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.

Standard Vertical Control Methods Used:

Discrete ZoningERZT

The following National Water Level Observation Network (NWLON) stations served as datum control for this survey:

Station Name	Station ID
Sand Point, AK	9459450

Table 11: NWLON Tide Stations

File Name	Status
9459450.tid	Final Approved

Table 12: Water Level Files (.tid)

File Name	Status
P183FA2015CORP_Reg.zdf	Final

Table 13: Tide Correctors (.zdf or .tc)

A request for final approved tides was sent to N/OPS1 on 06/08/2015. The final tide note was received on 06/17/2015.

The ERZT model file was applied in accordance with the FPM. Separation model was used for the vertical transformation of ellipsoid-referenced data to MLLW and is applied for data submission. Soundings were merged in CARIS HIPS and SIPS using the Apply GPS Tide function, and TPU was computed with the new separation model uncertainty value. See correspondence in Appendix II for additional information on separation model use and approval.

The hydrographer was provided two vertical control assignments including the traditional tides product of surveyed soundings reduced to MLLW using .tid and .zdf files above. The hydrographer was successful in creating an ellipsoidally referenced zoned tides (ERZT) model to transform ellipsoidal survey heights to MLLW as their final vertical control product, rendering the traditional vertical control products superfluous. The ERZT surface is named OPR-P183-FA-ERZT_Separation_Model.csar
Tide file is appended to this report.

C.2 Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD83).

The projection used for this project is UTM Zone 4North.

The following PPK methods were used for horizontal control:

Single Base

Vessel kinematic data were post-processed using Applanix POSPac processing software and Single Base Positioning method described in the DAPR. Smoothed Best Estimate of Trajectory (SBET) and associated error (RMS) data were applied to all MBES data in CARIS HIPS.

For further details regarding the processing and quality control checks performed see the H12780 POSPAC Processing Logs spreadsheet located in the SBET folder with the GNSS data. See also the OPR-P183-FA-15 Horizontal and Vertical Control report, submitted under separate cover.