



# Lower Gwydir Groundwater Source Summary Report 2006-2015

## Water sharing plan

The Water Sharing Plan (hereafter referred to as the Plan) for the Lower Gwydir Groundwater Source commenced on 1 October 2006. Since commencement of the Plan, the Lower Gwydir groundwater source has been managed under the *Water Management Act 2000* (WMA2000). The Plan sets the framework for managing these groundwater sources until the end of June 2017.

A copy of the Plan can be viewed and downloaded from the NSW legislation website or from the following link:

[http://www.water.nsw.gov.au/water-management/water-sharing/plans\\_commenced/water-source/lower-gwydir-groundwater](http://www.water.nsw.gov.au/water-management/water-sharing/plans_commenced/water-source/lower-gwydir-groundwater)

## Location and description of water sources

The Lower Gwydir groundwater source includes all water contained in the unconsolidated alluvial sediment aquifers associated with the Gwydir River, its tributaries, and effluents downstream of Gravesend as shown in Figure 1.

## Access licences

Three categories of groundwater access licenses are held in the Lower Gwydir groundwater source. These are:

- Local water utility access licences
- Aquifer access licences
- Supplementary water access licences

The Local Water Utility Licences are held by local governments for town water supply purposes. The share component of these licences is for a specified volume of groundwater.

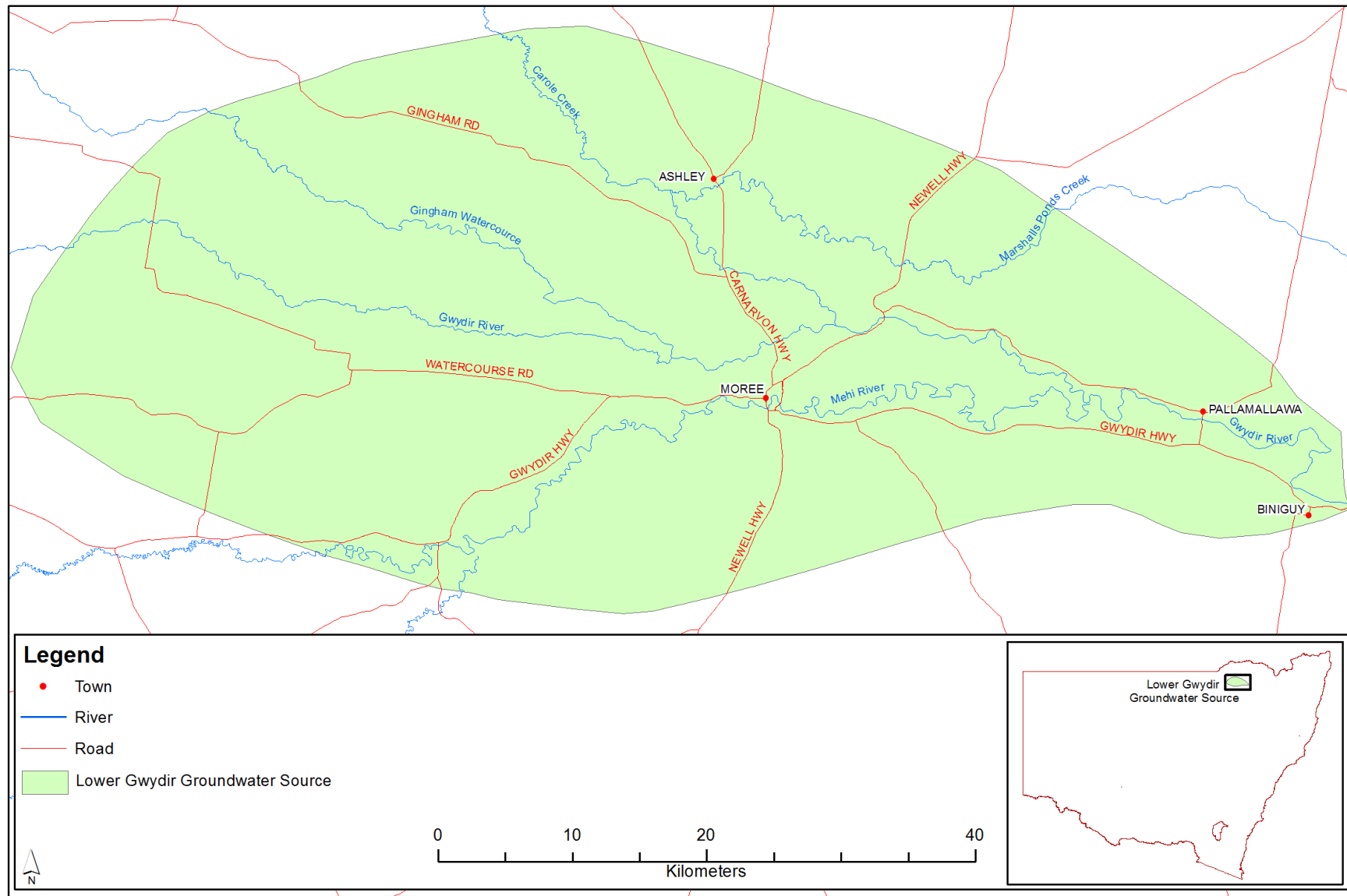
The share components of aquifer access licences and supplementary water access licences are issued for a specified number of unit shares. These are summarised in Table 1.

