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Clarification and Explanation of Compositional Analysis of Australian Rainwater Samples Collected by:

- 1. Mike Scott (Sept. 2012) Burpengary QLD**
- 2. Edward Everett (Jan. 2010) Southport QLD**



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Clarification and Explanation of Compositional Analysis of Australian Rainwater Samples Collected by Mike Scott (Sep. 2012) and Edward Everett (Jan. 2010)

The two samples discussed in this document were taken for testing by Mike Scott and Edward Everett, of Queensland, to NATA accredited laboratories at their own expense, and the results published in one form or other on the internet soon after. I, personally, am most grateful to them for this public service. Apparently, we cannot depend on our *hired* public servants for such sensible action.

The CSIRO material in this document is taken from their June 2012 report on Australian rainwater entitled "New insights to the chemical and isotopic composition of rainfall across Australia". The reader is encouraged to download this from the internet for free as a pdf document. The rainwater compositional tables for all of Australia including Brisbane are in Appendix A, pages 24 to 66.

I've noted some confusion on the internet regarding these kinds of analysis tables because of the difference in units used for measurements. To mitigate this confusion therefore I have converted all units to micrograms per litre ($\mu\text{g/L}$) using the following conversions:

1 milligram per litre (mg/L) = 1000 micrograms per litre ($\mu\text{g/L}$)

1 microgram per litre($\mu\text{g/L}$) = 1/1000 milligrams per litre (mg/L)

Further confusion, has arisen also, it would seem, regarding Edward Everett's sample because of some 'mathematical errors' on his part when he first published the test results - errors which he later endeavoured to correct, but have resulted nonetheless in interpretations persisting in places online other than his own site that tend to distract from the actual worth and significance of the document. For this reason I would suggest that we start with a clean slate altogether, ignoring the additions to the document in green and red, and working only from the original lab document.

We are obliged to note also that the quality of the results from the testing of these samples can only be as good as the propriety of the sample collection procedure that preceded it, and for that, of course, we will have to trust to Messrs. Scott and Everett and the relevant staff at the CSIRO. (Alternatively we can collect our own samples for testing and remove all doubt.) Regarding his own collection method and motivation however, Mike Scott makes the following comment:

"We collected that tiny sample. The vessel used for collection was.....not deployed until it started to rain.....I plan on doing a follow-up sample in a few months, so I have something to compare this with, so stay in touch. The more information we get out there the better.....I have tried to give it to the Environment Protection Authority here and they were not interested. It beggar's belief. I live around 40 km outside of Brisbane. There is not a cloud in the sky and what should be bright blue is silvery grey. It's damn sad."

(Source: <http://chemtrailsnorthnz.wordpress.com/2012/10/21/aluminium-strontium-barium-in-brisbane-rainwater>)

Critics of tests such as these often call into question how well protected the samples have been from windblown dust and other air particulates during the collection period, but an inspection of the CSIRO collection equipment shown on pg. 6 of this document suggests no reason to believe that the integrity of the samples collected privately by both Scott and Everett are not at least as good as the CSIRO sample. Regarding the private samples we are told that for at least one of them the collection vessel was "not deployed until it started to rain", whereas the CSIRO sample was presumably left open to the elements at all times albeit by way of a small funnel aperture. It is

perhaps worth noting also that the Australian standard for the testing for dissolved metals in rainwater requires that the samples be 0.45 µm filtered prior to analysis and this would serve to remove any of the larger sized particulates from the mix. Windblown dust for instance falls in the range of about 1 to 100 µm so such filtering would only leave behind that part of these dust particles that managed to break down significantly or dissolve.

OK, so what do the test results show us?

Of particular interest in both these samples are the high levels of Aluminium- both far in excess of what was found consistently to be normal/typical over a five year period by the CSIRO. On pgs 7-8 of this document I have highlighted the Aluminium column of the CSIRO's rainwater analysis for Brisbane. This shows clearly, and without a single exception in 42 separate tests, that the

Normal level of Aluminium in rainwater (Brisbane) is less than 50µg/L.

This general norm is consistent also with results from right across Australia.

From the two private Australian samples we see the following results. (I have highlighted the relevant entry on both tables.)

