

## Application of Tidal Correctors

Final water level files for each tide zone were created from verified tide data using the **SABER Create Water Level Files** tool. Water level files contained water level heights that were algebraically subtracted from depths to correct the soundings for tides and water levels. These water level files were applied to the bathymetry data using the **SABER Apply Tides** program within the **SABER** software.

When it was necessary to apply updated tide correctors to the GSF files, the program removed the previous tide corrector and applied the new corrector. Each time a routine was run on the GSF data file, a history record was appended to the end of the GSF file. For quality assurance, the **Check Tides** program was run on all GSF files to confirm that the appropriate water level corrector had been applied to the GSF file.

## Quality Control of Tidal Correctors

After confirmation that verified water levels were applied to all bathymetry data, grids were created and analyzed using various color change intervals. The color intervals provided a means to check for significant, unnatural changes in depth across zone boundaries due to water level correction errors, unusual currents, storm surges, etc.

The primary means for analyzing the adequacy of zoning was observing zone boundary crossings in the navigated swath editor, SAIC's **MVE**. In addition, crossline analysis using SAIC's **Analyze Crossings** software was used to identify possible depth discrepancies resulting from the applied water level corrector. Discrepancies were further analyzed to determine if they were the result of incorrect zoning parameters or weather (wind) conditions between the tide station and the survey area.

The zone to zone comparisons presented in Table C-11 are valid for the days when survey data acquisition was accomplished, but they include the entire day, not just the times of survey. The large differences at the FTxGS005 to FPtFn749 zone boundary occur during times when the weather conditions made water levels deviate from normal at the Port Fourchon station which is inside the harbor. Surveys were not conducted near the zone boundary in H11783 and H11784 at the times of these large differences.

**Table C-11. Water Level Differences across Zone Boundaries, Verified**

	FTxGs001 - FTxGs002	FTxGs002 - FTxGs003	FTxGs003 - FTxGs004	FTxGs004 - FTxGs005	FTxGs005 - FPtFn749	FPtFn749 - FPtFn750	FPtFn750 - FPtFn364	FPtFn750 - FPtFn394	FPtFn364 - FPtFn394
<b>stdev</b>	0.002	0.006	0.002	0.002	0.068	0.015	0.010	0.002	0.010
<b>Avg</b>	0.003	0.002	0.003	0.003	0.025	0.012	-0.002	-0.002	0.000
<b>Min</b>	-0.005	-0.034	-0.005	-0.005	-0.491	-0.106	-0.203	-0.009	-0.108
<b>Max</b>	0.010	0.046	0.010	0.010	0.255	0.220	0.106	0.005	0.201

The final tide zoning used for the H11783, H11784 and H11785 surveys is presented in Table C-12 and Figure C-16.

**Table C-12. Tide Zone Parameters Applied on Sheets H11783, H11784, H11785**

<b>Zone</b>	<b>Time Corrector (hours:minutes)</b>	<b>Range Ratio</b>	<b>Reference Station</b>
FPtFn394	00:00	1.0900	8762075
FPtFn364	00:06	1.0900	8762075
FPtFn750	00:00	1.0800	8762075
FPtFn749	00:06	1.1400	8762075
FTxGs005	-00:06	0.9600	8763535
FTxGs004	-00:06	0.9700	8763535
FTxGs003	-00:06	0.9800	8763535
FTxGs002	00:00	0.9900	8763535
FTxGs001	00:00	1.0000	8763535