# IMDEX ioGAS™

**QGIS Plugin v3.22 (build 201460)**

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# ioGAS Link for QGIS

QGIS is a free, open-source cross-platform desktop geographic information system (GIS) application that enables the visualisation, editing and analysis of geospatial data. Used in conjunction with the ioGAS for QGIS Link, geoscientific point datasets can be analysed in real time and the results viewed simultaneously with other GIS layers such as geology, geophysics, regolith maps, tenement boundaries, topography and more in QGIS.

The ioGAS for QGIS Link creates a special 'live' layer in QGIS that synchronises with the dataset currently loaded in ioGAS. The data for the live layer may be opened directly into ioGAS and then viewed as a live layer in QGIS or a copy of an existing point layer in QGIS can be selected as the live layer and be opened up into ioGAS for analysis. Only one dataset can be in use by the live link at any time.

Once the live layer is activated, all attribute changes in ioGAS (including visibility and set filter groups) are displayed in the live link layer in QGIS in the same way as they appear in ioGAS. Data can also be selected for attribution in ioGAS using the standard selection tools in QGIS, or any of the standard ioGAS tools that modify symbols (e.g. polygon select, classification diagrams, attribute manager, etc).

The live link is activated via the free QGIS Plugin developed by IMDEX which can be downloaded from our website at https://reflexnow.com/product/iogas/.

In addition to the live link, the QGIS Plugin also enables data from an ioGAS file (.gas) to be imported directly into QGIS and displayed as a temporary scratch layer or as a GeoPackage layer.

## System Requirements

- Windows or Mac OS
- ioGAS 7.3 or later
- QGIS 3.10 or later (Long Term Release versions only)
- ioGAS Plugin for QGIS 3.22 (build 201460) or later
- ioGAS file (.gas) v 6.3 or later

## Installation

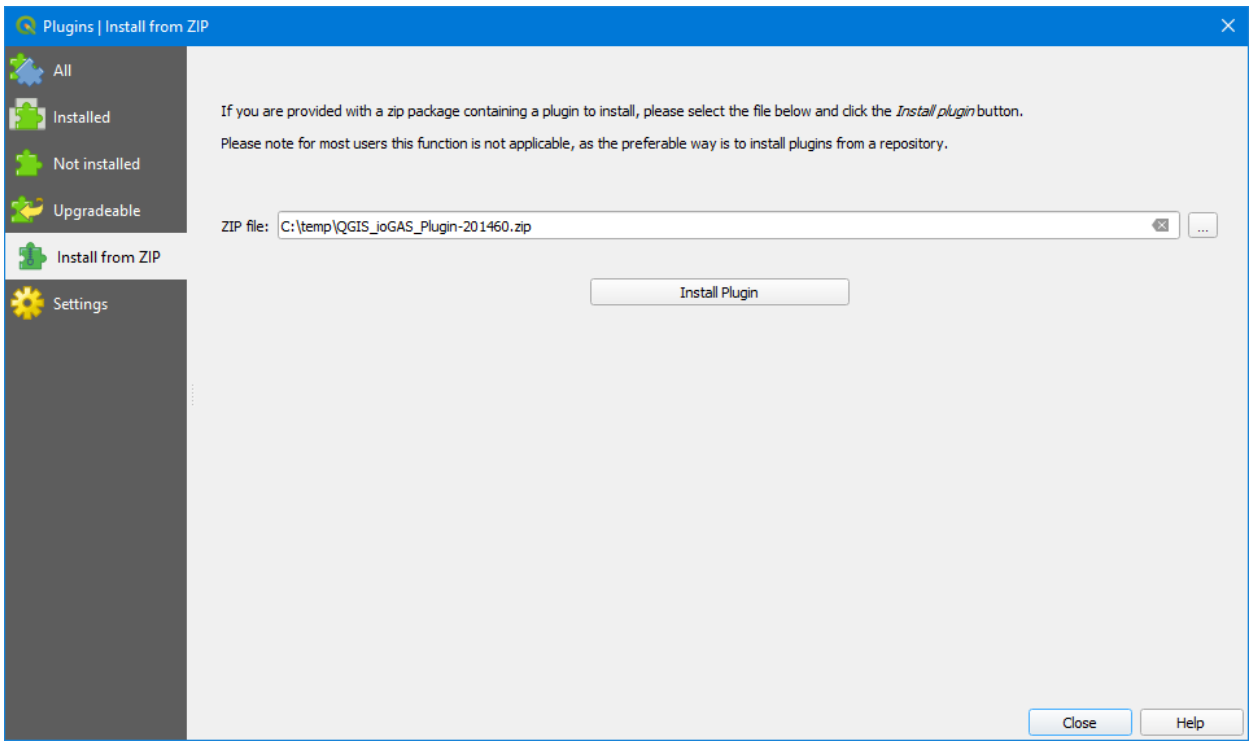
1. Download the latest ioGAS for QGIS plugin.zip file from our website at https://reflexnow.com/product/iogas/.

