

NovoGIS

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About



NovoGIS

This software is designed for preparation of a Geographic Information System (GIS) map based on the geotechnical data extracted from gINT project files.

Although all efforts have been undertaken to ensure that this software is of the highest possible quality and that the results obtained are correct, the authors do not warrant the functions contained in the program will meet your requirements or that the operation of the program will be uninterrupted or error-free. The authors are not responsible and assume no liability for any results or any use made thereof, nor for any damages or litigation that may result from the use of the software for any purpose. All results to be verified independently by user.

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Vancouver, Canada

License Agreement

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Licensing Help

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Using Help



Help button is placed at the top-right corner of all pages, as shown on this screenshot. In order to load the help content associated with the page please click on the question mark button.

Coordinates Systems

This software requires the [Universal Transverse Mercator \(UTM\)](#) coordinates of test hole locations. The UTM coordinates are entered in Easting and Northing (both in metres). NovoGIS converts UTM coordinates to [geographic coordinates](#) (latitude and longitude) in order to display their locations on Google Earth map.

In order to use NovoGIS you will need UTM survey data at each test hole location, and [UTM Zone](#) of your projects.

Google Earth Pro Software



Google Earth is a computer program that renders a 3D representation of Earth based primarily on satellite imagery. The program maps the Earth by superimposing satellite images, aerial photography, and GIS data onto a 3D globe, allowing users to see cities and landscapes from various angles. Users can explore the globe by entering addresses and coordinates, or by using a keyboard or mouse. The program can also be downloaded on a smartphone or tablet, using a touch screen or stylus to navigate. Users may use the program to add their own data using Keyhole Markup Language and upload them through various sources, such as forums or blogs. Google Earth is able to show various kinds of images overlaid on the surface of the earth and is also a Web Map Service client. Recently Google has revealed that Google Earth now covers more than 98 percent of the world, and has captured 10 million miles of Street View imagery, a distance that could circle the globe more than 400 times.

In January 2015, Google decided to make this software free to the public. You can download a copy of Google Earth Pro at the following link <https://www.google.com/earth/versions/>

KML Files

KML is a file format used to display geographic data in an Earth browser such as Google Earth. KML uses a tag-based structure with nested elements and attributes and is based on the XML standard. All tags are case-sensitive and must appear exactly as they are listed in the [KML Reference](#). The Reference indicates which tags are optional. Within a given element, tags must appear in the order shown in the Reference.

If you're new to KML, explore these samples files ([SamplesInEarth](#)) to begin learning about the basic structure of a KML file and the most commonly used tags. For a detailed tutorial on KML format please read [this article](#) by Google.

References

- 1- About the Universal Transverse Mercator (UTM) https://en.wikipedia.org/wiki/Universal_Transverse_Mercator_coordinate_system
- 2- About the geographic coordinate system https://en.wikipedia.org/wiki/Geographic_coordinate_system

Getting Started ...

In order to create a GIS map from your gINT project files using NovoGIS, you need to follow the following steps:

- **Step 1:** Add your gINT project files to the list ([read more](#)).
- **Step 2:** Confirm the database structure of your gINT files ([read more](#)).
- **Step 3:** Generate GIS map for Google Earth ([read more](#)).

