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Sounding Better!

HYPACK 2019 Q3 Update: The Highlights

By Judy Bragg

I recently wrote the announcement for the email blast announcing the HYPACK 2019 third quarter update. To keep it “short and sweet”, I couldn’t include every bit of development that it includes; that level of detail once each year for our annual release is enough. This time I’ll take a brief look at the larger developments mentioned in our recent announcement (and maybe a just a few more).

“This quarterly update for HYPACK® 2019 includes something new for everyone.

“There are increased logging and processing capabilities for side scan, multibeam and magnetometer projects: ...”

MULTIBEAM PROJECTS

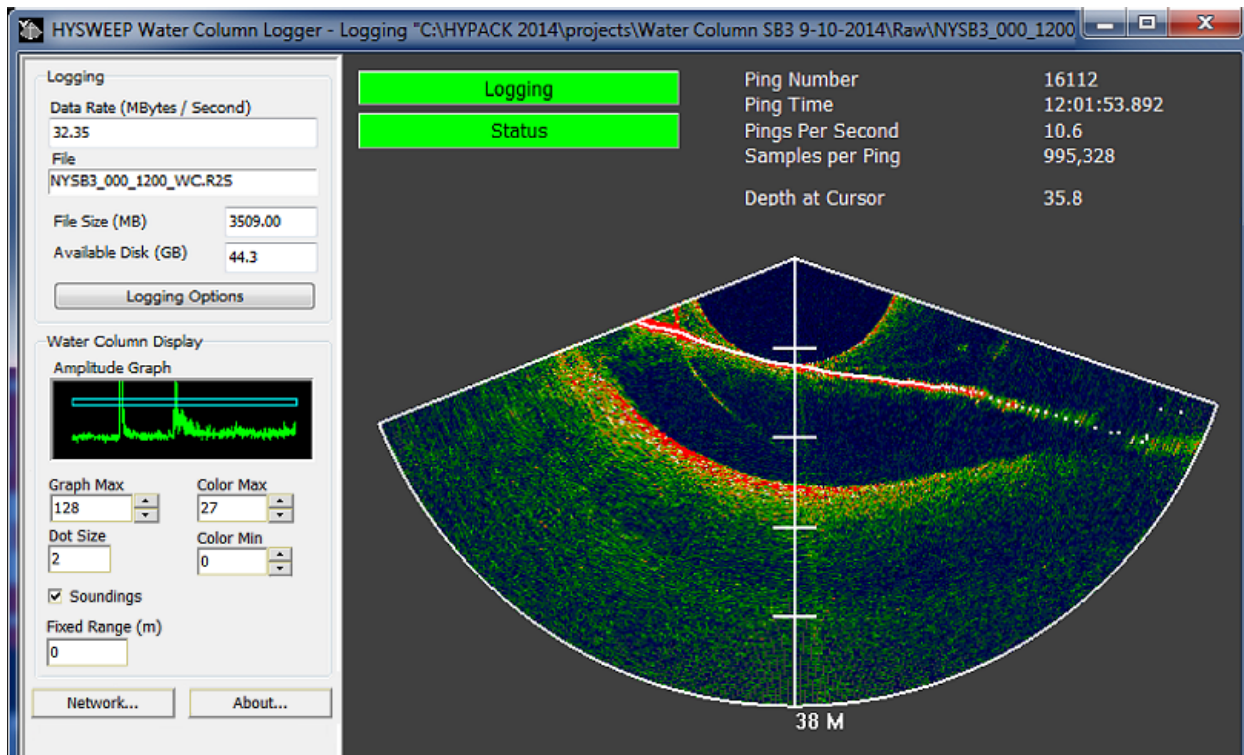
For multibeam surveyors, we have added support for NORBIT systems and improved handling water column data from start to finish.

WATER COLUMN SUPPORT

The WATER COLUMN LOGGER and WATER COLUMN PLAYBACK have both been updated and support NORBIT WC systems:

- The new user-defined **Fixed Range** limits the extent of the display. Enter 0 to show the full sonar range.
- Click **[Network]** to view the number of datagrams received and lost, and the number of transmission errors.
- WATER COLUMN PLAYBACK enables you to select the head of the R2Sonic dual head system from which it should read the data. Additionally, when you’ve loaded your data, the program pauses to allow you to choose a line file.

