Munsys 14.4

QUERY USER MANUAL

Munsys® Query User Manual

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Introducing Munsys Query

Welcome to Munsys Query

Munsys Query provides design engineers with the necessary functionality to query and view both Munsys and external spatial and attribute data in an AutoCAD environment for data access and planning purposes.

Munsys Query forms part of the Munsys product family, which comprises the following applications:

- Munsys Cadastral
- Munsys Cable Route
- Munsys Cable Fiber
- Munsys Drainage
- Munsys Electricity
- Munsys Roads
- Munsys Sewer
- Munsys Water
- Munsys Map Books
- Munsys Spatial Data Manager
- Munsys Management Console
- *Munsys Query*
- Munsys Lineage
- Munsys Scheduled Tasks

About this manual

The *Munsys Query User Manual* enables users to easily find their way around Munsys query, and provides a conceptual overview of the functionality used in Munsys Query. For the purpose of this manual, we assume that you are familiar with:

- The business rules of the application
- AutoCAD Map
- Common GIS terminology

What's in this manual

The *Munsys Query User Manual* consists of the following chapters:

- Chapter 1 – Introducing the Munsys Query User Manual, gives an overview of this manual, and provides links to additional reading material.
- Chapter 2 – Getting acquainted with Munsys Query, gives an overview of Munsys Query and its various components.
- Chapter 3 – Querying data from the database, describes how to query data from the database using Munsys Query.

Additional reading material

Before you start using this manual, we suggest that you first read the Munsys Concepts User Manual, which contains the following information:

- the generic functionality of the various Munsys applications, including the Query Palette and the Info Palette
- the generic query functionality that is used to query spatial data from the Oracle® database
- how to structure a query through GSC settings
- how to view spatial data
- extras such as annotation, reporting and legend options

Conventions in this manual

The following table lists the typographical conventions used in this manual.

Text element	Example
Keys you press on the keyboard	CTRL, ENTER, DEL
Screen buttons	Click Close.
Folder paths	C:\Program Files\Open Spatial\
Menu paths	choose Query > Clear Basemap.
Hypertext links to more information	http://www.openspatial.com
Text displayed/typed on the command line	Munsys Query
Dialog box/screen names	The Create New GSC dialog box
Application functions	The Query function

Table 1 Munsys typographical conventions

Finding the information you need

To get help on

- general issues, select Help from the Munsys menu bar.
- an operation in progress, click the Help button on the dialog box.
- the latest support options, visit http://www.openspatial.com

Chapter 2
Getting acquainted with Munsys Query

Introducing Munsys Query

Munsys Query gives engineers direct access to the latest GIS information from within a familiar CAD environment. The same seamless Oracle database that is used by the GIS users can be accessed directly (read only) to create CAD drawings containing the latest spatial and attribute information. This information can then be manipulated for design purposes using standard AutoCAD functionality.

The same easy to use interface that is used by the standard Munsys applications is also used by Munsys Query. This includes a customizable menu, standard GIS queries, and attribute templates for viewing related attribute information

Launching Munsys and Munsys Query

To launch Munsys, do one of the following:

1 Double-click the **Munsys Applications 14.4** icon on the Windows desktop.

2 Choose **Start** > **Program Files** > **Open Spatial > Munsys 14.4** > **Munsys Applications 14.4**

Connecting to the Oracle database

Munsys uses Oracle as its data store. The advantage of using the Oracle Spatial or locator technology is that spatial and attribute data are captured and managed in a single database. This reduces processing overheads and eliminates the complexity of coordinating and synchronizing different sets of data.

The Munsys Applications support multiple Logons which permit users to logon to different databases such as Training, Test or Production databases by selecting a Logon Profile from a drop-down list. When the Connect function is selected, the logon credentials (excluding the password) are pre-populated based on last successful database connection.

The Logon Profile details are customizable and stored in the Current User's Registry Keys. By default, three Logon Profiles are defined, namely Logon1, Logon2 and Logon3. The Logon Profile descriptions can be changed from the default description to be more meaningful one by simply clicking in the text box next to the Logon Profile and overwriting the default value.

Important You have to be connected to the Oracle database before you can start working with Munsys Drainage. If you try to launch any application without being connected to the database, you will be prompted to connect first.

To connect to the Oracle database

1 For first time connection do one of the following:

- Choose **File** > **Database** > **Connect...**
- Click the **Connect to Database** button on the Munsys standard toolbar.

The Connect to Database dialog box is displayed.

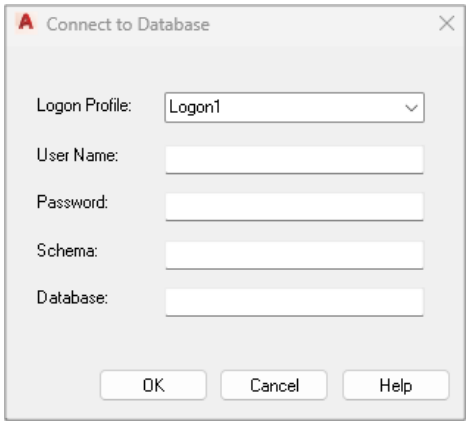


Figure 1 The Connect to Database dialog box

2 In the **Logon Profile** box, select a profile from the drop-down list.

Note The Logon Profile can be changed to a more meaningful description by clicking in the Logon Profile text box and overwriting the default description with a value not exceeding 25 characters, for example: TRAINING, TEST, STAGING or PRODUCTION.

3 In the **User Name** field, enter your user name.

4 In the **Password** field, enter your password.

5 In the **Schema** field, enter the schema name.

6 In the **Database** field, enter the database name.

7 Click **OK**.

On successful connection to the database, the last Logon Profile, User Name, Schema and Database details are saved in your Current User's Registry Key where they are used to pre-populate the Connect to Database dialog-box on next logon. Your password is never saved, and you will always be prompted to enter your Password.

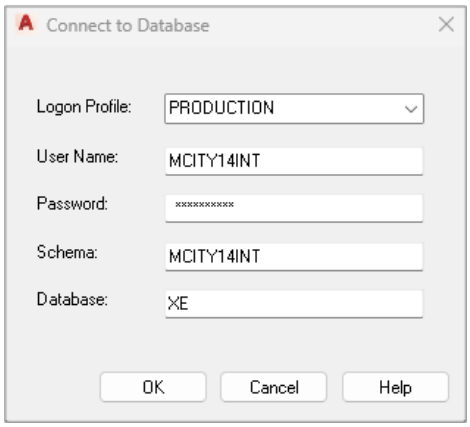


Figure 2 The Connect to Database dialog box with Logon Profile

Note The last used Logon Profile details, and the various Logon descriptions are stored in the registry key **Computer\HKEY_CURRENT_USER\Software\Open Spatial\Munsys 14.4\Applications\Logons**, whilst the registry key **Computer\HKEY_CURRENT_USER\Software\Open Spatial\Munsys 14.4\Applications\Logons\[Logon1]** saves the individual User Name, Schema and Environment Name details per Logon Profile.

The administrator assigns you user rights to log on to the database, and will inform you what your user name, password, schema name, and database are. A successful connection to the database activates the appropriate functions on the menu bar and toolbars.

To launch Munsys Query

When you launch Munsys for the first time, the configured base map automatically loads. When you launch Munsys Query, the Munsys Query functions are loaded onto the menu bar and toolbars.

1 To launch Munsys Query, do one of the following:

- Choose **File** > **Munsys Applications**.
- Click the **Munsys Applications** button on the Munsys standard toolbar.

The Available Applications dialog box is displayed.

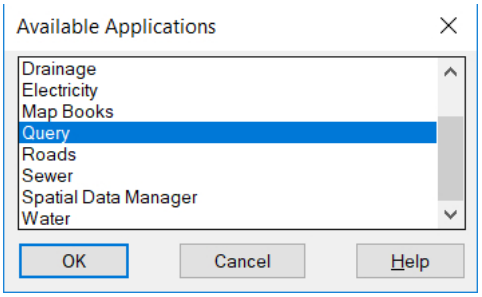


Figure 3 The Available Applications dialog box

2 From the list of available applications, select **Query,** and then click **OK**.

To zoom to the database extents

Do one of the following:

- Choose **Query** > **DB Extents** > **Zoom to DB Extents**.
- Click the **Zoom DB Extents** button on the Munsys **Main** toolbar.

The database extent is indicated by a dotted line.

The Munsys Query user interface

The Munsys Query user interface consists of the following:

