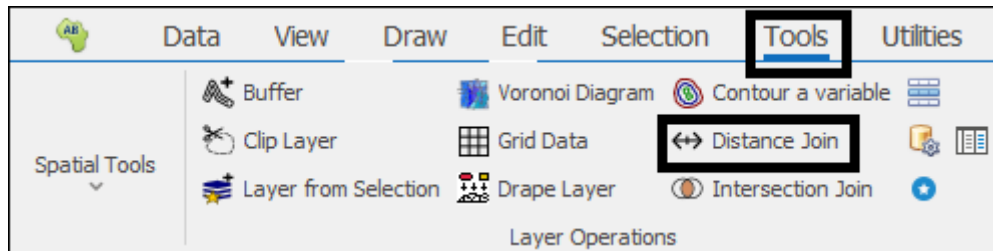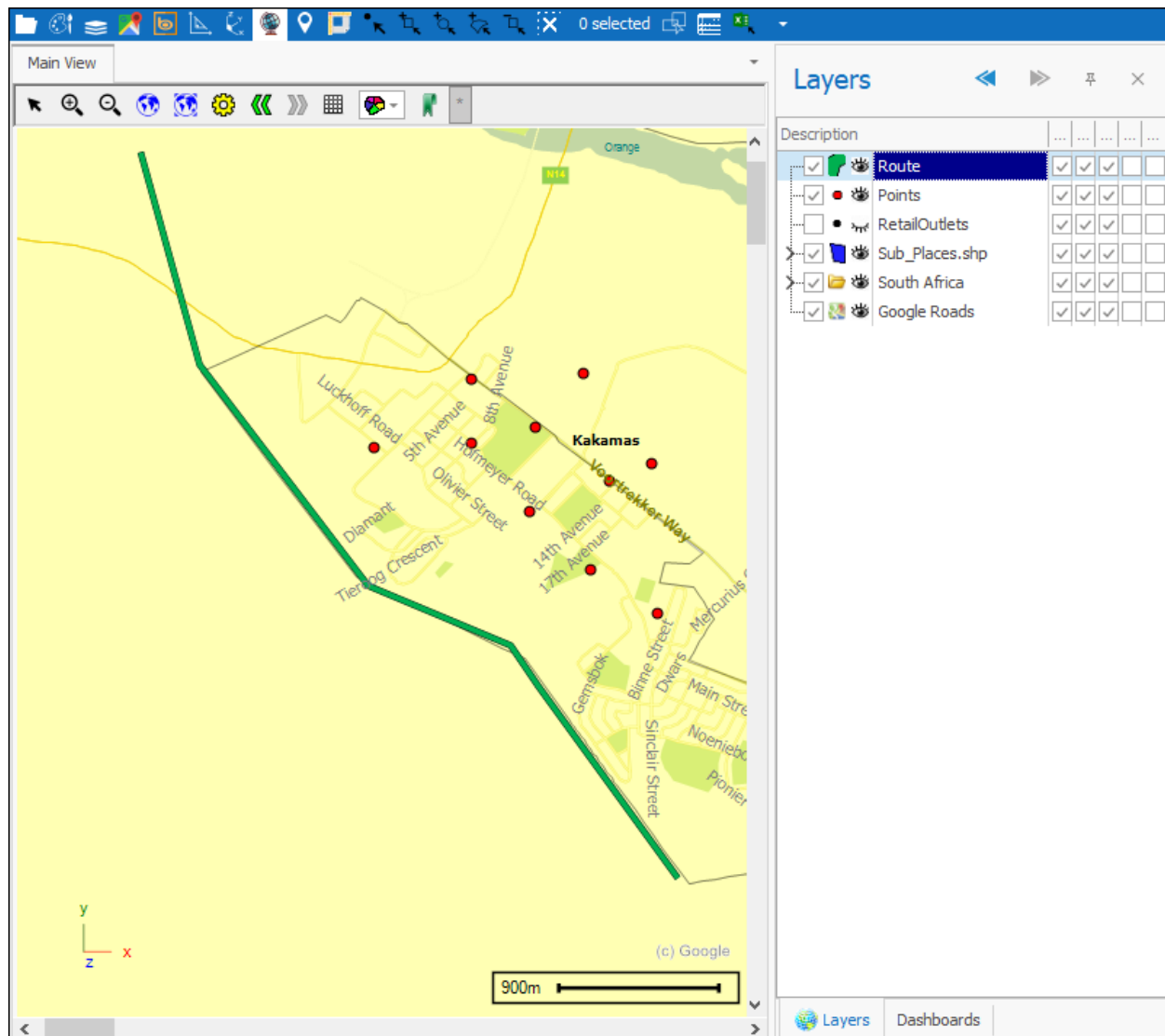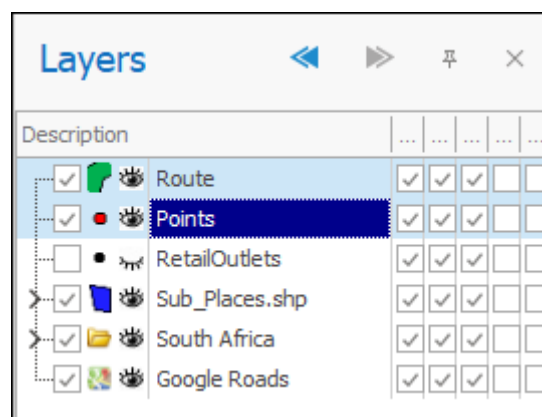# Distance Join

