# WinLoG Field Assistant

## User Guide

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# WinLoG Field Assistant

## Version 5



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# Introduction

WinLoG Field Assistant is used to create and print boring and well logs and manage boring and well data. The program can be used on tablets that use the Android operating system. The user interface has been specifically designed to make data collection easier on tablets.

Borehole and well data in WinLoG Field Assistant are stored in projects. Each project represents a discrete area for data collection and can hold any number of boreholes and wells. Boring, borehole and well logs can contain optional headers and footers and a large variety of depth related column data. Templates are used to control the layout and formatting of the log. A wide variety of templates are available for download to use in the program. To download your own custom templates, you will need to have the network version of GaeaSynergy or have them created by GAEA Technologies.

WinLoG Field Assistant can be used independently or as a field extension of the WinLoG/GaeaSynergy application. All of the data is stored on the tablet and the logs can be printed directly from the tablet. WinLoG Field Assistant can be used completely independently of WinLoG and does not require any other software.

When used in conjunction with the network version of WinLoG/GaeaSynergy, WinLoG Field Assistant can act as a remote data collection device for boring and well data. The data collected in the field can be sent to the network as an Electronic Data Interchange (EDI) file. In addition, boring and well creation tasks can be automatically sent to personnel using WinLoG Field Assistant. The GaeaSynergy Network Data Manager service will automatically download the data from the FTP site and merge the data with the main database on the server.

### Benefits

- Standardize the procedures for data collection within and across projects,
- Reduce the time and effort required for data handling and reporting,
- Provide a secure database system for the storage, retrieval, and backup of all boring and well data.
- Can upload boring and well data to GaeaSynergy/WinLoG using EDI via FTP.

### Features

Some of the features include:

- Licenses can be perpetual or subscription based.
- Subscriptions can be annual or monthly and can be manually or automatically renewed.
- Licenses can be purchased and registered in WinLoG Field Assistant.
- After purchase, licenses can be immediately added and used in WinLoG Field Assistant.
- Annual maintenance can be purchased and renewed as a subscription.
- Projects and boreholes can be created using a map showing the current location of the tablet.
- When creating a borehole the elevation can be automatically entered using the tablet or Google elevation.
- Borehole data to be collected is determined by the template used to create the borehole.
- Borehole logs can be previewed and printed.
- Borehole logs can be copied to create logs that are similar in a project,
- A wide variety of templates can be downloaded from GAEA's FTP site or customized templates can be download from your own FTP site.
- Lithologic macros can be used to quickly add lithology data.
- Well components and annotation can be automatically entered by specifying the well construction.
- A company logo can be specified on the tablet and used to create borehole logs.

- Projects, boreholes, and images can be uploaded to your FTP site and then automatically incorporated into your main WinLoG/GaeaSynergy network database.
- Projects from WinLoG/GaeaSynergy can be downloaded from your FTP site. The projects can include the location, name, and defaults for proposed borings.
- The project database on the tablet can be automatically backed up to your FTP site.
- A username and password can be specified to control access to the program on the tablet.
- Additional lithology libraries and macros can be downloaded from the FTP site.

Throughout this help for the program borings, boreholes, and wells are used interchangeably. Button and switch names are specified using an *italic font style*.

## 1.1 Overview

WinLoG and WinLoG Field Assistant can be used to improve and standardize environmental data collection, management, and reporting in an efficient and cost-effective manner. This is accomplished by implementing a documented process for the collection, storage, and reporting of boring and well data.

The data collected in the field can be sent to the network data manager via FTP. The network data manager service will automatically download and merge the data with the main database. To use WinLoG Field Assistant a network version of WinLoG/GaeaSynergy is also required.

This boring and well creation process can be divided into three stages. This process can be divided between WinLoG Field Assistant and GaeaSynergy/WinLoG.

**1. Scheduling and planning**

The first stage in any field program is the scheduling and planning of boring and well creation events. GaeaSynergy/WinLoG allows project managers to design, delegate, and monitor these events. Notification of these events can be automatically sent to personnel as email or SMS (text) messages.

**2. Data Collection**

Detailed boring and well information can be recorded in the field on an Android tablet using WinLoG Field Assistant. Boring and well data collected using WinLoG Field Assistant is uploaded to an FTP site, where the network data manager service will automatically download it and add it to the main database on the network.

**3. Reporting**

Boring and well data can be reported on a variety of logs using WinLoG or WinLoG Field Assistant. These logs can be easily customized to meet internal and external needs. In addition, boring and well data is fully integrated and available for use by other modules within GaeaSynergy.

### Electronic Data Interchange (EDI)

Electronic Data Interchange (EDI) files are used to exchange data between the GaeaSynergy/WinLoG and WinLoG Field Assistant. To use this feature the network version of GaeaSynergy/WinLoG must be installed and the GaeaSynergy Network Data Manager service running on the main network server.