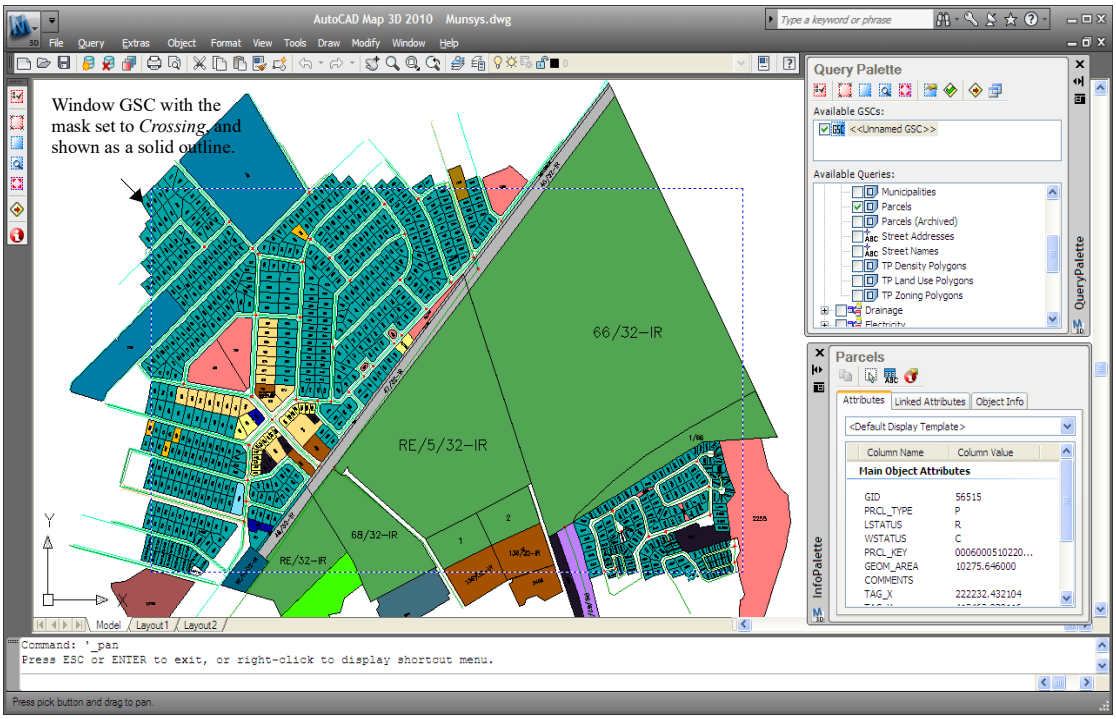


Figure 4 The Munsys Query user interface

- Munsys menu bar – contains the Munsys and AutoCAD menus. Munsys menus are defined by a menu file, which automatically loads when the Munsys application is launched.
- Standard toolbar – contains frequently used AutoCAD buttons, standard Microsoft buttons and Munsys buttons for connecting to the database, disconnecting from the database and unloading Munsys Query.

Use this button	When you want to...
	...connect to the Oracle database.
	...disconnect from the Oracle database.
	...launch Munsys Query

Table 1 Munsys Query Standard toolbar buttons

- Munsys Query main toolbar – contains Munsys Geographic Search Criteria, query and other functions.

Use this button	When you want to...
	...specify GSC settings.
	...create a new GSC.
	...create a new GSC Screen Extents.
	...show the active GSC.
	...zoom to the GSC extents.
	...zoom to the database extents.
	...run a query.
	...launch the Info Palette.

Table 2 The Munsys Query main toolbar

- AutoCAD drawing area – this area is used to display Munsys data that is retrieved from the database, AutoCAD drawings, as well as other external formats imported by Autodesk.
- AutoCAD command line – displays prompts and messages.
- AutoCAD status bar – displays information and drawing aids.

In Munsys Query, functions can be executed by:

- Typing the command on the command line
- Activating the function from the menu bar
- Clicking the appropriate button on the toolbar

Connecting to the Oracle database

Munsys uses Oracle as its data store. The advantage of using Oracle – particularly its spatial technology – is that spatial and attribute data are captured and managed in a single database. This reduces processing overheads and eliminates the complexity of coordinating and synchronizing disparate sets of data.

When you launch Munsys Query, you first have to connect to the Oracle database in order to access data.

The database administrator assigns you user rights to log on to the database, and will inform you what your user name, password, schema name, and database are. A successful connection to the database activates the appropriate functions on the menu bar and toolbars.

Tip You can use the **Change Password** function on the **File** menu to change the password that you use to connect to the database.

To connect to the Oracle database

1 Do one of the following:

- Choose **File** > **Database** > **Connect...**
- Click the **Connect to Database...** button on the Munsys **Standard** toolbar.

The Connect to Database dialog box is displayed.

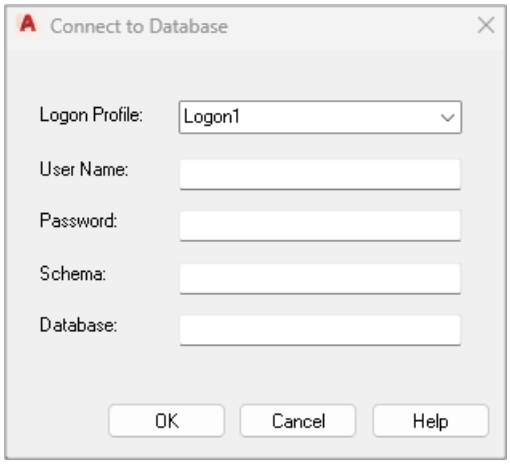


Figure 4 The Connect to Database dialog box

2 In the **Logon Profile** box, select a profile from the drop-down list.

Note The Logon Profile can be changed to a more meaningful description by clicking in the Logon Profile text box and overwriting the default description with a value not exceeding 25 characters, for example: TRAINING, TEST, STAGING or PRODUCTION.

3 In the **User Name** field, enter your user name.In the **Password** box, enter your password.

4 In the **Schema** box, enter the schema name.

5 In the **Database** box, enter the database, and then click **OK**.

On successful connection to the database, the last Logon Profile, User Name, Schema and Database details are saved in your Current User's Registry Key where they are used to pre-populate the Connect to Database dialog-box on next logon. Your password is never saved, and you will always be prompted to enter your Password.

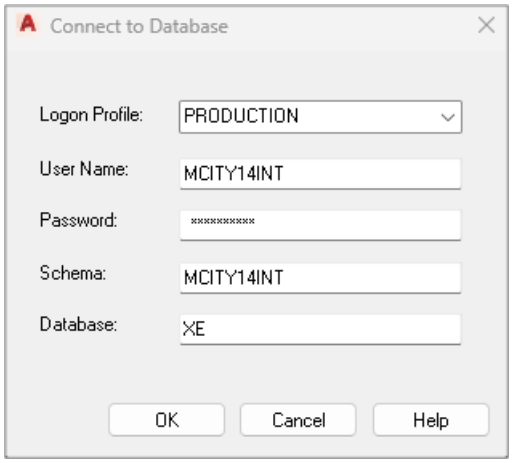


Figure 5 The Connect to Database dialog box

Note The last used Logon Profile details, and the various Logon descriptions are stored in the registry key **Computer\HKEY_CURRENT_USER\Software\Open Spatial\Munsys 14.4\Applications\Logons**, whilst the registry key **Computer\HKEY_CURRENT_USER\Software\Open Spatial\Munsys 14.4\Applications\Logons\[Logon1]** saves the individual User Name, Schema and Environment Name details per Logon Profile.

The administrator assigns you user rights to log on to the database, and will inform you what your user name, password, schema name, and database are. A successful connection to the database activates the appropriate functions on the menu bar and toolbars.

To change the password used to connect to the Oracle database

1 Do one of the following:

- Choose **File** > **Database** > **Change Password...**
- On the command line, type **MUNPASSWORD**, and then press ENTER.

The Changing password for user [*User*] dialog box is displayed.

Figure 6 The Changing password for user [User] dialog box

2 In the **Old password** box, type your current password.

3 In the **New password** box, type your new password.

4 In the **Retype new password** box, retype your new password.

Click OK to apply the new password.

To disconnect from the Oracle database

1 Do one of the following:

- Choose **File** > **Database** > **Disconnect...**
- Click the **Connect to Database** button on the Munsys standard toolbar.
- On the command line, type **MUNDISCONNECT**, and then press ENTER.

The connection to the database is terminated, and you will only be able to query data once an active connection has been restored.

Chapter 3
Querying data from the database

Introduction

In Munsys Query, data is retrieved from the database using the Munsys Query Palette and/or the Query menu. This chapter provides information about the query options that are available on the Query menu in the Munsys Query application.

The query options and functions on the Query Palette are discussed in detail in the *Munsys Concepts User Manual*.

Other functionality that is discussed in the *Munsys Concepts User Manual*:

- Geographical Search Criteria (GSC) options
- The Munsys Info Palette
- Browsing Information

Querying data from the database from the Query menu

A range of menu items on the Query menu are tailored for querying from a Munsys schema that has all the predefined spatial tables as used with other Munsys applications like Munsys Water, Munsys Sewer, etc. These menu items make it easy for users who are querying data that is captured and maintained by these Munsys applications.

In an environment where the Oracle schema was created using the process distributed with Munsys Query (a Munsys Query schema) these predefined tables will not exist and therefore these menu items cannot be used.

The following section explains how to query data from the database using the pre-defined (default) queries that are available on the Query menu. Customized (user-defined) queries are formulated on the Query Palette, which is discussed in the *Munsys Concepts User Manual.*

Specifying query preferences

The Query Preferences function is used to specify settings that will determine the format and conditions when spatial data is retrieved from the database. These options are stored in the registry and do not have to be set every time a new Munsys session is started. The following options are available:

- Use GSC – if this option is selected, the currently active GSC is applied as a spatial filter when the required objects are retrieved from the database.
- Create CAD Objects – if this option is selected, the objects are retrieved from thedatabase as AutoCAD drawing objects instead of Munsys objects.
- Attach Object Data – if this option is selected, attributes will be attached to the objects that are retrieved from the database. The objects may be Munsys or AutoCAD related. The attributes are always obtained from the primary spatial table. If the query is associated with a data group that relates the object(s) to an attribute table, the attribute will also include the columns from the retrieves all parcels or communities according to their status. (This option is only available when Munsys is run on AutoCAD Map.)

To specify query preferences, do the following:

1 Click the **Query Preferences** button on the **Query Palette** toolbar. (This function is also available on the Munsys Applications **Query** menu and the Munsys **Main** toolbar).

The Query Preferences dialog box is displayed.

