Vertical and Horizontal Control

Soundings for this survey were tide adjusted using data from Tide Station Ketchikan 945-0460. Preliminary water level data was downloaded daily from the NOAA web site (http://www.co-ops.nos.noaa.gov) and applied as the data was processed in CARIS. Verified tide data from the Ketchikan gage was then downloaded off the Internet site and applied to the final smooth sheet soundings. Both preliminary and final tide adjustments used tidal zoning provided by NOAA.[11]

The horizontal control datum for this survey is North American Datum of 1983(NAD 83). The projection used during collection was UTM, Zone 9. Control station *Penthouse* was established and used to send correctors to the survey vessels. A 24-hour observation on USGS Monument *WRONG* was used as a fixed point DGPS performance check on *Penthouse*. The observation survey showed the position on "Penthouse" to meet the required accuracy standards. The control survey to establish *Penthouse* and the 24-hour observation survey is detailed in the Project Wide Vertical and Horizontal Control report. In addition to station *Penthouse,* the United States Coast Guard (USCG) DGPS Beacon at Annette Island was used during hydrographic operations for the Shoreline Verification Survey and for daily confidence cross checks. A summary of the daily DGPS confidence checks can be found in the Project Wide Vertical and Horizontal Control report.[12]