deposited on the beach. Although the intent of this report appears to be to investigate cross-shore transport, the efforts quickly focus on longshore sediment transport perhaps in part because this is the more tractable transport component. A discussion of the general wave and current forces exerted on the bottom sediments is followed by a presentation of the various theories relating to cross-shore and longshore sediment transport. A calculation model is proposed encompassing boundary layer considerations and laboratory results of sediment motion initiation. As an example, the model is applied to Point Pedernales, CA where reasonable wave, profile and sediment characteristics are available. These calculations resulted in the longshore sediment seaward of the 12 ft contour; these results were compared with previously published estimates by Bowen and Inman. The predictions exceeded considerably the Bowen/Inman values. The model was found to predict sediment transport out to depths of 50 ft. The need for improved wave climate for use in such models was noted.


An underwater mound was constructed in water depths of 10 to 11 m at the Dam Neck (VA) disposal areas using approximately 650,000 cubic meters of silt and fine sand. Interest in constructing the mound is that it could be used elsewhere to provide shoreline protection against high waves by inducing tripping of the waves or could serve to "perch" a nourished beach or stabilize a natural beach against offshore transport during storms. A variety of techniques was employed to document the characteristics and evolution of the placed material, including: grab samples, diving observations, reference rods, seismics and bottom cores. It was found that only limited dispersion of the material occurred during the first few months following placement.


When material is dredged from an offshore borrow area and placed onshore, it is usually found to be finer and more poorly sorted than the native material on the beach. With such material characteristics, a portion of the fine fraction will be lost due to handling techniques resulting in less volume placed on the