FIGURE 1. Water Column Logger



NEW CUSTOM XYZ EXPORT OPTIONS

- **Export Point Flags as Targets:** This was a customer request. Most windows include a Drop a Point Flag icon with which you can mark points of interest in any of these windows and see the same points flagged in the other windows for comparison. Now, you can also export flagged positions as project targets.
- **Option to export X, Y, CUBE Depth, CUBE Uncertainty**

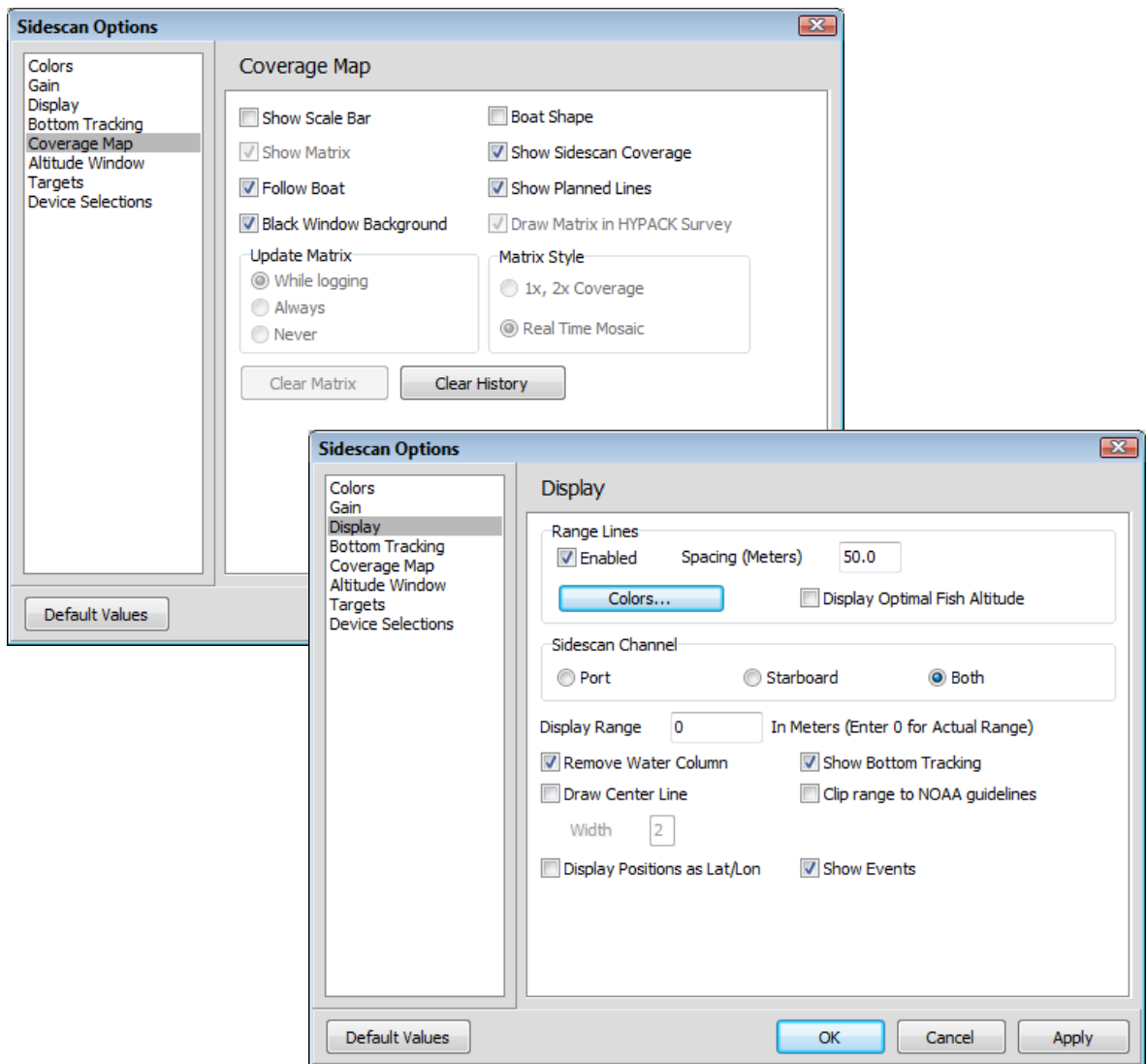


SIDE SCAN PROJECTS

Side Scan Survey supports multifrequency data and can now log snippets and True-Pix™ data simultaneously. The side scan controls are merged with other configuration dialogs in both Side Scan Survey and Targeting and Mosaicking--easy to find, easy to use.

