



Table Designer

Design the schema, browse the data, draw the relationships and build visual queries — without leaving GeoMate.

- Group: Data Management
- Schema integrity lock
- 4 tabs · 105 tables managed
- SQL preview before execution

Tables

ALIAS

Executive summary

The Table Designer puts the database schema in the geologist's hands: create a table, add a field, change a type — with the whole SQL shown before anything is executed.

01 What it replaces

The round trip through a database administrator, or opening Access on the side — and the risk of breaking a constraint without noticing.

02 How it works

A nine-column grid describes each field; Ctrl+P shows the generated CREATE or ALTER; Ctrl+S runs it. Nothing is written without an explicit trip through the preview.

03 Who it is for

The senior geologist or database owner adapting the standard schema to what a campaign actually needs — a project field, an in-house code, a table of campaign-specific measurements.

105

tables in the demonstration database

8

supported data types

9

properties per column

100 %

of changes previewed as SQL

The application's own warning: Apply Changes is irreversible. Back up the database before any schema change.

Contents

01 Four tools in one

Schema designer, viewer, relationships, query builder.

02 The column grid

Nine attributes per field, from type to stored description.

03 SQL preview

Nothing runs before it has been read.

04 Relationships

Foreign keys and referential integrity, drawn visually.

05 Data Builder

Drag-and-drop multi-table queries, with generated SQL.

06 Schema protection

Lock critical columns against any change.

07 Anonymised database

105 tables, 41 drillhole tables, a 684 MB database.

08 Business value

The schema evolves with the project, with no DBA and no ticket.



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SECTION I

The module

The problem addressed, the capabilities delivered, the processing chain and the module's place in the platform.

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- 01 Context
 - 02 Key capabilities
 - 03 Processing chain
 - 04 Place in the platform
-

Context

An exploration database is never finished: a new prospect forces a column, a laboratory changes its analytical suite, a geotechnical campaign needs a whole new table.

The Table Designer puts those changes in reach of the geologist who owns the database, with the guard rails that stop a change from destroying history.

Read before you write

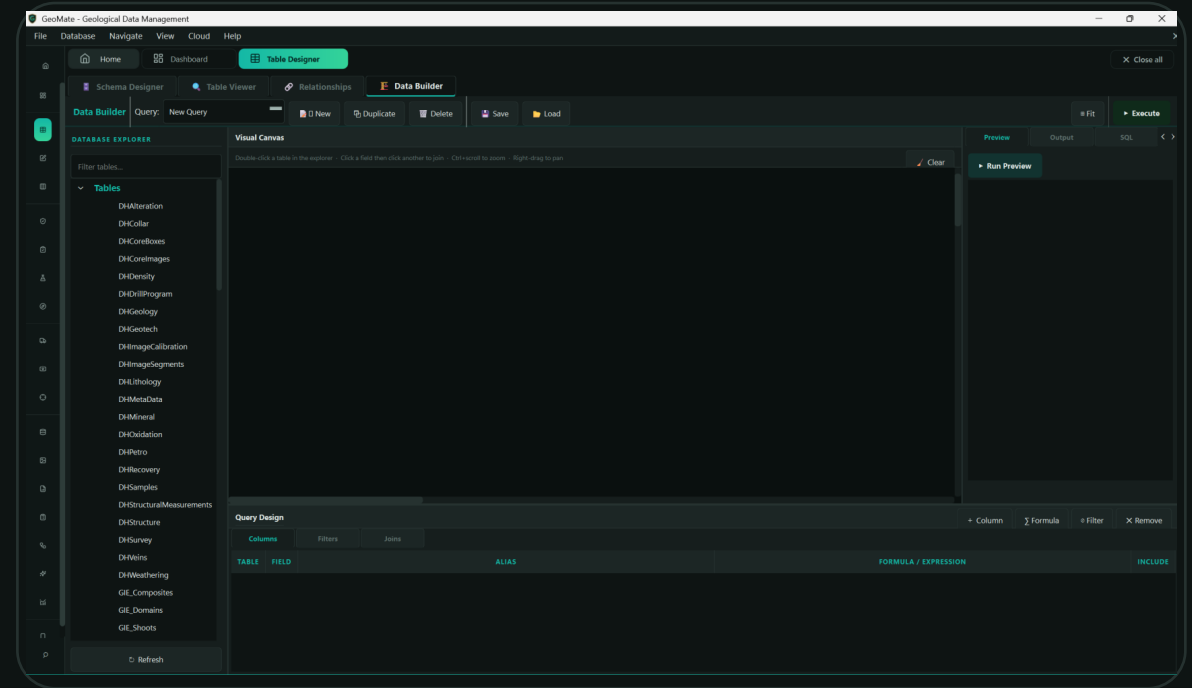
Ctrl+P shows the exact CREATE or ALTER that will run. No surprises.

