

Measuring and Documenting Distance to Water Using Google Earth

Introduction The distance from the edge of a field to surface water is required to calculate Part A (Site and Transport Characteristics) of the Phosphorus Site Index and to use the University of Maryland Phosphorus Management Tool.

Load topo maps into Google Earth

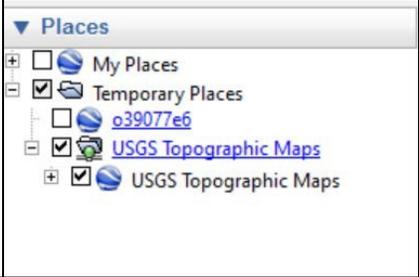
To prepare to measure distance to water, you must first download Google Earth and the appropriate topographic layer:

Step	Action
1	Download Google Earth from https://www.google.com/earth/
2	Open the Google Earth application.
3	Type the address or area of interest into the Search bar and click Search .

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Measuring and Documenting Distance to Water Using Google Earth, Continued

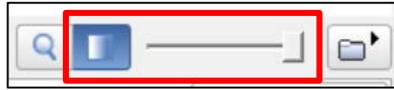
Load topo maps into Google Earth, continued

Step	Action
4	<p>Open the following webpage and scroll down to the link for downloading topographic maps using Google Earth, shown below: http://www.gelib.com/usgs-topographic-maps-2.htm</p> <p>The speed at which the maps load will depend on the speed of your Internet connection and the speed of my web host. When the map is loading, it may look like nothing is happening for a few seconds. But if your on a reasonably fast Internet connection, the map should appear after about 10-60 seconds.</p> <p>To get started, first make sure you have Google Earth installed. Then just click on the button below to load the KML file into the Places folder of Google Earth.</p> <div style="text-align: center;">  </div>
5	<p>Open the KML file that downloads, and it will open in Google Earth. You will now have an option to display USGS Topographic Maps under “Places” on the left side of the Google Earth screen.</p> <div style="text-align: center;">  </div>
6	<p>With the box for USGS Topographic Maps selected, click on the map. The following graphic will appear:</p> <div style="text-align: center;">  </div>

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Load topo maps into Google Earth, continued

Step	Action
7	Click on “View Map” and the topographic map covering the area you selected will be displayed.
8	To view both the aerial and topographic map layers simultaneously, click on the Adjust Opacity icon on the bar just below the Places box. A slide bar will appear that you can use to change the transparency of the topographic layer.



Measure distance to water

Measure distance to water in Google Earth using the following procedure:

Step	Action
1	Locate stream(s) in the vicinity of the field in the lowest landscape position.
2	Select the ruler on the top menu.

A screenshot of the Google Earth toolbar. A red rectangular box highlights the 'Ruler' icon, which is a vertical ruler, located in the toolbar.

3	In the ruler box that pops up, make sure Feet is selected under the Line tab.
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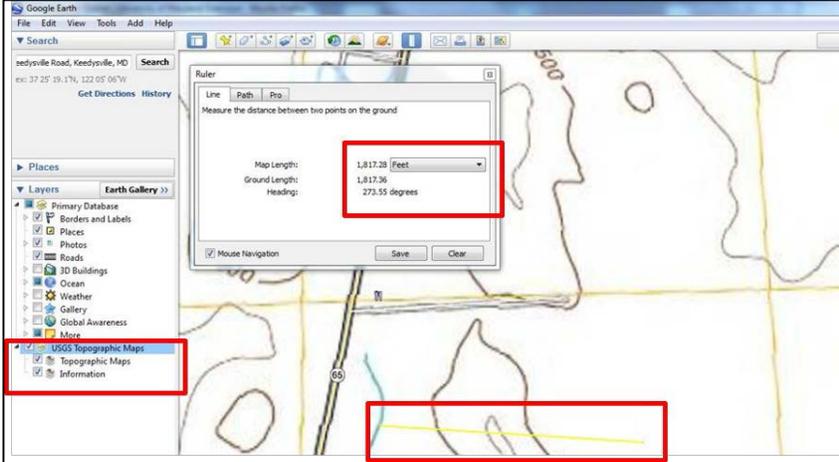
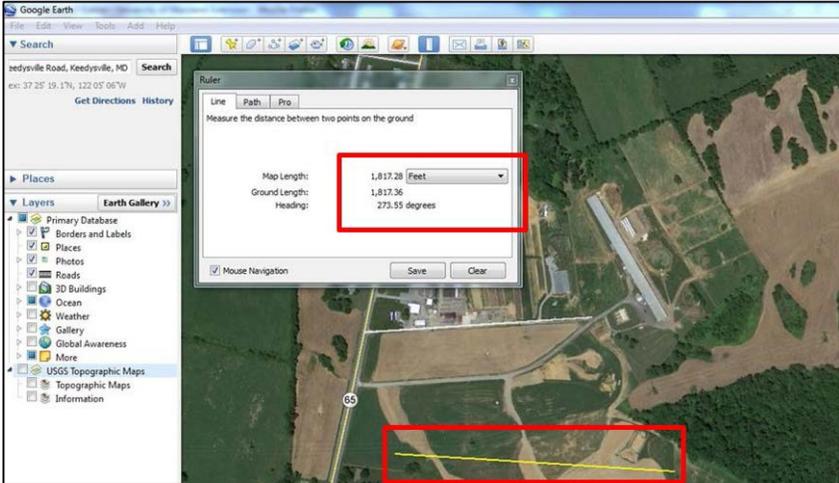
A screenshot of the 'Ruler' dialog box in Google Earth. The 'Line' tab is selected and highlighted with a red box. The 'Feet' unit is selected in the dropdown menu and also highlighted with a red box. The dialog shows 'Map Length: 0.00', 'Ground Length: 0.00', and 'Heading: 0.00 degrees'. There are 'Save' and 'Clear' buttons at the bottom.

4	Click on the map at the edge of the field of interest. Then click again at the edge of the stream.
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Measuring and Documenting Distance to Water Using Google Earth, Continued

Measure distance to water, continued

Step	Action
5	<p>A yellow line will appear connecting the two points you selected. The ruler box will show Map Length, Ground Length, and Heading. Use Ground Length for PSI and UM-PMT input.</p> <p>USGS Topographic Maps view:</p>  <p>Google Earth Maps view:</p>  <p>Note: To improve accuracy in measuring from edge of field to edge of stream, use opacity icon.</p>

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Measuring and Documenting Distance to Water Using Google Earth, Continued

Measure distance to water, continued

Step	Action
6	<p>Press the Print Screen button on your keyboard when you have the map, the yellow distance line, and the ruler measurement window open.</p> 

Insert the map image into a Word document

To insert the map into a Word document, use the following procedure:

Step	Action
1	Open a Word document
2	Change the page orientation to Landscape
3	<p>Right click on your mouse and choose Paste to place the screen capture into the Word document. You will need to crop out the rest of the screen shot. Do this by right-clicking the image you just pasted. A menu will appear with a Crop icon.</p>  <p>Crop</p> <p>Click on this icon and a frame will appear around your screen shot that you can adjust to include only the field image.</p>
4	Resize the image to fill as much of the page as possible. Make sure the yellow distance line and distance window are visible on the field map so that the location of distance to water, and its length, are documented.
5	Save the Word file of the map with the client's name and farm name.
6	Add pages to the Word file for additional maps.