GSC FIELD APP USER GUIDE – Version 3

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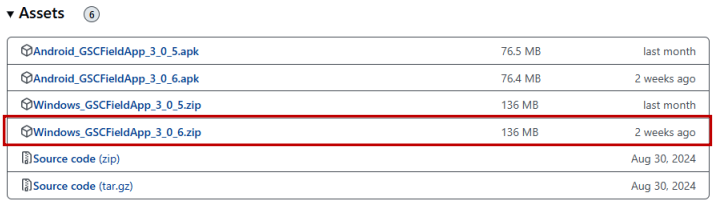
INSTALLING ON WINDOWS / INSTALLATION SUR WINDOWS

NOTE: The GSC Field App works under Windows 10 (at least Build 19041) and Windows 11.

1. Download the latest Windows version from https://github.com/NRCan/GSC-Field-Application/releases.
2. Expand the Assets section, of the latest release version available and locate the Windows package.



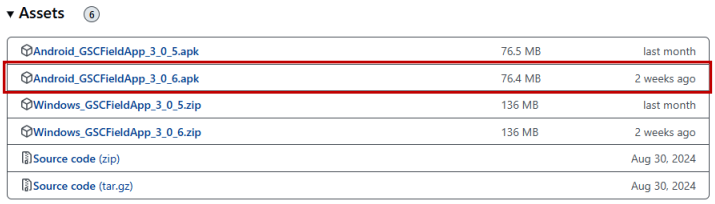
3. Extract the zip file contents and navigate to that location.
4. Run GSCFieldApp_3.0.6.0_x64.msix (or equivalent) to install the GSC Field App.

NOTE: Do **NOT** install the GSC Field App from the .PS file, as we have in the past. **Only install using the .msix file.**

INSTALLING ON ANDROID / INSTALLATION SUR ANDROID

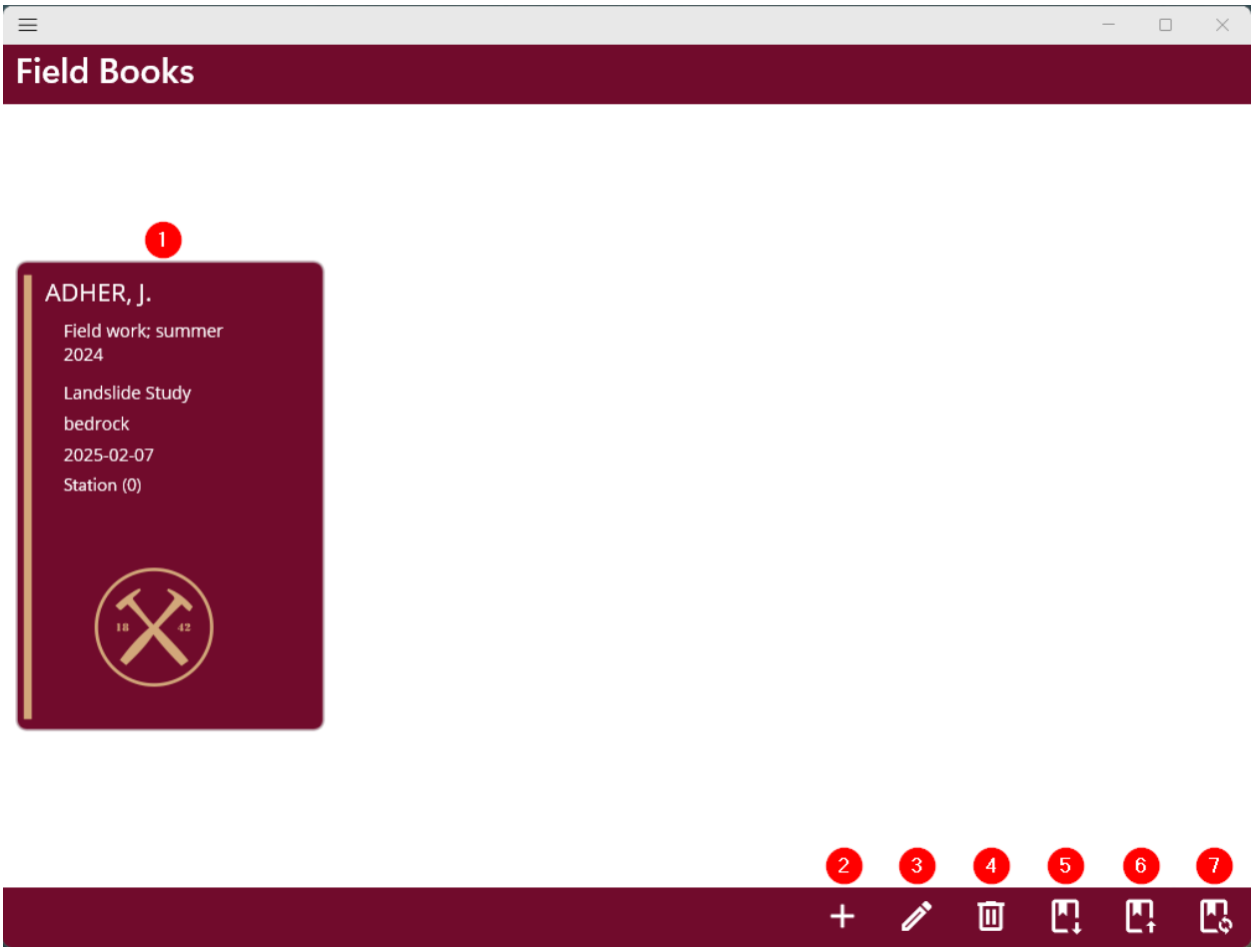
NOTE: The GSC Field App works under Android 10 or higher.

1. Download the latest Windows version from https://github.com/NRCan/GSC-Field-Application/releases.
2. Expand the Assets section, of the latest release version available and locate the Windows package.



3. Copy the .apk file to your Android device (using a USB-C cable or a USB-C flash drive).
4. On your Android device, run the .apk file to install the GSC Field App. You might be asked to first give permission to your browser or file application to install packages before this step.

FIELD BOOKS / LIVRES DE TERRAIN



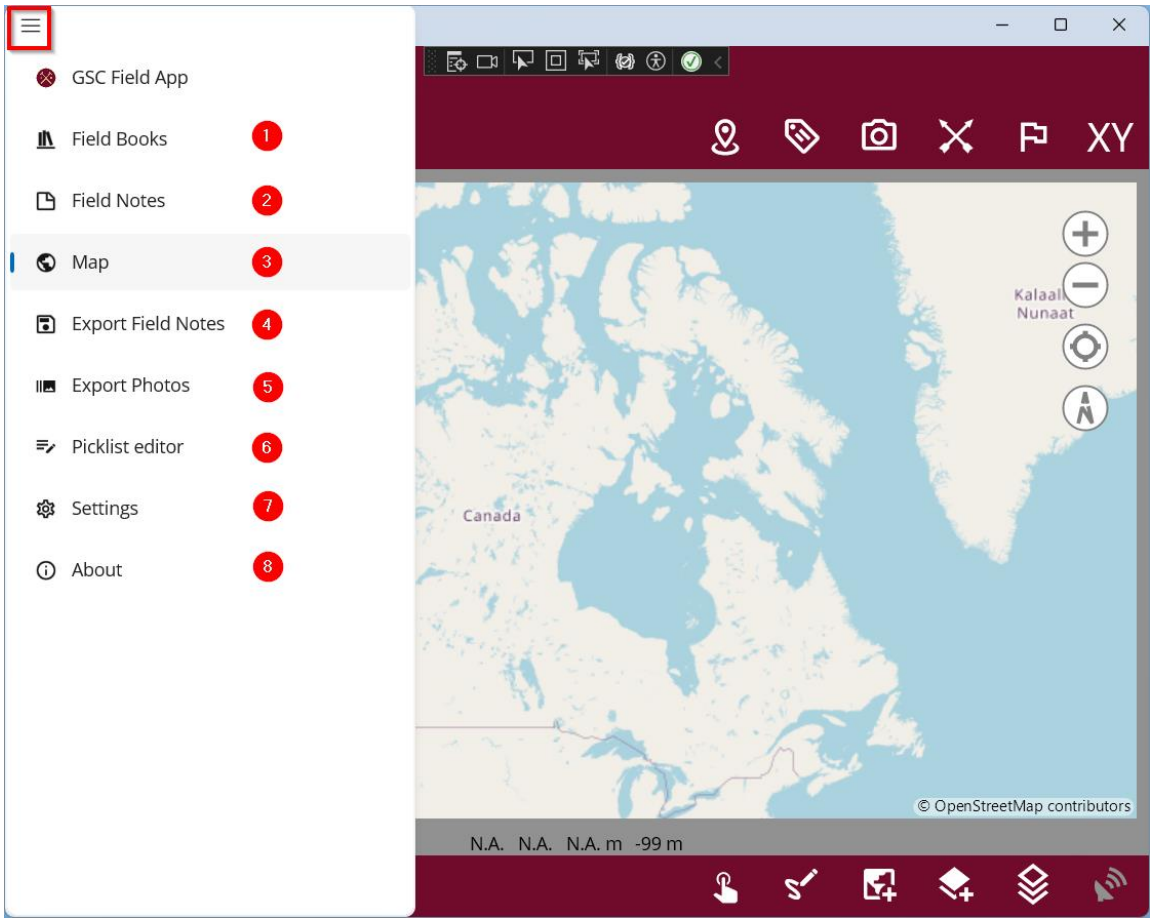
Note: the layout of the tools may vary depending on the orientation of the device and available space.

Navigation Bar → Summary of application pages.

1. **An existing Field Book.**
2. **Add:** add a new field book.
3. **Edit**: allows you to modify the metadata for the current field book.
4. **Delete**: deletes the selected field book. Do not do this unless you already have a backup as there is no way to undo a deletion of a field book. If you do try to delete a field book, it will prompt you to make sure you want to delete it, followed by an offer to create a backup of the field book.
5. **Backup**: Creates a backup of the current field book as a zip folder (contains Geopackage, map page layer settings and photos).
6. **Restore**: Restores a backup field book. If a same field book is found, a prompt will ask for permission to overwrite it with restored version. Restoring can work with a single Geopackage or a zip folder.

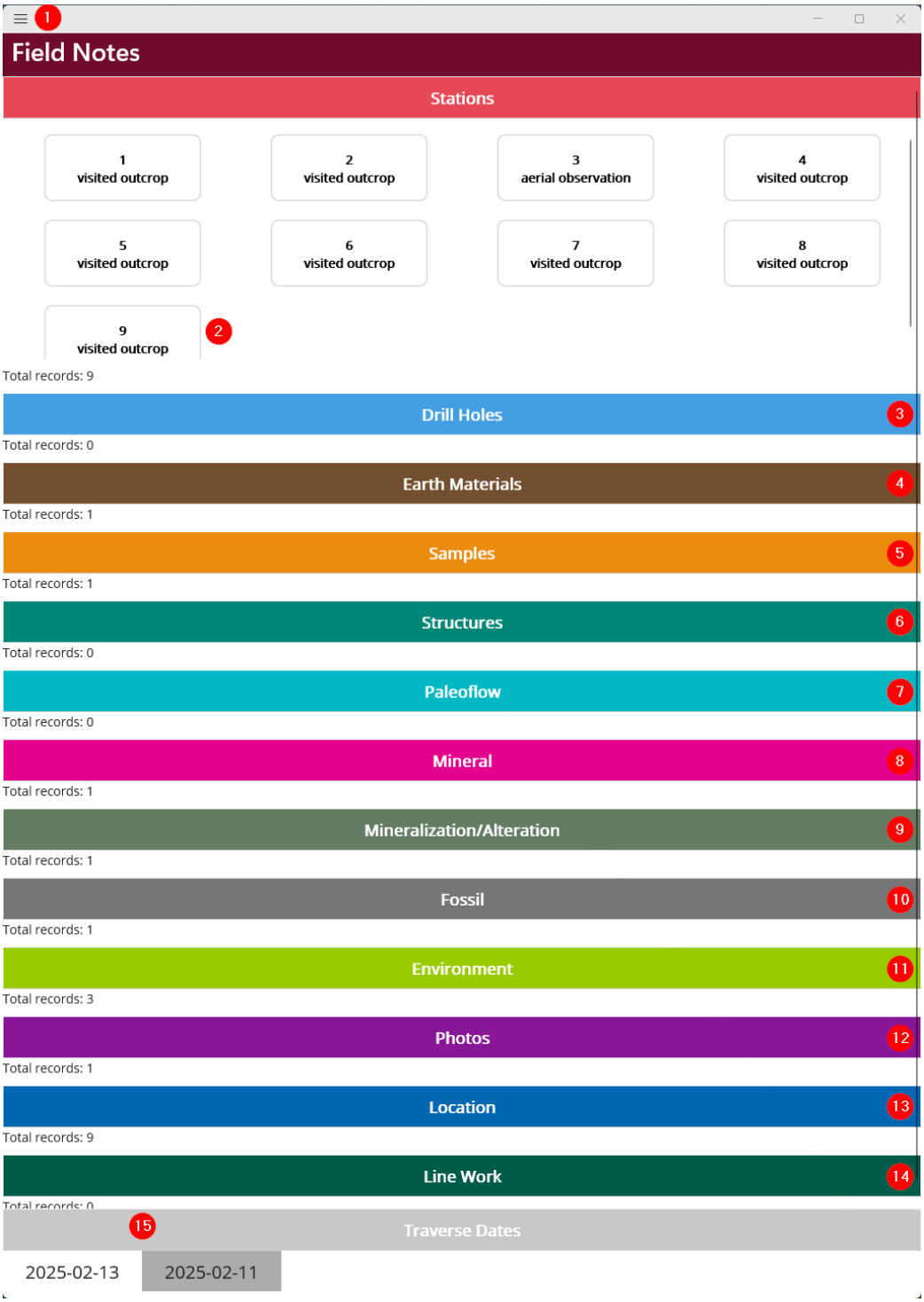
7. **Update**: updates the current field book to any changes in the database structure. This option can be used to upgrade a selected field book when the application has been updated to the latest release in which structural changes happened.

MAIN MENU / MENU PRINCIPAL



1. **Field Books** – a page in which we can manage field books for a specific area of interest. Each of those field books contains all of the organizational metadata about a project.
2. **Field Notes** – the area where individual stored records on Stations, Photographs, Samples, etc. can be examined and revised.
3. **Map View** – the map of the research area with all of the data plotted and adding optional layers of data.
4. **Export Field Notes** – allows the user to create a backup of the current field book as a Geopackage file.
5. **Export Photos** – allows the user to create a backup of the photos taken on the device in the current field book as a zip file.
6. **Picklist Editor** – allows the user to modify the picklists entries, addition/subtraction/sorting the display order of certain key terms for an individual project.
7. **Settings** – turn off/on certain tables as needed.
8. **About** – Contact, project and online resources for this app.

