LICENSE

1 – Open Log

- Use the shortcut on your desktop or launch the program from Geotec\Bin folder.

2 – Enter your license identification (LID) provided by Sobek

- For a **trial** license, the LID starts with **T**.
- For an **individual** license, the LID starts with **W**.
- For a **removable** license, the LID starts with **R**.
- For a **network** license, the LID starts with **N**.

3 – License and software information

- From the menu bar, use **Help > License**.
  The window shows information about the license used.
- From the menu bar, use **Help > About**.
 The window shows information about the Geotec version installed.

DEFINITIONS

Database (DB)

- This is the file in which data is saved. The database contains all sites, borings, samples, etc. Centralize all your data in one corporate database.
- There are four database management systems (DBMS) supported by Geotec: Microsoft Access, SQL Server, SQLite and Oracle.
- The Geotec databases have a normalized structure of tables, fields and relationships between the tables – no table or field definition is done by the user. The databases are created via the DBM module.
- The database structure can be in English or in French. It remains compatible with all style files.

Data Hierarchy

- The site corresponds to the mandate for which borings are being carried out. It is defined by a unique number in the database.
- The boring is defined by its number and its site number. The site-boring combination must be unique in the database.
- Samples, layers, in-situ tests and other data will all be linked to the boring.
- Lab tests are defined by their site-boring-sample combination which must be unique in the database.
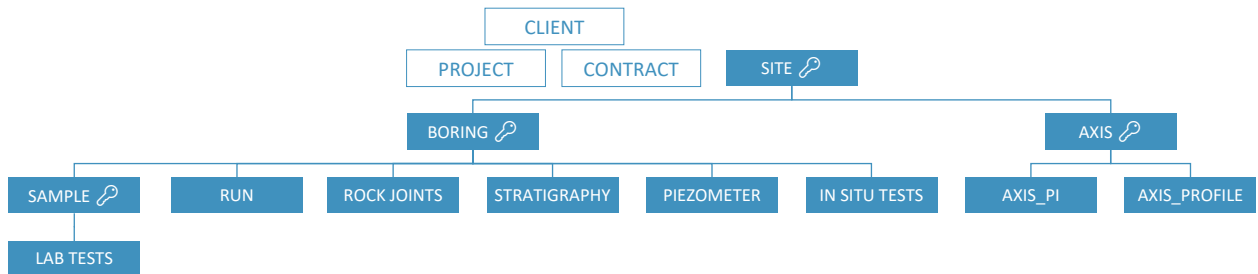
Style file

- This is the look of the presentation. The style file is a customizable graphic output independent from projects.
- Graphs, columns and objects are linked to specific fields in the database and are presented with the user-defined display.

Markers and patterns file

- A default markers file and a default patterns file are installed with Geotec.
- Markers are point symbols used for curves, water levels, etc.
- Patterns are fill symbols used to represent soils and rocks.

Entry forms

- Entry forms are integrated in all modules of Geotec to enter, modify, delete and view data. Entry forms include calculations, validations, default values and automations.
- Entry forms are used to retrieve data based on various criteria via the Query mode.

INTERFACE OVERVIEW: MENUS AND TOOLBARS

Horizontal toolbar
Most buttons are linked to the data.

To connect to a database
File > Open DB and **File > Connect DB**

To search for data through specific tools
Data > Retrieval by

To change the current log report
Data > Record

To open entry forms
Data > Entry

For more data tools
Data menu

To navigate pages of one boring report
[Home], **[Page Up]**, **[Page Down]**, **[End]**

Vertical toolbar
Most buttons are linked to the presentation.

File > Open Style
File > Save Style

View menu
To change the zoom on screen

Continuous zoom
[Ctrl] + **Left hold** + move mouse

Style menu
To edit the style file
(presentation)

Style menu
To view markers, patterns,
preferences and object
mode (presentation)

GETTING STARTED

1 – Connect to a database
- Use or **File > Open Database** to open an Access or db3 database.
- Use or **File > Connect Database** to connect to an SQL Server or Oracle database.
  - Enter the username, password and connection alias provided by your IT.
- If you are doing a trial, open **Geotec_tutorial.mdb** in folder **\Geotec\Access**.
- The title bar shows the software name and the connected database between brackets as [DBMS: File] (Database version - Language).

💡 Include the connection string in your shortcut to automatically connect to the last database used.

Log Properties

| Security | Details | Previous Versions |
| General | Shortcut | Compatibility |

LOG   Log

Target type: Application

Target location: Bin

Target: C:\Geotec\Bin\Log.exe geotec/pw@geotec_access

2 – Change the style file
- A default style file should be opened. To use a different presentation:
  Use or **File > Open Style** to select another style file created via Log.