2. Start the QGIS application.

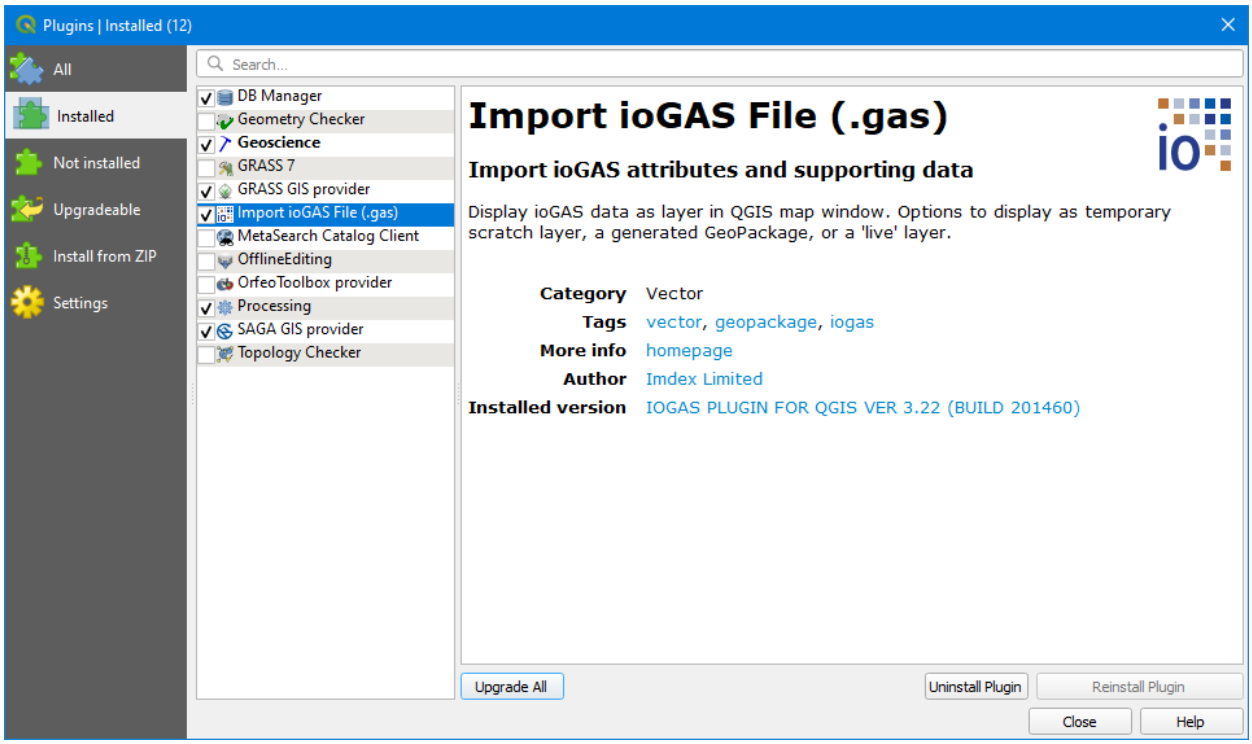
3. Go to **Plugins | Manage and Install Plugins** menu option.

4. Select **Install from ZIP** and use the ... browse button to locate the zip file.

5. Click **Install plugin** button.



6. "Plugin successfully installed" message should appear upon completion. To view the plugin metadata in QGIS go to **Plugins** | **Installed**.




To use the 'live link' option, both QGIS and ioGAS must be installed on the computer. When importing .gas files only, QGIS must be installed on the computer, but ioGAS is optional.

## Conventions Used

In ioGAS and QGIS the term “attribute” is used differently. An attribute in an ioGAS context refers to the appearance of a data point, i.e. the colour, shape or size. In QGIS this is referred to as the symbology.

