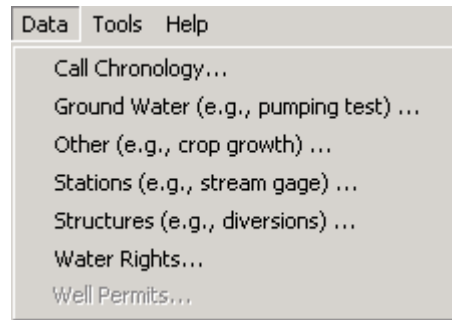

4 Viewing Data

Version 4.02.00, 2011-07-15

The **Data** menu provides displays for major categories of data, including nearly all of the data in the HydroBase database. In each case, a main display window is available, which provides access to additional display windows as appropriate. The following sections describe the various data types that can be displayed.



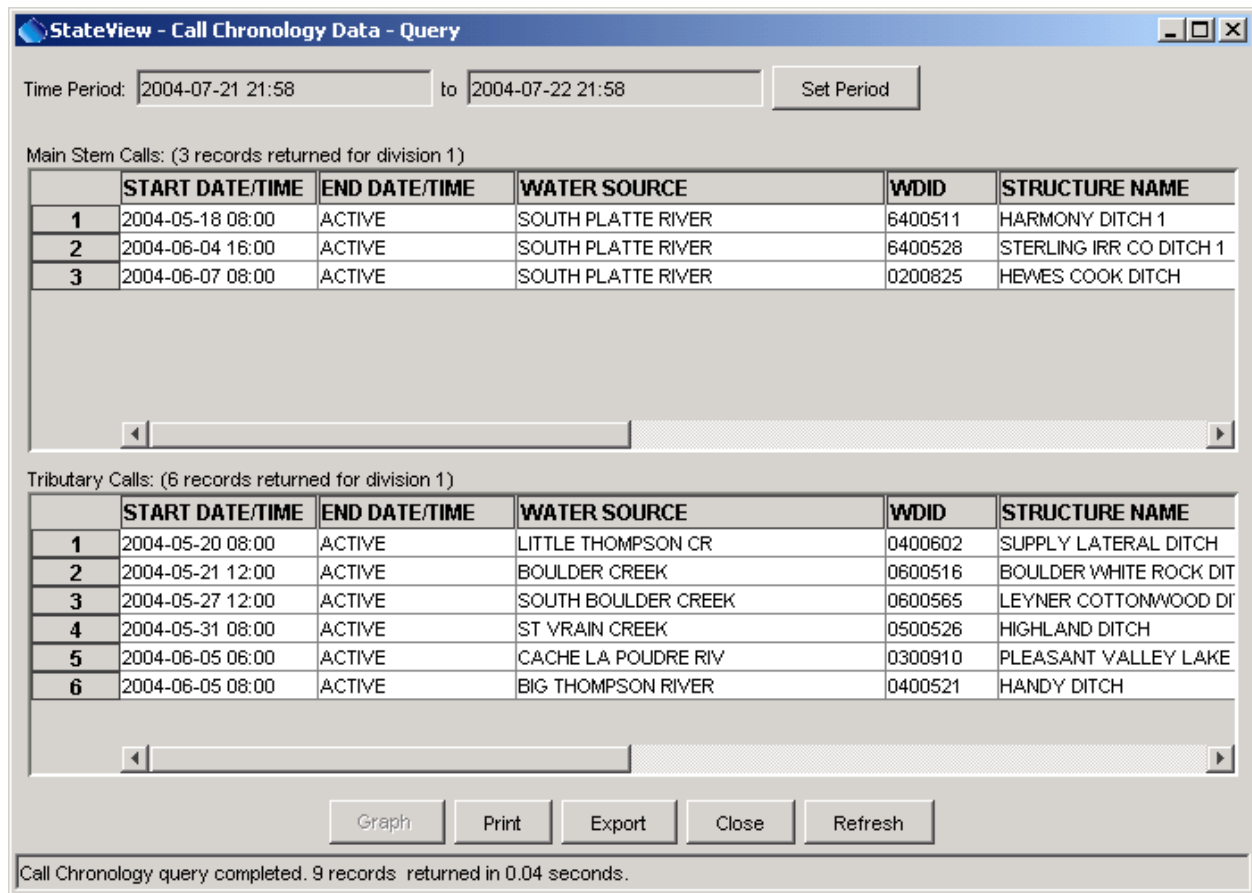
Menu_ViewData

Data Menu

The **Well Permits** menu will only be enabled if you have logged in as someone other than “guest” using a SQL Server database that includes well permit data. Well permit data access is meant primarily for State of Colorado personnel.

4.1 Call Chronology

The **Data...Call Chronology** menu displays a view-only history of calls affecting a water district or entire division during a particular period, as shown in the following figure.



StateView - Call Chronology Data - Query

Time Period: 2004-07-21 21:58 to 2004-07-22 21:58 Set Period

Main Stem Calls: (3 records returned for division 1)

	START DATE/TIME	END DATE/TIME	WATER SOURCE	WDID	STRUCTURE NAME
1	2004-05-18 08:00	ACTIVE	SOUTH PLATTE RIVER	6400511	HARMONY DITCH 1
2	2004-06-04 16:00	ACTIVE	SOUTH PLATTE RIVER	6400528	STERLING IRR CO DITCH 1
3	2004-06-07 08:00	ACTIVE	SOUTH PLATTE RIVER	0200825	HEWES COOK DITCH

Tributary Calls: (6 records returned for division 1)

	START DATE/TIME	END DATE/TIME	WATER SOURCE	WDID	STRUCTURE NAME
1	2004-05-20 08:00	ACTIVE	LITTLE THOMPSON CR	0400602	SUPPLY LATERAL DITCH
2	2004-05-21 12:00	ACTIVE	BOULDER CREEK	0600516	BOULDER WHITE ROCK DIT
3	2004-05-27 12:00	ACTIVE	SOUTH BOULDER CREEK	0600565	LEYNER COTTONWOOD DI
4	2004-05-31 08:00	ACTIVE	ST VRAIN CREEK	0500526	HIGHLAND DITCH
5	2004-06-05 06:00	ACTIVE	CACHE LA POUDE RIV	0300910	PLEASANT VALLEY LAKE
6	2004-06-05 08:00	ACTIVE	BIG THOMPSON RIVER	0400521	HANDY DITCH

Graph Print Export Close Refresh

Call Chronology query completed. 9 records returned in 0.04 seconds.

Call_Chronology

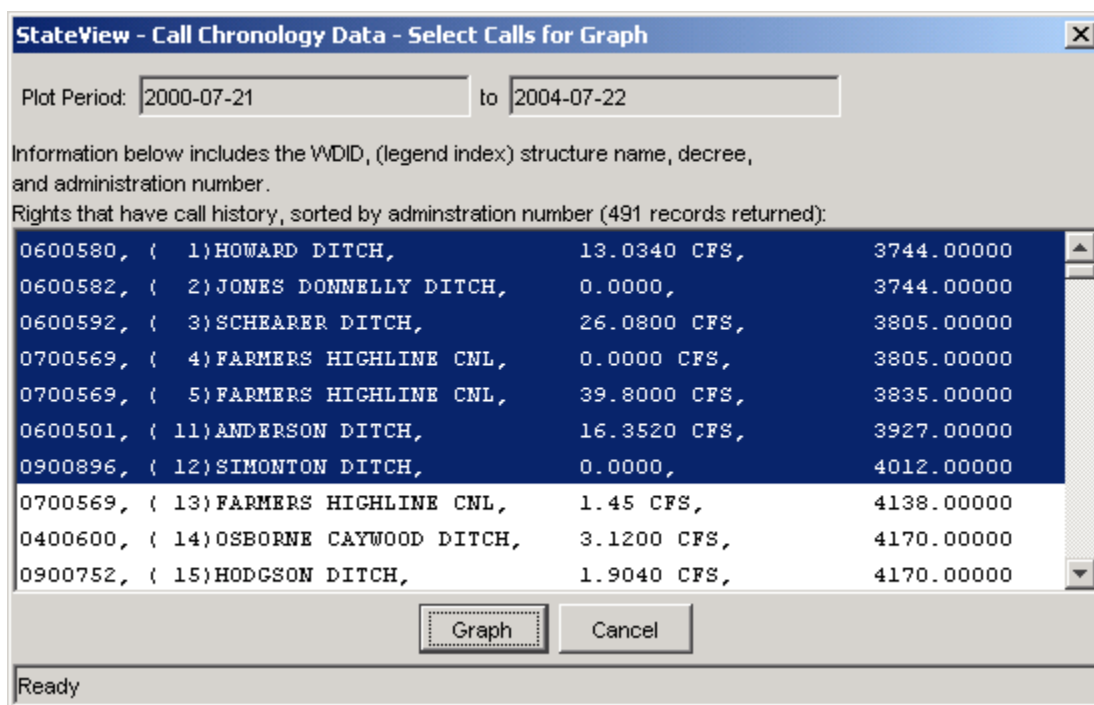
Call Chronology Window

The initial display uses the time period set with **Tools...Options...Time Period**, which is typically set to display a recent period of time. To obtain results for a different period, specify the new period using the **Set Period** button, which will automatically re-query HydroBase. Calls that were active at any time in the specified period are displayed, with active calls being listed first. Calls are listed separately for main stem and tributary calls (main stem calls are on streams that do not flow into other streams). Use the **Refresh** button to refresh the display (e.g., to monitor changing conditions during the day).

Calls are set with the **Administration...Edit Calls** menu in the CWRAT program. Call data cannot be modified using the **Data...Call Chronology** menu.

Selecting one or more calls and pressing the **Graph** button allows calls to be graphed. This feature, described below, is more useful when a long period is specified because it shows when calls are on/off over the period. The call data that are displayed can be printed or exported for use by other tools.

After the **Graph** button is selected, the following dialog will be displayed:

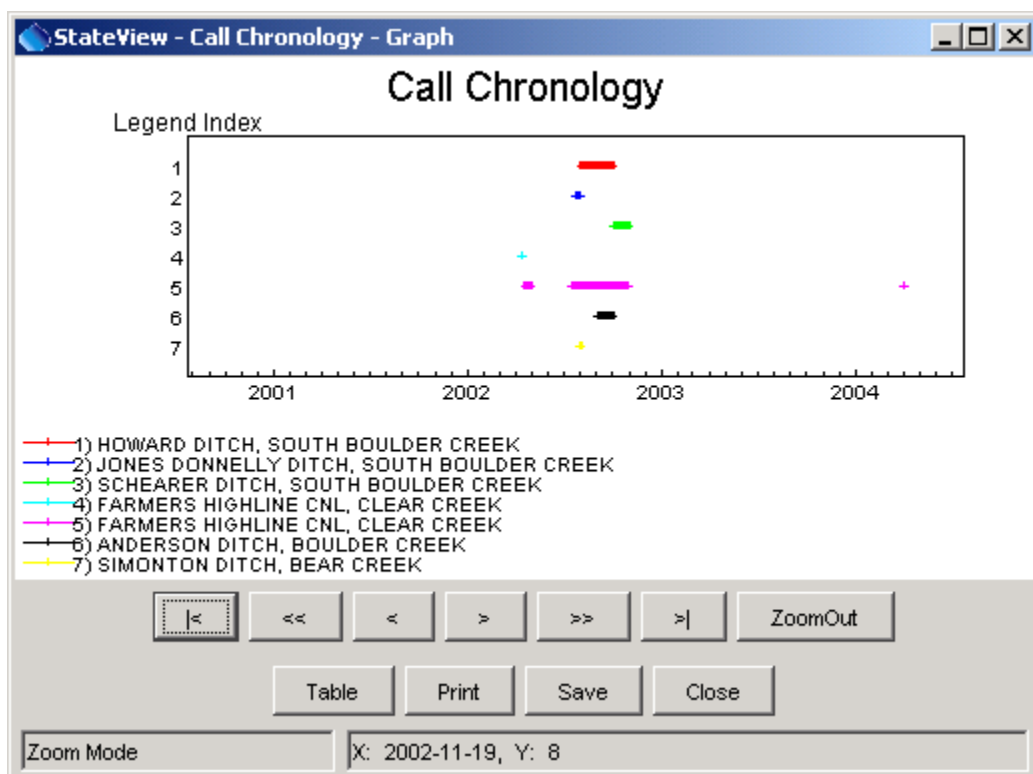


Call_Chronology_Graph_Select

Call Chronology Graph Selection Dialog

In the above example, for the specified period, there are 491 available calls, which are uniquely identified by the structure identifier and the water right administration number. The calls are listed with the most senior water right first. A gap in the counter that is shown indicates that the first right before the gap has had multiple calls during the period. A graph cannot normally display a very large number of calls, so a subset is typically selected. In the above example, multiple calls have been selected by clicking on the first call and then using shift-click on the seventh call. After selecting calls to graph, press **Graph**.

