

C. VERTICAL AND HORIZONTAL CONTROL

Project M-R908-FA-08 did not require static GPS observations or other horizontal control work, and all tide corrections were generated from a CO-OPS maintained tide station. Thus, no Horizontal and Vertical Control Report will be submitted. Refer to Section D2.h for recommendations on future vertical and horizontal control for this region.

Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was used for positioning when it was in range. There is a lack of DGPS stations in the Bristol Bay region and therefore much of the data were collected while out of range of DGPS. However, there are no apparent positional shifts between data collected with DGPS correctors and data collected without. Given the deep, flat, and featureless nature of the majority of this survey, the scale, and the absence of positional shifts, the hydrographer recommends that data without DGPS correctors be accepted along with the DGPS-corrected data. The differential corrector beacon utilized for this survey is shown in Table 3.

Location	Frequency	Operator	Distance	Priority
Cold Bay	289 kHz	USCG	80-150nm	Primary

Table 3: Differential Corrector Source for H11906.

Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) primary tide station at Unalaska, AK (946-2620) served as control for datum determination and as the primary source for water level reducers for survey H11906.

No other gauges were required.

All data were reduced to MLLW using **final approved water levels** from station Unalaska, AK (946-2620) using the tide file 9462620.tid. Final time and height correctors were applied to most of the data using the zone corrector file H11906CORF.zdf, however, several lines remained outside of the zone file and only applied the tide file, leaving a vertical shift in the data across this threshold (See *Figure 10*). Effected lines outside of the initial zoning are as follows:

Reson 8160:	Reson 8111:
222-0706	222-0813
222-0759	222-0847
222-0850	222-0705
222-0742	222-0739
222-0724	222-1102
222-0816	222-1136
222-0833	222-1027
222-1045	
222-1119	
222-1102	
222-1137	
222-1028	

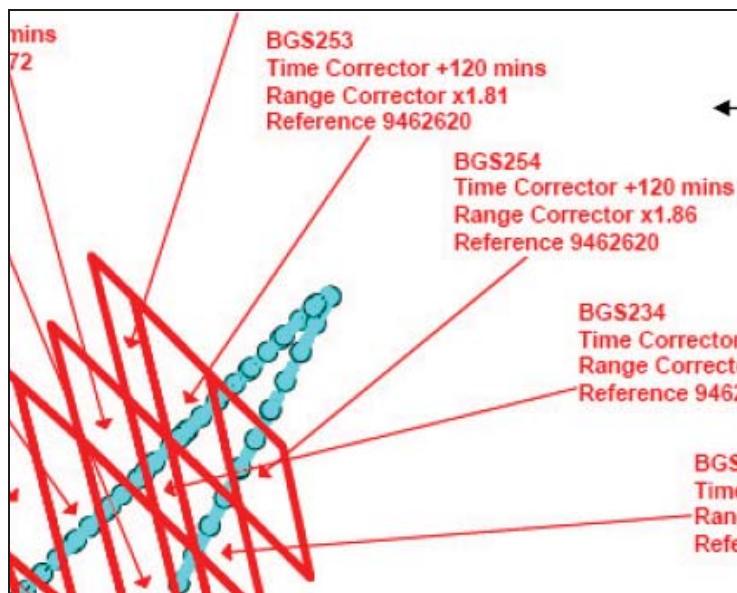


Figure 10 shows data outside approved zoning.

To address this, the hydrographer modified zone BGS254 to encompass the northeast corner of the trackline that was left out of the initial zoning (See *Figure 11*). This was done to avoid using a zero time offset from tide station Unalaska and to eliminate the apparently artificial ~2.0 meter vertical downward shift (in 80 meters of water) across the threshold. This new zone file was named H11906CORF_new.zdf and was applied *only* to the lines listed above.