All EDI files are transferred via an FTP site. The settings for the FTP site are specified in Settings 17. The FTP site can be provided by the customer or by GAEA Technologies.

| EDI Type | Originator | Receiver |
|---|---|---|
| Project Task Data | GaeaSynergy | WinLoG Field Assistant |
| Template Data | GaeaSynergy | WinLoG Field Assistant |
| Lithology Library Data | GaeaSynergy | WinLoG Field Assistant |
| Lithology Macro Data | GaeaSynergy | WinLoG Field Assistant |
| Lookup Lists | GaeaSynergy | WinLoG Field Assistant |
| Project Data | WinLoG Field Assistant | GaeaSynergy |
| Boring Data | WinLoG Field Assistant | GaeaSynergy |
| Image Data | WinLoG Field Assistant | GaeaSynergy |

## Notifications

When using the network version of GaeaSynergy, notifications can be sent throughout the work process. These notifications can only be setup in tasks and can only be used when tasks are used to control the work flow.

| Notification | Originator |
|---|---|
| Boring/Well required | GaeaSynergy |
| Boring/Well completed | WinLoG Field Assistant |
| Boring/Well not completed | GaeaSynergy |

Notifications can be sent via email or SMS (text message). When being sent using email the email address specified for the personnel is used, If they are being notified using SMS the cell number and country code for the personnel is used.

## 1.2 Installation

### Installation

The link below can be used to download the app directly on to your Android devicelet.

https:\\www.gaeatech.com\public\WinLoG_Field_Assistant.apk

When downloading the app you may get the message below:

*"For your security, your device currently isn't allowed to install unknown apps from this source. You can change this in Settings."*

To continue click on *Settings* and then *Allow* from this source for your browser. When installing Google Play Protect may try to block the installation, to continue select *more details* and then *Install Anyway*.

### After Installation

After it has been installed it will operate in demo mode for up to 15 days until it is purchased 13 and registered 14 using the Account 11 button on the main screen.

### WinLoG/GaeaSynergy

The network version of GaeaSynergy includes the GaeaSynergy Data Manager service and process. GaeaSynergy Data Manager runs as a background service and provides the electronic data interchange (EDI) and notification capabilities for GaeaSynergy and WinLoG Field Assistant. The GaeaSynergy Data Monitor process is used to control and monitor the service.

To use the program in conjunction with the WinLoG/GaeaSynergy network a username 11 must be specified and the FTP site 10 must be setup. Using it in conjunction with the WinLoG/GaeaSynergy network will allow you to import projects 46, templates 47, lithology libraries 48, and macros 49 from your Windows network. In addition, you will be able to export projects 52 and boreholes 53 to the network for incorporation into the main network database.

If the program is being used independently of a WinLoG/GaeaSynergy network, templates 47, lithology libraries 48, macros 49, and lists 50 can still be imported from the GAEA Technologies FTP site. You will still be able to backup your project database 20 to your own FTP site 10.

### 1.2.1 FTP Site Setup

To import and export data from your WinLoG/GaeaSynergy network or to backup your project data a company FTP site or an FTP site provided by GAEA Technologies is required. If you would like GAEA Technologies to provide the FTP site, please contact us at sales@gaeatech.com for a quote. The host name, port, username and password can be specified on the File Transfer 21 tab in Settings 17.

On the FTP site a base directory named "WinLoG_Data" should be created. Then within this directory the following folders should be created.

..WinLoG_Data
..Imports
..Bitmaps
..LithLibraries
..SampleSymbols
.. Users

After users have uploaded data to the FTP site, additional folders will be created in the Users folder with their username.

## 1.3 Account Information

Account and login information can be specified and reviewed using the *Accounts* icon on the main screen. At the top of the screen depending on whether the program is registered, there are buttons to Purchase 13, Register 14, Update 15, and Relock 16. These functions are described in the sections below.There is also an Information button that will display this screen again.

The following can be specified on the Account screen.

**Require Login:** This is used to specify whether the user needs to login before using the program.

### Login Information

**User Name:** This is a unique user name and should be the same as the one specified in Personnel in GaeaSynergy.

**Phone Number:** This is the user's phone number without the country code. It is used for the login and also to send a verification code by SMS if the user forgets the password.

**Country**: This is the country for the phone number and user. It is used when sending a verification code.

**Password**: The password must be between 8 and 15 characters and contain at least one uppercase letter and number.

### Customer Information

**Company Name**: This is the user's company name.

**First Name:** The user's first name.

**Last Name**: The user's last name.

**Street Address:** The user's street address.

**City:** The user's city.

**State/Province:** The user's state or province.

### License Information

**License Type**: This shows whether the license is a subscription or perpetual license. Before the program is registered it will show as a demo license.

**Installed On:** This is the date the program was first run.

**Expiry Date:** If the license is a subscription this is the expiry date of the subscription. If the license is perpetual this is the expiry date of the annual maintenance. If in demo mode the expiry is 15 days after the program is first run.

**Serial Number:** This is the unique serial number for the program and is used for the program registration.

### 1.3.1 Purchase

Either a subscription or perpetual license can be purchased by pressing the *Purchase* button. An Internet page will be displayed that can be used to purchase the program. If the web page is not displayed you can purchase the program by going to www.gaeatech.com/WinLoG_Field_Assistant.php in your web browser.

### 1.3.2 Register

This button is used to register the program after it has been purchased. The registration can be done either automatically with an order number or manually with a registration code.

#### Automatic

**Order Number**: This is the order number in the confirmation email that was sent when the program was purchased.

After the order number is entered the *Register* button is used to complete the registration.