The following figure provides an example of a call chronology graph.



Call_Chronology_Graph

Call Chronology Graph

Each call that was selected for graphing is shown as a horizontal line on the graph. The vertical order of the graph is consistent between the legend and the numbered indexes on the vertical axis. A small plus sign is drawn at each day on which a call was active; consequently, if a call was only active for one day, there will only be a plus symbol and no line.

The general features of the graphing tool are described in the **TSView Time Series Viewing Tools Appendix**.

4.2 Ground Water Data

The **Data...Ground Water** menu provides views for ground water data, which include driller's K sum, geophysical logs, pumping tests, pumping time series, volcanics, and well level data. Ground water data are available only for some divisions where a ground water modeling effort has occurred (e.g., Divisions 1 and 3). Well permits are available using the **Data...Well Permits** menu item. The **Data...Structures** menu displays well data for structures that have water rights. Data may only be available for certain water divisions (select **Div/Dist** as **Entire State** to see all available data).

StateView - Ground Water Data - Query

Query Options:

Div/Dist: Division 1: South Platte

Data Type: Geophysical Logs

Where: [] Matches []

Where: [] Matches []

Where: [] Matches []

Get Data

Geophysical Logs Data:

WD	WELL NAME	LOC NUM	SITE ID	PERMIT INFO	LOC
----	-----------	---------	---------	-------------	-----

View Print Export Close

Ready

GroundWater

Ground Water Query Window as Initially Displayed

Similar to other views, you must first select a data type and then press the **Get Data** button to display data. The following sections describe the ground water views that are available. Each display typically displays available identifier and location information for the wells, in addition to the specific data. Some wells have identifiers from multiple sources.

4.2.1 Driller's K Sum

To list driller's K sum data, first select **Driller's K Sum** as the **Data Type**. If desired, filter the query by specifying **Where** information. Press **Get Data** to query the database.

StateView - Ground Water Data - Query

Query Options:

Div/Dist: Division 1: South Platte

Data Type: Driller's K Sum

Where: Matches

Where: Matches

Where: Matches

Get Data

Driller's K Sum Data: 0 records returned in 0.621 seconds.

WD	WELL NAME	LOC NUM	SITE ID	PERMIT INFO	LOCAT
----	-----------	---------	---------	-------------	-------

View Print Export Close

0 records returned in 0.621 seconds.

Groundwater_DrillersKSum

Driller's K Sum Data

4.2.2 Geophysical Logs

To list geophysical log data, first select **Geophysical Logs** as the **Data Type**. If desired, filter the query by specifying **Where** information. Press **Get Data** to query the database. The corresponding list of geophysical log data will be shown, as in the following figure:

StateView - Ground Water Data - Query

Query Options:

Div/Dist: Division 1: South Platte

Data Type: Geophysical Logs

Where: [] Matches []

Where: [] Matches []

Where: [] Matches []

Get Data

Geophysical Logs Data: 3970 records returned in 7.712 seconds.

	WELL ELEVATION	WELL DEPTH	LOG TYPE	LOG SWL	LOG DEPTH	LOG DATE	UTM X	UTM Y
1	4579.0						599165.000000	4435916.000000
2	4760.0						580355.000000	4428506.000000
3	4938.0		,SP,R,C,		890		516224.200000	4432453.000000
4	5100.0		,G,R,		335		522153.000000	4431602.500000

View Print Export Close

3970 records returned in 7.712 seconds.

Groundwater_GeophysicalLogs

Geophysical Logs Data

To see a text view of the data, select a record and press the **View** button:

StateView - Geophysical Log Records

Geophysical Log data for Well

WD: 2

Well Name:

Loc Num: SB00106623DB

Site ID:

Permit Info: 20213-F-

AQUIFER	TOP	BASE	NET	ORIG. 1986
UPPER ARAPAHOE		4815		No

Print Save Close Search

Ready

Groundwater_GeophysicalLogs2

Geophysical Logs Data – Report View

4.2.3 Pumping Tests

To list pumping test data, first select **Pumping Tests** as the **Data Type**. Optionally, also enter **Where** information to limit the query. Then press **Get Data**. The corresponding list of pumping test data will be shown, as in the following figure:

The screenshot shows the 'StateView - Ground Water Data - Query' window. The 'Query Options' section has 'Div/Dist' set to 'Division 1: South Platte' and 'Data Type' set to 'Pumping Tests'. There are three 'Where:' fields, each with a 'Matches' dropdown. A 'Get Data' button is to the right. Below the options, it says 'Pumping Tests Data: 1332 records returned in 2.864 seconds.' The main area is a table with the following data:

	WD	WELL NAME	LOC NUM	SITE ID	PERMIT INFO
183	64	10601R	SB01004801BC		10601-R-
184	64	1066R	SB01004915BB		1066-R-
185	8	11	SC00506735 HILLIER1		--
186	1	11030R	SB00506423CA		11030-R-
187	64	11126R	SB01005013DB DWR1		11126-R-
188	2	111298	SB00306607		111298--
189	64	11173R	SB01104608AC		11173-R-
190	1	111895	SB00405928BB		111895--
191	1	11212R	SB00406126BC		11212-R-

At the bottom of the window, there are buttons for 'View', 'Print', 'Export', and 'Close'. A status bar at the very bottom says '1332 records returned in 2.864 seconds.'

GroundWater_PumpingTestMain

Pumping Test List

The above example illustrates the results of the query, which lists pumping tests and parameters determined from the tests. To see a single pumping test in an expanded view, select the pumping test from the list (left click) and then press the **View** button.

The following figure illustrates the resulting pumping test view.

StateView - Ground Water Data - Pumping Test -

WD: 1 ID: Loc Num: SB00405928BB Site ID: Permit Info: 111895--

Name:

PM: S TWN: 4 RNG: N SEC: 59 1/4: NW 1/4 1/4: NW 1/4 1/4 1/4:

Test Type: Specific Capacity Data Source: SEO Well Permit Database Test Date: 1974-04-09 Test Duration (hrs): 5.00

Static Level (ft): 66.00 Final Level (ft): 68.00 Water Level Change (ft): 2.00 Average Flow (gpm): 1200.0

Top of Test Interval (ft): Base of Test Interval (ft):

Transmissivity (gpd/ft): 1693958 Hydraulic Conductivity (ft/d): Storativity: Leakance:

☐ Includes Monitor Well ☐ Includes Observed Well ☐ Multiple Tests Available

Print Export Close

GroundWater_PumpingTestSingle

Pumping Test Data

4.2.4 Pumping Time Series

Currently, pumping time series are not available in HydroBase, other than as part of the diversion coding data. To view pumping time series, use the **Data...Structures** menu and select the **Diversion Coding/Reservoir Releases** view (see **Section 4.5 - Structures**).

4.2.5 Volcanics

To volcanics data, first select **Volcanics** as the **Data Type**. If desired, filter the query by specifying **Where** information. Press **Get Data** to query the database.

StateView - Ground Water Data - Query

Query Options:

Div/Dist:

Data Type:

Where:

Where:

Where:

Volcanics Data: 30 records returned in 0.942 seconds.

	WD	WELL NAME	LOC NUM	SITE ID	PERMIT INFO	LOC#
1	22	ARROW RANCH	NA03501105CA		246-R-	N 35N
2	35	CASTRO JOSEPH J & COLLEEN M	SC03007433AB		47035-F-	S 30S
3	35	DAVIS JAMES G	SC03007426DD		47447-F-	S 30S
4	35	FIELDS ERNIE & DEBORAH	SC02907325AB		46564-F-	S 29S
5	27	GEYER DONALD J	NA04100720CD		44606-F-	N 41N
6	27	GEYER DONALD J	NA04100720CD		44606-F-	N 41N
7	27	GEYER DONALD J	NA04100720CD		44606-F-	N 41N
8	21	GONZALES LEO	NA03500815AD		5571-F-	N 35N
9	22	GUADALUPE WATER ASSN	NA03300918DC		12905-F-	N 33N
10	22	GUADALUPE WATER ASSN	NA03300918DC		12905-F-	N 33N
11	22	GYLLING O W & SOWARDS DO...	NA03401005CD		11721-R-	N 34N
12	20	MCNEIL RANCH	NA03800725CD		206700--	N 38N
13	20	MCNEIL RANCH	NA03800725CD		206700--	N 38N

30 records returned in 0.942 seconds.

Groundwater_VolcanicsMain

Volcanics Data

4.2.6 Well Level Measurements

To list information about well level time series, select **Well Level Measurements** as the **Data Type**. Optionally, also enter **Where** information to limit the query. Then press **Get Data**. The following figure illustrates the resulting list:

The screenshot shows the 'StateView - Ground Water Data - Query' window. The 'Query Options' section has 'Div/Dist' set to 'Division 3: Rio Grande' and 'Data Type' set to 'Well Level Measurements'. There are three 'Where:' fields, each with a 'Matches' dropdown. A 'Get Data' button is to the right. Below the options, it says 'Well Level Measurements Data: 957 records returned in 3.174 seconds.' The main area is a table with the following columns: WD, WELL NAME, LOC NUM, SITE ID, PERMIT INFO, and LOC#.

