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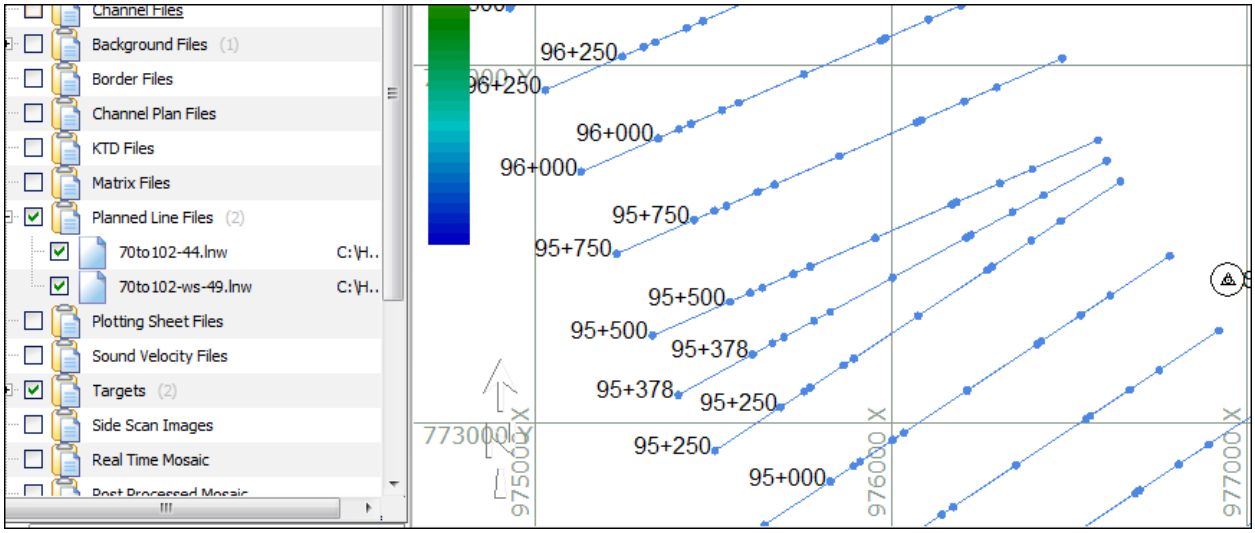
Comparing Templates from 2 Different Line Files

By John Lindberg

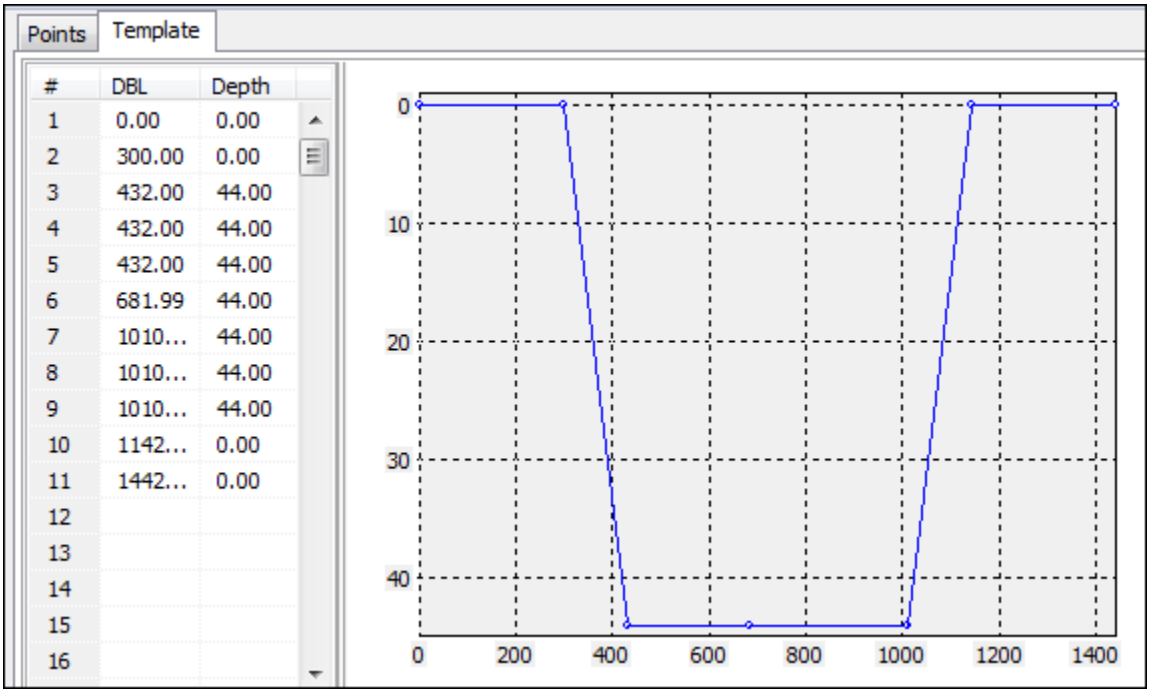
A couple weeks ago a question arose regarding the comparison of LNW (planned line) template points. In this example, a channel had been deepened from 44' to 49', and widened in different sections, and there was a need to compare sections and note the actual widened areas. If you look at Figure 1, there are 2 LNW files drawn on the main HYPACK® screen showing the position of the template points, but there is no visual on the actual template shape or depths of the template points.

