TAP™ Mapper Intersecting Contours Help

Intersecting Contours provides a tool for the summation of point data from point-type shapefiles over geographical areas covered by a set of intersecting polygon-type shapefiles. The most common Intersecting Contours usage is for conducting population counts wherein the population covered by the intersection of two sets of contour studies is calculated by summing the population residing within the area defined by the contour overlap. U.S. block centroid population data for the 2000 and 2010 census are available from SoftWright to facilitate population counts. In the illustrative example below, a population count is conducted for a set of contour type area coverage studies created using TAP.
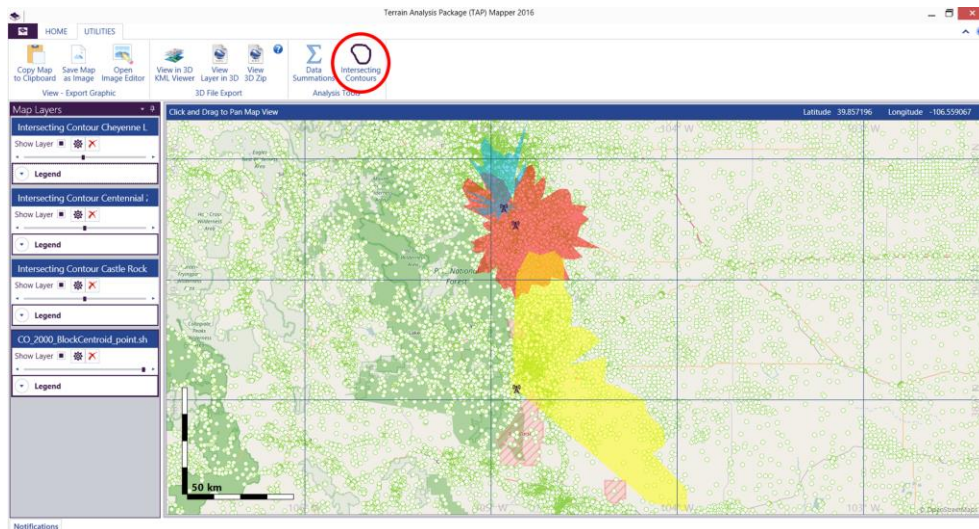