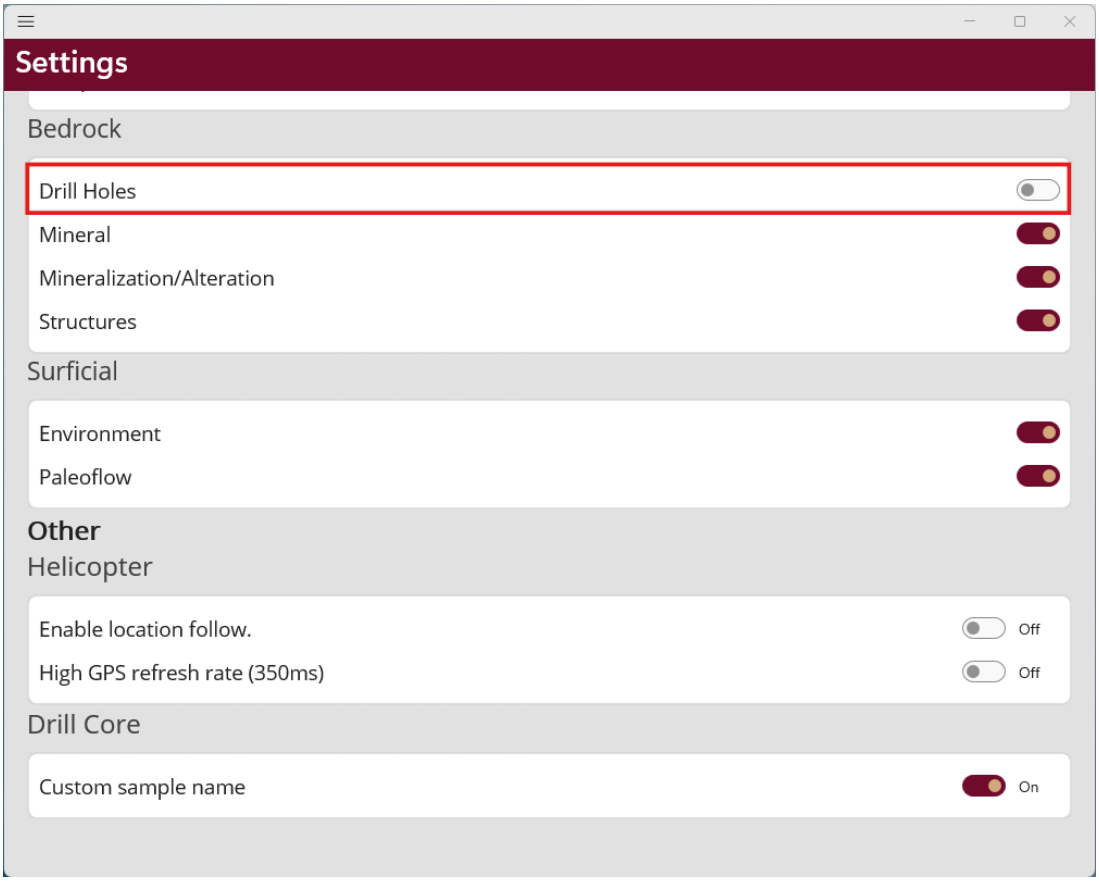
FIELD NOTES / NOTES DE TERRAIN



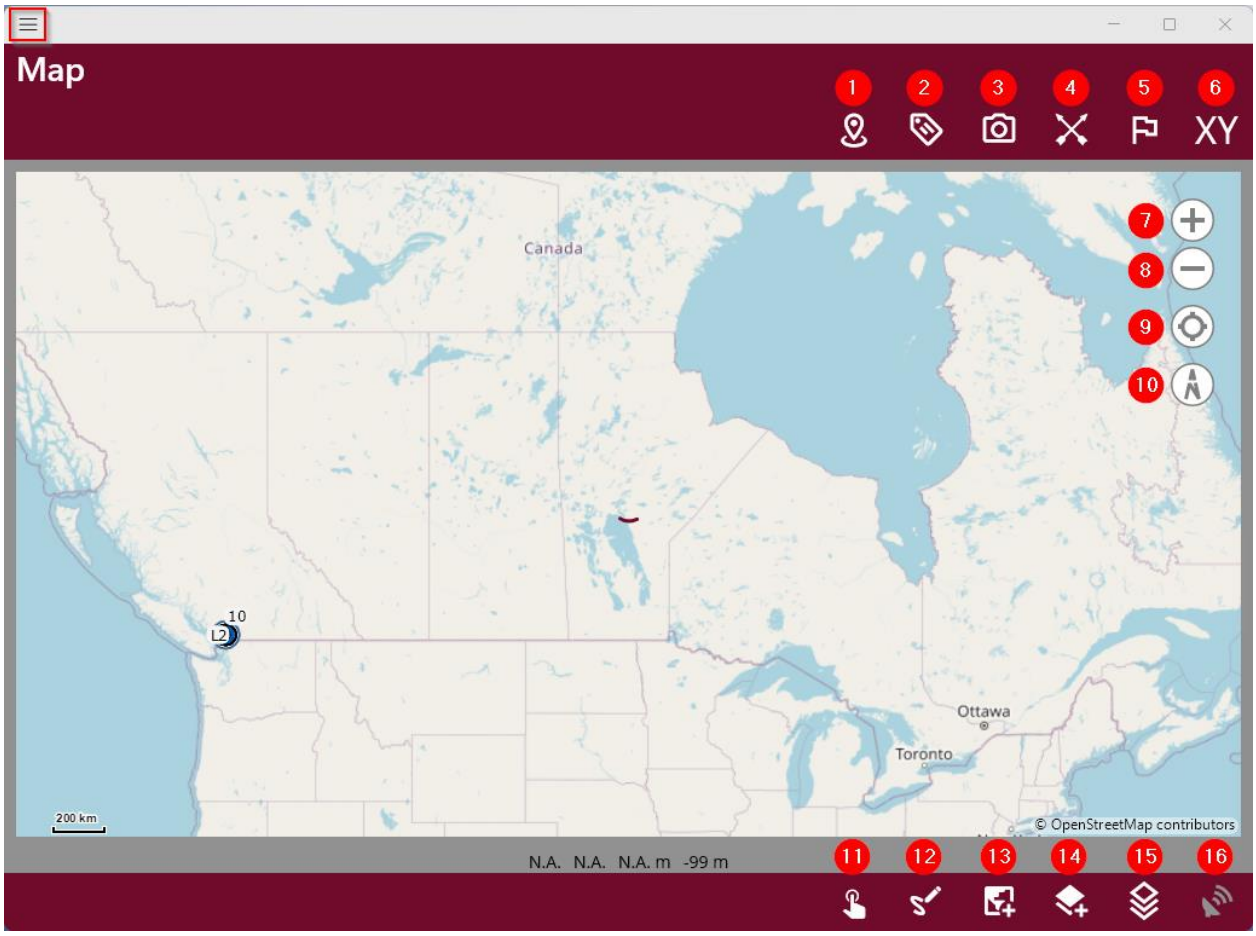
1. Main menu (Field Books, Field Notes, the Map View, Export field notes, Export photos, Picklist Editor, Settings, About).

2. A list of station records in the Field Notes view.
3. Expand Drill Holes to see records (none in this case).
4. Expand Earth Materials to see records (1).
5. Expand Samples to see records (1).
6. Expand Structures to see records (0).
7. Expand Paleoflow to see records (0).
8. Expand Mineral to see records (1).
9. Expand Mineralization/Alteration to see records (1).
10. Expand Fossil to see records (1).
11. Expand Environment to see records (3).
12. Expand Photos to see records (1).
13. Expand Location to see records (9).
14. Expand Line Work to see records (0).
15. Click on the Traverse Date tabs to look at traverse data collected on different days. Users can tap on the Traverse Dates line to refresh the Field Notes page. Once you get enough date entries wider than the width of your device, you can scroll the dates to the right to get older records and to the left to get newer records.

Note: one can reduce the number of headers that are displayed in the field notes by going to **Settings** where you can turn off certain types of records. For example, if you are not interested in recording any drill holes, you can turn Drill Holes off, as seen in the image below.



MAP PAGE / APPLICATION NAVIGATION



Map view: top and bottom navigation bars.

1. Tap to add a station record.
2. Tap to add a quick sample record. A quick sample will take a location and create an empty station and a blank earth material record related to new sample that will be shown on-screen.
3. Tap to add a quick photo record.
4. Tap to add a quick structure/pflow record.
5. Tap to add a waypoint.
6. Tap to manually create a location record from XY or lat/long.
7. Zoom in.
8. Zoom out.
9. Centre the map on the location.
10. Reorient the map direction (put north at the top of the screen).
11. Turn on/off Tap Entry. This allows you to tap on the screen to record a station and its location.
12. Tap to draw an interpretation line. You may draw a line and assign it as a contact, many types of faults or folds or Other. There is a note section if you have more details.
13. Tap to add a URL of an online Web Mapping Service (WMS).

14. Tap to add a new layer (MBTiles or geopackages).
15. Tap to see a list of all loaded layers and more options.
16. Tap to turn on/off GPS.

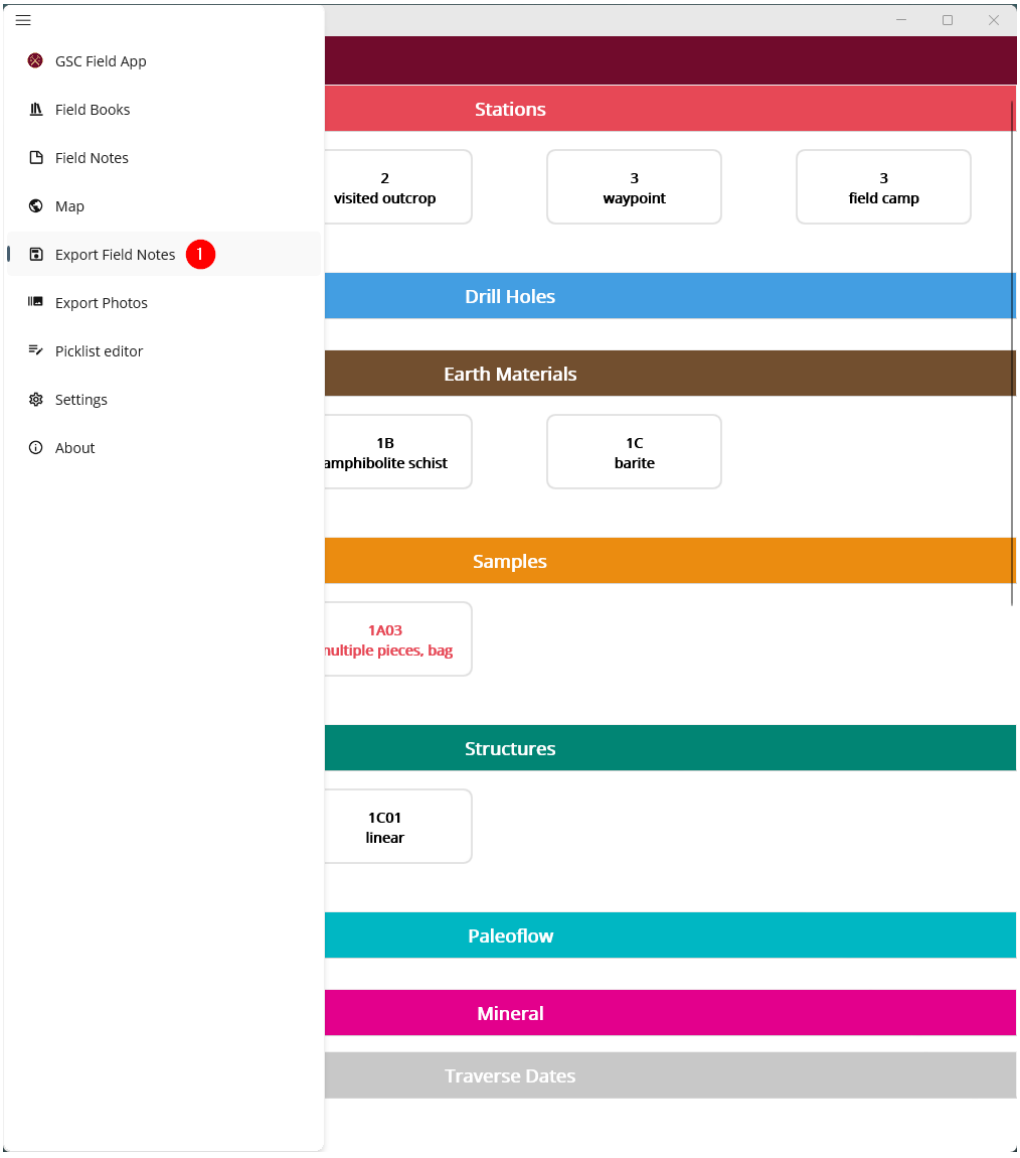
Note 1: By default, the GSC Field App loads the Open Street Map which will be cached and will be available when offline (https://www.openstreetmap.org/).

Similarly, WMS data will also be cached automatically and be available when offline.

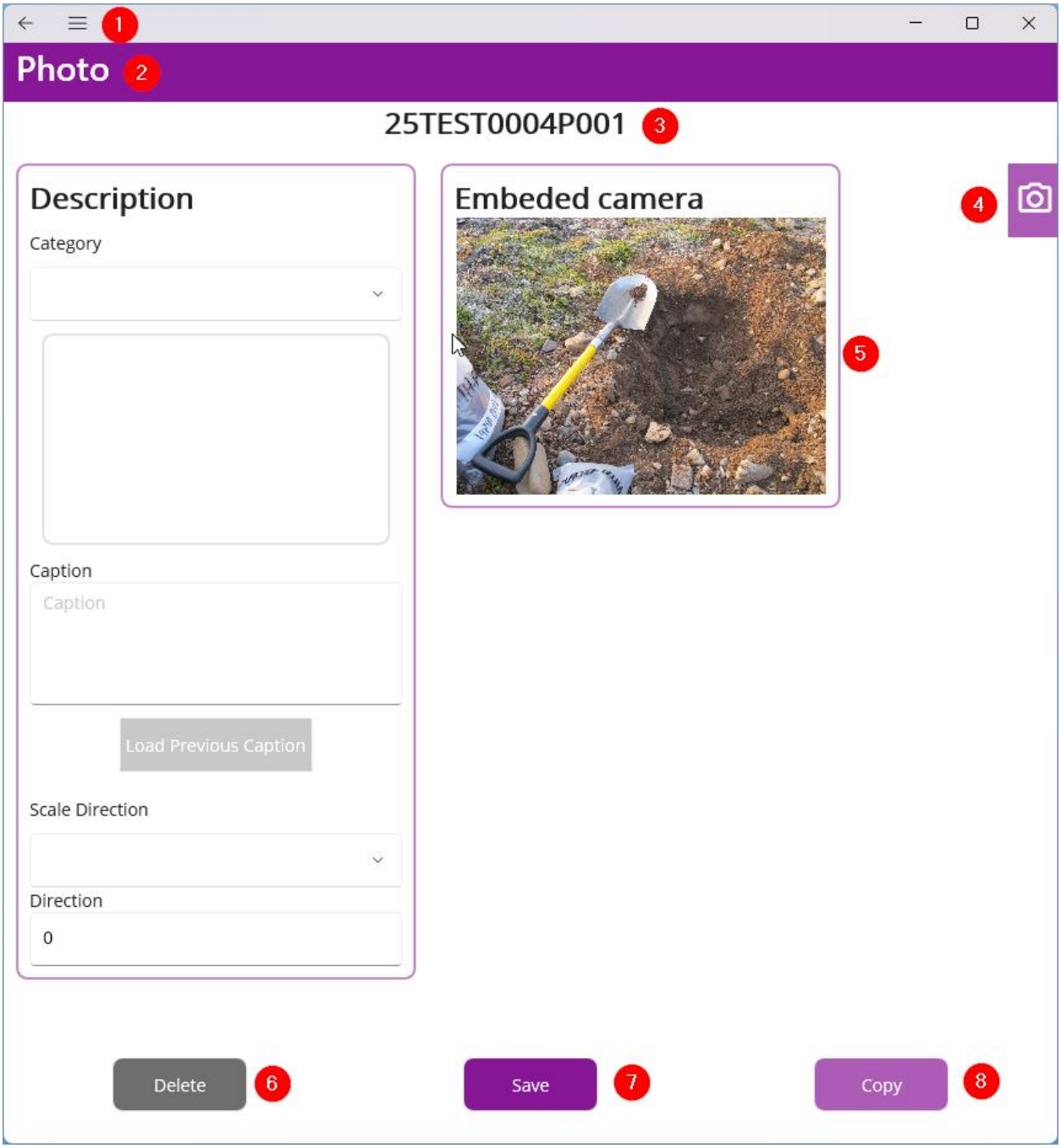
Note 2: If the user has digitized point traverses in a GIS software like ArcGIS or QGIS in the feature named F_Traverse_Point, they will show up in the GSC Field App, properly labelled by restoring the dataset in the field books page.

Note 3: Datasets collected and added as geopackages are tappable to get more information about a point or line feature.

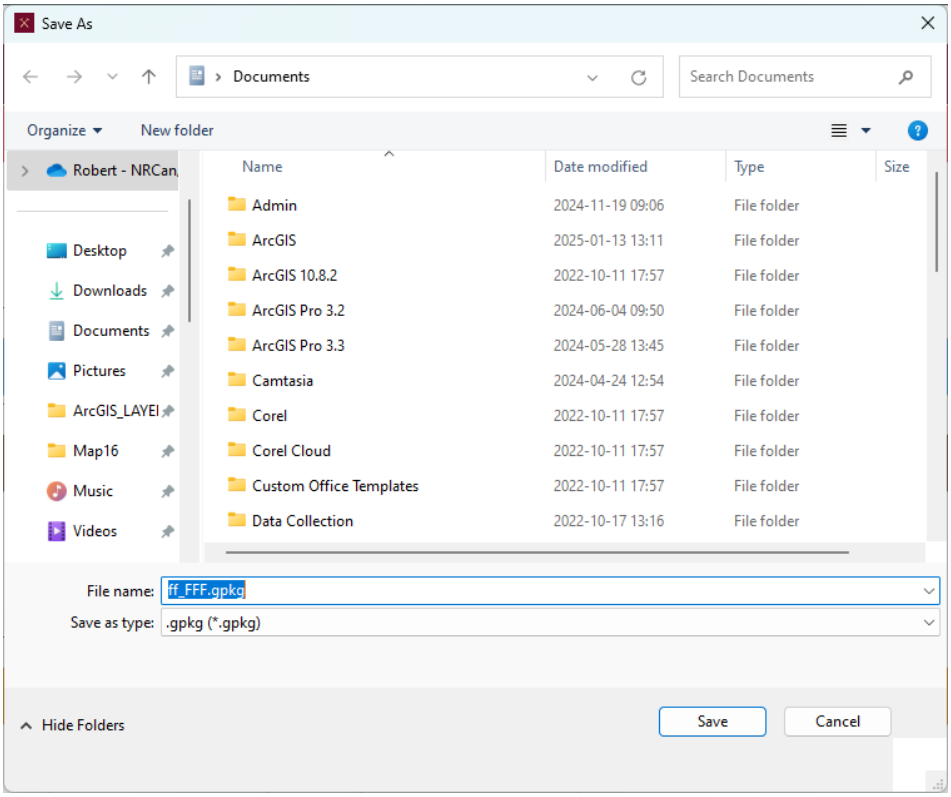
EXPORT FIELD NOTES / EXPORTER DES NOTES DE TERRAIN



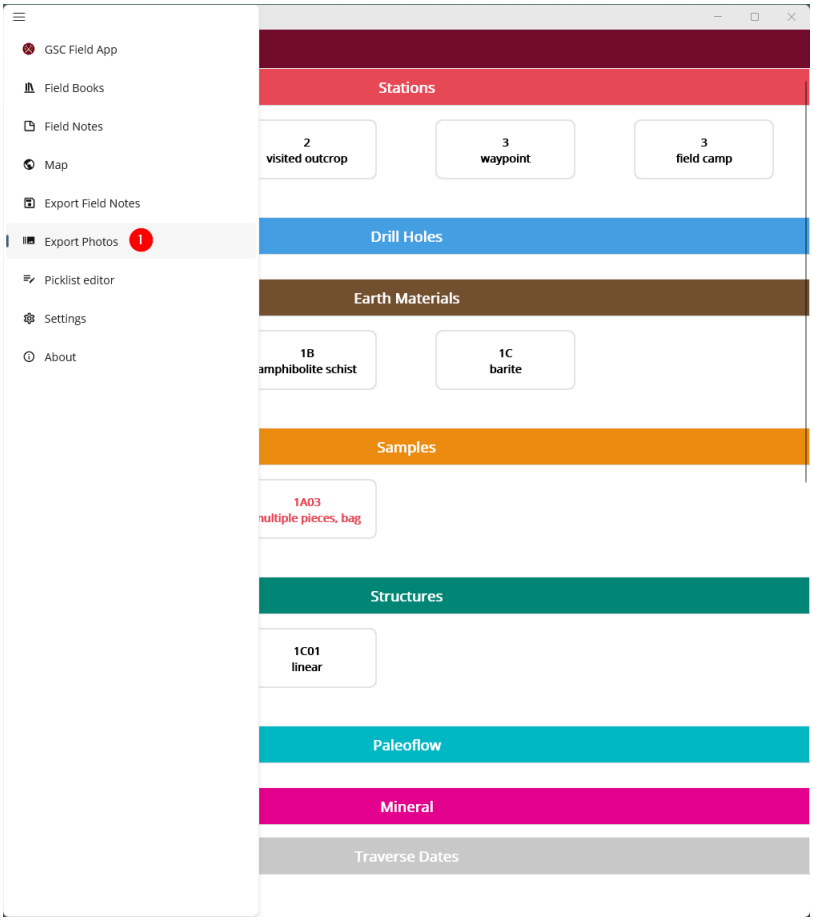
1. Tap here to export the field notes collected by the field device as a GeoPackage which can be used in ArcGIS, ArcGIS Pro and QGIS.



