

U.S. EPA SITE Program Investigative Samples: Navy Base / Phytoremediation Area Testing Diesel Range Organic Hydrocarbons



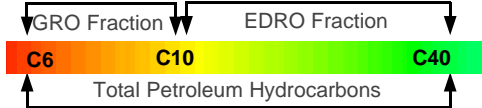
Navy BVC Site: PRA Area - Port Hueneme, California

The Phytoremediation Area (PRA) is located within the Navy Base Ventura County site and consists of soil from a fuel tank removal project conducted at the Naval Weapons Station in Seal Beach, California. It contains 12 cells of equal size that have three different types of cover; including unvegetated cover, a grass and legume mix and a native grass mix. Soils tested consisted of silty sands and were contaminated with high concentrations of heavy lubricating oil with a carbon range from C14 through C40+.

Since no volatile gasoline range hydrocarbons were expected, both the reference laboratory and **siteLAB®** analyzed samples for extended diesel range organic (EDRO) compounds only. Results were then reported as total petroleum hydrocarbons (TPH). The TPH action level for this site was 1,500 ppm.

DRO in TPH Test Results...

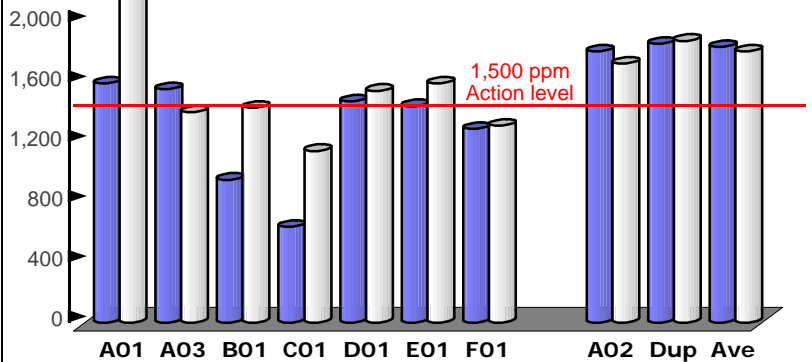
This table compares the performance of **siteLAB®** to the reference laboratory analyzing PRA soils for the extended diesel range organic fraction in TPH.



Sample ID #	siteLAB® DRO	Lab DRO
PRA A01	1,580	2,140
PRA A03	1,540	1,390
PRA B01	940	1,420
PRA C01	630	1,130
PRA D01	1,460	1,530
PRA E01	1,430	1,580
PRA F01	1,280	1,300
Extract Duplicates:		
PRA A02	1,790	1,710
PRA A02-ED	1,840	1,860
Average A02	1,820	1,790

Units = ppm (mg/Kg)

Correlation of TPH Results...



The TPH action level conclusion was only 62%. This was due to the fact that the UVF-3100A and reference method results for PRA samples were within 2% to 7% of the site's action level, making it difficult for EPA to accurately assess whether a sample was above or below the action level.

“...for samples collected from the PRA...all the UVF-3100A results were within 50 percent of the reference method results.”

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Statistical Analysis Summary...

Were UVF-3100A and Reference Method results statistically the same or different?

Same!

Statistical test defined by EPA as two-tailed, paired student's t-test.

Sitelab ITVR: Page 70, Table 7-4

Source: ITVR# EPA/600/R-01/080, September 2001

Sitelab data was generated in the U.S. EPA's Superfund Innovative Technology Evaluation (SITE) Program's "Field Measurement Technologies for Total Petroleum Hydrocarbons in Soil," directed by EPA's Office of Research and Development.
 Date: June 2000.

Disclaimer: EPA does not endorse any product offered for sale by developers in the SITE Program.