EXECUTIVE SUMMARY

The nearshore directional wave characteristics at Green Harbor, Massachusetts (Figure 1), were measured from 26 August 1983 through 27 October 1983 to monitor the coastal wave climate in Cape Cod Bay, Massachusetts. The instrument used for wave measurements was a Sea Data Corporation Directional Wave Gage Model 635-12. Its burst sampling capabilities permit measurement of waves as well as mean flows. More complete theory of operation and error analysis are contained in Aubrey (1981) and Grosskopf, Aubrey, Mattie and Mathieson (1983). For this time period, waves were sampled once every eight hours (three times a day) for seventeen minutes, acquiring a measurement of pressure and two horizontal velocity components once every half second for a total of 2048 samples per burst. Spectral estimates from these data were ensemble-averaged over 16 data subsets, yielding 32 degrees of freedom, with a frequency resolution of 0.0156 hz. Confidence intervals of 95% for these spectra with 32 degrees of freedom give an expected spectral estimate within 0.65 and 1.76 of the sample value (Table 1).

The instrument was deployed with the pressure sensor 0.18 m above the bottom, and the current meter 1.98 m above the bottom, above and slightly (<30 cm) to one side of the pressure sensor. The bottom within approximately 50 meters of the installation is flat, sandy, with medium sand grain size and widely scattered 1-2 ft. high boulders. Attempts to fluidize in a 1" I.D. pipe, and visual inspections, indicated that the sand cover is about 6"-12" deep and overlies a cobbly bottom.