

















































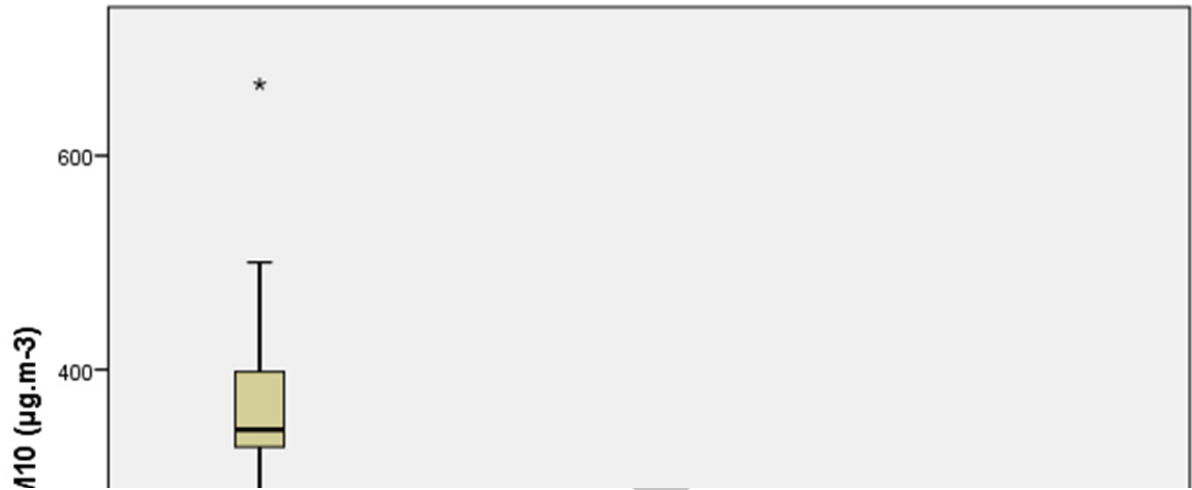






**Figure 2a:** Boxplots of indoor and outdoor 8-h concentrations of PM<sub>10</sub> (μg.m<sup>-3</sup>), during working hours (08:00-16:00). Extreme points are indicated with an asterisk. **2b:** Statistical data of indoor and outdoor 8-h concentrations of PM<sub>10</sub> (μg.m<sup>-3</sup>), during working hours (08:00-16:00).

2a



2b

PM <sub>10</sub> (μg.m <sup>-3</sup> )	Dismantling areas	Offices	Outdoor area	Dismantling areas (weekend)	Offices (weekend)
average ± SDEV	382.4 ± 104.8	54.3 ± 5.3	27.8 ± 25.4	206.4 ± 3.8	28.4 ± 3.0
median (min-max)	343.8 (262.5-666.7)	55.0 (47.9-59.4)	15.3 (5.0-68.9)	202.7 (194.6-232.3)	18.2 (14.5-62.5)