3 – Verify the markers and patterns file
- A default markers file and patterns file should be opened. Verify the files being used with: **File > Recent Markers** and **File > Recent Patterns**.

4 – Select a logo
- Use **File > Recent Logos** and select a row to open your logo file. Make sure an image identified as $$logo exists (see OBJECTS on page 10).
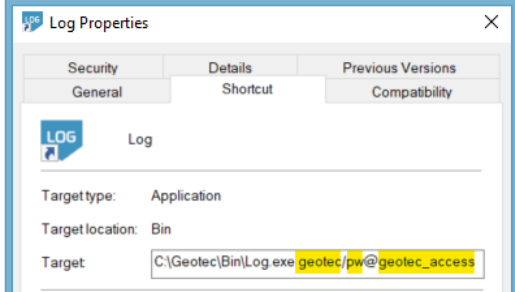
5 – View the entry forms menu
- Use Menu button of the horizontal toolbar or **Data > Entry > Entry Forms Menu**.
- A window opens, showing a button for each entry form, all grouped by data type.

6 – Enter your data
- Follow the DATA HIERARCHY on page 1.

Sobek

1 – Create a site
- Use Site button of entry forms menu.
- Or, use Site button of horizontal toolbar.
- Or, use **Data > Entry > Site**.

2 - Enter the Site Nº
- The number must be unique in the database.
- It can have up to 20 characters with numbers, letters and symbols - _ ( ) .

3 - Enter data for your project
- Data are saved in SI units by default.
- Enter the coordinate system, NAD and zone under Location tab to be able to calculate longitudes and latitudes of borings based on X and Y coordinates, or vice-versa. The location of your site can be calculated as the average of its boring locations.

4 – Save your site
- Data is saved directly in the database.
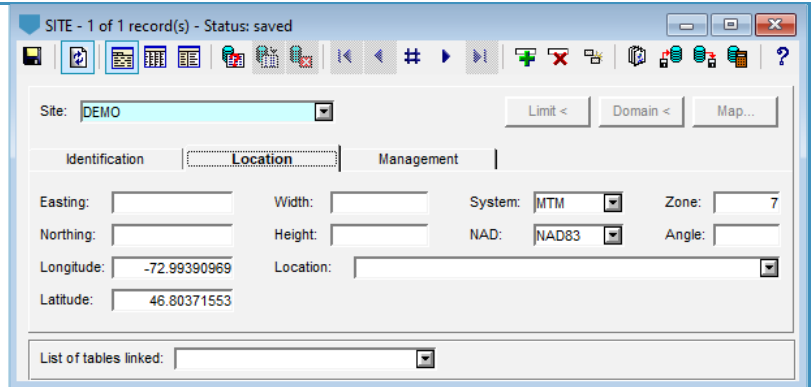
# CHARACTERISTICS OF ENTRY FORMS

Title bar
- The title bar indicates the table associated to the entry form.
- The number of records retrieved through a query is indicated, as well as the position of the current one displayed.
- The status is indicated:
  - New: inserting a new record
  - Saved: record saved in the database
 - Modified: record has been modified but not saved

Toolbar items and menus
When an entry form is opened, the menu items change. They reflect actions specific to the entry forms.

- Save changes: Use or **Action > Save** or **[F10]**. When going to the previous or next record, changes are automatically saved.
- The boring report gets refreshed automatically when is selected.
- Perform database queries: Use or **Query** menu or **[F7]** and **[F8]** (see QUERY AND DATA RETRIEVAL on page 8).
- Navigate through records: Use or **Record > First** to **Record > Last** or **[Ctrl]+[Home]** and **[Ctrl]+[End]**.
- Insert a new record: Use or **Record > Insert** or **[F6]**.
- Delete current record: Use or **Record > Delete** or **[Shift]+[F6]**. It is not possible to delete a record if others depend on it hierarchically.
- Duplicate current record: Use or **Record > Duplicate** or **[F6]+[F4]**.
- Import External CSV files into the database: Use or **Action > Import Data**. See page 9.
- Export the current data retrieved to a CSV file: Use or **Action > Export Data**. See page 9.
- Launch calculations: Use . The button is active when there is a calculation function in the entry form.
- View shortcuts: Use to see the list of shortcuts.

Display of current entry form
Each entry form can be displayed 3 different ways, depending on user preference.
- Use or **Display > Tab Form** to view one record only with predefined tabs, and groups of labels and fields.
- Use or **Display > Datasheet** to view multiple records as rows and each field as a column.
- Use or **Display > Columnar** to view one record only with fields as rows.

Unit conversion
Depths can be entered in meters or feet. Lengths can be entered in meters, feet or inches.
- Use **Display > Conversions** to select the unit conversion for each entry form.
- The values are converted and saved in SI units (by default) or in the unit system defined in the Site entry form.

