

Polyaromatic Hydrocarbon Applications using Sitelab UVF-3100D

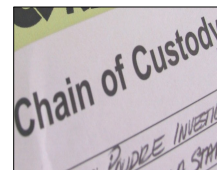
Save time and money on your next project using Sitelab's portable UVF-3100D analyzer. In less than 10 minutes, samples are extracted in solvent and then accurately measured for Target PAHs using Sitelab's PAH calibration kit. Detection limits are as low as 50 ppb. Test results will directly correlate to the sum of PAHs reported by EPA Method 8270. When the optics are rotated, samples can also be tested for Total PAHs (or EPH aromatics), and the ratios or "signatures" exhibited provide helpful forensic fingerprinting data.



Total PAHs:
EPH C11-C22 Aromatic Hydrocarbons



Target PAHs:
Using UVF-3100 Slot D Optics



vs. Sum of PAHs:
Confirmatory Lab EPA 8270 GC/MS

Power Plant - Coal Ash/Clinker Site:

Sitelab is used to test PAHs for monitoring the progress of a bioremediation project performed by an environmental engineering firm. The site is a former power plant located at a U.S. Air Force Base in Goldsboro, North Carolina.

115 ppm
78 ppm
29 ppm
26 ppm

30 ppm
16 ppm
8 ppm
9 ppm

EPH to PAH Ratio: 3-5X

21 ppm
13 ppm
10 ppm
10 ppm

Correlation R²: 0.99

Manufactured Gas Plant - Coal Tar Site:

A contractor used Sitelab during a site assessment testing river sediments contaminated from a former manufactured gas plant in Colorado. Like many MGP sites throughout the country, this site contains a subsurface plume of DNAPL oil, comprised of old coal tar, leftover from long ago.

13,000 ppm
5,000 ppm
942 ppm
890 ppm
2.5 ppm

1,500 ppm
600 ppm
110 ppm
90 ppm
0.3 ppm

EPH to PAH Ratio: 8-10X

1,200 ppm
666 ppm
113 ppm
40 ppm
ND

Correlation R²: 0.97

Petroleum Tank Farm - Fuel Oil Site:

A consultant used Sitelab during a site investigation testing soil borings for PAHs on a tank farm located along Boston Harbor in Massachusetts. The subsurface soils were contaminated by a large commingled plume of diesel fuel and No. 6 fuel oil.

9,000 ppm
4,770 ppm
3,355 ppm
1,330 ppm
875 ppm
48 ppm

455 ppm
370 ppm
180 ppm
75 ppm
97 ppm
3 ppm

EPH to PAH Ratio: 15-20X

682 ppm
350 ppm
130 ppm
80 ppm
82 ppm
ND

Correlation R²: 0.91

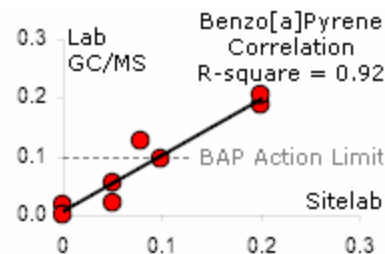
Need to Test Benzo[a]Pyrene?

A contractor performing work at a former military shooting range, sent samples to Sitelab to perform PAH analysis. The soils were contaminated with lead shot and clay pigeons. Clay pigeon targets are made with limestone mixed with petroleum asphalt pitch (derived from coal tar), which contain high levels of Benzo[a]Pyrene and other PAH compounds as a result of the combustion process.

Although Sitelab's UVF instruments cannot separately detect PAH compounds directly, response factors can be used to estimate and report Benzo[a]Pyrene or other problematic compounds accurately.



Tiny fragments of old clay pigeons contaminated the soil with high levels of Benzo[a]Pyrene and other PAH compounds.



Samples with PAHs close to the site's 0.1 ppm BAP action limit were sent to Sitelab for UVF analysis.

PAH & TPH Applications using Sitelab TD-500D

Monitor DNAPL Coal Tar in Soil or Sediment:

Sitelab's hand-held TD-500D analyzer is also a cost-effective field tool for delineating MGP and other PAH contaminated sites. The analyzer is very sensitive to the heavy 4 and 5-ring PAH compounds common in coal tars, creosotes and coal ash. If the site contains a coal tar plume of DNAPL (dense non aqueous phase liquids), the oil can be used to calibrate the analyzer, allowing accurate TPH measurement. Results correlate well to laboratory TPH GC methods.



Samples are extracted in solvent using Sitelab test kits and then measured on the analyzer in only a few minutes.



Coal tar collected from the site's plume is used for TPH calibration.