

## Tables

Table S1: Distribution of elements in the earth's crust (used as background) [1-2]

<b>Elements</b>	<b>Background in the earth's crust (mg/kg)</b>	<b>Elements</b>	<b>Background in the earth's crust (mg/kg)</b>
<b>Fe</b>	4.720	<b>Cr</b>	0.07803
<b>Al</b>	0.823	<b>Cd</b>	0.000351
<b>Mn</b>	0.597	<b>Ni</b>	0.068
<b>Zn</b>	0.0776	<b>Pb</b>	0.0239
<b>Cu</b>	0.0508	<b>As</b>	0.00583

Table S2: Indexes values

Index	Values	Class	Quality	Index	Values	Class	Quality
<b>I<sub>geo</sub></b> [3]	$I_{geo} < 0$	0	practically unpolluted	<b>mCd</b> [5]	$mCd < 1.5$	0	Nil to very low contamination
	$0 < I_{geo} < 1$	1	unpolluted to moderated polluted		$1.5 \leq mCd < 2$	1	Low contamination
	$1 < I_{geo} < 2$	2	moderately polluted		$2 \leq mCd < 4$	2	Moderate contamination
	$2 < I_{geo} < 3$	3	moderately to strongly polluted		$4 \leq mCd < 8$	3	High contamination
	$3 < I_{geo} < 4$	4	strongly polluted		$8 \leq mCd < 16$	4	Very high contamination
	$4 < I_{geo} < 5$	5	strongly to extremely polluted		$16 \leq mCd < 32$	5	Extremely high contamination
	$I_{geo} > 5$	6	extremely polluted		$mCd \geq 32$	6	Ultra high contamination
<b>CF</b> [1-2, 4-5]	$CF < 1$	1	Low contamination	<b>CD</b> [1-2, 4-5]	$CD < 8$	1	Low degree of contamination
	$1 \leq CF < 3$	2	Moderate contamination		$8 \leq CD < 16$	2	Moderate degree of contamination
	$3 \leq CF \leq 6$	3	Considerable contamination		$16 \leq CD < 32$	3	Considerable degree of contamination
	$CF > 6$	4	High contamination		$CD > 32$	4	Very high degree of contamination
<b>PLI</b> [6-8]	$PLI = 0$	0	Background concentration				
	$PLI < 1$	1	Perfection – unpolluted				
	$PLI = 1$	2	Base line pollution				
	$PLI > 1$	3	Deterioration of site quality Highly polluted				

Table S3: Exposure Parameters used for calculation.

Factor	Definition	Value			Unit	Reference
		Adults	Children	Infant		
C	Heavy metals concentrations	Measured			mg/kg	The current study
D Ingestion	The ingestion daily exposure dose	Calculated			mg/kg. day	
D Inhalation	The inhalation daily exposure dose					
D Dermal contact	The dermal daily exposure dose					
ADD	The average daily dose					
BW	Average body weight	70	30	10	kg	[9]
IngR	Ingestion rate	100	200	200	mg/day	[10]
InhR	Inhalation rate	20	7.6	7.6	m <sup>3</sup> /day	
PEF	Particle emission factor	1.36×10 <sup>9</sup>			m <sup>3</sup> /kg	
SA	Surface areas of the skin that exposed dust particles	4656	2625	1050	cm <sup>-2</sup>	
TS	Total soil or dust adhered	326	525	210	mg/ cm <sup>-2</sup>	
EF	Exposure frequency	365	365	365	Days/year	[9]
ED	Exposure duration	70	6	1	Years	
AT	Averaging time	ED×365			Days	
AF	Dermal absorption factor	0.001			Unitless	[10]
CF	Conversion factor	1×10 <sup>-6</sup>			Kg/mg	
F <sub>IR</sub>	The fish ingestion rate	0.108	0.027	0.013	kg/day	[11-12]
RfD <sub>Inhalation</sub>	Inhalation reference dose	0.040 (Cu); 0.00035 (Pb); 0.0000143 (Cr); 0.021 (Ni); 0.300 (Zn); 0.0010 (Cd)			mg/kg/day	[13-18]
RfD <sub>Dermal contact</sub>	Dermal contact reference dose	0.012 (Cu); 0.00053 (Pb); 0.00022 (Cr); 0.0054 (Ni); 0.06 (Zn); 0.00001 (Cd)			mg/kg/day	
RfD <sub>Ingestion</sub>	Ingestion reference dose	0.0000143 (Cu); 0.00000571 (Pb); 0.0206 (Cr); 0.3 (Ni); 0.001 (Zn); 0.00143 (Cd)			mg/kg/day	
CSF <sub>Inhalation</sub>	Inhalation Cancer Slope Factors	6.3 (Cd); 0.042 (Pb); 0.41 (Cr); 9.8 (Ni)			(mg/kg/day) <sup>-1</sup>	[18-20]
CSF <sub>Dermal contact</sub>	Dermal Cancer Slope Factors	6.3 (Cd); 0.0085 (Pb); 0.50 (Cr); 0.84 (Ni)				
CSF <sub>Ingestion</sub>	Ingestion Cancer Slope Factors	6.3 (Cd); 0.0085 (Pb); 0.50 (Cr); 0.84 (Ni)				

