

## C. Vertical and Horizontal Control

Additional information discussing the vertical or horizontal control for this survey can be found in the accompanying HVCR.

### C.1 Vertical Control

The vertical datum for this project is Mean Lower Low Water.

#### ERS Methods Used:

ERS via VDATUM

#### Ellipsoid to Chart Datum Separation File:

VDATUM\_Outline\_Shape\_xyNAD83-MLLW\_geoid12b.csar

Reduction to MLLW was accomplished using ERS methodology via VDATUM, except for any exceptions noted earlier in this report. The VDATUM model was provided by NOAA prior to operations and had an uncertainty specified as 10.4 cm. The VDATUM model was validated during this survey using comparisons with NWLON gauge data and found to be acceptable for tidal reduction. See the HVCR for validation reports.

*Survey H13183 is considered a hybrid ERS survey as the Project Instruction's ERS requirement was not met as detailed in DR section B.3.3. No waiver was obtained by the Field Unit acknowledging the vertical correction deviation of H13183 bathymetric data to MLLW through traditional correction referencing direct water levels from NOAA's NWLON reference station Matagorda Bay Entrance (8773767).*

### C.2 Horizontal Control

The horizontal datum for this project is North American Datum 1983.

The projection used for this project is Projected UTM 14.

#### The following PPK methods were used for horizontal control:

Smart Base

Applanix Smart Base (ASB) was used as a comparison against Trimble PP-RTX results, and generally compared to 0.10 m or better.

Positions were post-processed in Applanix POSPac MMS software using Trimble PP-RTX as the correction source. RMS errors were generally at 0.10 m or better, both horizontally and vertically.