

C1. Vertical Control

National Ocean Service (NOS) existing tide station at Santa Monica (941-0840) was used for the survey in accordance with Attachment #7, dated March 1, 2001, of the Project Instructions. Zone PAC11 with a time corrector of +12 minutes and a range ratio of 0.98 was applied to the tide data.

The NOS tide station experienced no down time during periods of hydrographic survey. All data were successfully retrieved and are included on the tape with the HDGS processed data.

Detailed descriptions of the vertical control used can be found in the Vertical and Horizontal Control Report for Project OPR-L328-KR-01. There were no deviations from those listed in the project-wide report.

Evaluation of the tides applied was accomplished through crossline comparisons, comparing adjacent lines during Caris subset editing and analysis of the sun-illuminated images generated from 1 meter shoal biased multibeam data. Crossline comparisons are discussed in Section B2.a of this report and represent all errors associated with the survey. It is difficult to associate a precise vertical error due to tides. In general, errors observed are a composite from various sources such as measurement error, tides, heave, refraction, transducer draft, settlement and squat. However, when fill lines are run during different times in the tide cycle than mainscheme lines or at the juncture of lines from different days, artifacts from tides may be observed. Some artifacts as the result of tidal zoning were apparent after analysis of sun-illustrated images. Applied tides in problematic areas were reviewed and no errors were found in the application of smoothed-zoned tides. Artifacts from tidal zoning are attributed to the distance from the survey area to the NOAA tide station at Santa Monica. In accordance with the Specifications and Deliverables (June 2000), the minimum error expected as result of tides is 0.2 meters with a maximum allowable error of 0.45 meters.

Tidal zoning errors observed are within allowable limits. NOAA verified tides were reviewed for spikes and blunders and compared to predicted tides. No obvious blunders were detected.