C34 Proving a Gasoline Release Source When Your Analytical Results Are Not Helpful

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This presentation will describe how to use forensic science investigation/evaluation approaches on environmental release work where a water supply was impacted by gasoline.

In suburban Philadelphia, a country village mall shopping center had gasoline odors emerge from its water supply. Two upgradient service stations were present, one of which had a large release due to a **break in** a fill line. Despite initial promises from one service station owner to take appropriate action, remedial work and delineation work was never fully completed in a timely manner, so the downgradient mall water supply was subsequently impacted.

Solutions were further thwarted by "finger pointing" at the other service station and an initial finding that other contaminants (not petroleum related) were also present. When a new, deeper water supply well at the mall was installed, it too became impacted. Lab test results can be found in Table 1; Figure 1 shows the station and village mall locations.

Careful examination of historical information revealed that an early service station consultant said that there was considerable risk of water supply impact. Although odors in the country village water supply well were strong, analytical testing did not consistently reveal an impact. This was attributed to the "deep" nature of fractures and the vertical height of water supply pumping of the dissolved phase contamination.

Cooperation between consultants for the second service station and the country village mall shopping center resulted in findings that the first service station was the clear predominant and primary source. Releases at the second station were found to be de minimis. Expert testimony was delivered and reports were prepared which led to resolution of the case.

The use of the Risk Based Corrective techniques (or misuse as the case may be) will be presented in some detail. Attendees will learn of the importance of having adequate technical support for report conclusions and findings.

Table 1

Table 1

Groundwater Contaminants - November 1998
ug/L (ppb)

		Location	
Compound	**Station A**	**Station B**	**Mall**
Methyl, t-butyl ether	ND	35	2.7
Disopropyl	ND	ND	5.1
1, 2 Dichloroethane	65	760	4.2
1, 2 Dibromoethane	34	ND	ND
Benzene	1,500	10,000	3.3
Toluene	5,100	3,000	ND
Ethylbenzene	750	1,000	0.2
Total xylenes	4,300	3,100	ND

ND means none detected
Station A never sold leaded gasoline
Station B never added MTBE to their gasoline

Environmental Gasoline, Water Supply, Gasoline Release

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