

Coffs Harbour City Council

Coramba Orara River Water Monitoring

all results in micrograms per litre (ug/L)

< symbol indicates "less than", i.e. <25 is less than 25 micrograms per litre

Location No.	Sample Location	Date Sampled	Benzene	Toluene	Ethyl Benzene	Xylene	TPH C6 - C9
A	Upstream of footbridge (end Martin Street, Coramba)	27/01/2009	<1	<1	<1	<2	<25
		23/02/2009	<1	<1	<1	<2	<25
		25/03/2009	<1	<1	<1	<2	<25
		20/04/2009	<1	<1	<1	<2	<25
		27/04/2009	<1	<1	<1	<2	<25
		18/05/2009	<1	<1	<1	<2	<25
		15/06/2009	<1	<1	<1	<2	<25
		28/07/2009	<1	<1	<1	<2	<25
		24/08/2009	<1	<1	<1	<2	<25
		21/09/2009	<1	<1	<1	<2	<25
		21/10/2009	<1	<1	<1	<2	<25
		17/11/2009	<1	<1	<1	<2	<20
		14/12/2009	<1	<1	<1	<2	<20
		18/01/2010	<1	<2	<2	<2	<20
		16/02/2010	<1	<2	<2	<2	<20
		15/03/2010	<1	<1	<1	<2	<25
		28/04/2010	<1	<1	<1	<2	<25
		25/05/2010	<1	<1	<1	<2	<25
		22/06/2010	<1	<1	<1	<2	<25
		19/07/2010	<1	<1	<1	<2	<25
		16/08/2010	<1	<1	<1	<2	<25
		27/09/2010	<1	<1	<1	<2	<25
		26/10/2010	<1	<1	<1	<2	<25
		23/11/2010	<1	<1	<1	<2	<25
		21/12/2010	<1	<1	<1	<2	<25
		24/01/2011	<1	<1	<1	<2	<25
		21/02/2011	<1	<1	<1	<2	<25
B	Outside bund (Sample site in backwater of river adjacent to problem area) (downstream from Site A)	27/01/2009	1.6	<1	<1	<2	<25
		23/02/2009	<1	<1	<1	<2	<25
		25/03/2009	<1	<1	<1	<2	<25
		20/04/2009	11	<1	5.1	16	130
		27/04/2009	<1	<1	<1	<2	<25
		18/05/2009	<1	<1	1.3	2.5	<25
		15/06/2009	<1	<1	<1	<2	<25
		28/07/2009	13	<1	2.4	3.5	<25
		24/08/2009	<1	<1	<1	<2	<25
		21/09/2009	<1	<1	<1	<2	<25
		21/10/2009	<1	<1	<1	<2	<25
		17/11/2009	<1	<1	<1	<2	<20
		14/12/2009	<1	<1	<1	<2	<20
		18/01/2010	<1	<2	<2	<2	<20
		16/02/2010	14	<2	<2	16	180
		15/03/2010	<1	<1	<1	<2	<25
		28/04/2010	<1	<1	<1	<2	<25
		25/05/2010	35	1.6	1.0	14.3	110
		22/06/2010	<1	<1	<1	<2	<25
		19/07/2010	<1	<1	<1	<2	<25
		16/08/2010	<1	<1	<1	<2	<25
		27/09/2010	2.5	<1	<1	<2	<25
		26/10/2010	<1	<1	<1	<2	<25
		23/11/2010	<1	<1	<1	<2	<25
		21/12/2010	<1	<1	<1	<2	<25
		24/01/2011	<1	<1	<1	<2	<25
		21/02/2011	<1	<1	<1	<2	<25
C	Former water supply location (Adjacent original intake location for Coramba supply (in river)) (downstream from Sites A & B)	27/01/2009	<1	<1	<1	<2	<25
		23/02/2009	<1	<1	<1	<2	<25
		25/03/2009	<1	<1	<1	<2	<25
		20/04/2009	<1	<1	<1	<2	<25
		27/04/2009	<1	<1	<1	<2	<25
		18/05/2009	<1	<1	<1	<2	<25
		15/06/2009	<1	<1	<1	<2	<25
		28/07/2009	<1	<1	<1	<2	<25
		24/08/2009	<1	<1	<1	<2	<25
		21/09/2009	<1	<1	<1	<2	<25
		21/10/2009	<1	<1	<1	<2	<25
		17/11/2009	<1	<1	<1	<2	<20
		14/12/2009	<1	<1	<1	<2	<20
		18/01/2010	<1	<2	<2	<2	<20
		16/02/2010	<1	<2	<2	<2	<20
		15/03/2010	<1	<1	<1	<2	<25
		28/04/2010	<1	<1	<1	<2	<25
		25/05/2010	<1	<1	<1	<2	<25
		22/06/2010	<1	<1	<1	<2	<25
		19/07/2010	<1	<1	<1	<2	<25
		16/08/2010	<1	<1	<1	<2	<25
		27/09/2010	<1	<1	<1	<2	<25
		26/10/2010	<1	<1	<1	<2	<25
		23/11/2010	<1	<1	<1	<2	<25
		21/12/2010	<1	<1	<1	<2	<25
		24/01/2011	<1	<1	<1	<2	<25
		21/02/2011	<1	<1	<1	<2	<25
D	150-200m Downstream (of site C)	27/01/2009	<1	<1	<1	<2	<25
		23/02/2009	<1	<1	<1	<2	<25
		25/03/2009	<1	<1	<1	<2	<25
		20/04/2009	<1	<1	<1	<2	<25
		27/04/2009	<1	<1	<1	<2	<25
		18/05/2009	<1	<1	<1	<2	<25
		15/06/2009	<1	<1	<1	<2	<25
		28/07/2009	<1	<1	<1	<2	<25
		24/08/2009	<1	<1	<1	<2	<25
		21/09/2009	<1	<1	<1	<2	<25
		21/10/2009	<1	<1	<1	<2	<25
		17/11/2009	<1	<1	<1	<2	<20
		14/12/2009	<1	<1	<1	<2	<20
		18/01/2010	<1	<2	<2	<2	<20
		16/02/2010	<1	<2	<2	<2	<20
		15/03/2010	<1	<1	<1	<2	<25
		28/04/2010	<1	<1	<1	<2	<25
		25/05/2010	<1	<1	<1	<2	<25
		22/06/2010	<1	<1	<1	<2	<25
		19/07/2010	<1	<1	<1	<2	<25
		16/08/2010	<1	<1	<1	<2	<25
		27/09/2010	<1	<1	<1	<2	<25
		26/10/2010	<1	<1	<1	<2	<25
		23/11/2010	<1	<1	<1	<2	<25
		21/12/2010	<1	<1	<1	<2	<25
		24/01/2011	<1	<1	<1	<2	<25
		21/02/2011	<1	<1	<1	<2	<25
Additional downstream samples for reference							
downstream	500m Downstream	8/08/2006	<1	<1	<1	<2	<25
		24/08/2006	<1	<1	<1	<2	<25
downstream	Downstream 3km (near TOFOG sportsground)	27/07/2006	<1	<1	<1	<2	<25
		8/08/2006	<1	<1	<1	<2	<25
		7/09/2006	<1	<1	<1	<2	<25
downstream	Adjacent Nana Glen Intake Location (downstream ~14km)	27/07/2006	<1	<1	<1	<2	<25
		8/08/2006	<1	<1	<1	<2	<25
		24/08/2006	<1	<1	<1	<2	<25
		7/09/2006	<1	<1	<1	<2	<25
		3/01/2007	<1	<1	<1	<2	<25

