

NOTE: There is always more than one way to approach a problem. These solutions are only some of the possible approaches.

Problem: Recording Downhole Depths for Modeling

You have down hole data for several drill holes, with samples taken at specified depths down each hole and analyzed. You would like to model the depth at which the first value greater than or equal to 300 is reached. How can you record this depth into a field so this surface can then be modeled?

Solution:

Step 1: Make sure that the table that stores the collar data and the table that stores the down hole values are joined. This is necessary so calculations can be made between both tables.

Step 2: Create a REAL, ACTUAL field to store the results of the calculation. For example create a field called *depth_300* and add this field to the table that contains the collar information.

Now use the following equation in *TBCALC* to calculate the depths which meet the criteria.

```
depth_300 exists 99 skip  
value 300 < 2 skip  
depth = depth_300
```

Step 3: Use *sOrt* option in *TBCALC* to sort the data by *hole_id* and depth down the hole.

The first line of this equation checks to see if a value exists in the *depth_300* field. If this statement is false (no value exists) then no skips occur and the second line of the equation is performed. If the *depth_300* value has already been found it will not perform any more calculations.

If no value as been assigned to *depth_300* then the second line compares value to 300. If the value is less than 300 the next 2 steps are skipped.

If the value is greater than or equal to 300 then the third line is executed and that the depth of that value is stored in the *depth_300* field.

Each value is checked with this equation and the depths are recorded for the first occurrence of a value greater than or equal to 300 for each hole.

If new data is added or the equation is run more than once the following equation should be run first, followed by steps 1 through 3.

```
null = depth_300
```

This equation simply clears any values in the *depth_300* field which may have been left over from previous calculations.

NOTE: If the drill holes are not vertical, this technique will not apply. Use *COMPOSIT* instead, set a filter for values ≥ 300 , ask for the top coordinate and a length composite greater than any hole depth.

Technote: TBCALC and Calculated Fields

Problem: Clipping Values

You have some very high values (outliers) that you would like to clip. How do you test the values against a clipping value and then assign the high values a constant?

Solution:

For this example we'll say our values are stored in a field called *Au*. One important point to make is that you should never change your original data, so we will create a CALCULATED FIELD. Following are two approaches to this problem:

Create a new field called *Au_cut* which will be a REAL, CALCULATED FIELD. You can use either of the following equations to reach the answer.

The first equation is:

$$\text{Au dup } 1.0 < 1 \text{ skip } 1.0$$

This equation takes the value in the *Au* field and compares it to 1.0. If the value in the *Au* field is greater than or equal to 1.0 the value is assigned a 1.0. If the value is less than 1.0 the next step is skipped and the original value is recorded. The value that is assigned can be different than the cut off value. For instance if the value is greater than 1.0 you may want to assign them a value of 1.1.

A second choice is:

$$\text{Au } 1.0 \text{ min}$$

This equation compares the value in *Au* to 1.0 and records the minimum value. For example say that *Au* is 2.5, which is greater than 1.0 so the minimum value is recorded, which is 1.0. This is different than the first equation in that your cut off value and the assigned value must be the same, but the results are virtually the same.

Problem: Clipping 2 Surfaces

You are trying to clip 2 surfaces, X and Y. The result you would like is as follows: where X exists and Y does not you want X to be recorded; where X exists and Y exists you want to record the max value; where X does not exist and Y does you want to record Y.

Solution:

Create a REAL, CALCULATED FIELD (we'll call it *clip_surf*.) The equation for the field is written as follows:

$$\text{X dup } Y > 1 \text{ skip } Y$$

This equation does the following:

Compares the X and Y values as follows:

- a. If Y does not exist and X does, the max value is X and this value is recorded.
- b. If X and Y both exist, the values are compared and the max value is recorded.
- c. If X does not exist and Y does, Y is recorded.

For more information on TBCALC and creating calculated fields see ["tbCalc - Database calculator" on page tb-55](#) and ["Define - Create databases, tables, and fields" on page tb-3](#)