#### Manual

**Invoice Number:** This is the invoice number provided by GAEA Technologies.

**Registration Code**: This is the registration code provided by GAEA Technologies.

After the invoice number and registration code have been entered the *Register* button is used to complete the registration.

### 1.3.3 Update

After the program has been registered, this button is used to renew the subscription or annual maintenance (if it is a perpetual license). When pressed the screen will display the following:

**License**: This is the type of license for the program.

**Expiry**: If the license type is subscription this is the expiry date for the subscription. If the license type is perpetual this is the expiry date of the annual maintenance.

Order Number: After the renewal is purchased this is the order number that is sent to you in the confirmation email.

*Renew*

Press this button to display an Internet page that can be used to purchase the renewal. If the web page is not displayed you can purchase the renewal by going to www.gaeatech.com/WinLoG_Data.php in your web browser.

*Update*

After the renewal is purchased and the order number entered this is used to update the program registration.

### 1.3.4 Relock

After the program is registered this is used to relock the program so that it can be moved to a different tablet. When the program is relocked it will revert back to demo mode. The order number can then be used to register it on a different tablet.

*Relock*

Press this button to relock the program.

## 1.4 Settings and Defaults

Settings and defaults can be specified using the *Settings* icon on the main screen. The screen will then display tabs for Defaults 18, Database 20, File Transfer 21, Templates 22, Lithology Libraries 23, Lithology Macros 24, and Lists 25. These tabs are explained in the sections below.

### 1.4.1 Defaults

The following can be specified on the Defaults tab.

#### Defaults

**Project Type:** This is used to select the default project type as georeferenced or local.

**Elevation Type**: This is used to select the type of elevation used when creating a new borehole. The elevation can be retrieved from the sensor on the device, off the Internet using Google, or not at all. The elevation can be overwritten when entering the borehole data.

**Borehole Type:** This is used to select the default borehole type.

**Local Units**: This is used to select the default units as feet or meters.

**Lat/Long Display**: This is used to select whether to specify the latitude and longitude as decimal degrees or degrees, minutes, and seconds when showing a point on the map.

**Map Type:** This is used to select the map type for georeferenced projects. It can be either satellite, roadmap, hybrid, or terrain.

**Show Map**: This is used to specify whether to show the map be default in georeferenced projects.

**Initial Zoom Level**: This is the initial zoom level when displaying project maps. It can be between 10 and 22. The lower the zoom level the more area will be displayed in the map. The default value is 20..The zoom level when displaying boreholes is one greater than the project zoom level.

**Location Accuracy:** This is the level of precision (in meters) by which the sensor locates the device geographically, relative to the geographical point at which the device is actually located. Tip: The higher the accuracy, the more time and power that the sensor requires to determine the location. The recommended value is Accuracy=0.

**Location Distance**: This specifies the minimum distance (in meters) by which the device must move in order to make the location sensor relocate the device and return new location information. For example, if you set Distance to "10", location sensor will trigger an event when you move "10 meters".

**Style**: This is used to select the default font style for the application. It can be either small, medium, or large.

**Well Colors:** This is used to select whether to display wells in color or not on the preview of the boring log.

**Lithology Colors:** This is used to select whether to display lithologies in color or not on the preview of the boring log.

#### Logo

A company logo can be specified that will replace the logo bitmap on templates used for borings.

*Add*

This button is used to select the logo image from images stored on the tablet.

*Remove*

This button is used to remove the logo image so that a different one can be specified. The image is not deleted from the images on the tablet.

### 1.4.2 Database

The project database containing all of the boring data can be backed up and restored on an FTP site. The backing up and restoration of the project database requires the specification of the Use Name in Account Settings 11 and FTP settings 21.

The following can be specified on the Database tab.

**Backup Database**: Check this to backup project database.

**Backup Frequency:** The project database can be backed up daily, weekly, or monthly to the FTP site.

**Restore Backup**: Use this button to display a list of previously backed up project databases and select one to restore. If a project database is restored the current project database will be overwritten by the selected backup.

### 1.4.3 File Transfer

An FTP site is required for importing and exporting data to the WinLoG/GaeaSynergy network and to backup and restore databases. The FTP site can be provided by your company or GAEA Technologies.

The following can be specified on the File Transfer tab.

**FTP Host:** This is the host name for the FTP site.

**FTP Port:** This is the port for the FTP site.

**Username**: This is the username for the FTP site.

**Password**: This is the password for the FTP site.
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### 1.4.4 Templates

This tab is used to display a list of the boring templates in the program and can be used to selectively delete them.

*Retrieve*

Press this button to retrieve a list of templates in the program. Beside each template in the list there is a checkbox that can be used to select the template for deletion.

*Delete*

Press this button to delete the selected templates.

### 1.4.5 Lithology Libraries

This tab is used to display a list of the lithology libraries in the program and can be used to selectively delete them.

*Retrieve*

Press this button to retrieve a list of lithology libraries in the program. Beside each lithology library in the list there is a checkbox that can be used to select the lithology library for deletion.

*Delete*

Press this button to delete the selected lithology libraries.

### 1.4.6 Lithology Macros

This tab is used to display a list of the lithology macros in the program and can be used to selectively delete them. All of the lithology macros can be selected by checking the Select All box.