Reserved words flagged

A column named DATE, SELECT or FROM triggers an inline warning before it breaks a query.

Lockable columns

From Database Security, HoleID, mFrom and mTo can be made indestructible — even for an administrator in a hurry.



Warning — Apply Changes is irreversible. Always use the SQL preview and back up the database before a schema change.

Key capabilities



01

Schema Designer

Nine-column grid: order, name, type, size, default, required, primary key, unique, description.



02

Table Viewer

Read-only preview of the selected table's real data, to check before you change anything.



03

Relationships

Draw the links between tables, auto-detect them by key name, and edit joins manually.



04

Data Builder

Visual canvas: double-click to drop a table, click two fields to join, computed columns and filters, generated and executable SQL.



05

Integrity lock

Locked columns can no longer be deleted, renamed or retyped; the whole table becomes undroppable.



06

Table duplication

Copy an existing schema into a new table — the fastest way to create a campaign variant.

Processing chain

From the existing schema to the modified one, through a mandatory preview.

A Read

Schema of the connected database

- Full list of the project's tables
- Columns, types, sizes and default values
- NOT NULL, primary key and unique constraints
- Descriptions stored in the schema
- Read-only preview of the table's data

B Edit & check

Nine-column grid

- Add, remove and reorder fields
- Type change among the eight Access types
- Warning on SQL reserved names (DATE, SELECT, FROM...)
- Duplication of a schema into a new table
- SQL preview — Ctrl+P — of the generated CREATE or ALTER

C Apply

Write to the database

- DDL executed against the database — Ctrl+S
- Table immediately available in Data Entry
- New fields offered to the Layout Builder
- Schema picked up by Validation and by the reports
- Structure exportable to another project

GUARD RAIL

No schema change is applied without having been shown as SQL. The operation cannot be undone from the application: backing up the database beforehand is part of the procedure, not an optional precaution.

A composite primary key cannot be declared here: the grid handles single-column primary keys only.

Place in the platform

FED BY

— Project database

Access (.acddb) or SQL Server: the Designer reads the schema in place and offers to edit it.

12 External Data

A third-party dataset often dictates the fields to create so it can be taken in without loss.

— Campaign standard

The company data model: codes, reference lists and mandatory fields to reproduce.



Table Designer

The foundation: everything the other modules read, write or validate exists because the schema declares it.

FEEDS

04 Layout Builder

Every field created here becomes a control available on the entry form.

03 Data Entry

A new table appears immediately as a capture tab.

05 Data Validation

The declared constraints — required, unique, type — are exactly what validation checks.

A field deleted here disappears from the layout, the forms and the reports that reference it. Check its uses before removing it.



