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*Supplement of*

## **Mean transit times in headwater catchments: insights from the Otway Ranges, Australia**

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**Supplement.** Geochemistry of the upper Gellibrand catchment streams

Location <sup>a</sup>	Date	Q 10 <sup>3</sup> m <sup>3</sup> day <sup>-1</sup>	EC μS/cm	pH S.U.	TDS mg/L	HCO <sub>3</sub> mg/L	F mg/L	Cl mg/L	Br mg/L	NO <sub>3</sub> mg/L	SO <sub>4</sub> mg/L	Si mg/L	Na mg/L	Mg mg/L	K mg/L	Ca mg/L	<sup>3</sup> H TU
Upper Lardners (UL)	10/07/2014	nm <sup>c</sup>	142	6.26	74	7.8	0.02	30.5	0.06	2.31	3.9	5.5	18.2	2.7	0.7	2.1	1.99±0.04 <sup>b</sup>
	28/09/2014	nm	168	6.03	83	15.1	0.03	30.1	0.07	0.68	3.4	6.7	18.8	3.4	1.3	3.1	1.77±0.04
	20/03/2015	nm	192	7.11	118	41.8	0.03	31.5	0.07	0.37	3.1	7.2	21.1	5.1	1.9	5.7	1.54±0.04
	10/09/2015	nm	154	6.48	81	11.3	0.03	33.0	0.08	1.72	4.2	6.1	18.7	2.8	1.1	2.4	1.99±0.03
Lardners Gauge (LG)	10/07/2014	151.3	164	6.19	85	9.5	0.02	35.8	0.08	3.03	4.5	5.3	19.9	3.1	1.6	2.4	1.94±0.04
	28/09/2014	32.8	182	6.45	94	18.3	0.02	34.0	0.09	1.21	3.3	6.2	22.6	3.8	1.3	3.4	1.94±0.04
	20/03/2015	5.0	197	6.71	114	35.0	0.03	35.3	0.10	0.29	2.7	6.6	21.7	4.9	1.9	5.0	1.64±0.04
	10/09/2015	116.6	179	5.87	92	12.3	0.03	38.9	0.09	2.23	4.5	5.9	21.0	3.3	1.4	2.8	1.97±0.03
	4/11/2015	12.7	172	6.68	100	22.2	0.03	36.4	0.09	1.78	3.5	6.4	20.6	3.7	1.7	3.4	1.77±0.04
Gellibrand River @ James Access (JA)	13/03/2012 <sup>d</sup>	18.5	160	nm	93	39.0	0.07	26.0	0.05	0.05	3.3	nm	14.7	3.0	1.5	5.0	1.90±0.09
	26/04/2012 <sup>d</sup>	30.4	161	nm	85	27.0	0.07	27.2	0.07	0.40	2.8	nm	16.6	3.8	1.4	6.0	1.80±0.08
	10/07/2014	255.2	151	6.70	74	10.0	0.03	27.6	0.06	2.41	3.6	6.2	17.6	2.6	1.0	2.6	2.04±0.04
	28/09/2014	39.1	164	6.66	87	21.4	0.05	28.0	0.08	0.48	3.2	6.7	19.0	3.3	1.1	3.8	1.93±0.04
	20/03/2015	8.8	162	6.71	94	28.5	0.03	28.0	0.07	0.08	2.9	6.3	18.6	3.6	1.5	4.4	1.73±0.04
	10/09/2015	204.4	146	6.68	84	17.8	0.04	29.7	0.08	1.64	3.7	6.6	17.5	2.7	1.0	3.0	2.08±0.03
Porcupine Creek (PC)	10/07/2014	50.4	281	6.33	138	11.5	0.05	61.1	0.08	0.28	10.2	6.5	34.9	5.1	1.7	6.4	1.97±0.04
	27/09/2014	3.3	380	6.76	200	51.2	0.04	68.4	0.17	0.21	5.1	7.2	44.6	7.2	2.2	14.0	1.68±0.04
	20/03/2015	1.0	723	7.30	528	271.8	0.12	90.1	0.26	0.74	8.1	13.4	61.9	15.8	7.6	58.4	0.20±0.02
	10/09/2015	9.7	319	6.51	171	15.0	0.04	83.1	0.15	0.31	9.1	7.2	41.3	6.1	1.7	6.8	2.08±0.04
	4/11/2015	0.6	661	6.95	485	235.7	0.13	99.1	0.31	0.68	8.3	11.7	60.1	14.2	6.7	47.7	0.40±0.02
Ten Mile Creek (TC)	10/07/2014	8.6	397	6.43	184	7.8	0.05	90.4	0.22	0.54	13.5	4.6	54.3	7.1	1.8	3.5	1.74±0.04
	27/09/2014	0.6	463	6.48	229	29.3	0.02	101.6	0.31	0.26	13.8	4.8	65.8	8.1	1.2	3.6	1.00±0.03
	20/03/2015	0.2	406	6.47	191	4.6	0.02	102.8	0.33	0.08	10.0	4.8	59.1	5.8	0.9	2.3	0.44±0.02
	10/09/2015	1.7	562	6.45	285	12.8	0.06	156.1	0.43	0.37	16.1	5.7	77.2	9.8	1.4	4.9	1.09±0.02
	4/11/2015	0.1	392	6.49	199	7.6	0.03	107.8	0.34	0.22	11.8	4.6	57.6	5.8	1.0	2.5	0.53±0.02
Yahoo Creek (YC)	11/07/2014	23.0	368	5.73	221	37.8	0.03	94.1	0.20	0.24	13.7	5.7	53.3	7.9	2.1	6.1	2.14±0.04
	28/09/2014	1.2	505	6.09	276	69.5	0.03	103.8	0.33	0.14	14.2	3.0	66.9	9.2	1.8	7.3	1.19±0.03

