Feasibility of Using Ohmsett for Dispersant Testing and Research

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Abstract

The Minerals Management Service operates a wave tank facility in Leonardo, New Jersey, known as Ohmsett, which is used primarily for the testing of oil spill equipment. The objective of this study was to examine the feasibility of performing dispersant effectiveness testing at the facility. The study included (1) interfacial tension laboratory tests; (2) turbidity tests; (3) laboratory tests to determine efficacy of the current filtering material used at Ohmsett and alternative filtering materials for removing dispersant and chemically dispersed oil; and (4) full-scale testing at Ohmsett.

The study showed that (1) the presence of dispersant in Ohmsett water following dispersant tests will strongly affect the interfacial tension of oils used in subsequent boom or skimmer tests at Ohmsett, so that the tank will have be thoroughly cleaned following a dispersant testing program; (2) dispersant concentrations in the water can reach at least 400 ppm before having a noticeable effect on the dispersion of floating oil, so that many experiments could be done consecutively without concern that residual dispersant is in the tank; (3) a number of experiments per day could be run in sequence before having to filter the body of water to remove dispersed oil; (4) underwater viewing of dispersant testing will only possible for the first test in a series; (5) it is possible to remove most dispersed oil from Ohmsett tank water using cellulose as the filter aid; (6) activated carbon is likely to remove dissolved dispersant with a high degree of effectiveness; and (7) overall, dispersant testing at Ohmsett could be done with good success if the testing program is carefully designed and implemented with regard for the limitations noted above.