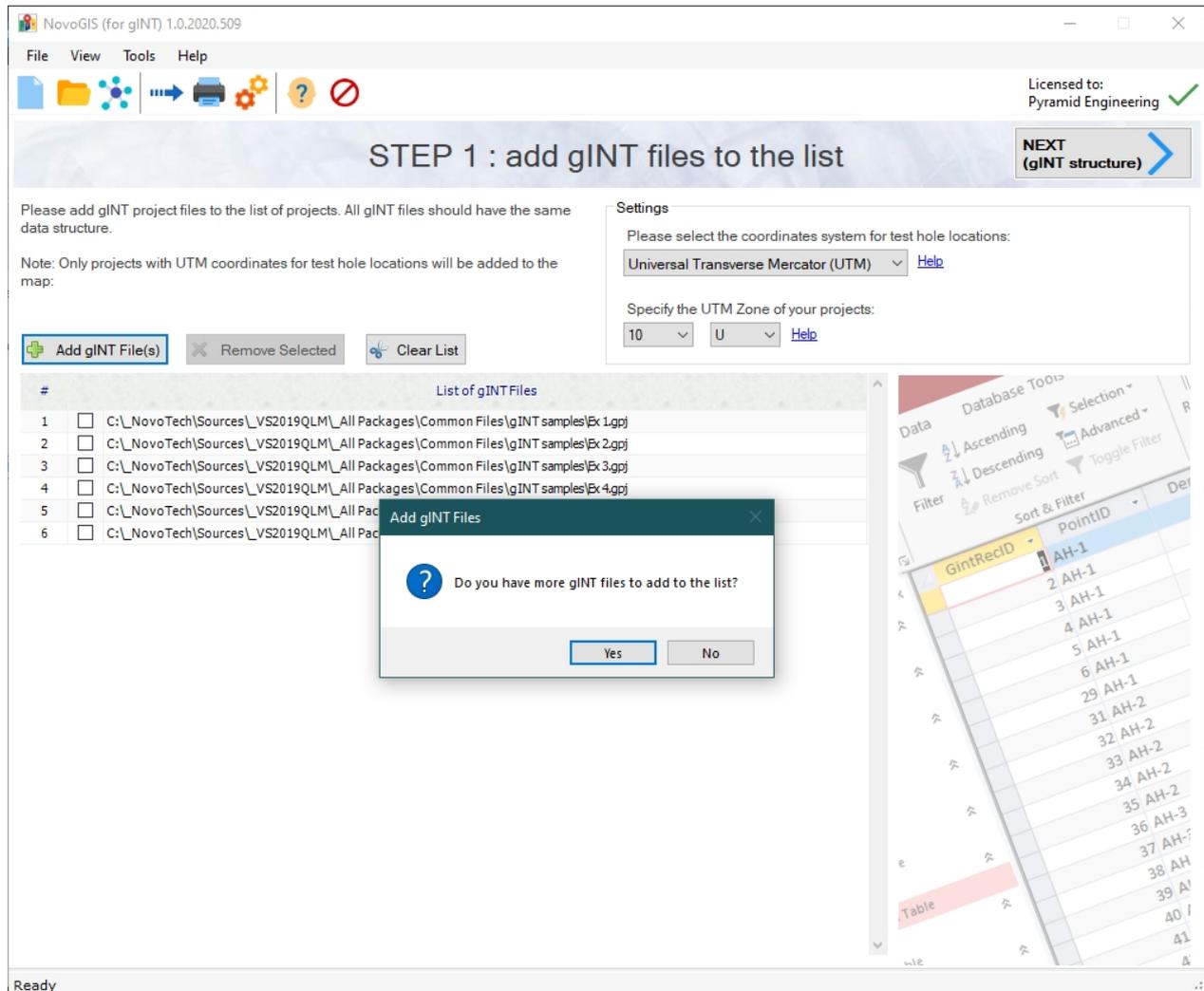
The map created by NovoGIS is in [KML file](#) format, and can be opened and viewed by [Google Earth Pro](#) software.

STEP 1 (adding gINT files)

Step 1

The first step in creating the projects map using NovoGIS, is to introduce the gINT files. You can add one or multiple gINT files at a time, but all gINT files must have the same gINT database structure. In order to facilitate this step, we recommend the following:

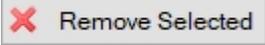
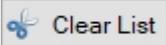
1. Create a new folder on the same computer where NovoGIS is installed,
2. Copy of all your gINT project files (*.gpj) in this folder,
3. Run NovoGIS program, on STEP 1 screen, click on  and browse to the folder you copied all the gINT project files,
4. You can click on single gINT files and add them to the list, one at a time. Alternatively, you can press CTRL+A to select all the files in the folder, then click OK.
5. This will add all the gINT project files to the list (see below).