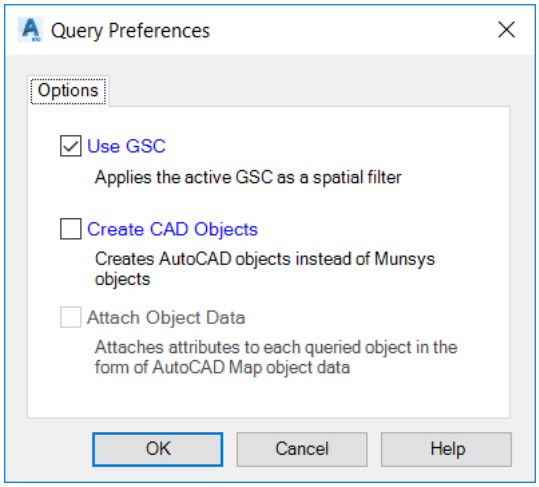


Figure 1 The Query Preferences dialog box

Select or clear any of the following check boxes:

- Use GSC – select this option if you want to apply the currently active GSC as a spatial filter when the objects are queried from the database.
- Create CAD objects – select this option to query the objects from the database as AutoCAD drawing objects instead of Munsys objects.
- Attach Object Data – this option is only available when Munsys is run on AutoCAD Map. Select this option if you want attributes to be attached to the objects that are queried from the database. The objects may be Munsys or AutoCAD related. The attributes are always obtained from the primary spatial table. If the query is associated with a data group that relates the object(s) to an attribute table, the attribute will also include the columns from the attribute table.

2 Click **OK** to apply the settings.

The settings are saved in the registry under the HKEY_CURRENT_USER\\Software\\Open Spatial\\Munsys 14.4\\ Applications\\ Options key.

Querying communities

Communities (suburbs, townships, municipalities, etc.) are queried from the database according to the current GSC, or by a selected community name. Suburb boundaries are displayed as polygons (MUNPOLY objects).

To query communities by name

1 Choose **Query** > [*Suburbs*] > **By Name...**

The Select [*Suburb*] dialog box is displayed, showing a list of all the available suburbs with their associated codes. The list can be sorted ascending or descending, according to the code or description.

2 From the list, select the suburb that you want to query, and then click **OK**.

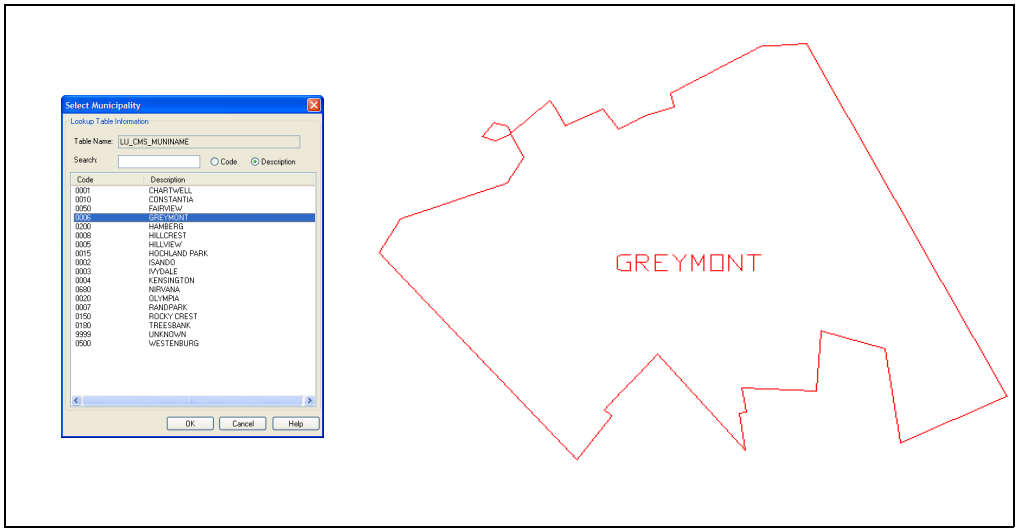


Figure 2 Querying a Municipality by Name

Tip If you want to query more than one suburb, press and hold down the **SHIFT** key (to select consecutive suburbs), or press and hold down the **CTRL** key, and then select each suburb that you want to query.

To query communities by GSC

- Choose **Query** > [*Suburbs]* > **By GSC**.

The suburb boundaries are retrieved according to the current GSC.

Querying Cable Route Objects

Using the functions on the Query menu, you can quickly retrieve cable route objects from the database according to the current GSC, or retrieve objects per object type.

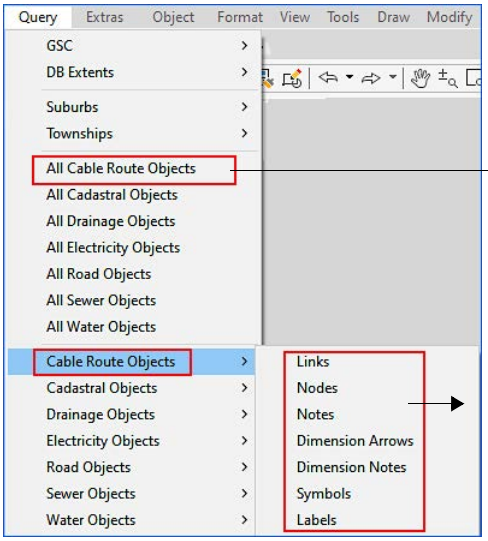


Figure 3 Cable Route Query Menu

Cable Route objects are defined as follows:

- Links – cable route runs which are placed, and in which the fiber cables will reside within.
- Nodes – cable route nodes to which the fiber cables would affect to connect to, or interact with.
- Notes – user defined notes which was captured and posted to the database.
- Dimension Arrows – arrows indicating the distance of the cable route segment in relation to two cadastal boundaries.
- Dimension Notes – text reflecting the distance of the dimension arrows in relation to the cadastral boundaries.
- Symbols – features which are captured for orientation purposes but does not break or influence the network.
- Labels – the cable route default material text, which is defined in the capture settings and placed on cable routes.

The following example shows cable route objects that have been queried from the database using the predefined queries on the Query menu:

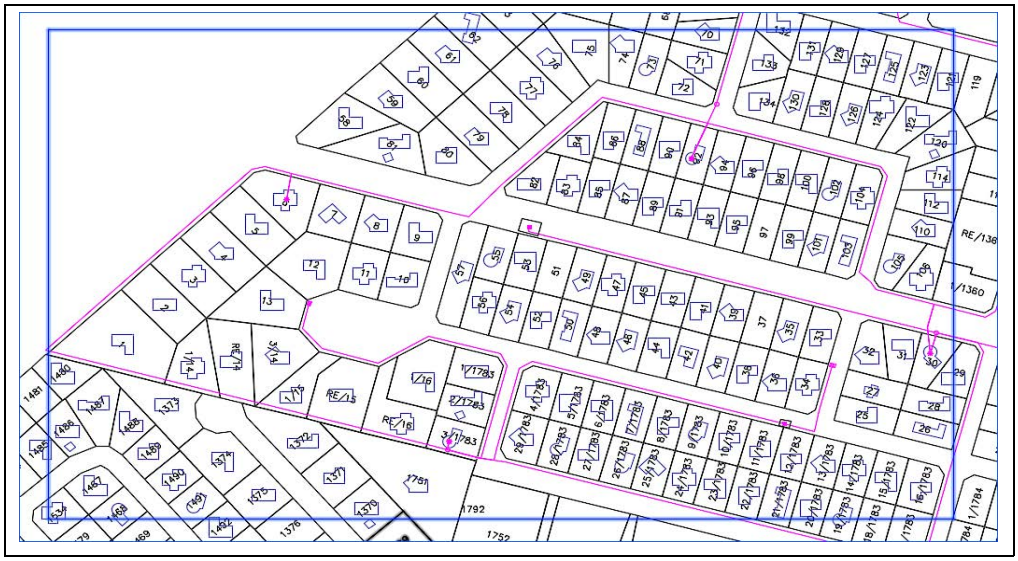
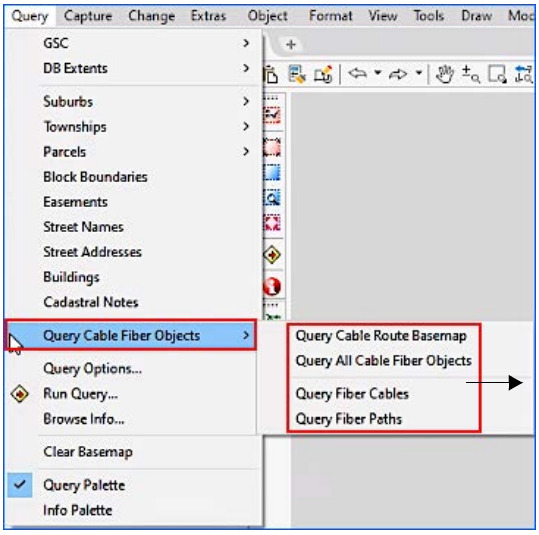


Figure 4 Querying Cable Route Objects

Querying Cable Fiber Objects

Using the functions on the Query menu, you can quickly retrieve cable route objects from the database according to the current GSC, or retrieve objects per object type.



With this group of functions, you can query Cable Fiber objects from the database by object type.

Figure 5 Cable Fiber Query Menu

Cable Fiber objects are defined as follows:

- Cable Route Basemap – This function retrieves all Cable Route and Building information from the database.
- All Cable Fiber Objects – This function retrieves all Cable Fiber objects from the database according to the current GSC.
- Fiber Cables – This function retrieves all Fiber Cables from the database according to the current GSC.
- Fiber Paths– This function retrieves all Fiber Paths from the database according to the current GSC.