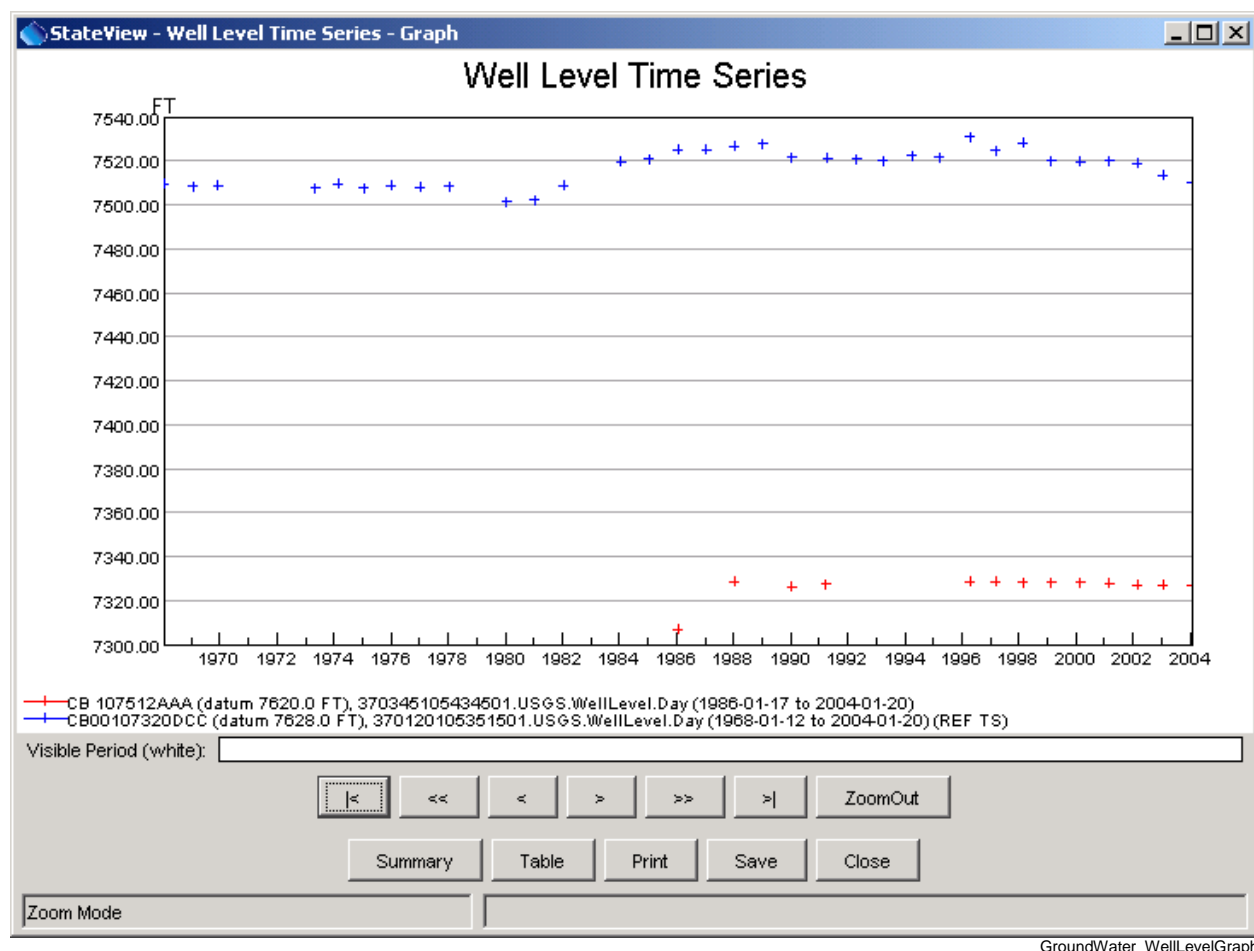
	WD	WELL NAME	LOC NUM	SITE ID	PERMIT INFO	LOC#
1	24	CB 107512AAA	CB01007512AAA	370345105434501	--	
2	24	CB00107320DCC	CB00107320DCC	370120105351501	--	C 1N
3	24	CB00107335BAB	CB00107335BAB	370030105320501	--	C 1N
4	24	CB00107415DBD	CB00107415DBD	370225105393501	--	C 1N
5	24	CB00107425AAA DUP2	CB00107425AAA DUP2	370115105370501	--	C 1N
6	24	CB00107427DCD	CB00107427DCD	370028105393501	--	C 1N
7	24	CB00107433DAA	CB00107433DAA	365958105403001	--	C 1N
8	24	CB00107524CCA	CB00107524CCA	370130105442501	--	C 1N
9	24	CB00207119ACC	CB00207119ACC	370728105223001	--	C 2N
10	24	CB00207212ADC	CB00207212ADC	370845105235401	--	C 2N
11	24	CB00207303BAA	CB00207303BAA	370958105332001	--	C 2N
12	24	CB00207305DDA	CB00207305DDA	370945105343501	--	C 2N

At the bottom of the window are buttons for 'View', 'Print', 'Export', and 'Close'. A status bar at the very bottom says '957 records returned in 3.174 seconds.' The title bar of the window is 'StateView - Ground Water Data - Query'.

Well Level Measurement List

To graph well level measurement time series, select one or more items from the list and then press the **View** button. In HydroBase, wells with well level measurements may or may not correspond to a structure with water rights. For example, wells may have a USGS or USBR identifier. For time series identifiers, the location is determined from the agency that is the data source for the time series data. If available, the datum is used to adjust well levels to elevation (as opposed to depth).

The following figure illustrates the resulting graph for well level measurements.



Well Level Time Series Graph

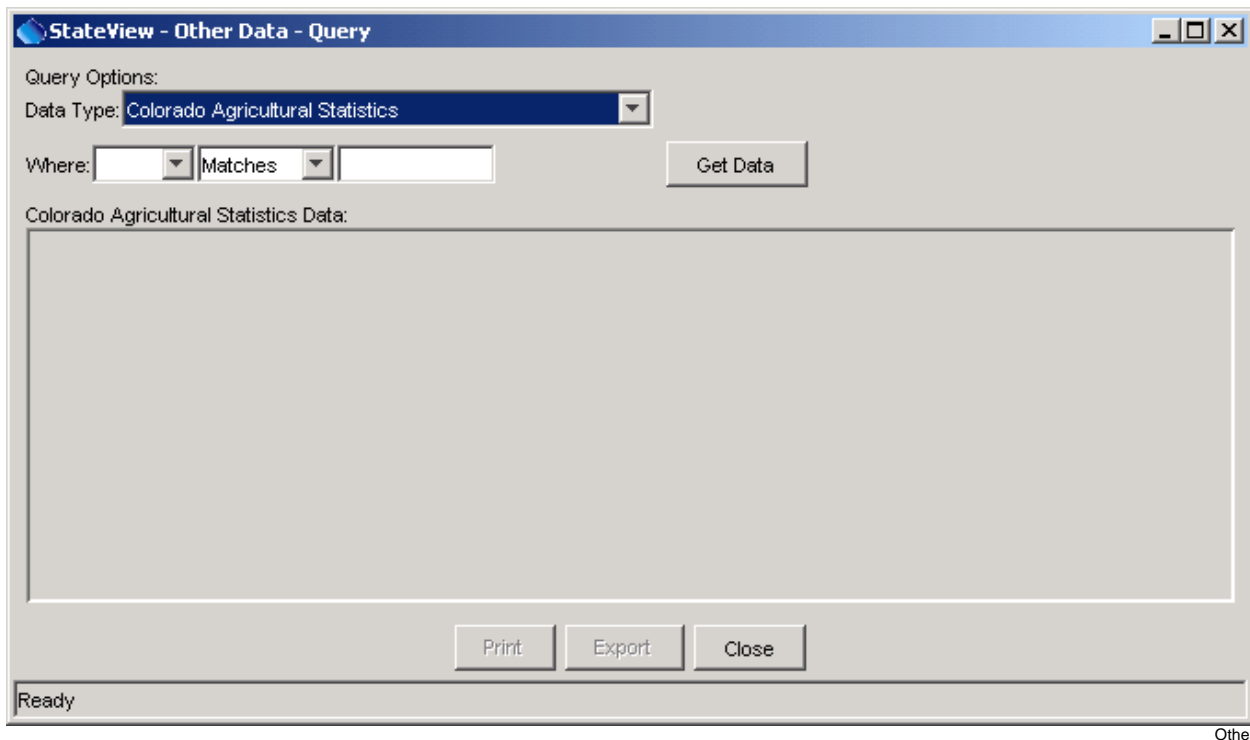
In order to display the data as a graph, daily well level measurements are treated as a daily time series, although not every day may have a measurement. Because well measurements are often measured in absolute units (e.g., elevation from sea level), the y-axis for the graph does not start at zero. If zero were used, the well level graph would be difficult to distinguish from a horizontal line. The datum is shown so that it can be evaluated for accuracy.

The features of the graphing tool are described in the **TSView Time Series Viewing Tools Appendix**.

Well level data also can be viewed and processed using the CDSS TSTool software.

4.3 Other Data

The **Data...Other** menu displays miscellaneous data that are not directly associated with the other data types in the **Data** menu. Many of these data are static information (rather than time series or administrative data). The main query dialog is shown in the following figure.



Other Data Query Window

To view data, select a data type and then press the **Get Data** button. You can filter the amount of output by selecting using the **Where** information. In some cases, all data are displayed and cannot be filtered. Each data type is explained in subsequent sections.

4.3.1 Colorado Agricultural Statistics

Colorado agricultural statistics are available by county. Agricultural statistics are time series of crops sorted by county, crop (commodity), irrigation practice, and year. Familiarity with the Colorado Agricultural Statistics Service (CASS) data is helpful when using the data.

StateView - Other Data - Query

Query Options:
 Data Type: Colorado Agricultural Statistics
 Where: County Matches LARIMER

Other Data Records: 1683 records returned in 0.651 seconds.

	STATE	COUNTY	COMMODITY	PRACTICE	CALENDAR YEAR	PLANTED (ACRE)	PLANTED HARVESTED (ACRE)	HARVESTED (ACRE)
1	CO	Larimer	Barley All	Irrigated	1956	18110		17570
2	CO	Larimer	Barley All	Irrigated	1957	17150		16770
3	CO	Larimer	Barley All	Irrigated	1958	17400		17200
4	CO	Larimer	Barley All	Irrigated	1959	14140		14010
5	CO	Larimer	Barley All	Irrigated	1960	15310		15000
6	CO	Larimer	Barley All	Irrigated	1961	15220		14520
7	CO	Larimer	Barley All	Irrigated	1962	15000		14000
8	CO	Larimer	Barley All	Irrigated	1963	14020		12200

1683 records returned in 0.651 seconds.

Other_ColoradoAgStats

Colorado Agricultural Statistics

Colorado agricultural statistics data also can be viewed and processed using the CDSS TSTool software.

4.3.2 National Agricultural Statistics

National agricultural statistics are available by county. Agricultural statistics are time series of crops (commodities), sorted by county, crop, irrigation practice, and year. Familiarity with the National Agricultural Statistics Service (NASS) data is helpful when using the data.

StateView - Other Data - Query

Query Options:

Data Type: National Agricultural Statistics

Where: County Matches LARIMER

Get Data

Other Data Records: 28 records returned in 0.08 seconds.

	STATE	COUNTY	COMMODITY	CALENDAR YEAR	AMOUNT (ACRE)	FLAG
1	CO	LARIMER	Orchards, Irrigated	1945	2671	
2	CO	LARIMER	Orchards, Irrigated	1950	2152	
3	CO	LARIMER	Orchards, Irrigated	1954	962	
4	CO	LARIMER	Orchards, Irrigated	1959	838	
5	CO	LARIMER	Orchards, Irrigated	1964	566	
6	CO	LARIMER	Orchards, Irrigated	1969	245	
7	CO	LARIMER	Orchards, Irrigated	1974	71	
8	CO	LARIMER	Orchards, Irrigated	1978	130	
9	CO	LARIMER	Orchards, Irrigated	1982	168 0	
10	CO	LARIMER	Orchards, Irrigated	1987	129	

Print Export Close

28 records returned in 0.08 seconds.

Other_NationalAgStats

National Agricultural Statistics

National agricultural statistics data also can be viewed and processed using the CDSS TSTool software.

4.3.3 Crop Characteristics

Crop characteristics are parameters associated with crops and are used by the consumptive use model. Refer to the StateCU model documentation for more information about how these data are used.

StateView - Other Data - Query

Query Options:
Data Type: Crop Characteristics

Get Data

Other Data Records: 27 records returned in 0.211 seconds.

	CROP TYPE	METHOD	TEMP EARLY MOIST (DEG F)	TEMP LATE MOIST (DEG F)	INIT ROOT (IN)	MAX ROOT (IN)	MAX SOIL DEF. (%)	MAX APP DEP (IN)
5	CORN_GRAIN	TR-21	55.00	32.00	3.30	3.30	50.00	3.1
6	CORN_SILAGE	TR-21	55.00	32.00	3.90	3.90	60.00	3.1
7	COTTON	TR-21	62.00	32.00	3.50	3.50	55.00	3.1
8	DRY_BEANS	TR-21	60.00	32.00	2.50	2.50	60.00	3.1
9	GRAPES	TR-21	55.00	50.00	4.10	4.10	50.00	3.1
10	GRASS_PASTURE	TR-21	45.00	45.00	3.30	3.30	50.00	3.1
11	GREEN_BEANS	TR-21	60.00	32.00	2.50	2.50	45.00	3.1

Print Export Close

27 records returned in 0.211 seconds.

Other_CropCharacteristics

Crop Characteristics

Crop characteristics data also can be viewed and processed using the CDSS StateDMI software.

4.3.4 Crop Growth Characteristics

Crop growth characteristics are used by the StateCU consumptive use model. Refer to the StateCU model documentation for more information about how these data are used. The output for these data is shown in a report because of the variability in the data for different methods.