The **Distance Join** tool will do a join of two layers based on their distance from each other. In this example I'll be doing a distance join on a **Route** and **Points** layer to see which points fall within 1KM of the route:
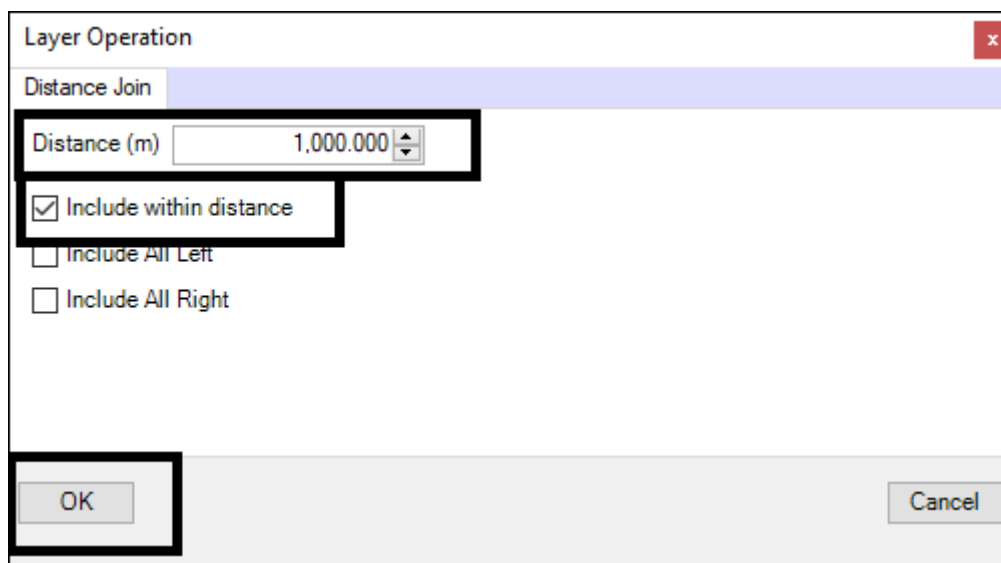
First select the layers in the layer control by clicking on one, then holding down shift and then down or up arrow so that both are selected (the layers will need to be next to each other):

The way the tool works is that the bottom layer is always taken as the baseline of comparison and will be the layer whose geometries will be included in the new joined layer created. In this case it is my **Points** layer. The tool will do a join based on how far the route is from each point.

Next click on the tool which will bring up the dialogue where you will specify the **Distance**. In this example I will just have **Include within distance** ticked on. Then click **OK**:

You are then prompted to set the properties for the new layer that will be created, when done click **OK**:

3

New layer from Distance Join Layer   ✕

General	Description: Distance Join Layer

☑ Display Layer (Will render on Map, otherwise just holds data)   Reload

Display from Scale: 0 ⇕   to: 6,000,000,0 ⇕

Transparency: − ▮——————————— +

☑ Selectable ☑ Snapable ☐ Editable ☑ Include in legend ☐ Background layer

☐ Read Only ☐ Data Read Only

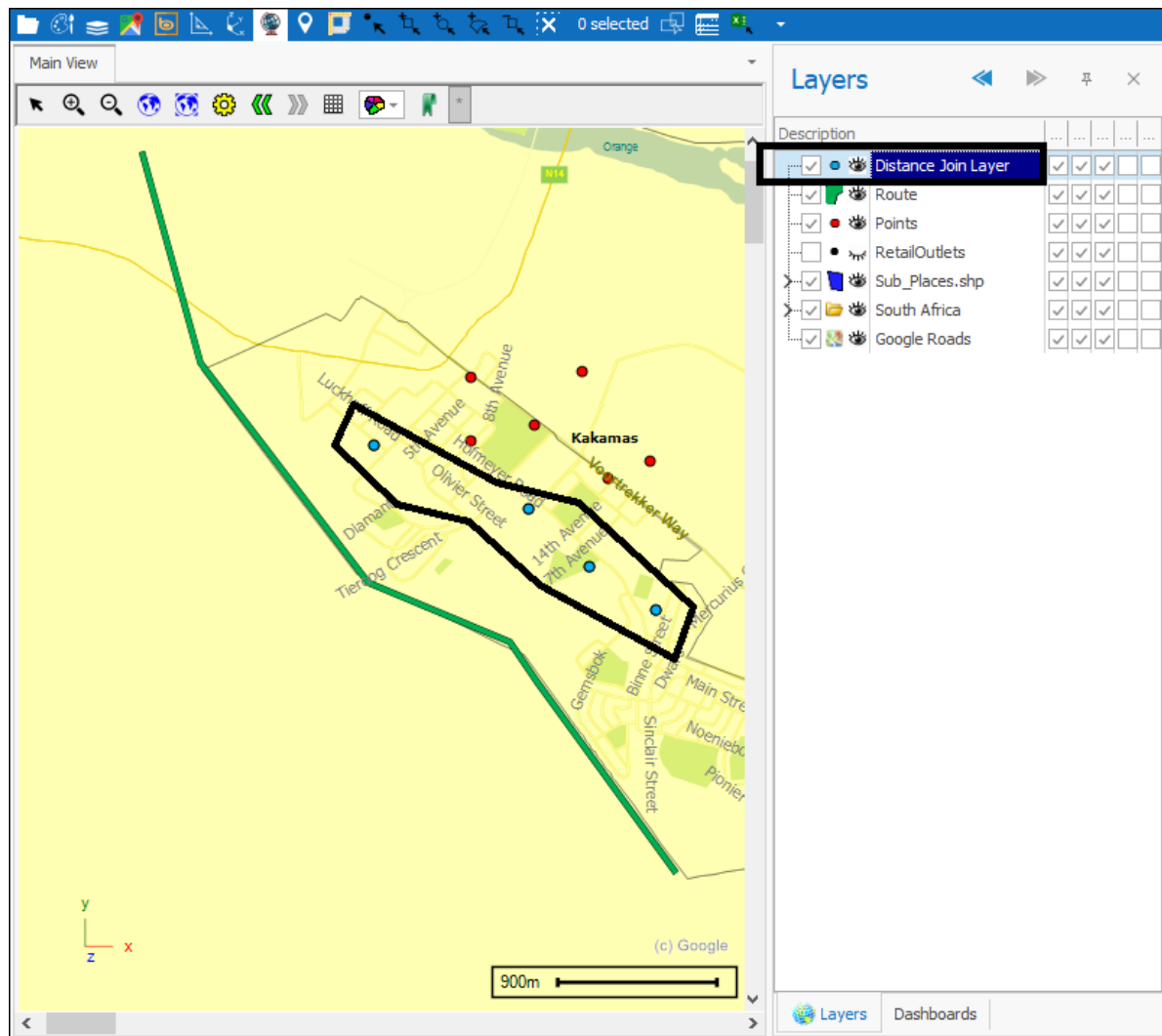☑ Publish   ☑ Publish Readonly   ☑ Publish Data Readonly

Mnemonic Display

Image: [Change]   [Clear]

Left panel tabs:
- General
- Data
- Styling
- Text
- Thematics
- Links
- Projection
- Input Transform
- Event Scripts
- Editing
- Colour Palette

[OK]   [Apply]   [Cancel]