MANY SETTINGS, ONE DIALOG

Side Scan Options are merged to one, multipaneled dialog that includes the View Options, Device Selections, Target Parameters and Side Scan Controls.

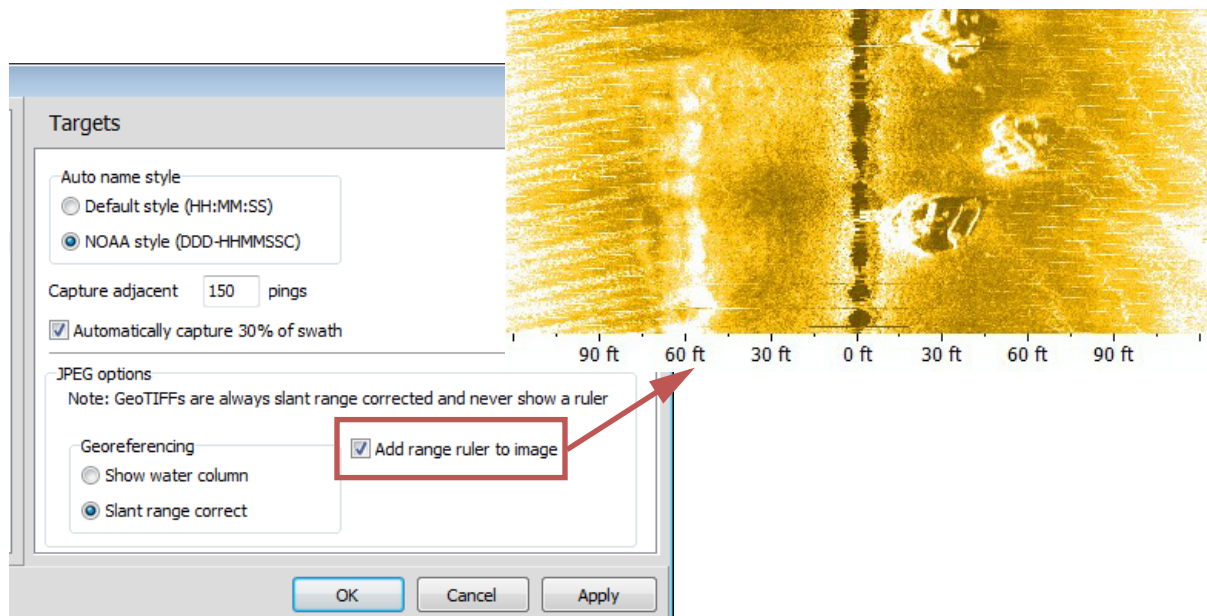


ADDITIONAL IMPROVEMENTS

Geo-referenced TIFs are now always slant range corrected. Across-track imagery is always at an accurate range from the centerline and geo-referenced.

For JPG images captured at your target site:

- **NOAA Auto-Naming convention in the SIDE SCAN SURVEY:** JulianDay-Time Channel (JJJ-hhmmss,Cusing Por S for Port or Starboard respectively). The option is found in the Targets tab of the View Options dialog.
- **Option to attach a scale bar to target images** (Target Parameters). A scale along the bottom edge of the captured JPG image provides perspective.