Crop Growth Characteristics by Consumptive Use (CU) Method

BLANEY-CRIDDLE

Crop	Curve Type	Curve Value	Crop Growth Coefficient
ALFALFA	Day	1	0.60
ALFALFA	Day	15	0.63
ALFALFA	Day	32	0.68
ALFALFA	Day	46	0.73
ALFALFA	Day	60	0.79
ALFALFA	Day	74	0.85
ALFALFA	Day	91	0.92
ALFALFA	Day	105	0.99
ALFALFA	Day	121	1.04
ALFALFA	Day	135	1.09
ALFALFA	Day	152	1.12
ALFALFA	Day	166	1.13
ALFALFA	Day	182	1.13
ALFALFA	Day	196	1.12
ALFALFA	Day	213	1.09
ALFALFA	Day	227	1.07
ALFALFA	Day	244	1.03
ALFALFA	Day	258	0.99
ALFALFA	Day	274	0.95

Ready

Other_CropGrowthCharacteristics

Crop Growth Characteristics

Crop growth characteristics data also can be viewed and processed using the CDSS StateDMI software.

4.3.5 Human and Livestock Consumptive Use Characteristics

Human and livestock consumptive use characteristics are used by the consumptive use estimates. Refer to the StateCU model documentation for more information about how these data are used.

StateView - Other Data - Query

Query Options:
 Data Type: Human and Livestock Consumptive Use Characteristics

Get Data

Other Data Records: 7 records returned in 0.661 seconds.

	CONSUMPTIVE USE NAME	USE/DAY GALLONS	CONSUMPTIVE USE EFFICIENCY
1	SHEEP	2.00	1.00
2	HOG	3.00	1.00
3	HUM_PUBLIC	7.00	0.35
4	CATTLE	10.00	1.00
5	HUM_COMMERCIAL	28.00	0.35
6	HUM_RESID_URBAN	120.00	0.36
7	HUM_RESID_RURAL	120.00	0.36

Print Export Close

7 records returned in 0.661 seconds.

Other_HumanAndLivestockCharacteristics

Human and Livestock Consumptive Use Characteristics View

Population data also can be viewed and processed using the CDSS TSTool software.

4.4 Stations

The **Data...Stations** menu displays station information, primarily as a way to access real-time and historical time series data. The following figure illustrates the Station Data interface, which displays basic information including identifier, name, and location. The CDSS TSTool software also can be used to view and process station time series data.

Stations

Stations Query Interface

Each station may be associated with one or more time series. For example, a streamflow station may have daily and monthly time series as averages, totals, minimum, maximum, etc. To display station data, first select query options, as described below:

**Water
Division/District**

The water division and district are used to limit queries to a region. The available options are typically constrained using the **Tools...Options...Water District Filter** settings.

Data Type

Station queries are based on knowing the data type of interest. Consequently, you cannot ask “what are the data types available at a station”. The available data types correspond to time series data stored in HydroBase. Data types are listed in logical groupings. Real-time data may only be available when using a State server HydroBase.

To mix time series data types and intervals, use the **Tools...Time Series Plot** feature or the TSTool software.

Time Step

The time step indicates the data interval and provides an additional level of detail when selecting time series for stations.

Where

Use the **Where** lists to choose additional criteria for limiting a query.

After selecting query options, press the **Get Data** button (or press the **Enter** key in **Where** text fields).

The following figure illustrates the results of a station query.

StateView - Station Data - Query

Query Options:

Div/Dist: Division 1: South Platte

Data Type: Stream - Streamflow

Time Step: Month

Where: Matches

Where: Matches

Stations for selected data type (298 stations returned in 1.702 seconds):

	WD	ID	ABBREVIATION	STATION NAME	DATA SOURCE
234	64	06764000	PLAJUCCO	SOUTH PLATTE RIVER AT JULESBURG (CHANNEL #1)	DWR
235	64	06764000	PLAJUCCO	SOUTH PLATTE RIVER AT JULESBURG (COMBINED)	DWR
236	64	06763980	PLAJULCO	SOUTH PLATTE RIVER AT JULESBURG (LEFT CHAN. #4)	DWR
237	64	06763990	PLAJURCO	SOUTH PLATTE RIVER AT JULESBURG (RIGHT CHAN. #2)	DWR
238	23	06696200	PLATGECO	SOUTH PLATTE RIVER AT LAKE GEORGE, CO.	USGS
239	8	06710000	PLALITCO	SOUTH PLATTE RIVER AT LITTLETON, CO.	USGS
240	1	06756995	PLAMASCO	SOUTH PLATTE RIVER AT MASTERS, CO.	USGS
241	8	06707500	PLASPLCO	SOUTH PLATTE RIVER AT SOUTH PLATTE	DWR

Time Series Graph Time Series Summary Time Series Table

Select On Map Print Export Close

Select one or more stations and then press Time Series buttons or select other choices.

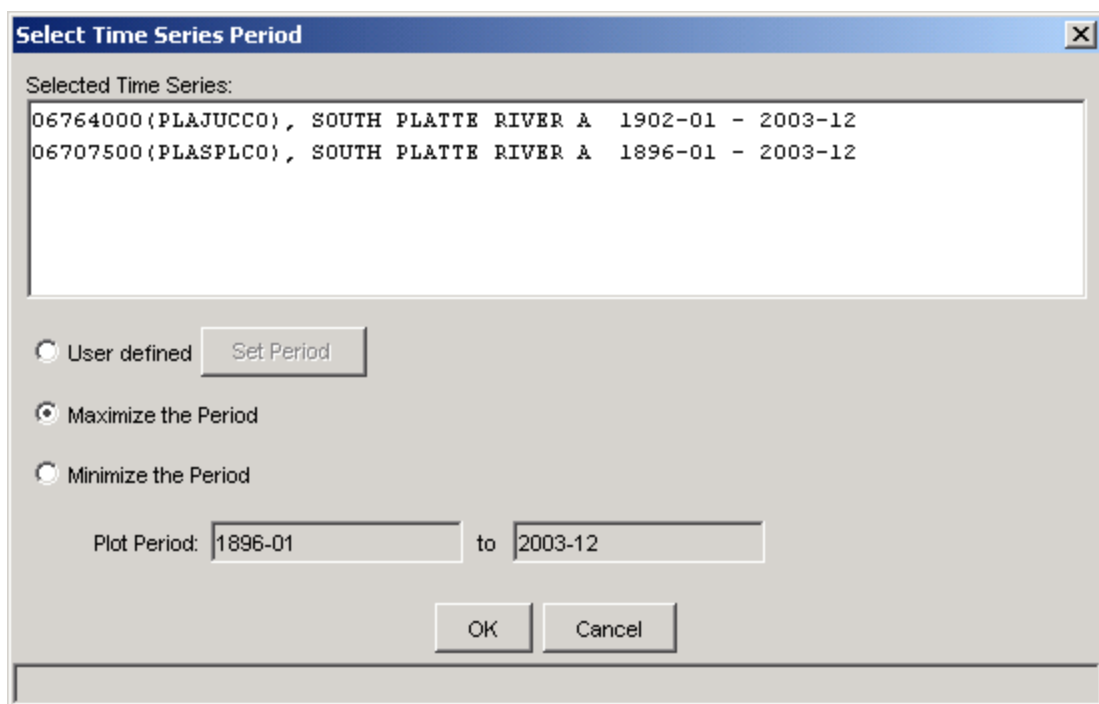
Stations_List

Station Query showing Monthly Streamflow Stations

The results of the query are displayed in the list area and consist of stations that have time series data of the requested type. Select one or more stations from the list. The following buttons can be pressed to act on the list:

- Time Series Graph** Display the selected time series in a graph. See below for an example.
- Time Series Summary** Display the selected time series in a text report form.
- Time Series Table** Display the selected time series in a tabular form.
- Select On Map** If the map interface is enabled and station data are available on the map, select the stations on the map. **Warning: only streamflow stations and general climate station data are typically available for maps. Not all data types may have corresponding map layers. See Chapter 7 - Examples of Use** for information about interacting with the map interface.
- Print** Print the contents of the list.
- Export** Export the contents of the list to a file.
- Close** Close the **Station Data** window.

When the **Time Series Graph**, **Time Series Summary**, or **Time Series Table** buttons are pressed, the period that is used to query the time series data can be limited. Specifying a shorter period can increase performance. The following figure illustrates the period selector dialog.

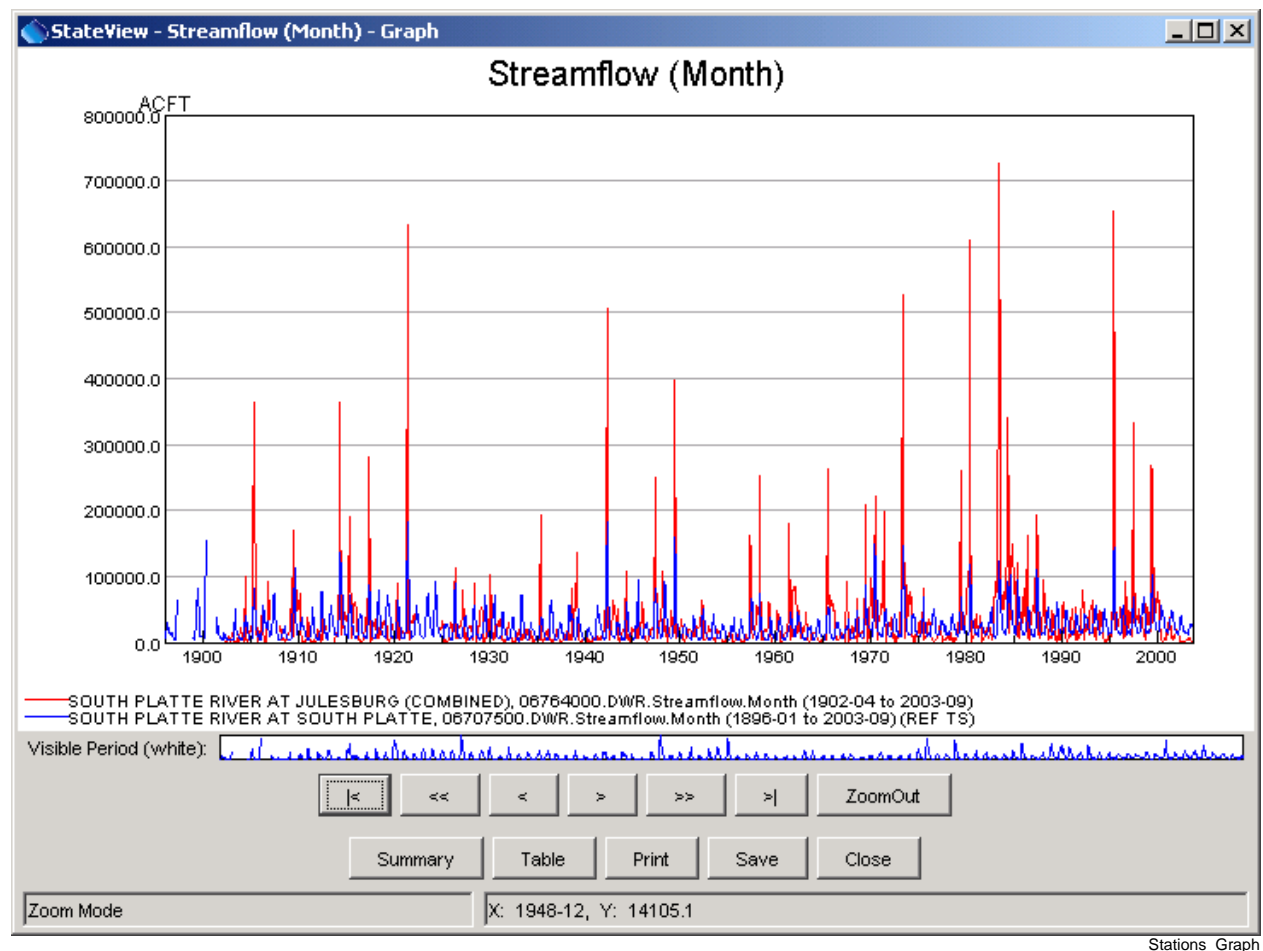


Stations_Period

Time Series Period Selector

The period can be specified as the maximum period, the minimum overlapping period, or a user-defined period. Pressing **OK** will display the appropriate view (graph, summary, or table).