Table 1 Total share component of existing access licences

Type of access licence	Lower Gwydir
Local water utility access licence	3,572 ML
Aquifer access licences	28,858 shares
Supplementary water access licences	13,930* shares

\*See next section 'Annual extraction limits and Available Water Determination' for further information on available water determinations for supplementary water access licences as set by the water sharing plan.

Figure 1 Map of the Lower Gwydir groundwater source



## Annual extraction limits and available water determination

The extraction limit for the Lower Gwydir is initially 32,300 ML/yr, plus total water made available to supplementary water access licences, plus the total requirements for basic landholder rights at the commencement of the plan.

At the start of each water year an available water determination (AWD) is made which sets the allocation of groundwater for the different categories of access licences. The Plan requires that where the average of the preceding 3 year's extraction exceeds the extraction limit by 5% or greater, then the available water determination made for aquifer access licences in this groundwater source for the following water year, should be reduced by an amount that is assessed necessary by the Minister to return subsequent total water extraction to the extraction limit.

The available water determinations for supplementary water access licences for each year have been set in the Plan. After the 2014-2015 water year there will be no groundwater available under Supplementary Water Access Licences.

**Table 2 Available water determination for access licence categories start of Plan to date**

Year of Plan	Water Year	Supplementary Water (ML per unit share)	Aquifer (ML per unit share)	Local Water Utility (%)
1	2006-2007	1	1	100
2	2007-2008	1	1	100
3	2008-2009	1	1	100
4	2009-2010	0.857	1	100
5	2010-2011	0.714	1	100
6	2011-2012	0.571	1	100
7	2012-2013	0.429	1	100
8	2013-2014	0.286	1	100
9	2014-2015	0.143	1	100
10	2015-2016	0	Announced 1 July 2015	Announced 1 July 2015
11	2016-2017	0	Announced 1 July 2016	Announced 1 July 2016

## Access licence account management rules

The water sharing plan allows for accrual of unused allocation in aquifer access licence accounts. This includes the yearly allocations for the aquifer access licences made through available water determinations plus any carryover of unused allocation up to a maximum of 2 ML per unit of share component.

The maximum amount of water permitted to be debited from an account in any one water year (i.e. account take limit) cannot exceed 2 ML per unit share component plus any allocation transferred in, and minus any allocation transferred out. This means that metered extraction plus allocation transferred out cannot exceed twice the share component, unless allocation is transferred into the account.

Local water utility access licences do not have any provisions for carryover.

## Groundwater extractions

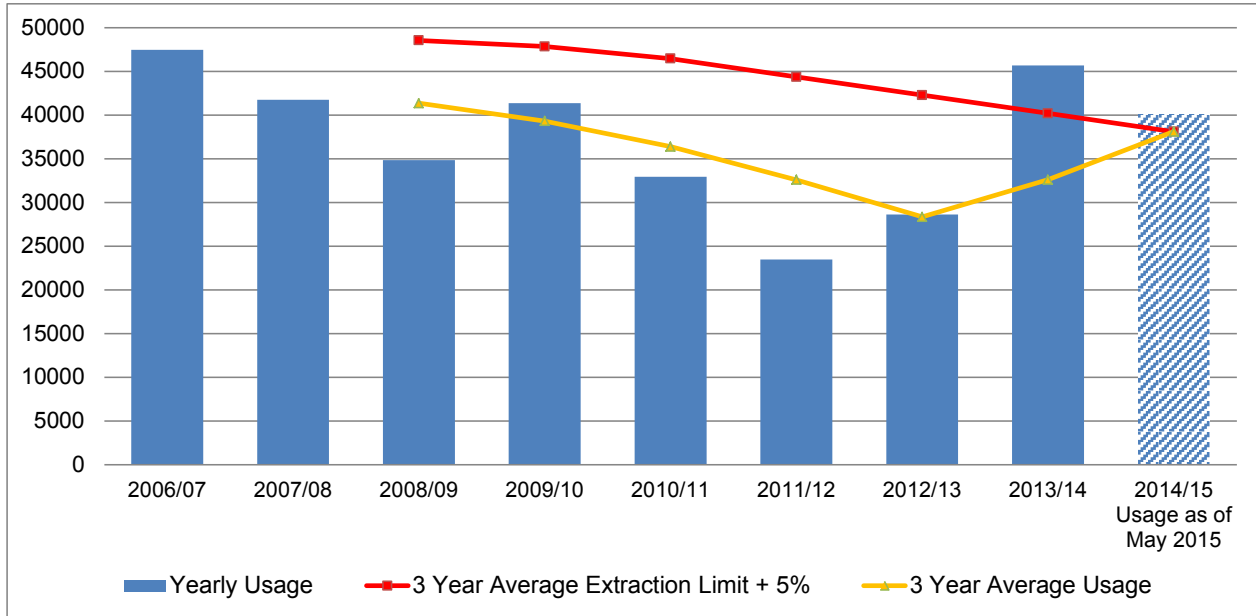
There are approximately 394 production bores within Lower Gwydir groundwater source. All bores are metered and the usage is recorded at regular intervals.