*Retrieve*

Press this button to retrieve a list of lithology macros in the program. Beside each lithology macro in the list there is a checkbox that can be used to select the lithology macro for deletion.

*Delete*

Press this button to delete the selected lithology macros.

### 1.4.7 Lists

This tab is used to display a list of the lists in the program and can be used to selectively delete them. All of the lists can be selected by checking the Select All box.

*Retrieve*

Press this button to retrieve a list of lists in the program. Beside each list there is a checkbox that can be used to select the list for deletion.

*Delete*

Press this button to delete the selected lists.

# Data Entry

Borehole and well data in WinLoG Field Assistant are stored in projects. Each project represents a discrete area for data collection and can hold any number of boreholes and wells.

After the data has been entered, it can be printed and/or uploaded to the GaeaSynergy network. Either entire projects 52 or individual boreholes 53 and wells can be exported and uploaded to the FTP site. Once on the FTP site, the GaeaSynergy Network Data Manager service will automatically download and merge the data with the main database.

## 2.1 Projects

Projects are the primary building block of WinLoG and GaeaSynergy and are used to encapsulate all the boring and well data. To open an existing projects or to create a new project click on the Projects icon on he main screen to display a list of current projects.

In addition to creating projects with WinLoG Field Assistant they can also be created in the WinLoG module of GaeaSynergy and then uploaded to the FTP site where they can be imported 46 into WinLoG Field Assistant.

## 2.1.1 Creating a Project

To create a new project use the *New* button on the Projects screen. The New Project screen has two tabs for Project Information and Coordinates. These tabs are explained in the sections below,

After the project information has been entered it can be saved and the New Project screen closed using the *Save and Close* button. The Project screen will then be displayed showing a list of boreholes in the project. This list will be empty for a new project. Boreholes can then be created 33, opened 34, and deleted 44.

### 2.1.1.1 Project Information

#### Project

**Project ID**: This is the unique project number.

**Project Name:** This is the name of the project.

#### Client

**Client:** This an optional client name.

**Client ID:** This is an optional client identification.

#### Project Address

**Street Address:** This is the street address of the project.

**City:** This is the city of the project.

**State/Province:** This is the state or province of the project.

**Country:** This  is the country of the project.

**Postal/ZIP Code:** This is the postal or ZIP code of the project.

### 2.1.1.2 Project Coordinates

**Type:** There are two types of projects, georeferenced or local. Georeferenced projects have GIS based coordinates, normally in decimal degrees.Whereas, local projects have coordinates in feet or meters.

#### Local Project

The boundary for a local project is specified using x and y coordinates in either feet or meters. Points for the boundary can be added and deleted using the *Add* and *Delete* buttons. At least 3 points must be specified for the boundary.

#### Georeferenced Project

The boundary for a georeferenced project is specified using latitudes and longitudes in decimal degrees. Points for the boundary can be added and deleted using the *Add* and *Delete* buttons. At least 3 points must be specified.

In addition, the boundary can be specified on a map of the area using the *Show Map* switch. The map can be zoomed and panned using the buttons at the top of the map. The type of map is specified in Settings 17. The map will be centered on your current location with a red marker.

The current location can be selected as a boundary point using the *Select Current* button. Boundary points can be selected on the map using the *Select on Map* button and then tapping the point locations on the map.

## 2.1.2 Opening a Project

To open an existing project select it on the Projects screen and tap the *Open* button. When the project is opened a list of boreholes in the project is displayed on the Project screen. Boreholes can then be created 33, opened 34, *copied*, and deleted 44.

The information for the project can be displayed and edited by tapping on the *Project Info* button. This information is the same as was specified when creating the project 28.

In addition, images can be assigned and uploaded to the network with the project using the *Images* button.
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### 2.1.2.1 Images

Images can be added and removed for the project using the *Images* button on the project screen. The images screen has buttons to add an image using the *Camera* button or from the image *Library* on the device.The images currently in the project will be displayed below the buttons.

The name of an image can be edited by selecting it or clicking on the *Edit* button. Images can be removed from the project by clicking on the *Remove* button and then selecting the image.

### 2.1.3 Deleting a Project

To delete an existing project, select it on the Projects screen and then tap the *Delete* button. After confirming the deletion the project and its boreholes will be deleted.

## 2.2 Borings and Wells

Borehole logs can contain general borehole data (ex. location, client, project number); lithologic descriptions and symbols for each layer; sample data; well completion details; water level measurements; etc. The sections below describe how to create 33, edit 35, preview/print 42, copy 43, and delete 44 boring and well logs.

### 2.2.1 Creating a boring or well log

To create a new borehole after a project has been opened, tap the *New* button on the Project screen. The Select Template screen will then be displayed. Select the template to use and then tap the *Select* button.

Templates are used to control the layout and formatting of the data in the log as well as what data is collected. In general, all of the borehole logs in a project would use one or two templates to format the logs. In this way a consistent format can be established within a project and across projects. The templates are created in the WinLoG module of GaeaSynergy and can then be uploaded to the FTP site where they can be imported 47 by WinLoG Field Assistant.

