



XYZ Import in Advanced Channel Design

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Most channel creation jobs, these days, call for importing a DXF into ADVANCED CHANNEL DESIGN (ACD), as these types of drawings carry with them the necessary node information for the design. However, sometimes there are no DXF files to be found, so we must find other ways to import points into ACD.

Let's take a look at this example, which was from a survey conducted on a sewage pond in the foothills of the Rockies. While we should always strive for repeatability on hydrographic surveys, nobody wants to repeatedly survey these ponds! Therefore, the decision was made to create a hard-bottom template (using ADVANCED CHANNEL DESIGN) to use over-and-over again for volume calculations on the primary sewage pond.

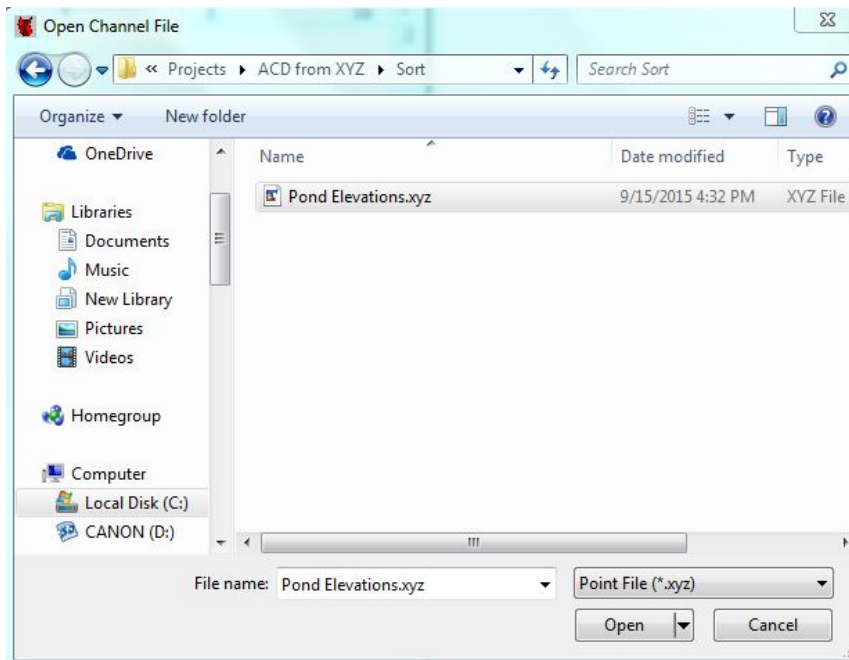
The survey did require *one-time* mobilization in the middle of the primary pond. These primary ponds can't be surveyed with sonar equipment, as there is an enormous amount of aeration in the "water". As the sun hits the pond and the sewage starts to break down, air bubbles fill the pond and render sonars useless. The surveyors (QUICKLY) took note of several elevations in the pond using a long, steel pole and a data collector. The positions and elevations were recorded, as were those of several points along the water's edge and at the top of the bank. These XYZs were output from the data collector and brought into HYPACK® as an XYZ file.

FIGURE 1. XYZ File in HYPACK®



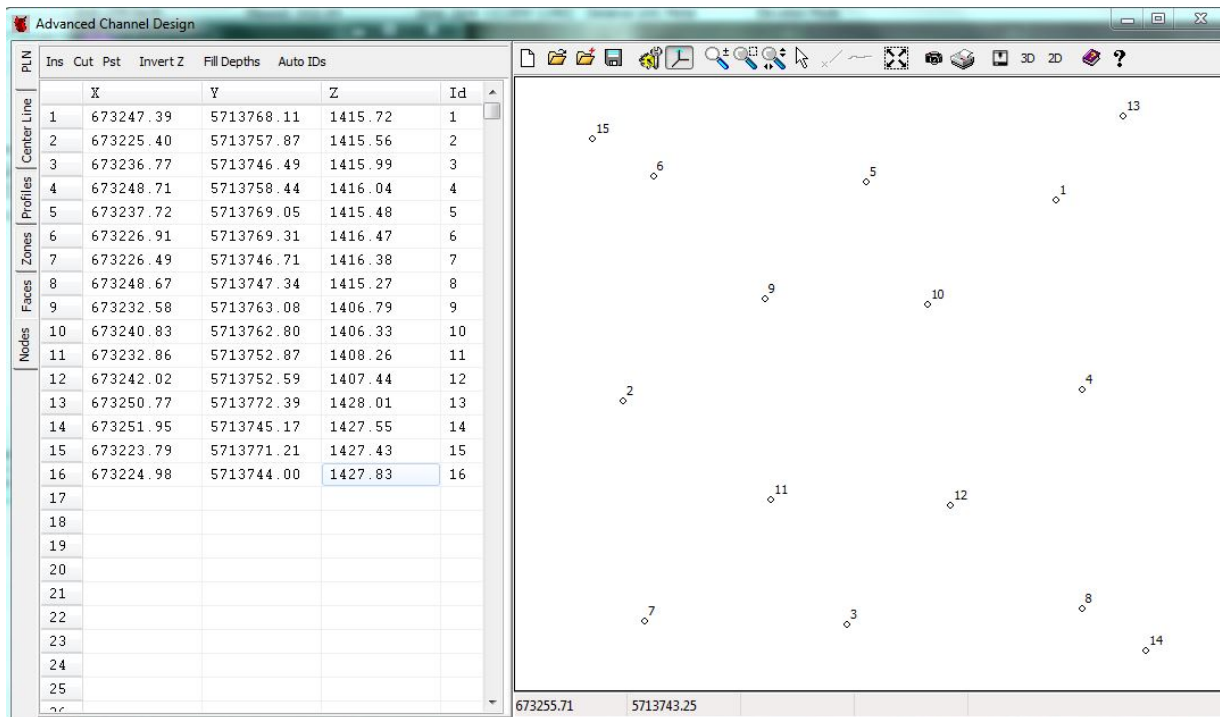
After the XYZ file was brought into HYPACK®, it was also imported into ACD. The file type was changed in the "Open Channel File" window from CHN to XYZ to import the proper file.