FIGURE 1. *Map View of 2 Planned Line Files with Different Template Information*



The Planned Line Editor has the ability to view a single template as shown in Figure 2, but how can you compare templates from 2 different planned lines?

FIGURE 2. Viewing the Template in the LINE EDITOR



I found a workaround to view 2 different templates by using a few tools already available in HYPACK®:

1. The first thing I did was **extract the template points from one of the line files**.
   a. **Load one of the line files (70to102-ws-49.lnw with depth of 49) into the LINE EDITOR.**
   b. **Select TEMPLATE - SAVE TO XYZ**. This saves each of the template points as an XYZ point.

FIGURE 3. Exporting Template Points to XYZ

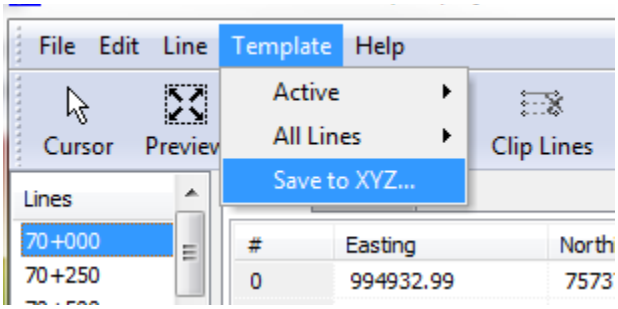
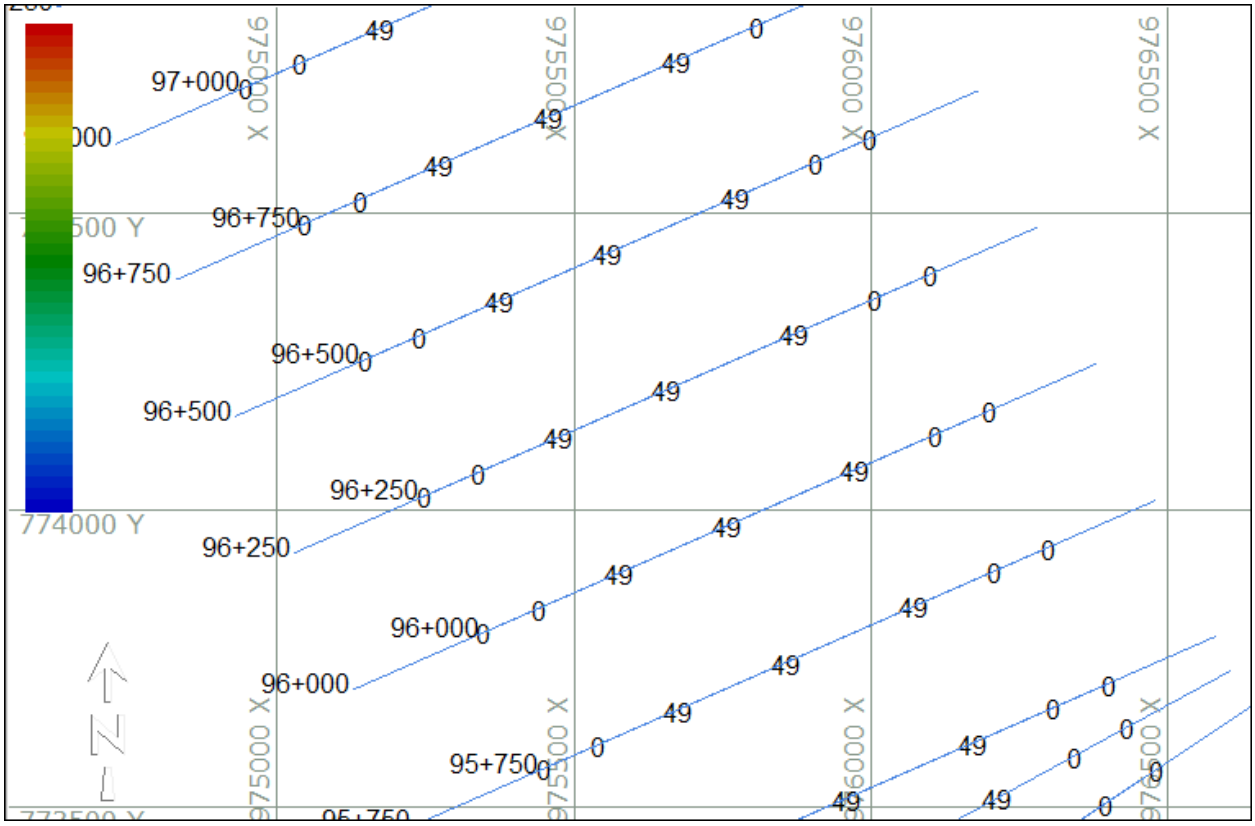


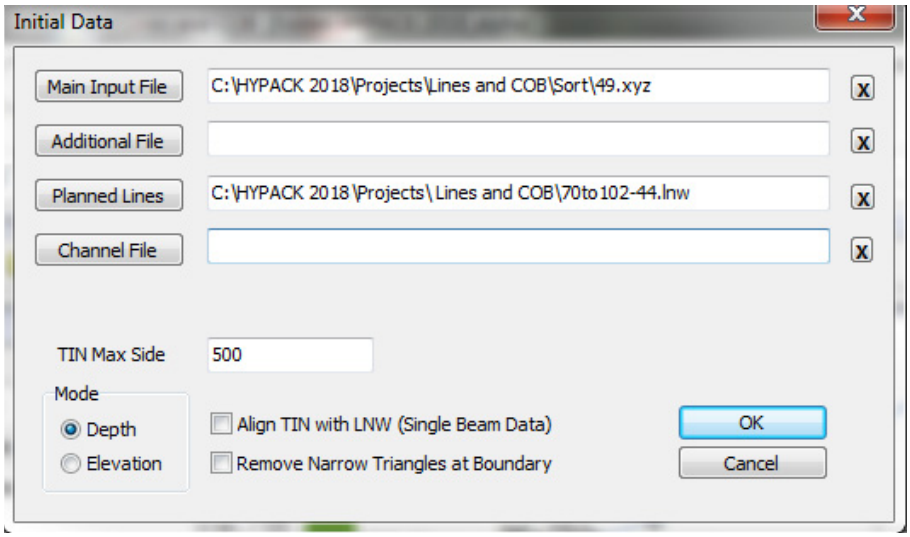
Figure 4 shows the exported points in the HYPACK® Map window:

FIGURE 4. *Template Points Overlaid on the Planned Line in the HYPACK® Map Window*



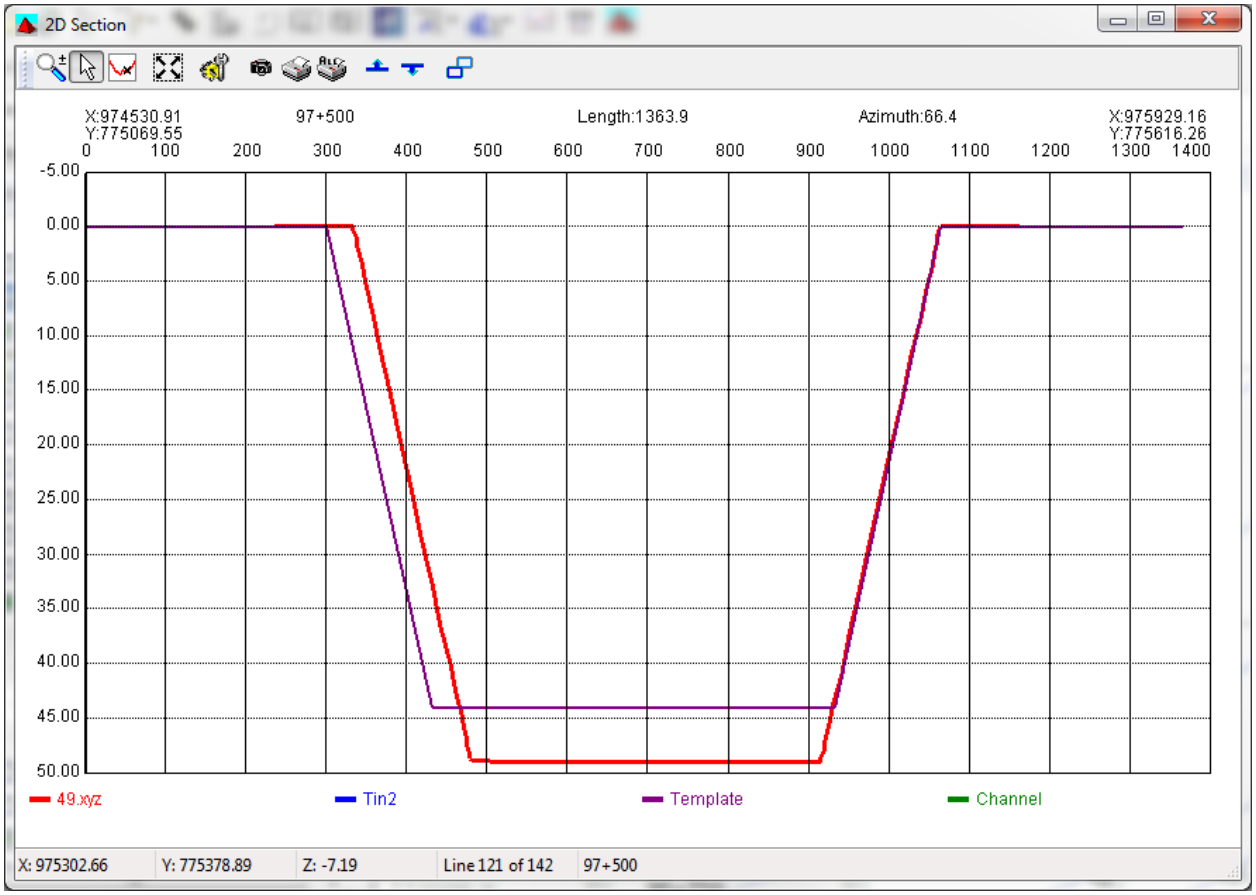
2. Next, I took this **XYZ file into TIN MODEL along with the other LNW file (70to102-44.lnw) and cut sections out of the TIN model.**
   a. **Build the TIN model**. I used the following parameters:
      - **Main Input File:** the newly created XYZ file
      - **Planned Lines** file: LNW file with the 44' depth.
      - **TIN Max Side** big enough to connect all the nodes of the XYZ file. In this example, a 500 value was big enough.