Table S4: A comparison of the concentration levels of heavy metals recorded in Al-Akrasha region with other results in Egypt and other regions around the world

Country		Heavy metals (mg/m <sup>3</sup> )											Ref.	
		Cu	Pb	Mn	Cr	Ni	Zn	Cd	Al	Ag	B	Fe		As
PM <sub>10</sub>														
Egypt	Al-Akrasha, Egypt	0.260	0.676	0.837	0.162	0.068	0.060	0.011	0.428	0.104	0.156	3.54	0.008	The current study
	Al-Akrasha, Egypt	0.087	0.034	0.381	0.193	0.036	1.458	0.010	-	-	-	4.18	-	[5]
	Awadallah Smelter – Shoubra El-keima, Egypt	-	4.126	-	0.150	-	1.309	0.037	-	-	-	-	0.039	[21]
	Shoubra El-keima, Egypt	0.060	0.040	-	-	0.100	0.030	-	0.390	-	-	5.60	-	[22]
	Giza, Egypt	0.159	0.035	-	-	0.013	-	0.007	-	-	-	-	0.021	[23]
	Helwan, Egypt	0.213	0.054	-	-	0.016	-	0.006	-	-	-	-	0.013	[23]
	Helwan, Egypt	0.057	-	-	-	0.080	-	-	-	-	-	-	-	[24]
	Helwan, Egypt	0.090	0.050	-	-	0.070	0.040	-	0.250	-	-	3.60	-	[22]
	Tebbin, Eyp	0.156	-	0.936	0.127	-	0.245	0.002	-	0.080	-	3.20	0.003	[25]
Africa	Algris, Algeria	0.102	0.029	-	-	0.042	-	0.021	-	-	-	-	-	[26]
	Nigeria	0.200	0.400	2.400	-	0.030	0.200	0.020	-	-	-	4.00	-	[27]
	Northern Nigeria	0.086	0.060	0.144	0.045	0.058	4.967	0.009	-	-	-	-	-	[28]
	South Africa	0.200	0.500	-	0.354	0.067	-	0.026	-	-	-	4.30	0.035	[29]
Asia	Erbid, Jordan	0.117	0.111	-	-	0.080	-	-	-	-	-	-	-	[30]
	Tehran, Iran	-	0.132	-	0.091	-	-	0.068	-	-	-	-	-	[31]
	Isfahan, Iran	-	0.117	-	0.123	0.013	0.034	0.044	-	-	-	-	-	[32]
	Ahvaz, Iran	-	0.453	-	0.100	0.139	0.058	0.034	0.160	-	-	-	-	[33]
	Ahvaz, Iran	0.028	0.162	-	0.212	0.086	0.072	0.019	-	-	-	3.55	0.018	[34]
	China	0.107	0.284	0.191	0.028	0.020	0.422	0.012	-	-	-	-	0.046	[35]
	Beijing, China	0.060	0.195	0.750	0.045	0.020	0.295	0.050	-	-	-	-	0.015	
	Guangzhou, China	0.173	0.417	0.134	0.053	-	1.220	0.010	-	-	-	-	0.039	
	Wuhan, China	0.036	0.415	0.155	0.014	0.065	0.604	0.090	-	-	-	-	0.046	
	Shanghai, China	0.035	0.108	0.060	0.027	0.010	0.418	0.029	-	-	-	-	0.030	[36]
	Hangzhou, China	0.130	0.370	0.130	0.020	0.020	0.550	0.010	-	-	-	-	0.120	
	Hongkong, China	0.021	0.076	0.013	0.037	0.059	0.030	-	-	-	-	-	0.039	
	Shaoguan, China	0.360	0.960	0.200	0.430	0.040	0.790	-	-	-	-	-	0.010	
	Chongqing, China	-	0.108	-	-	0.010	0.024	-	-	-	-	-	-	[37]
	Guangzhou, China	-	0.466	-	0.069	0.052	0.016	0.019	-	-	-	-	-	[38]
	Ho Chi Minh, Vietnam	-	0.073	-	0.070	-	0.032	-	-	-	-	-	-	[39]
	Taichung, Taiwan	-	0.090	-	0.090	0.043	0.040	0.038	-	-	-	-	-	[40]
	Western coastal, Taiwan	0.015	0.021	-	-	0.098	-	0.070	-	-	-	-	0.033	[41]
	Phitsanulok, Thailand	0.060	-	-	-	-	0.090	0.050	-	-	-	5.80	-	[42]
	Islamabad, Pakistan	0.170	0.035	-	-	0.010	-	0.010	-	-	-	-	-	[43]