Figure 2 shows the annual extraction and the three year rolling average compared to the water sharing plan compliance trigger of 5% above the average extraction limit.

Extraction for the 2014/2015 water year to May 2015 is at 40,004.2 ML resulting in the three year rolling average for the period 2012/13 to 2014/15 exceeding compliance conditions of the extraction limit.

The Office of Water continues to monitor extraction levels in the lead up to an available water determination being made 1 July 2015 for aquifer access licences for the 2015/2016 water year. Where average extraction over the preceding 3 year exceeds the average extraction limit by 5% or more the Office of Water may announce an AWD of less than 1 ML/share for aquifer access to return subsequent total water extraction to the extraction limit.

Figure 2 Lower Gwydir annual extraction and extraction limits



## Groundwater dealings (trades)

Under the WMA 2000 dealings or trades are permitted within a groundwater source between access licences including dealings in shares, account water and nomination of water supply works.

The most common dealings are assignment of allocation (sale or purchase of account water – s71T) and assignment of rights (sale or purchase of share component – s71Q or add or remove works s71W).

A summary of s 71T assignments of allocation (temporary trades) since commencement of the Plan are provided in Table 3.

This information can be obtained from [www.water.nsw.gov.au/water-licensing/registers](http://www.water.nsw.gov.au/water-licensing/registers) under 'Water trading statistics and processing times'.

Table 3 Summary of assignment of allocation dealings since commencement of the Plan

Water Year	Assignment of Allocation Dealings (71T)	
	Number	Volume (ML)
2006-2007	34	5627
2007-2008	33	7070.2
2008-2009	33	5393
2009-2010	58	8121.1
2010-2011	36	5265.7
2011-2012	31	4545.5
2012-2013	34	4812.6
2013-2014	58	8664.9
2014-2015*	55	9418.7

\*Total dealings as at 18/05/2015, water year still in progress.

Since commencement of the Plan there have been 40 s71Q or s71W dealings or assignment of rights (permanent trade) totalling approximately 4,600 ML in the Lower Gwydir.

## Groundwater levels

The Office of Water monitors groundwater levels in approximately 114 bores at 54 sites throughout Lower Gwydir (Figure 3). At most of these sites multiple pipes are screened at different depths below ground surface.

The graphs (Figures 4 to 9) show variation in water levels at each monitoring site over time expressed as metres below ground level. The depth of the screened intervals indicating the interval of the aquifer being monitored is noted on each graph.

The network includes four telemetered sites with continuous real time (logged) data available at <http://realtimedata.water.nsw.gov.au/water.stm>.