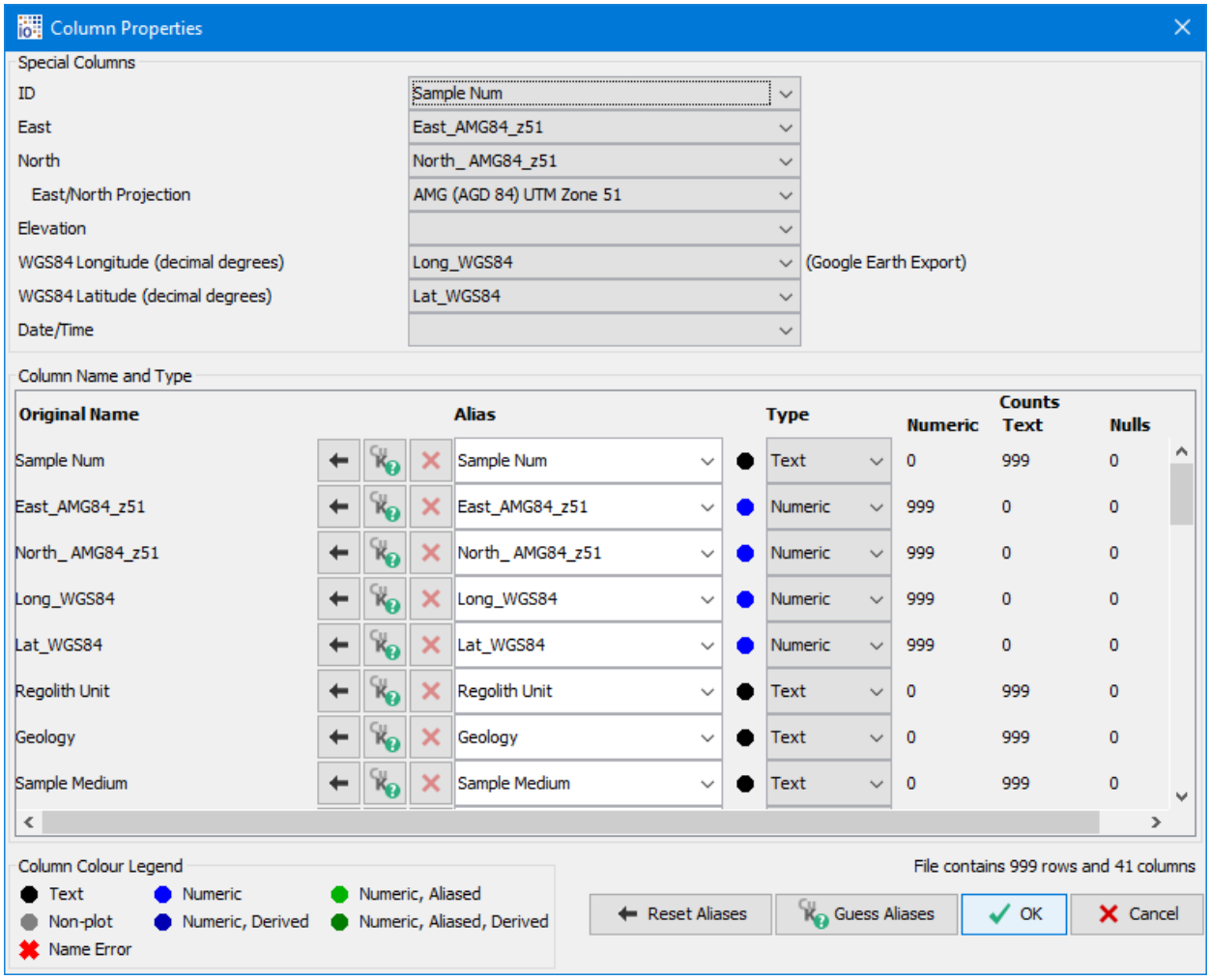
An attribute in an QGIS context refers to a variable displayed in tabular form, i.e. open Attribute Table. In ioGAS this is referred to as a data view.

The ioGAS Plugin for QGIS supports attribute map symbology only. To import variable map symbology into QGIS select the **Export visible rows to multiple .gas files** button on the Variable Map toolbar within ioGAS. This will generate separate .gas files for each variable map which can be imported into QGIS as individual scratch or GeoPackage layers.

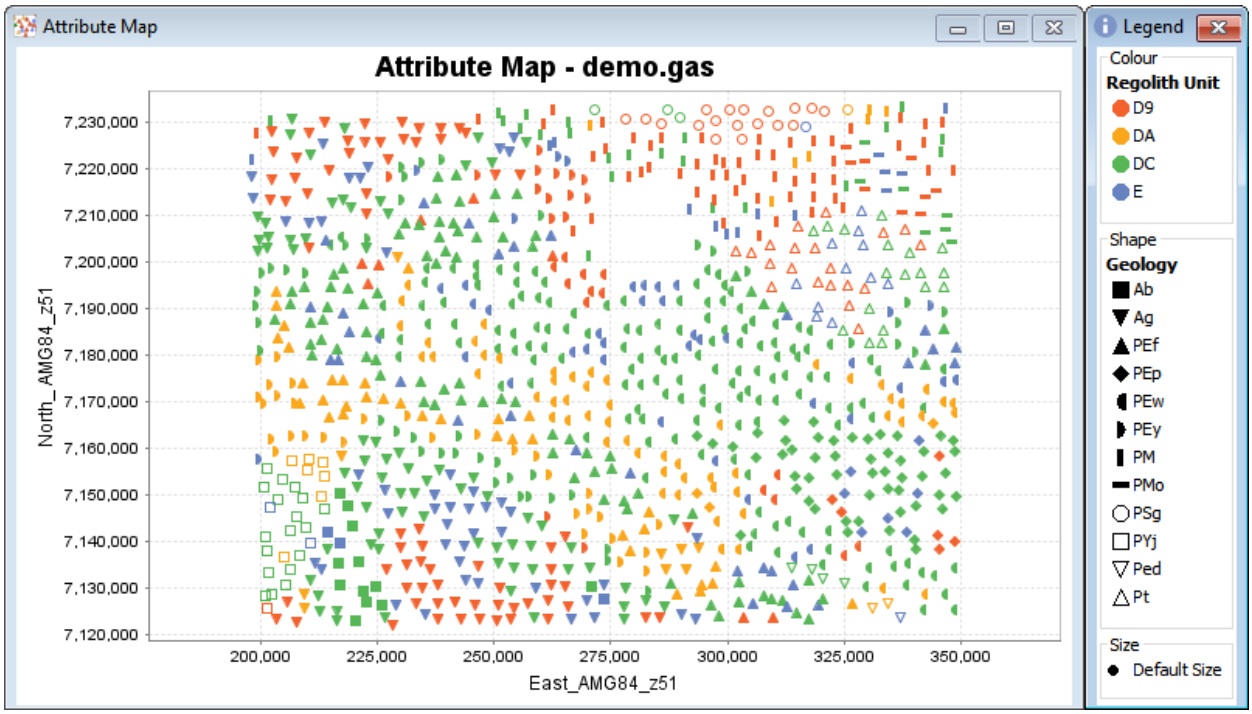
## Prepare Data in ioGAS

The rendered symbology in QGIS is derived from either the currently open colour, shape, size attributes as defined in the ioGAS **Attribute Manager**(when using the 'live link') or from the last saved attributes in the .gas file (when using the plugin import options).