After the template is selected the borehole data can be entered and edited on the Borehole Data screen as described in the Editing a boring or well 35 section.

### 2.2.2 Opening a boring or well log

To open an borehole select it on the Project screen and tap the *Open* button. After the borehole is opened the borehole data can be edited on the Borehole Data screen as described in the Editing a boring or well 35 section.

## 2.2.3 Editing a boring or well log

The Borehole Data screen is used to enter and edit the data for a borehole log. This screen has tabs for General data, Header/Footer data, Lithology data, Sample data, and Well data. In addition, depending on the template for the borehole it will have tabs for Text data, Text Interval data, and Graph data. These tabs are explained in the sections below.

At the top of the screen there are buttons to *Preview /Print*, add/remove *Images*, *Save and Close*, and *Cancel*.

### 2.2.3.1 General Data

The General data tab includes information about the borehole number, drill date, well/borehole symbol, depths, elevations, and X and Y coordinates. The following can be specified on the left side of this tab.

#### General Information

**Borehole Name:** This is the name of the borehole or well.

**Start Date:** This is the date drilling started.

**End Date:** This is the date drilling ended.

**Type**: This is used to select the type of the boring or well.

**Drilling Method:** This is used to select the drilling method.

#### Depths and Elevation

**Start Depth**: This is the start depth. To indicate an aboveground completion (to show an aboveground vault) a negative value can be entered.

**End Depth**: This is the end depth.

**Elevation**: This is the elevation of the ground surface.

**Units**: This is used to select the depth units.

#### Coordinates

There are two types of projects, georeferenced or local. Georeferenced projects have GIS based coordinates, normally in decimal degrees.Whereas, local projects have coordinates in feet or meters.

***Local Project***

**X-Coordinate:** This is the x coordinate in local units.

**Y-Coordinate**: This is the y coordinate in local units.

***Georeferenced Project***

**Latitude:** This is the latitude for the boring or well.

**Longitude:** This is the longitude for the boring or well.

If the project is georeferenced the boring location can be shown on a map using the Show Map switch. The map can be zoomed and panned using the buttons above the map.

#### New Borings

If the device has a location sensor, the current device location is indicated with a red marker. The location of other borings in the project are shown with blue markers if the map is within the project area. The current location can be selected using the *Select* button. Other locations on the map can be selected by using the *Use Map* button and then touching the map at the new location. The red marker will then be located at the new location and the elevation will be displayed. When the location is correct use the *Select* button to store the coordinates and elevation.

#### Existing Borings

The location of the boring will be shown with a red marker on the map and the location of other borings in the project are shown with blue markers. The location can be changed by using the *Use Map* button and then touching the map at the new location. The red marker will then be located at the new location and the elevation will be displayed. When the location is correct use the *Select* button to store the coordinates and elevation.

### 2.2.3.2 Header/Footer Data

Header and footer data is displayed at the top and bottom of the borehole log. The data being displayed will depend on the template. This data can include information such as project name, location, client, date, drill method, etc. The data can be represented as text, numbers, dates, or checkboxes.

On this tab a list of the header and footer data is displayed, with the type of data on the left and the data on the right. If the data type is filled out automatically (e.g. borehole/well name, project name) then it can not be edited on this tab and is automatically entered by the program.

### 2.2.3.3 Lithology

Lithologic layers are used to indicate the subsurface strata encountered during drilling. The lithologic descriptions are displayed in the Description column and the lithologic symbols are usually displayed in the Symbol column of the borehole log.

At the top of the tab there are buttons to **Add** and **Delete** layers. The following information can be edited for each layer:

**Top**: This is the top depth of the layer and should be between the start and end depths of the log.

**Bottom**: The bottom depth of the layer is optional. If it is not specified or is less than the top depth, the top depth of the next layer is used.

**Name**: This is the layer name selected from the list of lithologic macros. It is used to quickly fill in the symbol, title, and description of the layer using the information specified in the lithology macro.If the template for the log specifies the Title Edit mode as “Text” for the lithology description column, the Name

column will not appear on this form. To select a layer name tap on the Name column, the Lithology Macros form below will be displayed. For more information see the section on Selecting Lithology Macros 37.

**Title**: The optional name of the layer displayed above the description.

**Description**: The description is used to describe the lithology of the layer.

**Symbol**: This is the symbol used for the layer in the Lithology Symbol column. The symbol can be changed by clicking on it with the left or right mouse buttons. For more information see the section on Selecting Lithology Symbols 37 below.

**Top Line Style:** This is the line style to be used for the top layer boundary.

**Lithology:** Depending on the template used for the borehole, this is used to select the lithology descriptor of the layer from a predefined list 50.

**Color:** Depending on the template used for the borehole, this can be used to select the color descriptor of the layer from a predefined list 50.

**Porosity:** Depending on the template used for the borehole, this is used to select the porosity descriptor of the layer from a predefined list 50.

**Consistency:** Depending on the template used for the borehole, this is used to select the consistency descriptor of the layer from a predefined list 50.

**Odour:** Depending on the template used for the borehole, this is used to select the odour descriptor of the layer from a predefined list 50.

**Custom List Data:** Custom list data can be entered for each layer using the Lithologic Custom column in the template. The name of this column will be the name of the data column in the template. When this column is selected a drop down list showing the symbols and description in the custom list is displayed. The text can be selected from this list. Up to 5 custom list columns can be added for a layer.