Figure 3 Monitoring bore locations, representative bores highlighted in yellow

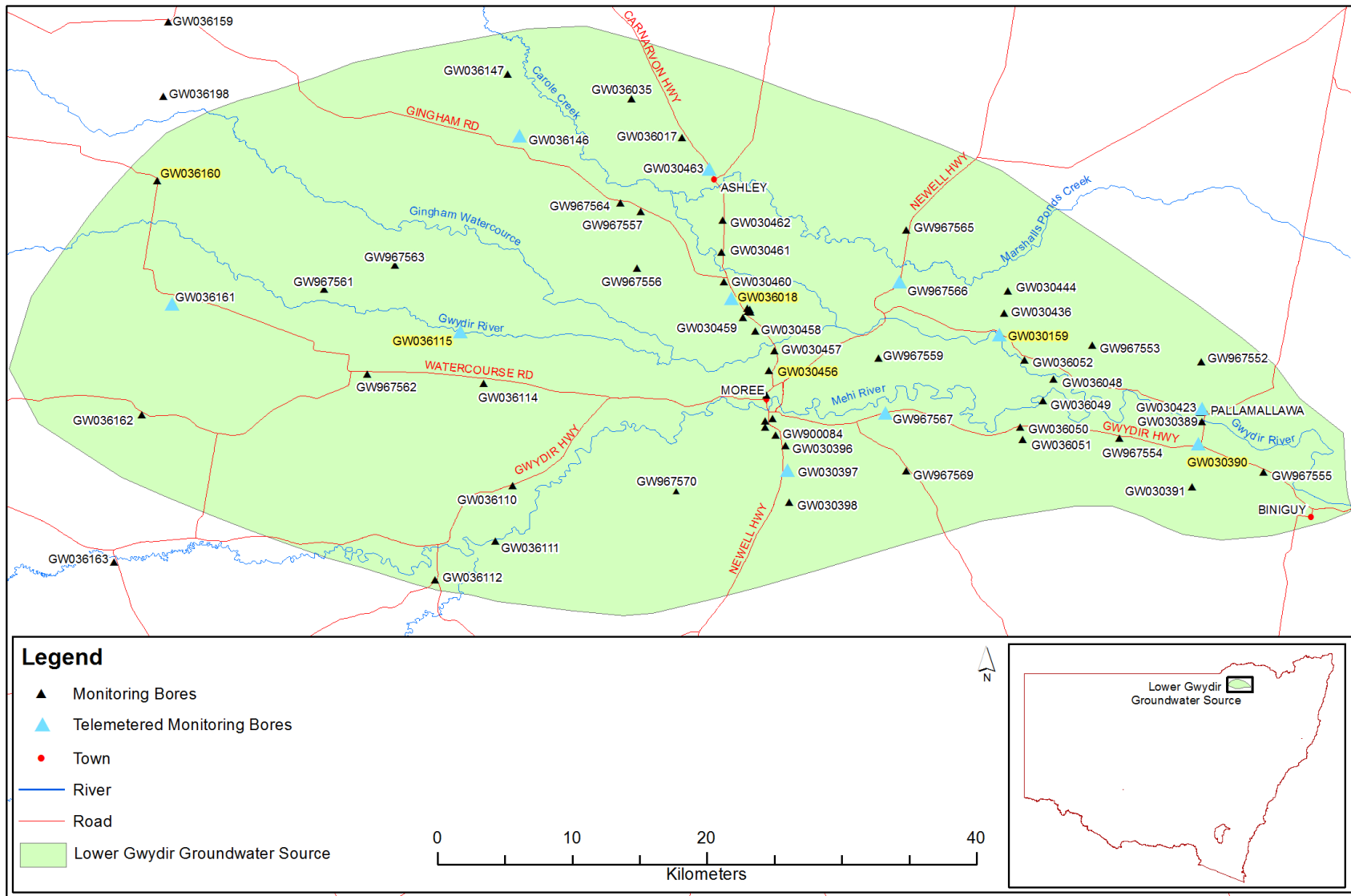


Figure 4 Hydrograph for monitoring bore site GW030390 – includes telemetered data