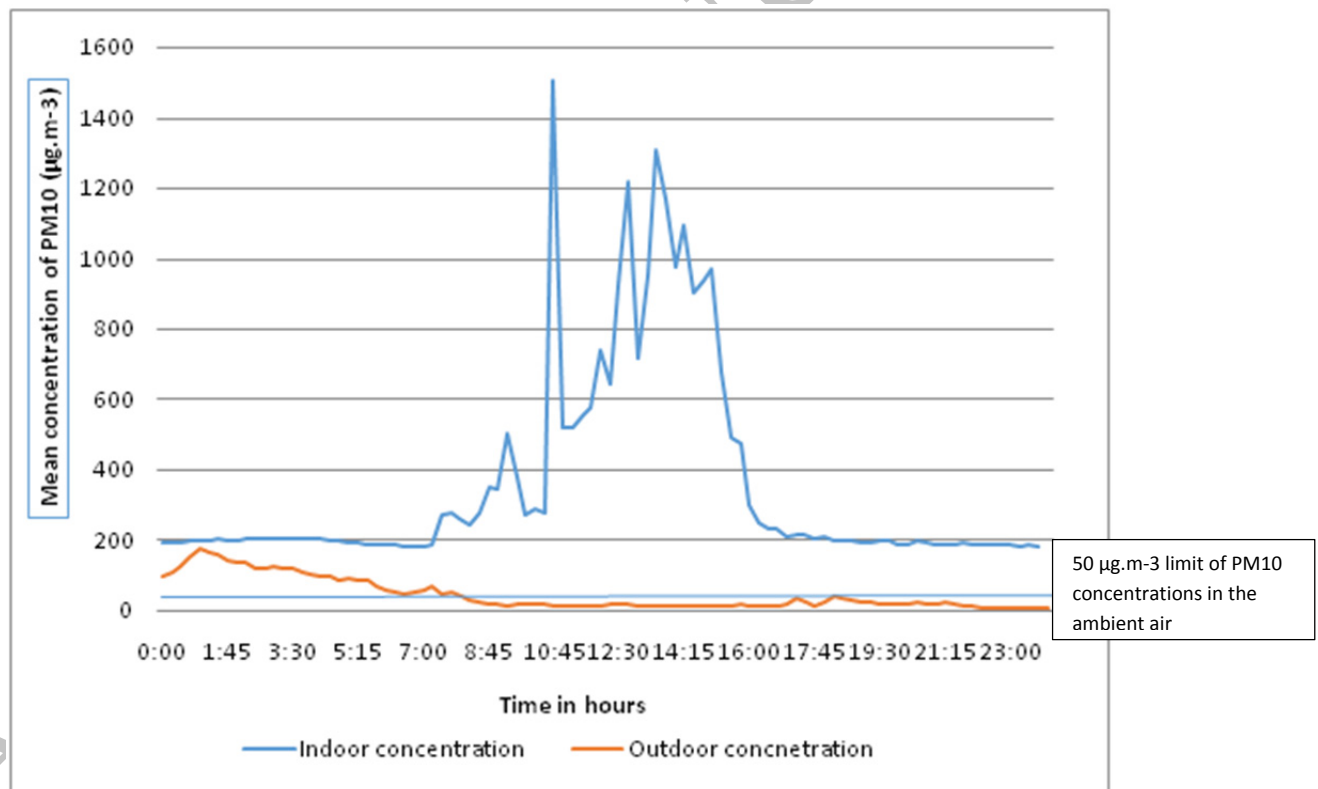
10 <sup>th</sup> -90 <sup>th</sup> percentile	291.7-282.8	49.2-58.9	9.0-55.2	196.2-220.2	14.7-50.1
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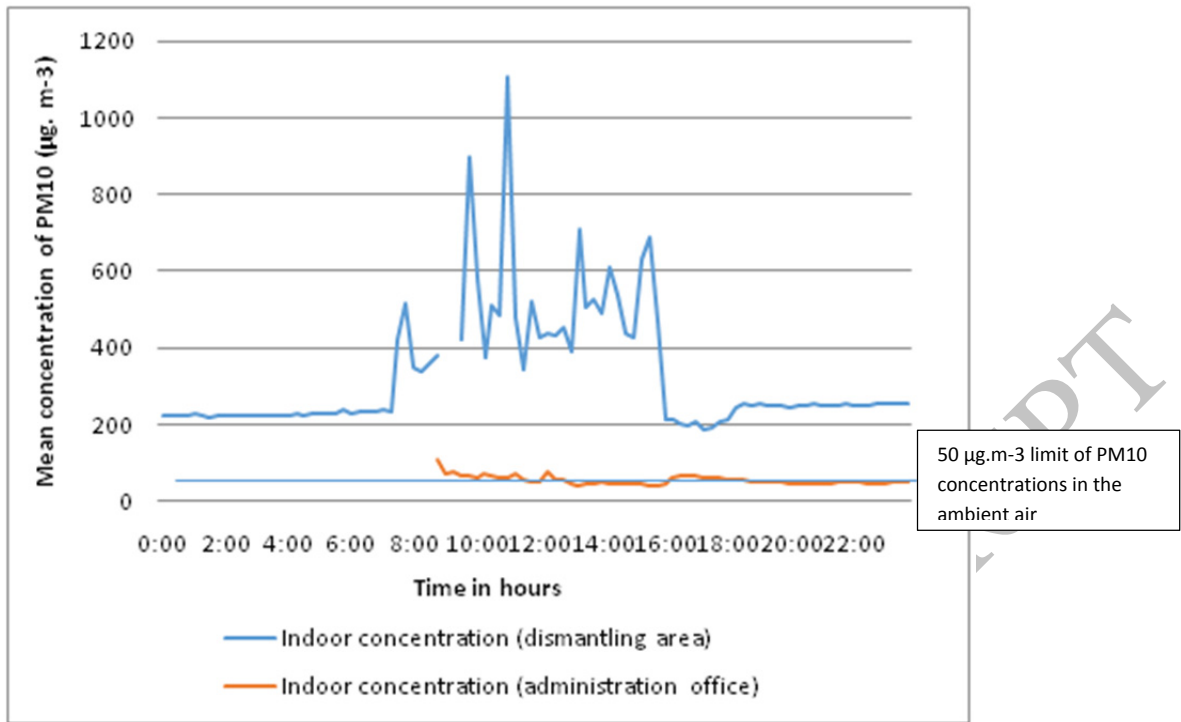
**Figure 3:** Daily variation of mean concentrations of PM<sub>10</sub> in various sampling points