Quantity of Aluminium in Mike Scott's sample: 0.19mg/L x 1000 = 190µg/L

Quantity of Aluminium in Edward Everett's sample: 320µg/L

So both tests, independent of one another show a quantity of Aluminium almost four, and in excess of six times the normal amount, respectively, at least. The key words here are *at least*, because the CSIRO report can only tell us that the amount of Aluminium in forty samples over five years is *less than* 50µg/L - that is the limit of the report's sensitivity. This means that the normal/typical amount could be significantly less than that. Let's say, for example that the normal amount is in fact 10µg/L, then we would be dealing here with results almost 20 and in excess of 30 times the normal amount. In any case what is irrefutable is that Aluminium is present in these samples in quantities far in excess of the norm for the general area from which they were taken, as well as Australia in general.

Let us now consider the quantities of Manganese, Strontium, Boron and Nickel in the Everett sample.

Quantity of Manganese in Edward Everett's sample: 530µg/L

Normal level of Manganese in rainwater: less than 50µg/L

Again the norm here is deduced from the CSIRO's report showing a result of less than 50µg/L for Manganese in Brisbane rainwater in all 42 samples over the course of five years. This is generally true for all the capital and major residential centres across Australia. Mr. Everett's sample therefore has quantities of Manganese in excess of 10 times the normal level, at least.

Note also that the quantity of Manganese found in Mr. Everett's sample - rainwater straight from the sky - *exceeds* the lower limit of toxicity (500µg/L) given in the Australian Government's "Australian Drinking Water Guidelines 2011" document. In short, his rainwater sample, according to that document, is toxic.

Quantity of Strontium in Edward Everett's sample: 230µg/L

Normal level of Strontium in rainwater: less than 50µg/L

The quantity of Strontium in the CSIRO Brisbane samples is less than 50 $\mu\text{g}/\text{L}$ in 40 out of 42 cases. (Again, this general norm is consistent with results from right across Australia.) The other two Brisbane results are 214 $\mu\text{g}/\text{L}$ and 146 $\mu\text{g}/\text{L}$ respectively, both occurring at the end of 2007 and are clearly anomalies. In any case the quantity of Strontium in Everett's sample is at least 4.6 times the normal/typical quantity of Strontium found in Australian rainwater.

Quantity of Boron in Edward Everett's Sample: 230 $\mu\text{g}/\text{L}$

Normal level of Boron in rainwater: less than 100 $\mu\text{g}/\text{L}$

The CSIRO report's sensitivity appears for some reason to be lower for Boron than most of the other metals tested – we can only say that in each and every one of the 42 Brisbane samples tested over five years the result for Boron is less than 100 $\mu\text{g}/\text{L}$. This is also almost invariably true for every single sample taken across Australia in those five years. Therefore the quantity of Boron in the Everett sample is at least 2.3 times the normal level for both Brisbane and the Australian continent in general.

Quantity of Nickel in Edward Everett's Sample: 21 $\mu\text{g}/\text{L}$

It is impossible to establish a meaningful norm for Nickel in Australian rainwater from the CSIRO report because the lower limit of the report's testing sensitivity is generally too high - 50 $\mu\text{g}/\text{L}$ for an analyte that appears here and there in the report in quantities much smaller than that (where there are anomalous exceptions to the low sensitivity rule). In the Brisbane samples there are three such exceptions that I have highlighted in blue showing 8.32, 3.96 and 4.47 $\mu\text{g}/\text{L}$ for June, July and August of 2009 respectively.

In any case the rainwater sample is toxic on a second count (see also results for Manganese above) according to the "Australian Drinking Water Guidelines 2011" document which states:
"Based on health considerations, the concentration of nickel in drinking water should not exceed 0.02 mg/L. [20 $\mu\text{g}/\text{L}$]"

Disparity of CSIRO and Everett Sample Results for the same time frame.

Both the CSIRO test results and the Everett sample results cover the period around January 2010, yet we see a significant disparity of results. How might this be accounted for given that we assume no errors or falsity by either party?

Southport, on the Gold Coast is about 70 kms south of Brisbane, similar to the distance between Geelong and Melbourne. While that distance in that area is not of great significance when considering general norms for rainwater chemistry composition (especially when we also take into account similar trends across the entire Australian continent), it is another matter entirely when we are considering the effects of aerial aerosol spraying on rainwater, which can be highly localized in its application. Therefore it is not in any way inconsistent with the co-incident validity of both sets of results that they should show utterly different quantities for particular metals, and in fact indicates a cause plausibly consistent with the properties (inferred and otherwise) of observed aerosol spraying – highly localized at any particular time, and at least partly metallic in nature.