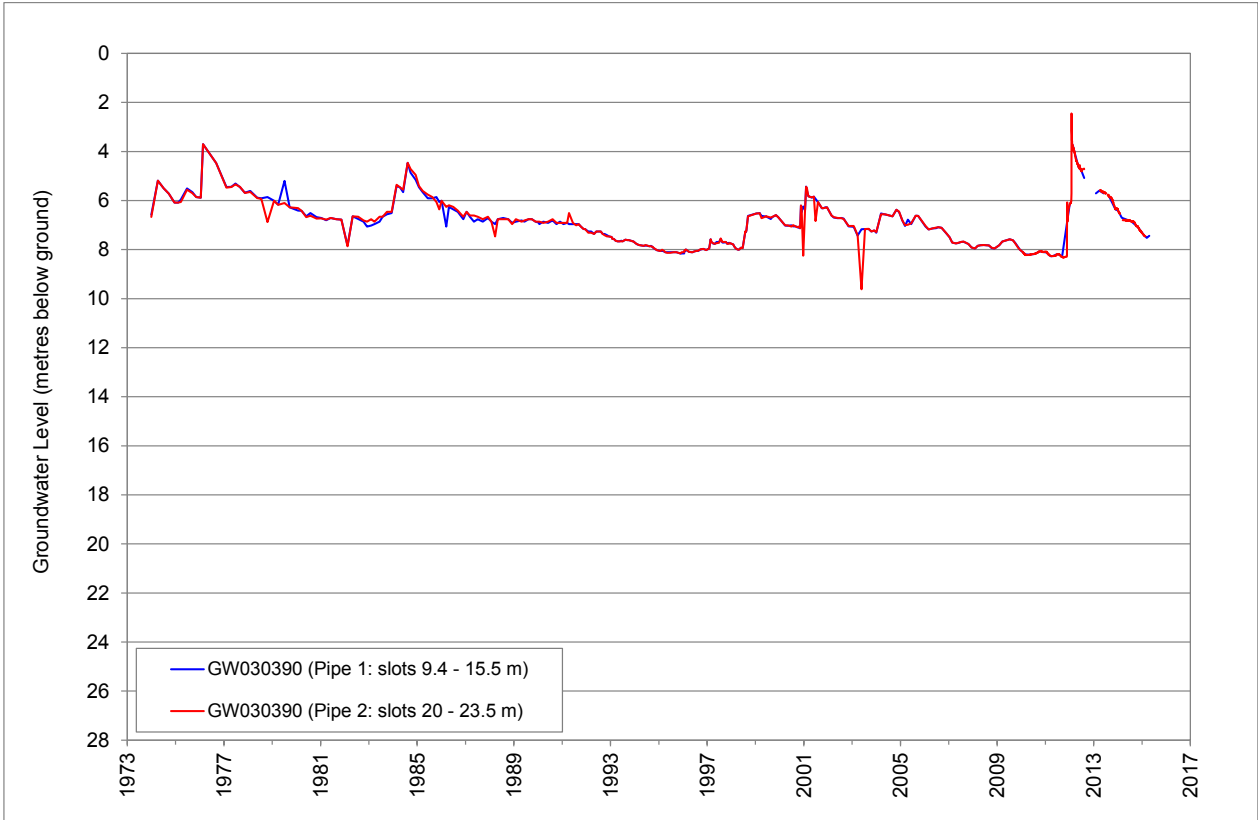


Figure 5 Hydrograph for monitoring bore site GW036159 – includes telemetered data