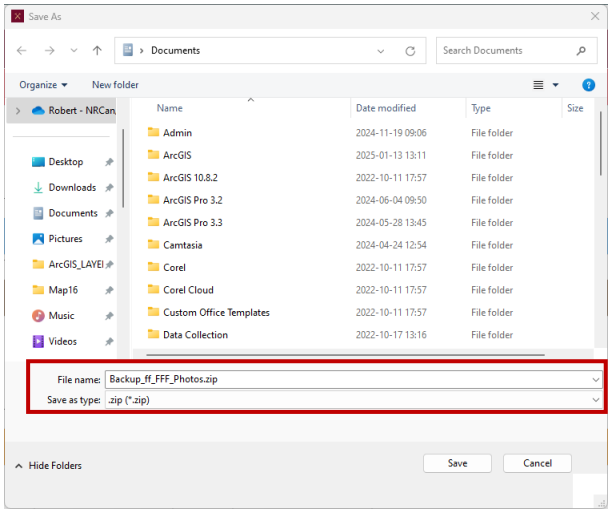
2. Enter in the name of the backup file (.gpkg)
3. Tap the **Save** button


Save As
Documents
Search Documents
Organize
New folder
Robert - NRCan
Desktop
Downloads
Documents
Pictures
ArcGIS_LAYEI
Map16
Music
Videos
Name
Date modified
Type
Size
Admin 2024-11-19 09:06 File folder
ArcGIS 2025-01-13 13:11 File folder
ArcGIS 10.8.2 2022-10-11 17:57 File folder
ArcGIS Pro 3.2 2024-06-04 09:50 File folder
ArcGIS Pro 3.3 2024-05-28 13:45 File folder
Camtasia 2024-04-24 12:54 File folder
Corel 2022-10-11 17:57 File folder
Corel Cloud 2022-10-11 17:57 File folder
Custom Office Templates 2022-10-11 17:57 File folder
Data Collection 2022-10-17 13:16 File folder
File name: ff_FFF.gpkg
Save as type: .gpkg (*.gpkg)
Hide Folders
Save
Cancel

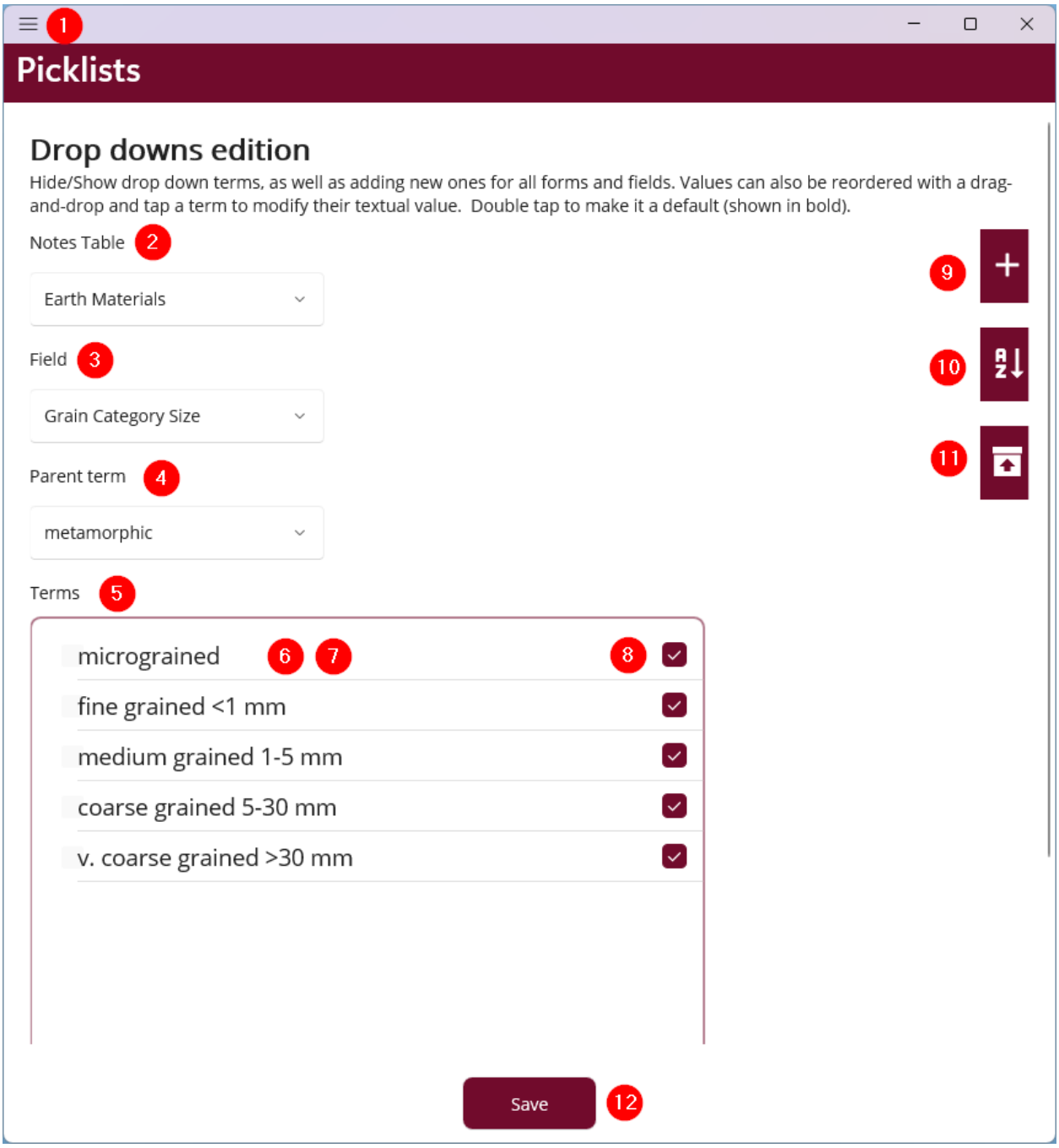
EXPORT PHOTOS / PHOTOS D'EXPORTATION



1. Tap here to export the photos collected by the field device (not an external camera)
2. Enter in the name of the backup file (.zip)
3. Tap the **Save** button



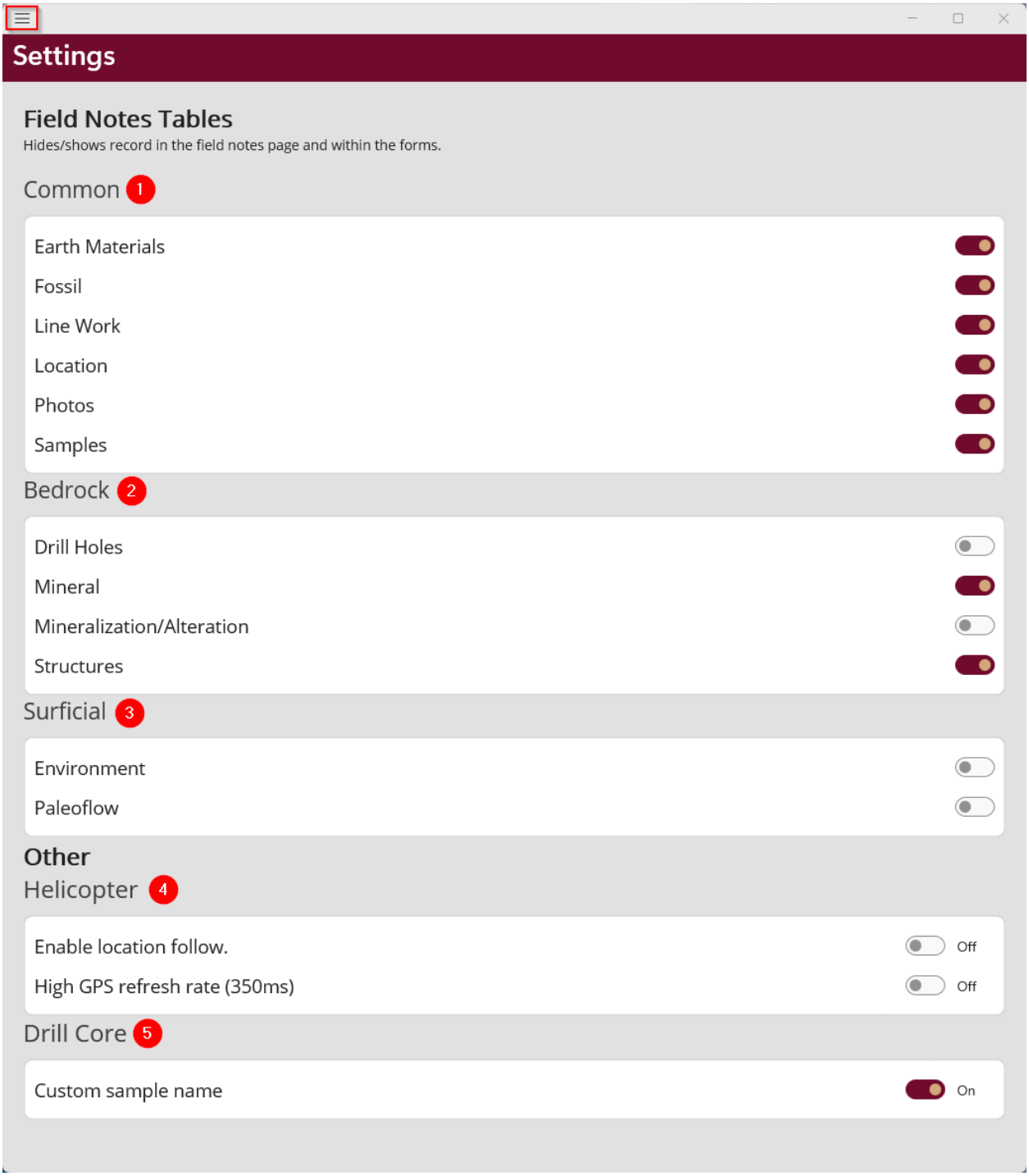
USING THE PICKLIST EDITOR / UTILISER L'ÉDITEUR DE LISTES DE SÉLECTION



1. Main Menu
2. The name of the table you wish to modify
3. The name of the field in the above table being modified
4. The name of the parent term being modified

5. The terms contained under the parent term
6. Single tap on the term to edit its text
7. Double tap on the term to set as a default value
8. Check/Uncheck to make Visible/Hidden in the drop down.
9. Tap to add a new picklist term
10. Tap to sort in ascending order
11. Tap to import picklist from another geopackage
12. Save the current changes

SETTINGS / PARAMÈTRES

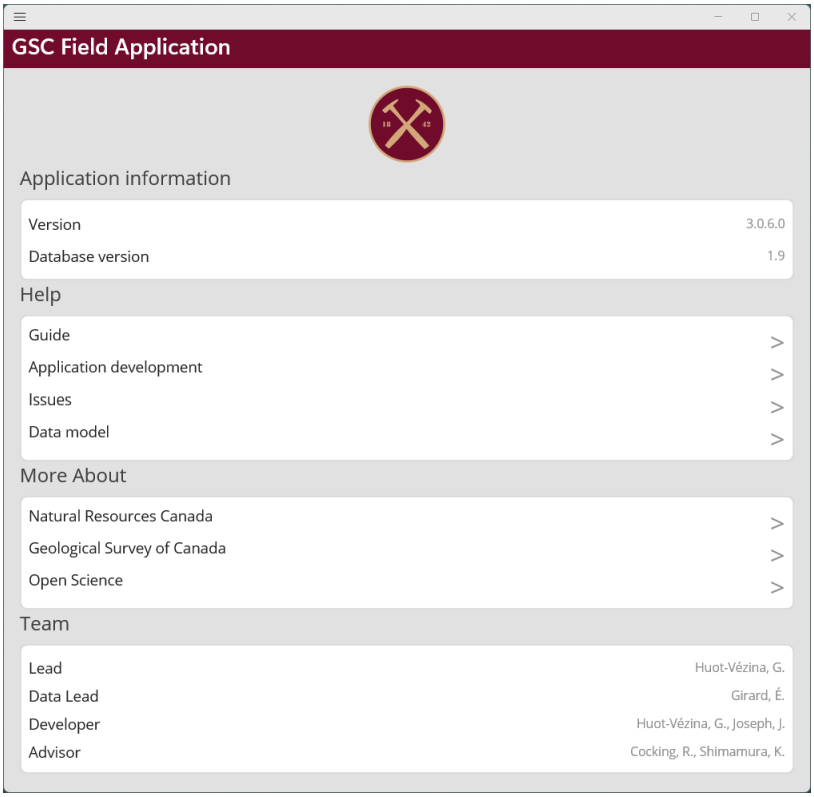


The Settings menu allows you to turn on/off certain tables of data collection. For example, if you know you don't have any interest in collecting drill hole data or mineralization/alteration, you can turn those tables off.

1. **Common** refers to data tables that contain data common to both Surficial and Bedrock data models.
2. **Bedrock** includes all tables relevant to bedrock data collection.
3. **Surficial** includes all tables relevant to surficial data collection.
4. **Other** includes two settings that allow you to optimize the device in a helicopter setting, where you need a faster refresh rate on the GPS since the helicopter is travelling so fast. The **High GPS Refresh Rate** setting helps to match the helicopter speed to the GPS, while **Enable Location Follow** forces the map to stay centred on the helicopter.
5. **Drill Core** allows the user to customize the name of a drill core sample.

ABOUT / À PROPOS

The About page lists the App version and database version, the main developers and, more importantly, provides links to help (if the user is connected to the Internet).



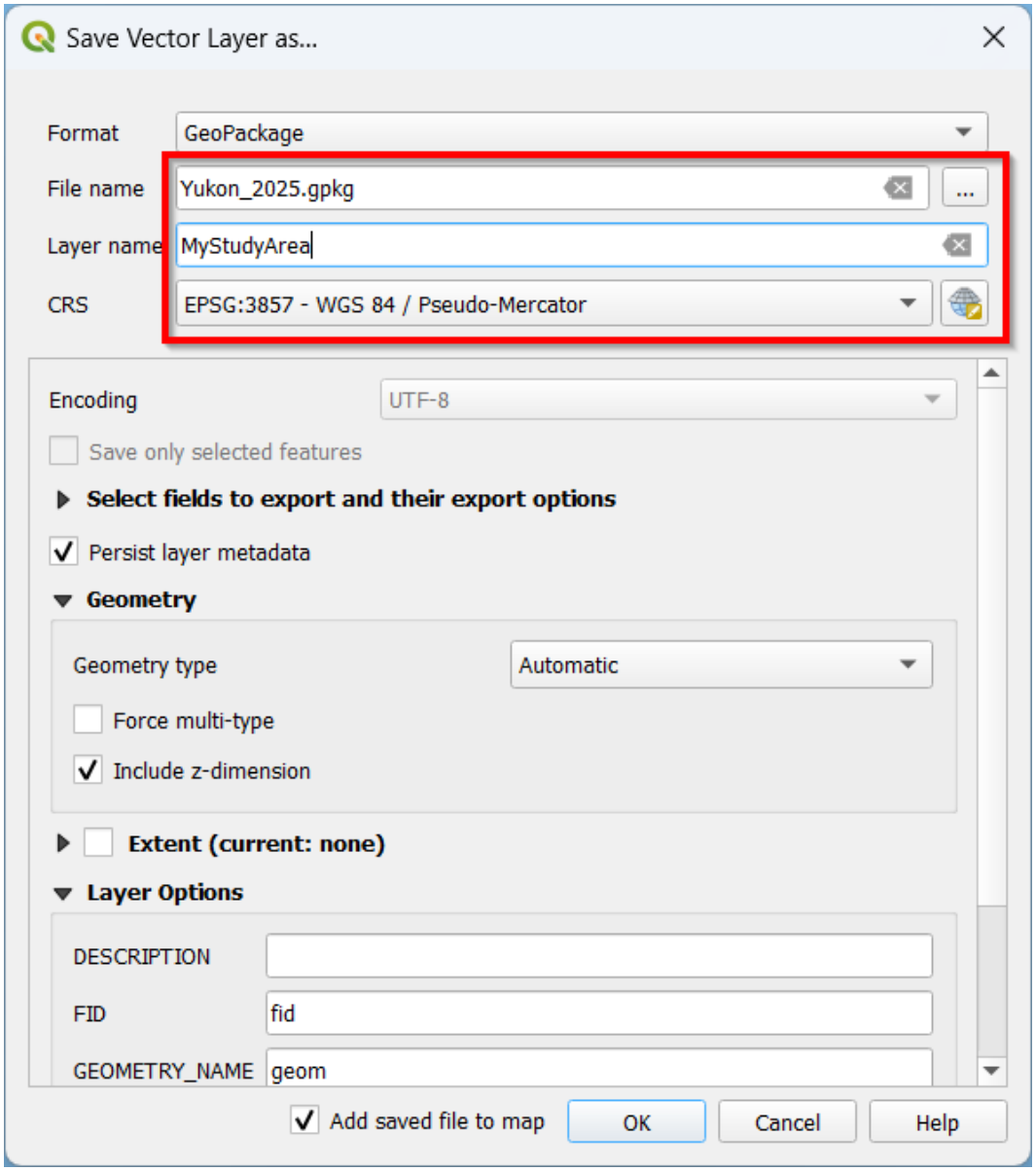
PREPARING DATA / PRÉPARATION DES DONNÉES

Like MBTiles, you can create and use geopackage-formatted files in the GSC Field App. Additionally, if you create the geopackage in QGIS, you can include the same symbology used in QGIS in the Field App

Note: The GSC Field App mainly uses two projections. If you wish to create a geopackage, the projection of the data must be either geographic WGS 84 (EPSG: 4326) or WGS 84 / Pseudo-Mercator (EPSG: 3857). Any other spatial reference system (SRS) set within the geopackage will be projected to EPSG:3857 upon loading in the map page, this might impact the loading time, especially on older devices.