Figure 1: Open Intersecting Contours Dialog from the Main Window Utilities Tab

Error! Reference source not found. shows a set of three contour studies created using TAP and displayed as blue, red, and yellow polygon regions. The fourth map layer is block centroid population data for Colorado for the 2000 census. It is shown as a green ellipse marker with white fill. The point data could be any point-type shapefile containing numerical data fields. In order to conduct Intersecting Contours analysis, at least one point-type shapefile and one polygon-type shapefile must be loaded in Mapper. Now that this criteria has been satisfied, launch the Intersecting Contours dialog by clicking on the contour icon in the Utilities tab of the Main Window as shown in Figure 1.
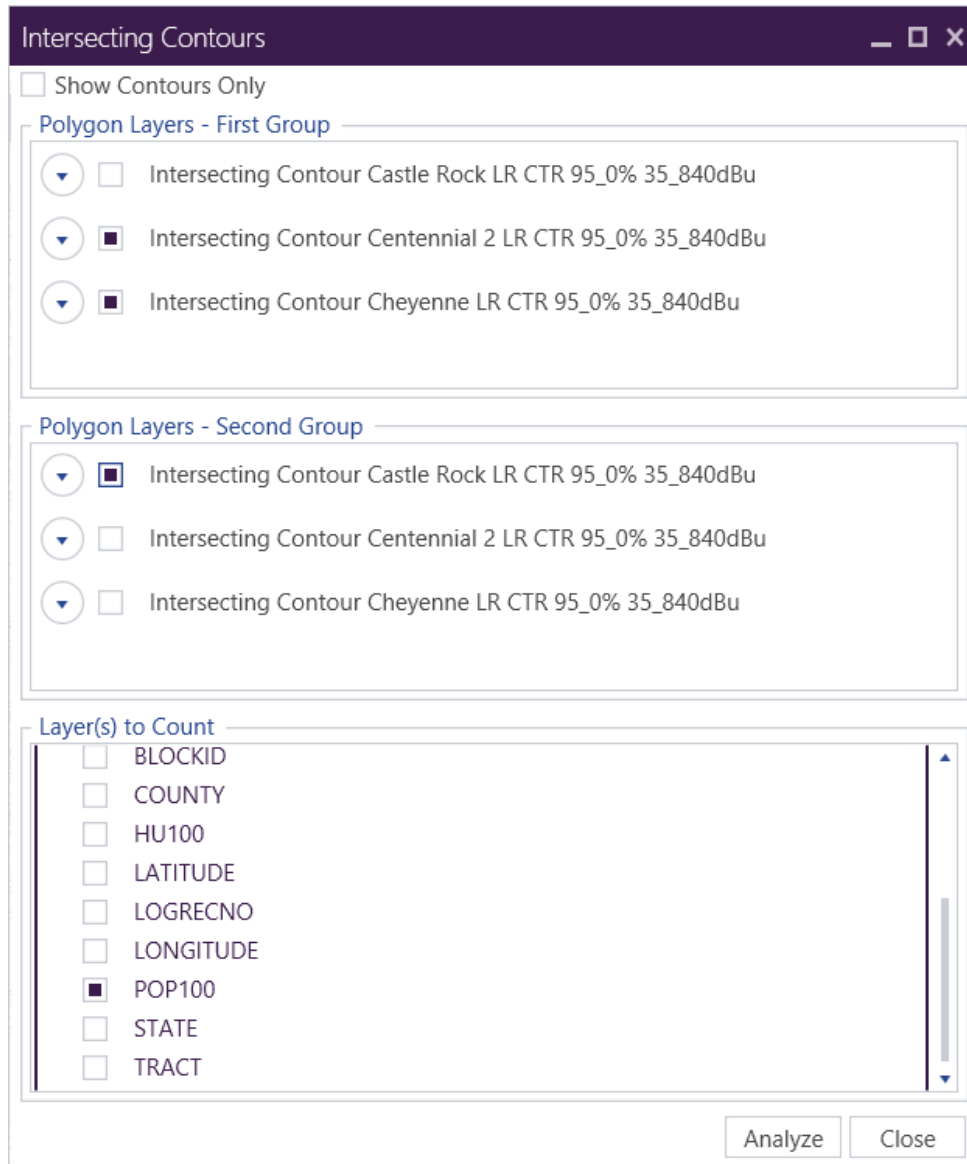
Figure 2: Intersecting Contours Dialog Window

The Intersecting Contours dialog window shown in Figure 2 will appear. Note that by default all polygon shapefile layers loaded in the map are displayed in two groups. In order to limit the selections only to contour type area coverage studies, check the "Show Contours Only" checkbox. The intersecting contours region is based on the selections in "Polygon Layers – First Group" and "Polygon Layers – Second Group". The region is defined as follows:

The region covered by at least one polygon selected in the First Group AND covered by at least one polygon selected in the Second Group.

So, for a data point to be counted toward the total, it must be within at least one contour from the First Group and at least one contour from the Second Group. Another way to describe the intersecting contours analysis where shapefiles A and B are selected in the First Group and shapefiles C and D are selected in the second group is "All of the points covered by A or B that are also covered by C or D".

In the example shown in Figure 2, the region will be the area covered by either Intersecting Contour Centennial or Intersecting Contour Cheyenne AND covered by Intersecting Contour Castle Rock. All of the population data (data field "POP100") within that Intersecting Contour region is summed and totaled when the Analyze button is pressed.

In summary, setup the Intersecting Contours analysis using the following steps:
1. Select the polygon layers for the First Group and Second Group in order to define the desired Intersecting Contour region.
2. Select the point data to sum by clicking the box beside the data fields of interest from the point-type shapefile(s). More than one data field may be selected. In Figure 2, the population data is contained in a field named POP100.