The following figure illustrates a graph view.



Graph Showing Monthly Streamflow

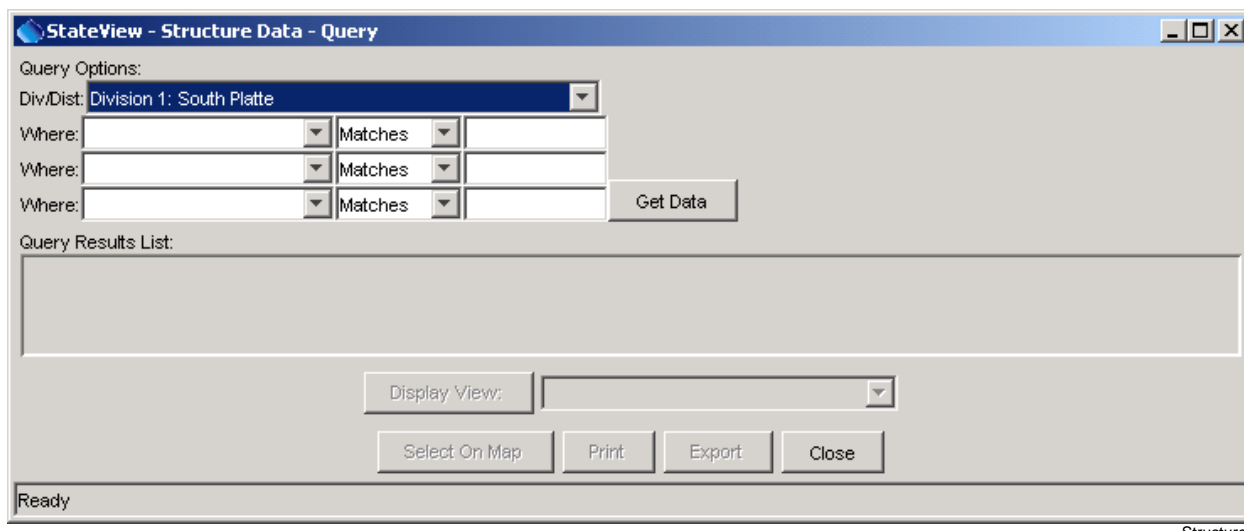
Stations_Graph

The **TSView Time Series Viewing Tools Appendix** describes the features of the graph and also provides examples of the summary and table views. Note that the graph, summary, and table views can be displayed from each of the individual views by pressing the appropriate buttons.

For example, use the arrow buttons to scroll through the graph or use the mouse to draw a box on the main graph or the overview graph above the buttons. Right-click on the graph to edit graph properties.

4.5 Structures

The **Data...Structures** menu displays information associated with structures (e.g., diversions, reservoirs) that have administrative data. The following figure illustrates the **Structure Data** display.



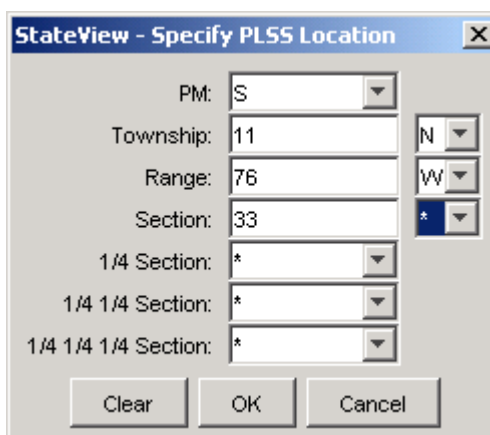
Structure Data Window

To display structure data, first select query options, as described below:

Div/Dist The water division and district are used to limit queries to a region. The available options are typically constrained using the **Tools...Options...Water District Filter** settings.

Where Use the **Where** list to choose additional criteria for limiting a query. To see an explanation of the choices, do a simple query, and then use the tool tips for each column heading.

Use the **Location** choice to query by legal location. To input the location, click in the entry field, which will cause the following dialog to be displayed:



Location_Dialog

Wildcard characters (*) can be used to make the search as broad as desired.

Initiate a query by pressing the **Get Data** button or press **Enter** while the mouse cursor is in a text entry field. Queries of entire districts or divisions may require a few minutes to return results but typically only a few seconds are required. The results from the query are displayed in list format, as illustrated in the following figure:

StateView - Structure Data - Query

Query Options:

Div/Dist: 1 - South Platte: Greeley to Balzac

Where: Structure Name Contains highline

Where: Matches

Where: Matches

Get Data

Structure Records: 6 records returned in 4.366 seconds

	WD	ID	STRUCTURE NAME	LOCATION	WATER SOURCE	STREAM MILE	OWNER
1	1	764	HIGHLINE DITCH 1	S 3N 62W 10 SW SW NW	LOST CREEK	0.00	NO INFORM
2	1	765	HIGHLINE DITCH 2	S 3N 62W 10 SW SW NW	LOST CREEK	0.00	NO INFORM
3	1	607	HIGHLINE DITCH 3	S 3N 62W 10 NE NE NW	LOST CREEK	0.00	NO INFORM
4	1	763	HIGHLINE DITCH 4	S 3N 62W 10 SW SW SE	LOST CREEK	0.00	NO INFORM
5	1	766	HIGHLINE DITCH 5	S 3N 62W 10 SW SE SW	LOST CREEK	0.00	NO INFORM
6	1	767	HIGHLINE DITCH 6	S 3N 62W 10 SE NW NW	LOST CREEK	0.00	NO INFORM

Display View:

Select On Map Print Export Close

6 records returned in 4.366 seconds.

Structures_Division

Structure Data Query Showing Results List

Information displayed in the tabular list includes water district, identifier, name, legal location, water source (stream, lake, etc.), stream mile (from the state line), owner, structure type, currently in use (see below), whether a trans-basin structure, sum of decreed rights, and location coordinates. These data fields are available for all structure types in HydroBase. The currently in use flag can change from year to year and has the following possible values (from **State of Colorado Water Commissioner Manual**):

- A Active structure with contemporary diversion records
- B Structure abandoned by the court
- C Conditional structure
- D Duplicate, ID is no longer used
- F Structure used as FROM number – located in another District
- H Historical structure only – no longer exists or has records, but has historical data
- I Inactive structures which physically exist but no diversion records are kept
- N Non-existent structure with no contemporary or historical records
- U Active structures but diversion records are not maintained

Unlike the **Data...Stations** display, where multiple stations can be selected and viewed together, structure views are displayed by first selecting a single structure (click on the list) and then selecting a view from a list of available views. This approach is taken because available structure views depend on the structure type and structures have several related views. The following buttons can be pressed to act on the structure list:

Display View	Display the selected view for the selected structure. See below for a list of views.
Select On Map	<p>If the map interface is enabled and structure data are available on the map, select the stations on the map. Warning: only diversion, reservoir, and well data (for some divisions) are typically available for maps. Not all data types may have corresponding map layers.</p> <p>See Chapter 7 - Examples of Use for information about interacting with the map interface.</p>
Print	Print the contents of the list.
Export	Export the contents of the list to a file.
Close	Close the Structure Data window.

Once a structure is selected from the list, the list of available views next to the **Display View** button is updated, based on the structure type. The following views are available:

Available Structure Display Views

View Type	Structure Type	Description
Detail	Any	Detailed information specific to the structure type; the view choice will be specific to the structure type (Jurisdictional Dam - Detail, Minimum Flow Reach - Detail, Non-Jurisdictional Dam - Detail, Reservoir – Detail). Headgates and wells do not have additional detail data.
Diversion Coding/ Reservoir Releases	Headgate, Reservoir	Historic diversion coding (diversion time series), which may include reservoir releases.
Historical Reservoir Measurements	Reservoir	Time series associated with reservoirs (e.g., elevations, storage)
Irrigated Acres by Parcel	Any	Irrigated acreage information associated with the structure.
Location	Any	Location information
More Structure Information	Any	More structure information that is available for any structure but which does not fit on the main Structure Data screen
Owner/Contact Information	Any	Owner and contact information
Structure Summary	Any	A summary of several data values for the structure, including water rights, irrigated acreage, and diversion coding, if available.
Water Rights - Transaction, Water Rights - Net Amounts	Headgate, Minimum Flow Reach, Reservoir, Well	Water rights associated with the structure. Note that wells with water rights may or may not also be represented in the Data...Well Permits displays.

Examples of each view are provided in the following sections.

4.5.1 Detail - Jurisdictional Dam

The structure ***Jurisdictional Dam - Detail*** view shows information for jurisdictional (non-exempt) dams, as shown in the following figure.

StateView - Structure Data - Jurisdictional Dam Detail - 5190510108 (GRANBY)

Structure Name: DIV: WD: ID:

Dam AKA:

Hazard Class: NAB Code:

Nearest Downstream

Town Name: Distance:

Stream Code: Federal Regulations:

Spillway Capacity: Crest:

Outlet Capacity: Length:

Width:

Dam Type: Purpose:

Year Completed:

Remarks:

State Dam ID:

National Inventory ID:

Forest Service ID:

Federal Land:

Dam Heights:

Jurisdictional:

Hydraulic:

Structural:

Spillway Inspection Outlet Emergency Plan

	SPILLWAY NAME	SPILLWAY CAPACITY	FREEBOARD	FLOW CODE	SPILLWAY TYPE	WALL SS	WIDTH
1		12000.0	25.0	CONC	GCHAN	0.0	40.0
2		0.0	0.0			0.0	0.0
3		0.0	0.0			0.0	0.0

Print Export Close

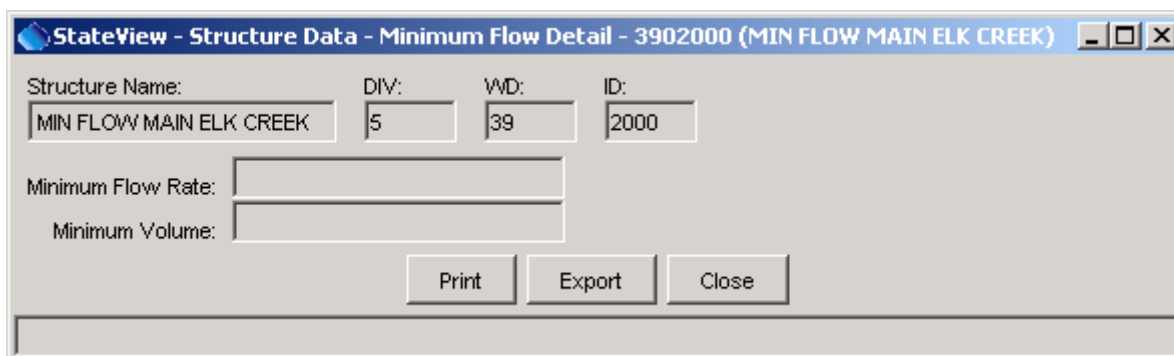
Structure_JurDam_Detail

Jurisdictional Dam Detail View

Note that several tabbed displays can be viewed at the bottom of the view for ***Spillway***, ***Inspection***, ***Outlet***, and ***Emergency Plan*** data.

4.5.2 Detail - Minimum Flow Reach

The structure **Minimum Flow Reach - Detail** view shows information for minimum flow reaches, as shown in the following figure.



StateView - Structure Data - Minimum Flow Detail - 3902000 (MIN FLOW MAIN ELK CREEK)

Structure Name: MIN FLOW MAIN ELK CREEK DIV: 5 VWD: 39 ID: 2000

Minimum Flow Rate:

Minimum Volume:

Print Export Close

Structure_MinFlowReach_Detail

Minimum Flow Reach Detail View

Currently, HydroBase does not include the CWCB's instream flow database (it mainly includes information related to water rights). The CWCB database is being linked to HydroBase and may be available in the future.