1. In the **Column Properties** dialog make sure the East and North Special Columns are populated and the **East/North Projection** is set correctly. This projection is used to display the data in the correct geographic location in QGIS.



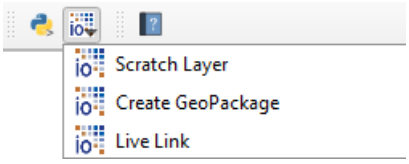

2. Set the desired colour, shape, size and filter/visibility in the Attribute Manager.




3. When the dataset is ready it is time to open the live link. If the data is to be imported into QGIS instead of via the live link save the ioGAS file now.

## View Data in QGIS

4. Open the QGIS application and go to the **Import ioGAS File** button on the plugins toolbar. Alternatively, go to the **Vector** | **Import ioGAS file** menu option and choose from one of the following three options:




### Scratch Layer

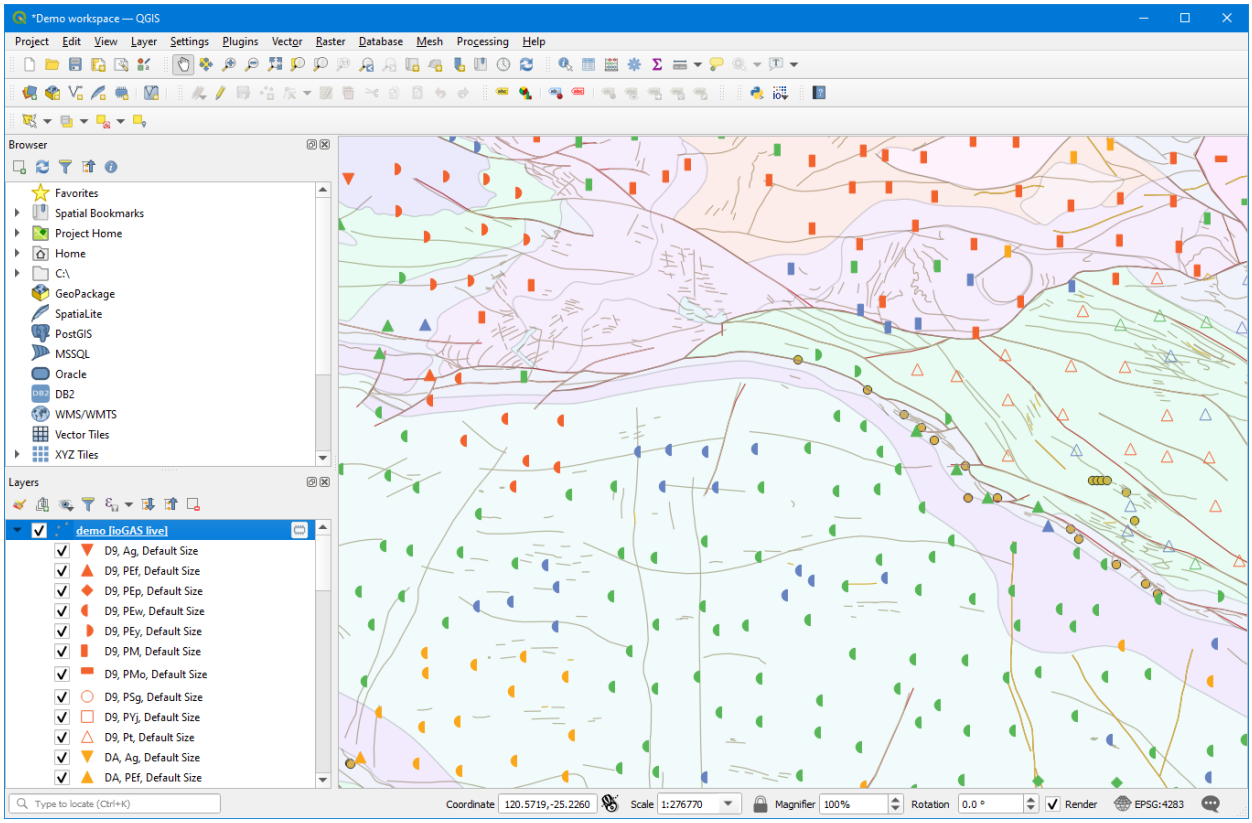
Import one or more .gas files as individual temporary scratch layers in the current QGIS map window. Scratch layers are deleted when the QGIS session is closed and should not be saved in QGIS Projects.

## Create GeoPackage

Import one or more .gas files as individual GeoPackages into the current QGIS map window. The GeoPackage includes data and symbology and is created in the same folder as the ioGAS file. Geopackage layers can be re-opened into QGIS or saved to a QGIS Project.

## Live Link

Open a special 'live' layer in QGIS that synchronises with ioGAS. The currently open dataset in ioGAS or an existing QGIS layer can be defined as the live link data layer. The live link layer is deleted when the QGIS or ioGAS session is closed and should not be saved in QGIS Projects.