Press the "Analyze" button and a report will be created that sums the point data over the appropriate intersecting contour region for every point data field selected. In this example, the report will show the total population covered by the intersecting contour region. Progress information will be displayed while the Intersecting Contour report is generated, which may take a minute or two for large studies.

As shown in Figure 3, the Intersecting Contour Report has a table that shows the point data (population from the 2000 census in this case). In this example, the Intersecting Contour region that we have selected has a population of 178,207. Select the "Open in Document Editor" button to open the report in a word processing application from which the report may be printed or saved in a variety of common formats (e.g., .doc, .pdf).

For additional information or to initiate a support request, please send an email to support@softwright.com.

Intersecting Contours Results

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Polygon Layers - First Group

Intersecting Contour Centennial 2 LR CTR 95_0% 35_840dBu.shp

Intersecting Contour Cheyenne LR CTR 95_0% 35_840dBu.shp

Polygon Layers - Second Group

Intersecting Contour Castle Rock LR CTR 95_0% 35_840dBu.shp

Layer(s) to Count
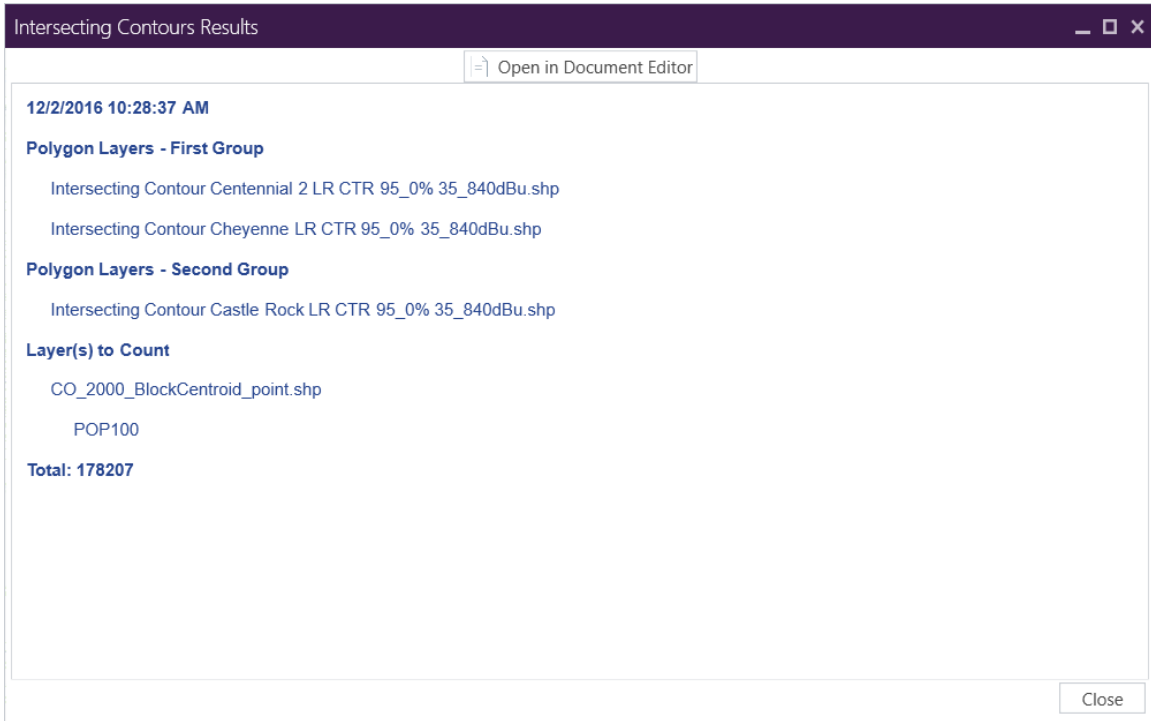
CO_2000_BlockCentroid_point.shp

POP100

Total: 178207

Close

Figure 3: Intersecting Contour Report