Health – Epidemiology. Ms. Hoeppner began her career as a junior analyst, working her way up to regional manager for large, multi-national chemistry companies. Ms. Hoeppner brings over two decades worth of laboratory experience, including business development, communication, management, and consulting to Life Science Forensics. Her passion and enthusiasm for chemistry and public health is what motivated her to start Life Science Forensics, a joint venture project with the Canadian environmental laboratory Paracel Laboratories. Together, Paracel and Life Science Forensics are merging environmental toxicology, environmental medicine, and environmental reclamation.

Dr. Detlef (Deib) Birkholz, M.Sc., Ph.D., P.Chem.

Dr. Birkholz has extensive litigation experience, including expert witness testimony, providing training to Federal and Provincial enforcement officers, and consultants. He has also provided training and consultation to various agencies in Mexico, Argentina, Israel and Ukraine. He has presented numerous lectures on science and the law at conferences and for the Alberta Law Society.

Dr. Birkholz is an adjunct professor at the University of Alberta, currently providing lectures on toxicology, chemical analyses, mass spectrometry, scientific liability, litigation, quality assurance and quality control including GLP (good laboratory practices). He has extensive experience in forensic science, including assisting the Centers of Disease Control & Prevention in the investigation of mysterious deaths in the United States and abroad and assisting Federal and Provincial police and Provincial enforcement agencies in investigations. Further, he has assisted in the investigation of toxic chemical releases, the sources of chemicals on contaminated sites as well as helping the insurance industry in validate claims. Dr. Birkholz is also a member of the prestigious OSINET (oil spill international network of experts).