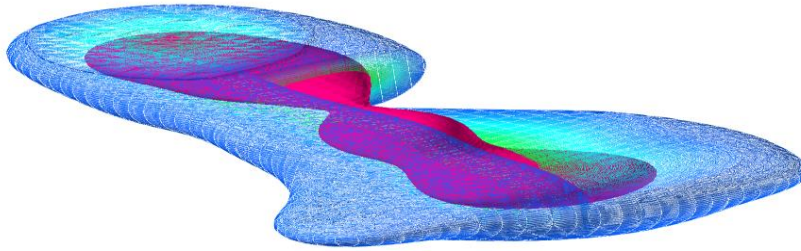


Adding Cutouts to Solid Models

12/11/24/JPR



When displaying solid models depicting contamination, ore-grades, geothermal gradients, etc. it is often desirable to view the inner gradations of these “blobs”. The Cutout option within the RockWorks 3D plotting utility provides a way to accomplish this.

- Let’s start by assuming that you have displayed an interpolated geochemical, geophysical, geotechnical, or geothermal model (Figure 1). In this example, we’re looking at Dioxane concentrations based on samples from screened intervals.

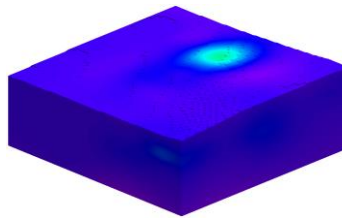


Figure 1

- In this next step we’ll render all of the low values to be transparent such that the isosurface depicts a plume of Dioxane concentrations greater than 6.5 ppt (Figure 2). This is accomplished by (1) double-clicking on the *IDATASOLID* icon, (2) setting the *Iso-Level Value* to 6.5, and (3) clicking the *Apply* button.

Figure 2

- Right-click on the *IDATASOLID* icon and select the *Add Cutout* option (Figure 3).

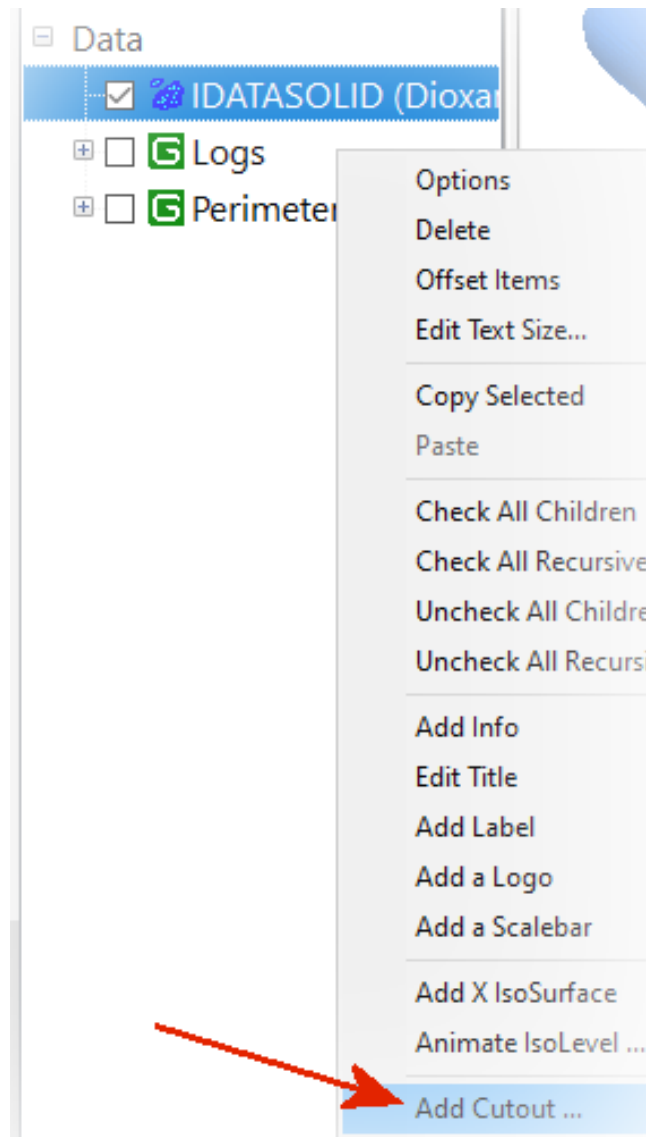


Figure 3

- The *Solid Model Cutout* dialog (Figure 4) will now appear.
 1. Select the corner that is to be removed.
 2. Either drag the circular icons to the desired location, or
 3. Manually set the cutout location. Note: These coordinates represent the relative voxels, not the actual global coordinates which are shown to the right of the “spin buttons”.
 4. Note: Changes to the cutout dimensions will not be implemented until the *Apply* button is clicked (Figure 5).