Shortcuts:
[F1]: View field information
[F3]: Copy value from previous record
[F4]: Copy previous record
[F6]: Insert record
[F7]: Enter query
[F8]: Execute query
[Ctrl]+[Q]: Cancel query
[F9]: Open list
[Esc]: Cancel or clear
[Tab] or [Enter]: Go to next field
[Ctrl]+[E]: Open text editor

CHARACTERISTICS OF ENTRY FORMS (continued)

🛡 Types of fields

Background and text colors identify the types of fields.

- Key fields (required) – turquoise. The combination of keys defines a unique record in the database. The records must be entered hierarchically.   Ex: a boring must be created before entering its samples.
- Disabled fields – gray. No values can be entered.
- Fixed fields – green. These values are calculated or used for calculations by Log but not saved in the database.
- Calculated fields – orange. These values are calculated by Log but can be modified and saved in the database.

🛡 Field information

- Field structure is predefined by Geotec. Use **[F1]** to open a pop-up with field information: NAME, TYPE, LENGTH and if REQUIRED.
- Hover the mouse over any field or header to open a tooltip describing the field and its unit or format.

🛡 Double-click

- Double-click in a key field (blue background, such as site no, boring no, sample no, etc.) to open the parent table on the current record.
- Double-click in a field referring to another table to open that corresponding table (client no, contract no, etc.).
- Double-click in other text fields to open the Lists table.

🛡 Drop-down lists

Each text field can show a drop-down list, either showing values predefined in the Lists table of the database, or showing values existing in the database for the current field.

ENTER DATA – CREATE A BORING

🛡 1 - After creating the site, create a boring

- Use the List of tables linked at the bottom of Site entry form.
- Or, use Boring button 🏭 of horizontal toolbar.
- Or, use **Data > Entry > Boring**.
- Or, double-click in the header of the boring report.

🛡 2 - Select the Site Nº

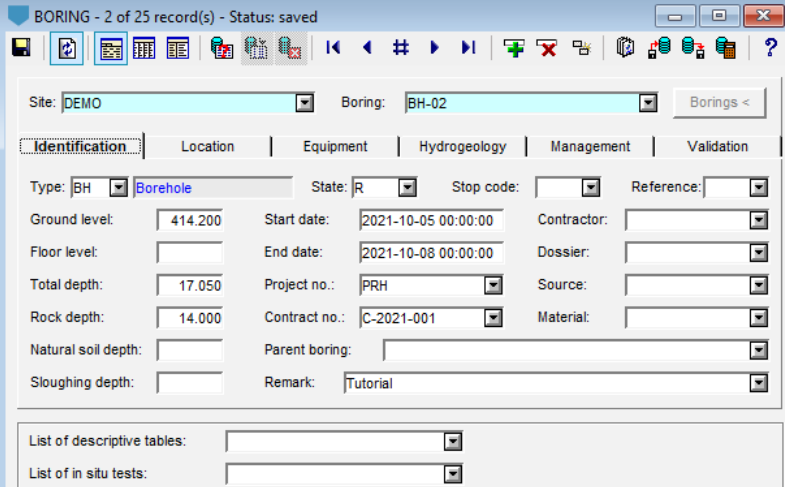- The list shows all sites defined in SITE table.

🛡 3 - Enter the Boring Nº

- The site – boring combination must be unique in the database.
- It can have up to 20 characters with numbers, letters and symbols - _ ( ) .

🛡 4 - Enter data for your boring

- The ground level is used to calculate elevations.
- The dip and azimuth (Location) are used in calculations and projections if entered.
- The total depth increments automatically as new data is entered in other tables.
- The rock depth is set as the depth of the 1st rock strata.
- The latitude and longitude are calculated from X and Y coordinates, or vice versa, if the coordinate system, NAD and zone are set for the Site.
- A photo can be added to the report. The complete filename is entered in the management tab.

🛡 🅖 Google Maps

- Open Google Maps in the horizontal toolbar of Log to locate sites and borings that have a longitude and latitude in the database.
- Move around, zoom in or zoom out to view different locations.
- Hover over an entity to see some information.
- Right click on an entity to retrieve its properties or its complete boring report.

🔷 **Sobek**

1 – After creating the boring, add samples

- Use the list of descriptive tables at the bottom of Boring entry form.
- Or, use Sample button 🗑 of horizontal toolbar
- Or, use **Data > Entry > Sample**.
- Or, double-click in a sample column of the boring report.

2 - Select the Site Nº and Boring Nº

- The lists show the sites and borings defined in BORING table.

3 – Edit the depth increment

- The top depth is automatically suggested.
- Without increment, the sampling is considered continuous.
- With an increment, the suggested depth is the top depth of previous sample plus the increment.

