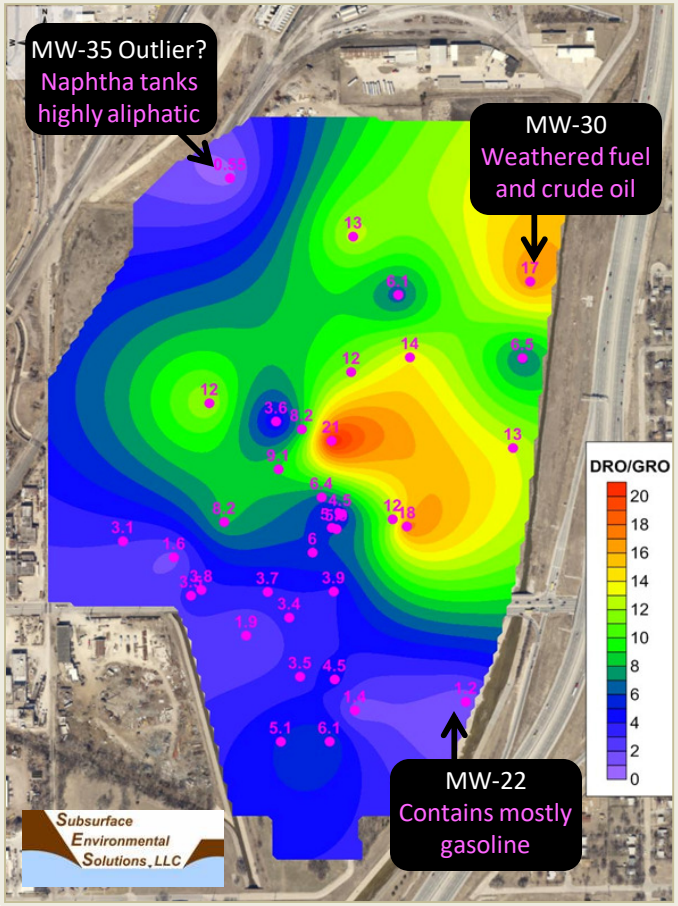
An environmental consultant at Subsurface Environmental Solutions, LLC used Sitelab to fingerprint a large plume of Non Aqueous Phase Liquids (NAPL) located at a former oil refinery in Kansas. The plume is commingled with gasoline, diesel, crude oil and other petroleum products.

Sitelab's portable UVF-3100D analyzer is fitted with optical filters which can measure the C6 to C10 gasoline range hydrocarbons, like BTEX, separately from the C10 to C36 diesel/oil range hydrocarbons. Samples take just a few minutes to prepare and analyze. The data provides quick and useful information about the types of petroleum in the plume when considering which treatment or remediation technology is most suitable.

Oils are extracted and diluted in solvent and then measured on the UVF-3100D analyzer for their GRO and DRO content using Sitelab's CAL-025 and CAL-042 calibration kits.

Fluorescence Response Testing NAPL Collected from 35 Monitoring Wells



Sample Response at 10 ppm

NAPL MW ID	GRO (ppm)	DRO (ppm)	DRO/GRO RATIO
1	0.56	6.50	11.6
2	0.77	10.00	13.0
3	1.32	4.80	3.6
4	1.09	5.60	5.1
5	0.87	5.30	6.1
6	0.54	11.60	21.5
7	1.14	3.90	3.4
8	1.03	3.98	3.9
9	1.06	3.70	3.5
10	0.87	3.26	3.7
11	0.84	7.65	9.1
12	1.90	11.45	6.0
13	0.81	3.63	4.5
14	1.26	4.43	3.5
15	0.70	2.15	3.1
16	1.00	8.20	8.2
17	0.60	10.50	17.5
18	1.01	1.93	1.9
19	0.80	9.85	12.3
20	1.61	2.18	1.4
21	1.51	2.35	1.6
22	**1.52**	**1.80**	**1.2**
23	0.96	7.85	8.2
24	0.76	10.56	13.9
25	0.99	6.40	6.5
26	1.10	4.96	4.5
27	1.14	6.70	5.9
28	1.27	7.70	6.1
29	0.90	11.40	12.7
30	**0.73**	**12.53**	**17.2**
31	0.84	3.19	3.8
32	0.86	5.10	5.9
33	0.28	3.22	11.5
34	0.86	5.47	6.4
35	**0.32**	**0.18**	**0.6**

Areas with crude oil and weathered fuel oils exhibit high DRO/GRO ratios and fluoresce stronger as they contain more aromatic compounds compared to areas with gasoline, which exhibit lower DRO/GRO ratios and fluoresce weaker because they contain fewer aromatic compounds.