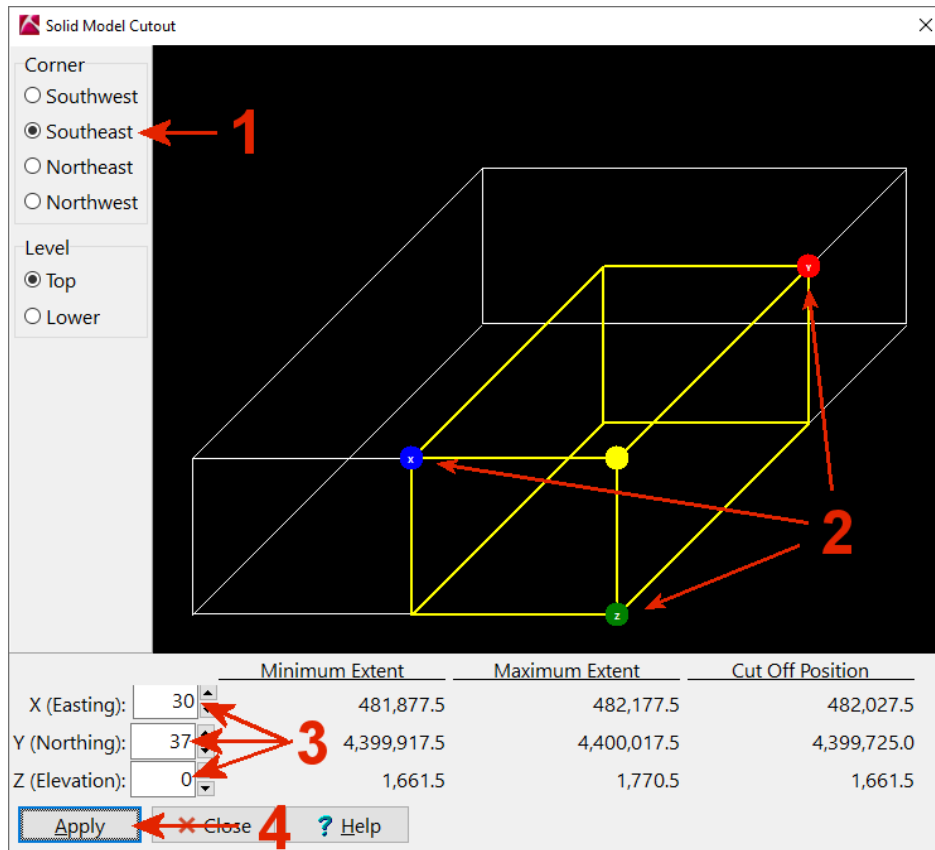


Figure 4

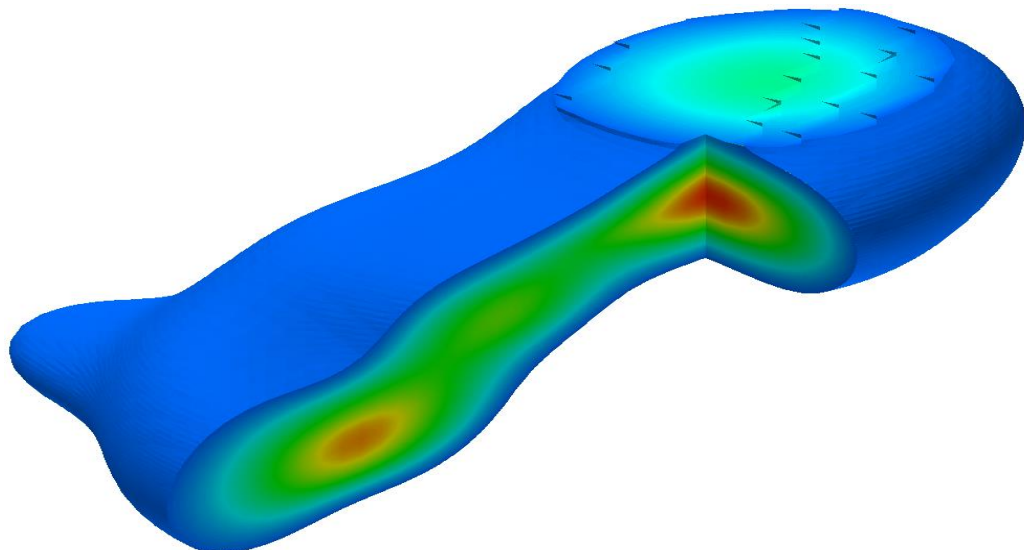


Figure 5

- In this next step, we'll be creating an illusion that depicts a plume representing the higher Dioxane concentrations extruding into the cutout area. We'll start by copying the *IDATASOLID* to the Windows Clipboard. This is accomplished by right-clicking on the *IDATASOLID* icon and selecting the *Copy Selected* option (Figure 6).