4.5.3 Detail - Non-Jurisdictional Dam

The structure **Non-Jurisdictional Dam - Detail** view shows information for non-jurisdictional (exempt) dams, as shown in the following figure.

StateView - Structure Data - Nonjurisdictional Dam Detail - 5191009679 (HAR...

Structure Name:	DIV:	WD:	ID:
HARBERT	5	51	91009679
Receipt	9679		
Date Application Approved:	1963-06-27		
Date Construction Completed:			
Drainage Area:	2000.0		
Dam Type:	T		
Height of Dam:	11.00		
Height of Spillway:	6.00		
Width of Spillway:	200.00		
Tank Capacity:	1.0		
Size of Outlet:			
Type of Outlet:			
Title Number:	1-1963		

Print Export Close

Structure_NonJurDam_Detail

Non-Jurisdictional Dam Detail View

4.5.4 Detail - Reservoir

The structure **Reservoir - Detail** view shows information for reservoirs, as shown in the following figure.

StateView - Structure Data - Reservoir Data - 5103695 (CBT SHADOW MTN GRAND L)

Structure Name: CBT SHADOW MTN GRAND L DIV: 5 VWD: 51 ID: 3695

Normal Storage: 18400.0 Maximum Storage: 24109.0 Surface Area: 1852.0 Drainage Area: 121600.0

Reservoir EOM Record Period: to

Capacity Table

	ELEVATION (FT)	GAGE HEIGHT (FT)	SURFACE AREA (ACRES)	VOLUME (AF)
1			2	4
2			27	76
3			145	506
4			190	750
5			480	2069
6			929	5591
7			1096	8628
8			1208	10932
9			1808	14708
10			1830	16530
11			1852	18369

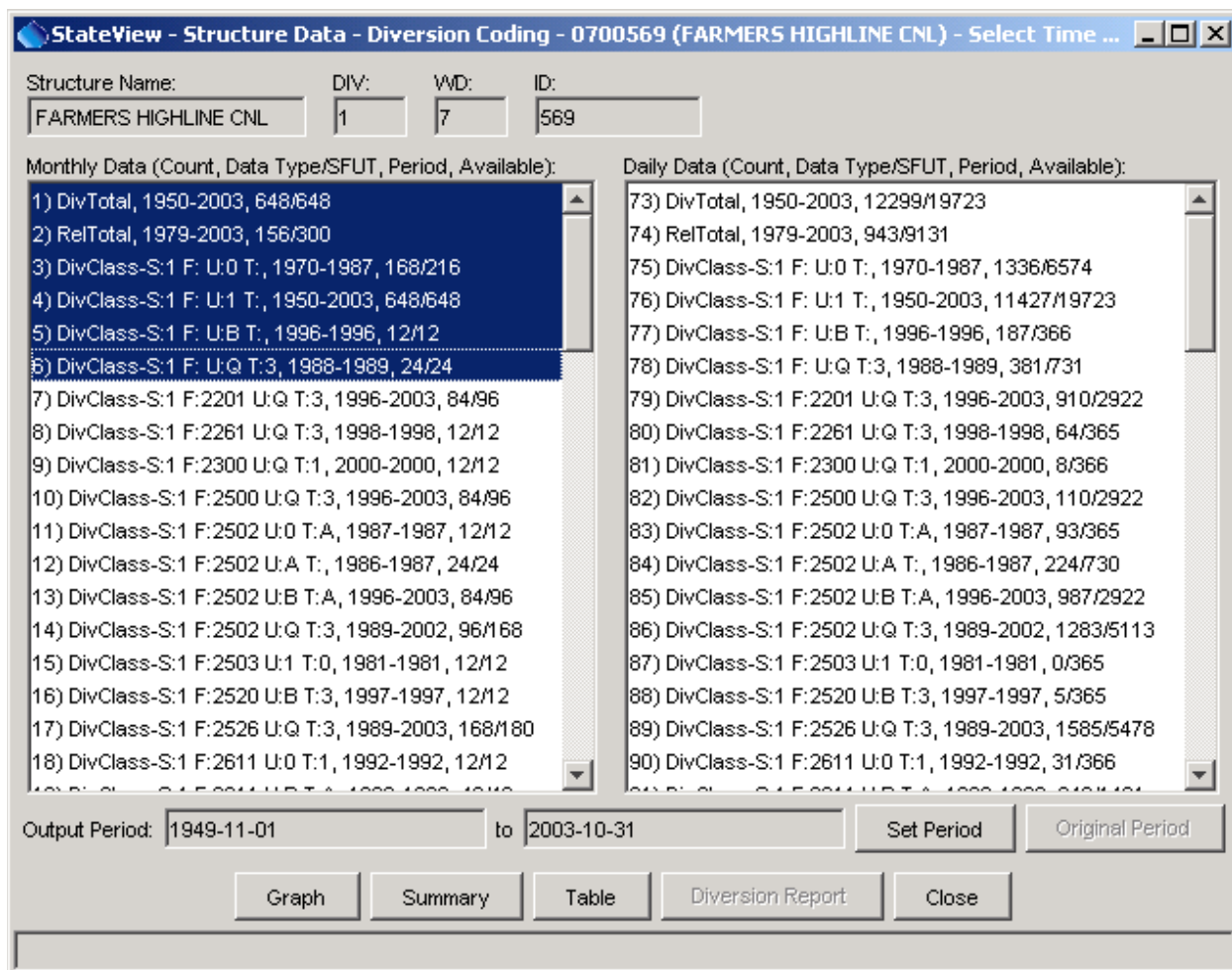
Print Export Close

Structure_Reservoir_Detail

Reservoir Detail View

4.5.5 Diversion Coding/Reservoir Releases

The **Diversion Coding/Reservoir Releases** view provides access to historic diversion coding and reservoir release (time series) records in graphical, report, and tabular formats. Diversion coding applies to diversion and reservoir administrative data. When this view is initially selected, the following dialog is displayed, which lists the available diversion coding combinations.

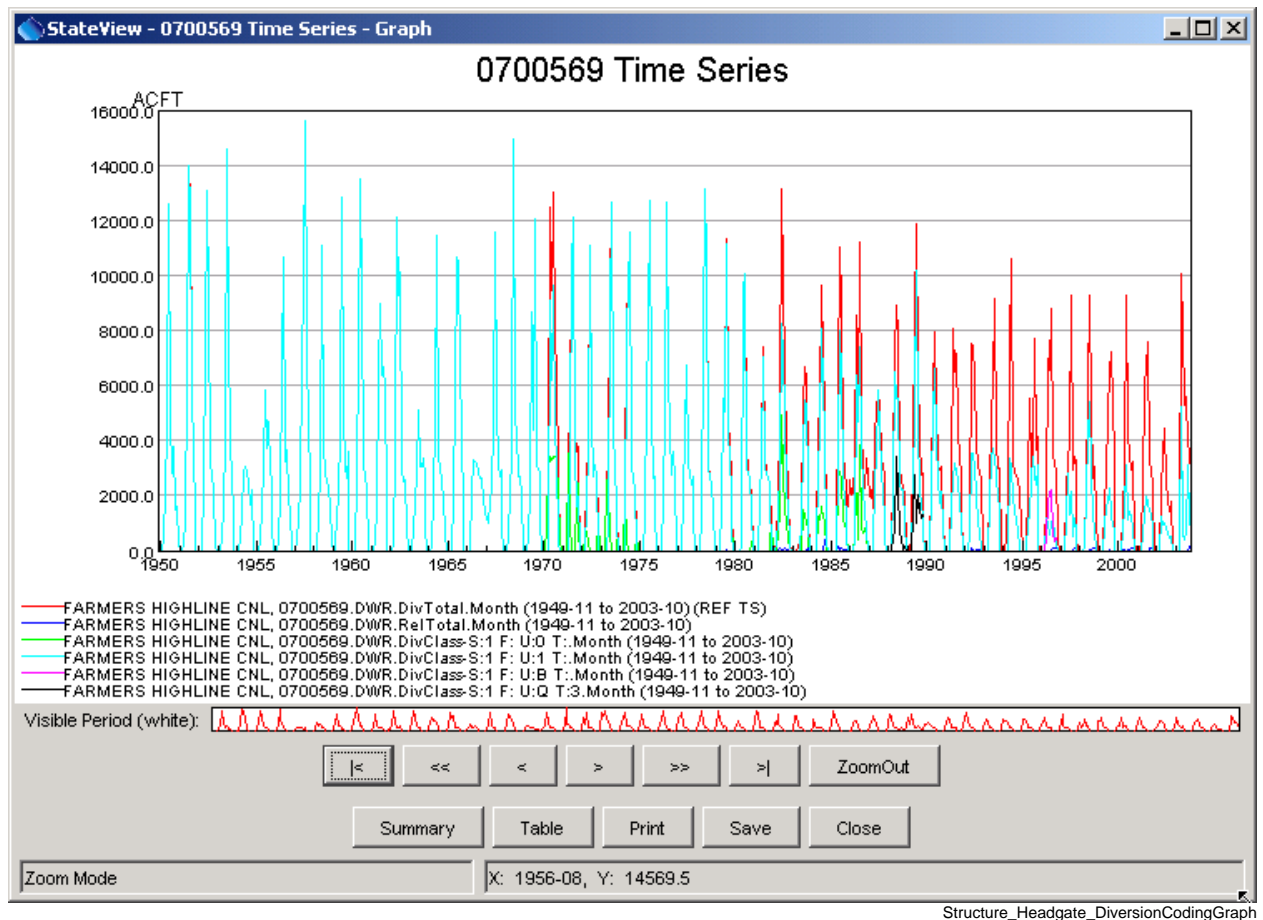


Diversion Coding Time Series List Dialog

As shown in the above example, time series that are available for a structure are categorized by diversion total, release total, and SFUT (source, from, use, type) water classes. The SFUT values are explained in the **State of Colorado Water Commissioner Manual**. One or more time series can be selected from the list and can consequently be viewed by pressing the **Graph**, **Summary**, or **Table** buttons. The **Output Period** that is shown is adjusted automatically as time series are selected but can also be manually set with the **Set Period** button.

This display does not currently list infrequent diversion or diversion comments. These time series can be viewed in the **Structure Summary** display and TSTool software.

An example of a graph for the above time series is shown in the following figure. See the **TSView Time Series Viewing Tools Appendix** for more information about time series viewing tools.



Example Diversion Coding Graph

Diversion/reservoir coding data also can be viewed and processed using the CDSS TSTool software.

4.5.6 Historical Reservoir Measurements

The structure **Historical Reservoir Measurements** view is only available for reservoirs. It lists in tabular form the reservoir measurements that are recorded on a day.

StateView - Structure Data - Historical Reservoir Measurements - 2003536 (CONTINENTAL RES)

Structure Name: CONTINENTAL RES DIV: 3 VWD: 20 ID: 3536

See also Diversion Coding and Reservoir Release data.

Query Results List: (439 records returned)

	DATE	GAGE HT. (FT)	STORAGE (ACFT)	INFLOW (ACFT)	RELEASE (ACFT)	EVAP LOSS (ACFT)
1	1974-11-01	25.1	1066.0			
2	1974-12-01	26.8	1314.0			
3	1975-01-01	29.1	1706.0			
4	1975-02-01	31.6	2213.0			
5	1975-03-01	33.7	2697.0			
6	1975-04-01	35.6	3189.0			
7	1975-05-01	37.6	3733.0			
8	1975-06-01	39.5	4303.0			
9	1975-07-01	46.3	6604.0			
10	1975-08-01	36.6	3461.0			
11	1975-09-01	32.4	2377.0			

Print Export Close

Reservoir Measurement Query completed.

Structure_ReasMeas

Historical Reservoir Measurements View

Records are typically not continuous and all data types may not be available for a reservoir.

Reservoir measurement data also can be viewed and processed using the CDSS TSTool software.

4.5.7 Irrigated Acres by Parcel

The structure ***Irrigated Acres by Parcel*** view shows the irrigated acres associated with a structure.