Country		Heavy metals (mg/m <sup>3</sup> )											Ref.	
		Cu	Pb	Mn	Cr	Ni	Zn	Cd	Al	Ag	B	Fe		As
Europe	Munich, Germany	-	-	-	0.105	-	-	-	-	-	-	-	-	[25]
	London, UK	-	-	-	0.112	-	-	-	-	-	-	2.30	-	
	Athens, Greece	0.191	-	0.113	-	-	-	0.009	-	-	-	-	-	[44]
	Italy	0.012	-	-	-	-	0.023	0.060	-	-	-	2.29	-	[45]
	Acerra, Italy	0.024	0.060	0.050	0.019	0.017	0.079	0.047	0.118			1.395	0.027	[46]
	Kayseri, Turkey	0.025	0.032	0.027	0.011	0.070	0.129	0.010	0.771		0.140	1.107	0.003	[47]
	Rome, Italy		0.092			0.045		0.052	-	-	-	-	0.013	[48]
	Cuenca, Spain	0.106					0.199	0.031	-	-	-	-	-	[49]
America	New York, USA	-	-	-	0.062	-	-	-	-	-	-	3.20	-	[25]
	León, Mexico	0.270	-	0.270	-	-	1.16	0.098	-	-	-	3.08	-	[50]
	Leon, Mexico	0.119	-		-	-	0.655	0.028	-	-	-	1.51	-	[51]
	Tampico, Mexico	0.090	-	0.363	-	-	0.431	0.210	-	-	-	1.63	-	[52]
	Tampico, Mexico	0.033	-		-	-	0.040		-	-	-	2.36	-	[53]
	Tijuana, Mexico		-	0.0081	-	-	0.018	0.013	-	-	-	0.40	-	[54]
	Puebla, Mexico	0.090	-		-	-		0.005	-	-	-	1.23	-	[55]
	Puebla, Mexico	0.461	-	0.089	-	-		0.019	-	-	-	5.85	-	[55]
	Colima, Mexico	0.398	-	0.373	-	-	0.106	0.009	-	-	-	1.60	-	[56]
	Sonora, Mexico	0.208	-	-	-	-			-	-	-	6.27	-	[57]
	CDMX, Mexico	0.123	-	-	-	-		0.015	-	-	-	-	-	[58]
	Cuba	0.100	-	-	-	-	0.548	0.077	-	-	-	-	-	[59]
	Quito, Ecuador	0.097	-	-	-	-	0.121	0.029	-	-	-	4.40	-	[60]
	Rio de Janeiro, Brazil	0.253	-	0.090	-	-	0.182		-	-	-	6.49	-	[61]
	Riohacha, Colombia	1.569	-	0.006	-	-	1.949		-	-	-	0.47	-	[62]
Wollongong, Australia	0.049	0.024	0.046	-	-	0.019	0.011	-	-	-	-	0.002	[63]	
Limits	NAAQS, Egypt	-	0.001	-	-	-	-	-	-	-	-	-	-	[64]
	NAAQS, India	-	0.0005	-	-	0.002	-	-	-	-	-	-	0.0006	[36]
	NAAQS, Nigeria	0.01	0.0005	-	0.0012	0.0024	-	0.0002				10	0.0006	[65]
	NAAQS, China	-	0.0005	-	0.0025	-	-	0.0005	-	-	-	-	0.0006	[36]
	FME <sub>env</sub>	-	0.0005	0.01	0.001	-	-	0.0003	-	-	-	-	-	[66]
	DPR	-	0.001	-	-	-	-		-	-	-	-	-	[66]
	NESREA	-	0.0014	-	-	0.002	-	0.0005	-	-	-	-	-	[67]
	WHO/EU	0.01	0.0005	0.0015	0.0025	0.0005	0.005	0.0005	-	-	-	-	0.0006	[28]
Surface soil (mg/kg)														
Egypt	Al-Akrasha, Egypt	0.171	0.451	-	0.029	0.024	0.022	0.010	-	-	-	-	-	The current study
	Al-Akrasha, Egypt	0.461	0.309	-	0.138	0.042	0.036	0.016	-	-	-	-	-	[5]
	Awadallah Smelter – Shoubra El-keima, Egypt	-	1.172	-	-	-	0.404	0.012	-	-	-	-	-	[21]