CREATING GEOPACKAGES IN QGIS / CRÉATION DE GÉOPACKAGES DANS QGIS

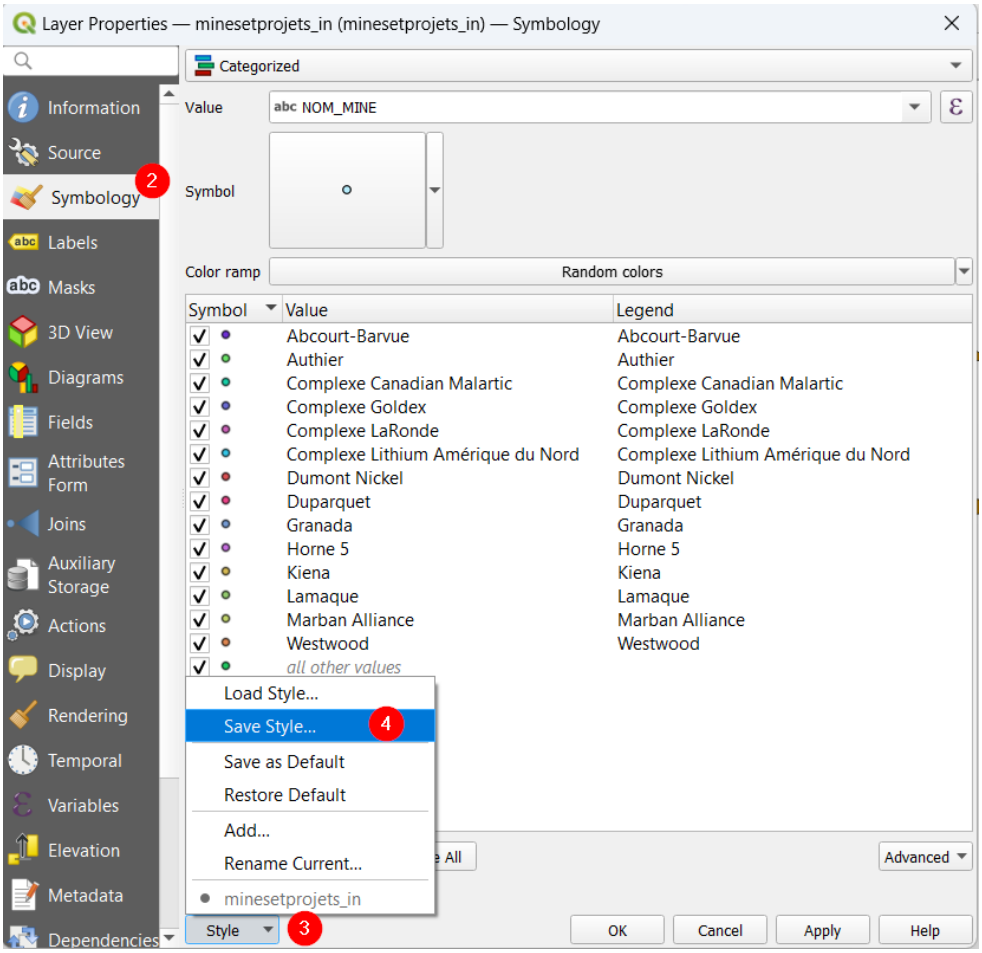
1. In the QGIS Table of Contents, right-click on the map layer you wish to be used in a geopackage and select **Export > Save As…**
2. Set the Format to **GeoPackage** and name the file.

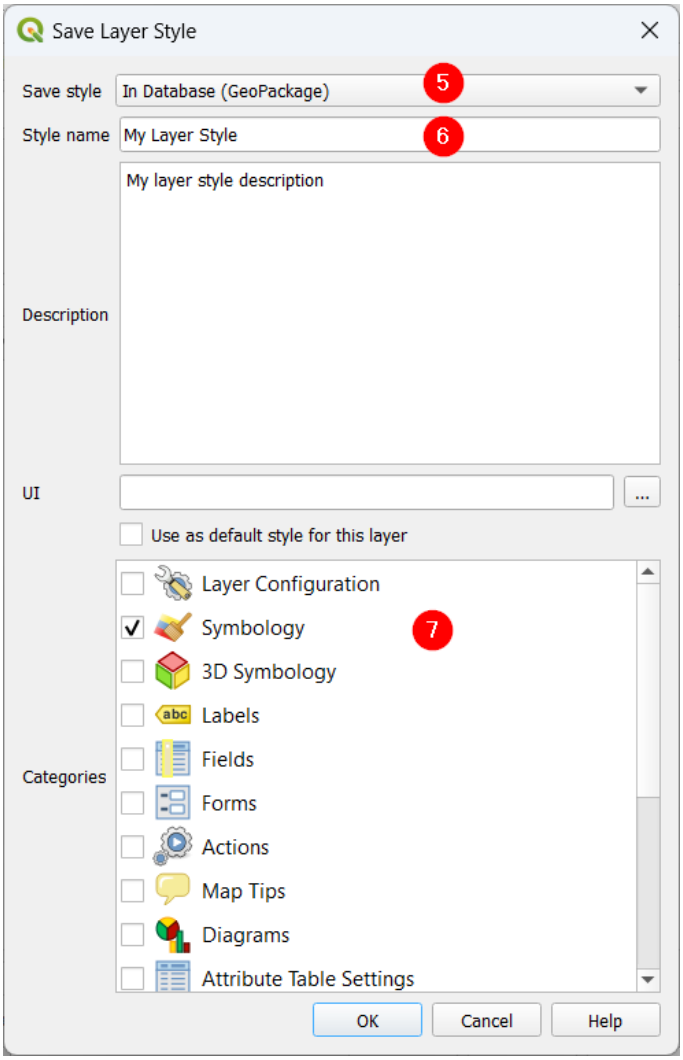


3. Set the CRS projection to either EPSG: 3857 or EPSG: 4326 (for faster loading time, else they'll be reprojected to 3857 upon loading).
4. Click OK to export the data

QGIS can save your symbology within a geopackage by following these steps.

1. Right-click on the layer you want to save the symbology and click **Properties.**
2. Locate the **Symbology** section in the left panel.
3. Click on the **Style** drop-down menu.
4. Select **Save Style …**
5. Make sure to save in the database source (Geopackage).
6. Give the new style a name.
7. Make sure that at least **Symbology** is checked.





Note: Point and line features will keep their colour and size style only. Polygons will retain their colour and their outline width and colour.

You can use North Road's ESRI to QGIS software (https://north-road.com/slyr/) to convert any ArcGIS or ArcGIS Pro style into a style that will work with QGIS. Each division of the GSC should have a staff member that has a license for this useful package. SLYR will also convert MXD files to QGIS.

CREATING GEOPACKAGES IN QGIS USING SLYR TOOLS/ CRÉATION DE GÉOPACKAGES DANS QGIS À L'AIDE DES OUTILS SLYR

SLYR tools are created by North Road Consulting and the tools allow conversion of ArcGIS symbols sets into QGIS. A number of licenses were purchased for use within the GSC, contact Gabriel Huot-Vezina for more information on accessing the SLYR tools.

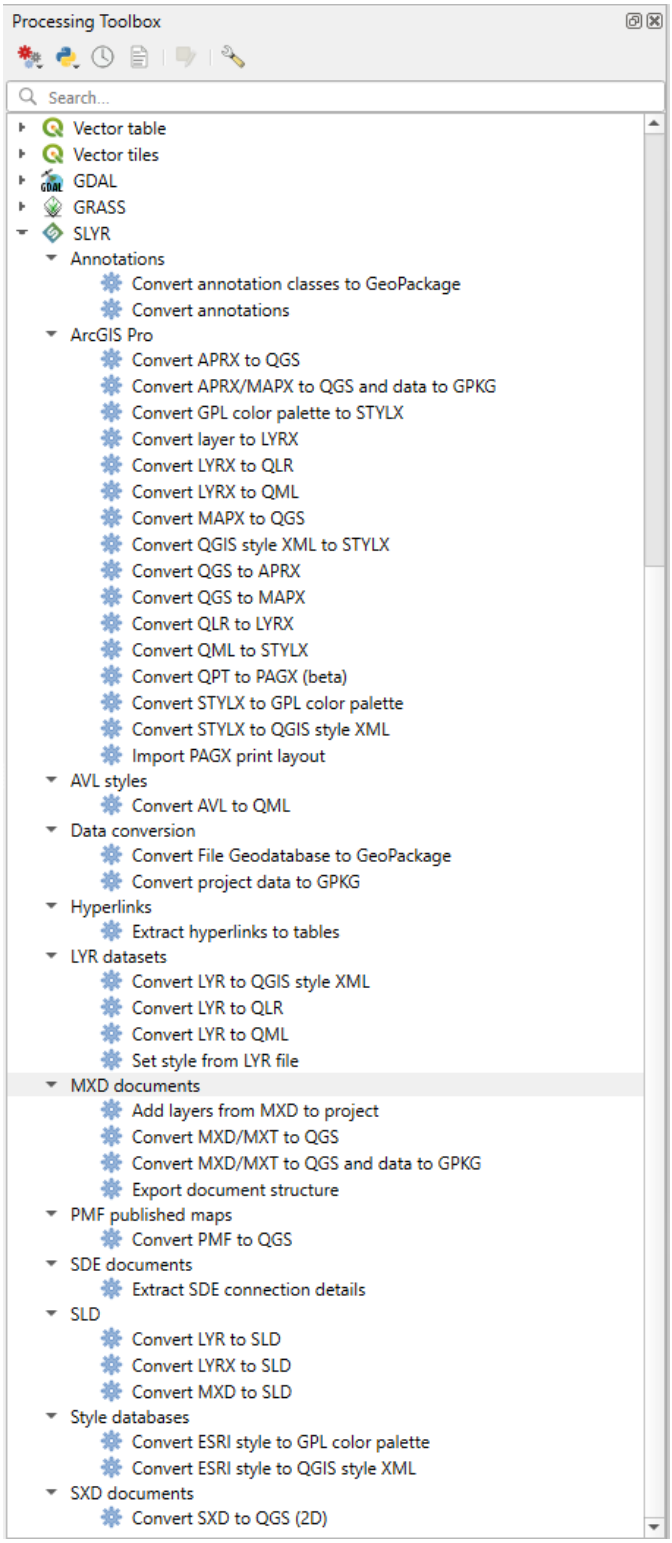
SLYR tools can:

1. Convert a file geodatabase into a GeoPackage
2. Convert an ARCGIS or ARCGIS Pro map into a GeoPackage
3. Convert annotations into a GeoPackage
4. Convert a .style (ArcGIS) or a .stylx (ArcGIS Pro style) to a QML style XML
5. Convert .LYR and .LYRX files to QML
6. And many more

The SLYR Tools are loaded a bit differently than most QGIS plugins. Assuming you have a license available you simply:

1. Download the installer from North Road.
2. Unzip the downloaded file and drag "install_slyr_qgis.py" over a running QGIS install.
3. After the plugin is installed, a window will open where you can enter the unique license key.
4. Once the license key has ben accepted, click on the **Processing Toolbox** button and you will see the available SLYR tools.

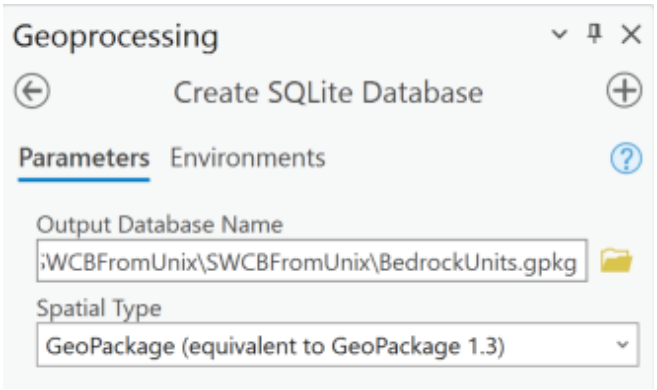
Note: this allows one to bring your ArcGIS symbols directly into a properly symbolized geopackage via QGIS.

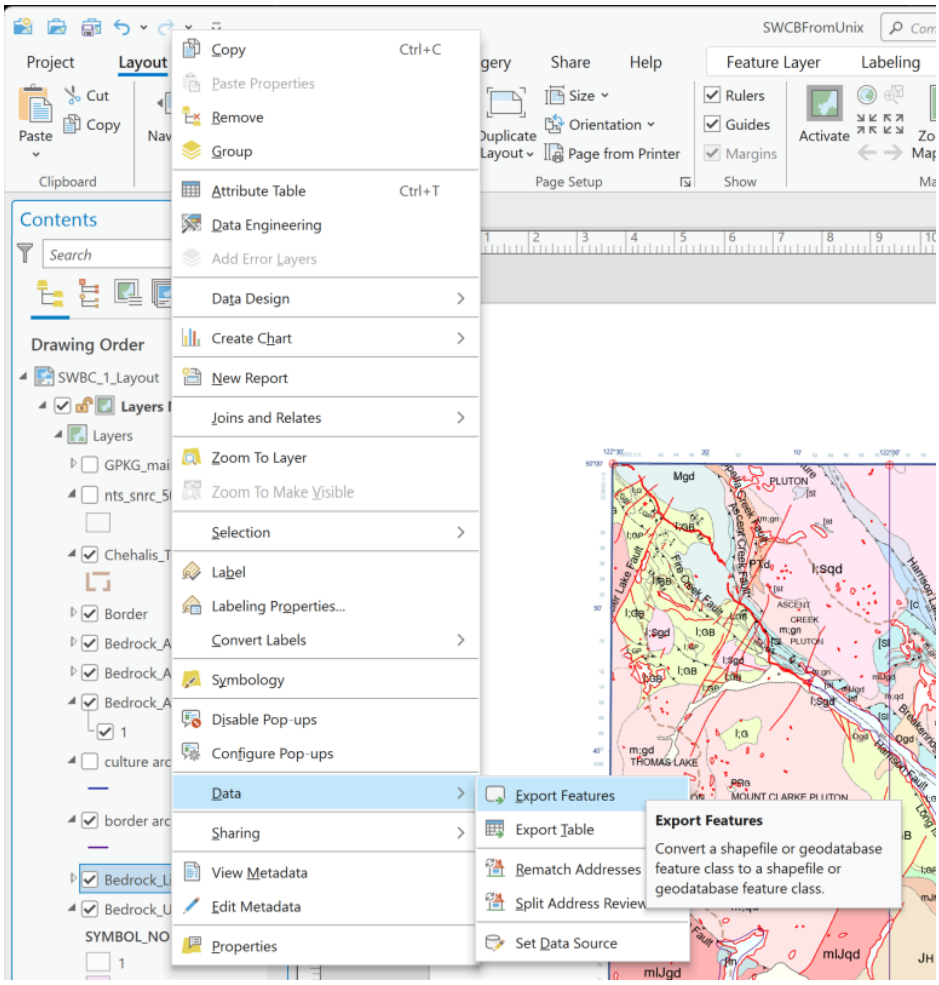


CREATING GEOPACKAGES IN ARCGIS PRO / CRÉATION DE GÉOPACKAGES DANS ARCGIS PRO

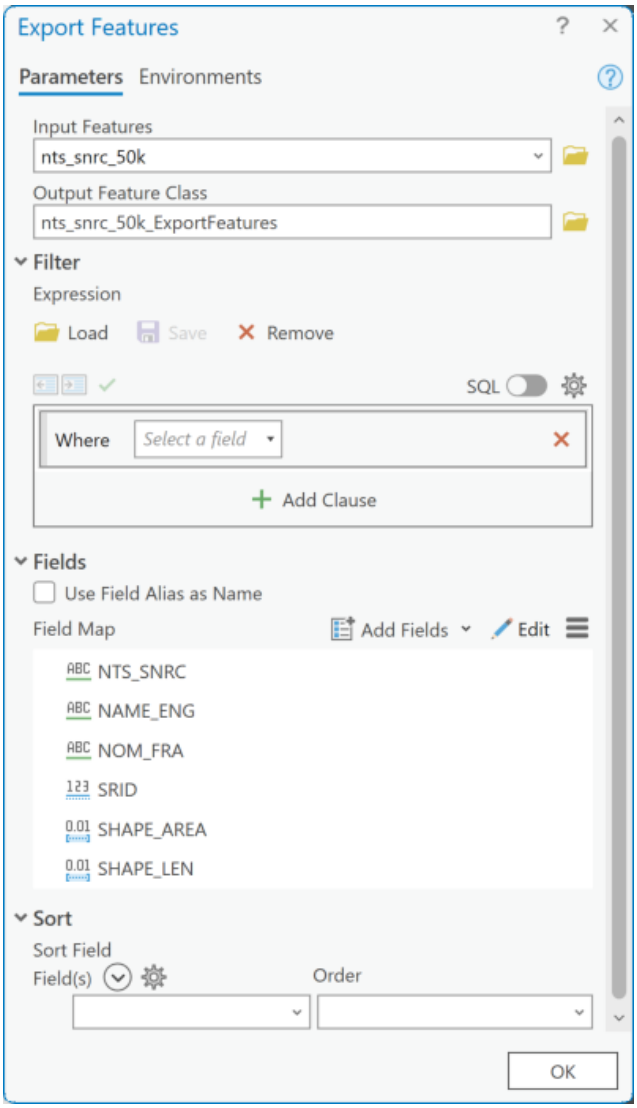
ArcGIS Pro works with data differently than QGIS. It requires the data to already be in an SQLite database.

