

Gravity Mapping Program Chart and Design Explanation

Flow Chart Key

- **Blue** indicates User inputs, actions and/or viewed information in the Web Browser
- **Purple** indicates predefined processes that are executed on the Users machine by the Web Browser
- **Green** indicates predefined processes that are executed on the Web Server
- **Red** indicates predefined processes that are executed on the Database Server

Term Definition/Clarification for

- **Round and Offset** – Rounding and Offsetting the Latitude and Longitudes involves moving the provided values to the closest value in the database (eg. Round to the closest 0.002 and offset by 0.001 because the database includes values such as 31.123 & 31.125, etc)
- **Database Limits** – Per the Database table below the data is not currently available for all Latitudes and Longitudes
- **Aspect Ratio** – It is important to calculate the Aspect ratio of the map window since the outputted heat map is based on circular points and hence it is important to have a square spacing for the output array
- **Ideal Plot Horizontal Resolution** – This represents the number of points that would be plotted in the heat map along the horizontal axis to ensure the spacing between the plotted points is equal horizontally and vertically and is related to the Ideal Plot Vertical Resolution which is set as a variable in the Web Server code
- **Database Vert & Hori Plot Resolution** – This represents the number of points that would be plotted (both horizontally and vertically) if the given map window size was used with the resolution available from the database.
- **Step** – Using the chosen resolution (based on the minimum acceptable resolution in order not to overload the Web Server and Database Server with data requests but in order to display a map with acceptable definition) calculate what the 'step' in Latitude and Longitude values will be to achieve that number of data points in the request array