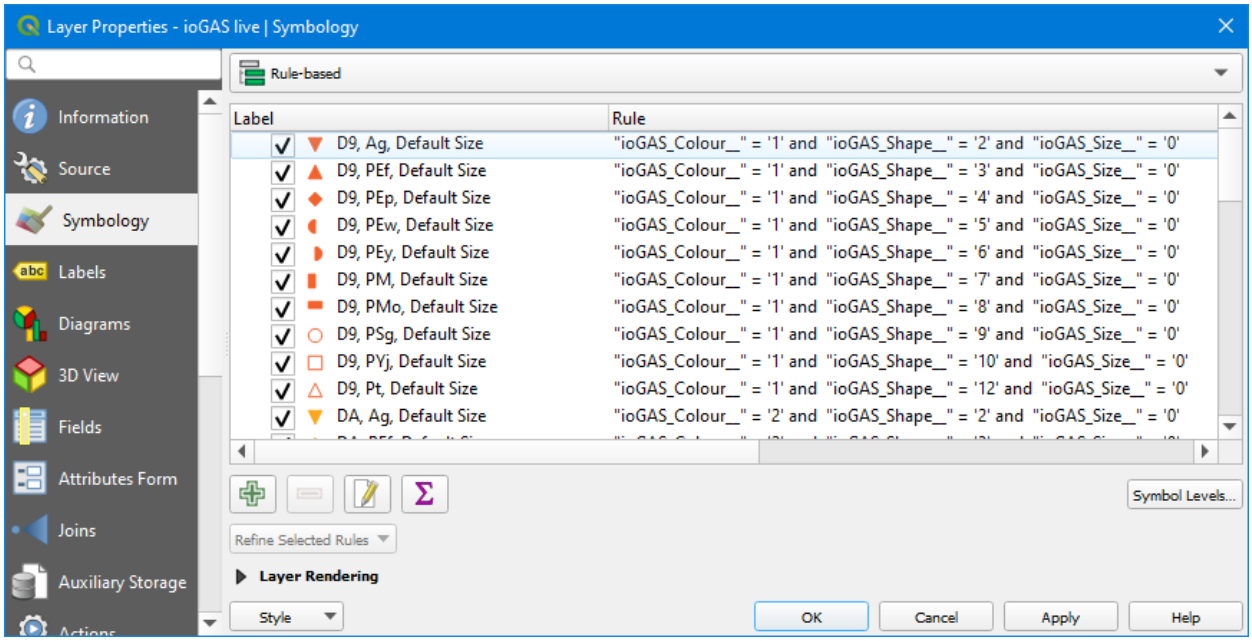

## QGIS Projection

The projection set in the Column Properties dialog in ioGAS is used as the QGIS map window projection unless the projection of the incoming data is different to the currently open QGIS map window projection. In this case the data is reprojected on-the-fly to display in the correct geographical space.

## QGIS Legend and Symbology

The symbolised layer is added to the **Layers** pane using the same name as the original ioGAS filename (when imported as a scratch or geopackage layer) or ioGAS filename **[ioGAS live]** in the case of the live link layer.

The colour, shape and size attributes are combined to make a single unique legend entry. To view the legend properties right-mouse click on the layer name in the **Layers** pane and select **Properties | Symbology | Rule-based**.

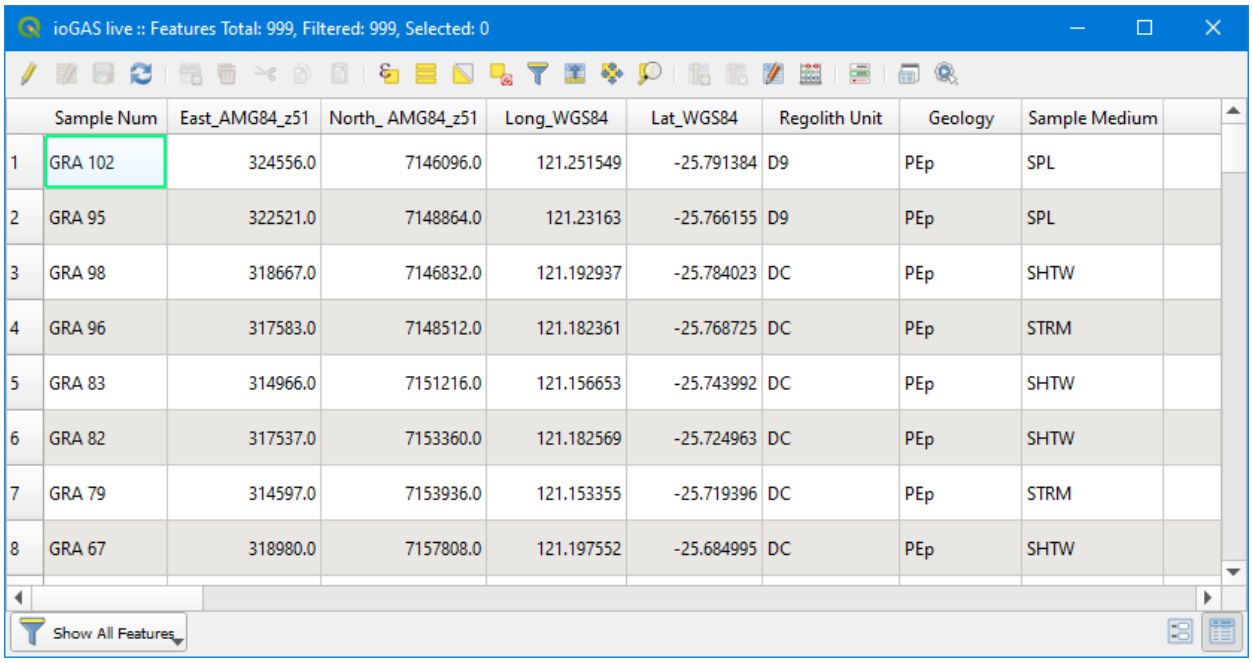



## QGIS Attributes

To view the imported variables as a table, right-mouse click on the layer name in the **Layers** pane and select **Open Attribute Table**.