- a) Daily variation of indoor and outdoor mean concentrations of PM<sub>10</sub> (Tuesday 6/11/2012, points 1 and 11)
- b) Daily variation of indoor mean concentrations of PM<sub>10</sub> (Friday 26/10/2012, points 2 and 8)
- c) Daily variation of indoor and outdoor mean concentrations of PM<sub>10</sub> (Monday 5/11/2012, points 3 and 11)
- d) Daily variation of indoor mean concentrations of PM<sub>10</sub> (Friday 2/11/2012, points 5 and 9)
- e) Daily variation of indoor mean concentrations of PM<sub>10</sub> (Sunday 28/10/2012, points 2 and 8)

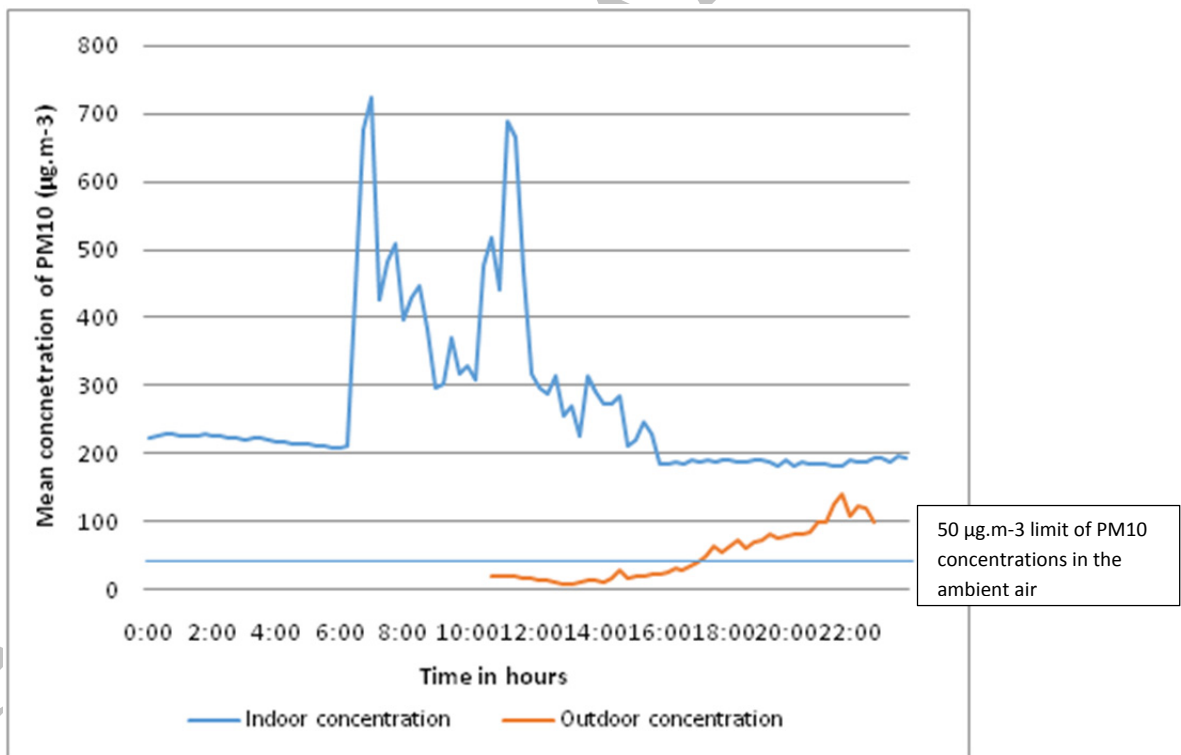
a)



