Standards Tables

In a typical database, separate tables are commonly defined to contain information about drill hole collar locations, downhole geologic data, drillhole surveys, downhole assay values etc. Storing detailed descriptive information, which should be part of a complete database, but is used only occasionally or simply when creating graphics is problematic. The use of a "standards" table is an elegant solution to the dilemma of how to best organize this data. Detailed information describing, for instance, geologic units can be stored in a unique "standards" table. This table can then be "joined" to your geology table providing additional information about each geologic unit.

Following the example of downhole drill data, and using a standards table to define typical characteristics of geologic units, the use of a standards table is described below. Keep in mind that a standards table can be used to define any feature which is repetitively used in your database, or any long descriptions - not just geologic information. Of course, remember to comment each field and table for the next user who might inherit your database!

Typical Database Setup for Down Hole data

A typical drill hole database might be organized something like this:

TABLE: *Collars*
TYPE: *Flat*
FIELDS: *Hole#, Northing, Easting, Elevation*

TABLE: *Geology*
TYPE: *Flat*
FIELDS: *Hole#, G_From, G_To, Lithology*

A Collars table typically describes the X, Y, Z location of your drill hole collars. A separate table is commonly set up to store geologic information. See the July 1991 Technote **Database Setup for Drillhole Data** for more information on drillhole database setup.

Adding a "Standards" Table

You can add a standards table to your database by creating a new TABLE, *Standards.* Then add the *Lithology* field used in your Geology TABLE to the *Standards* TABLE. This field will need to be "Keyed" for the next step, so go to *Tables/Key Field* before you add any records or *Records/Rekey* if you forget to key the field until after you have added records. This is a necessary step as the *Lithology* field will be used to link downhole data with descriptive information.

Next add fields to store detailed descriptions, information used only when plotting graphics, or any other data you would like in your database, but that might not necessarily "fit" in the list of downhole intercepts in your *Geology* table. Typical FIELDS might include *lith_color, lith_pattern*, *lith_description, and lith_hardness*. As well, you might add a field for *lith_Width* populated with the number 1. You will need the latter if you are drawing a downhole bar of uniform width representing geology filled with a color or a pattern representing different units. Remember to define any fields used in TECHBASE Graphics menus, such as *lith_color* or *lith_pattern* as Integer Fields, as color and pattern numbers are required to be integer values. Your Standards table might then look like this:

TABLE: *Standards*
TYPE: *Flat*
FIELDS: *Lithology, lith_color, lith_pattern, lith_description, lith_hardness, lith_width.*

For each lithology type, select appropriate colors and patterns to be used when plotting graphics. Many standard lithology patterns are available in the standard TECHBASE pattern map, or design your own using the **Tbstyle** program. A shale that you would like to plot with parallel dashed lines in a brown color might have a standards record something like:

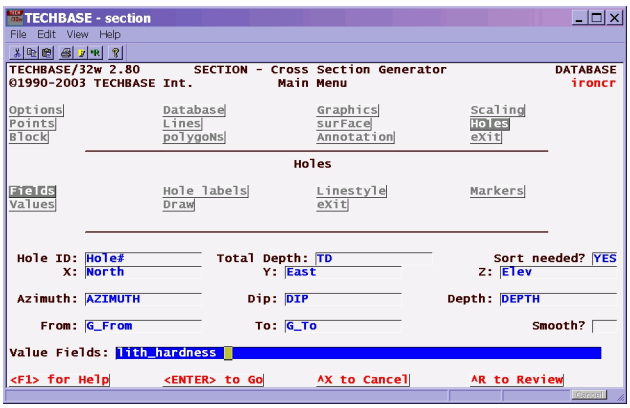
FIELDS: *Lithology, lith_color, lith_pattern, lith_description, lith_hardness, lith_width.*
RECORD1: Shale, 8, 14, Dark brown limey shale with some calcareous nodules,.5, 1

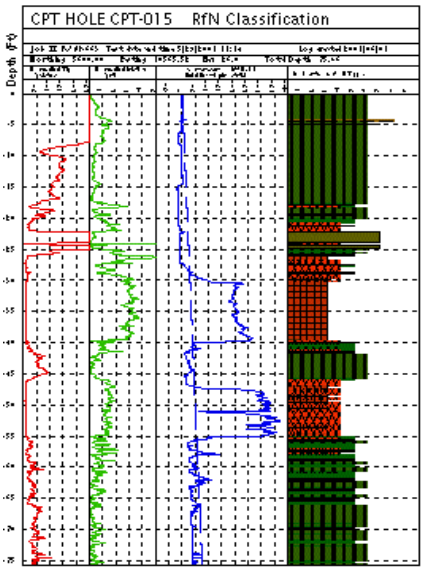
The beauty of a *Standards* table is that you don't need to repeat this information each time you add additional drilling to your geology table. Just remember to define new *Lithology* types in your standards table if you add a new *Lithology* to your *Geology* table. The Standards table also makes it extremely easy to change styles later, since the change has to be made in just one place.

Joining the Standards and the Geology Tables

The next step is to create a Join Table to link the *Geology* and *Standards* Tables. To set up this join, you follow the convention of joining "many" to "few" - that is, join the table with more records to the table with fewer records, not vice versa. In this case, you would create a Join Table in the TECHBASE Define program, lets say calling it *J_Geo_Std*. Table 1 would be Geology (containing many records) and Table 2 the Standards table (containing relatively few records). It is not necessary to add any fields to this table, as we are just setting up a logical relationship between the Geology and Standards table in this Join.

TABLE: *J_Geo_Std*
TYPE: Join - *Geology* (Table 1) to *Standards* (Table 2)
FIELDS: None





Use of the Standards Table

Using the Standards Table makes plotting downhole records, either as cross-section or drill-logs, a painless process. The screen shot to the right shows how you might enter values from the standards table into a graphics menu in TECHBASE. Note that we are plotting downhole geologic intercepts from the *Geology* table (*G_From* and *G_To*), and *lith_hardness* from the *Standards* table to produce a relative weathering profile for these units. In the Values menu, you could use the following settings and fields: Location= RIGHT, Color= *lith_color*, Size= 0.15, "Histogram scale=" .1, Type= RBAR, "Fill style=" *lith_pattern*, Offset= " " Scale= 1.0 Baseline= " ". Sizes and scales of course depend on the scale of your graphics. Note that *lith_color* and *lith_pattern* used in this histogram/log are also defined in the Standards table. Histogram scale allows you to adjust how *lith_hardness* plots to produce a quality graphic. Lithology type joins the two data sources. An example of a drill log produced by plotting relative hardness, creating a weathering profile for your drillhole is shown in the graphic to the left.

