Reddy, C.M., Eglinton, T.I., Hounshell, A., White, H.K., Xu, L., Gaines, R.B., and Frysinger, G.S., *The West Falmouth oil spill after thirty years: The persistence of petroleum hydrocarbons in marsh sediments*, Env. Sci. and Technol., 2002; v36, 4754-4760

The long-term fate of petroleum hydrocarbons in marsh sediment of West Falmouth, Massachusetts, polluted in 1969 by an oil spill from the barge, Florida, was studied. A 36-cm long sediment core was collected in Aug. 2000, and sediment exts. were analyzed by gas chromatog. and comprehensive, 2-dimensional gas chromatog. (GCxGC). The latter method can sep. 1 order of magnitude more compds. than the former and was used to observe whether any compositional changes in the unresolved complex mixt. (UCM) occurred. No evidence of petroleum residues was detected in the top 6 (0-6 cm) and lower 8 (28-36 cm) cm of the core; however, the central sections (6-28 cm) were dominated by a UCM in the boiling range of n-C13 to n-C25 alkanes, consistent with a No. 2 fuel oil source. The 12 to 14- and 14 to 16-cm sections had the highest UCM concns.(.apprx.8 mg/g). These values were similar to concns. obsd. shortly after the spill. Initial GC´GC anal. showed only the n-alkanes were completely degraded, and contrary to previous studies, pristane, phytane and numerous other branched alkanes were still present in the sediment. Results suggested that at this site, hydrocarbon pollution will persist indefinitely in the sedimentary record.