The following example shows cable fiber objects that have been queried from the database using the predefined queries on the Query menu:

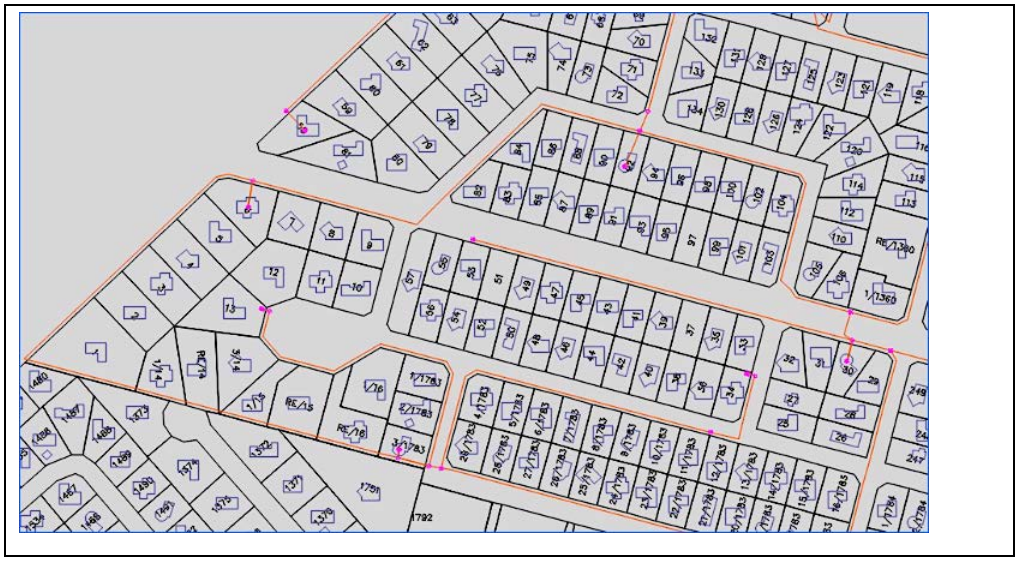


Figure 6 Querying Cable Fiber Objects

Querying cadastral objects

Using the functions on the Query menu, you can quickly retrieve cadastral objects from the database according to the current GSC.

Using the functions on the Query menu, you can quickly retrieve all the cadastral objects from the database according to the current GSC, or retrieve objects per object type.

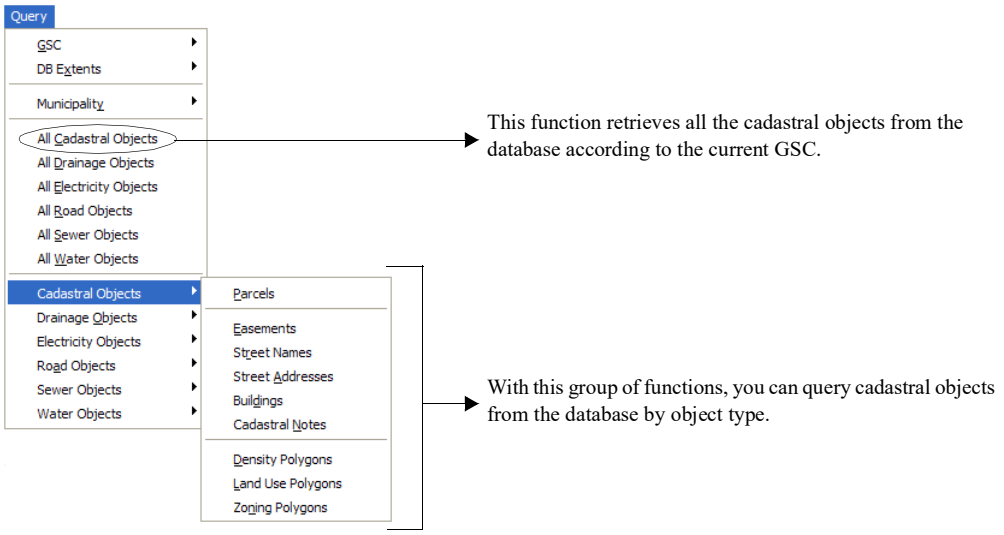


Figure 7 Cadastral Query Menu

Cadastral objects are defined as follows:

- Parcels – a distinct portion of land, which is captured from a registered plan by means of coordinates or angles of direction and distance.
- Easements – a registered area attached to a parcel for the benefit of the local authority. This area is used for the installation of services or right of way; the landowner is not allowed any permanent construction on this area.
- Street names and addresses – legal street names are assigned to sections of the road reserve and display as text. The address information is assigned at a specific point within the parcel polygon. In some cases, parcels can have more than one point of entry, and are therefore assigned multiple address points.
- Buildings – can be classified as different types according to the default values set up by the system administrator. New building types can be added to the list of available building types.
- Cadastral notes – additional notes pertaining to cadastral objects.
- Zoning, density and land use polygons – zoning classification defines the allowable use of the property, such as residential, business or commercial. Density classification defines the number of units (such as houses) that may be constructed on a parcel. Land use is based on function or activities; the purpose for which the land is being used. A land use type can include a series of activities that are required to produce one or more goods or services.

The following example shows cadastral objects that have been queried from the database using the predefined queries on the Query menu:

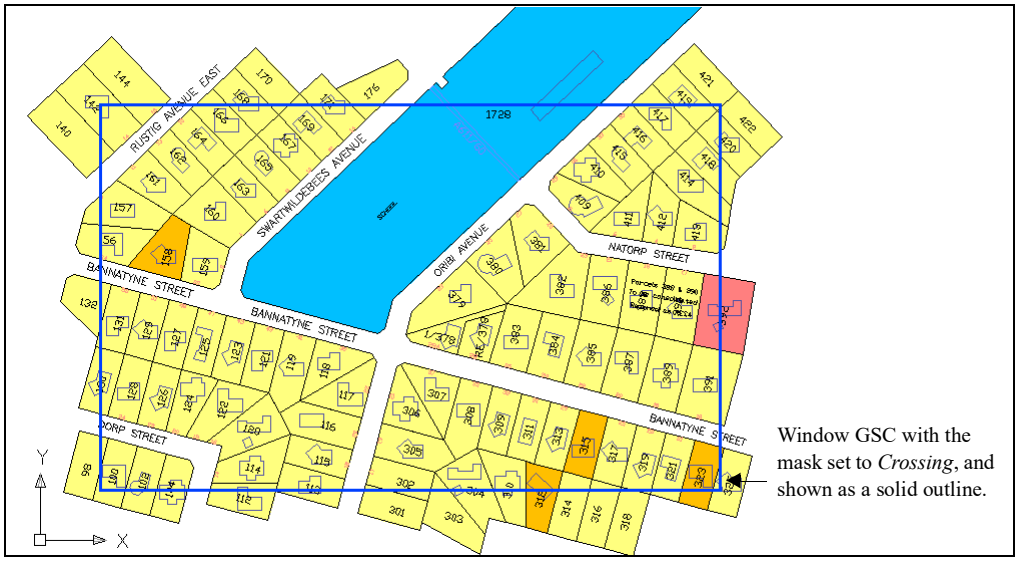


Figure 8 Querying Cadastral Objects

Querying drainage objects

Using the functions on the Query menu, you can either retrieve all the drainage objects from the database according to the current GSC, or retrieve drainage objects per object type.

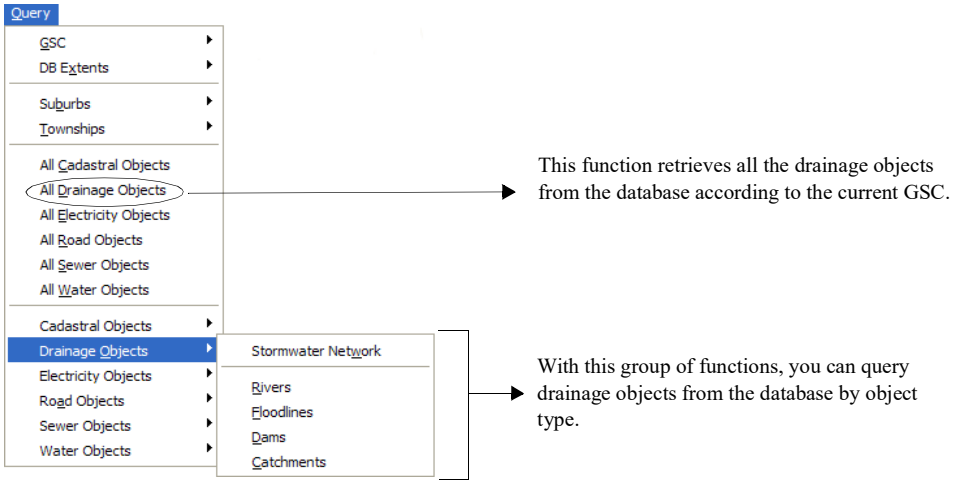


Figure 9 Drainage Query Menu

Drainage objects consist of the following:

- Stormwater network – all the drainage objects that contribute to the stormwater network, including stormwater pipes, culverts and channels, stormwater nodes (manholes, curb inlets, drop inlets, etc.), service connections, stormwater symbols, labels, notes and dimensions.
- Rivers – can be either polygons (MUNPOLY objects) or lines (MUNLINE objects)
- Floodlines – an estimate of the level to which water may rise on average (for example, every 20 or 50 years).
- Catchments – an area from which rainfall drains into a river, reservoir or dam.
- Dams – are queried as polygons

The following example shows drainage objects that have been queried from the database using the functions on the Query menu:

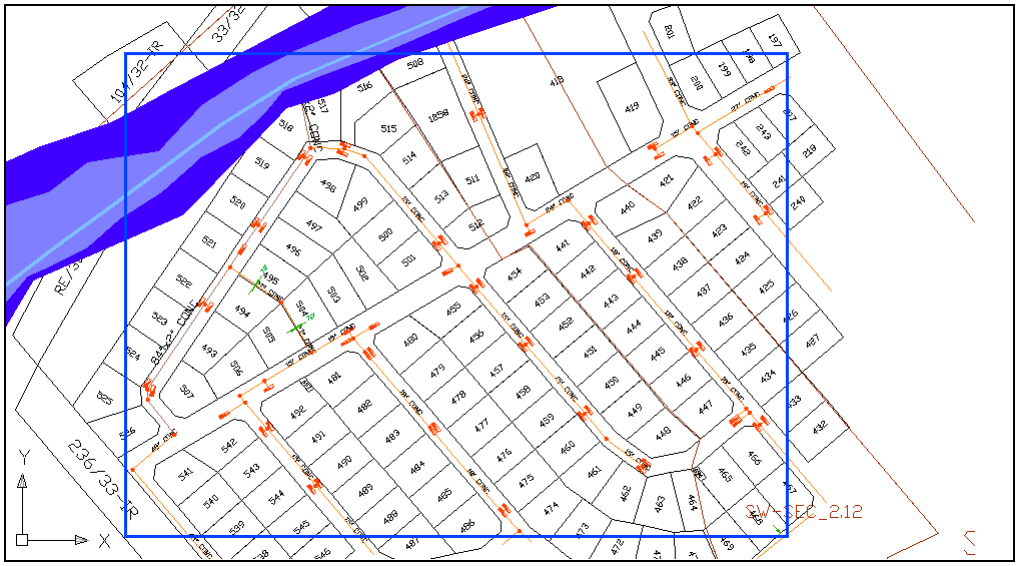


Figure 10 Querying Drainage Objects

Querying electricity objects

Using the functions on the Query menu, you can either retrieve all the electricity objects from the database according to the current GSC, or retrieve electricity objects per object type.