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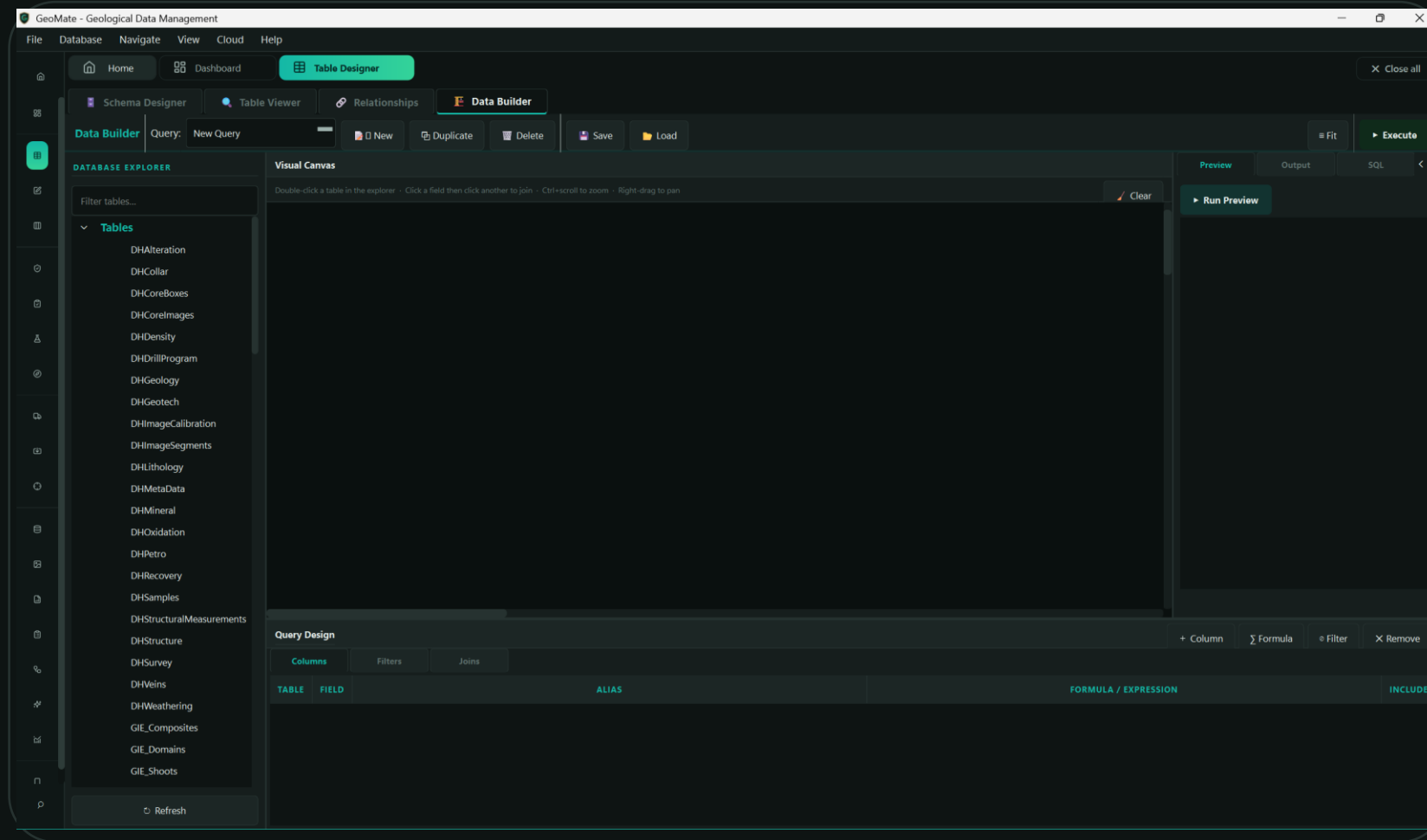
SECTION II

In practice

The real interface, the operating workflow, the reference settings, good practice and the questions that come up.

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- 01 The interface
 - 02 Operating workflow
 - 03 In depth
 - 04 Good practice
 - 05 Frequently asked
-

The interface



1 Database explorer

The project's 105 tables, filterable by name, grouped by family.

2 Four tabs

Schema, data, relationships, query builder.

3 Visual canvas

Double-click to place a table, click two fields to create the join.

4 Query design

Columns, filters and joins — with aliases and computed expressions.

5 Preview · Output · SQL

The generated SQL stays readable and exportable; nothing is hidden.

Actual GeoMate 2026 v2026.3.1.5 screen capture — Midnight theme.

Operating workflow

Four actions to change the schema, the fourth only after the SQL has been read.

1

Select the table

Click a name in the explorer: the schema loads into the grid and the real data into the viewer.

2

Edit the columns

Rename, retype, add fields, set the required, key and unique constraints.

3

Read the SQL

Ctrl+P opens the read-only preview of the CREATE or ALTER that will be submitted to the database.

4

Back up, then apply

Back up the database, then Ctrl+S executes the changes against the project file.

5

Verify

The viewer and the Layout Builder pick up the new structure; a refresh is enough, no restart.

The column grid

ATTRIBUTE	PURPOSE	NOTE
Column Name	Field identifier in the table	Checked against SQL reserved words
Type	TEXT · NUMBER · INTEGER · DATE · YESNO · MEMO · CURRENCY · AUTOINCREMENT	Retyping is refused when the column is locked
Size	Text field length	TEXT fields only
Default	Value inserted on a new record	Useful for project and country codes
Required	NOT NULL constraint	Also enforced by the validation engine
Primary Key	Unique record identifier	Single-column key
Unique	Forbids duplicate values in the column	Complements the validation rules
Description	Annotation stored in the database schema	Read by exports and documentation

Toolbar and shortcuts

ACTION	SHORTCUT	EFFECT
New Table	Ctrl+N	Creates a table and prompts for its name
Add Column	Ins	Appends a blank row to the grid
Delete Column	Del	Removes the selected column from the pending schema
Move Up / Down	—	Reorders columns within the table
Duplicate Table	—	Copies the current schema to a new table
Preview SQL	Ctrl+P	Shows the exact CREATE / ALTER before it runs
Apply Changes	Ctrl+S	Executes the changes — irreversible action

Good practice

The procedure to follow before applying a schema change in production.