6. Once you add the files, you will be asked the question "Do you have more gINT files to add to the list?"; If you select No, you will be automatically taken to [Step 2](#). If you select Yes, you will stay on STEP 1 and can add more files to the list by

repeating the Step 3 above.

Note: You can delete a file by selecting the checkbox beside the file name, and clicking on

 button. If you like to clear the entire list and remove all files from the list, click on  button.

Settings

Please note that your gINT project files must have coordinates for the locations of each test hole. NovoGIS will use these coordinates to locate the test holes on the map. Please [read this article](#) for more information.

In the Settings section at the top of STEP 1 screen, you can specify the type of coordinates ([read more](#)). If you have received coordinates from the surveyors, they are typically in [Universal Transverse Mercator \(UTM\)](#) system. A location in UTM system is defined by Northing, Easting, Elevation, and [UTM Zone](#).

You are now ready to move forward to [Step 2](#).

STEP 2 (gINT structure)

Step 2

gINT project files are Microsoft Access [database](#) files. From company to company, the structure of gINT files varies; this means the data included in gINT files are different based on the type of projects carried out by different companies. We help you determine this gINT file structure by using our SmartSync component ([read more](#)).

NovoGIS assumes that all your gINT files share the same data structure. By clicking on "Start Processing gINT Files" button, the program opens one of your projects and allows you to confirm the data structure. Please learn more [about setting gINT structure here](#).

Note: Every time you click on "Start Processing gINT Files" button you will be shown the SmartSync page, and then the program will start processing ALL gINT files. Therefore, once you determined the settings on SmartSync page, you don't need to click on "Start Processing gINT Files" button unless you have added / deleted files from the list in [Step 1](#).

You are now ready to move forward to [Step 3](#).

STEP 3 (generating map)

Congratulations! you are now just one quick step away from generating the GIS map. When ready, click on the "Open GIS Map" button. This will generate the Google Earth [KML file](#), and:

1. The folder containing your GIS map (*.KML) will be opened.
2. Google Earth will be automatically launched to show the GIS map.

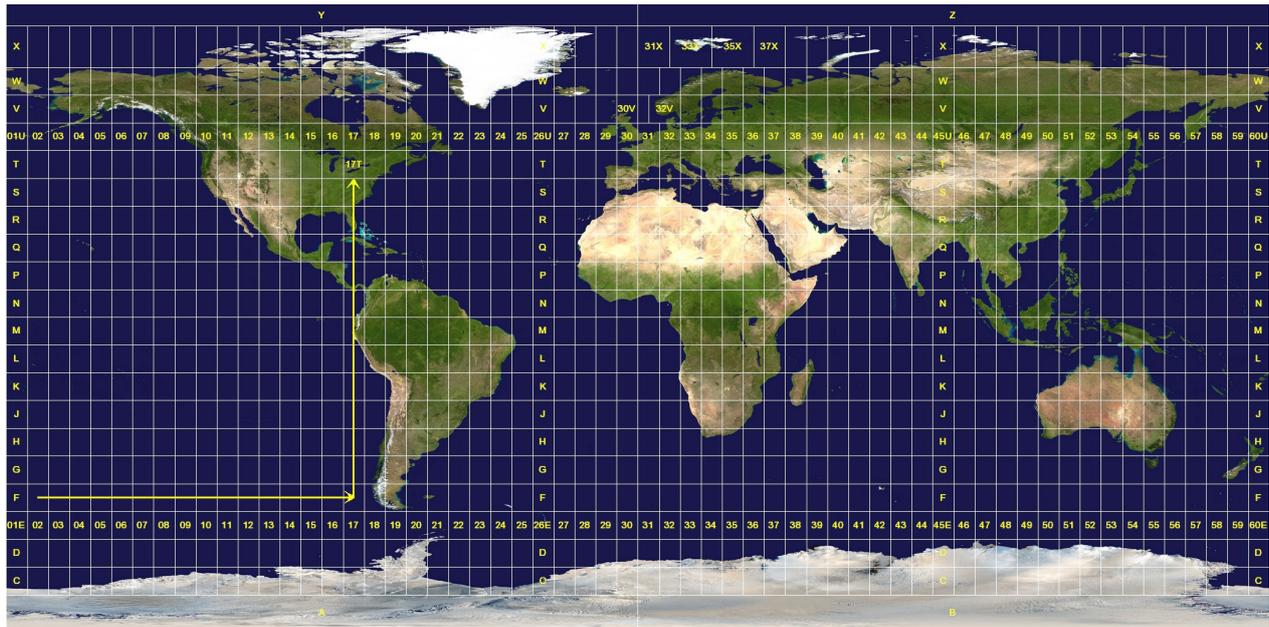
Please note in order to view the KML file, you need to have [Google Earth Pro software](#) installed on your computer. This software is free ([read more](#)).