For scratch and GeoPackage layers the ID, North, East, WGS84 Longitude, WGS84 Latitude, Date/Time special columns as designated in the **Column Properties** dialog are imported into QGIS automatically along with all of the selected variables. For drillhole data, the depth from, depth to and grouping fields may also be automatically included.

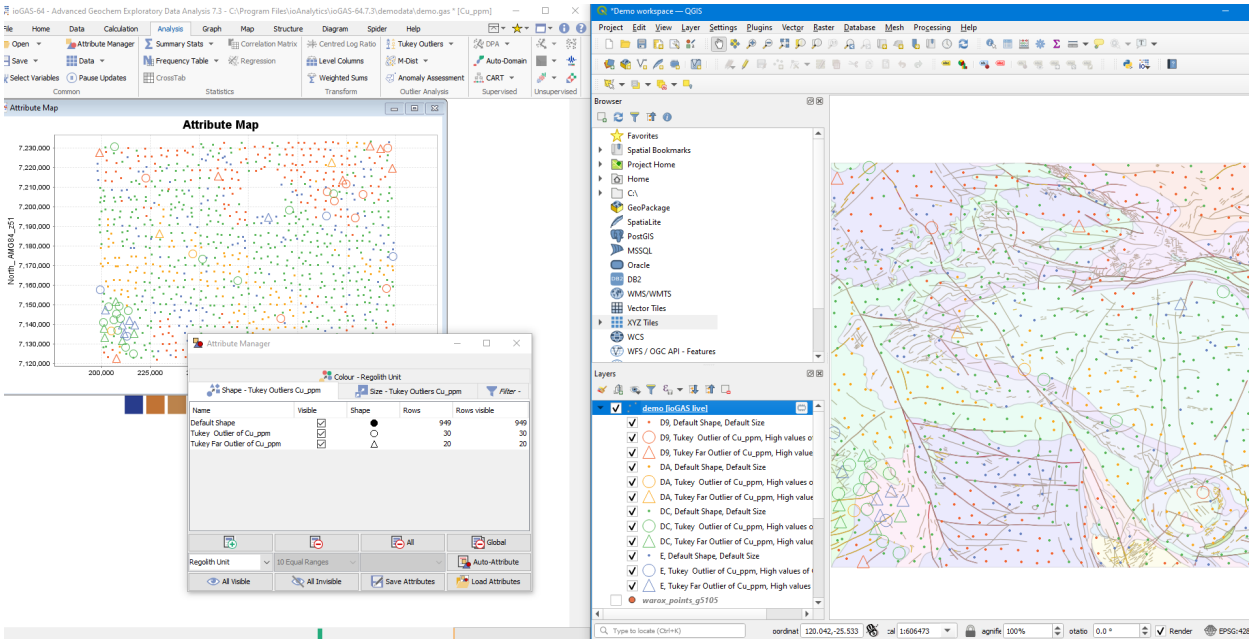
For live link layers, all of the variables in the dataset are displayed in QGIS.




| | Sample Num | East_AMG84_z51 | North_ AMG84_z51 | Long_WGS84 | Lat_WGS84 | Regolith Unit | Geology | Sample Medium |
|---|---|---|---|---|---|---|---|---|
| 1 | GRA 102 | 324556.0 | 7146096.0 | 121.251549 | -25.791384 | D9 | PEp | SPL |
| 2 | GRA 95 | 322521.0 | 7148864.0 | 121.23163 | -25.766155 | D9 | PEp | SPL |
| 3 | GRA 98 | 318667.0 | 7146832.0 | 121.192937 | -25.784023 | DC | PEp | SHTW |
| 4 | GRA 96 | 317583.0 | 7148512.0 | 121.182361 | -25.768725 | DC | PEp | STRM |
| 5 | GRA 83 | 314966.0 | 7151216.0 | 121.156653 | -25.743992 | DC | PEp | SHTW |
| 6 | GRA 82 | 317537.0 | 7153360.0 | 121.182569 | -25.724963 | DC | PEp | SHTW |
| 7 | GRA 79 | 314597.0 | 7153936.0 | 121.153355 | -25.719396 | DC | PEp | STRM |
| 8 | GRA 67 | 318980.0 | 7157808.0 | 121.197552 | -25.684995 | DC | PEp | SHTW |

## Update Data from ioGAS

Colour, shape, size, visibility and filter settings can be modified in ioGAS by manually making changes to the Attribute Manager, e.g. making selections, changing visibility or applying attributes. Attributes can also be automatically updated by using other ioGAS analysis tools such as generating clusters groups or identifying outliers. New variable columns may also be added to the dataset during these processes.




When the live link layer is active any of the changes made above in ioGAS are displayed in real time in the QGIS map window.

