

Fitzroy Basin Water Quality and Coal Mine Status

Update 13

Fitzroy Basin Salinity Update – 1 June 2012

The Queensland Government continues to closely monitor salinity levels in the Fitzroy Basin as part of its independent water quality monitoring program.

The department has a network of 23 water quality monitoring stations that continuously measure EC, stream height, flow, water temperature and rainfall data.

Salinity levels can be measured by the conductivity of the water. The salinity information provided is expressed as Electrical Conductivity (EC) and measured in Micro-Siemens per cm ($\mu\text{S}/\text{cm}$).

This information is updated weekly on the Fitzroy River website- www.fitzroyriver.qld.gov.au

River flows start receding

The flows throughout the Fitzroy Basin continue to recede and, as expected, elevated salinity (EC) is becoming evident throughout the upper and mid reaches of the catchment.

This is expected to continue in these areas of the catchment while groundwater is the major influence on stream flows.

In the upper and mid reaches of the catchment, the elevated EC's are likely to reach similar levels as last year and will remain around those levels until there is sufficient rainfall to cause surface water runoff.

The EC levels in the lower parts of the catchment remain at lower values because the large

waterholes and water storages still contain the remnant waters of the last minor flood.

Also, due to the volume of the waterholes and storages, it is likely the water in the lower reaches of the catchment will take a few months before the salinity values become significantly elevated in this region.

Earlier this week (30 May) the levels of EC and sodium in the drinking water supplied to Rockhampton, from the Glenmore Treatment Plant, were 405 $\mu\text{S}/\text{cm}$ and 32 mg/L respectively.

During May the raw water EC increased gradually from approximately 370 $\mu\text{S}/\text{cm}$ to the current level, which reflected reduced flows throughout the Fitzroy Barrage storage area.

In comparison, last year at the Barrage the EC level increased by more than 200 $\mu\text{S}/\text{cm}$ during May.

The flow was approximately 116.5 Megalitres per day downstream of the Theresa Creek gauging station at the Gregory Highway on 21 May 2012.



Drinking, irrigation and livestock water quality as at 28 May, 9am

Catchment	Stream site	Electrical conductivity μS/cm (24 hr average)	Drinking water ¹ (¹ Raw water not treated for town water supply)	Irrigation	Livestock watering
Callide	Callide Creek at Goovigen <i>(Water level below probe)</i>	no data	no data	no data	no data
Upper Dawson	Dawson River at Taroom	618	(a)	(b)	(a)
Lower Dawson	Dawson River at Beckers	342	(a)	(a)	(a)
Comet	Comet River at the Lake	494	(a)	(a)	(a)
Upper Nogoa	Nogoa River at Craigmore	634	(a)	(b)	(a)
Lower Nogoa	Nogoa River at Duckponds	780	(a)	(b)	(a)
Theresa	Theresa Creek at Gregory Highway <i>(Problem with EC probe)</i>	no data	no data	no data	no data
Upper Isaac	Manual data collection as required	no data	no data	no data	no data
Lower Isaac	Isaac River at Yatton	641	(a)	(b)	(a)
Connors	Connors River at Pink Lagoon	641	(a)	(b)	(a)
Mackenzie	Mackenzie River at Coolmaringa	468	(a)	(a)	(a)
Fitzroy	Fitzroy River The Gap	458	(a)	(a)	(a)

Explanatory information for water quality rating

Intended use	Water quality indicator				
	no data	(a)	(b)	(c)	(d)
Livestock watering	No data available	<3000 $\mu\text{S}/\text{cm}$ No adverse impacts	3000–<4500 $\mu\text{S}/\text{cm}$ Early alert: poultry	4500–7500 $\mu\text{S}/\text{cm}$ Loss of production: dairy and poultry Early alert: pigs and beef	> 7500 $\mu\text{S}/\text{cm}$ Loss of production: beef Early alert: sheep
Irrigation	No data available	<600 $\mu\text{S}/\text{cm}$ Suitable for all plants	600–<1300 $\mu\text{S}/\text{cm}$ Suitable for the majority of plants. Alert for sensitive plants	1300–3000 $\mu\text{S}/\text{cm}$ Suitable for plants tolerant to medium levels of salinity	> 3000 $\mu\text{S}/\text{cm}$ Suitable for very tolerant plants only
Human drinking water ²	No data available	< 900 $\mu\text{S}/\text{cm}$ Good	900–<1400 $\mu\text{S}/\text{cm}$ Fair	1400–1800 $\mu\text{S}/\text{cm}$ Poor	>1800 $\mu\text{S}/\text{cm}$ Unacceptable

² Human drinking water thresholds relate to Australian Drinking Water Standards. People who need to monitor their dietary intake should seek professional advice.