What is My UTM Zone?

Introduction

UTM Zones are a combination of a 'number' and a 'letter'. Numbers are between 1 to 60, and

letters are from C to X. The following map shows how UTM Zones look like on the world map:



Source: <https://commons.wikimedia.org/wiki/File:Utm-zones.jpg>

How to Get UTM Zone of Your Project Site

One of the best ways to obtain the UTM Zone of your project site is to use [Google Earth software](#). Open Google Earth and browse to your project site. Then at the bottom-right corner of screen you will find your site's UTM Zone. Here is an example:



Options

The following options are currently available:

Decimal Digits: Specifies number of decimals shown when calculating net friction.

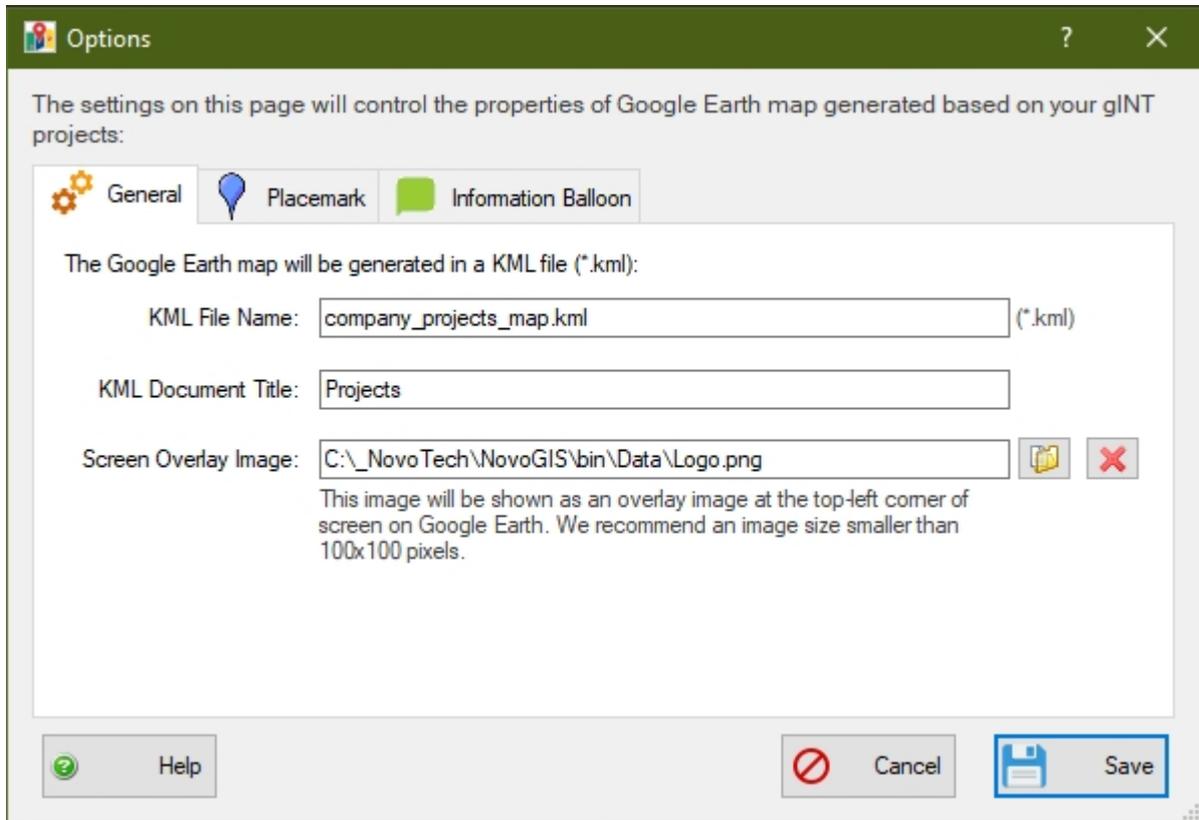
Units System: Select units system used in NovoBPT for data entry and output results.