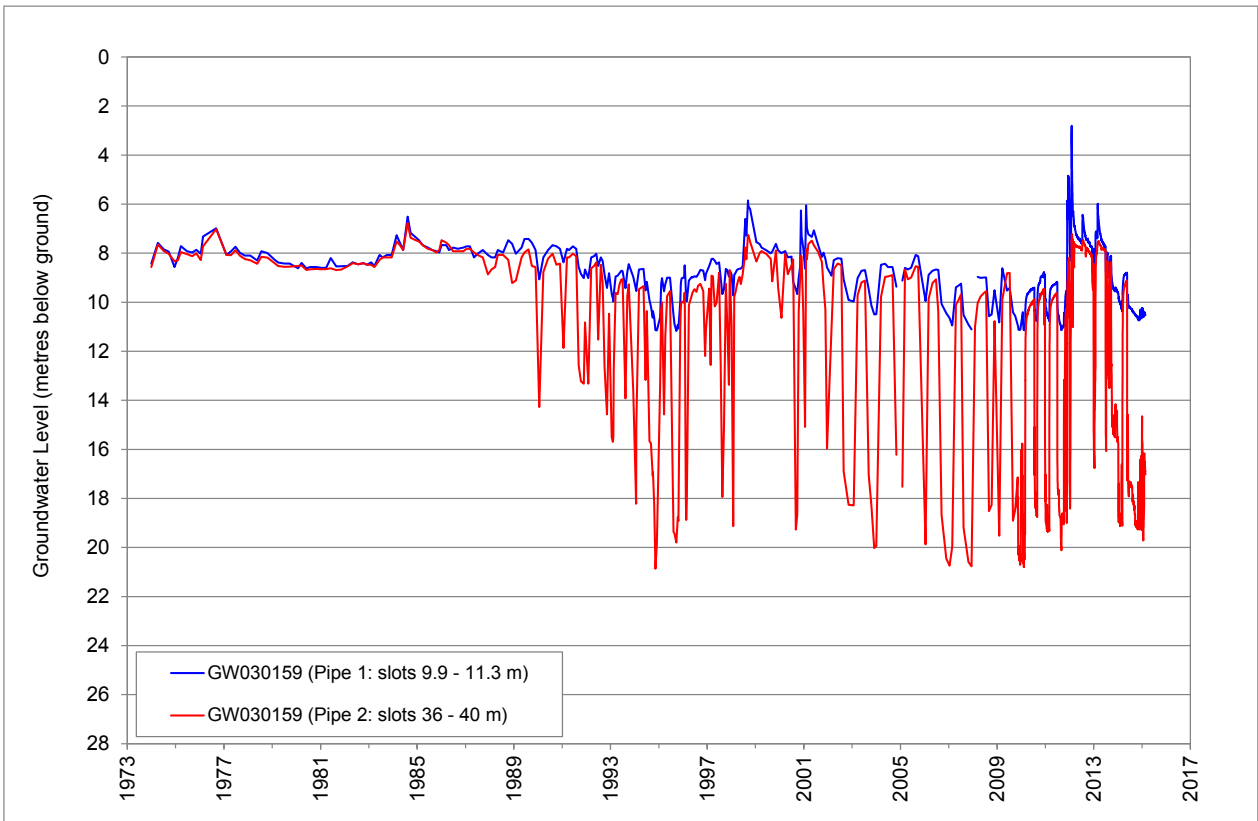


Figure 6 Hydrograph for monitoring bore site GW036018 – includes telemetered data