Your new layer has been created, as you can see it includes only those points that fall within 1 KM of my route:
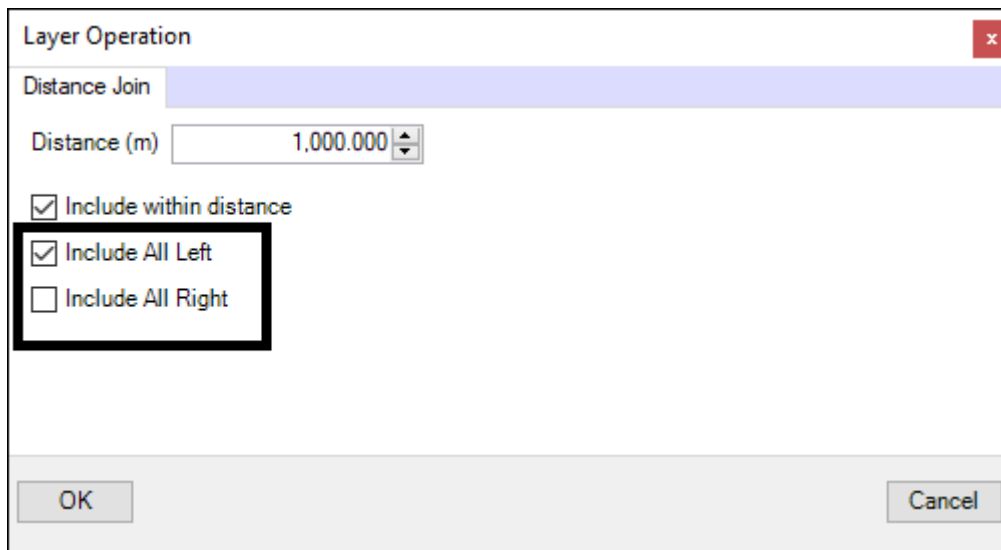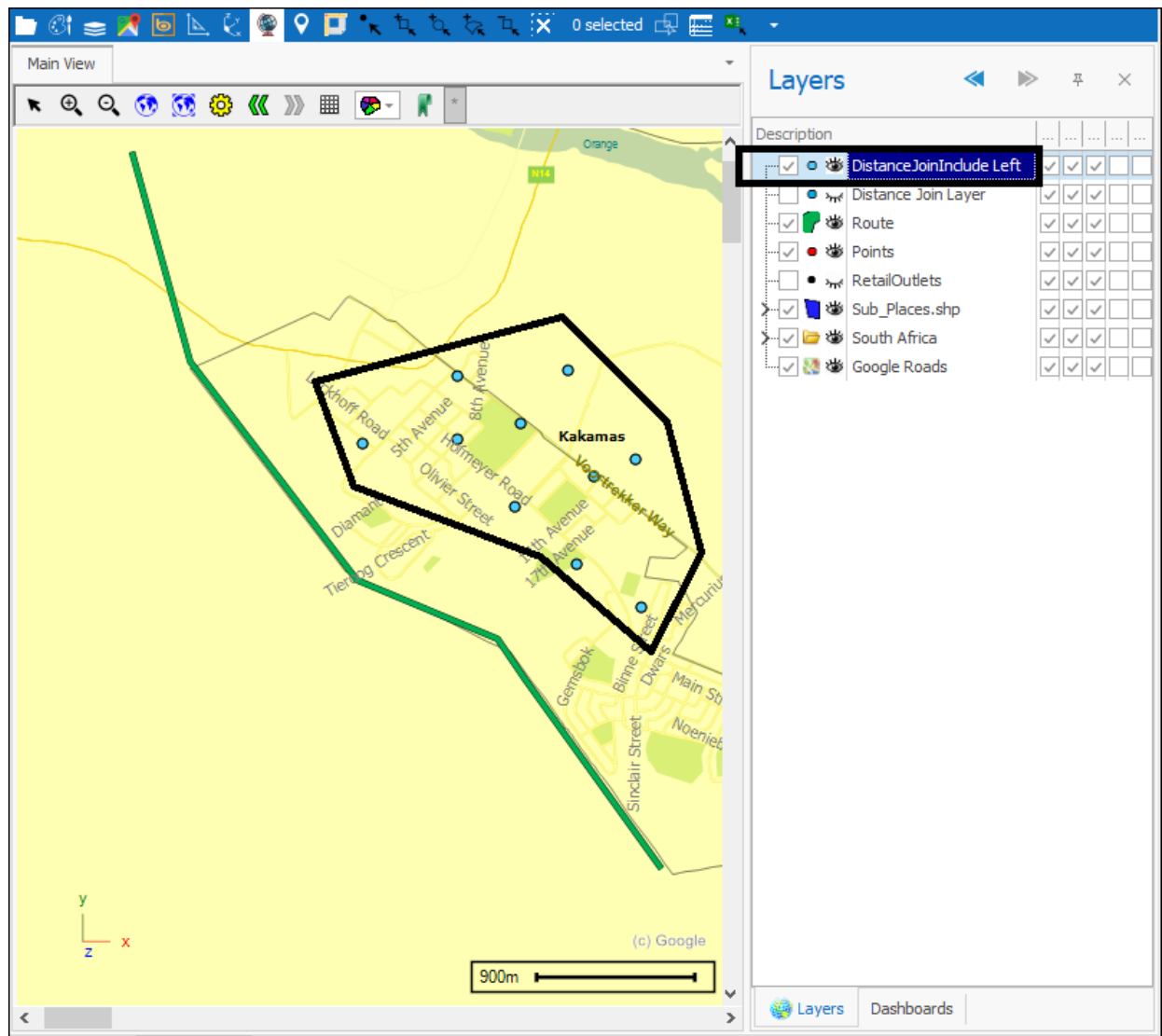
If I go into its layer data I will see the join it did along with the distance of the route from each point (the baseline layer is by default left and the other layer is taken as right, in this case the route layer is right):