Round corrected BPT and correlated N60: If selected, all corrected and correlated N60 values

are rounded to nearest integer value, otherwise one decimal is used.

General Settings

In this section you can define the main properties of the [KML file](#) generated by NovoGIS:



KML File Name

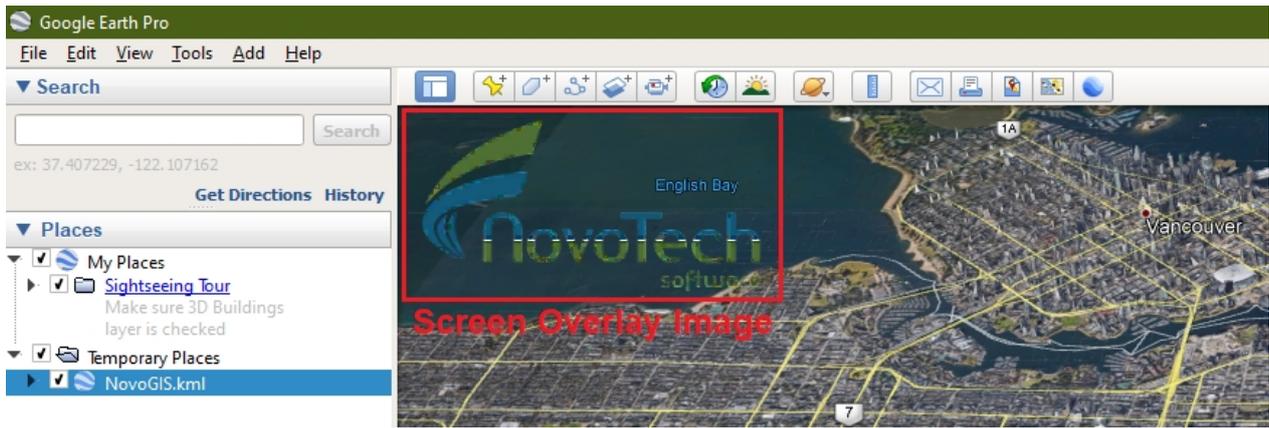
This is the name of the KML file. We recommend to leave this name short. A default file extension of *.kml will be added to the file.

KML Document Title

Document title is an identifier for KML file that describes the purpose of the map. This will be written in the <name> tag of the KML file but is not displayed anywhere when you open the map with Google Earth.