Electricity objects can be retrieved as follows:

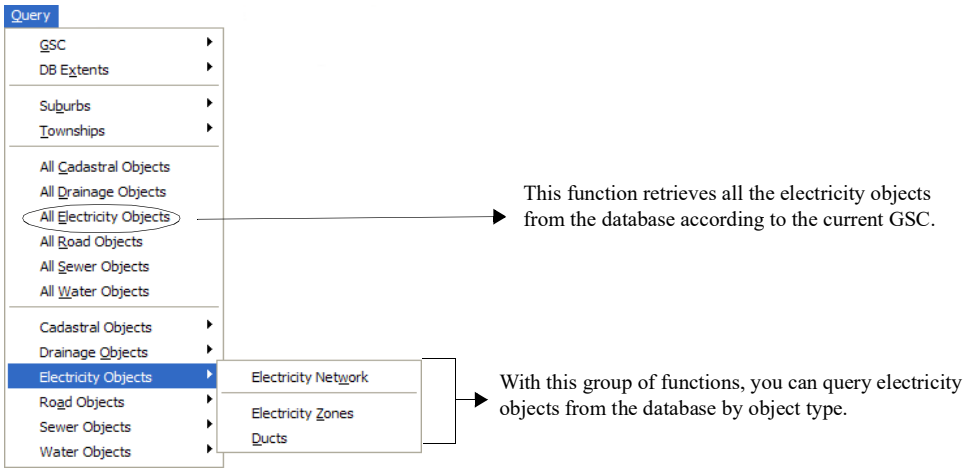


Figure 11 Electricity Query Menu

Electricity objects consists of the following:

- Electricity network objects – all the electricity objects that contribute to the electricity network, including cables, nodes, service connections, notes and dimensions
- Electricity zones – transformer supply areas
- Electricity ducts – carry electricity cables under the road

The following example shows electricity objects that have been queried from the database using the predefined queries on the Query menu:

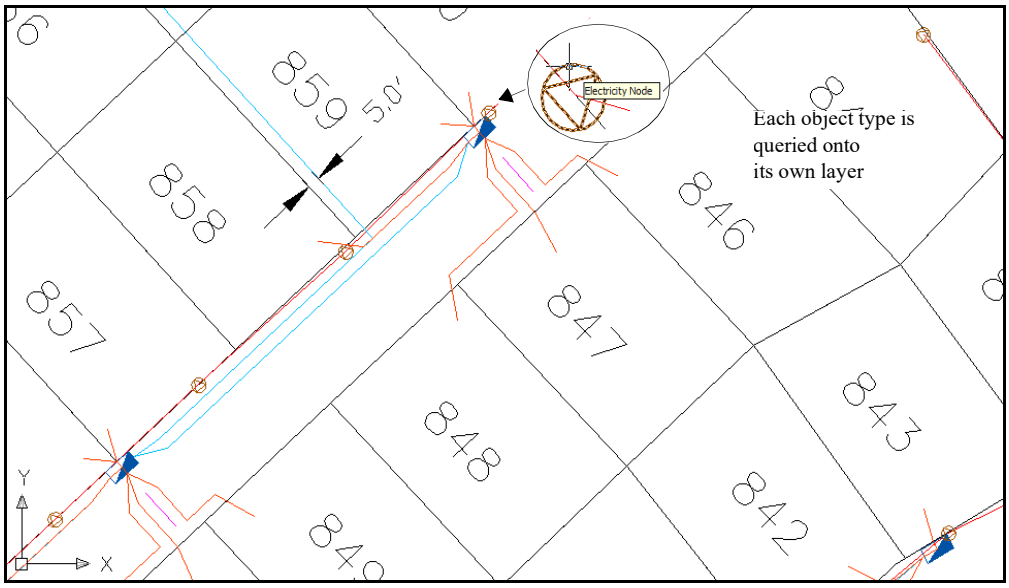


Figure 12 Querying Electricity Objects

Querying road objects

Using the functions on the Query menu, you can either retrieve all the road objects from the database according to the current GSC, or retrieve road objects per object type.

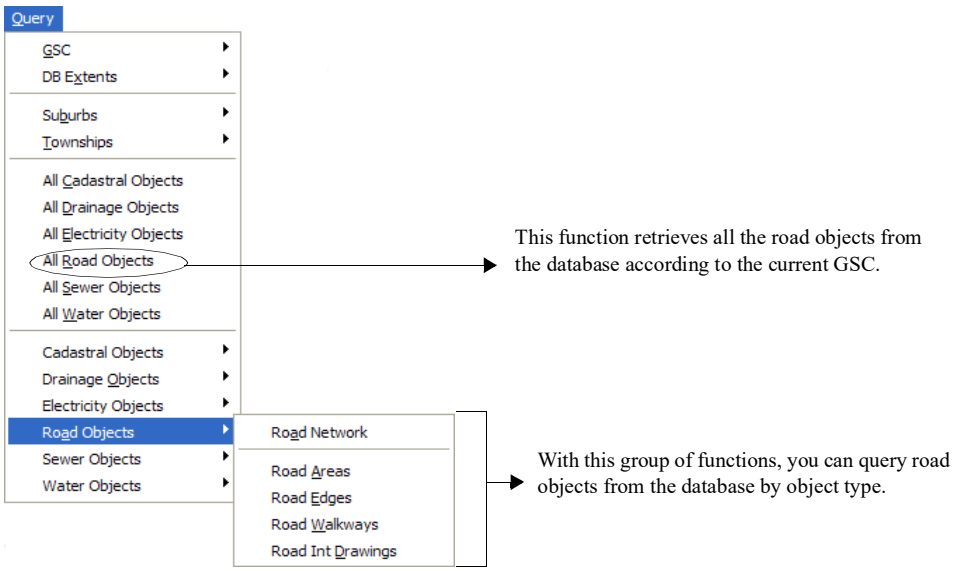


Figure 13 Road Query Menu

Road objects can be retrieved as follows:

- Road network objects – all the road objects that contribute to the road network, including road center lines, intersection markers and road notes
- Road areas – an area that is designated for the location of constructions within the composition of a road and for the organization of road management
- Road edges – mountable, non-mountable or semi-mountable curbs
- Road walkways – pedestrian pathways, which are tarred or paved
- Road intersection drawings – AutoCAD drawings that are referenced to specific road intersection markers

The following example shows road objects that have been queried from the database using the predefined queries on the Query menu:

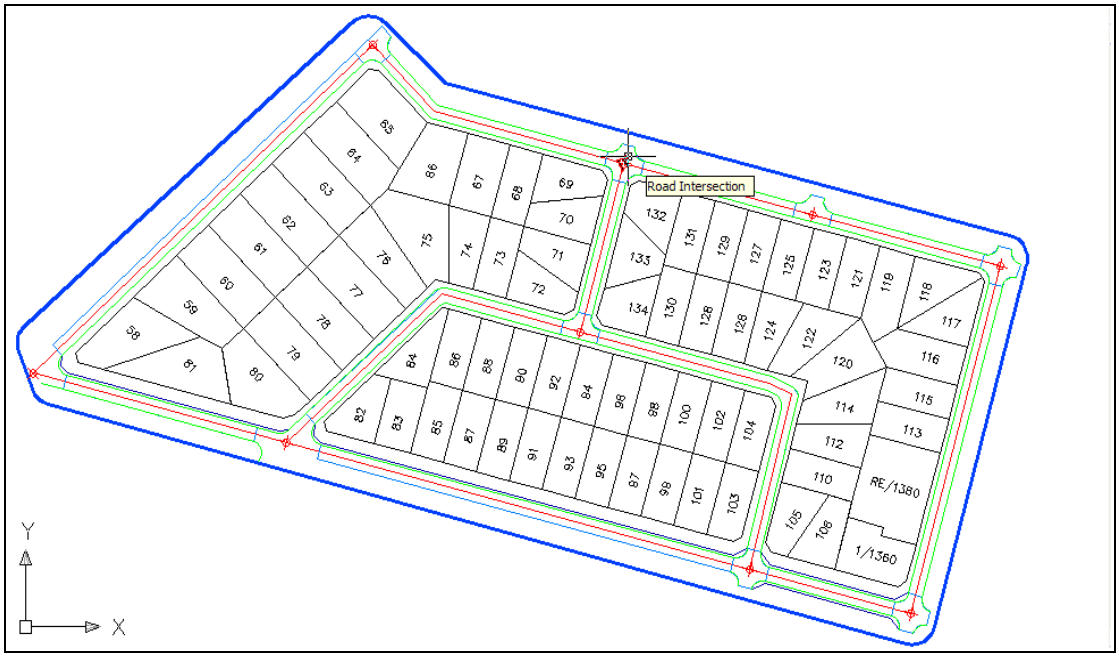


Figure 14 Querying Road Objects

Querying sewer objects

Using the functions on the Query menu, you can either retrieve all the sewer objects from the database according to the current GSC, or retrieve sewer objects per object type.