MAGNETOMETER PROJECTS

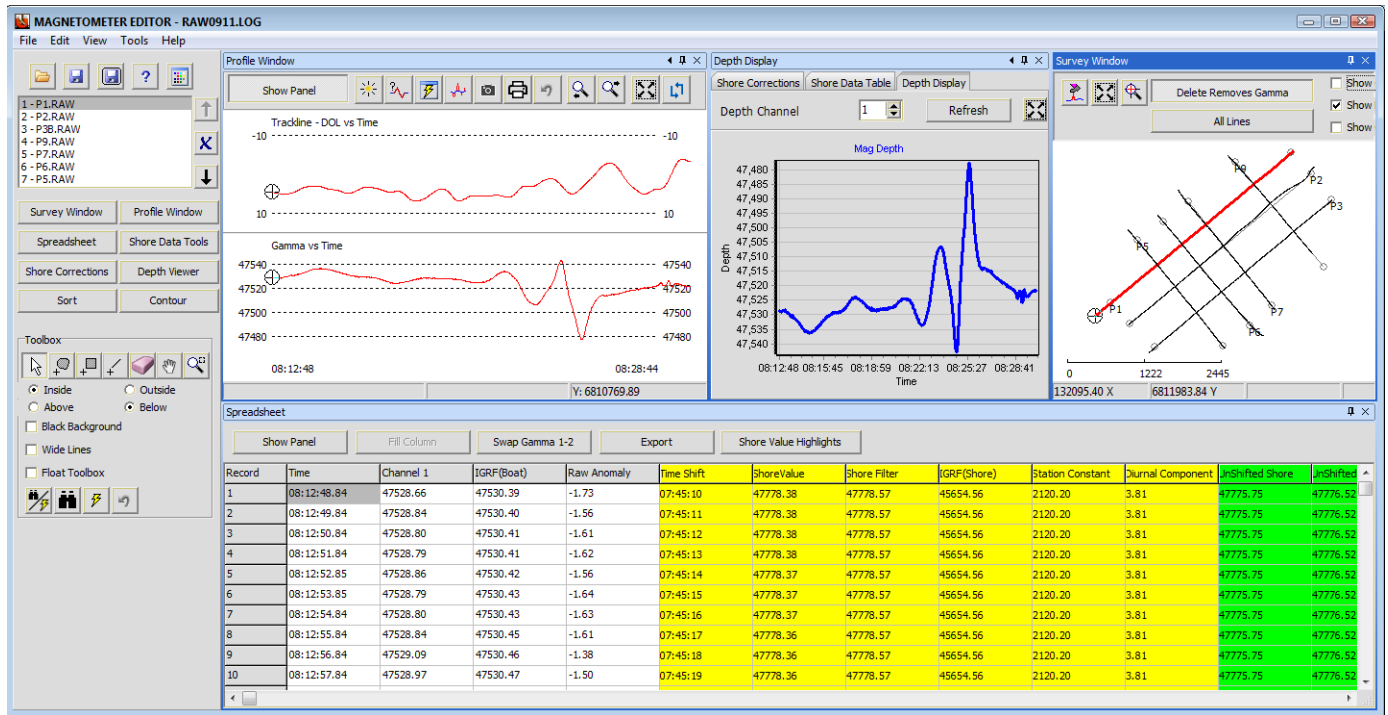
The Magnetometer Editor has an updated interface and provides improved processing of associated environmental data.

UPDATED INTERFACE

In the updated interface, you can resize and reposition the windows into any layout you want or, in one easy click, pin them to the side of the shell window.

When you pin a window, it “slides out of view” leaving a 0.25 inch (0.5 cm) tab on the side of the window where it is docked. When you want to access the pane, click its tab and it slides into view. When you move your cursor to a different window, HYPACK® knows you have finished in the pinned window and it slides back out of view and out of your way.

When you drag the toolbar of any window to reposition the window, the interface displays “landing pads” to indicate where you can dock your window.