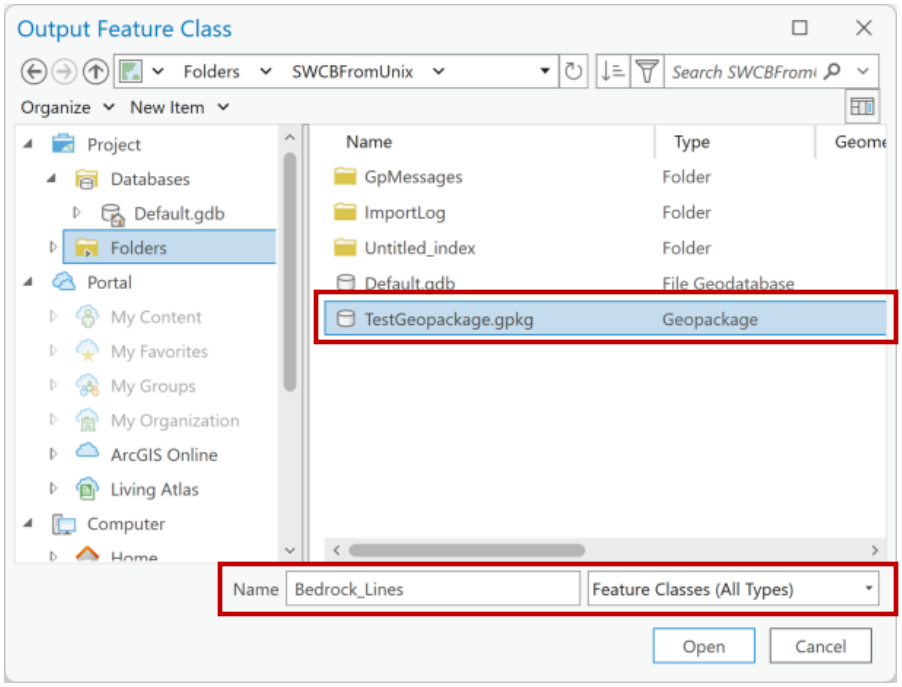
1. Create an SQLite database with the **Create SQLite Database** command.
2. Ensure that you set the Spatial Type to 'GeoPackage (equivalent to GeoPackage 1.3)'. The file name will change to a .gpkg
3. Click on the **Run** button to create the geopackage
4. In the Table of Contents, right-click on the layer you want to add to the geopackage and navigate to **Data > Export Features**





5. Navigate to the location of the geopackage that you setup in Step 1 and enter the name of the layer.

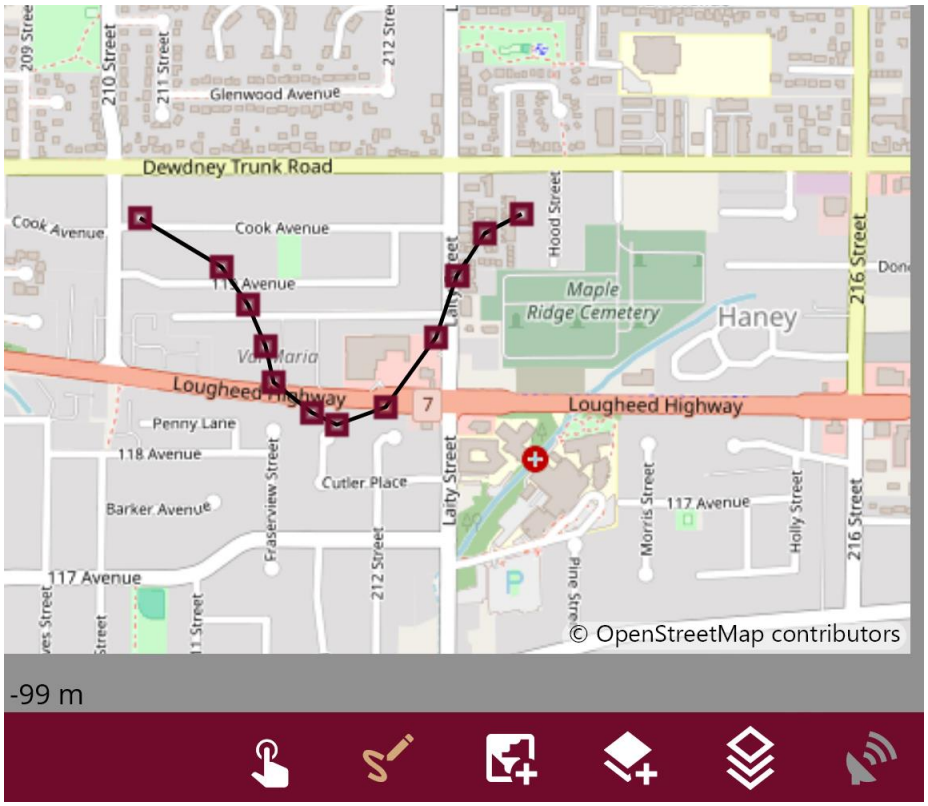



Output Feature Class
Folders
SWCBFromUnix
Search SWCBFrom
Organize
New Item
Project
Databases
Default.gdb
Folders
Portal
My Content
My Favorites
My Groups
My Organization
ArcGIS Online
Living Atlas
Computer
Home
Name
Type
Geome
GpMessages
Folder
ImportLog
Folder
Untitled_index
Folder
Default.gdb
File Geodatabase
TestGeopackage.gpkg
Geopackage
Name
Bedrock_Lines
Feature Classes (All Types)
Open
Cancel

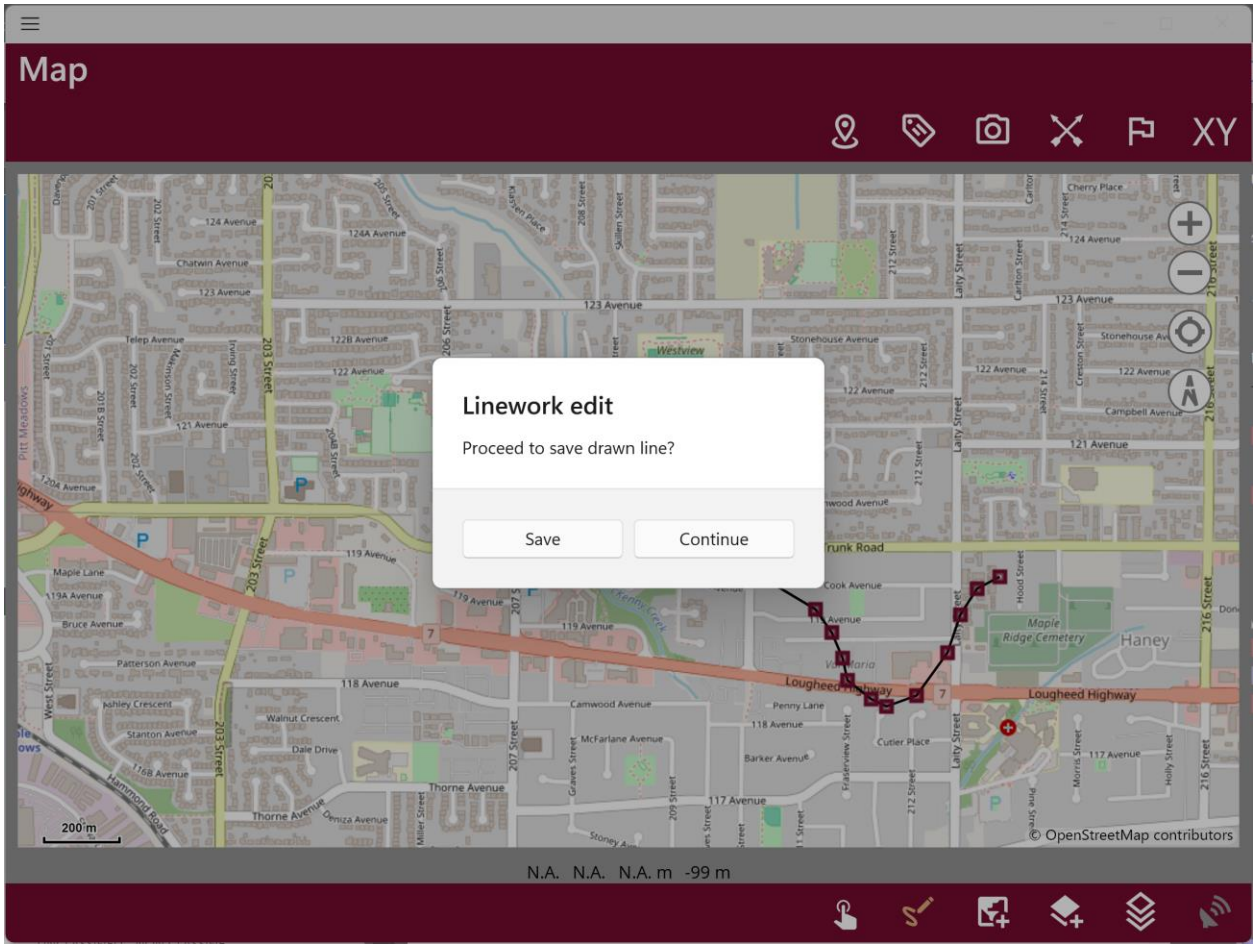
USING THE INTERPRETATION LINE FEATURE / L'UTILISATION DE LA LIGNE D'INTERPRÉTATION

Often, a field geologist will identify a linear feature that they would like to draw on the map. This can include contacts, faults, folds

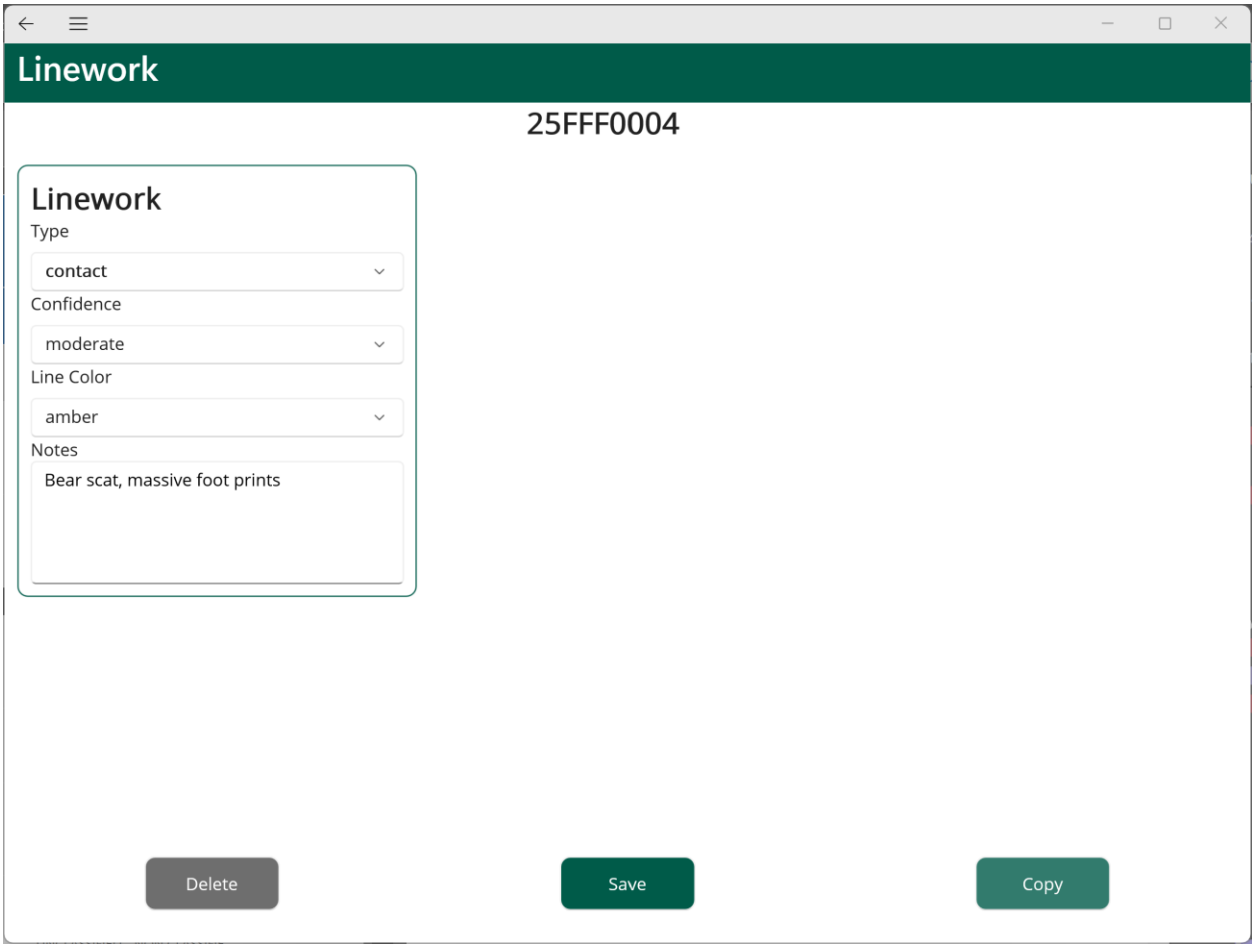
1. Click on the 'Tap to draw an interpretation line' button.
2. The button will change to show it is in 'draw mode'.
3. Tap on the screen where you want to start the line, then point to all the vertices you wish to add.



4. Once the line is completed, hold the finger position for 2 seconds and lift your finger. Tap the **Save** button to save a line record, tap the **Continue** button to abandon the line you drew.



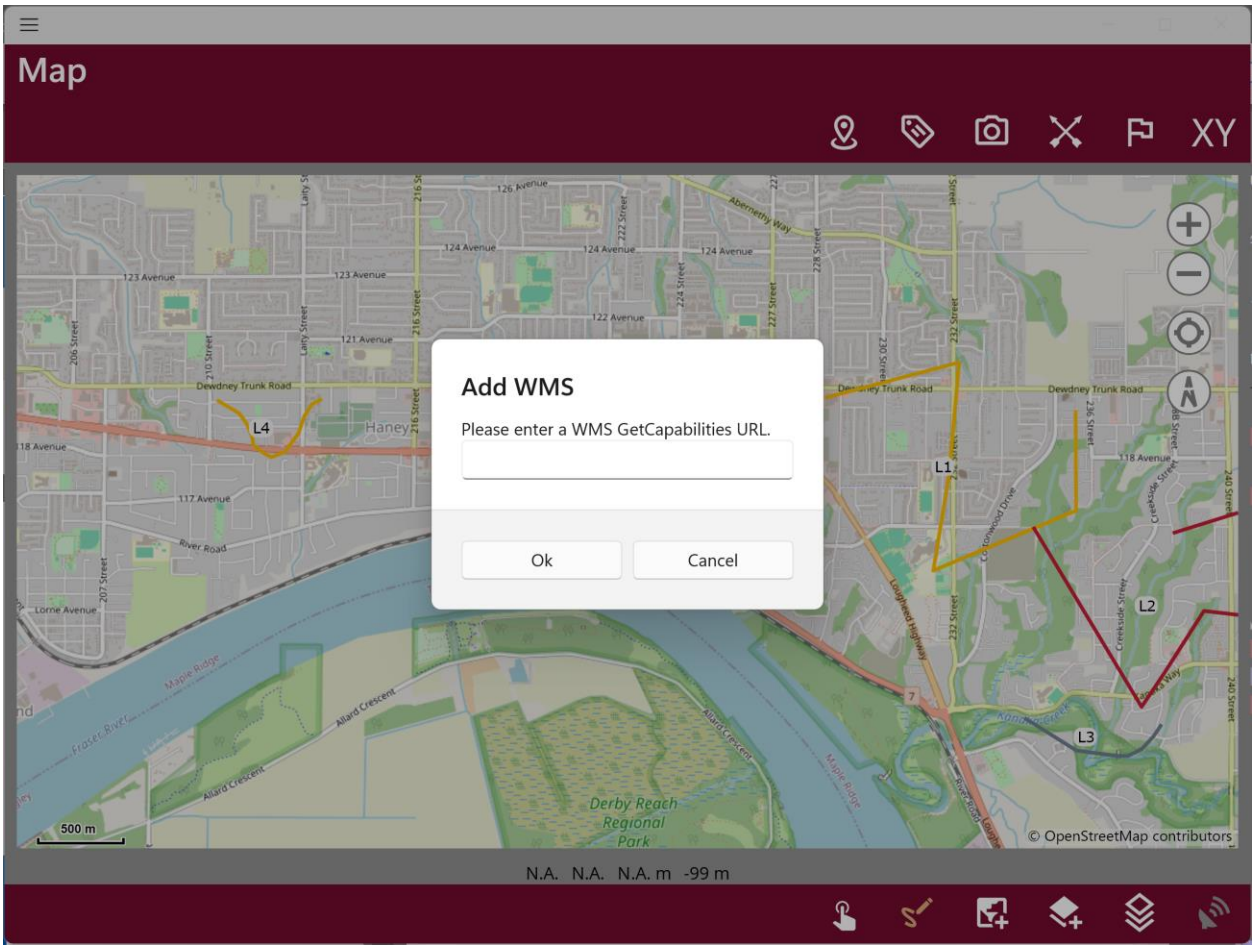
5. The Line attribute menu will appear. Choose the line confidence (good, moderate or poor), select a colour for the line and write any notes about the line feature.


Linework
25FFF0004
Linework
Type
contact
Confidence
moderate
Line Color
amber
Notes
Bear scat, massive foot prints
Delete
Save
Copy

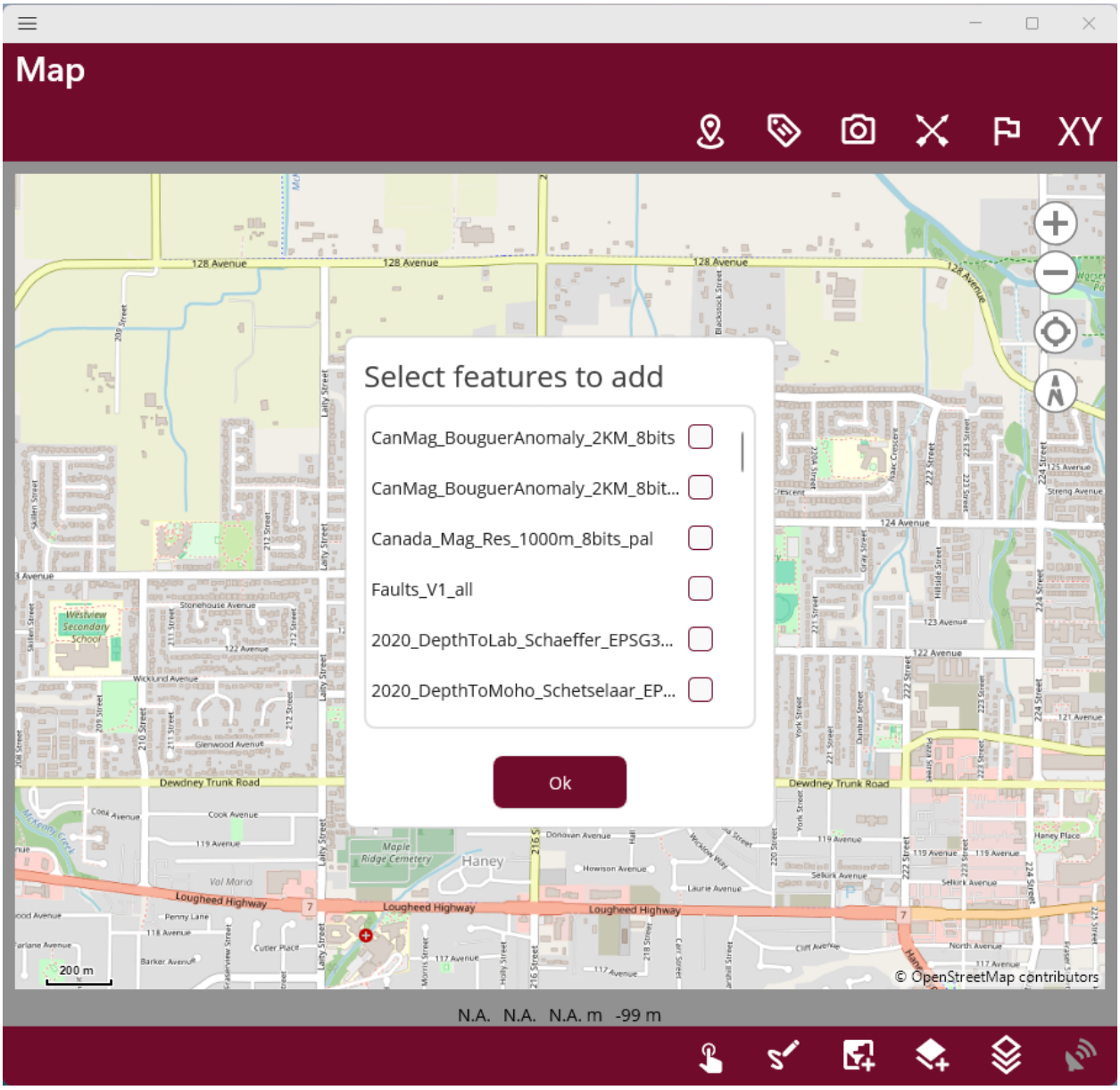
USING A WEB MAPPING SERVICE (WMS) / UTILISATION D'UN SERVICE DE CARTOGRAPHIE WEB (SCW)

Note: data viewed from the WMS will be cached for future use when offline.