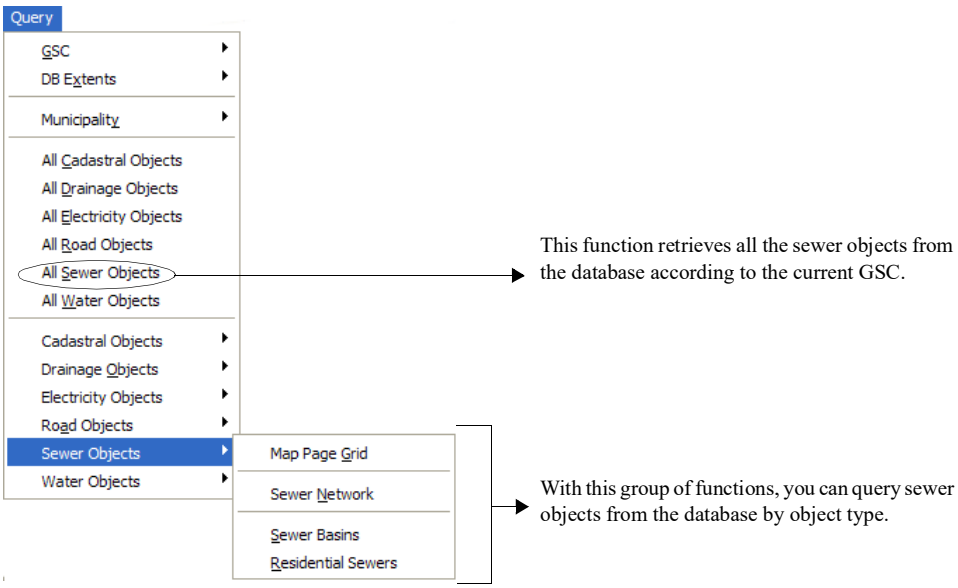


Figure 15 Sewer Query Menu

Sewer objects can be retrieved as follows:

- Sewer network objects – all the sewer objects that contribute to the sewer network, including pipes, nodes, service connections, labels, sewer symbols, notes and dimensions
- Sewer map page grid – used to locate services based on the map page number, and is represented by a layout of polygons
- Sewer basins – represent different networks up to the purification works, or even smaller sections up to the primary outfall sewers
- Residential sewers – indicate the sewer pipes running from buildings to service connections

The following example shows sewer objects that have been queried from the database using the predefined queries on the Query menu:

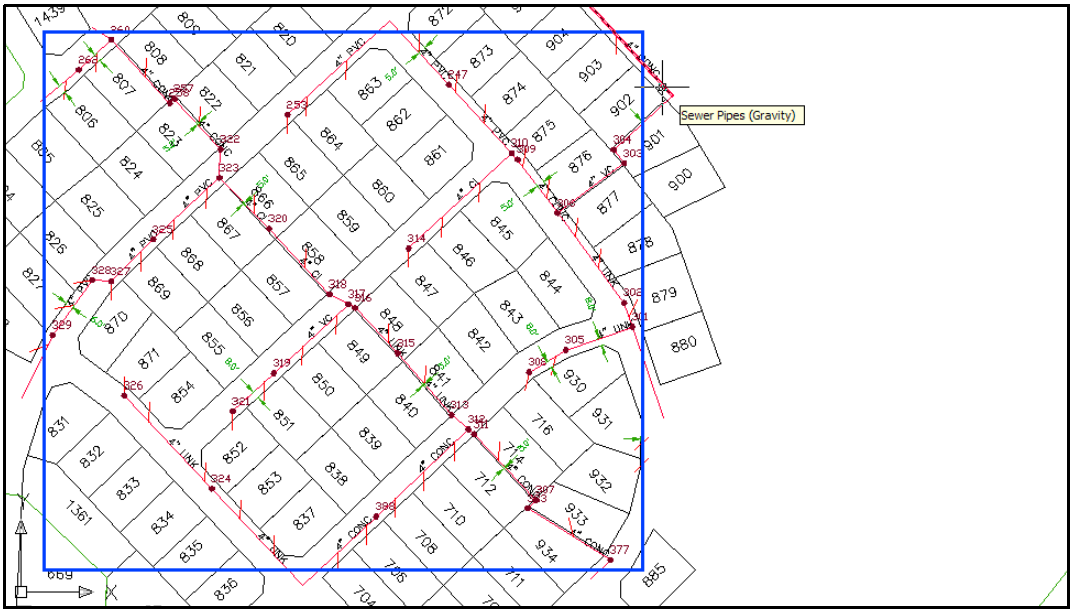


Figure 16 Querying all Sewer Objects

Querying water objects

Using the functions on the Query menu, you can either retrieve all the water objects from the database according to the current GSC, or retrieve water objects per object type.

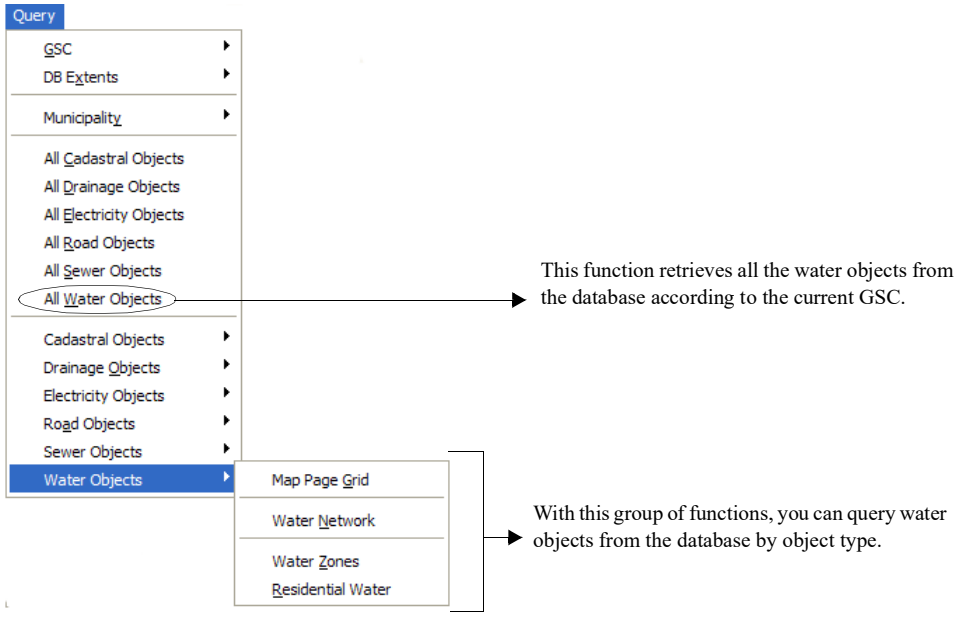


Figure 17 Water Query Menu

Water objects can be retrieved as follows:

- Water network objects – all the water objects that contribute to the water network, including pipes, nodes, service connections, labels, water symbols, notes and dimensions
- Water map page grid – used to locate services based on the map page number, and is represented by a layout of polygons
- Water zones – provide an overview of the water network layout.
- Residential water pipes – indicate the water pipes running from buildings to service connections

Note The queries on the **Query** menu shown above retrieve the water objects from all four water categories (potable, reclaimed, raw and abandoned) from the database. If you want to query water objects by category, you will have to specify a user-defined query in the Munsys Query Palette.

The following example shows water objects that have been queried from the database using the predefined queries on the Query menu:

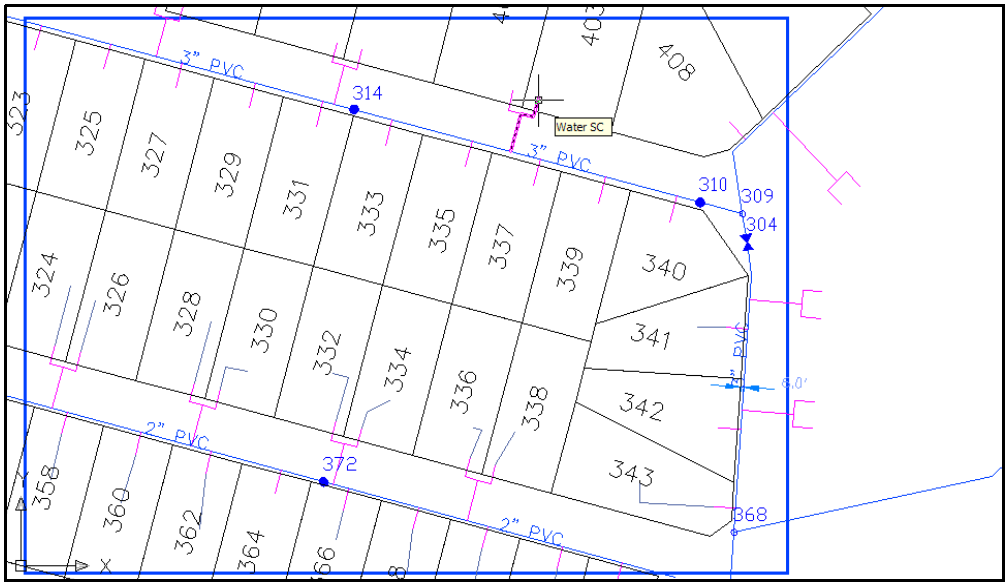


Figure 18 Querying all Water Objects

Running multiple queries using the Query List dialog box

A selection of one or more predefined queries can be run using the Query List dialog box, which can be called from the Query Palette toolbar, the Query menu, or the command line. The list of queries on the dialog box shows the name of the query, the category it belongs to and its priority, in descending order.

Tip The list can be re-sorted by clicking on the appropriate header.

