



South Coast Air Quality Management District

Wildomar Report #2 - Report on soil and water samples taken in Wildomar, CA in February 2013

Background and Summary of Results

SCAQMD was one of several agencies that participated in a community meeting on December 18, 2012 and a follow-up meeting on February 5, 2013. At the first meeting, SCAQMD staff committed to collect and analyze air samples from two or three homes in the Autumnwood development and report the findings back to the community. A report summarizing that sampling effort, analysis, and results is available on SCAQMD's website (<http://www.aqmd.gov/news1/WildomarReport.pdf>). At the second meeting, SCAQMD staff committed to collect and analyze soil samples from one additional home in the Autumnwood development. On February 7, 2013 soil samples were collected from the front and back yard of the home. Water samples were collected inside and outside the home as well. There are technical appendices attached which include the detailed information for the samples taken.

Overall findings are that the water samples collected from inside and outside the home met U.S. EPA drinking water standards. The soil samples were of typical concentrations for soil reported in scientific literature.

Sampling

One home on Amaryllis Court was selected for the additional sampling. On Wednesday, February 7, 2013, two types of sampling were done:

1. Water samples were collected from the kitchen and one bath room inside the home and a hose bib located in the back yard. Samples were collected of the first water that came out of the spout when the water was turned on and a second sample was collected after the water was allowed to run.
2. Soil samples were collected from the surface in the front and back yard of the home consistent with the way soil sampling had been previously conducted.

Analysis

All analysis was done in SCAQMD's laboratory at its Diamond Bar headquarters following SCAQMD's Standard Operating Procedures and rigorous quality assurance measures, which ensure that samples are analyzed properly.

Soil samples were analyzed for metal content. While SCAQMD does not normally analyze soil samples, our laboratory has this capability. All samples were analyzed by Energy Dispersive X-Ray Fluorescence (ED XRF), which can identify and quantify metals using x-rays.

Water samples were also analyzed for metal content. As with the soil samples, while SCAQMD does not normally analyze water samples, our laboratory has this capability. All samples were analyzed by using Inductively Coupled Plasma/Mass Spectroscopy (ICP/MS), which identifies and quantifies metals based on each metal's unique molecular weight or mass.

Results

In summary, all water samples met U.S. EPA drinking water standards. Please see Appendix 1 for the detailed sample results.

Soil sample results were compared to western U.S. soil data from the U.S. Geological Service. All soil samples taken at this home were consistent with literature values for soils in the western United States. This includes Barium, for which typical soil ranges are up to 5,000 ppm. These results can be found in Appendix 2.

Appendices

The attached appendices contain detailed data for the samples taken:

Appendix 1. Water Data

Appendix 2. Soil Data

SCAQMD contacts:

Jill Whynot, Assistant Deputy Executive Officer, 909-396-3104, jwhynot@aqmd.gov

Sam Atwood, Media Relations Manager, 909-396-3687, satwood@aqmd.gov

Appendix 1 Water Data

Sample Description	Backyard faucet initial flow	Backyard faucet flush	Kitchen Tap initial flow	Kitchen tap flush	Master Bath sink initial flow	Master Bath sink flush	U.S. EPA Inorganic Drinking Water Standards	
Units	mg/L ¹	mg/L	mg/L	mg/L	mg/L	mg/L	MCL ² (mg/L)	Notes
Antimony	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.006	
Arsenic	0.001	0.001	0.001	0.001	0.001	0.001	0.01	
Barium	0.055	0.058	0.048	0.058	0.053	0.057	2	
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	
Boron	0.129	0.128	0.281	0.126	0.198	0.126	-	
Cadmium	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.005	
Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.1	Chromium (total)
Copper	0.007	0.040	0.009	0.201	0.013	0.082	1.3 ³	Copper (at tap)
Iron	0.085	0.076	0.060	0.078	0.074	0.079	N/A	
Lead	<0.001	<0.001	<0.001	<0.001	0.010	0.001	0.015 ⁴	Lead (at tap)
Manganese	0.006	0.001	0.001	0.001	0.019	0.001	-	
Mercury	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	Inorganic mercury
Molybdenum	0.003	0.003	0.003	0.003	0.002	0.003	-	
Nickel	0.001	0.001	0.001	0.001	0.013	0.001	-	
Selenium	0.002	0.002	0.002	0.002	0.001	0.001	0.05	
Silver	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	
Strontium	0.467	0.469	0.337	0.474	0.450	0.469	-	
Thallium	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.002	
Zinc	0.491	<0.0001	0.254	0.021	3.670	0.043	-	
Uranium	0.002	<0.0002	0.001	0.002	<0.0002	0.002	0.03	

¹ milligrams per liter

² MCL: Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water.