Figure 2. Equipment used in the rainfall collectors



Figure 3. Rainfall collector (left) deployed in the field sitting next to a rain gauge (right)

0.05 mg/L = 50µg/L

Aluminium  Boron  Manganese  Nickel  Strontium 

Apx Table A.3 Brisbane chemistry

Date	Rainfall mm	pH	E.C. dS/m	Total Alkalinity meq/L	F- mg/L	Cl- mg/L	Br- mg/L	NO3- mg/L	SO4= mg/L	Ca mg/L	K mg/L	Mg mg/L	Na mg/L	S mg/L	Al mg/L	As mg/L	B mg/L	Cd mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	Mn mg/L	Mo mg/L	Ni mg/L	P mg/L	Pb mg/L	Sb mg/L	Se mg/L	Si mg/L	Sr mg/L	Zn mg/L	
May-07	58.7	6.3	0.31	1.8	<0.05	6.71	<0.05	<0.05	0.227	1.06	9.05	1.07	3.89	0.84	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	0.112	<0.05	<0.05	<0.05	5.81	<0.05	<0.05	<0.05	0.206	<0.05	<0.05	
Jun-07	112	6.2	0.02	0.13	<0.05	1.22	<0.05	<0.05	0.308	1.79	0.273	<0.1	0.605	0.256	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.0579			
Jul-07	0.7																																
Aug-07	112.4	6.4	0.04	0.12	<0.05	6.48	<0.05	<0.05	1.33	0.634	1.27	0.361	3.68	0.863	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8/9- 16/11/07	102.9	6.6	0.45	3.5	<0.05	10.2	<0.05	0.117	0.276	53.5	6.33	3.44	6.65	0.866	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	4.82	<0.05	<0.05	<0.05	<0.05	0.321	0.214	<0.05
16/11- 2/12/07	17.6	5.7	0.04	0.06	<0.05	7.59	<0.05	<0.05	2.99	1.47	0.15	0.562	4.34	1.39	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	0.196	<0.05	0.0924
3/12- 26/12/07	41.6	7.1	0.33	2.6	<0.05	6.51	<0.05	<0.05	0.152	59	5.91	1.17	4.82	3.97	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	0.362	<0.05	<0.05	<0.05	3.55	<0.05	<0.05	<0.05	<0.05	0.254	0.146	<0.05
Jan-08	146.9	5.7	0.04	0.06	<0.05	6.53	<0.05	<0.05	2.2	0.472	0.533	0.358	3.73	0.976	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.111
1/2- 2/3/08	186	5.6	0.02	0.06	<0.05	3.19	<0.05	<0.05	0.785	0.228	0.147	0.213	1.75	0.343	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	0.0783	<0.05	0.0776
1/3- 13/03/08	5.5	5.2	0.05	0.05	<0.05	9.56	<0.05	<0.05	3.29	0.823	0.128	0.551	5.5	1.4	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.183
Jun-09	103.9	6.3	0.11		0.14	5.4	<0.05	<0.05	0.35	0.833	2.69	0.47	3.65	1.29	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	0.000832	1.2	<0.05	<0.1	<0.05	0.351	<0.05	<0.05	
Jul-09	4.5				<0.05	20	0.11	<0.05	44	3.69	17.4	1.61	11.1	15.8	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	0.00396	11.6	<0.05	<0.1	<0.05	0.281	<0.05	0.159	
Aug-09	2.5																																
Sep-09	11	5.7	0.26		<0.05	12	<0.05	<0.05	6.1	2.86	11.9	1.95	6.31	4.12	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	0.207	<0.05	<0.05	0.00447	4.26	<0.05	<0.1	<0.05	0.563	<0.05	0.0644	
Oct-09	75.2	5.9	0.05		<0.05	8.1	<0.05	<0.05	0.08	1.67	1.67	0.706	4.12	0.222	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	0.231	<0.05	0.167	
Nov-09	27.9	6.2	0.08		<0.05	16	<0.05	<0.05	4.2	1.71	0.364	0.98	7.71	1.3	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	0.305	<0.05	0.256
Dec-09	177.8	5.8	0.03		<0.05	4.3	<0.05	<0.05	1.9	0.51	0.16	0.277	2.94	0.532	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	0.0833	
Jan-10	58.6	4.8	0.03	0.02	<0.05	7.8	<0.05	<0.05	2.6	0.302	0.128	0.368	2.93	0.658	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.186
Feb-10	151.2	5.1	0.02	0.04	<0.05	4.1	<0.05	<0.05	1.7	0.21	0.132	0.186	1.5	0.453	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.099
Mar-10	207.2	5.1	0.03	0.04	<0.05	6.8	<0.05	<0.05	1.6	0.247	0.241	0.355	3.09	0.542	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.095
Apr-10	85.2	6.4	0.05	0.18	<0.05	4.8	<0.05	<0.05	2.2	1.02	5.76	0.594	1.6	0.805	<0.05	<0.05	<0.1	<0.05	<0.05	<0.0													