4 – Use the same sampler or select the sample state

- If the *Same sampler* box is checked, the state, type and length of the previous sample are copied for the new one.
- Otherwise, select the sample state as remolded, intact, core or grab.
- The type and length associated to the state are automatically entered.
- Some fields are disabled depending on the state.

> 💡 The length and type associated to each state are specified in the LIST table for the STATE field.
> Values **must be R, I, C and G**.
> Descriptions are specified as *label, type, length* (in meters).
> If the list is not defined, these values are used:
> R → Remoulded, SS, 0.6096
> I → Undisturbed, ST, 0.6096
> C → Rock core, CR, 1.524
> G → Grab / Manual, GB, 0.3048

5 – Edit the sample number (if needed)

- The Nº of the first sample is suggested as 1 and can be modified.
- The number of the subsequent samples of the boring will be based on the previous sample (number and format).

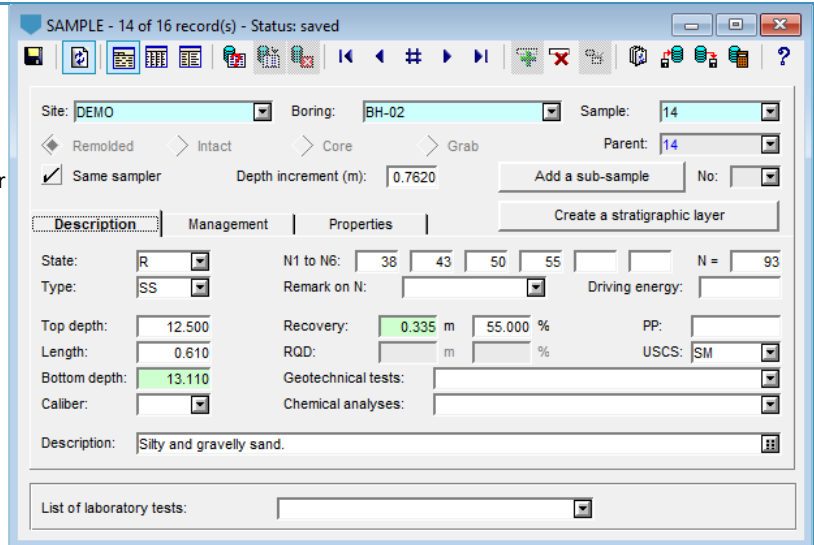## 6 - Enter data relevant to your sample

- Enter the caliber, tube number, recovery, blow counts and / or RQD, depending on the sample state.
- Enter lengths to calculate percentages.
- Log calculates N = N2 + N3.

7 – Describe the sample

- Describe the sample with the soil description matrix via ⊞ .

8 – Add sub-samples (if needed)

- Sub-samples are automatically numbered A, B, C, … and their number is a concatenation with the main sample, like 002A.
- The **Add sub-sample** button is active only if the current record is:
  - A sample with no sub-sample.
  - The last sub-sample of a sample, if the bottom depth of the sample has not been reached.
- Describe the sub-sample and other relevant information.

Add a stratigraphic layer

- Click on **Create a stratigraphic layer** to add a new layer based on the descriptions of the samples taken.
- The layer always begins at the bottom depth of the previous layer.
- The layer ends:
  - At the top depth of the current sample or sub-sample if its **Description is empty**.
  - At the bottom depth of the current sample or sub-sample if it **has a Description**.
- A weighted average of the descriptive elements of all samples and sub-samples found between the top and bottom of the layer is used to generated the layer.
- The button is deactivated if the bottom depth of the current sample is smaller than the maximum depth found in the layers of the boring.

Add in-situ properties for samples and / or sub-samples

- You can add new properties for samples and subsamples, if not already defined in Geotec as *in situ tests* or *lab tests.*
- Go to **Properties** table via the Entry forms menu – General tab (see page 7) or by double-clicking on the PROPERTY heading of the table at the bottom of the sample entry form.
- Properties defined are shown at the bottom of the sample entry form.
- Up to 2 values and 1 remark can be entered per property for each sample and/ or sub-sample.

Go to **Other properties** via the Entry forms menu – Lab tests tab - to see all the values entered for your project.

Describe the soils with the matrix

- Select all descriptive elements.
- Textual description will be automatically generated as:
Category. Material (size), gradation, shape, color, oxidation, density / consistency, plasticity, moisture, calcareous. Structure. Presence (%) (list of debris). Inclusions. Evidence of contamination.

Category

- This is the main type of soil or rock. The drop-down list can be edited.
- The category can be presented in the style file in bold, italic, underline and/or capital letters.

Material

- Select the proportions of clay, silt, sand, gravel with the option buttons.
- Or, choose a unique material from the drop-down list.

Presence, percentage and maximum diameter

- Add the % of each element in the text field.
- Check its box to see it in the description.

