

Nelson, R.K., Kile, B.M., Plata, D.L., Sylva, D.P., Xu, L., Reddy, C.M., Gaines, R.B., Frysinger, G.S., and Reichenbach, S.E., *Tracking the weathering of an oil spill with comprehensive two-dimensional gas chromatography*, Environmental Forensics, 2006; v7: pp.33–44

Comprehensive two-dimensional gas chromatography (GCxGC) was used to investigate the Bouchard 120 oil spill. The latter occurred on April 25, 2003, when the barge Bouchard 120 spilled 375,000 liters of No. 6 fuel oil into Buzzards Bay, Massachusetts. In order to gain a better understanding of the natural processes affecting the fate of the spilled product, we collected and analyzed oil-covered rocks from Nyes Neck beach in North Falmouth, Massachusetts. Here we discuss the data from samples collected on May 9, 2003, and six months later, on November 23, 2003. Along with standard two-dimensional gas chromatographic analysis, we employed unique data-visualization techniques such as difference, ratio, and addition chromatograms to highlight how evaporation, water washing, and biodegradation weathered the spilled oil. These approaches provide a new perspective to studying oil spills and aid attempts to remediate them.