✓ Back up the database

A dated copy of the .accdb, or a SQL Server backup, before any change. The application offers no undo.

✓ Read the whole SQL preview

Ctrl+P, then read it line by line: this is the only moment at which you can see exactly what will run.

✓ Avoid reserved names

DATE, SELECT, FROM and their kind raise an inline warning. Rename rather than work around it: the queries stay sound.

✓ Size the text fields

Size applies to the TEXT type only. A laboratory code truncated on import is paid for later in manual reconciliation.

✓ Document every column

The Description column is stored in the schema: it is the only documentation that survives the departure of whoever created the table.

✓ Check uses before deleting

A field referenced by a layout, a formula or a report must be removed from those first.

Frequently asked

The questions asked at the point of touching the schema.

Q Can I roll back after Apply?

Not from the application. Recovery goes through the database backup — hence the rule: back up before, preview the SQL during.

Q Which types are available?

TEXT, NUMBER, INTEGER, DATE, YESNO, MEMO, CURRENCY and AUTOINCREMENT — the Access engine's types.

Q Can I declare a two-column primary key?

No: the grid handles a single-column primary key. Uniqueness across a pair is handled by a unique constraint or by a validation rule.

Q Is the change visible elsewhere straight away?

Yes. A new table appears as a capture tab and its fields are immediately offered to the Layout Builder.

Q Can I reorder the columns?

Yes, by dragging in the # column or with Move Up / Move Down. Order governs reading, not storage.

Q How do I reuse an existing schema?

Duplicate Table: the schema is copied under a new name, without the data, ready to be adjusted.



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SECTION III

The data

What the module produces on a real dataset, and the vocabulary needed to read those results.

01 Anonymised data

02 Key concepts

Anonymised data

The KOUKOUDAN demonstration database, as the Table Designer sees it.

105

TABLES

in the project database

41

DRILLHOLE TABLES

DH prefix — collars, logging, samples

684 MB

FILE SIZE

Access .accdb, compactable

231 162

RECORDS

collars, surveys, samples and logged intervals

The schema brings together the DH family for drilling, sp for dispatch, QAQC for quality assurance, GIE for geological intelligence, and the rf* reference tables that feed the data-entry dropdowns.

Source: KOUKOUDAN project database (Senegal) — figures computed from the real data exported from GeoMate.

Key concepts

The database notions the grid works with.

Schema

The description of the tables and their columns — names, types, constraints. It defines what the database will accept, independently of its content.

Required constraint (NOT NULL)

Forbids saving a row where this field is empty. The first barrier against capture gaps.

DDL

Data Definition Language: the part of SQL that creates and alters structures — CREATE TABLE, ALTER TABLE. It is what the preview shows.

Primary key

The column that identifies a row uniquely. Without one, two identical records become indistinguishable.

Unique

Forbids the same value twice in the column. It is what stops two holes carrying the same identifier.

Reserved word

A name the SQL engine interprets itself. Used as a column name it breaks queries in ways that are hard to diagnose.



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SECTION IV

Value & specifications

What the module changes for the project, and its technical integration profile.

01 Business value

02 Technical profile

Business value

The schema follows the project, not the reverse

A new analytical suite or a geotechnical campaign is added the same day, without waiting for a development cycle.

Same day

No SQL to write

The geologist who owns the database works in a grid; the SQL is generated, displayed, then executed.

Zero lines of code

Critical columns are protected

HoleID, mFrom and mTo locked: nobody can rename or drop them by accident any more.

Owner / Zeus lock

Complex queries become reusable

The Data Builder saves a multi-table query and replays it; export and automation can reference it.

Named queries

Nothing is applied unread

The mandatory SQL preview removes the whole class of accidental schema errors.

Ctrl+P

Technical profile

Supported engines

Access

.accdb and .mdb files over ODBC

SQL Server

Local or remote instance, ODBC Driver 17/18

Migration

Built-in Access → SQL Server wizard

Maintenance

Access compact & repair from the Home screen

Data types

Text

TEXT (sized) · MEMO

Numeric

NUMBER · INTEGER · CURRENCY ·
AUTOINCREMENT

Other

DATE · YESNO

Constraints

NOT NULL · primary key · unique · default

Security

Schema lock

Per column, restricted to Owner and Zeus roles

Registry

The lock travels with the database

Audit

Every change is traceable in the audit log

Preview first

No execution without displayed SQL



One platform, from field to report

The “Table Designer” module is one of the 19 modules of GeoMate 2026 — a single, fully offline platform covering the whole chain: database design, data entry, validation, QA/QC, dispatch, analysis and reporting.