Debris

- Add all debris. Use the type of list "+ description" to add up the debris.
- Check the box to see them in the description.

Color, structure, inclusions, evidence of contamination

- The elements will be added to the description.
- Use the type of list "+ description" to add up the values.

Soil characteristics

- Select 1 or 2 elements per characteristic. They get added to the description.
- Some items are disabled depending on selections at the top of the matrix.
- Force Density or Consistency via Cohesionless / Cohesive button at the top.

Copy previous to copy information from previous record.

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1 – After creating the boring, add strata

- Use the list of descriptive tables at the bottom of Boring entry form.
- Or, Stratigraphy button ▮ of horizontal toolbar.
- Or, use **Data > Entry > Stratigraphy**.
- Or, double-click in a stratigraphy column of the boring report.

2 - Select the Site Nº and Boring Nº

- The lists show the sites and borings defined in BORING table.

3 – Select the classification type

- S: **Simplified** is used to define up to 6 materials constituting the layer. The matrix describes the simplified classification.
- R: **Rock** is used to describe manually a rock layer. The rock depth is copied in the ROCK_DEPTH field of the BORING table.
- T: **Text** is used to add a remark at any depth without creating a layer.
- E: **End of boring** is used to describe the conditions of the end of boring.
- U: **Unified** is for the USCS classification (for future use).

3 – Enter depths

- The top depth is always required. It is suggested as the bottom of the previous layer.
- The bottom depth in only required for types S, R and U.

4 – Describe the stratigraphic layer

- Describe the stratigraphic layer with the soil description matrix via ▦.
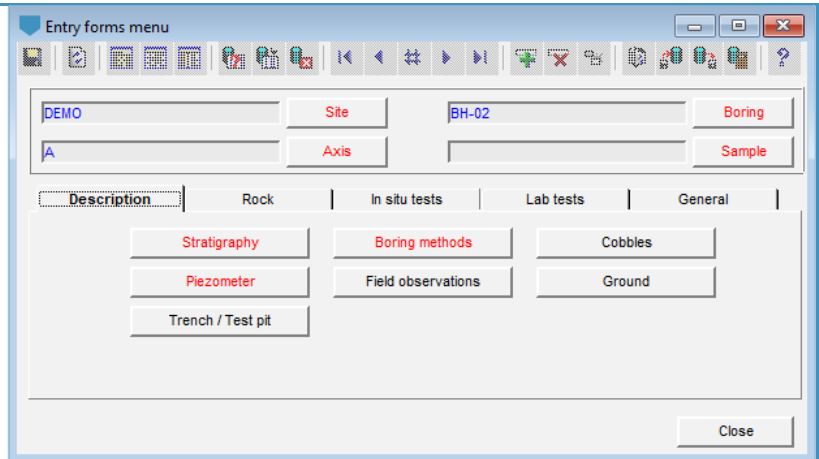
> 💡 Use the **automatic creation of layers** in the Sample entry form to generate strata based on the descriptions of the samples as selected

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There are several other entry forms for soil and rock description, in-situ tests and lab tests.

1 – Open the entry form

There are several ways to access entry forms, depending on the user's preferred method.

- Use the Menu button ▦ of the horizontal toolbar or **Data > Entry > Entry Forms Menu**, then click on a button to open its entry form.
- Or, use the drop-down lists of tables at the bottom of the Site, Boring or Sample entry form.
- Or, double-click in a column of the boring report that refers to the table (see the tooltip shown as you hover over a column).

## 2 - Select the Site Nº and Boring Nº and Sample Nº

- In the entry form, select the values of the key fields, as appropriate.
- Enter the relevant data.

> 💡 Red buttons indicate that data exists in the table for the current site and boring.

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QUERY and DATA RETRIEVAL

In all entry forms of Geotec, queries can be done to retrieve data from the database using various criteria. Their purpose is to filter the records in the database in order to consult, edit, complete, print or delete them.
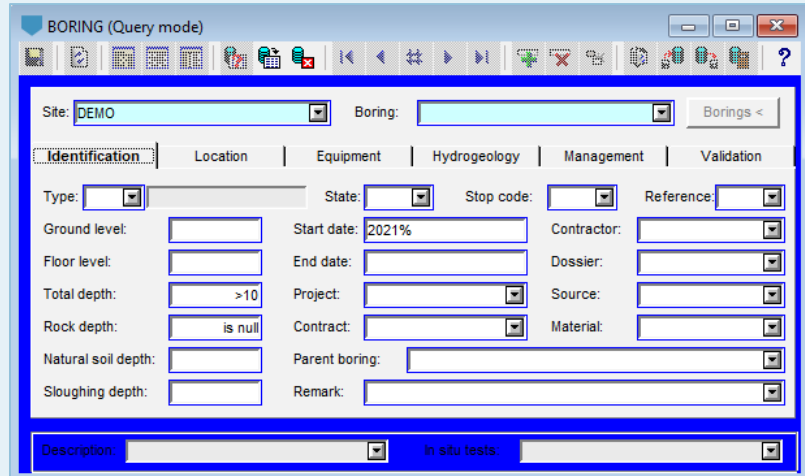
🛡 1 - Enter Query

- Use 📇 from the toolbar, or **[F7]**, or **Query > Enter**.
- Once the mode is changed, the entry form's background is dark blue.
- The title bar indicates **Query mode**.