1. Tap the 'Tap to add a URL of an online Web Mapping Service (WMS).
2. Enter the WMS URL



3. After you tap on the **OK** button, wait for 5-10 seconds for the WMS site to send back a list of the layers that it is providing.



https://canada3d-geo.azurewebsites.net/ows?service=wms&version=1.3.0&request=GetCapabilities is a good source of relatively coarse geological data resources such as geophysical, faults, bedrock geology, surficial geology, marine geology, Ni showings and more.

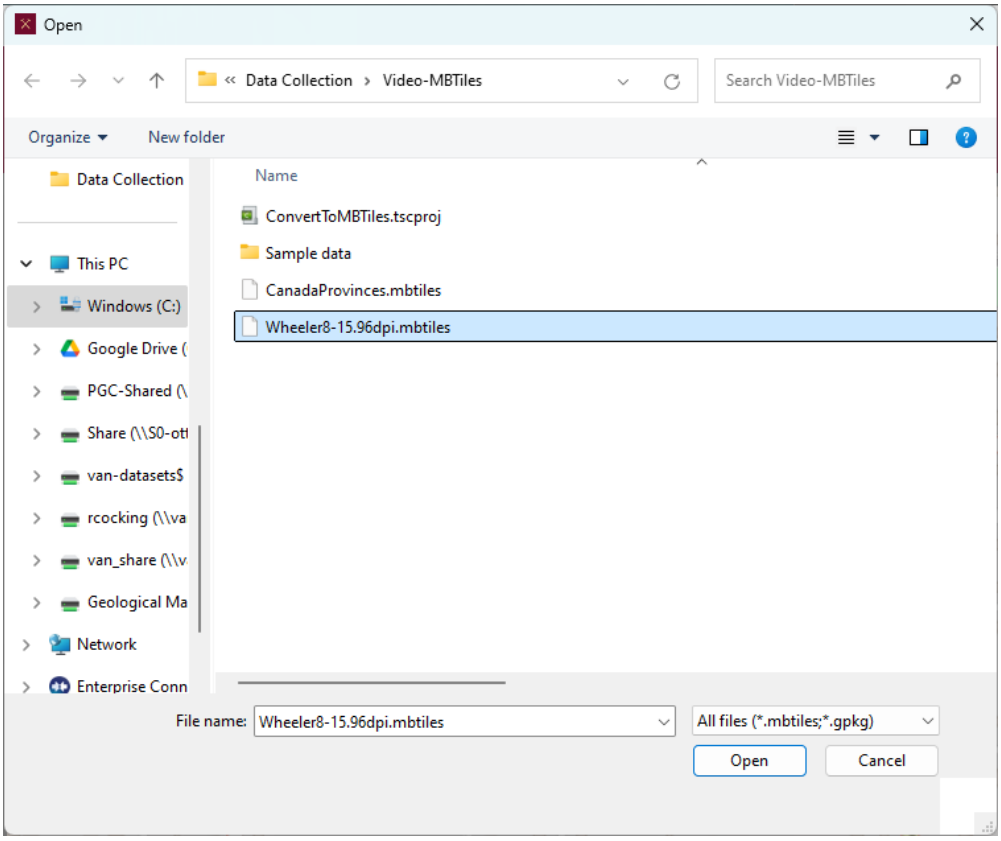
We encourage you to experiment with each of the layers to see if it helps you.

Note: some WMS datasets will take as long as 10 minutes to download depending on their area coverage.

USING LAYERS (MBTILEs, GEOPACKAGES) / UTILISATION DE LAYERS (MBTILEs, GEOPACKAGES)

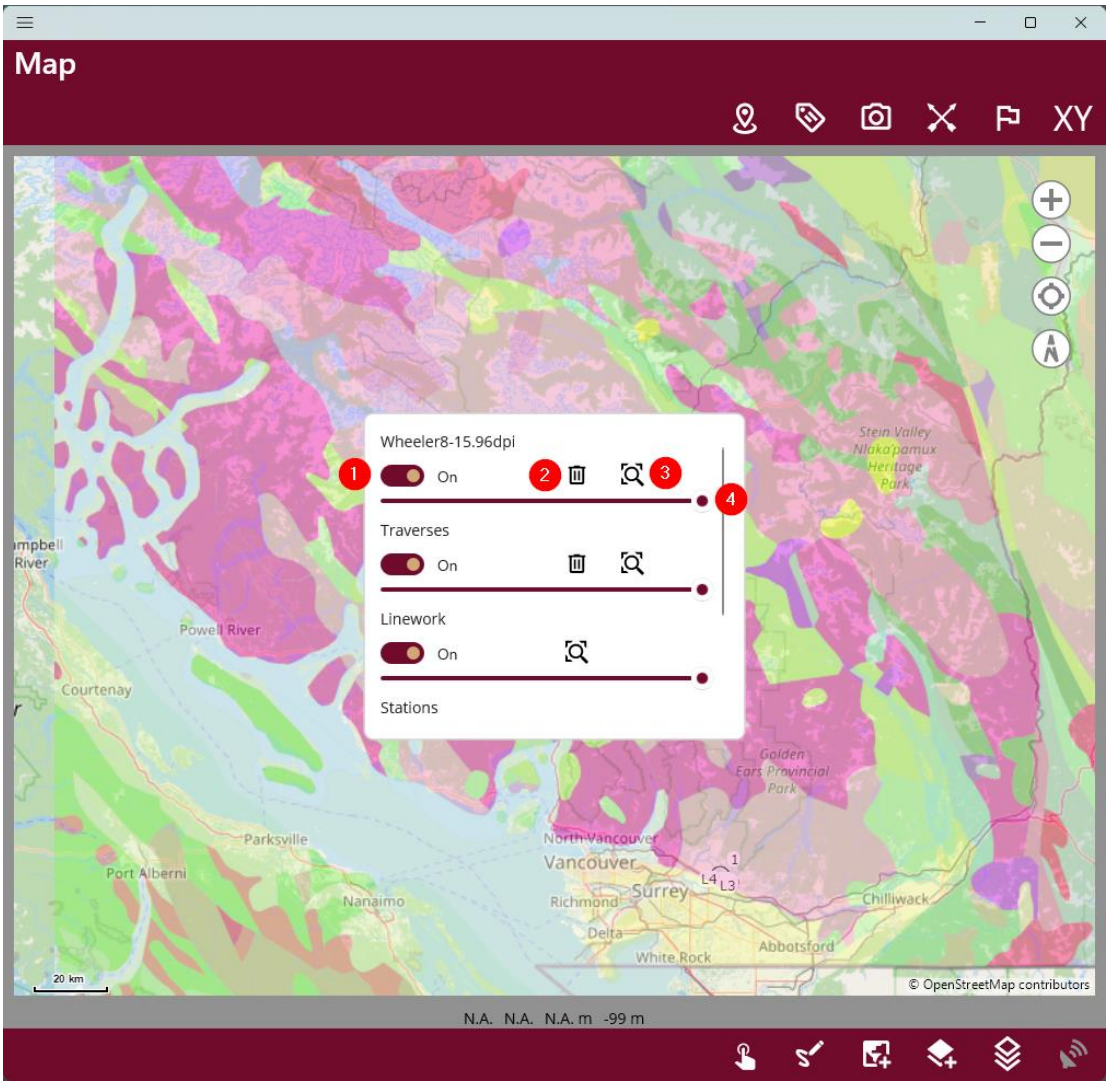
Tap on the **Tap to add a new layer** button

Use the browser to navigate to the location of your layer and select it. Click on the **OK** button to add the layer.



USING THE LAYER MANAGER / UTILISER LE GESTIONNAIRE DE COUCHES

Tap on **Tap to see a list of all loaded layers and more options** button to enter the Layer Manager.



1. Toggle the layer on/off.
2. Remove the layer (does not delete the layer files).
3. Zoom to the extent of the features in a layer with the magnifying glass button.
4. Move the slider side to side to change the transparency of this layer.

Optionally, dragging a layer item from this menu can change the ordering. For example, dragging Wheeler8-15.96dpi to below the Stations layer will reorder it to show underneath it in the map page. The layer menu presents the map page layer vertical ordering.

TIPS

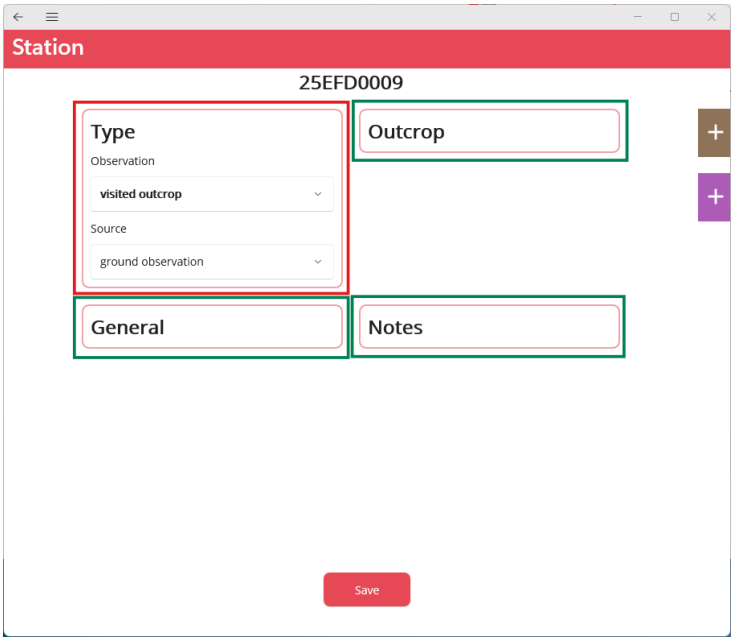
Tip 1: Keep a battery bank for extra power for your mobile devices.

Tip 2: When prompted, GPS location should be set to **Allow all the time**, not just for the app. Otherwise, the app will turn off the GPS if it is not actively used, adding some extra waiting time upon screen opening, while your location is being recalculated.

Tip 3: When using the GSC Field App on Android, you can access the **COPY** and **DELETE** buttons by sliding the **SAVE** button to the left or right with your thumb. These buttons always appear on a Windows version, as below in the Station Notes.

Tip 4: Hover over right-side buttons to show tooltips. These buttons will navigate to the related record entry forms. These can be associated with currently editing one. For example, a sample record is always associated to an earth material one which itself is always associated with a station record.

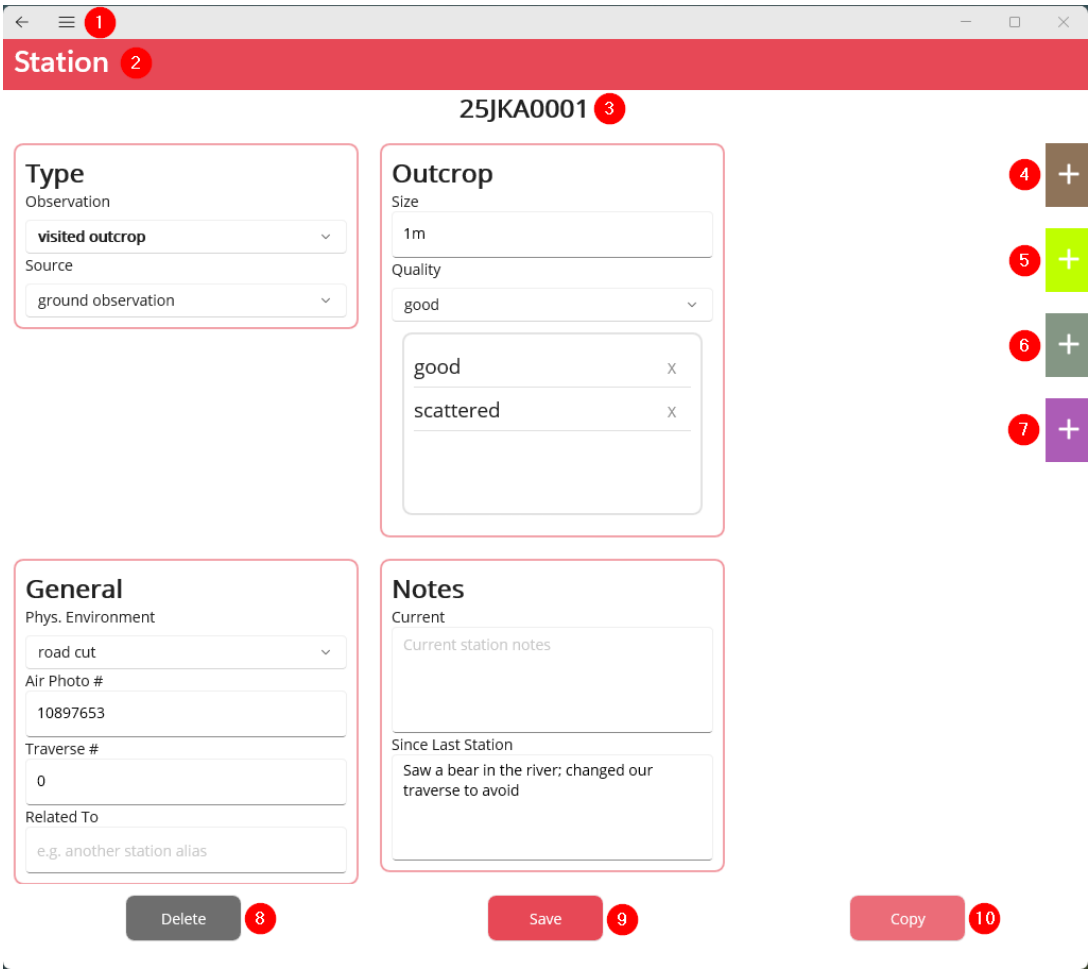
Tip 5: In either Android or Windows, in a record, double tapping on a box header allows the user to close that box to save space. In this example, the three boxes in green are closed, while the box in red is open.



Tip 6: Tap/click 10 times on the application logo, in the About page, to enable developer mode. Once enabled, some hidden settings will be available, like getting access to debug log text file or even a geometry repair tool.

APPENDIX / ANNEXE

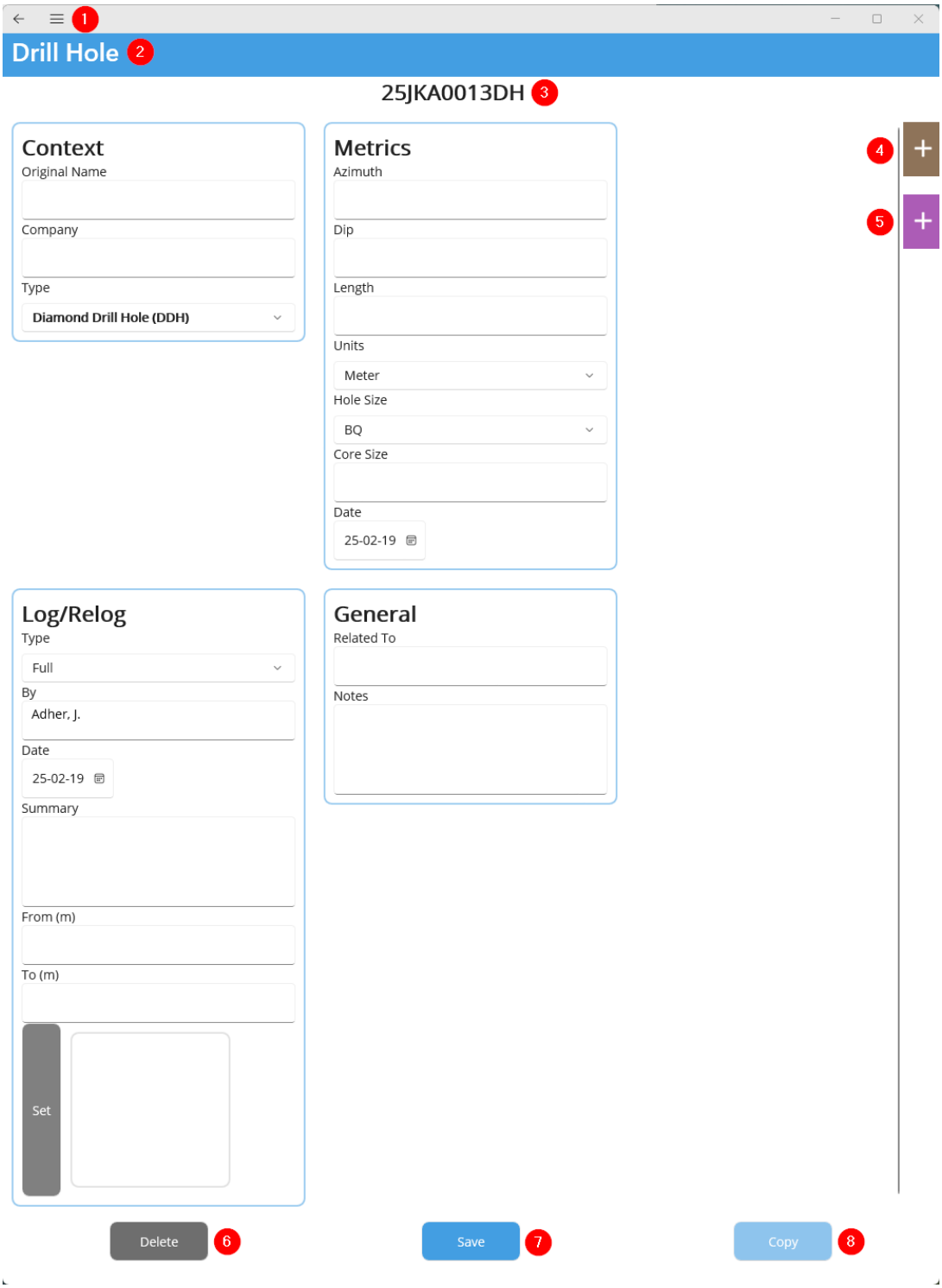
STATION NOTES / NOTES DE STATION



1. Main Menu
2. Station record
3. Station Name
4. Tap to add a new earth material
5. Tap to add a new environment
6. Tap to add a new mineralization/alteration
7. Tap to add one or many photos
8. Delete this record (Android, left swipe on the **Save** button)
9. Save any edits made to this record
10. Copy this record (Android, right swipe on the **Save** button)