#### 2.2.3.3.1 Selecting Lithology Macros

The layer name can be used to quickly fill in the symbol, title and description of the layer from a list of previously defined strata referred to as Lithologic Macros. These names can also be used later by the Cross-Section module to automatically generate the strata for a cross-section.

If the “Use Strata Names List” option is selected in the template, the names will need to selected from the list of lithology macros. The names selected for each layer in this situation will have to be unique for each layer. By using this option and specifying unique strata names, the auto-generation of the strata in the cross-section will be greatly improved.

The lithology macro form will display a list or previously imported macros 49.An existing lithology macro can be selected for the layer using the *Select* button. The title and symbol can also be updated for the layer using the checkboxes at the bottom of the form.

#### 2.2.3.3.2 Selecting Lithology Symbols

Lithology symbols are stored in symbol libraries containing 18 symbols each. These lithology libraries can be imported 48 from the FTP site,

To change the lithologic symbol for a layer tap on the symbol in the Symbol column of the Select Lithologic Symbol form will be displayed. The following information can be entered and edited on this form:

**Library**: This combo box is used to select the symbol library for the layer. When the arrow at the right is pressed a list will display the available symbol libraries. After a library has been selected, the symbols displayed in the tab will be updated.

**Symbol**: The symbol for the layer can be selected by tapping on one of the 18 symbols displayed for the current library. The selected symbol is highlighted with a blue border.After highlighting the symbol tap the *Select* button.

### 2.2.3.4 Sample Data

The Sample data tab is used to edit the data for each sample, that is displayed in one or more columns of the log. The template determines the type of information displayed on the log for the sample. At the top of the tab there are buttons to *Add* and *Delete* samples.

The following information can be edited for each sample:

**Number:** This is the sample number.

**Start Depth:** This is the start depth of the sample. The depth should be specified in the same units as set in the template. The start depth and length are the only fields that must be specified for the sample all of the other information is optional.

**Length**: This is the length of the sample. The length should be specified in the same units as set in the template.

**Type**: This is the type of sample.

**Symbol**: This is the symbol used to represent the sample. When this column is selected, a form will be displayed to select the sample symbol.

**Recovery**: This is the sample recovery, usually expressed as a percentage or as a length measurement. Depending upon the template settings the recovery can be represented on the log as text or as a shaded box that covers the specified portion of the sample interval. For example, if the recovery were 75% then a box covering 75% of the sample interval would be drawn.

**Line Type**: This is the style of line that is used to draw the top and bottom boundaries of the sample.

**Blows/ft:** Depending on the template used for the borehole, this is the blow count or N-Value of the sample. When entering N-Value data a line break can be added to the data by specifying a "/" between data values (e.g. 12/18/16/22). In addition, the 4 N-Values normally specified, can be spaced equally across the column by specifying a "^" at the beginning of the data.

**Soil Type:** Depending on the template used for the borehole, this can be used to select a soil type from a predefined list 50 of soil types.

**Color:** Depending on the template used for the borehole, this can be used to select a soil color from a predefined list 50 of soil colors.

**Odour:** Depending on the template used for the borehole, this can be used to select a odour from a predefined list 50 of odours.

**Porosity:** Depending on the template used for the borehole, this can be used to select a porosity type from a predefined list 50 of porosity types.

**Consistency:** Depending on the template used for the borehole, this can be used to select a soil consistency from a predefined list 50 of soil consistencies.

**VOC:** Depending on the template used for the borehole, this can be used to specify the VOC for the sample.

**Dry Weight:** Depending on the template used for the borehole, this can be used to specify the dry weight for the sample.

**Wet Weight:** Depending on the template used for the borehole, this can be used to specify the wet weight for the sample.

**Other**: Depending on the template used for the borehole, other types of data can be entered as text strings for each sample. The number of other data types and the names for this data is specified in the template as Sample Other columns. Other data is stored and displayed as text strings. The name of the other data is specified as the column name. This string is displayed at the top of each other data column when the log is edited.

**Custom List Data:** Depending on the template used for the borehole, custom list data can be entered for each sample using the Sample Custom column in the template. The name of this column will be the name of the data column in the template. When this column is selected a drop down list showing the symbols and description in the custom list is displayed. The text can be selected from this list.Up to 5 custom list columns can be added to a sample.

#### 2.2.3.5 Well Data

Well logs can display a wide variety of wells at varying levels of detail and complexity. Monitoring, extraction, injection, and almost any other type of well can be displayed on the log. Well completion details and data can be displayed graphically in one or more columns of the log.

The components and annotation can be automatically created by the program using the information specified for the well construction below.

**Well Diameter**: This is the outside diameter of the well.

**Water Depth:** This is the measured depth to water in the well.

**Date Measured:** This is the date the water depth was measured.

**Cover Type:** This is used to select the type and height of the well cover.

**Grout Type:** This is used to select the type of grout used in the well.

**Screen Type:** This is used to select the type and diameter of the screen.

**Screen Pack Material:** This is used to select the packing material around the screen.

**Screen Start Depth:** This is used to specify the start depth of the screen.

**Screen End Depth:** This is used to specify the end depth of the screen.

#### 2.2.3.6 Text Data

Text data can be used to display any information that varies with depth; such as soil classification, RQD, chemical testing, lithologic consistency, laboratory results, drilling rates, etc. Depending on the template if the column is displayed as text, a tab for text data will be added. The tab name will be the same as the column name in the template.