Compositional table of Mike Scott's sample Sept. 2012, Burpengary QLD (Annotations added.)

(For all pages of this lab document see ChemtrailsGeelong.com)

Page : 3 of 4
 Work Order : EB1225794
 Client : MIKE SCOTT
 Project : —

1 milligram per litre (mg/L) = 1000 micrograms per litre (µg/L)



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID	1	—	—	—	—	—	—
Compound	CAS Number	Client sampling date / time	20-SEP-2012 15:00	—	—	—	—	—	—
		LOR	Unit	EB1225794-001	—	—	—	—	—
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L	0.19 = 190µg/L	—	—	—	—	—
Dysprosium	7429-91-6	0.001	mg/L	<0.001	—	—	—	—	—
Silver	7440-22-4	0.001	mg/L	<0.001	—	—	—	—	—
Arsenic	7440-38-2	0.001	mg/L	<0.001	—	—	—	—	—
Bismuth	7440-69-9	0.001	mg/L	<0.001	—	—	—	—	—
Erbium	7440-52-0	0.001	mg/L	<0.001	—	—	—	—	—
Boron	7440-42-8	0.05	mg/L	<0.05	—	—	—	—	—
Europium	7440-53-1	0.001	mg/L	<0.001	—	—	—	—	—
Strontium	7440-24-6	0.001	mg/L	0.020	—	—	—	—	—
Barium	7440-39-3	0.001	mg/L	0.011	—	—	—	—	—
Gadolinium	7440-54-2	0.001	mg/L	<0.001	—	—	—	—	—
Titanium	7440-32-6	0.01	mg/L	<0.01	—	—	—	—	—
Beryllium	7440-41-7	0.001	mg/L	<0.001	—	—	—	—	—
Gallium	7440-55-3	0.001	mg/L	<0.001	—	—	—	—	—
Cadmium	7440-43-9	0.0001	mg/L	0.0392	—	—	—	—	—
Hafnium	7440-58-6	0.01	mg/L	<0.01	—	—	—	—	—
Tellurium	22541-49-7	0.005	mg/L	<0.005	—	—	—	—	—
Cobalt	7440-48-4	0.001	mg/L	<0.001	—	—	—	—	—
Holmium	7440-60-0	0.001	mg/L	<0.001	—	—	—	—	—
Uranium	7440-61-1	0.001	mg/L	<0.001	—	—	—	—	—
Caesium	7440-46-2	0.001	mg/L	<0.001	—	—	—	—	—
Chromium	7440-47-3	0.001	mg/L	<0.001	—	—	—	—	—
Indium	7440-74-6	0.001	mg/L	<0.001	—	—	—	—	—
Copper	7440-50-8	0.001	mg/L	0.003	—	—	—	—	—
Lanthanum	7439-91-0	0.001	mg/L	<0.001	—	—	—	—	—
Rubidium	7440-17-7	0.001	mg/L	<0.001	—	—	—	—	—
Lithium	7439-93-2	0.001	mg/L	<0.001	—	—	—	—	—
Lutetium	7439-94-3	0.001	mg/L	<0.001	—	—	—	—	—
Thorium	7440-29-1	0.001	mg/L	<0.001	—	—	—	—	—
Cerium	7440-45-1	0.001	mg/L	<0.001	—	—	—	—	—
Manganese	7439-96-5	0.001	mg/L	0.028	—	—	—	—	—
Neodymium	7440-00-8	0.001	mg/L	<0.001	—	—	—	—	—
Molybdenum	7439-98-7	0.001	mg/L	<0.001	—	—	—	—	—
Praseodymium	7440-10-0	0.001	mg/L	<0.001	—	—	—	—	—