SPECIALIZED MARINE INSTRUMENT PROCESSING

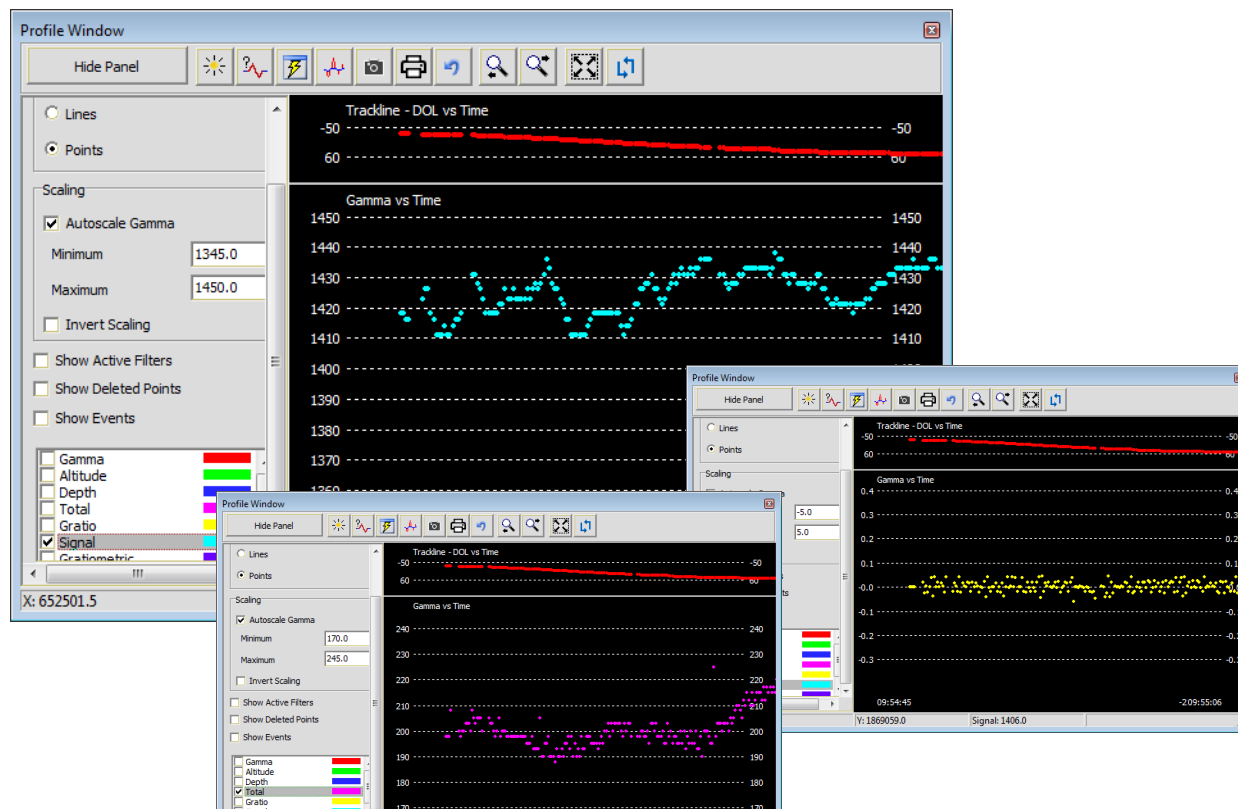
Some magnetometers log environmental data in addition to the mag data. In previous releases, you could select only 2 of these values to process in a single session. In HYPACK® 2020, you can process any number. You can examine and edit the data, displaying one or more values at once, in the Profile and Depth Display window graphs and in the numerical presentation in the Spreadsheet.

Specialized Marine Instrument

Device Name: Number of Channels:

Select Channels for Processing. Deselect all Channel to Ignore This Device.

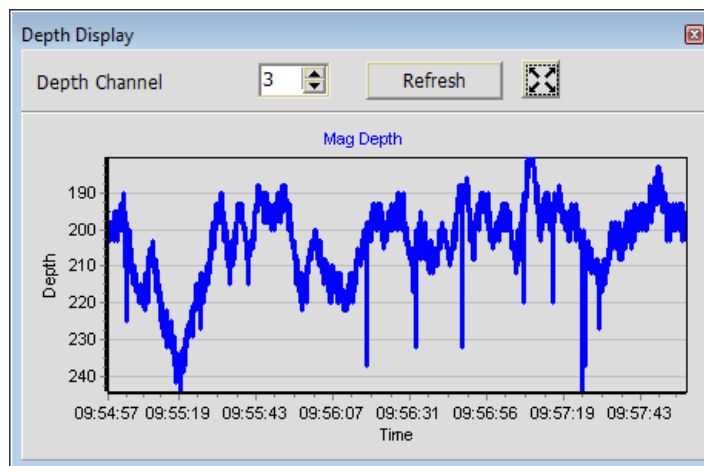
- ☒ Temperature
- ☒ Conductivity
- ☒ Salinity
- ☒ Dissolved Oxygen
- ☒ Dissolved Oxygen mg/l
- ☒ Pressure
- ☒ Depth
- ☒ Turbidity
- ☒ Chlorine
- ☒ Battery



The Depth Display window graphs one channel at a time. It used to show the towfish depth. Now you can choose the data displayed by selecting the correct channel.