At the top of tab there are buttons to *Add* or *Delete* text data. The following information can be edited for each data point:

**Depth**: This is the depth to display the text.

**Text**: This is the text to display at the specified depth.

#### 2.2.3.7 Text Interval Data

Text interval data can be used to display any information that varies with depth; such as soil classification, RQD, chemical testing, lithologic consistency, laboratory results, drilling rates, etc. Depending on the template if the column is displayed as a text interval, a tab for text interval data will be added.The tab name will be the same as the column name in the template.

At the top of tab there are buttons to *Add* or *Delete* text interval data. The following information can be edited for each data point:

**Top Depth**: This is the top depth to display the text.

**Bottom Depth**: This is the bottom depth to display the text.

**Text**: This is the text to display between the specified depths.

**Line Type:** This is used to select the type of line to show at the top and bottom depths.

#### 2.2.3.8 Graph Data

Graph and bargraph data can be used to display numerical information that varies with depth; such as shear strength, water content, hydraulic conductivity, contaminant concentrations, volatile hydrocarbon readings, etc. Depending on the template if the column is displayed as a graph or bargraph, a tab for the data will be added.The tab name will be the same as the graph name in the template.

At the top of tab there are buttons to *Add* or *Delete* graph data.

If the graph type is not a bargraph the following information can be edited for each data point:

**Depth**: This is the depth to display the data.

**Data**: This is the numerical data for the graph at the specified depth.

**Label**: This is an optional text label to display at the specified depth.

If the graph type is a bargraph the following can be edited for each data point:

**Top Depth**: This is the top depth to display the data.

**Bottom Depth**: This is the bottom depth to display the data.

**Data**: This is the numerical data for the graph at the specified depths.

#### 2.2.3.9 Images

Images can be added and removed for the borehole using the *Images* button on the borehole data screen. The images screen has buttons to add an image using the *Camera* button or from the image *Library* on the device.The images currently in the borehole will be displayed below the buttons.

The name of an image can be edited by selecting it or clicking on the *Edit* button. Images can be removed by clicking on the *Remove* button and then selecting the image.

### 2.2.4 Previewing/printing a boring or well log

To preview or print a log, press the *Preview* button at the top of the Borehole Data screen, the Preview screen will be displayed showing the log. At the top of the screen there are buttons to go to the next or previous *Page* (if there is more than one page in the log), *Print*, *Zoom In*, *Zoom Out*, and show the log in the *Full Screen*.

When the *Print* button is pressed the log will be shown in a print preview with the printer, number of copies, and paper size shown at the top and a blue print button shown on the right. The printer, number of copies and paper size can be adjusted by clicking on them.

To print from the tablet you will need a printer connected to the same WiFi network as the tablet. If the printer does not show up in the print preview, it will need to added to the tablet using the steps below.

1. On the tablet go to Settings > Connected devices > Connection preferences > Printing
2. Select Add service. The Google Play Store will open showing printer brands available.
3. Select the printer's brand and Install the app.

### 2.2.5 Copying a boring or well log

To copy a borehole select it on the Project screen and tap the *Copy* button. A copy of the borehole will be opened the borehole and a new name and location can be specified. All of the data can be edited on the Borehole Data screen as described in the Editing a boring or well 35 section.

### 2.2.6 Deleting a boring or well log

To delete an existing borehole, select it on the Project screen and then tap the *Delete* button. After confirming the deletion the borehole will be deleted.

# Receiving Data

A variety of data can be retrieved from the FTP Site and used in the application. This data can be uploaded to the FTP site using GaeaSynergy and the GaeaSynergy Network Data Manager. To import data select the *Import* icon on the Main screen..The screen will then display tabs for Projects 46, Templates 47, Lithology Libraries 48, Lithology Macros 49, and Lists 50.

## 3.1 Importing Projects

Projects can be retrieved off the FTP site and imported into WinLoG Field Assistant, These projects can include the location, name, and defaults for proposed borings.

The projects can be uploaded to the FTP site directly from the project in GaeaSynergy or by specifying a task for the project in GaeaSynergy. To send the project as part of a task it must be specified in the notifications for the task in GaeaSynergy.When sending the project from the GaeaSynergy, the Username to receive the project must be specified. In WinLoG Field Assistant, the Username for receiving projects is specified on the Account screen.

To obtain a list of projects to import use the *Retrieve List* button on the Projects tab.The projects displayed will only be those that have been sent to the specified user.One or more projects can then be imported by selecting them and then tapping on the *Import* button.

When importing projects, duplicate projects that already exist in WinLoG Field Assistant can be either *Skipped* (ignored), *Overwritten*, or *Merged*. When merging the projects only new borings in the downloaded project will be added to the existing project.