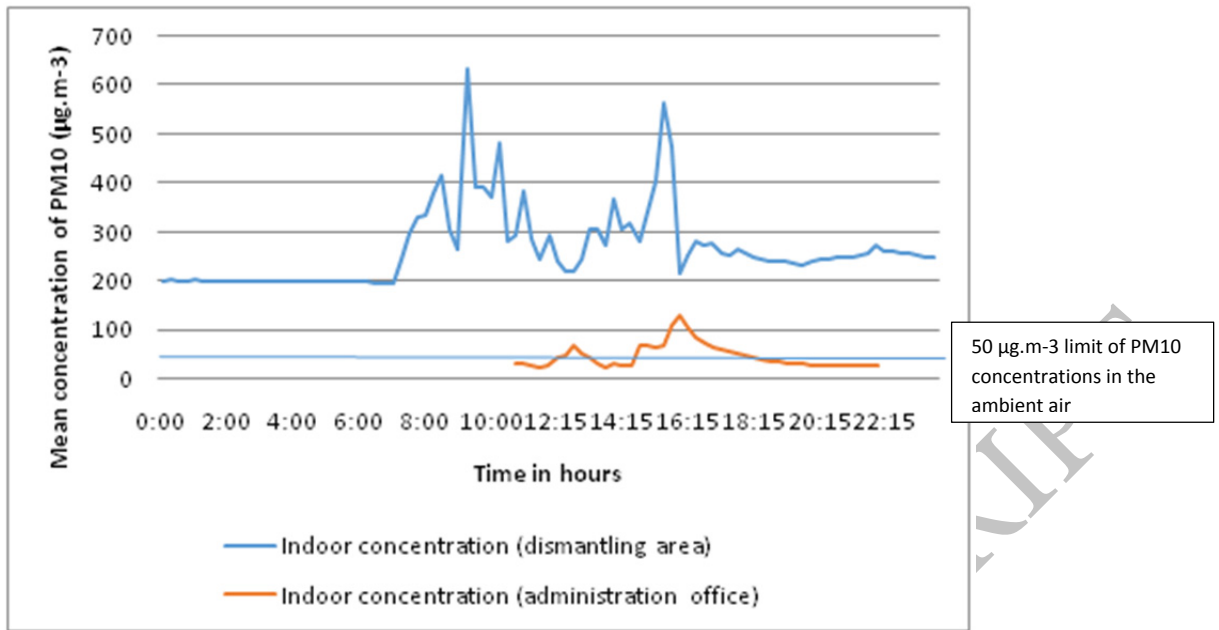
b)