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

1

Client sampling date / time

20-SEP-2012 15:00

Compound	CAS Number	LOR	Unit	EB1225794-001	—	—	—	—	—
EG020F: Dissolved Metals by ICP-MS - Continued									
Nickel	7440-02-0	0.001	mg/L	<0.001	—	—	—	—	—
Samarium	7440-19-9	0.001	mg/L	<0.001	—	—	—	—	—
Lead	7439-92-1	0.001	mg/L	0.001	—	—	—	—	—
Terbium	7440-27-9	0.001	mg/L	<0.001	—	—	—	—	—
Antimony	7440-36-0	0.001	mg/L	<0.001	—	—	—	—	—
Thulium	7440-30-4	0.001	mg/L	<0.001	—	—	—	—	—
Selenium	7782-49-2	0.01	mg/L	<0.01	—	—	—	—	—
Ytterbium	7440-64-4	0.001	mg/L	<0.001	—	—	—	—	—
Tin	7440-31-5	0.001	mg/L	<0.001	—	—	—	—	—
Yttrium	7440-65-5	0.001	mg/L	<0.001	—	—	—	—	—
Thallium	7440-28-0	0.001	mg/L	<0.001	—	—	—	—	—
Zirconium	7440-67-7	0.005	mg/L	<0.005	—	—	—	—	—
Vanadium	7440-62-2	0.01	mg/L	<0.01	—	—	—	—	—
Zinc	7440-66-6	0.005	mg/L	0.043	—	—	—	—	—
Iron	7439-89-6	0.05	mg/L	0.07	—	—	—	—	—



CLIENT

We apologise to
the lab report for
incorrect calculations
on previous
page

 Organic Vegetable Gardens
 PO Box 3602
 Australia Fair
 Southport QLD 4215

Ray Sperring

 Package No. : SSF0001456
 Client Order No. : RAY_SPERRING
 Date Sampled : 27-Jan-2010
 Date Received : 26-Jan-2010
 Date Started : 26-Jan-2010
 Date Completed : 06-Feb-2010
 QHSE Ref. : 10NA901-10NA904-TKP2

DRAFT

We apologise to viewers that the
previous page had mathematical
errors that were not connected with
the Lab test

ANALYTICAL REPORT

Report 10NA901-10NA904 : TKP2 Continued:

Lab. Ref.	Our Calculations on The Over amts shown in red are not supplied Safe by the Lab report level in green			10NA901	10NA902	10NA903	10NA904
Client Reference	Sample	Method	Analyte by ICPMS	Safe level	Units	Over amt	Over amt
			Aluminium	.2	µg/L	22	1.2 320
			Arsenic	.007	µg/L	< 0.3	.0006 7.6
			Barium	.7	µg/L	2	42
			Beryllium		µg/L	< 0.1	< 0.1
			Boron	.4	µg/L	16	230
			Cadmium		µg/L	0.2	0.4
			Chromium		µg/L	1.6	3.3
			Cobalt		µg/L	0.1	3.1
			Copper	.2	µg/L	.06	26 72
18302	Iron			.3	µg/L	43	293
			Lead		µg/L	3.5	2.3
18302	Lithium				µg/L	.02	4
			Manganese	.3	µg/L	3	.024530
			Mercury		µg/L	< 0.1	< 0.1
			Molybdenum		µg/L	0.2	0.8
			Nickel	.02	µg/L	8.2	21.0
			Selenium	.01	µg/L	< 1.0	3.0
			Silver		µg/L	< 1.0	18.0
			Strontium		µg/L	19	230
18302	Thallium				µg/L	< 0.1	< 0.1
			Tin		µg/L	5.4	0.4
			Uranium		µg/L	< 0.1	< 0.1
			Vanadium		µg/L	0.3	2.7
			Zinc	.3	µg/L	98	.07 370