## 3.2 Importing Templates

Borehole templates can be retrieved off the FTP site and imported into WinLoG Field Assistant, These templates can then be used when creating boreholes and wells. The templates can be uploaded to the FTP using the GaeaSynergy Network Data Monitor application on the server. The uploaded templates on the FTP site will be available to all WinLoG Field Assistant users with access to the FTP site.

To obtain a list of templates to import use the *Retrieve List* button on the Templates tab..One or more templates can then be imported by selecting them and then tapping on the *Import* button.

When importing templates, duplicate templates that already exist in WinLoG Field Assistant can be either *Skipped* (ignored) or *Overwritten*. In addition, all existing templates in WinLoG Field Assistant can be deleted before importing the new templates by checking *Delete Existing*.

## 3.3 Importing Lithology Libraries

Lithology libraries can be retrieved off the FTP site and imported into WinLoG Field Assistant, These libraries include the lithology symbols and are used when creating boreholes and wells. The lithology libraries can be uploaded to the FTP using the GaeaSynergy Network Data Monitor application on the server. The uploaded libraries on the FTP site will be available to all WinLoG Field Assistant users with access to the FTP site.

To obtain a list of lithology libraries to import use the *Retrieve List* button on the Lithology Libraries tab..One or more libraries can then be imported by selecting them and then tapping on the *Import* button.

When importing lithology libraries, duplicate libraries that already exist in WinLoG Field Assistant can be either *Skipped* (ignored) or *Overwritten*. In addition, all existing libraries in WinLoG Field Assistant can be deleted before importing the new libraries by checking *Delete Existing*.

## 3.4 Importing Lithology Macros

Lithology macros can be retrieved off the FTP site and imported into WinLoG Field Assistant, These lithology macros are used when creating boreholes and wells. The lithology macros can be uploaded to the FTP using the GaeaSynergy Network Data Monitor application on the server. The uploaded macros on the FTP site will be available to all WinLoG Field Assistant users with access to the FTP site.

To obtain a list of lithology macros to import use the *Retrieve List* button on the Lithology Macros tab..One or more macros can then be imported by selecting them and then tapping on the *Import* button.

When importing lithology macros, duplicate macros that already exist in WinLoG Field Assistant can be either *Skipped* (ignored) or *Overwritten*. In addition, all existing macros in WinLoG Field Assistant can be deleted before importing the new macros by checking *Delete Existing*.

## 3.5 Importing Lookup Lists

A variety of lookup lists can be retrieved off the FTP site and imported into WinLoG Field Assistant, These lists are used when creating boreholes and wells. The lists can be uploaded to the FTP using the GaeaSynergy Network Data Monitor application on the server. The uploaded lists on the FTP site will be available to all WinLoG Field Assistant users with access to the FTP site.

To obtain a list of lookup lists to import use the *Retrieve List* button on the Lists tab..One or more lists can then be imported by selecting them and then tapping on the *Import* button.

When importing lists, duplicate lists that already exist in WinLoG Field Assistant can be either *Skipped* (ignored) or *Overwritten*. In addition, all existing lists in WinLoG Field Assistant can be deleted before importing the new lists by checking *Delete Existing*.

# Sending Data

Project, borehole, and image data can be exported to the FTP Site. This data can then be automatically retrieved by the GaeaSynergy Network Data Manager service and added to GaeaSynergy on the server. To export data select the *Export* icon on the Main screen..The screen will then display tabs for Projects 52, Boreholes 53, and Images 54.

## 4.1 Exporting Projects

Projects can be exported to the FTP site and imported into WinLoG, The exported projects include the boring, well data, and images in the project..

A list of projects to export is displayed on the Projects tab..One or more projects can then be exported by selecting them and then tapping on the *Export* button.

When exporting projects, duplicate projects that already exist in GaeaSynergy can be either *Skipped* (ignored), *Overwritten*, or *Merged*. The way duplicates are handled is specified in the GaeaSynergy Network Data Monitor. When merging the projects only new borings in the downloaded project will be added to the existing project.

## 4.2 Exporting Boreholes

Individual boreholes within projects can be exported to the FTP site and imported into WinLoG Field Assistant, A list of projects is displayed on the Boreholes tab..A project can be selected using the *Select Project* button.

After a project is selected, a list of boreholes in the project will be displayed. One or more boreholes can then be exported by selecting them and then tapping on the *Export* button.

When exporting boreholes, duplicate boreholes that already exist in the project in GaeaSynergy can be either *Skipped* (ignored), *Overwritten*, or *Merged*. The way duplicates are handled is specified in the GaeaSynergy Network Data Monitor. When merging the boreholes only new borings will be added to the existing project. If the project does not exist in GaeaSynergy it will be created.

## 4.3 Exporting Images

Images stored on the device can be assigned to a project or borehole and uploaded to the FTP site. These images will then be automatically downloaded and added to the project or borehole in GaeaSynergy by the GaeaSynergy Network Data Manager service. The images can then be used in project views in GaeaSynergy.

A list of projects is displayed on the Images tab..A project can be selected using the *Select Project* button.

After a project is selected, images for the project and boreholes will be displayed. Additional images can be added to the export using the *Add* button. Images can be removed from the export using the *Remove* button. Images added or removed during the export will not be added or removed from the actual project or borehole on the device.

Once all of the images have been added or removed the *Export* button is used to upload the images to the FTP site.