Country		Heavy metals (mg/m³)											Ref.	
		Cu	Pb	Mn	Cr	Ni	Zn	Cd	Al	Ag	B	Fe		As
Around the world	Bono, Ghana	0.687	0.109	-	0.633	-	0.119	-	-	-	-	-	-	[68]
	China	0.200	0.236	-	0.539	0.234	0.677	0.010	-	-	-	-	-	[69]
	Western area, China	-	0.300	-	-	-	0.025	0.030	-	-	-	-	-	[70]
	Rampal, Bangladesh	0.237	0.511	-	0.027	0.269	0.485	-	-	-	-	-	-	[71]
	Babol, Iran	-	0.031	-	0.324	0.345	0.828	0.032	-	-	-	-	-	[72]
	Ireland	0.169	0.304	-	0.495	0.135	0.703	0.050	-	-	-	-	-	[73]
	USA	0.170	0.160	-	0.370	0.130	0.480	0.016	-	-	-	-	-	[69]
	Rondônia, Brazil	0.020	0.020	-	0.150	0.020	0.100	0.010	-	-	-	-	-	[74]
	Austrália	0.100	0.150	-	0.100	0.600	1.400	0.010	-	-	-	-	-	[69]
Limits	EU Standards	250	300	-	150	75	600	3	-	-	-	-	-	[5]
	EPA limits	16.5	8.1	-	39.4	1.3	6.8	0.3	-	-	-	-	-	[74]
	WHO and FAO limits	100	100	-	100	50	300							[75]
	NJDEP limits	-	600	-	100	-	1500	100	-	-	-	-	-	[76-77]
	Indian Standard	270	500	-	-	-	-	6	-	-	-	-	-	[78]
	China standard	-	23.9	-	-	-	79.9	0.20	-	-	-	-	-	[79]

**NAAQS**: National Ambient Air Quality Standards; **EU**: European Union; **WHO**: World Health Organization; **FME****nv**: Federal Ministry of Environment; **DPR**: Department of Petroleum Resources; **NESREA**: Federal Ministry of Environment; **EPA**: Environmental Protection Agency; **FAO**: The Food and Agriculture Organization; and **NJDEP**: New Jersey Department of Environmental Protection.