If using the Scratch Layer or Create Geopackage import options, any new attribute manager or data view changes in ioGAS must first be saved in the .gas file and the file re-imported into QGIS. If a previous layer of the same name already exists in QGIS the following protocols are observed:

- Importing new scratch layer with same name as existing scratch layer will overwrite existing scratch layer.
- Importing new scratch layer with same name as existing GeoPackage layer will remove existing GeoPackage layer from map window and replace with new scratch layer. Original GeoPackage file is retained.
- Importing new GeoPackage layer with same name as existing GeoPackage layer will overwrite existing layer and update GeoPackage file.

## Update Data from QGIS - Live Link Layer Only

When the live link layer is active, selected data points of interest in QGIS can be added to the attribute manager in ioGAS as a new or to an existing attribute group.

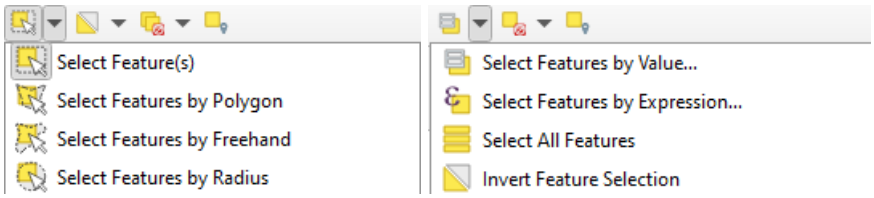
In ioGAS these data selections can be viewed in any open plot windows, used with other analysis tools such as summary statistics, discriminant projection analysis, etc which generate results based on attribute groupings or as a filter group to subset the dataset.

Any changes to the live link layer symbology or visibility in QGIS are not reflected in ioGAS. These changes can only be controlled via the attribute manager in ioGAS.

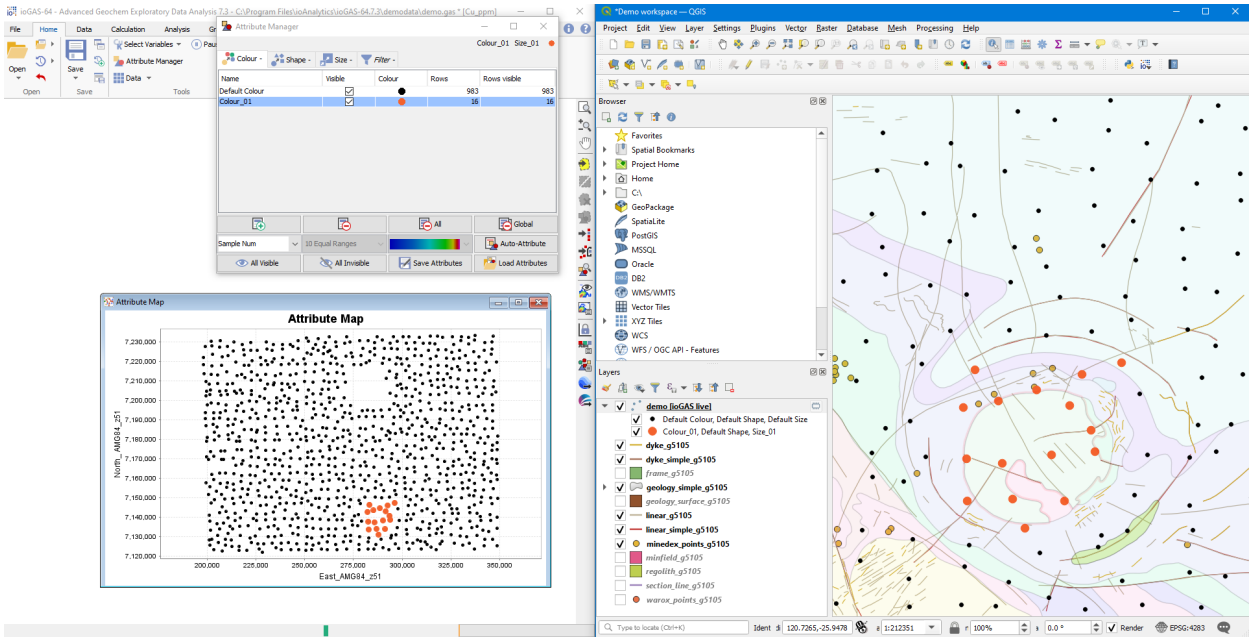
1. In ioGAS highlight a new or existing attribute group in the Attribute Manager. The selected data in QGIS is added to the highlighted attribute group.

2. In QGIS make sure that the live link layer is at the top of the list in the layer pane. (This is so the selection tools will select the points from the correct layer)

3. Use any of the following QGIS tools to select and highlight the desired data points from the live link layer in the QGIS map window:




4. Once the points are selected they are attributed in both ioGAS and the QGIS map window.




Additional selections can be made in the QGIS window and added to the existing attribute group in ioGAS or to new attribute groups.

5. Continue making selections in QGIS or ioGAS and analysing the data in ioGAS.

## Activate Live Link Layer from QGIS

The workflow above shows how to open a dataset in ioGAS and view the data points as a live layer in the QGIS map window. It is also possible to select an existing layer in the QGIS map window to use as the live link layer and analyse the data in ioGAS.

