



Stockpile Volumes in TIN MODEL

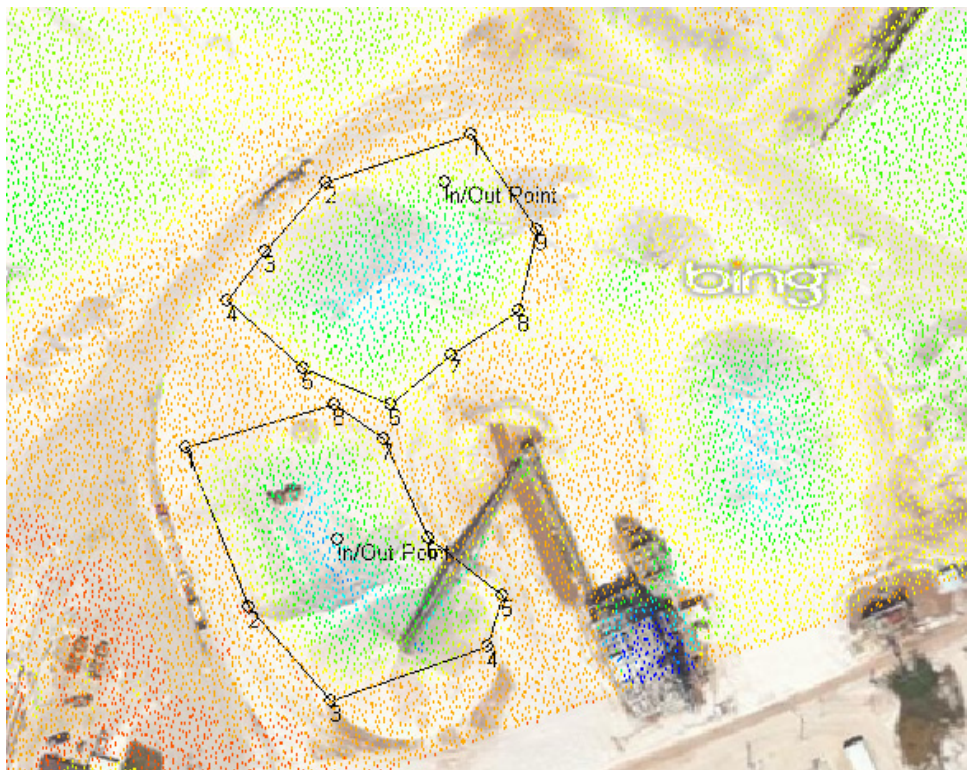
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Currently in development for 2019, I've been working on creating a stockpile volume method in TIN MODEL. This will allow users with a LIDAR survey of material to calculate its volume without a prior survey of the area.

This method uses the points where a border intersects a TIN model to create a base TIN surface that represents the area below the material. From that point, it does a TIN-to-TIN volume calculation between the surveyed TIN model and the border interpolated TIN surface. Since it also calculates the negative volume between the surfaces, you can use stockpile volumes to calculate the available space in an area like a basin as well.

1. **Create a border of your stockpiles.** The more points and the closer they are, the better your results will be.

FIGURE 1. *Border Files for your Stockpiles*

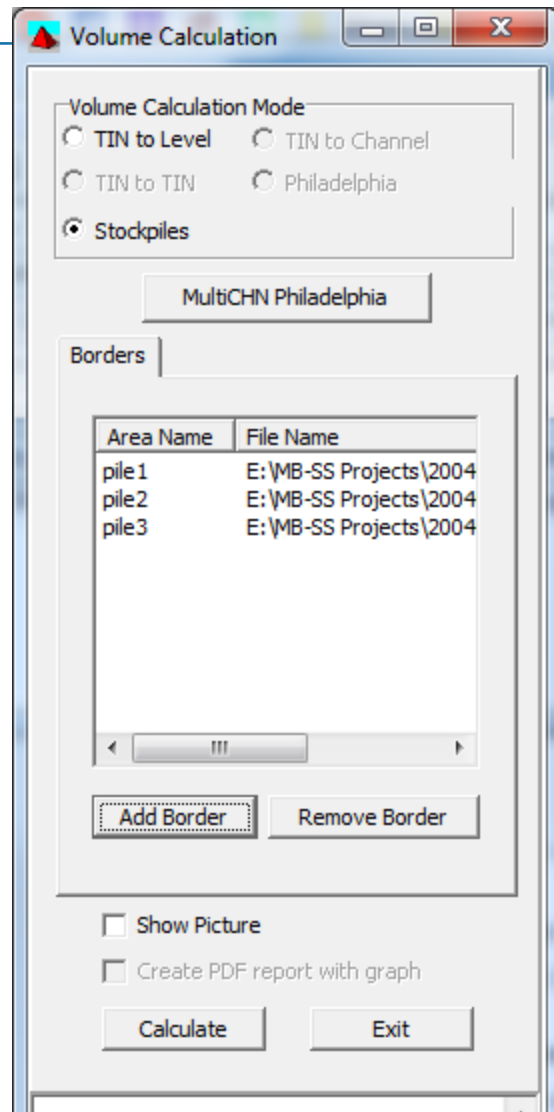


2. **Load your data into TIN MODEL.**
3. **Check the 2D model** to make sure you don't have any holes that shouldn't be there or triangles crossing areas where they shouldn't. (Strongly recommended.) If you need to make longer TIN Max Sides or remove triangles, do that first.
4. **Select CALCULATE - VOLUMES.** The Volumes Calculation dialog appears.

FIGURE 2. Volume Calculaiton Dialog

5. **Select Stockpiles as the Volume Mode, load your pile borders and click [Calculate].** TIN MODEL will chug away calculating the volume estimates.
6. **View the volume report** (Optional) by selecting EXPORT > VIEW REPORT from the main window.

The report will include the border file name, material volume, material area, areas below the border surface as infill volume and area, border perimeter, average pile height above the ground, average elevation of the border surface, max height of the pile, and minimum and maximum elevation of the border surface.



Tin Stockpile Volumes

Volume unit: Cubic Yard

TIN File: E:\MB-SS Projects\Test Stockpiles\Sort\5x Site 1.xyz

Border	Border Material	Mate- rial Area	Infill Volume	Infill Area	Perime- ter	Avg Pile Height	Avg Base Elev	Max Height	Max Base Elev	Min Base Elev
Pile1	26645.0	36258.7	18.8	823.3	647.4	15.5	118.0	57.2	125.5	115.2
Total	26645.0	36258.7	18.8	823.3	647.4	15.5	118.0	57.2	125.5	115.2