To read a different value, select the channel in the toolbar and click [Refresh].

FIGURE 2. Depth Display



XYZ MANAGER

The XYZ Manager returned to the cleaner bordering method and added a Border Tool that enables you to fine-tune the boundaries of each dataset. You can output a single merged dataset, or maintain a separate output file for each one input. A new Date/Time filter adds another optional layer of control for your output data.”

EXPORT COMBINED OR SEPARATE FILES

Choose whether to export a single, merged XYZ file or a catalog of XYZ files including only soundings remaining after any clipping or filtering you may have done.

FIGURE 3. XYZ LOG File by Date in HYPACK®

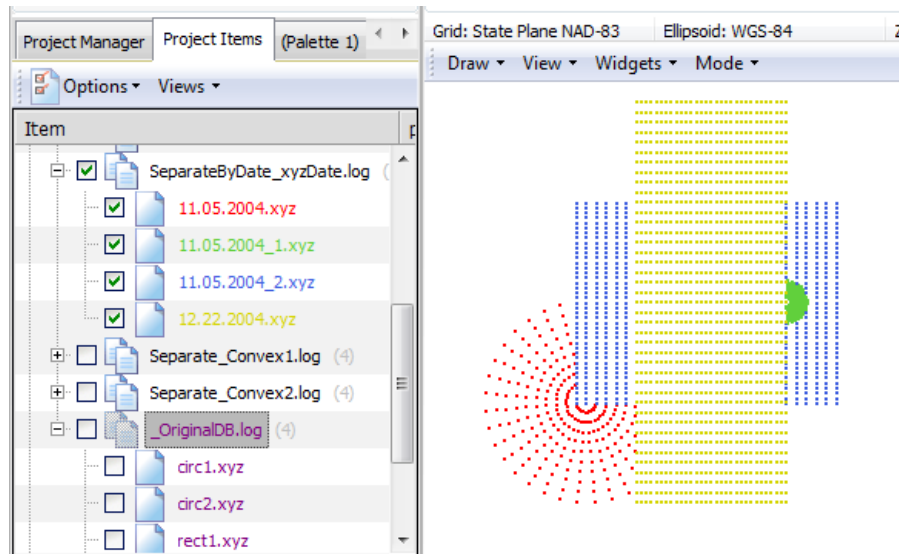
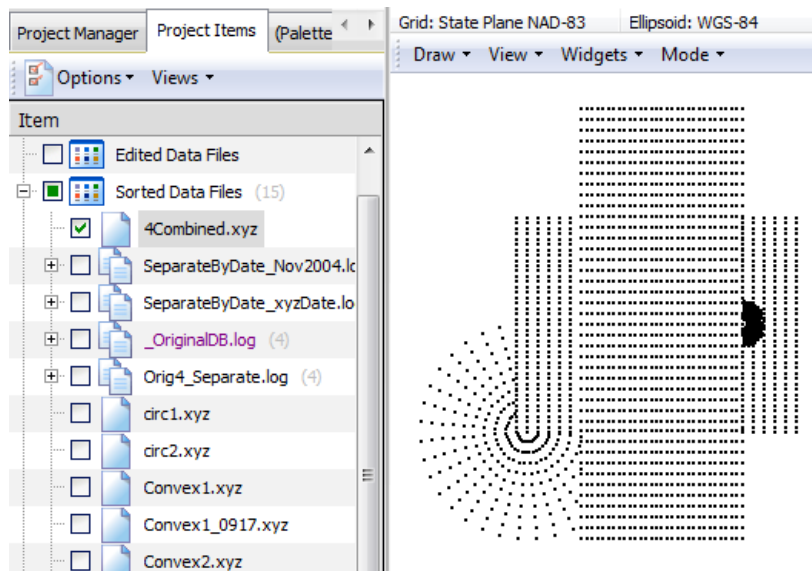


FIGURE 4. All File Combined



DATE AND TIME FILTERS

Date/Time filters enable you output data including only files whose Date and (optionally) Time properties fall within the user-defined range. The Source Date filter option defaults to the earliest and latest dates of files from your database.