Table S5: A comparison of the concentration levels of heavy metals recorded in the edible fish of tilapia samples which collected from the Ismailia Canal with other results in Egypt and other areas around the world

Country	C (mg/kg)			References	Country	C (mg/kg)			References
	Pb	Cd	Hg			Pb	Cd	Hg	
Ismailia Canal in Al-Akrasha, Egypt	0.227	0.035	0.107	The current study	Meghna river, Bangladesh	3.66	-	-	[95]
Manzala Lake, Egypt	15.0	1.54	-	[80]	rivers in India	0.3	-	0.5	[96]
Manzala Lake, Egypt	2.98	1.71	-	[81]	Galas River, Malaysia	0.3	-	-	[97]
Manzala Lake, Egypt	36.57	0.78	-	[82]	Rivers in China	2	-	0.3	[98]
Hurghada, Red Sea	-	0.02	-	[83]	Caspian Sea, Gorgan Bay, Iran	0.43	-	-	[99]
Red Sea	-	0.26	-	[84]	Lake Rd, Asafo market, Ghana	0.085	-	-	[100]
Gulf of Aqaba, Red Sea	-	0.83	-	[85]	Pearl river, China	1.94	-	-	[101]
Jeddah coast, Red Sea	-	0.90	-	[86]	Egyptian limit*	0.300	0.050	0.500	[102-103]
Yemen, Gulf Aden	-	0.39	-	[87]	EC limits	1	0.17	1	[104]
Mediterranean Sea	5.32	0.66	-	[88]	FAO limits	2	0.17	0.5	[105]
Mediterranean Sea	-	0.05	-	[89]	WHO limits	0.5	3.33	0.5	[106]
Black Sea	-	0.10	-	[90]	FAO/WHO limits	-	1.67	0.5	[107]
Durban Lake, South Africa	0.73	-	-	[91]	NOAA limits	128	-	0.5	[108]
Meghna river, Noakhali, Bangladesh	0.52	-	1.65	[92]	FDA limits	1.7	-	1	[109]
Bangshi river, Bangladesh	4.64	-	-	[93]	ROPME limits	1.28	-	1	[110]
Meghna river, Bangladesh	0.3	-	-	[94]	England limits	-	0.67	-	[111]

EC: European Commission; **FAO**: The Food and Agriculture Organization; **WHO**: World Health Organization; **NOAA**: National Oceanic and Atmospheric Administration; **FDA**: Food and Drug Administration; **ROPME**: Regional Organization for the Protection of the Marine Environment.

Table S5: A comparison of Blood lead level (BLL) recorded in the current study with other results in Egypt and around the world

	Site	blood lead levels (BLLs) $\mu\text{g/dl}$	References
Egypt	Al-Akrasha region	Workers in Awadallah Factory	22.3
		Staff worked in health center	7.5
		People living in Al-Akrasha	16.2
	Greater Cairo	Dokki area	5.4
		Helwan area	10.3
		Faysal areas	15.4
		Shoubra El-Kheima and Helwan	8.6
		rural areas near cultivated lands	5.4
		Urban area	30.5
		Rural area	12.1
		Greater Cairo	33.8
		El-Waily area	55.1
		Greater Cairo	18.8
		non-industrial area	8.8
		residential areas	3.9
		traffic area	7.4
		Residential areas	3.9
		Traffic areas	7.4
		Industrial areas	2.7
		Mixed areas	5.1
	Giza	Rural	46.4
		Urban	20.5
	Sharkia		31.6
China	Suburban	60.3	
	Downtown	58.1	
	Countryside	56.7	
Japan		2.02	
China		3.3	
Sweden		1.1	