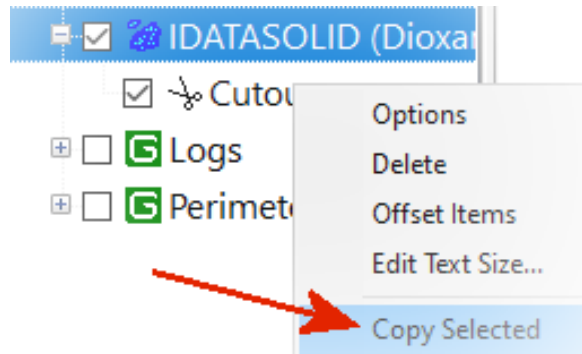


Figure 6

- Right-click on the *Data* item and select the *Paste* option (Figure 7).

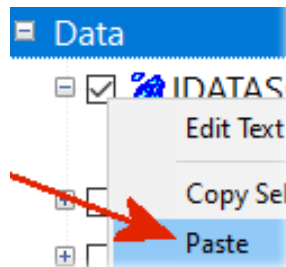


Figure 7

- A copy of the solid, including the cutout will now be added to the *Data* "tree". Click on the *Cutout* option within the copied solid and press the *Delete* key.

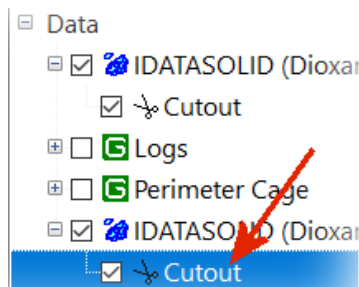


Figure 8

- As shown in Figure 9, double-click on the IDATASOLID copy (1) and adjust the Iso-Level (2) to a value that is higher (e.g., 12.5) than the cutoff value that was used for the original solid (6.5).