🛡 2 – Enter Criteria

Filter values can be entered directly, or via more complex specifications.

- Use **[F7]** again to fill with last criteria.
- Use the drop-down lists to select a specific value from any field, or hold **[Ctrl]** or **[Shift]** to select multiple values.
- Use **%** as replacement character.
- Use **<** or **>** for numbers or dates.
- Use **IS NULL** to retrieve record without a value in the field.

The query above will retrieve all records from the Boring table where these four criteria apply:
- The Site number is *DEMO*
- The boring was done in *2021*
- The total depth is *greater than 10 meters*
- There is *no rock depth*
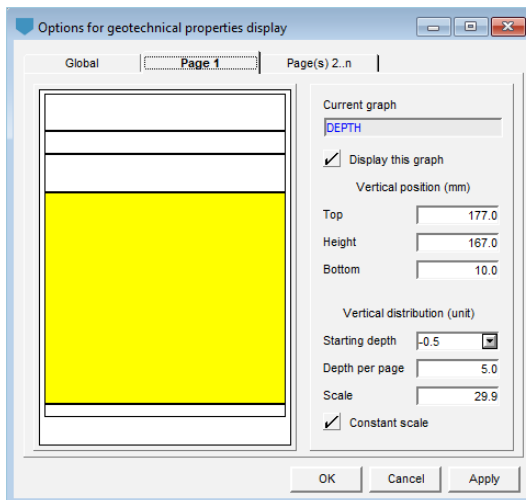
🛡 3 - Execute Query

- Use 📇 from the toolbar, or **[F8]**, or **Query > Execute**.
- The query will return all records corresponding to the specified criteria.
- If no record corresponds, the entry form returns in New mode (to insert).

🛡 4 - Cancel Query

- Use 📇 from the toolbar, or **[Ctrl]+[Q]**, or **Query > Cancel**.
- Query is canceled and entry form returns in New mode (to insert).

LOG OPTIONS and PRINT

🛡 Adjust depth per page (Log options)

1- Use 📝 from the Log horizontal toolbar, or **Style > Options**.
2- Go to Page 1.
3- Change your vertical distribution values.
4- Keep a constant scale on following pages if report has more than one page. Page 1 can be designed differently than following pages.

🛡 Print one report

1- Execute a query to retrieve your boring.
2- Verify the printer setup via **File > Printer Setup**.
3- Verify the margins via **Style > Page** under **Printer** tab.
4- Print with **File > Print**.

If a PDF printer is used, file name suggested is **site_boring.pdf**.

🛡 Print multiple reports

1- Execute a query to retrieve all borings to be printed.
2- Do steps 2 – 4 as for printing only one report.
3- In the message, select **Yes** to print all, or **No** to print the current boring.

If a PDF printer is used, file name suggested is **site_boring.pdf** and there is one pdf per boring
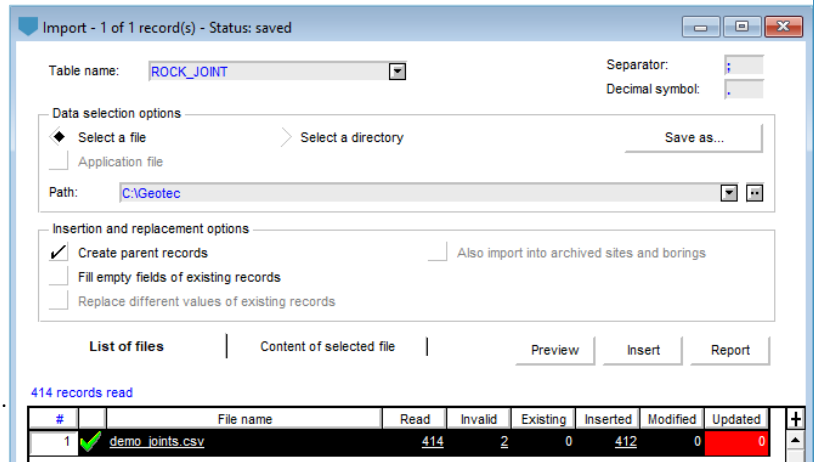

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🔘 Export Data

You can export the records via any entry form to a CSV file. A CSV file will be created with all records as rows, and all fields as columns. Each header corresponds to the field name in the database.