There are no primary drinking water standards for Boron, Manganese, Molybdenum, Nickel, Silver, Strontium, and Zinc. However, there are secondary non-enforceable standards for these metals.

³ Action level for copper

⁴ Action level for lead

**Appendix 2
Soil Data**

Element	Conc.	Backyard - North Side	Backyard - East Side	Backyard - South Side	Decomposing Banana Tree	Planter in Front of House	Planter S. Corner of Front Yard	AQMD Soil	Mean Conc. of Soil in Western U.S. ¹	Range of Conc. of Soil in Western U.S. ²
Aluminum	%	6.18	6.32	7.04	5.98	7.34	6.88	8.98	5.8	0.5 - >10
Calcium	%	3.18	3.21	2.83	3.40	2.62	2.93	2.07	1.8	0.06 - 32
Iron	%	3.25	3.57	3.79	3.76	4.73	4.31	3.09	2.1	0.1 - >10
Magnesium	%	1.13	1.16	1.08	1.15	1.03	1.15	1.68	0.74	0.03 - >10
Phosphorus	%	0.37	0.17	0.15	0.37	0.10	0.08	0.09	0.012	0.04 - 0.45
Potassium	%	2.18	2.11	1.97	1.96	1.57	1.53	1.39	1.8	0.19 - 6.3
Silicon	%	25.5	26.9	28.9	22.4	24.7	24.9	31.50	30.0	15 - 44
Sodium	%	1.00	1.64	1.13	1.52	1.16	1.63	1.02	0.97	0.05 - >10
Sulfur	%	0.13	0.81	0.20	0.20	0.14	0.16	0.20	0.13	<0.08 - 4.8
Titanium	%	0.37	0.36	0.37	0.37	0.40	0.40	0.39	0.22	0.05 - 2.0
Antimony	ppm	2.2	2.2	1.9	1.8	1.8	1.8	5.4	0.47	<1 - 2.6
Arsenic	ppm	5.0	3.7	4.9	4.4	1.7	3.6	7.3	5.5	0.10 - 97
Barium	ppm	1190	1000	950	920	890	780	500	580	70 - 5000
Cadmium	ppm	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	ppm	39	33	32	33	28	29	61	41	3 - 2,000
Cobalt	ppm	12	12	13	14	17	15	11	7	<3 - 50
Copper	ppm	48	39	33	46	26	27	30	21	2 - 300
Gallium	ppm	14	13	14	14	14	16	12	16	<5 - 70
Lead	ppm	16	14	11	15	10	13	17	17	<10 - 700
Manganese	ppm	590	690	720	760	970	860	410	380	30 - 5000
Molybdenum	ppm	3.2	3.0	2.2	4.4	1.4	1.9	15	1	<3 - 7
Nickel	ppm	16	11	9.5	12	7.6	6.7	30	15	<5 - 500
Rubidium	ppm	85	72	69	69	56	54	59	69	<20 - 210
Selenium	ppm	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.23	<0.1 - 4.3
Strontium	ppm	370	280	210	320	200	230	260	100	10 - 3,000
Uranium	ppm	3.0	2.4	<0.01	2.3	<0.01	<0.01	3.6	2.5	0.68 - 7.9
Vanadium	ppm	2.2	2.2	1.9	1.8	1.8	1.8	120	70	7 - 500
Yttrium	ppm	2	2.5	2.7	2.4	3.0	3.0	21	22	<10 - 150
Zinc	ppm	130	120	100	140	100	100	120	55	10 - 2,100
Zirconium	ppm	410	400	320	440	200	350	280	160	<20 - 1,500

¹ : Arithmetic mean reported by United States Geological Service

² : Range of concentrations reported by United States Geological Service