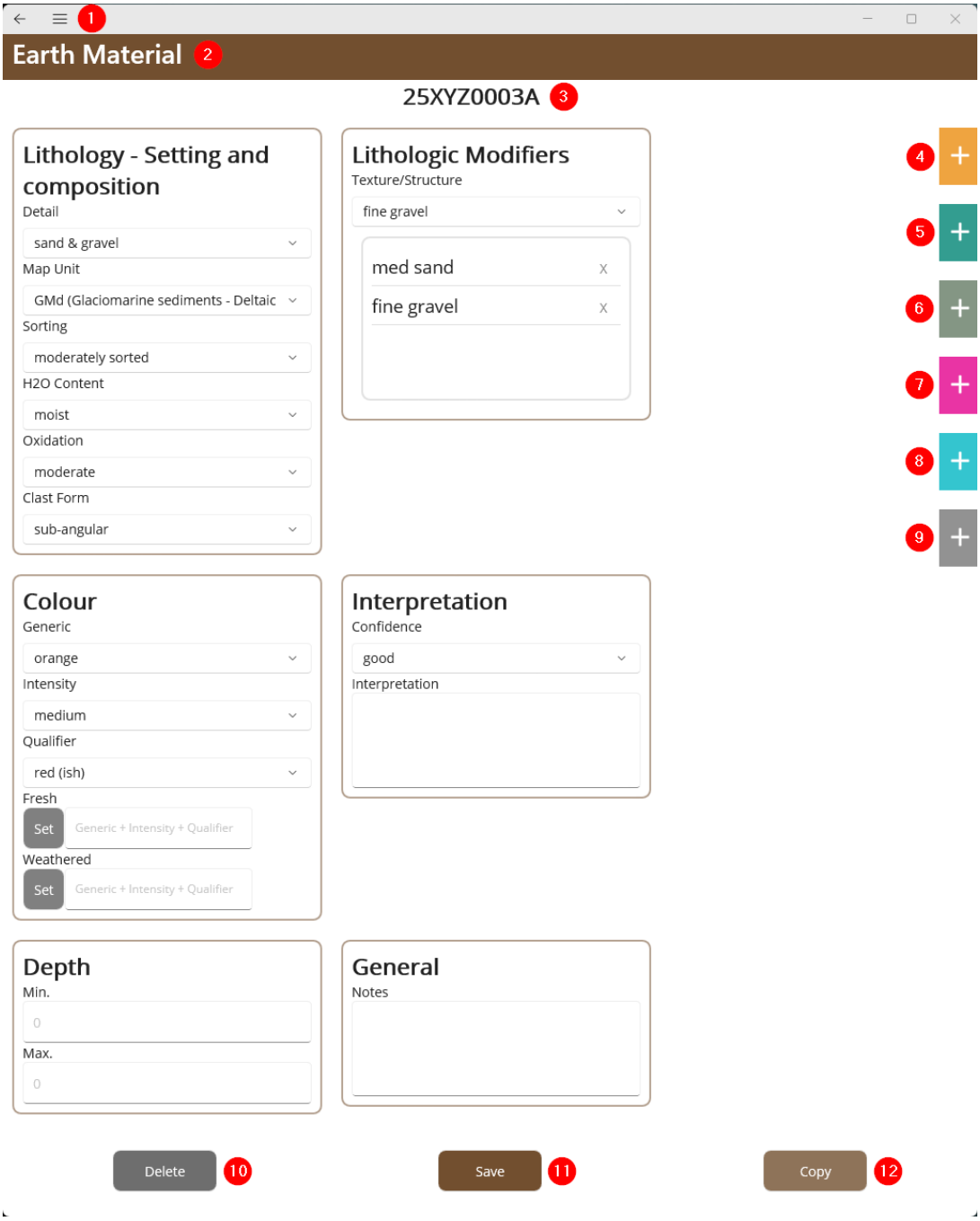
DRILL HOLE NOTES / NOTES SUR LES TROUS DE FORAGE

Note : add a drill hole by first adding a manual location entry from the map page, then tap the blue Drill Hole + icon.



1. Main Menu
2. Drill Hole record
3. Drill Hole Name
4. Tap to add a new earth material
5. Tap to add one or many photos
6. Delete this record (Android, left swipe on the **Save** button)
7. Save any edits made to this record
8. Copy this record (Android, right swipe on the **Save** button)

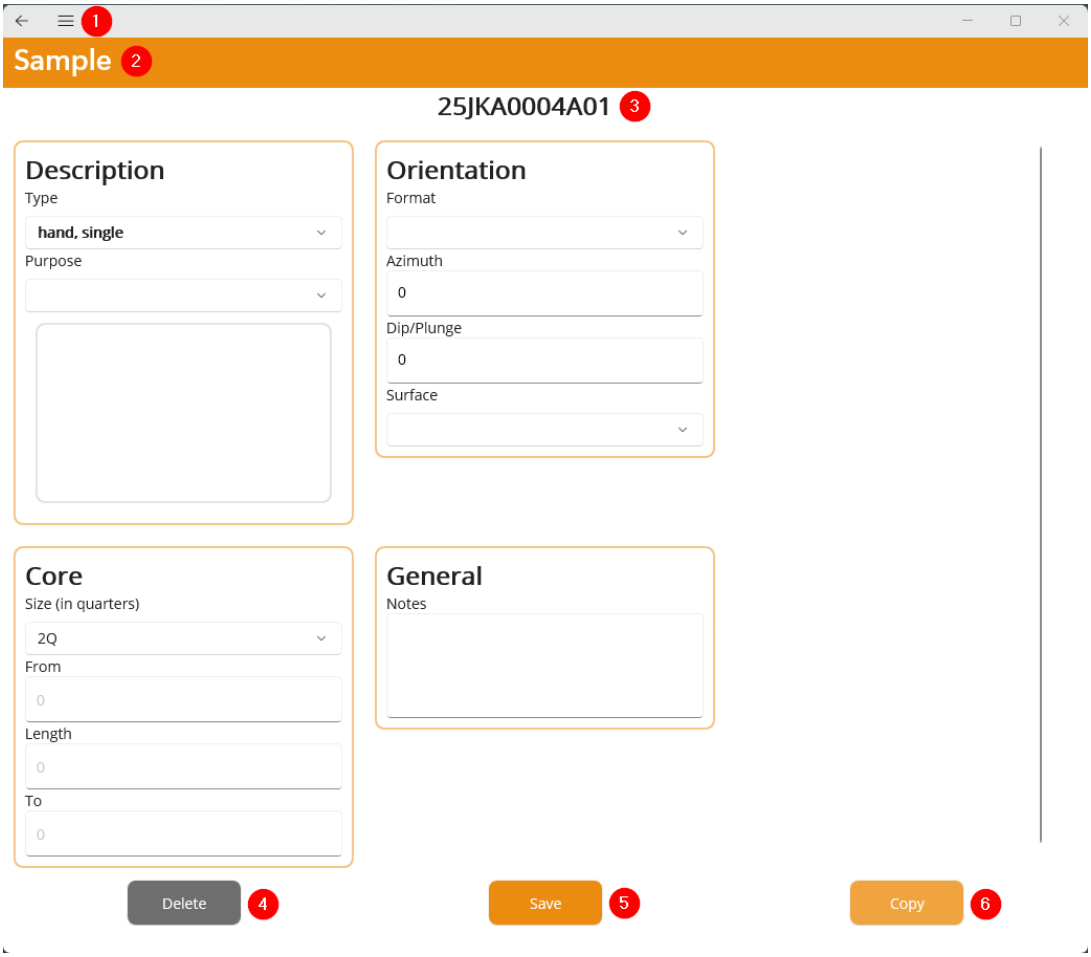
EARTH MATERIAL NOTES / NOTES SUR LES MATÉRIAUX TERRESTRES



1. Main Menu
2. Earth Material record
3. Earth Material Name
4. Tap to add a new sample
5. Tap to add a new structure

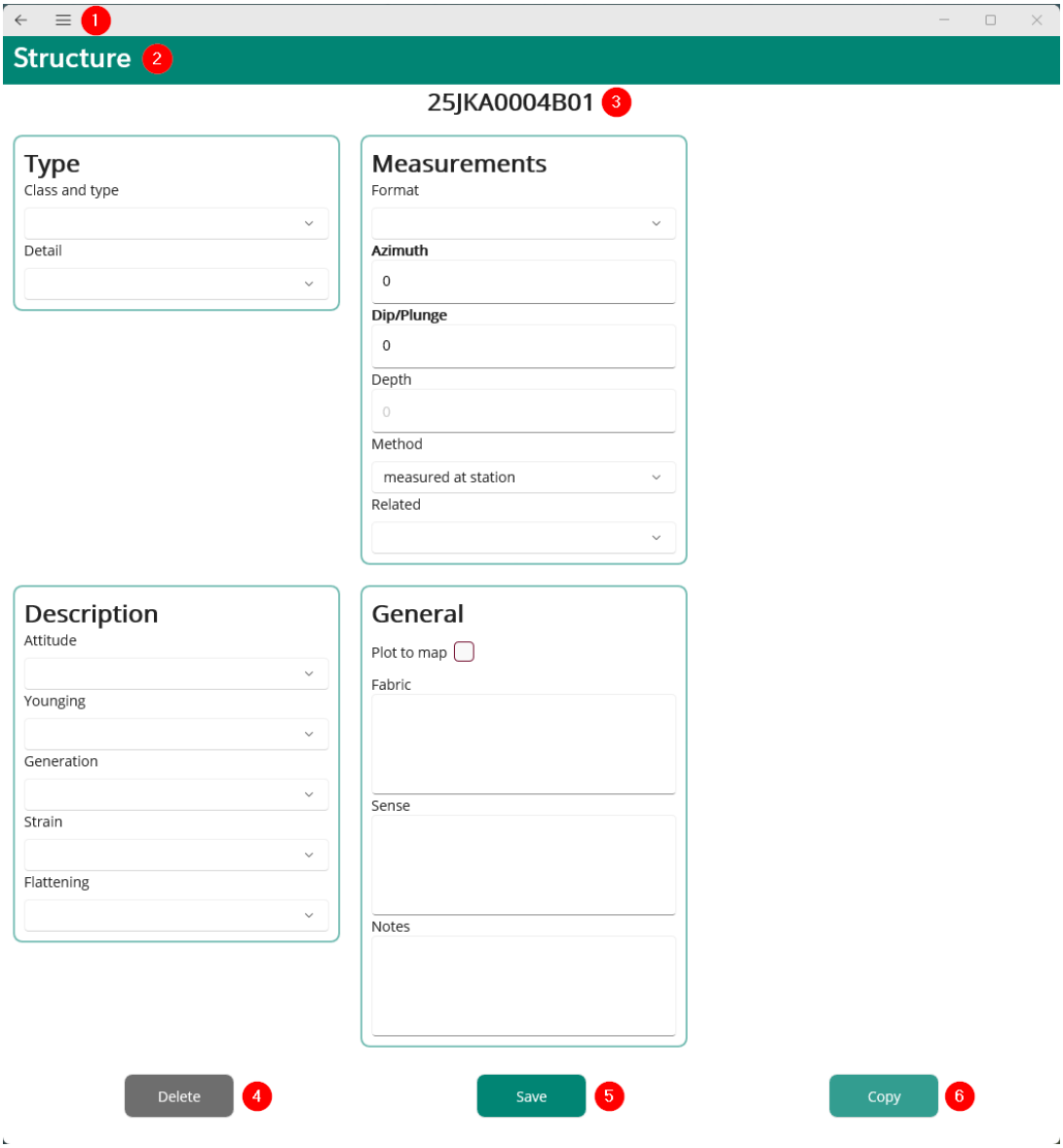
6. Tap to add a new mineralization/alteration
7. Tap to add a new mineral
8. Tap to add a new paleoflow
9. Tap to add a new fossil
10. Delete this record (Android, left swipe on the **Save** button)
11. Save any edits made to this record
12. Copy this record (Android, right swipe on the **Save** button)

SAMPLE NOTES / EXEMPLES DE NOTES



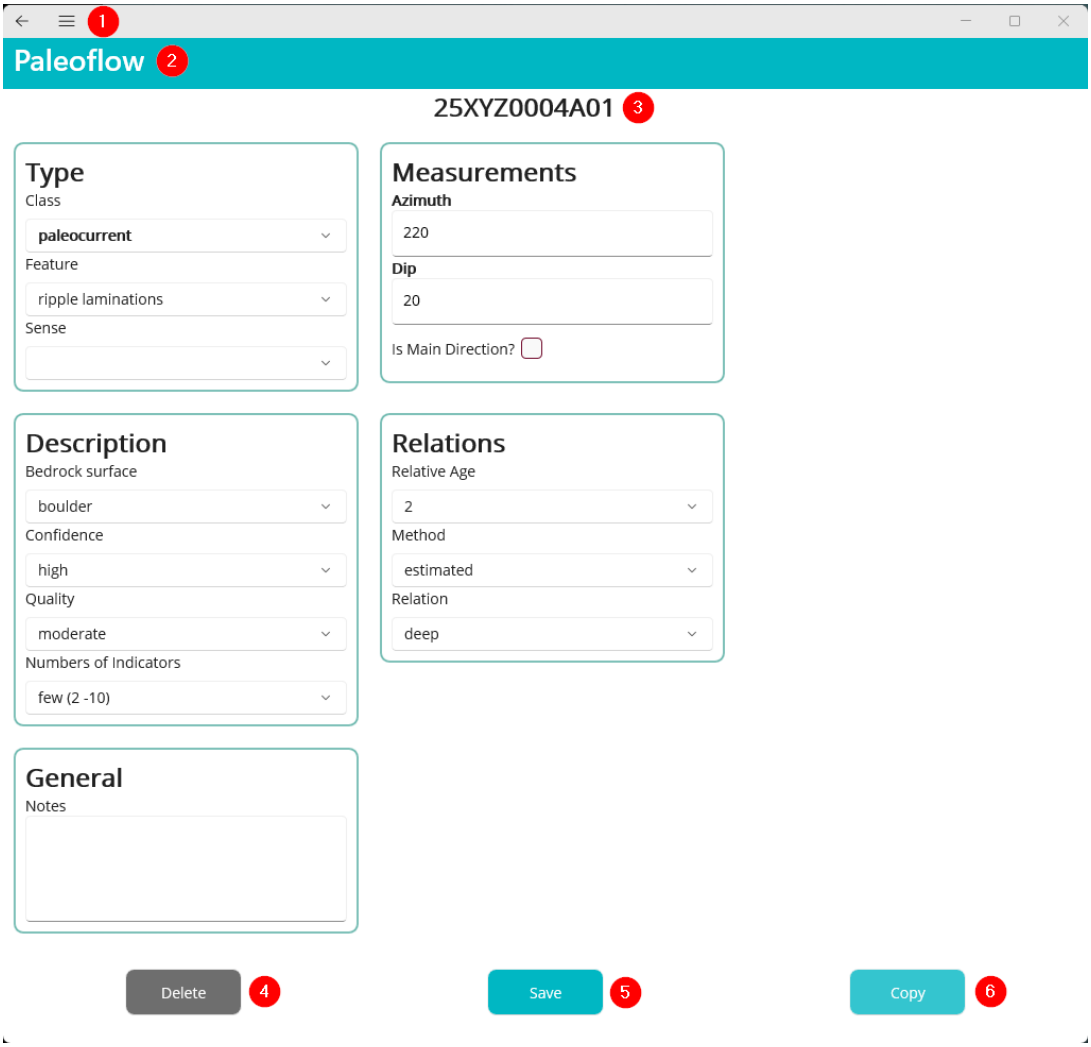
1. Main Menu
2. Sample record
3. Sample Name
4. Delete this record (Android, left swipe on the **Save** button)
5. Save any edits made to this record
6. Copy this record (Android, right swipe on the **Save** button)

STRUCTURE NOTES / NOTES DE STRUCTURE



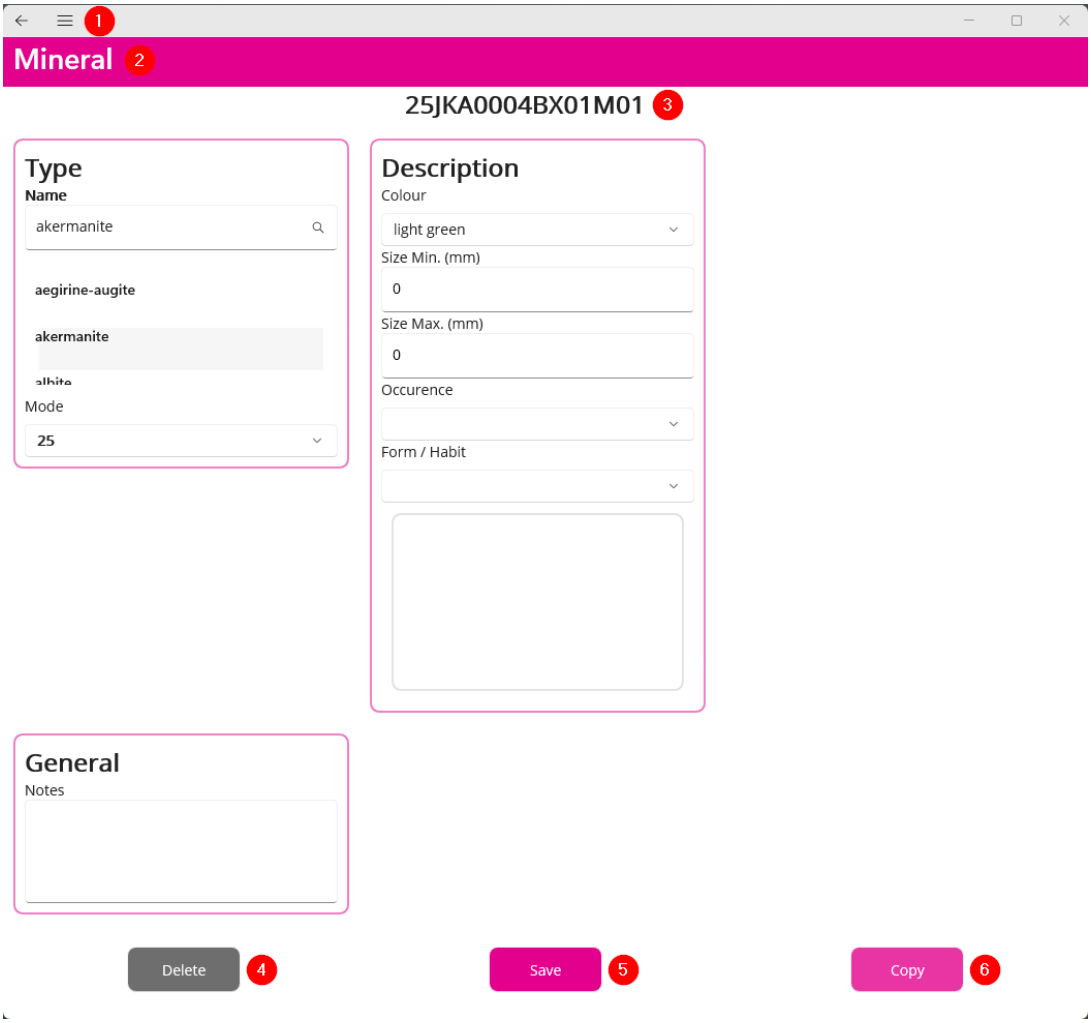
1. Main Menu
2. Structure record
3. Structure Name
4. Delete this record (Android, left swipe on the **Save** button)
5. Save any edits made to this record
6. Copy this record (Android, right swipe on the **Save** button)