1- Open the entry form.
2- Retrieve your data (via a query).
3- Use 🔲 from toolbar or **Action > Export Data**.
4- Select the folder and Save.

🔘 Import External Data

You can import values from a CSV file into a specific table of the database. Each column must have a header corresponding to a field name in that table of the database. Each row must contain all key fields for that specific table.

1- Use 🔲 from the Log horizontal toolbar.
   Or open the entry form for which data will be imported and use 🔲 from its toolbar,
   or **Action > Import Data**.
2- The window to Import External Data opens.
3- Verify the table in which data will be imported.
4- Select a file or a directory with multiple files.
5- Select your options.

- **Create parent records**: creates records in higher hierarchy if not present in the database.
- **Fill empty fields of existing records**: updates records already present in the DB, but only for fields that had no value.
- **Replace different values of existing records**: updates records already present in the DB, for all values that are different between the database and the CSV file.
- **Also import into archived sites and borings**: inserts data even if the site or boring in we import is archived.

6- From the **List of files**, select one or multiple files to import.
7- Click **Preview** to see the results of the data import without executing it.
8- Verify data with **Content of selected file**. You may uncheck rows to skip them in the import.
9- Click **Insert**. The number of records read, invalid, existing, inserted and modified and number of fields updated are indicated.

Import - 1 of 1 record(s) - Status: saved

Table name: ROCK_JOINT
Separator: ;
Decimal symbol: .

Data selection options
◆ Select a file   ▷ Select a directory   Save as...
☐ Application file
Path: C:\Geotec

Insertion and replacement options
✔ Create parent records   ☐ Also import into archived sites and borings
☐ Fill empty fields of existing records
☐ Replace different values of existing records

List of files | Content of selected file | Preview Insert Report

414 records read

#		File name	Read	Invalid	Existing	Inserted	Modified	Updated	
1	✔	demo_joints.csv	414	2	0	412	0	0	

Sobek

HOW THE STYLE FILE LINKS TO THE DATABASE

💡 A tooltip shows the name of graph as you hover over a column in the boring

🛡 Style file

- It's the look of the presentation. The style file is a customizable graphic output independent from projects.
- Graphs, columns and objects are linked to fields in the database and are presented with user-defined display.
- Markers (point symbols) and patterns (fill symbols) are used by the style file.
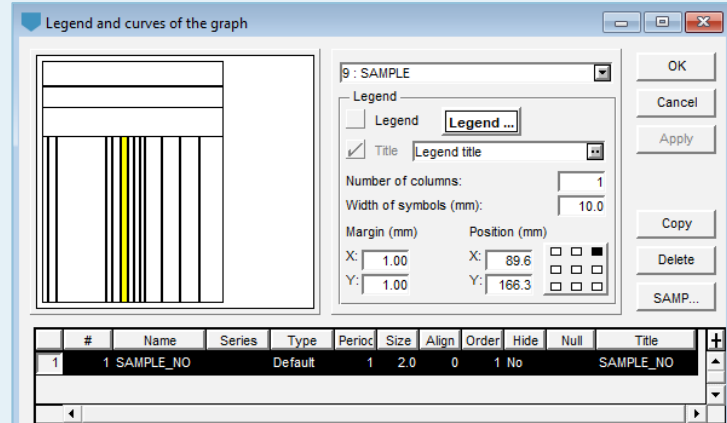
🛡 Graphs window

- Use 📊 in the vertical toolbar, or **Style > Graphs**.
- Each row represents a column of the boring log.
  - Use the drop-down list in the NAME cell to select the table with information to display (from the database).
  - Change the left, width or right value to define its position (in mm, with respect to bottom left corner of page).
  - Change its title.
- All rows are linked to the DEPTH row (#P).
- Add a FEET or ELEVATION scale if needed.
- Use Copy and Delete to add and delete columns.
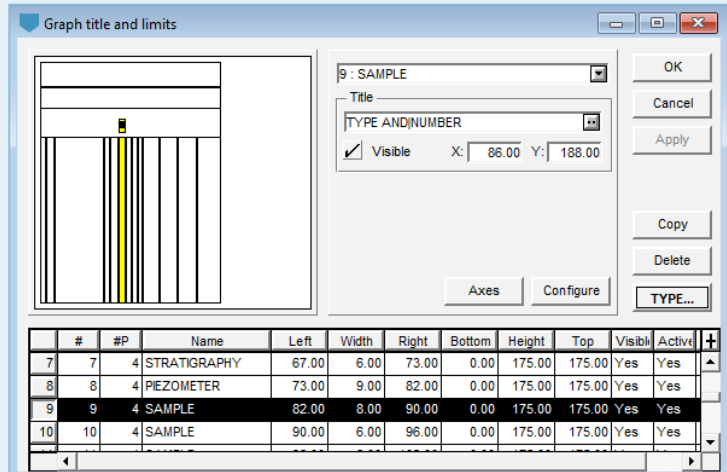
🛡 Curves window