The electrical conductivity-based categories for 'livestock watering' and 'human drinking water' are derived from TDS limits (i.e. total dissolved solids, milligrams per litre; mg/L) using the relationship $\text{EC } (\mu\text{S}/\text{cm}) \times 0.67 = \text{TDS } (\text{mg}/\text{L})$.

Coal mines update

The focus here on coal mine water releases is due to the significant increase in public interest during recent wet seasons. It is important to note that there are a range of factors that can influence water quality in the Fitzroy Basin, including natural events and human activities such as non-mining related industry releases, agricultural practices and sewage effluents.

Mine affected water is any water, including rainfall, that has come into contact with any area disturbed by mining activities that is yet to be rehabilitated.

Between 27 April and 30 May 2012 there have been 3 mines that released into the catchment.

Information about mine releases

Since the issuing of update 12, releases of mine affected water from Clermont and Moorvale and Hail Creek mines have ceased.

During May, Hail Creek mine released water that was within the limits set in its Environmental Authority and Transitional Environmental Program, which was approved to aid recovery from the extremely wet weather experienced at the site during February 2012.

Minerva mine also released mine affected water that was within the limits set by an Environmental Authority.

There are currently no mines discharging in the Fitzroy Basin.

Monitoring of water quality in receiving waters downstream of all 3 mines was undertaken by site personnel. In addition to this monitoring, the department continues to closely monitor water quality in streams across the Fitzroy Basin to detect any impacts resulting from ongoing releases.

Compliance matters under investigation

The department is committed to providing open communication to stakeholders about compliance matters, to the extent that it does not compromise possible enforcement actions. The department will typically reserve its final decision until all required monitoring data is submitted and assessed. Mining companies must provide a report detailing all monitoring results within four weeks of ceasing the release. This provides adequate time to obtain and report results from necessary laboratory analysis.

The department is currently assessing potential compliance matters at the following mines in the Fitzroy Basin:

Release Date	Mine	Nature of Potential Breach
28 Jan – 1 Feb	Peak Downs	Exceeded EC limit
29 Mar		Exceeded EC Limit
14-24 Feb	German Creek (Capcoal)	Pipe leak- unauthorised release
21 Mar	Cook Mine	Exceeded EC limit
2 Nov 8-24 Feb 22 Mar	Callide Mine	Failure to notify Failure to notify Exceeded EC limit Insufficient dilution in receiving environment

Further Information:

www.fitzroyriver.qld.gov.au

Fitzroy Basin Association

Fitzroy River Water

Monthly Update for Mine Affected Water Releases (27 April 2012 to 30 May 2012)

Fitzroy Basin Mines

Company	Mine Name	Release Authority	Date Commenced	Time	Notified as Compliant Release	Receiving Waters	Date Ceased
Rio Tinto Coal Australia Pty Ltd	Clermont	TEP	17/04/2012	03:00pm	Yes	Wolfgang Creek	22/05/12
Queensland Coal Pty Ltd (Rio Tinto Coal Australia Pty Ltd)	Hail Creek	TEP	21/04/2012	09:10am	Yes	Schammer Creek	24/05/12
Queensland Coal Pty Ltd (Rio Tinto Coal Australia Pty Ltd)	Hail Creek	TEP	28/04/2012	08:00am	Yes	Middle Creek	24/05/12
Sojitze Minerva Mining Pty Ltd	Minerva	EA	25/05/2012	8:20am	Yes	Sandhurst Creek	26/05/12
Queensland Coal Pty Ltd (Rio Tinto Coal Australia Pty Ltd)	Hail Creek	EA	25/05/2012	11:30am	Yes	Middle Creek	27/05/12
Queensland Coal Pty Ltd (Rio Tinto Coal Australia Pty Ltd)	Hail Creek	EA	25/05/2012	12:00pm	Yes	Middle Creek	27/05/12