FIGURE 5. Sample Database (left), Filtering the Latest File by Date and Time (right)

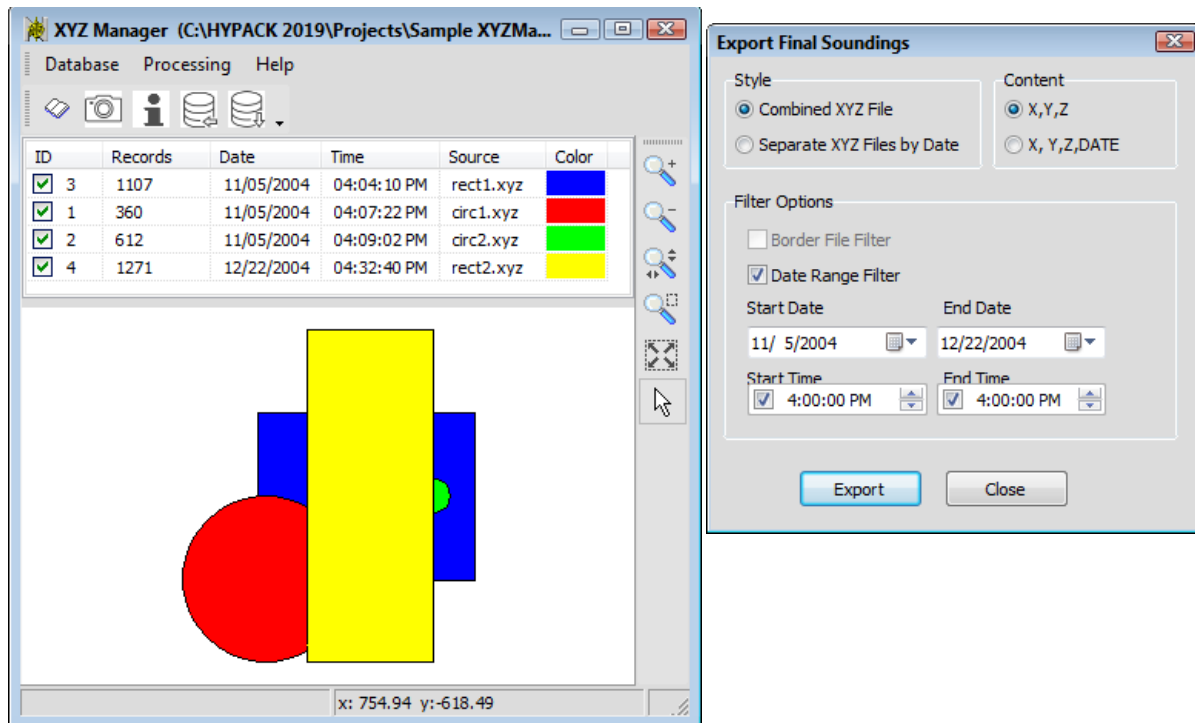
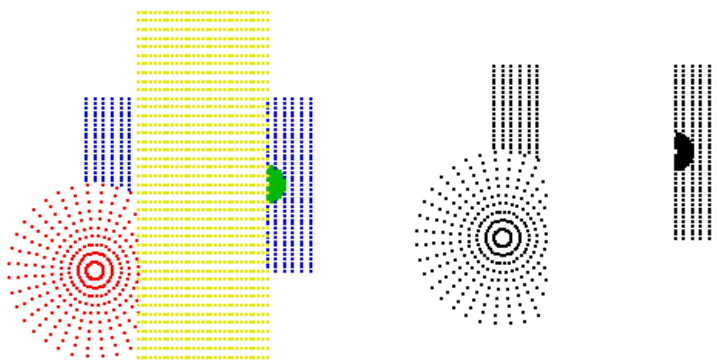


FIGURE 6. Filtering the Last File—No Filter (left), Combined with Latest (yellow) Filtered (right)



BORDER TOOL

When you add an XYZ file to the database, the XYZ MANAGER connects the data points to create a TIN Model. It is the perimeter of this model that describes the area covered by the data set.

In the Border Tool, you can view the current border for an individual XYZ file, and adjust the parameters by which it is drawn:

FIGURE 7. *Border Tool—Max Leg = 200 (left), Max Leg = 100 (right)*