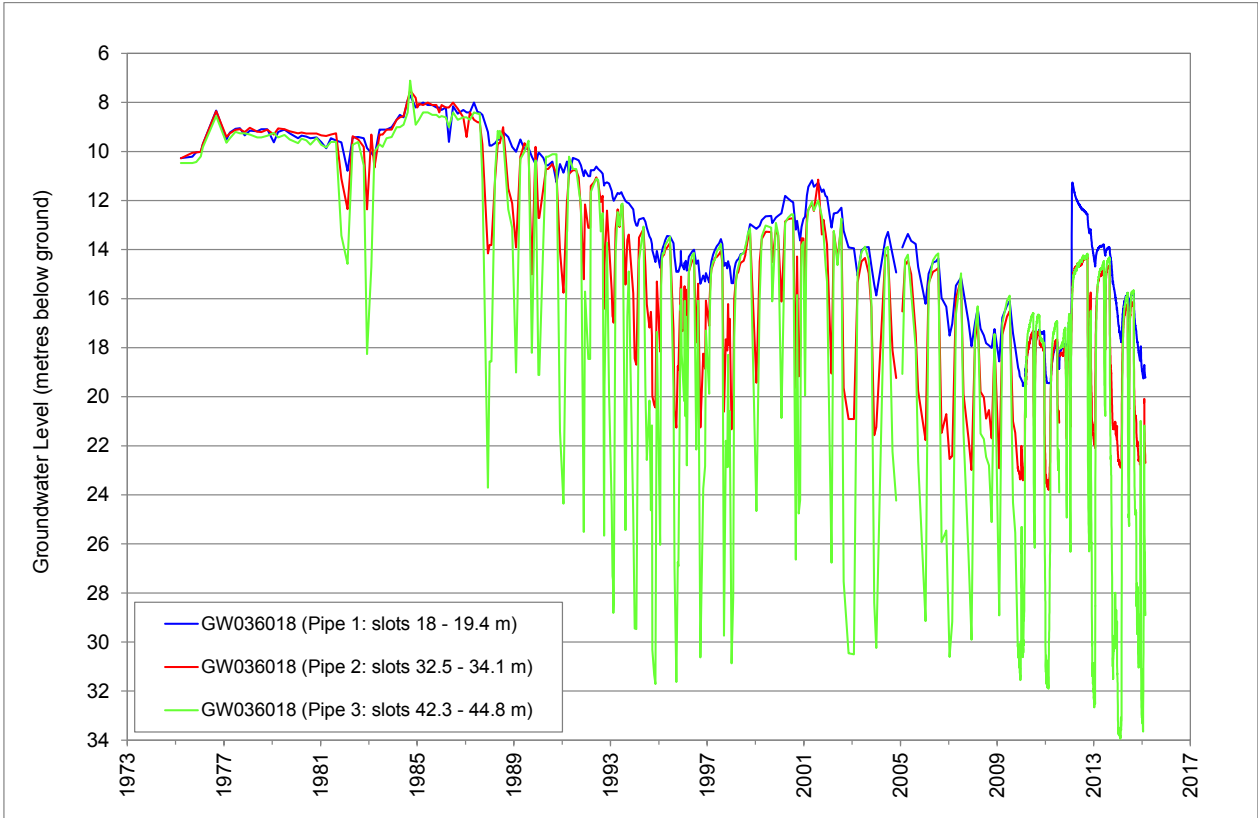


Figure 7 Hydrograph for monitoring bore site GW030456

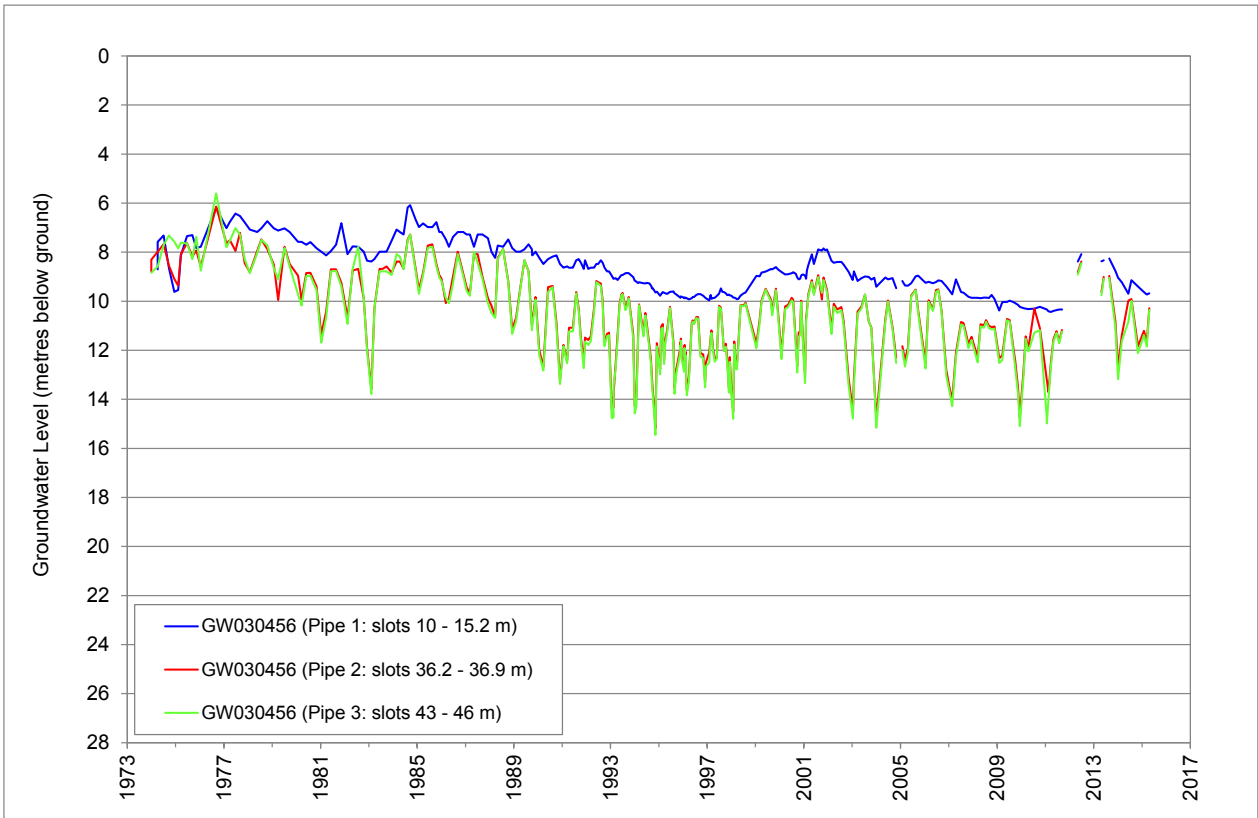




Figure 8 Hydrograph for monitoring bore site GW036115 – includes telemetered data

