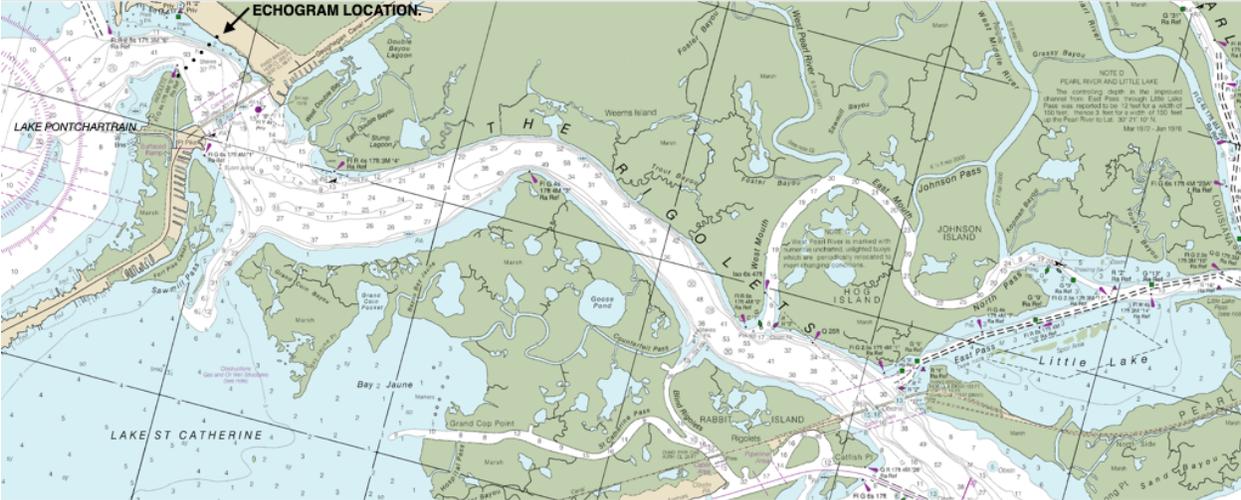


# Unabara Hydrographics

## Z Axis-2F Echogram Example: The Rigolets, Louisiana



The Rigolets (from the French word “rigole” meaning trench or gutter) is an 8 mile long (12.9 kilometer) deep water strait in Louisiana. It connects Lake Pontchartrain and Lake Saint Catherine to Lake Borgne and then the Gulf of Mexico. Near it’s mouth, at Lake Pontchartrain, there is a deep pit, kept more than 100 feet deep by scouring tidal currents which often exceed 2 knots. On the map above, the transverse of the channel denoted as a “ECHOGRAM LOCATION” (and dotted line) was surveyed using Unabara’s Z Axis-2F Dual Frequency Hydrographic Echo Sounder providing the “Z” (depths); with X,Y geoposition provided by RTK GPS; X,Y,Z was inputted to HydroMagic PC-based mapping software (Eye4Software of The Netherlands) which was used to generate the echogram below. This area is particularly challenging to echo sounders because the water depth begins in about 0.8 feet then falls down a steep slope to 111 feet; further, many echo sounder’s bottom tracking function is defeated as the acoustic reflectivity of the bottom varies widely in this channel. In shallow depths the bottom sediment is mostly silty-clay with high acoustic losses (low acoustic reflection) while beginning around 60 feet in depth, the consolidated layer of the bottom is hard Pleistocene clay which exhibits very low acoustic losses, thus high acoustic reflection. Unabara’s proprietary machine learning algorithm is uniquely suited to maintain bottom acquisition. The echogram below was produced using *unedited* Z Axis-2F generated depths. Note that at no time, not even on the steep slope of the channel walls, did either frequency fail to provide continuous valid depths; and, at no time during this survey line was user intervention needed to maintain continuous bottom acquisition and resulting depth measurements.



Note the scour hole above which has been backfilled

RED = 200 Khz. (Surficial Bottom)  
 GREEN = 24 Khz. (Consolidated Bottom)