1. Start the QGIS application and open all of the desired GIS layers into a QGIS map window.

2. Go to the **Import ioGAS File** button on the plugins toolbar. Alternatively, go to the **Vector | Import ioGAS file** menu option and choose the live link option.

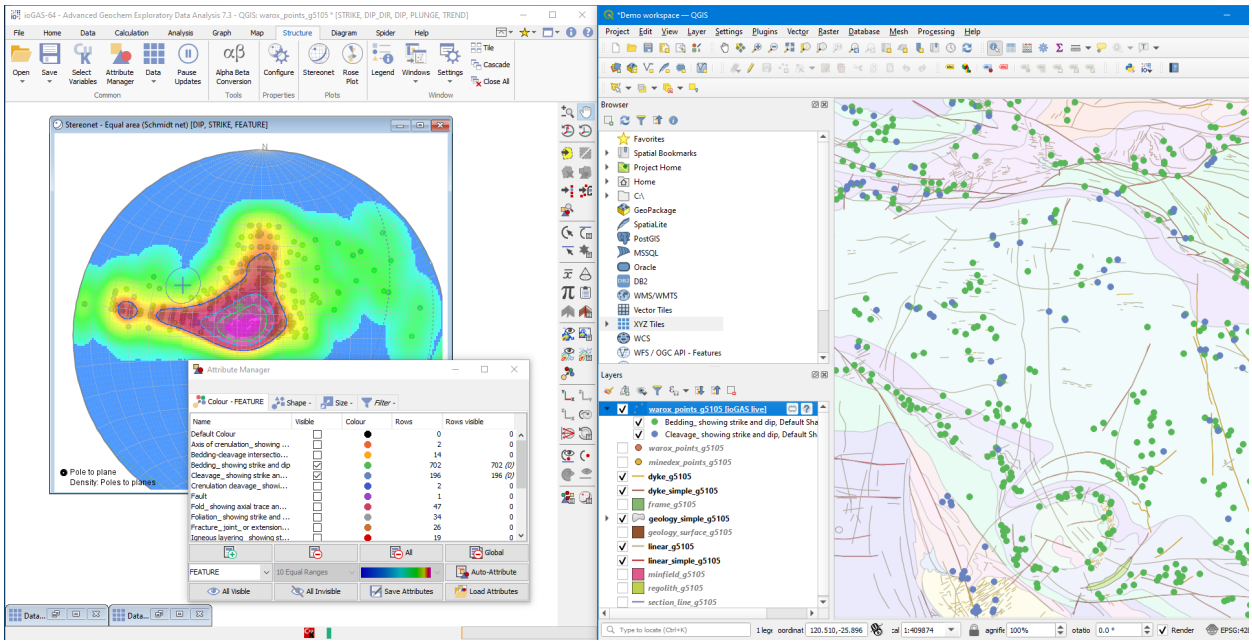
3. Start the ioGAS application. In **the** File ribbon select **Open Link Data**.

4. If there is only one point layer visible in the QGIS map window it is automatically selected as the live link layer. If there is more than one point layer, select the desired layer from the displayed dialog in ioGAS.

5. A copy of the selected point layer is added to the QGIS layer pane using the name of layer and a **[ioGAS live]** extension. The data points are displayed with the default colour, shape, size attributes.

6. In ioGAS the same data layer is loaded, ready for analysis. Each point is assigned the coordinates from its location in the open QGIS map window however the default projection in ioGAS is Non-Earth. To change this go to Column Properties.

7. Proceed to make selections and update attributes using the analysis tools in ioGAS as usual.



## Save Scratch and Live Link Layers

The scratch and live link layers displayed in both QGIS and ioGAS are temporary layers only. To save a live link layer in ioGAS use the **Save** or **Save As** menu options.

To save a scratch or live link layer in QGIS, right click on the layer and select **Make Permanent**.

## End Live Link Session

To stop a 'live link' session at any time select **Disconnect Live Link** from the QGIS plugin menu. Alternatively close the ioGAS or QGIS applications.

## Trouble Shooting

If you have difficulty with the ioGAS QGIS Plugin please lodge a support issue through the IMDEX Customer Care Portal or send an email to iogas.support@imdexlimited.com.

Log files are used by IMDEX to diagnose technical support issues so please try to include this file with your support query. By default, the ioGASPlugin.log file is located in:

- **C:\Users*Username*\AppData\Roaming\ioGAS.QGIS\log folder** (Windows)
- **home/library/application support/ioGAS.QGIS folder** (Mac)

# Support

## Customer Service Portal

The Help ribbon provides access to the IMDEX Customer Service portal for existing ioGAS users. Search the ioGAS knowledge base, get help or request an enhancement. The support portal can also be used to lodge licence requests. A one-off registration is required to access the customer service portal.

Where possible include a screen capture of the **Help>About** information and a copy of the **log.txt** files. (Use **Browse to Logs** on the Help ribbon to locate the log files).

Technical support is not intended to provide remote training in the software. For training enquiries please contact iogas@imdexlimited.com.

Technical support is available for maintained clients only. Server and single seat (timed) licences automatically include technical support. Existing single seat (perpetual) licence holders must pay an ongoing annual maintenance fee in order to continue to receive technical support.

## Email Support

Email support is available for trial users and existing ioGAS clients who are unable to access the IMDEX Customer Service Portal.

Contact Details:

Email: iogas.support@imdexlimited.com