The list of queries that is displayed on the dialog box is dependent on user privileges. This is firstly restricted by the roles assigned to the user, since the query categories restrict access to the queries in the category through roles. Secondly, access to queries is also restricted by the privileges assigned to the user with regard to the tables referenced in the queries.

The queries that have been selected are run in order of their query priority; queries with a priority of 0 are run first, followed by queries with a higher number. As the queries are run, feedback about the number of objects retrieved is provided on the command line.

Tip Use the **Query Preferences** button on the **Query List** dialog box to specify query preferences before the queries are executed.

1 To run multiple queries using the **Query List** dialog box, do one of the following:

- Click the Run Query button on the Query Palette toolbar.
- Choose Query > Run Query.
- Click the Run Query button on the Munsys Main toolbar.
- On the command line, enter MUNQRYRUN.

The Query List dialog box is displayed.

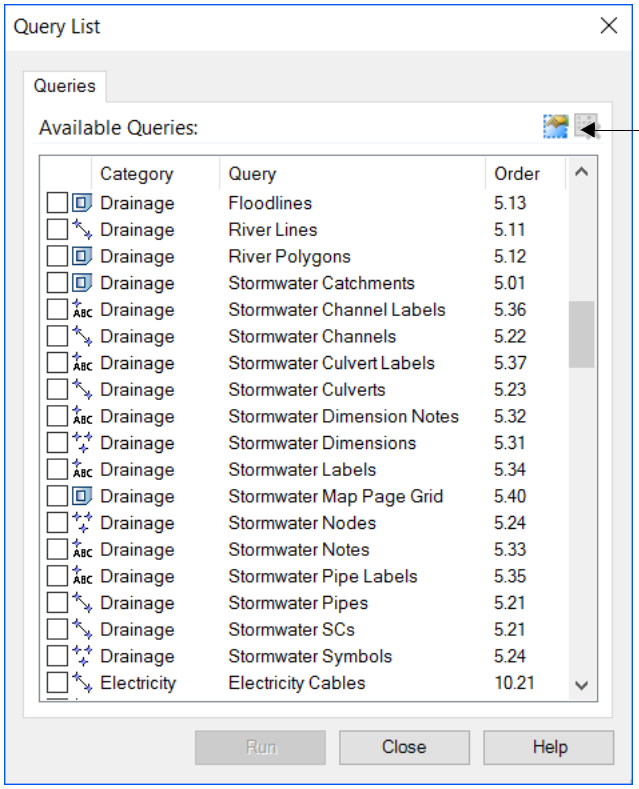


Figure 19 The Query List dialog box

2 Select the queries that you want to run from the list of available queries. Use the **Query Preferences** button to specify query preferences before the list of queries is run.

3 Click the **Run** button to run the selected queries.

The queries are run according to their query preference, and the command line displays the number of objects that were retrieved from the database for each query.

Browsing Information

The browse selection opens a resizable modeless browsing window so that the user can view the queried objects in the drawing while browsing the attribute information in the browsing window. Multiple Browsing windows can be opened simultaneously to view attribute data for different spatial objects, for example Sewer Pipes and Sewer Nodes.

Once the sources are identified, the content from the predefined sources is displayed in a table format that includes a row entry for every record and a column to specify the type of information available. To browse information, you will do the following:

- Define the sources to browse
- Browse content from sources

Defining sources to browse

When initiating the browse command from the Query > Browse Info... menu item or from typing the command MUNBROWSE in the command line, the user is presented with the Browse Selection dialog box which has the following two tabs:

- Queries tab - displays a list of all user and default system queries available to the user dependent on their roles assigned.
- Tables/Views tab - displays a list of table items that are available to the user dependent on their roles assigned.

On the Queries tab the user is presented with a list of Query Categories which, when expanded, display a list of User Queries and default System Queries. The availability of query categories and their associated queries is dependent on the roles assigned to the user. A user with the role MUNSYS_ALL_QUERY will have access to view all the spatial tables in the database.

If the Browse Info function is initiated from either the Query > Browse Info... menu item or by typing the command MUNBROWSE at the command line, the Browse Info dialog box with the Tables/Views tab is displayed. The user must select one of the following items to browse:

- All Tables - lists all tables in the database.
- Attribute Templates - lists all attribute templates in the database.
- Lookup Tables - lists all lookup tables in the database.
- Queried Objects - lists the tables for objects queried into the drawing.
- Spatial Tables - lists all spatial tables in the database.
- Views - lists all spatial views in the database.

Once the user selects one of the items to browse, the Browse Selection window is displayed and a list of all available tables are populated to the content pane.

To define sources to browse

1 Choose **Query** > **Browse Info...**

The Browse Selection dialog box is displayed.

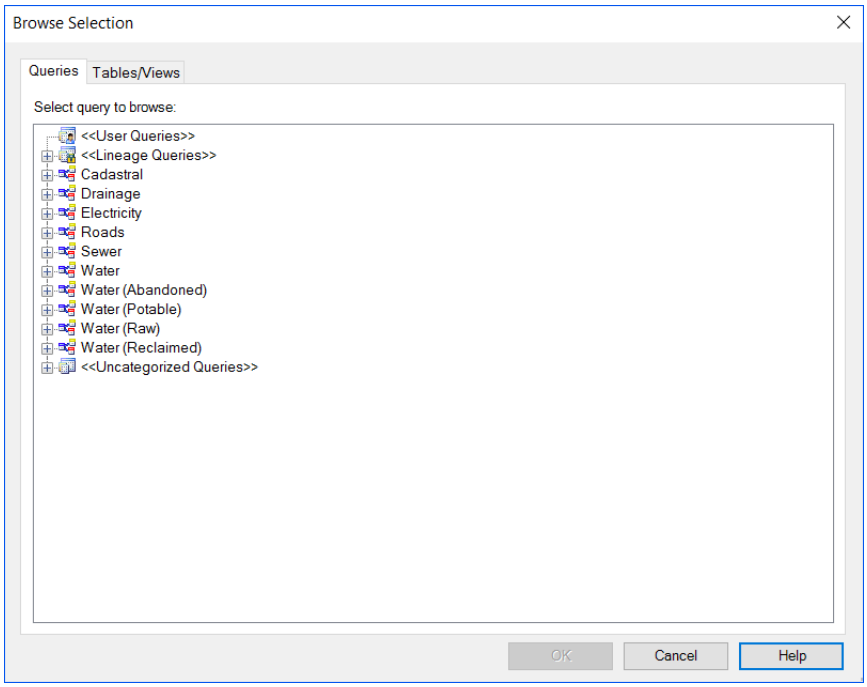


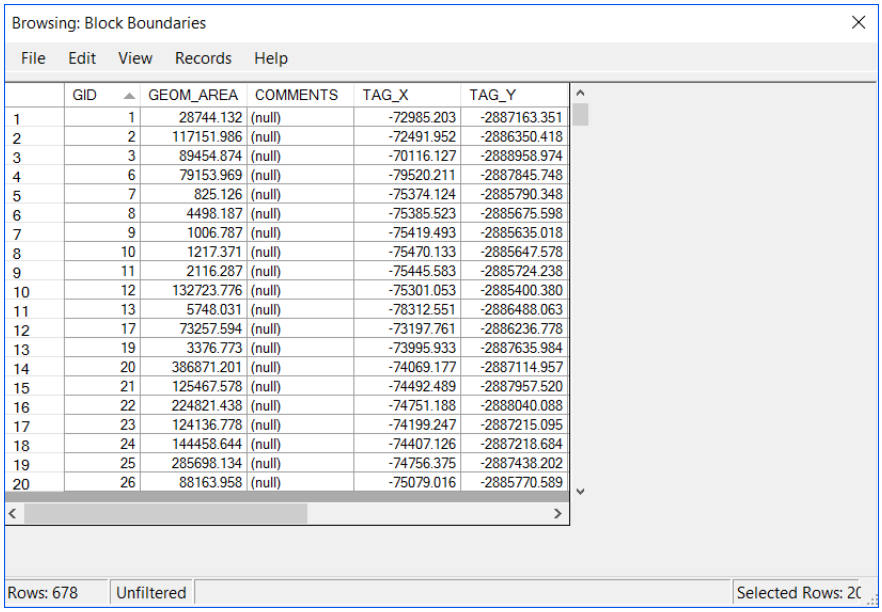
Figure 20 The Browse Selection Dialog box

Browsing content from sources

Once the source/s have been identified, the result is populated to the Browse *Info* dialog box. The result is displayed in table or grid format, including a row for every record and a column to specify the type of information available. The dialog box is menu driven and is sensitive to content selection. The result set can be refined by applying filters. The active result set is used at all times as input to the functions available on the menus.

The following menu items are available on the Browse *Info* dialog box:

- File – generates reports from the active result set, which allows the termination of the browse using the Close function.
- Edit – the user is allowed to copy selected rows to the clipboard, find a specific value or go to a specific record number.
- View – determines the result set by applying various filters and applying formatting of values. The user also has the option to determine how the relationship between the primary and linked table is to be interpreted.
- Records – this menu is only applicable when the primary table is a spatial table. The user can determine the spatial objects to query and once queried, can zoom to the spatial objects in the drawing and/or highlight equivalent objects.