Table S7: Exposure dose (D) of heavy metals in PM<sub>10</sub> and surface soil

D	Sites	Infant						Children						Adult					
		Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd
PM <sub>10</sub>																			
D <sub>Inhalation</sub> (mg/kg. day)	Site-1	1.4E-10	3.2E-10	1.0E-10	4.7E-11	2.8E-11	6.7E-12	4.8E-11	1.0E-10	3.5E-11	1.5E-11	9.5E-12	2.2E-12	5.4E-11	1.2E-10	3.9E-11	1.7E-11	1.0E-11	2.2E-12
	Site-2	2.4E-10	2.5E-10	1.4E-10	5.4E-11	3.7E-11	9.5E-12	8.2E-11	8.6E-11	4.7E-11	1.8E-11	1.2E-11	3.1E-12	9.2E-11	9.7E-11	5.3E-11	2.0E-11	1.4E-11	3.5E-12
	Site-3	1.0E-10	2.0E-10	7.9E-11	2.9E-11	2.2E-11	5.0E-12	3.5E-11	6.7E-11	2.6E-11	9.6E-12	7.6E-12	1.6E-12	3.9E-11	7.6E-11	2.9E-11	1.0E-11	8.6E-12	1.8E-12
	Site-4	1.1E-10	1.8E-10	5.4E-11	3.4E-11	1.9E-11	5.0E-12	3.9E-11	6.0E-11	1.8E-11	1.1E-11	6.5E-12	1.6E-12	4.4E-11	6.8E-11	2.0E-11	1.2E-11	7.3E-12	1.8E-12
	Site-5	1.1E-10	2.9E-10	8.9E-11	2.9E-11	2.0E-11	4.4E-12	3.8E-11	9.8E-11	2.9E-11	9.8E-12	6.7E-12	1.4E-12	4.3E-11	1.1E-10	3.3E-11	1.1E-11	7.5E-12	1.6E-12
	Site-6	2.1E-10	9.7E-10	2.3E-10	3.9E-11	5.3E-11	1.5E-11	6.9E-11	3.2E-10	7.9E-11	1.3E-11	1.7E-11	5.0E-12	7.8E-11	3.6E-10	8.9E-11	1.4E-11	2.0E-11	5.6E-12
	Site-7	1.8E-10	3.5E-10	1.2E-10	1.9E-11	2.4E-11	3.9E-12	6.1E-11	1.1E-10	4.1E-11	6.5E-12	8.0E-12	1.3E-12	6.9E-11	1.3E-10	4.6E-11	7.3E-12	9.0E-12	1.4E-12
	Site-8	1.7E-10	5.4E-10	8.5E-11	3.3E-11	3.3E-11	3.3E-12	5.8E-11	1.8E-10	2.8E-11	1.1E-11	1.1E-11	1.1E-12	6.6E-11	2.0E-10	3.2E-11	1.2E-11	1.2E-11	1.2E-12
	Site-9	1.2E-10	2.6E-10	9.4E-11	2.9E-11	2.2E-11	2.2E-12	4.0E-11	8.7E-11	3.1E-11	9.8E-12	7.6E-12	7.4E-13	4.6E-11	9.8E-11	3.5E-11	1.1E-11	8.6E-12	8.4E-13
D <sub>Dermal contact</sub> (mg/kg. day)	Site-1	5.7E-06	1.2E-05	4.1E-06	1.8E-06	1.1E-06	2.6E-07	1.1E-05	2.6E-05	8.6E-06	3.9E-06	2.3E-06	5.5E-07	5.6E-06	1.2E-05	4.0E-06	1.8E-06	1.1E-06	2.6E-07
	Site-2	9.7E-06	1.0E-05	5.5E-06	2.1E-06	1.4E-06	3.7E-07	2.0E-05	2.1E-05	1.1E-05	4.4E-06	3.0E-06	7.8E-07	9.5E-06	1.0E-05	5.4E-06	2.1E-06	1.4E-06	3.6E-07