Water quality guideline criteria for reference

Table 3.2: Surface and groundwater criteria µg/L <sup>1,2</sup>

Analyte	Freshwater	Drinking water
	Total petroleum hydrocarbons (TPHs) <sup>3</sup>	
TPHs C6 - C9	TPHs in waters used as screening analysis. If > LOD, analysis for specific toxicants required, e.g. BTEX, PAHs. 10 mg/L is not an ecological criterion.	-
TPHs C10 - C14		-
TPHs C15 - C28		-
TPHs C29 - C36		-
BTEX <sup>3</sup>		
Benzene	950	1
Toluene	100	20
Ethyl benzene	80	3
Meta-xylene	75	20
Ortho-xylene	350	
Para-xylene	200	

Table notes:

- Aquatic ecosystem criteria from Australian New Zealand Environment and Conservation Council (ANZECC) / Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, including Table 3.4.1 and Section 5.3.7. EPA specify that the 95% species protection levels are to be applied for slightly to moderately-disturbed ecosystems (most urban catchments) and the 99% species protection levels for pristine or vulnerable ecosystems or where the contaminants are intractable (e.g. bioaccumulative).
- Drinking water criteria from National Health and Medical Research Council (NHMRC) & Natural Resource Management Ministerial Council (NRMMC) (2004) *Australian Drinking Water Guidelines*.
- Reliability of trigger values (TVs):
  - BTEX - criteria are low reliability TVs, except:
  - moderate reliability TVs for benzene, and o-xylene and p-xylene freshwater.

NOTE: all results are in micrograms per litre (ug/L)

Note: for ease of reference, only sample data from 2009/10 included in this version (with supporting earlier sampling data from further downstream)