FIGURE 2. Importing the XYZ File to the Project



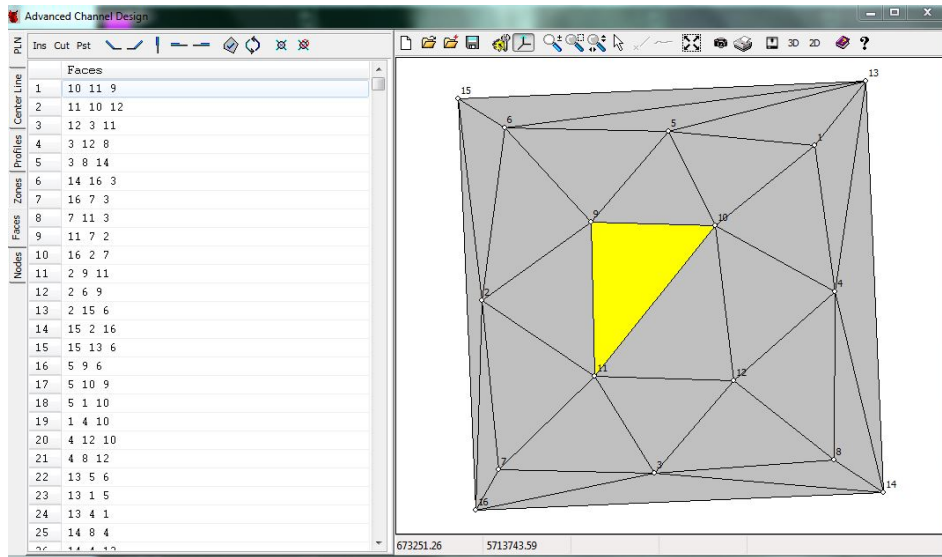
Once the XYZ file was opened, the position and real-world elevation information was automatically brought into the Nodes tab.

FIGURE 3. XYZ Soundings as Nodes in ACD



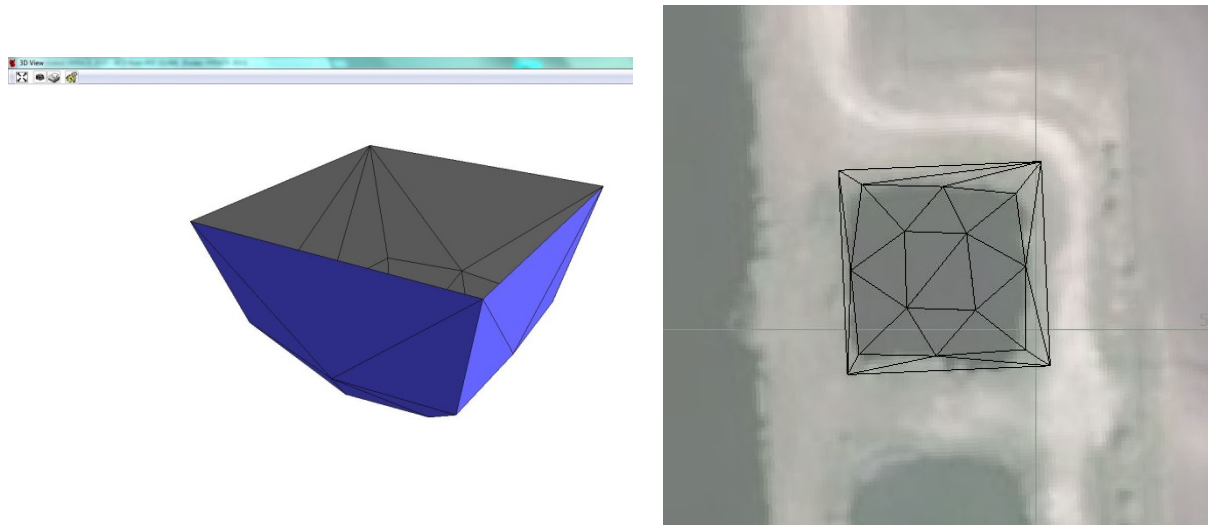
The next step was to connect all the nodes in the Faces tab, using triangles for each face, as the elevations varied from point-to-point.

FIGURE 4. *Defining the Faces in ACD*



After connecting the faces, the channel file (CHN) was saved. The 3D View in ACD provided a nice look at the channel, while the extents of the channel were visible in the HYPACK® Shell.

FIGURE 5. *The Resulting Channel in ACD (left) and HYPACK® (right)*



The channel that was created will now be used as the “before dredge” template, with all future “after dredge” surveys measured up against it using TIN-to-Channel in the TIN MODEL. The “after dredge” surveys will actually consist of shooting the water surface elevation, and taking shots of the perimeter of the pond at the water’s edge using a data collector. Once again, the points file is exported out of the data collector and brought into HYPACK®. There will no longer be the need to mobilize a boat on this pond!