	GID	GEOM_AREA	COMMENTS	TAG_X	TAG_Y
1	1	28744.132	(null)	-72985.203	-2887163.351
2	2	117151.986	(null)	-72491.952	-2886350.418
3	3	89454.874	(null)	-70116.127	-2888958.974
4	6	79153.969	(null)	-79520.211	-2887845.748
5	7	825.126	(null)	-75374.124	-2885790.348
6	8	4498.187	(null)	-75385.523	-2885675.598
7	9	1006.787	(null)	-75419.493	-2885635.018
8	10	1217.371	(null)	-75470.133	-2885647.578
9	11	2116.287	(null)	-75445.583	-2885724.238
10	12	132723.776	(null)	-75301.053	-2885400.380
11	13	5748.031	(null)	-78312.551	-2886488.063
12	17	73257.594	(null)	-73197.761	-2886236.778
13	19	3376.773	(null)	-73995.933	-2887635.984
14	20	386871.201	(null)	-74069.177	-2887114.957
15	21	125467.578	(null)	-74492.489	-2887957.520
16	22	224821.438	(null)	-74751.188	-2888040.088
17	23	124136.778	(null)	-74199.247	-2887215.095
18	24	144458.644	(null)	-74407.126	-2887218.684
19	25	285698.134	(null)	-74756.375	-2887438.202
20	26	88163.958	(null)	-75079.016	-2885770.589

Figure 21 The Browse Info dialog box

Copying results

The Edit > Copy menu item allows users to copy a selection from the result set to the clipboard for pasting in other applications. Column headings are copied with the selected records. Columns and records are comma delimited text and may be pasted to any application that accepts text.

Finding results

The Edit > Find... menu item searches through the entire result set and highlights the matching record. On the Find dialog box, you must enter the value(s) to search for, as well as indicate the column in which to search. The columns available from the lookup list includes columns from linked tables, as well as columns that were not identified as available columns when browsing the data. The search operation can be refined by applying more search parameters including an exact or partial match.

The search is affected by the Display Formatted Values option (available on the View menu). If this option is active the search will ignore the raw values and search for formatted values. The value in search is case sensitive at all times.

Finding a row number

The Edit > Goto Row Number menu item allows the user to search for a specific row number within the result set. If the required row number is found, it is displayed and selected. Should the required row number not be found, the user will be presented with the Browse Goto Error message box, indicating that the required row number is not found in the current result set.

Filtering by attributes

With the Filtering by attributes function, you can filter the current result set by applying an attribute filter that is constructed by attribute conditions. Once the attribute conditions are applied on the current result set, it is refreshed with the new values. The Attribute Condition dialog box is used to construct the filter that will be used to apply to the initial result set. For users who are not familiar with SQL statements, Munsys provides drop-down lists in the order required to easily construct the applicable filter. The Attribute Condition is used to construct complex filters that contain more than one attribute condition.

1 Choose **View** > **Filter by Attributes...**

The Attribute Condition dialog box is displayed.

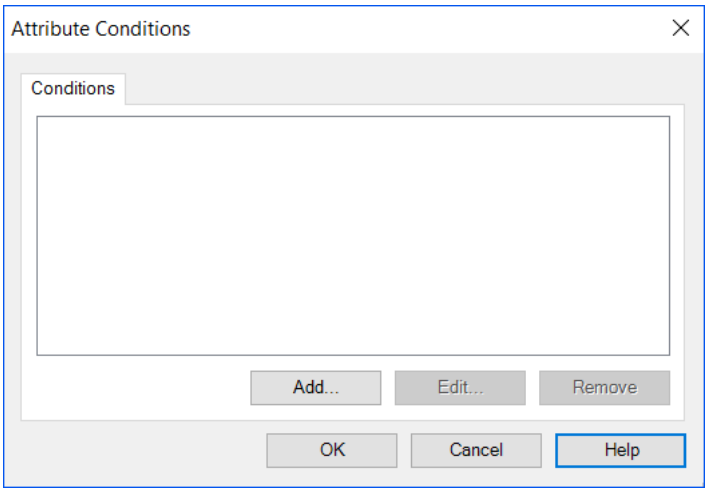


Figure 22 The Attribute Condition dialog box

2 Click the **Add** button to open the **Add Condition** dialog box.

3 To define a condition statement, use the drop-down lists from the condition statement group:

- From the **Column** drop-down list, select the appropriate column to determine the criteria.
- From the **Operator** dropdown list, select the operator that best suits the condition that you want to check. Operators include <=, =, >=, etc. Use these operators to produce the desired spatial result.
- In the **Value** option, enter the criteria that will be tested against the value of the column and that qualifies the condition operator.
- Or start tying an SQL statement in the **SQL Equivalent** box to define your own SQL statement
- Click the **OK** button to add the condition to the **Condition dialog box** group.

4 Click the **Add** button to add another condition or the **OK** button to apply the attribute filter.

Note If you do not know the exact value for the SQL condition, you can select the **Values...** button to display a list of all unique values in the database for the column selected. The Unique Values dialog box list is limited to display the first 50 unique records, but the user can tick the Show All check box to display all values.

Filtering by GSC

The View > Filter by GSC menu item filters spatial data according to the current GSC. The current GSC is zoomed to the extents of the drawing area while the Browse *Info* dialog box is still active. This spatial filter is also applied on the current result set that is displayed in the Browsing *Info* dialog box.

This function does not replace any previous defined attribute or spatial filters that are active by complement these.

Filtering by spatial objects

This function applies a spatial filter to the current result set by selecting Munsys objects in the current drawing. This option is only available when the primary table selected in the Browse Content dialog box is a spatial table. When activating the option, the user will be requested to select the appropriate spatial objects that are used as the filter. Once the user selected these objects, the Browsing *Info* dialog box is updated accordingly.

This filter criteria will replace all previously defined spatial filters, but complements attribute and GSC filters.

1 Choose **View** > **Filter by Spatial Objects**.

2 Select the appropriate spatial objects, and then press ENTER.

The Browsing *Info* dialog box is updated accordingly.

3 To reset the **Browsing** *Info* dialog box, use the **Clear All Filters** option on the **View** menu.

Filtering by selected objects

This function allows users to apply an object filter to the current result set by selecting rows in the Browse Info result set. The user must select rows in the result set and then check the Filter Selected Objects Only menu option.

1 Select the required rows in the Browse Info result set.

2 Choose **View > Filter Selected Objects Only**

3 the result set is refreshed with only the selected rows.

Clearing all filters

The View > Clear Filters menu item is used to clear all of the previously defined filters, and is therefore only available when at least one filter has been specified. Once the function is activated, the result set is refreshed with no filters applied.

Sorting results

The column headers in the result set in the Browsing *Info* dialog box can be used to sort the result set. Once a column header is selected, it sorts the values in ascending or descending order. The column that has been used to sort on displays a small arrow indicating up for ascending, and down for descending.

Predefined filters remain intact upon activation of this option.

This function sorts the raw data and does not consider any formatted values.

Displaying formatted values

The View > Display Formatted Values menu option is used to display more descriptive information in the result set, for example, rather display the land use description instead of a code. Column headings are also affected by this setting, headings are displayed with appropriate descriptions. If descriptions are not available the column name is prefixed with the table name.

The formatted values affect the data display in the result set, generating of reports, copying of selected records and the find function.

Setting an object query

This function is used to select a spatial query that will be used when querying spatial objects from the database. The available spatial queries are determined by the spatial table, identified on the Browse Content dialog box. The selected spatial query will be used to query the spatial objects associated with the result set.

1 Choose **Record** > **Set Object Query...**

The Available Queries dialog box is displayed.

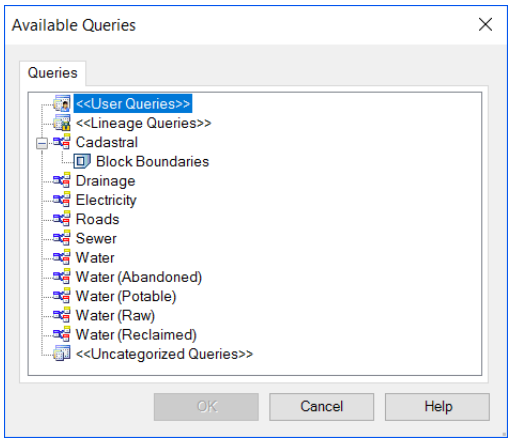


Figure 23 The Available Queries dialog box

2 Select the appropriate system query from the list, and then click OK.

The required system query is set.

Note The display property settings of the query is used.

Querying objects

The Query Objects function is used to query the associated spatial objects of the selected records in the result set from the database. The associated Munsys objects are created in the current drawing. The system query that was identified during the Browse Selection process is used to determine the formatting parameters when querying spatial objects from the database.

1 On the **Browsing** *Info* dialog box, select the appropriate record/s from the result set.

2 Choose **Records** > **Query Objects**.

The associated spatial record/s is queried into the current drawing onto the appropriate spatial layer.

3 To view the queried spatial objects, see **Zooming to objects**.

Zooming to objects

This function is used to locate a single or more queried spatial objects. Once the user has selected the appropriate record in the result set, the Zoom to objects function allows users to zoom the associate spatial objects in the drawing. The aggregated extents of those objects encountered, is used to change the zoom state of the drawing.

1 On the **Browsing** *Info* dialog box, select the appropriate record/s from the result set.

2 Choose **Records** > **Zoom to Objects**.

When a record is selected, the associated spatial objects are zoomed to the extent of the screen.

Highlighting objects

This function is used to select records in the result set, and then highlights the associated spatial objects in the drawing. This function is only available when the primary table is a spatial table. You have to select at least one record in the result set for the function to be active. The zoom state of the drawing remains unchanged during this operation.

1 On the **Browsing** *Info* dialog box, select the appropriate record/s from the result set.

2 Choose **Records** > **Highlight Objects**.

The associated spatial objects are highlighted in the drawing.

3 To zoom to the highlighted records, refer to **Zooming to objects**.

Highlighting records

This function is used to select spatial objects in the drawing and then highlights the associated records in the result set. This function is only available when the primary table is a spatial table. The user is required to select at least one spatial object in the drawing. The user will only be ably to select the spatial objects in the drawing associated with the primary table identified.

1 On the **Browsing** *Info* dialog box, select the appropriate record/s from the result set.

2 Choose **Records** > **Highlight Records**.

The associated records in the result set are highlighted.

3 To clear the highlighted records, simply uncheck the **Highlighted Records** menu item.

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