	20/03/2015	0.4	471	6.52	229	26.8	0.03	112.3	0.37	0.17	7.0	4.0	65.1	7.3	0.9	5.3	0.43±0.02
	10/09/2015	3.9	569	6.22	283	5.6	0.04	153.0	0.37	0.41	24.1	5.2	72.8	10.9	2.0	8.7	1.30±0.03
Love Creek Kawarren (LK)	10/07/2014	102.9	402	6.66	197	21.7	0.13	83.8	0.18	1.28	14.5	5.0	47.2	7.6	5.2	10.2	1.85±0.03
	27/09/2014	6.7	570	6.75	286	59.8	0.05	105.9	0.33	4.30	10.3	4.9	66.5	11.0	6.7	16.1	1.34±0.03
	20/03/2015	2.0	527	6.99	286	62.0	0.04	114.3	0.34	0.94	9.1	6.1	66.2	8.9	3.4	15.2	0.48±0.02
	10/09/2015	18.6	456	6.71	236	25.9	0.06	112.0	0.24	0.92	12.3	6.5	55.8	8.5	2.9	10.8	1.91±0.03
	4/11/2015	1.2	522	6.23	307	68.8	0.07	124.0	0.37	1.02	10.9	5.8	65.6	9.6	2.7	17.9	0.58±0.02
Love Creek Wonga (LW)	10/07/2014	103.5	411	6.58	204	22.3	0.08	86.2	0.19	1.08	16.7	6.0	48.3	9.0	3.5	10.5	1.86±0.04
	28/09/2014	6.0	721	6.93	367	84.2	0.10	135.9	0.42	3.33	11.8	6.4	76.7	17.8	6.4	23.5	1.34±0.03
	20/03/2015	2.0	857	7.27	481	128.7	0.06	178.8	0.57	0.56	9.6	9.8	86.2	23.0	8.1	35.9	0.55±0.02
	10/09/2015	19.6	514	6.82	271	37.3	0.07	125.2	0.26	1.15	13.8	7.0	57.7	11.1	3.5	14.1	1.88±0.03
Birnam Rainfall	27/09/2014	-	80	6.49	25	5.7	0.00	8.5	0.02	0.23	1.5	0.0	5.1	0.7	2.6	0.8	2.45±0.04

Notes:

- a) Locations on Fig. 1
- b) Uncertainty
- c) Not measured
- d) Data from Atkinson (2014)