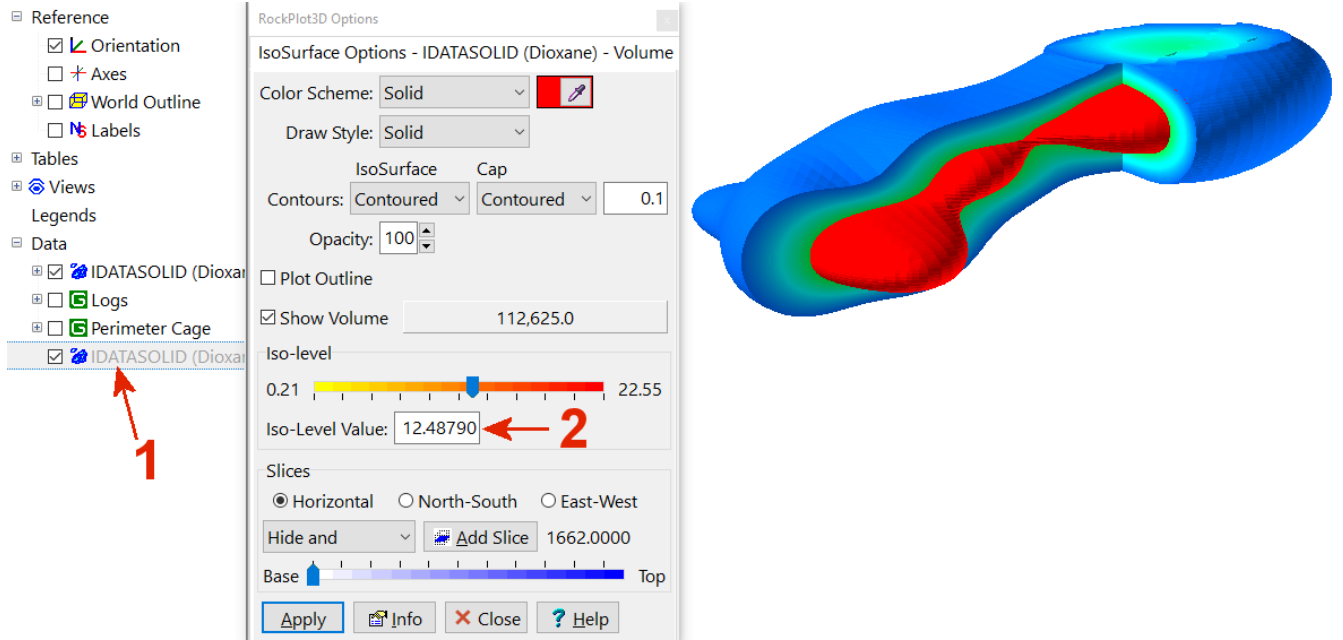


Figure 9

- At this point, we encourage you to experiment with some of the other settings such as showing the isosurface as a mesh (Figure 10 – lower image) to see what can be done.

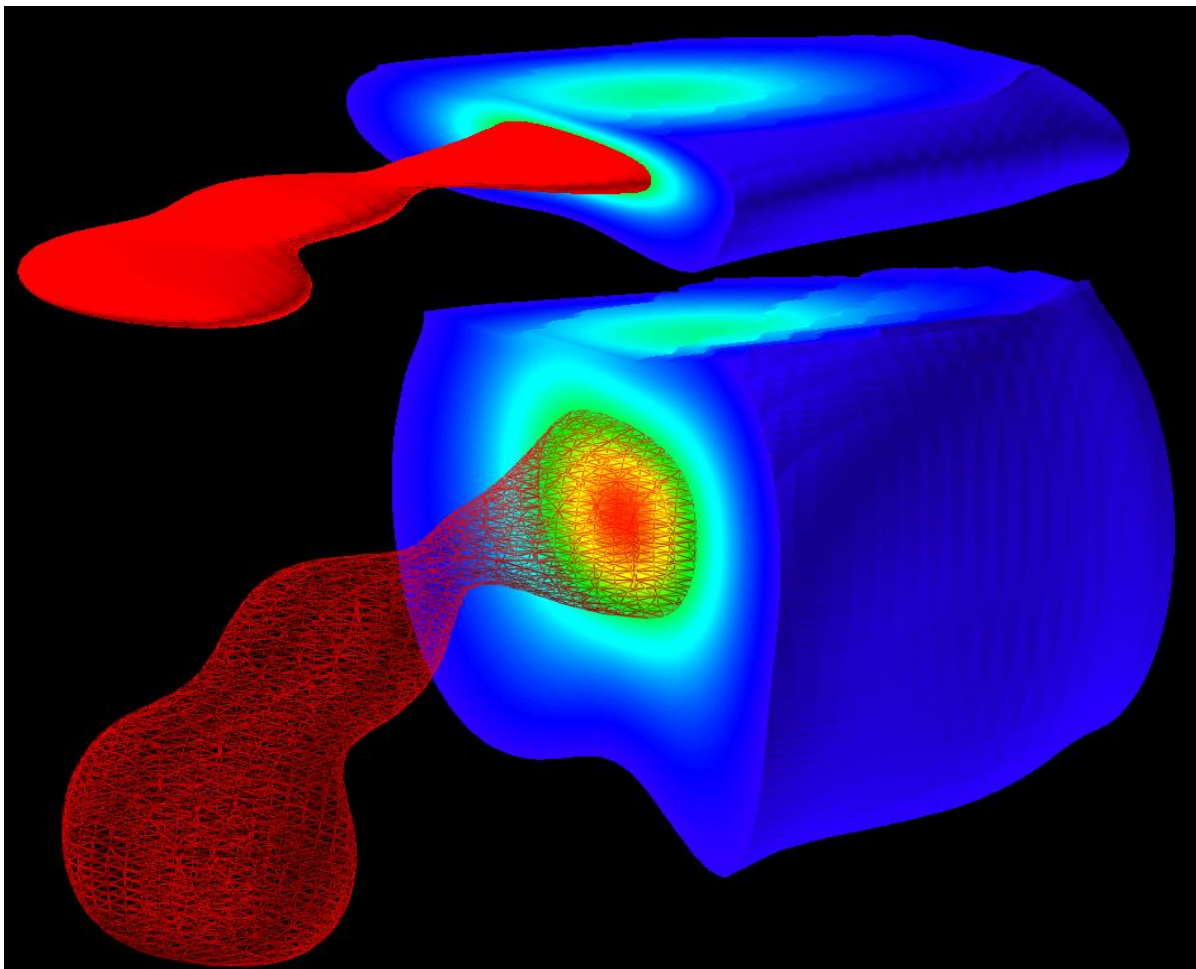


Figure 10