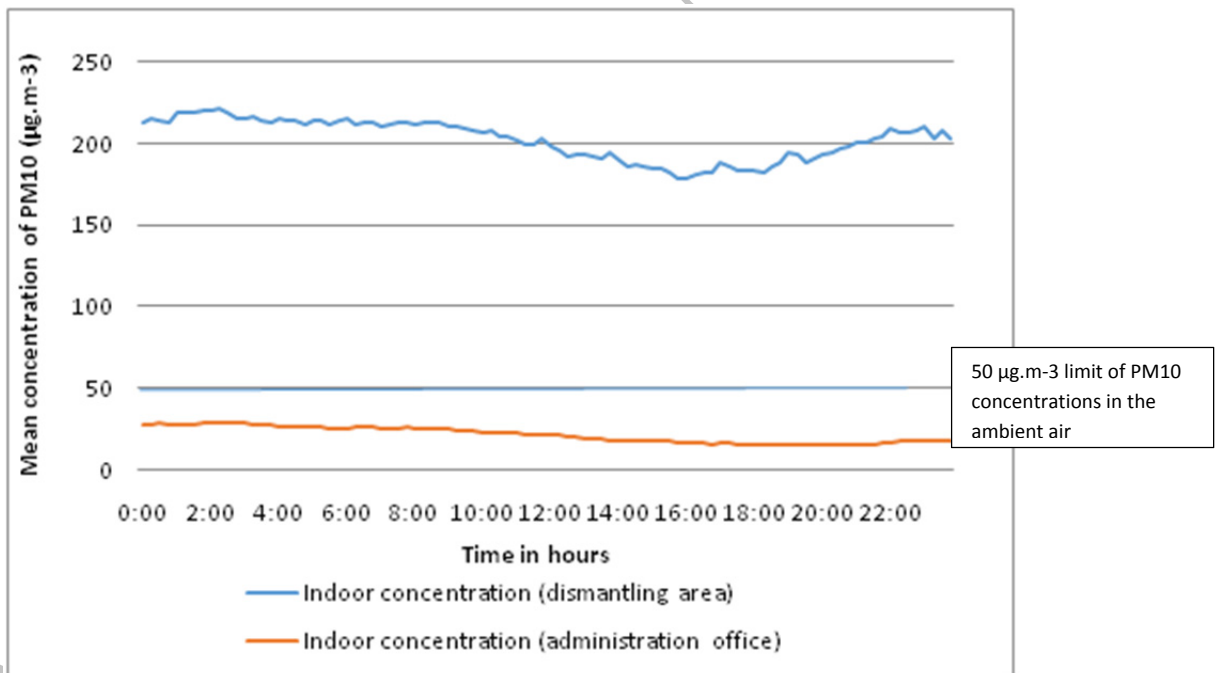
c)



d)



e)



**Table 1:** a) Climatological data from 25th to 31st of October 2012 b) Climatological data from 1st to 14th of November 2012

a)

TEMPERATURE (°C), RAIN (mm), WIND SPEED (km.h <sup>-1</sup> )										
DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
25	15.5	22.7	15:50	9.8	6:50	0.0	0.0	8.0	13:40	NE
26	16.1	24.5	16:10	10.2	7:20	0.0	0.2	8.0	16:30	ENE
27	14.2	16.3	15:40	11.1	7:50	4.4	0.2	8.0	12:30	NNE
28	18.2	23.1	13:10	14.3	2:00	3.2	0.2	9.7	12:20	NNE
29	19.0	24.9	14:20	15.4	0:00	11.8	1.3	38.6	2:50	SSW
30	15.4	20.8	14:30	11.0	23:40	0.8	1.4	27.4	1:00	SW
31	13.7	19.6	14:30	8.2	7:20	0.0	0.2	8.0	12:00	ENE

b)