PALEOFLOW NOTES / NOTES SUR LE PALEOFLOW



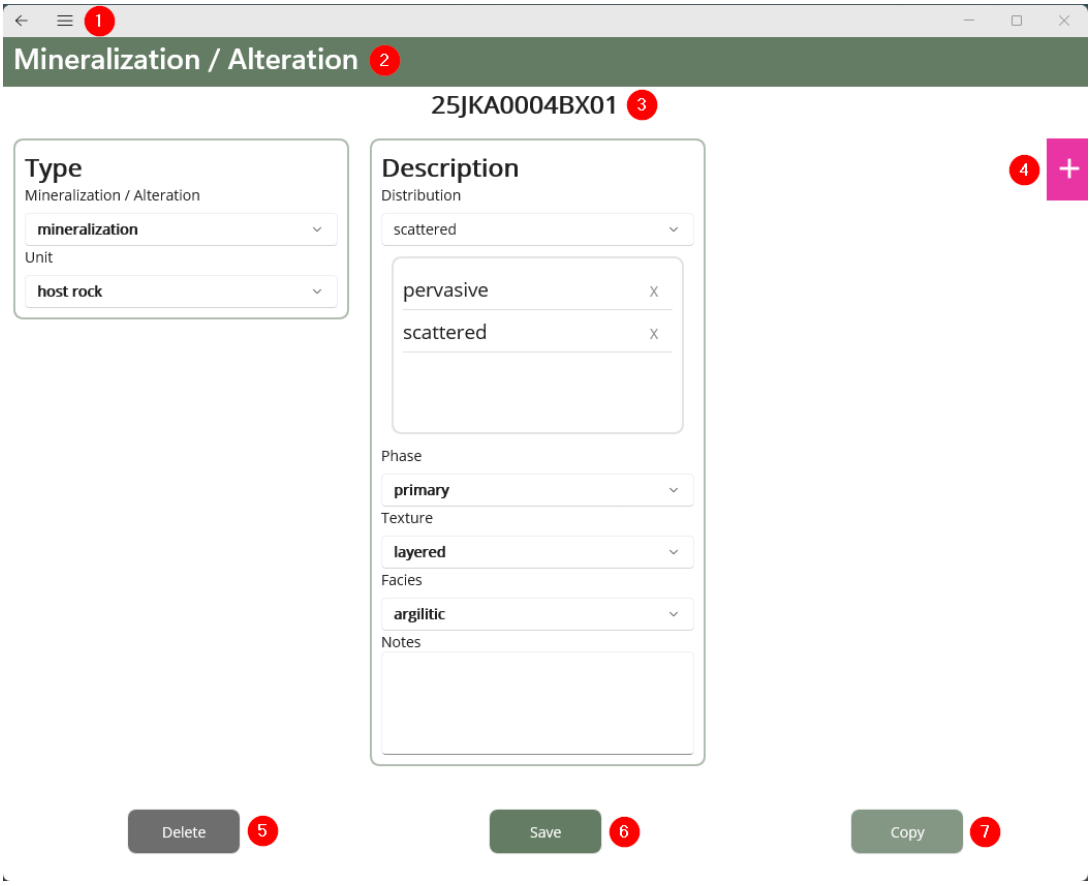
1. Main Menu
2. Paleoflow record
3. Paleoflow Name
4. Delete this record (Android, left swipe on the **Save** button)
5. Save any edits made to this record
6. Copy this record (Android, right swipe on the **Save** button)

MINERAL NOTES / NOTES SUR LE MINÉRAUX



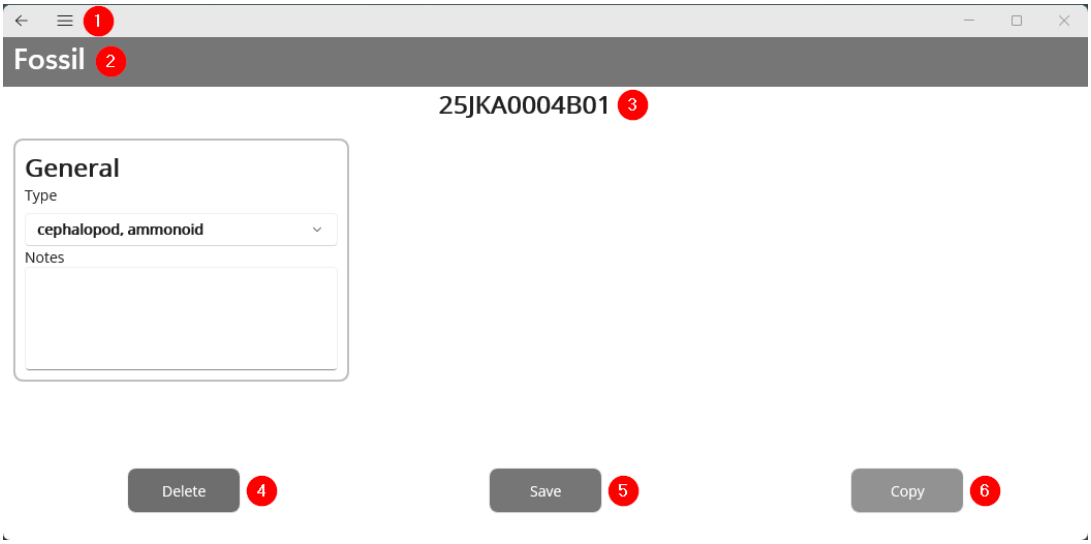
1. Main Menu
2. Mineral record
3. Mineral Name
4. Delete this record (Android, left swipe on the **Save** button)
5. Save any edits made to this record
6. Copy this record (Android, right swipe on the **Save** button)

MINERALIZATION-ALTERATION NOTES / NOTES SUR LA MINÉRALISATION-ALTERATION



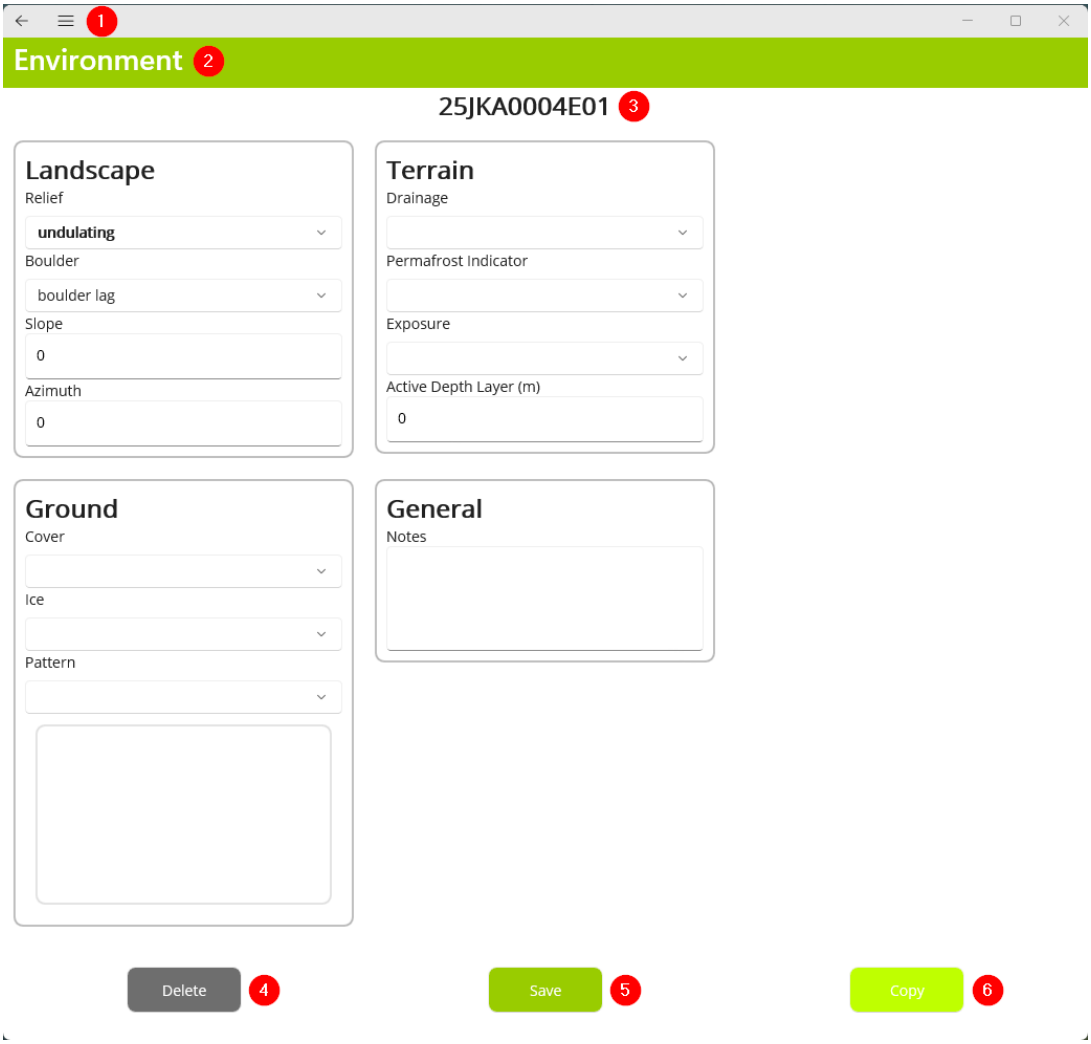
1. Main Menu
2. Mineralization/Alteration record
3. Mineralization/Alteration Name
4. Tap to add a new mineral
5. Delete this record (Android, left swipe on the **Save** button)
6. Save any edits made to this record
7. Copy this record (Android, right swipe on the **Save** button)

FOSSIL NOTES / NOTES SUR LES FOSSILES



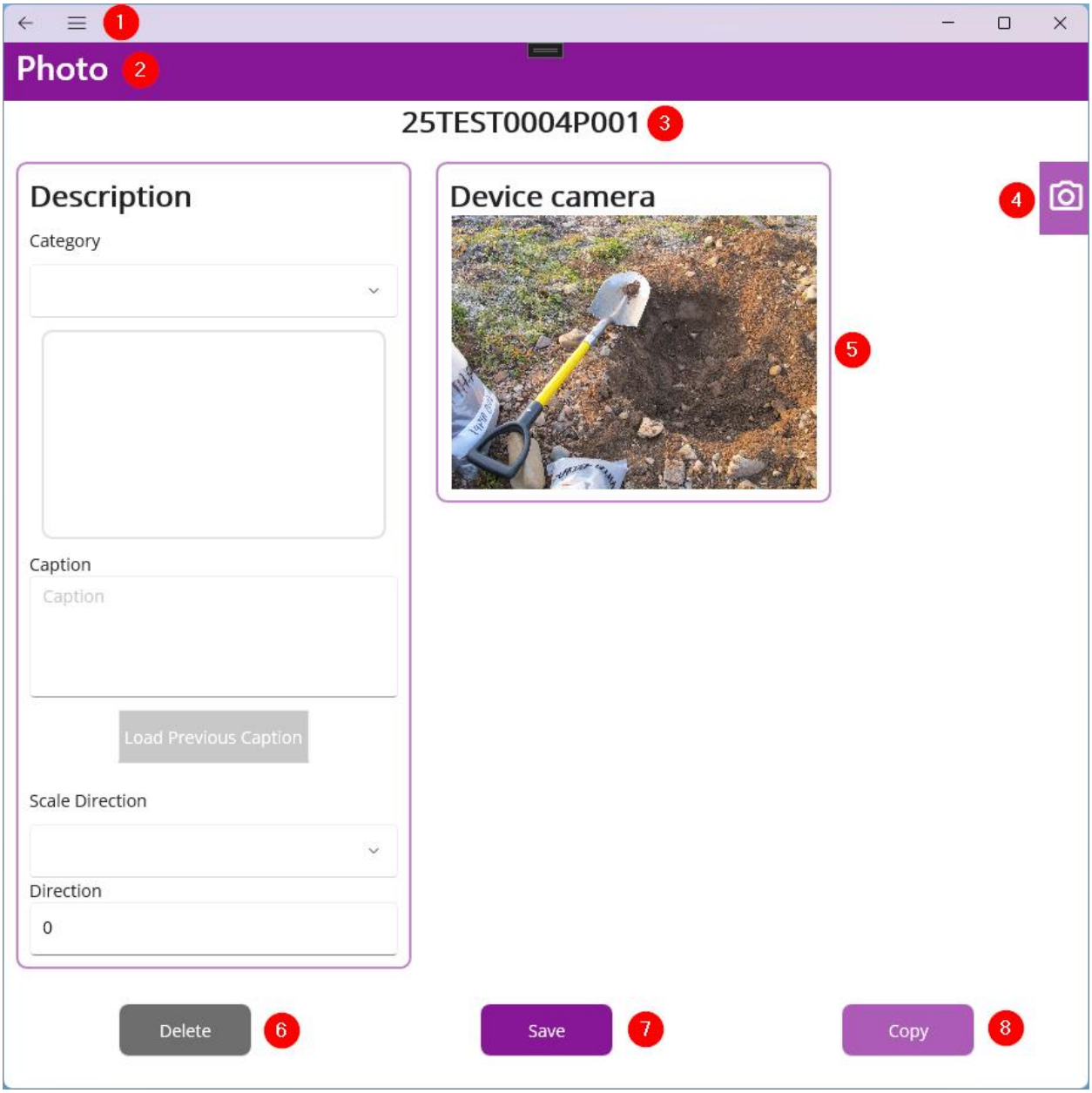
1. Main Menu
2. Fossil record
3. Fossil Name
4. Delete this record (Android, left swipe on the **Save** button)
5. Save any edits made to this record
6. Copy this record (Android, right swipe on the **Save** button)

ENVIRONMENT NOTES / NOTES SUR L'ENVIRONNEMENT



1. Main Menu
2. Environment record
3. Environment Name
4. Delete this record (Android, left swipe on the **Save** button)
5. Save any edits made to this record
6. Copy this record (Android, right swipe on the **Save** button)

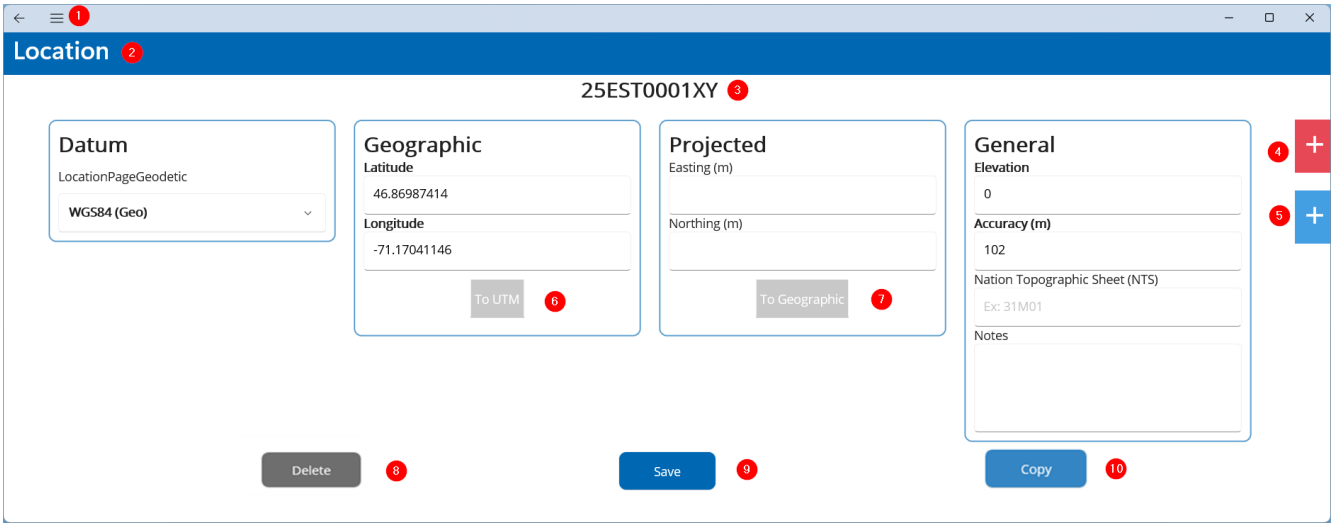
PHOTOS NOTES / NOTES DE PHOTOS



1. Main Menu
2. Photos record
3. Photos Name
4. Take a snapshot with device
5. A snapshot taken with the device
6. Delete this record (Android, left swipe on the **Save** button)
7. Save any edits made to this record
8. Copy this record (Android, right swipe on the **Save** button)

Note: Double tap/click on the snapshot thumbnail to edit it. For example, it could be useful to edit the photo to draw some contact seen in the landscape. Make sure to save any edit with the same picture name for those edits be seen in the thumbnail, back in the form.

LOCATION NOTES / NOTES DE LOCALISATION



1. Main Menu
2. Location record
3. Location Name
4. Tap to add a new station record
5. Tap to add a new drill hole record
6. Tap to convert coordinates to metric (if a metric projection is selected in the Datum box)
7. Tap to convert coordinates to geographic
8. Delete this record (Android, left swipe on the **Save** button)
9. Save any edits made to this record
10. Copy this record (Android, right swipe on the **Save** button)