StateView - Structure Data - Irrigated Acres by Parcel - 2000812 (RIO GRANDE CNL)

Structure Name: DIV: VWD: ID:

Irrigated Acres Summary

GIS Total (Acres): Most Recent Report Year:

Diversion Comments Total (Acres): Most Recent Report Year:

Structure Total (Acres): Most Recent Report Year:

Parcel Details

	YEAR	DIV	PARCEL ID	PERIMETER (M)	PARCEL AREA (ACRE)	CROP TYPE	IRRIGATION TYPE	PARCEL PERCENT IRRIGATED BY STRUCTURE	PARCEL AREA IRRIGATED BY STRUCTURE (ACRE)	PARCEL AREA IRRIGATED BY STRUCTURE, SUM (ACRE)
1	1998	3	10101	2610.943	131.832	ALFALFA	SPRINKLER	100.000	131.832	84513.882
2	1998	3	10102	2650.783	135.253	ALFALFA	SPRINKLER	100.000	135.253	84513.882
3	1998	3	10103	3103.069	124.643	ALFALFA	SPRINKLER	100.000	124.643	84513.882
4	1998	3	10104	2532.175	123.794	ALFALFA	SPRINKLER	100.000	123.794	84513.882
5	1998	3	10105	2619.833	133.197	ALFALFA	SPRINKLER	100.000	133.197	84513.882

Print Export Close

Structure_IrrigatedAcres

Irrigated Acres by Parcel View

Irrigated acres are shown by year, parcel identifier, crop type, and irrigation method. The percent of the parcel irrigated by the structure is also shown, which allows calculation of the acres irrigated. The total acres irrigated by the structure for a year are also shown, repeated in each row. The parcel data are typically determined during the irrigated lands assessment that is performed to support consumptive use modeling for CDSS projects. The spatial data and attributes are loaded into HydroBase to facilitate queries.

Irrigated parcel data also can be viewed and processed using the CDSS TSTool software.

4.5.8 Location

The structure **Location** view provides location-related information about a structure.

StateView - Structure Data - Location Data - 2000812 (RIO GRANDE CNL)

Structure Name: RIO GRANDE CNL DIV: 3 WVD: 20 ID: 812

State: CO County: RIO GRANDE Location Type: Manmade Structure Stream Name: RIO GRANDE Stream Mile: 0.00

COORDINATES:

PM: N TWN: 40 RNG: N 6 SEC: E 30 1/4: NW 1/4 1/4: NW 1/4 1/4 1/4: SW

Latitude: 37.687651 Longitude: -106.367453 UTM X: 379430.800000 UTM Y: 4172039.900000 Topographic Map: Hydrologic Unit Code: 13010002

Print Export Close

Ready

Structure_Location

Location View

4.5.9 More Structure Information

The structure **More Structure Information** view provides additional information common to all structure types that will not fit on the main structure display. Use available **Detail** views described previously to see information specific to a structure type.

The screenshot shows a software window titled "StateView - Structure Data - More Structure Information - 2000812 (RIO GRANDE CNL)". The window contains several sections for data entry and viewing:

- Structure Name:** RIO GRANDE CNL
- DIV:** 3
- WD:** 20
- ID:** 812
- Structure Type:** Headgate
- CIU Code:** A
- Estimated Capacity:** 1900.00
- Decreed Capacity:** 1648.50 CFS
- Structure AKA:** (Empty text box)
- Equipment:** A table with columns "DATE INSTALLED" and "MEAS DEVICE". It contains one entry: "1" in the first column and "80 FT RATED SECT" in the second.
- Mapfile Information:** A table with columns "FILING DATE", "FILING NUMBER 1", "FILING NUMBER 2", "TITLE", and "SUB STATUS". It is currently empty.
- Court Case Information:** A table with columns "CASE NO", "BOOK NO", "PAGE NO", and "COMMENTS". It is currently empty.
- Notes:** A large empty text box for additional notes.
- Buttons:** "Print", "Export", and "Close" buttons are located at the bottom right.
- Status Bar:** At the bottom left, it says "Finished retrieving data."

Structure_MoreStructure

More Structure Information View

4.5.10 Owner/Contact Information

The structure **Owner/Contact Information** view provides information about the owner of the structure.

StateView - Structure Data - Owner/Contact Data - 2000812 (RIO GRANDE CNL)

Structure Name: RIO GRANDE CNL DIV: 3 VWD: 20 ID: 812

Fullname: [Empty]

Name: RIO GRANDE CANAL WAT OWNER: [Empty]

Title: OWNER Prof. License #: [Empty]

Organization: [Empty]

Bonding Co.: [Empty]

Address: BOX 288

City: MONTE VISTA

State: CO

ZIP: 81144

CONTACT MEANS: TRY FIRST, PHONE NUI

Print Export Close

Structure_Owner

Structure Owner/Contact Information View

4.5.11 Structure Summary

The **Structure Summary** view displays summary information for a structure.

StateView - Structure Data - Structure Summary - 2000812 (RIO GRANDE CNL)

STRUCTURE SUMMARY FOR: RIO GRANDE CNL

WATER DISTRICT: 20
 ID NUMBER: 812
 WATER SOURCE: RIO GRANDE AT STREAM MILE: 0.00
 LOCATION: 40N 6E 30 NW NW SW IN RIO GRANDE COUNTY
 TOTAL IRRIGATED ACRES: See irrigated acres summary.
 STRUCTURE TYPE: Headgate
 CIU (CURRENTLY IN USE): Active Structure with contemporary diversion records
 IS TRANSEASIN:
 ESTIMATED CAPACITY:
 DECREEED CAPACITY (SUM OF ABSOLUTE NET AMOUNT RIGHTS): 1648.5000 C
 MEASURING DEVICE/RECORDER: 80 FT RATED SECT/A35
 CONTACT: RIO GRANDE CANAL WAT
 ADDRESS 1: PO BOX 288
 CITY/STATE/ZIP: MONTE VISTA CO 81144

WATER RIGHTS TRANSACTION INFORMATION

ADMIN NO	ADJ DATE	APPRO DATE	COURT NO	DECREED RATE (CFS)	DECREED VOL. (AF)	ADJUDICATION TYPE	USES
10926.00000	1896-05-01	1879-11-30	W3979	11.20		0,TF	IRR
10926.00000	1896-05-01	1879-11-30	W3979	11.20		0,TT	IRRCH
10926.00000	1896-05-01	1879-11-30	05/01/1896	11.20		0,TT	IRR
10956.00000	1896-05-01	1879-12-30	05/01/1896	2.00		0	IRR
10956.00000	1896-05-01	1879-12-30	05/01/1896	2.00		0,TF	IRR
11568.00000	1896-05-01	1881-09-02	W3979	318.40		0,TF	IRR

Search Print Save Close

Ready

Structure_Summary

Structure Summary View for a Headgate

This report summarizes structure information from several database tables, including:

- Structure identifier, name, location, and physical characteristics
- Water rights
- Irrigated acreage
- Diversion and reservoir release records

The report is useful when one or a few structures are of interest.

4.5.12 Water Rights - Net Amounts

The structure **Water Rights - Net Amounts** view for a structure is the same as the general **Data...Water Rights** view, constrained to show only the structure of interest. See **Section 4.6 - Water Rights** for more information.

4.5.13 Water Rights - Transaction

The structure **Water Rights - Transaction** view for a structure is the same as the general **Data...Water Rights** view, constrained to show only the structure of interest. See **Section 4.6 - Water Rights** for more information.

4.6 Water Rights

The **Data...Water Rights** menu displays transaction and net amount water rights as raw data and reports. The following figure illustrates the **Water Rights Query** display.

StateView - Water Rights - Query

Query Options:

Water Division/District: Division 1: South Platte

Water Rights Type: Transaction List

Where: [Dropdown] Matches [Dropdown]

Where: [Dropdown] Matches [Dropdown]

Where: [Dropdown] Matches [Dropdown]

Get Data

Column Order: Associated Rights

Query Results List:

View Print Export Close

View Report: Standard Water Rights Report (ID, Admin #)

Ready

WaterRights

Water Rights Query

To display water rights data, first select query options, as described below:

**Water
Division/District**

The water division and district are used to limit queries to a region. The available options are typically constrained using the **Tools...Options...Water District Filter** settings.

**Water Rights
Type**

The water rights type can be either **Transaction List** (the individual transactions that have occurred over time) or **Net Amounts** (the resulting sum of the transactions). The available output formats depend on the water right type.

Where

Use the **Where** list to choose additional criteria for limiting a query. To see an explanation of the choices, do a simple query, and then use the tool tips for each column heading.

Use the **Location** choice to query by legal location. To input the location, click in the entry field, which will cause the following dialog to be displayed:

Location_Dialog

Wildcard characters (*) can be used to make the search as broad as desired.

Column Order

If the **Legal** column order is selected, then the legal location is shown before other information. If the **Summary** column order is selected, the legal location information is shown at the right end of the table. The column order is changed after data are queried.

Output Format

After water rights are displayed to the screen as raw data, the results can be formatted and displayed in a report window. The format of the report, including sort order, is predefined for reports; therefore, the data may be requested if the displayed order is not consistent with the report. Displaying the raw data is useful because it can be exported to a delimited format (e.g., for use with a spreadsheet) and the query options can be used to narrow the query. Printing some of the reports may require landscape and/or oversized paper (this is not automatically selected).

Initiate a query by pressing the **Get Data** button or press **Enter** while the mouse cursor is in the **Is** field. Queries for an entire district or division can take several minutes but typically require only a few seconds. The results from the query are displayed in list format, as illustrated in the following sections.

4.6.1 Net Amount Water Rights

The following figure illustrates a net amounts water rights data view.

StateView - Water Rights - Query

Query Options:

Water Division/District: Division 1: South Platte

Water Rights Type: Net Amounts

Where: Water Right Name Contains highline cnl

Where: Matches

Where: Matches

Column Order: Legal

Get Data

Water Rights Records: 155 records returned in 21.823 seconds

	WD	ID	WATER RIGHT NAME	WATER SOURCE	LOCATION	COUNTY
27	7	569	FARMERS HIGHLINE CNL	CLEAR CREEK	S 3S 70W 27 SW NW SE	JEFFERS
28	7	569	FARMERS HIGHLINE CNL	CLEAR CREEK	S 3S 70W 27 SW NW SE	JEFFERS
29	7	569	FARMERS HIGHLINE CNL	CLEAR CREEK	S 3S 70W 27 SW NW SE	JEFFERS
30	7	569	FARMERS HIGHLINE CNL	CLEAR CREEK	S 3S 70W 27 SW NW SE	JEFFERS
31	8	1004	HIGHLINE CNL	SOUTH PLATTE RIVER	S 6S 69W 33 SE NW SE	JEFFERS

View Print Export Close

View Report: Tabulation Report (Admin #, ID)

155 records returned in 21.823 seconds.