FIGURE 5. TIN Modeling the 49' Template Points (XYZ) with the 44' Template in the LNW



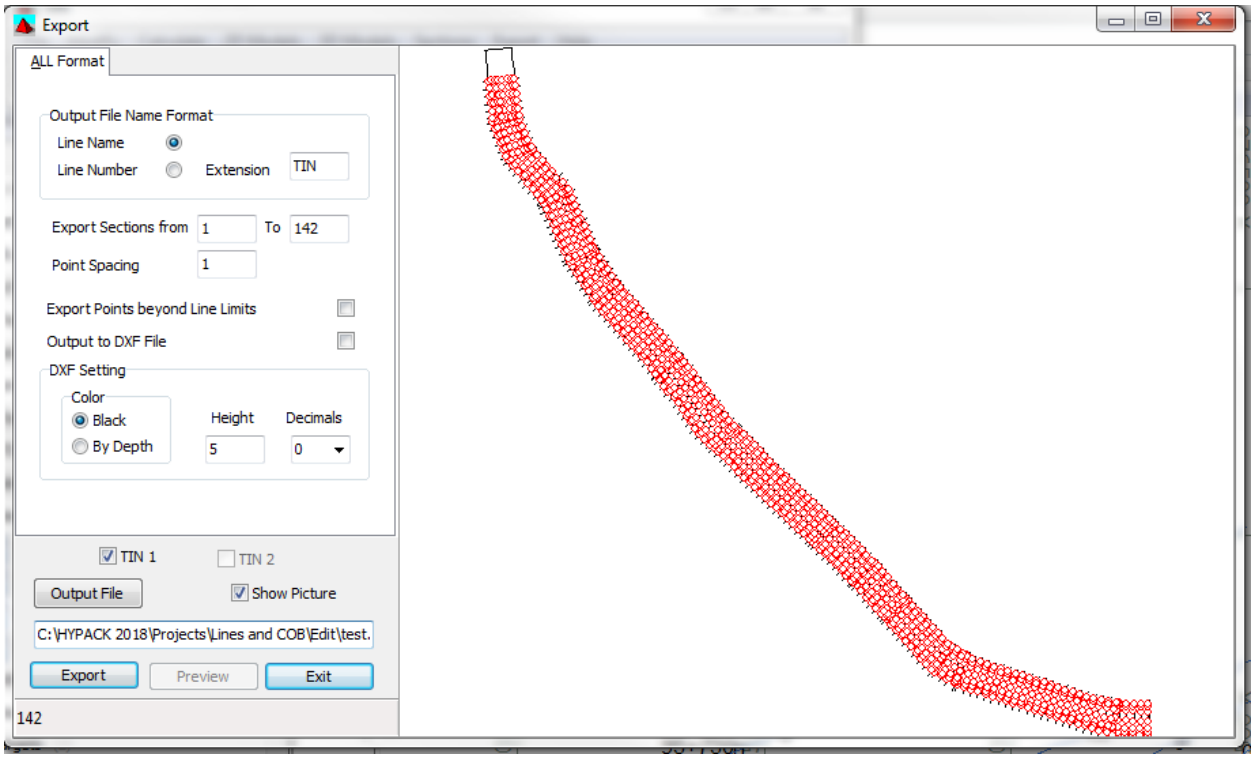
Tip: While in TIN MODEL, you can select SECTIONS – 2D and compare each template pair. As you can see, the red line is the 49' data and the purple line is the 44' template.