TEMPERATURE (°C), RAIN (mm), WIND SPEED (km.h <sup>-1</sup> )										
DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	14.6	17.9	13:50	12.6	23:30	13.8	0.3	33.8	14:50	ENE
2	14.6	20.3	15:00	11.4	8:10	0.0	0.2	6.4	10:50	NE
3	15.7	22.6	15:00	10.4	7:00	0.0	0.0	4.8	0:30	NE
4	15.2	20.8	14:30	11.6	7:30	0.0	0.0	6.4	7:10	ENE
5	16.3	23.0	14:00	11.7	7:40	0.0	0.0	6.4	9:50	ENE
6	20.7	28.1	14:10	15.7	2:10	0.0	1.3	20.9	13:40	SSW
7	17.0	21.7	12:20	12.1	22:50	3.8	1.6	24.1	23:50	WSW
8	12.4	16.5	15:00	7.4	0:00	0.0	1.6	24.1	2:50	NE
9	10.2	16.8	15:10	4.4	5:40	0.0	0.2	6.4	15:10	ENE
10	11.2	18.5	14:20	5.7	6:00	0.0	0.6	12.9	13:20	NE
11	10.8	16.9	14:20	6.1	7:20	0.0	0.0	6.4	0:50	ESE
12	10.9	17.3	15:10	5.6	7:30	0.0	0.0	6.4	13:50	WSW
13	11.3	18.1	14:50	6.6	7:10	0.0	0.0	6.4	14:50	WSW
14	10.3	13.2	13:20	6.3	7:20	0.0	0.0	6.4	10:30	NE

**Table 2:** Indoor elemental concentrations in PM<sub>10</sub> (ng.m<sup>-3</sup>)

<b>Elements</b>	<b>Arithmetic Mean</b>	<b>Standard Deviation</b>	<b>Min</b>	<b>Max</b>
Mg	1795	545	599	2477
Al	4170	1544	1174	7071
Si	9060	2772	3383	13184
P	248	104	61	398
S	1522	621	393	2696
Cl	765	463	207	1729
K	3720	1517	1892	7433
Ca	60111	21021	22929	100399
Ti	794	228	507	1279
Mn	245	73	156	383
Fe	12974	4591	8403	22235
Ni	62	30	19	108
Cu	341	190	155	641
Zn	2568	683	1623	3707
As	274	68	189	409
Br	419	111	275	602
Sr	630	269	200	1126

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Sn	38	28	2	84
Ba	77	54	11	179
Pb	1545	606	899	2780
Cd	21	15	5	57
Cr	51	24	25	107

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**Table 3:** OSHA, NIOSH 8- h TWA exposure limits and Greek Legislation 15-minutes permissible exposure levels during working hours for selected elements of toxicological concern.

<b>ELEMENT</b>	<b>OSHA PELs<sup>a</sup></b>	<b>NIOSH RELs<sup>b</sup></b>	<b>GREEK LEGISLATION<sup>c</sup></b>
<b>Zn</b>	15 x 10 <sup>3</sup> µg.m <sup>-3</sup>	5 x 10 <sup>3</sup> µg.m <sup>-3</sup>	-
<b>Pb</b>	50 µg.m <sup>-3</sup>	50 µg.m <sup>-3</sup>	-
<b>Cu</b>	1 x 10 <sup>3</sup> µg.m <sup>-3</sup>	1 x 10 <sup>3</sup> µg.m <sup>-3</sup>	1 x 10 <sup>3</sup> µg.m <sup>-3</sup>
<b>As</b>	10 µg.m <sup>-3</sup>	2 µg.m <sup>-3</sup> (15 minutes)	100 µg.m <sup>-3</sup>
<b>Mn</b>	5 x 10 <sup>3</sup> µg.m <sup>-3</sup>	1 x 10 <sup>3</sup> µg.m <sup>-3</sup>	5 x 10 <sup>3</sup> µg.m <sup>-3</sup>
<b>Ni</b>	1 x 10 <sup>3</sup> µg m <sup>-3</sup>	15 µg m <sup>-3</sup>	1 x 10 <sup>3</sup> µg m <sup>-3</sup>
<b>Cr</b>	500 µg.m <sup>-3</sup>	500 µg.m <sup>-3</sup>	1 x 10 <sup>3</sup> µg.m <sup>-3</sup>
<b>Cd</b>	5 µg.m <sup>-3</sup>		25 µg.m <sup>-3</sup>

