

U.S. EPA Performance Evaluation Samples: Diesel Fuel Spike Recovery Analysis Testing Total Petroleum Hydrocarbons

TPH Analysis Comparison:

- These tables compare the performance of **siteLAB**® TPH recoveries to each sample's TPH Acceptance Limits and Lab GC result.
- Tables 1 & 2 consist of soils spiked with #2 Diesel Fuel only, including seven low level detection limit study samples. Table 3 consists of soils spiked with #2 Diesel plus petroleum additives, non-petroleum interferences and natural organics.
- ***Performance Acceptance Limits** listed are used to closely approximate the 95% confidence interval based on the certified #2 Diesel spike values, and were developed by analytical verification GC data/studies for the U.S. EPA.

1 TPH: Diesel Fuel in Soil with Variable Concentrations

Soils with certified TPH concentrations	Sample ID #	siteLAB TPH	Acceptance Limits*	Lab TPH
#2 Diesel Fuel: 454 ppm with 9% Water Moisture	PE S80	290	220 - 557	226
	PE S81	300	220 - 557	265
	PE S82	300	220 - 557	267
#2 Diesel Fuel: 3,920 ppm with 9% Water Moisture	PE S86	2,800	1,900 - 4,980	2,480
	PE S87	3,060	1,900 - 4,980	2,890
	PE S88	2,610	1,900 - 4,980	2,800
#2 Diesel Fuel: 4,320 ppm with <1% Water Moisture	PE S101	2,870	2,100 - 5,490	2,700
	PE S102	3,340	2,100 - 5,490	2,950
	PE S103	3,100	2,100 - 5,490	3,070

Units = ppm (mg/Kg)

2 TPH: Diesel Fuel in Soil Detection Limit Comparison

Soils with certified TPH concentrations	Sample ID #	siteLAB TPH	Acceptance Limits*	Lab TPH
#2 Diesel Fuel: 37.3 ppm with 5% Water Moisture	PE S66	18	18.1 - 47.4	12.0
	PE S67	19	18.1 - 47.4	16.5
	PE S68	18	18.1 - 47.4	13.7
	PE S69	16	18.1 - 47.4	16.4
	PE S70	18	18.1 - 47.4	17.4
	PE S71	19	18.1 - 47.4	17.2
	PE S72	19	18.1 - 47.4	14.8

Units = ppm (mg/Kg)

3 TPH: Diesel Fuel in Soil with Additives/Interferences

Soils with certified TPH concentrations	Sample ID #	siteLAB TPH	Acceptance Limits*	Lab TPH
#2 Diesel Fuel: 3,920 ppm with 3,650 ppm Stoddard Solvent (Not incl. in Acceptance Limit)	PE S01	2,860	1,900 - 4,980	4,390
	PE S02	3,080	1,900 - 4,980	4,640
	PE S03	2,830	1,900 - 4,980	4,520
#2 Diesel Fuel: 3,920 ppm with 18,200 ppm Stoddard Solvent (Not incl. in Acceptance Limit)	PE S04	2,830	1,900 - 4,980	8,770
	PE S05	2,510	1,900 - 4,980	6,580
	PE S06	2,570	1,900 - 4,980	8,280
#2 Diesel Fuel: 3,920 ppm with 3,850 ppm Turpentine	PE S07	2,830	1,900 - 4,980	5,860
	PE S08	2,840	1,900 - 4,980	5,810
	PE S09	2,720	1,900 - 4,980	5,610
#2 Diesel Fuel: 3,920 ppm with 19,600 ppm Turpentine	PE S10	2,270	1,900 - 4,980	15,000
	PE S11	2,250	1,900 - 4,980	13,300
	PE S12	2,150	1,900 - 4,980	13,300
#2 Diesel Fuel: 3,920 ppm with 3,350 ppm 1,2,4-Trichlorobenzene	PE S89	2,590	1,900 - 4,980	3,220
	PE S90	2,690	1,900 - 4,980	3,750
	PE S91	2,660	1,900 - 4,980	3,550
#2 Diesel Fuel: 3,920 ppm with 16,600 ppm 1,2,4-Trichlorobenzene	PE S92	2,420	1,900 - 4,980	7,940
	PE S93	2,300	1,900 - 4,980	6,560
	PE S94	2,400	1,900 - 4,980	6,690
#2 Diesel Fuel: 3,920 ppm with 3,940 ppm Humic Acid	PE S95	2,430	1,900 - 4,980	2,150
	PE S96	2,750	1,900 - 4,980	2,080
	PE S97	2,860	1,900 - 4,980	2,360
#2 Diesel Fuel: 3,920 ppm with 19,500 ppm Humic Acid	PE S98	2,560	1,900 - 4,980	2,660
	PE S99	2,430	1,900 - 4,980	2,420
	PE S100	2,480	1,900 - 4,980	2,270
3,940 ppm Humic Acid only	PE S104	11		8.99
	PE S105	12		8.96
	PE S106	13		8.12
19,500 ppm Humic Acid only	PE S107	45		69.3
	PE S108	35		79.1
	PE S109	32		78.5

Units = ppm (mg/Kg)

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.