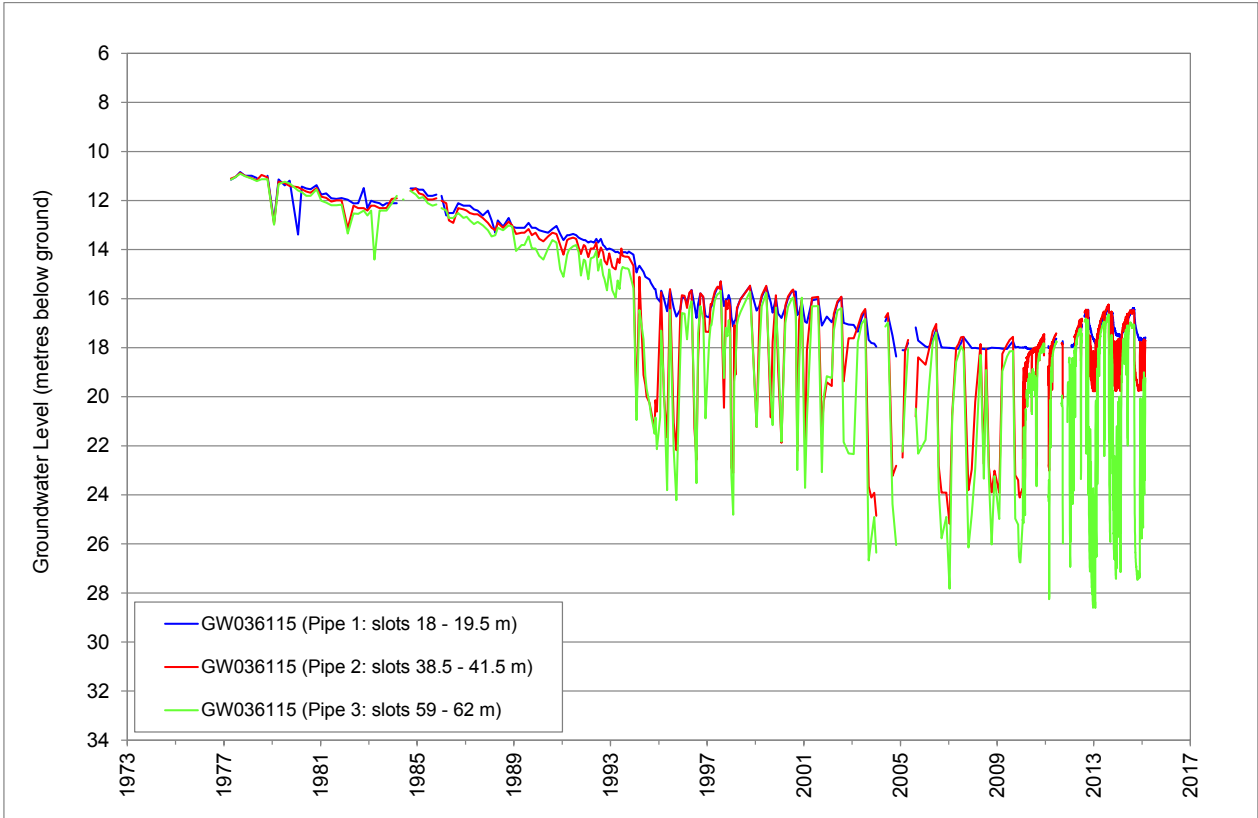
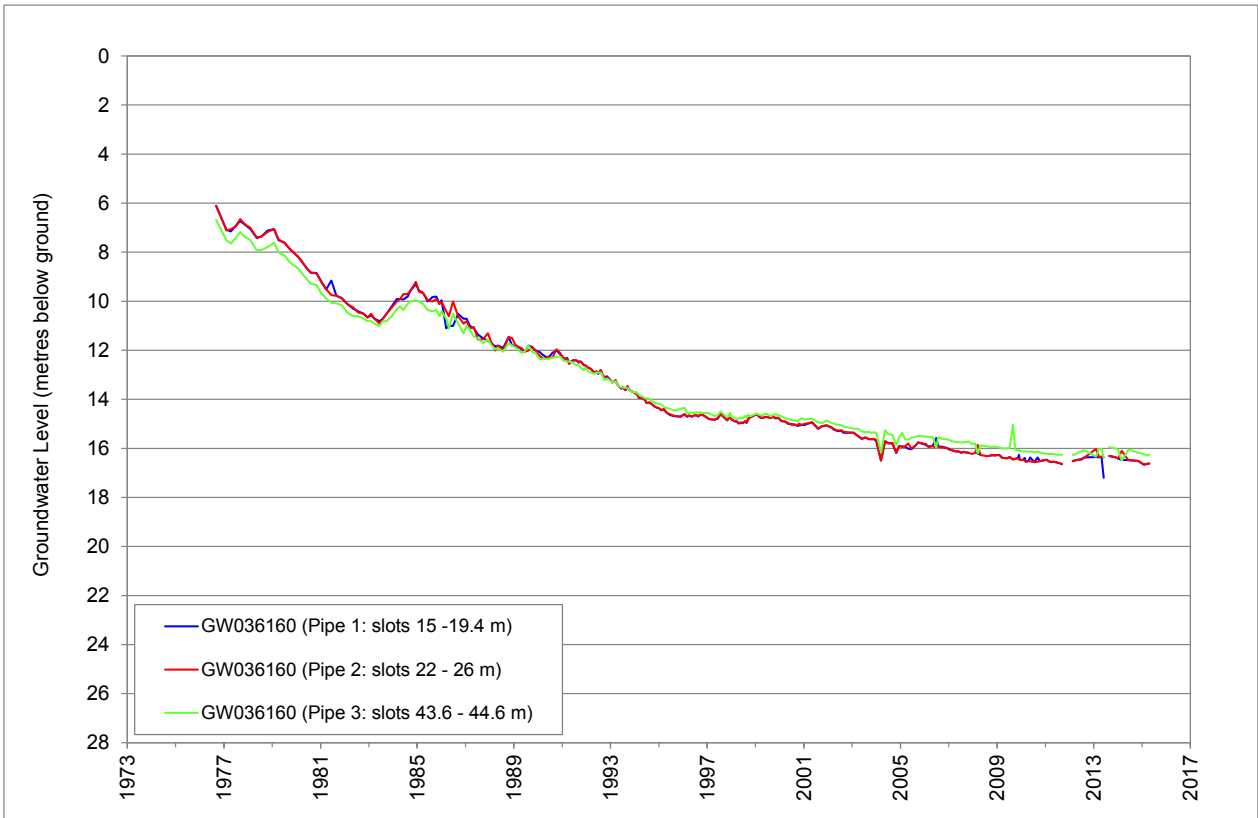


Figure 9 Hydrograph for monitoring bore site GW036160



## More information

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[www.water.nsw.gov.au](http://www.water.nsw.gov.au)

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