<sup>a</sup> Occupational Safety and Health Administration, 2017; <sup>b</sup> National Institute for Occupational Safety and Health; <sup>c</sup> Presidential Decree 90/1999

**Table 4:** Enrichment factor results for certain elements in PM<sub>10</sub>

<b>Element</b>	<b>EF</b>	<b>Element</b>	<b>EF</b>
<b>As</b>	<b>3000</b>	Mn	4.63
Ba	3.30	<b>Ni</b>	<b>11.5</b>
<b>Br</b>	<b>325</b>	<b>P</b>	<b>10.7</b>
<b>Ca</b>	<b>31.9</b>	<b>Pb</b>	<b>3700</b>
<b>Cd</b>	<b>2000</b>	<b>S</b>	<b>55.9</b>
<b>Cl</b>	<b>100</b>	Si	0.64
<b>Cr</b>	<b>65</b>	<b>Sn</b>	<b>26</b>
<b>Cu</b>	<b>140</b>	<b>Sr</b>	<b>27.9</b>
Fe	4.98	Ti	3.46
K	2.73	<b>Zn</b>	<b>762</b>
Mg	1.68		

**Table 5:** Pattern and Structure Matrix for PCA with Oblimin Rotation for 3 Factor Solution for elements of toxicological concern.

elements	Pattern Coefficients			Structure Coefficients			Communalities
	Component 1	Component 2	Component 3	Component 1	Component 2	Component 3	
Pb	<b>0.999</b>			<b>0.989</b>			0.899
As	<b>0.940</b>			<b>0.958</b>			0.908
Cd	<b>0.835</b>			<b>0.834</b>			0.926
Sr	<b>0.804</b>	-0.494		<b>0.817</b>	-0.564		0.942
Ni		<b>0.947</b>			<b>0.939</b>		0.736
Sn		<b>0.824</b>			<b>0.827</b>		0.982
Cr			<b>0.975</b>			<b>0.928</b>	0.914
Mn		0.303	<b>0.768</b>		0.371	<b>0.855</b>	0.752

Variance (%)	Component 1	Component 2	Component 3	Cumulative
	45.0	26.7	16.5	88.2

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1 **Table 6:** Calculated risk derived for each element of toxicological concern (Cr, Mn, Ni, Sn, Cd, Pb and As).

category	Cr			Mn			Ni			Sn			Cd			Pb			As			
	5%	mean	95%	5%	mean	95%	5%	mean	95%	5%	mean	95%	5%	mean	95%	5%	mean	95%	5%	mean	95%	
HQ	3.62	1.69	2.92	9.22	1.77	2.66	5.47	3.12E	5.55	4.24	1.73	3.13	3.24	2.08	4.41	4.41	<b>1.12</b>	<b>1.81</b>	5.57	9.13	1.26	
	E-4	E-3	E-3	E-5	E-4	E-4	E-5	-4	E-4	E-6	E-5	E-5	E-4	E-3	E-3	E-1			E-2	E-2	E-1	
	Cr canc			Ni canc			Cd canc			As canc												
CR	<b>1.26</b>	<b>4.96</b>	<b>8.56</b>	2.39	<b>1.20</b>	<b>2.19</b>	4.62	<b>3.02</b>	<b>6.59</b>	<b>5.94</b>	<b>9.49</b>	<b>1.34</b>	5% CR			Mean CR			95% CR			
	<b>E-5</b>	<b>E-5</b>	<b>E-5</b>	E-7	<b>E-6</b>	<b>E-6</b>	E-7	<b>E-6</b>	<b>E-6</b>	<b>E-5</b>	<b>E-5</b>	<b>E-4</b>										
													<b>7.27E-5</b>			<b>1.49E-4</b>			<b>2.28E-4</b>			

2

3

4