- Click **Configure** in the graphs window, or use ▦ in the vertical toolbar, or **Style > Legend and curves**.
- Select the column to edit from the preview or the drop-down list at the top right.
- Each row represents which field will be displayed in the boring log.
  - Use the drop-down list in the NAME cell to select the field to display (from the database).
  - Change the type of display (as Text, Point, Histogram, etc.). The Default type is managed by Geotec.
  - Change drawing attributes (colors, fonts, marker symbol, etc.) with the button below Delete.
- Use Copy and Delete to add and delete curves.

🛡 Axes window

- Click **Axes** in the graphs window, or use ⌐ in the vertical toolbar, or **Style > Axes**.
- Select the column to edit from the drop-down list at the top.
- Select the X-axis and edit the various items.
  - Minimum and maximum values.
  - Primary and secondary divisions.
  - Title, Labels, Gridlines, Tick marks.
- The Y-axis can also be edited and will show the depth scale.
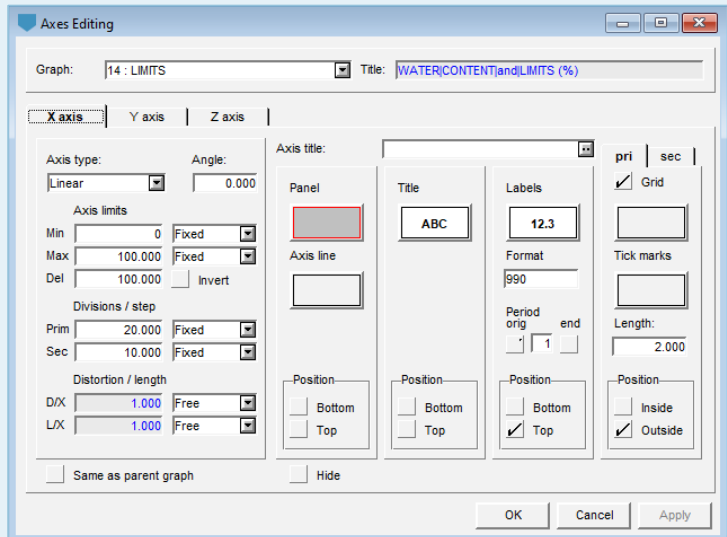
## 🛡 Objects

- Use 🖼 in the vertical toolbar, or **Style > Object Mode**.
- Use the objects horizontal toolbar to add new objects.
- Edit any object with a dotted line with a double-click, or **right click > Properties**.
- Use **&&TABLE.FIELD** to show the field value or **@@TABLE.FIELD** to show its equivalence.
- Use **$$keyword** –> several keywords are suggested by Geotec like database, style, current date, logo, etc.
- Anchor objects (for reports with multiple pages).
- Add an image linked to a logo file.

◆ Sobek

Log has special displays for several fields with display of Default type.

Stratigraphy

- Each pattern used in the boring report is linked to the type, code and proportion. Examples below:
  - For a Rock with code1 = LMST (limestone), the pattern R_LMST is used.
  - For a Soil with code1 = SMG and proportion = 124 (silty sand, trace gravel), three patterns are superimposed:
    S_S1 (sand)
    S_M2 (silty)
    S_G4 (trace gravel)
    The patterns show the most shapes for proportion 1 and the least for proportion 4.
- The layer category, primary and secondary materials can be highlighted in the description with *italic*, **bold**, ALL CAPS, etc.

Samples

- The STATE is displayed as ⊠ for remolded, ▯ for grab, ▨ for unremolded, and ◪ for core.
- The percentage lost can be represented in black at the bottom of the symbol.
- The same patterns and description highlight can be shown for samples as for stratigraphy.

Piezometers

- Log schematically illustrates installations with tube, screen, protector, cover, caps. Seals materials and water level can also be represented.

Limits

- The plastic limit, natural water content and liquid limit are represented as ⊢○—⊣.

Consolidation

- The lower limit, upper limit and probable preconsolidation stress are represented as ⊢↓—⊣.

Rock joints

- ALPHA and DIP of joints can be represented as inclined lines.
- TYPE of joints can be represented with a symbol specific to the type, inclined by its Beta angle or its Direction, and positioned on the X-axis at its Alpha angle or its Dip.

Piezocone SBT zones

- SBT zones can be shown as histograms with their predefined colors representing Zones 1 to 9 of Robertson.

SPECIAL DISPLAYS

Sobek

SUMMARY

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Our team of specialists will gladly answer your questions or comments.

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