Screen Overlay Image

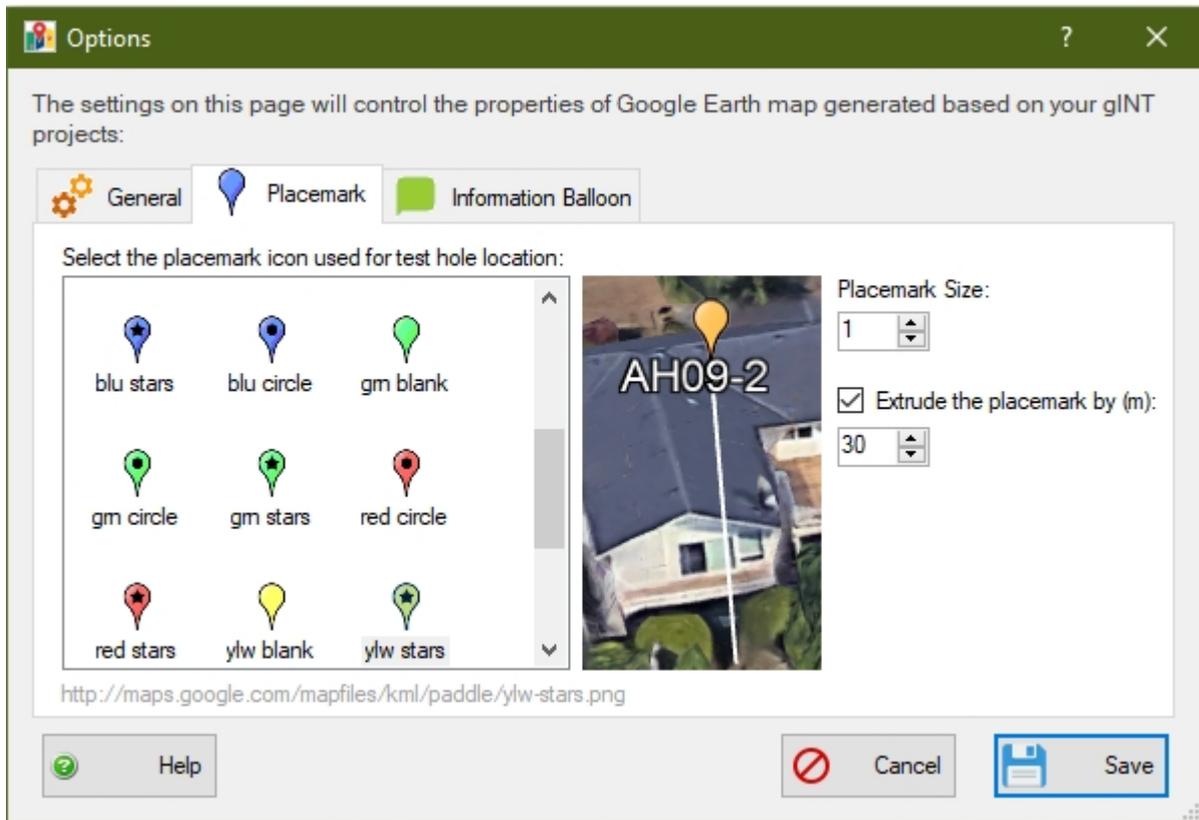
This image will be shown as an overlay image at the top-left corner of screen on Google Earth. We recommend an image size smaller than 100x100 pixels. An example of the screen overlay image is shown in the following screenshot:



Please note the default screen overlay picture used in NovoGIS is Novo Tech logo. If you don't want to show any screen overlay image, click on red X button and remove the picture.

Placemark

Placemarks are the markers showing the location of each test hole on the map. On this page you can determine how these placemarks look on the map:



Icon Size

You can also specify the size of the placemarks. We recommend using sizes of 1 or 2 for placemarks.

Placemark Extrusion

This options allows extruding the test hole locations to certain elevation above the ground surface. The advantage of doing this, is that the placemark will not be covered by trees or other 3D features shown in Google Earth.