WaterRights_Net_List

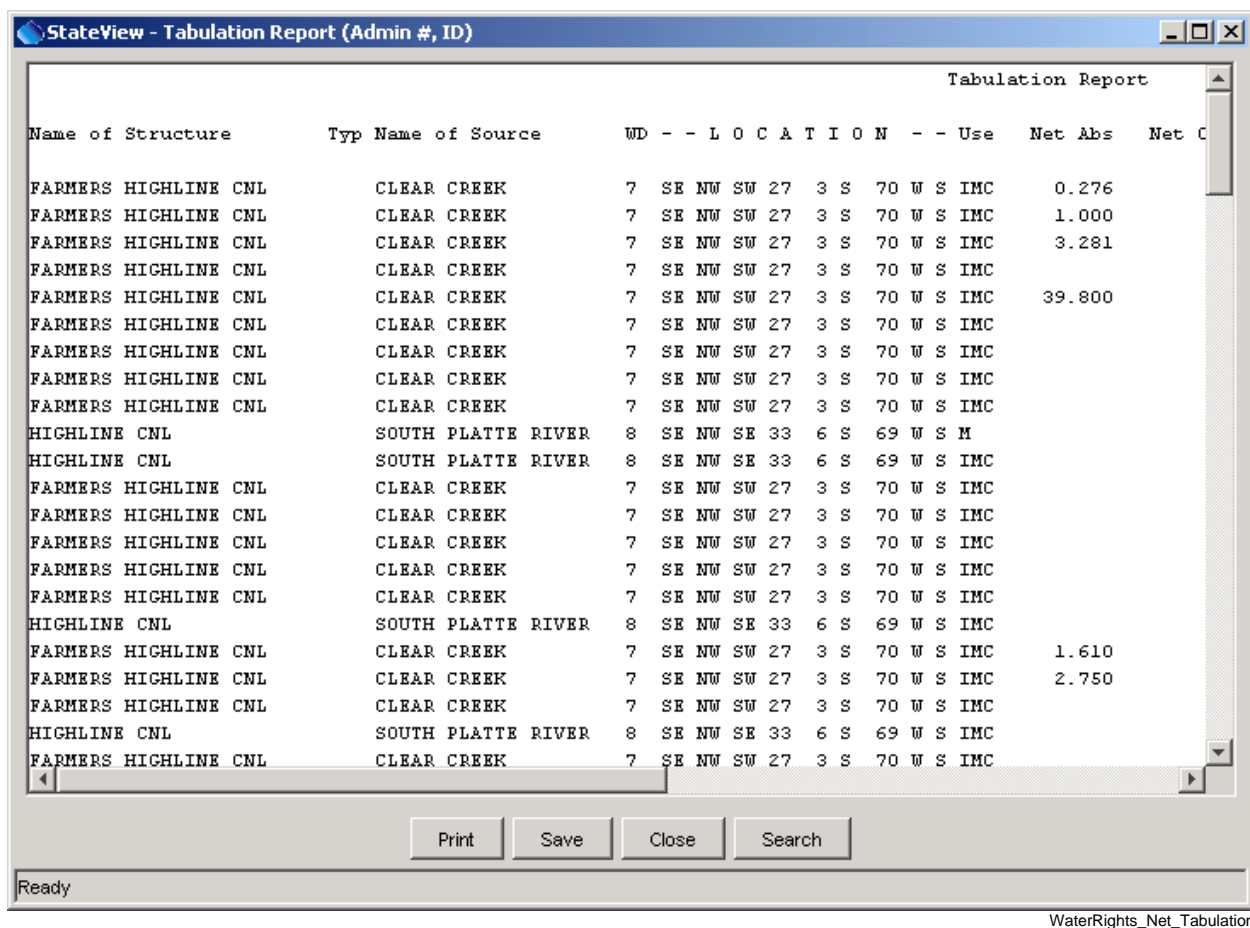
Water Rights View Showing Net Amounts List

The water rights data display includes a large number of columns. This format is useful for finding specific data items. However, standard reports are also available that organize data in useful formats. To view the water rights in a report format, select the appropriate format from the **View Report** choices. If necessary, the database will be requiered in order to sort data as needed for the report. Available net amounts reports are as follows and adhere to existing report formats, as much as possible.

Available Net Amounts Water Right Reports

Net Amounts Output Format	Sort Order
<i>Administrative Summary List</i>	Admin #, ID
<i>Administrative Summary List by Stream</i>	Stream, Admin #, ID
<i>Priority List</i>	Admin #, ID
<i>Priority List by Stream</i>	Stream, Admin #, ID
<i>Stream Alphabetical List</i>	Stream, Name, Admin #
<i>Tabulation Report</i>	Admin #, ID

The following figure illustrates a net amounts tabulation report.



Net Amounts Water Rights Tabulation Report

WaterRights_Net_Tabulation

In addition to the water rights data list and reports, a single net amount water right can be viewed in expanded form by selecting the water right in the list in the **Water Rights Query** window and then pressing the **View** button. The following figure illustrates the resulting view.

StateView - Water Right - Net Amounts

Water Right Name:		DIV:	WD:	ID:	Water Source:	
FARMERS HIGHLINE CNL		1	7	569	CLEAR CREEK	

County:	PM:	TVN:	RNG:	SEC:	1/4:	1/4 1/4:	1/4 1/4 1/4:
JEFFERSON	S	3	S	70	W	27	SW NW SE

Adjudication Date:		Prior Adjudication Date:	Appropriation Date:	
1884-10-04			1865-04-23	

Administration No:		Order No:		Prior/Case No:	
5592.00000		0		94CW0291	

Adjudication Type:		Use Type:		Struct Type:	
		STOIRRMUNCOMINDRECFISFIRDOMSTK		1	

Rate Abs (cfs):	Vol Abs (acft):	Rate Cond (cfs):	Vol Cond (acft):	Rate Apex (cfs):	Vol Apex (acft):
2.8900	0.0000	0.0000	0.0000	0.0070	0.0000

Action Comment:

30/1981 ARVADA CHNG USE W-8762;THORNTON CHNG USE 12/06/1990 86CW401/

Print Export Close

WaterRights_Net_View

Example Net Water Right View

4.6.2 Water Rights Transaction List

The following figure illustrates a water rights transaction list data view.

StateView - Water Rights - Query

Query Options:

Water Division/District: Division 1: South Platte

Water Rights Type: Transaction List

Where: Water Right Name Contains highline cnl

Where: Matches

Where: Matches

Column Order: Associated Rights

Get Data

Water Rights Records: 531 records returned in 35.123 seconds

	WD	ID	WATER RIGHT NAME	WATER SOURCE	LOCATION
1	7	569	FARMERS HIGHLINE CNL	CLEAR CREEK	S 3S 70W 27 SW NW SE
2	7	569	FARMERS HIGHLINE CNL	CLEAR CREEK	S 3S 70W 27 SW NW SE
3	7	569	FARMERS HIGHLINE CNL	CLEAR CREEK	S 3S 70W 27 SW NW SE
4	7	569	FARMERS HIGHLINE CNL	CLEAR CREEK	S 3S 70W 27 SW NW SE
5	7	569	FARMERS HIGHLINE CNL	CLEAR CREEK	S 3S 70W 27 SW NW SE

View Print Export Close

View Report: Standard Water Rights Report (ID, Admin #)

531 records returned in 35.123 seconds.

WaterRights_Transaction_List

Water Rights Transaction List View

The transaction list view includes a large number of columns. This format is useful for finding specific data items. However, standard reports are also available that organize data in useful formats. To view the water rights in a report format, select the appropriate format from the **View Report** choices. Available transaction list reports are as follows and adhere to existing report formats, as much as possible. The standard and extended reports are very similar, with the extended report having comments.

Available Water Right Transaction List Reports

Transaction List Output Format	Sort Order
Standard Water Rights Report	ID, Admin #
Standard Water Rights Report	Stream #, ID, Admin #
Standard Water Rights Report	Name, Admin #
Standard Water Rights Report	Location
Standard Water Rights Report	Admin #, Name
Standard Water Rights Report	Stream #, Admin #, ID
Extended Water Rights Report	ID, Admin #
Extended Water Rights Report	Stream #, ID, Admin #
Extended Water Rights Report	Name, Admin #
Extended Water Rights Report	Location
Extended Water Rights Report	Admin #, Name
Extended Water Rights Report	Stream #, Admin #, ID

In addition to the water rights data list and reports, a single water right transaction can be viewed in expanded form by selecting the water right in the list in the **Water Rights Query** window and then pressing the **View** button. The following figure illustrates the resulting view.

StateView - Water Right - Transaction

Water Right Name:		DIV:	WD:	ID:	Water Source:	
FARMERS HIGHLINE CNL		1	7	569	CLEAR CREEK	

County:	PM:	TVN:	RNG:	SEC:	1/4:	1/4 1/4:	1/4 1/4 1/4:
JEFFERSON	S	3	S	70	W	27	SW NW SE

Adjudication Date:		Prior Adjudication Date:		Appropriation Date:	
1884-10-04				1860-02-25	

Administration No:		Order No:		Prior/Case No:	
3708.00000		0			

Adjudication Type:		Use Type:		Struct Type:	
O		RRMUNCOMINDRECFISAUGWLD		1	

Rate Amt (cfs):		Vol Amt (acft):		Aband:		Status:		Case No:	
0.0074						A		88CW0105	

Assoc Type:	Assoc WVD:	Assoc ID:	Aug Role:	Plan WVD:	Plan ID:

Trans Type:	Tran WVD:	Tran ID:	Last Due Dil:	Action Update:
TT	7	569		1997-08-07

Action Comment:

ARVADA CHNG USE 02/13/1992

Print Export Close

WaterRights_Transaction_View

Water Right Transaction View

4.7 Well Permits

The **Data...Well Permits** menu displays information associated with well permits. Because these data are not typically distributed to the public with HydroBase, the **Data...Well Permits** menu is only enabled if at login the SQL Server database is selected for a non-guest login. The following figure illustrates the **Well Permit Query** display.

Well Permit Query

To display well permit data, first select query options, as described below:

Div/Dist The water division and district are used to limit queries to a region. The available options are typically constrained using the **Tools...Options...Water District Filter** settings.

Where Use the **Where** list to choose additional criteria for limiting a query. To see an explanation of the choices, do a simple query, and then use the tool tips for each column heading.

Use the **Location** choice to query by legal location. To input the location, click in the entry field, which will cause the following dialog to be displayed:

Location_Dialog

Wildcard characters (*) can be used to make the search as broad as desired.

Initiate a query by pressing the **Get Data** button or press **Enter** while the mouse cursor is in a **Where** text field. Queries of entire districts or divisions may require a few minutes to return results, but typically only a few seconds are required. Because some districts have many thousands of wells, it may be necessary to use the location **Where** selector to limit the query.

The results from the query are displayed in list format, as illustrated in the following figure:

The screenshot shows the 'StateView - Well Permit Query' window. It has a 'Query Options' section with a 'Div/Dist' dropdown set to 'Division 8: Designated Basin'. Below this are three 'Where' fields: 'Depth, feet' with a 'Greater than' operator and value '3000', and two empty 'Where' fields with 'Matches' operators. A 'Get Data' button is to the right. Below the options, it says '3 records returned in 0.22 seconds.' and displays a table with 11 columns: DIV, WD, PERMIT #, SFX, REP, LOCATION, RECEIPT, WELL NAME, STRUC #, and SUBD. The table contains 3 rows of data. At the bottom of the window are buttons for 'Select On Map', 'View', 'Export', and 'Close'. The status bar at the bottom left says 'Ready' and the bottom right says 'WellPermits_List'.

	DIV	WD	PERMIT #	SFX	REP	LOCATION	RECEIPT	WELL NAME	STRUC #	SUBD
1	8	66	7968			S 34S 44W 31 NE SE	9071961			
2	8	49	12060	F		S 9S 42W 33 NW SW	9036108			
3	8	65	19379	F		S 8N 48W 24 NW SW	9044010			

Well Permit Query List

Information displayed in the tabular list includes water district, permit number, suffix and replacement code, legal location, receipt, name, and many other data fields. Currently, well permits cannot be displayed on the map. The list of permits can be exported to a file.

Selecting a well permit from the list and pressing the **View** button displays a detailed view of the specific well permit, as shown below. This interface illustrates the meaning of the different fields in the list view shown previously.

StateView - Well Permit

Case No.: XRef#:	Use 1:	Receipt:	9036108
Well Name: Statute:	Use 2:	Permit:	12060 F
Subdivision:	Use 3:	Div:	8 WVD: 49
Lot: Block: Filing:	Area Irrigated:	Bas:	1 MD: 1
Parcel ID: Acres in Tract:	Pump Rate: Acre Feet: Depth (ft):	Eng:	User: RAB
	Proposed:	Act:	
	Actual:	Stat:	RC 1994-09-13
	Elevation: Top: Bottom: Water Level:	Tran:	YY 1996-12-05
		NP:	
		EX:	
		Notice:	
		WA:	
		WVC:	
		MVC:	
		Pl:	
		PC:	
		SA:	1968-06-10
		SBU:	
		NBU:	
		ABR:	
		ABCO:	

Driller: Pump:

Flow Meter: Geo. Log: Qual: Abandon:

Comment:

Print Export Close

WellPermits_View

Well Permit Data