FIGURE 6. Comparing Templates in the 2D Sections Window—49' channel (red) vs 44' channel (purple)



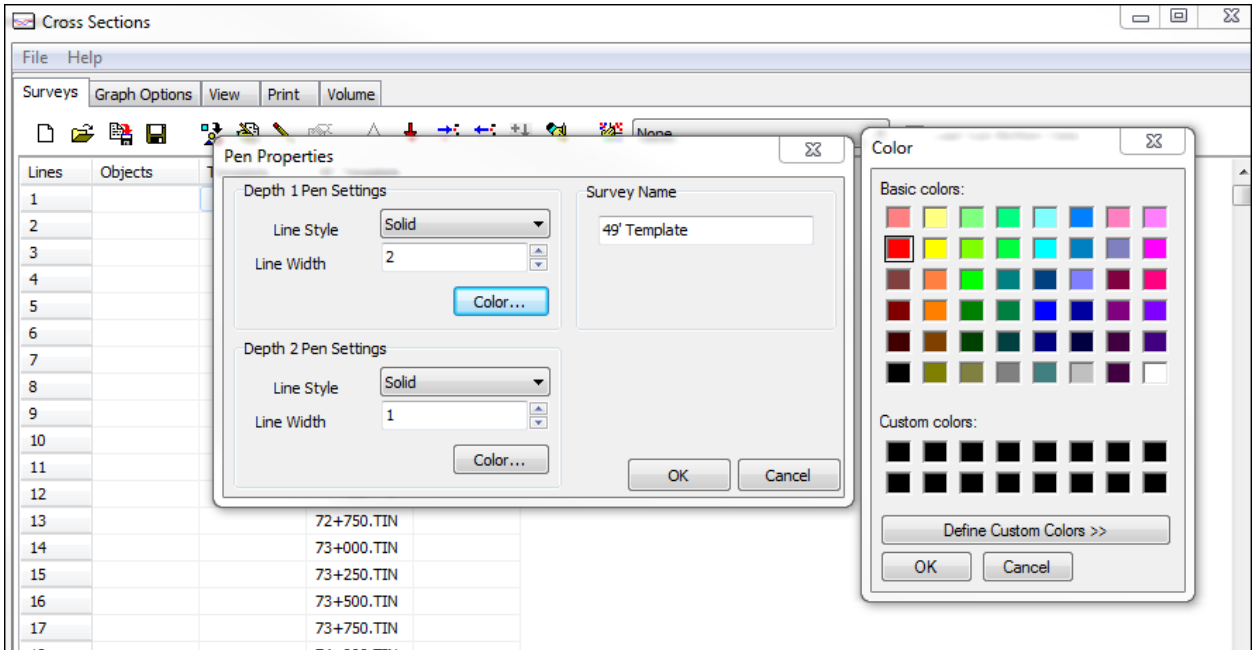
b. **Cut the sections**.
   i. **Select EXPORT – ALL FORMAT** from the TIN MODEL menu.
   ii. **Set your Output Options.** The only important thing to do here is enter a point spacing of 1. This will create points every foot along the line. If I left the (default) zero, the program would only create points at the line and triangle leg intersection locations, giving very erratic looking surface.
   iii. **Click [Export].** A catalog file (*.LOG) of ALL format files is generated representing the template at the 49' depth.

FIGURE 7. *Cutting Sections in TIN MODEL*



3. You can **take the new LOG file right into the CROSS SECTIONS AND VOLUMES** (CSV) program. Just change the pen properties and colors for Depth 1 (and the Survey Name if you wish) so you can differentiate the 49' template from the 44' template (Figure 8).

FIGURE 8. *The Pen Properties in CROSS SECTIONS AND VOLUMES enable you to configure how each depth is drawn.*



In the View tab, CSV gives you more options to compare the templates (Figure 9). You can also print these profile views out or export them to DXF.

FIGURE 9. *Comparing the Templates in the View Tab*