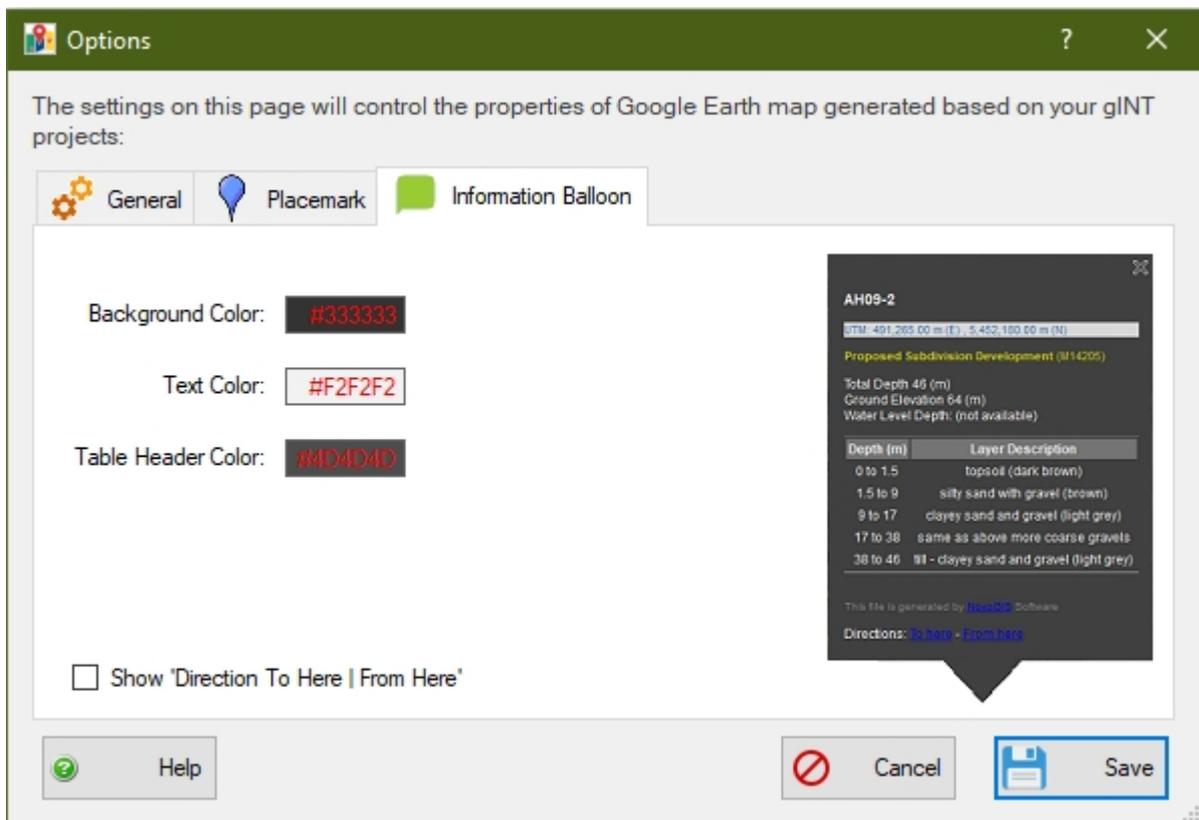
Adding Icons to the List

From the list on the left, select the icon used for placemarks. These icons are located in the <NovoGIS Installation Folder>\Data\Icons folder, and you can add more icons to this list by taking the following steps:

- 1- Manually copy your desired icon file in the above-noted folder. Please make sure the icon size is below 100px x 100px and its format is PNG.
- 2- Open the file List.txt located in the same folder. Add the name of the new icon file(s) to the bottom of the list.
- 3- Close the program and re-run; You should be able to see the icons in the list.

Information Balloon

When you click on a [placemark](#) on the map, an information balloon (shown below, on the right side of the dialog box) will popup. This balloon provides details about the selected test hole, its soil profile, coordinates, etc.



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