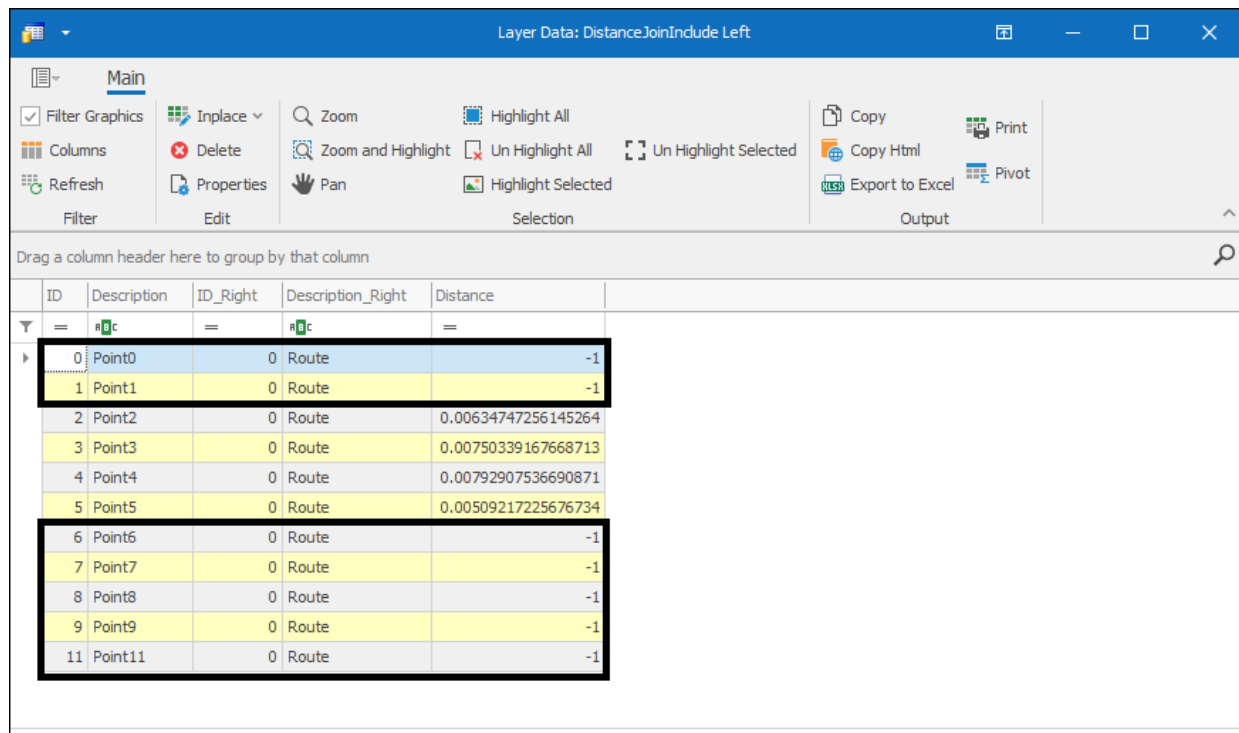| ID	Description	ID_Right	Description_Right	Distance
2	Point2	0	Route	0.00634747256145264
3	Point3	0	Route	0.00750339167668713
4	Point4	0	Route	0.00792907536690871
5	Point5	0	Route	0.00509217225676734

The other options you can use are to have **Include all left** or **Include all right** ticked on as well which will cause all elements of the left or right layer to be included in the new joined layer regardless of whether they fall within the distance or not, this allows you to see everything that does and doesn't fall within the distance. In this example I will tick on **Include all left** which will cause all elements of my points layer to be included and will just give a null value to those that don't fall within the distance I specified:

Distance Join User Guide

Support

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