	Site-3	4.1E-06	8.0E-06	3.1E-06	1.1E-06	9.0E-07	1.9E-07	8.7E-06	1.6E-05	6.5E-06	2.3E-06	1.8E-06	4.1E-07	4.1E-06	7.8E-06	3.0E-06	1.1E-06	8.8E-07	1.9E-07
	Site-4	4.6E-06	7.1E-06	2.1E-06	1.3E-06	7.7E-07	1.9E-07	9.6E-06	1.4E-05	4.5E-06	2.8E-06	1.6E-06	4.1E-07	4.5E-06	7.0E-06	2.1E-06	1.3E-06	7.5E-07	1.9E-07
	Site-5	4.5E-06	1.1E-05	3.5E-06	1.1E-06	7.9E-07	1.7E-07	9.5E-06	2.4E-05	7.3E-06	2.4E-06	1.6E-06	3.6E-07	4.4E-06	1.1E-05	3.4E-06	1.1E-06	7.8E-07	1.7E-07
	Site-6	8.2E-06	3.8E-05	9.3E-06	1.5E-06	2.0E-06	5.9E-07	1.7E-05	7.9E-05	1.9E-05	3.2E-06	4.3E-06	1.2E-06	8.1E-06	3.7E-05	9.2E-06	1.5E-06	2.0E-06	5.8E-07
	Site-7	7.2E-06	1.4E-05	4.8E-06	7.7E-07	9.4E-07	1.5E-07	1.5E-05	2.9E-05	1.0E-05	1.6E-06	1.9E-06	3.2E-07	7.1E-06	1.3E-05	4.7E-06	7.5E-07	9.3E-07	1.5E-07
	Site-8	6.9E-06	2.1E-05	3.3E-06	1.3E-06	1.3E-06	1.3E-07	1.4E-05	4.4E-05	7.0E-06	2.7E-06	2.7E-06	2.7E-07	6.8E-06	2.1E-05	3.3E-06	1.2E-06	1.2E-06	1.3E-07
	Site-9	4.8E-06	1.0E-05	3.7E-06	1.1E-06	9.0E-07	8.8E-08	1.0E-05	2.1E-05	7.7E-06	2.4E-06	1.8E-06	1.8E-07	4.7E-06	1.0E-05	3.6E-06	1.1E-06	8.8E-07	8.6E-08
D <sub>Ingestion</sub> (mg/kg. day)	Site-1	3.1E-04	7.1E-04	2.2E-04	1.0E-04	6.2E-05	1.4E-05	5.4E-05	1.2E-04	3.9E-05	1.7E-05	1.0E-05	2.5E-06	9.4E+03	2.1E+04	6.8E+03	3.1E+03	1.8E+03	4.3E+02
	Site-2	5.3E-04	5.6E-04	3.0E-04	1.1E-04	8.1E-05	2.0E-05	9.1E-05	9.6E-05	5.2E-05	2.0E-05	1.4E-05	3.5E-06	1.6E+04	1.6E+04	9.2E+03	3.5E+03	2.4E+03	6.2E+02
	Site-3	2.3E-04	4.4E-04	1.7E-04	6.3E-05	4.9E-05	1.1E-05	3.9E-05	7.5E-05	2.9E-05	1.0E-05	8.5E-06	1.8E-06	6.9E+03	1.3E+04	5.1E+03	1.9E+03	1.5E+03	3.2E+02
	Site-4	2.5E-04	3.9E-04	1.1E-04	7.4E-05	4.2E-05	1.1E-05	4.3E-05	6.7E-05	2.0E-05	1.2E-05	7.3E-06	1.8E-06	7.6E+03	1.1E+04	3.5E+03	2.2E+03	1.2E+03	3.2E+02
	Site-5	2.5E-04	6.4E-04	1.9E-04	6.4E-05	4.3E-05	9.7E-06	4.3E-05	1.1E-04	3.3E-05	1.1E-05	7.5E-06	1.6E-06	7.5E+03	1.9E+04	5.8E+03	1.9E+03	1.3E+03	2.9E+02

D	Sites	Infant						Children						Adult					
		Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd
Average Daily Dose (ADD) (mg/kg, day)	Site-6	4.5E-04	2.1E-03	5.1E-04	8.5E-05	1.1E-04	3.2E-05	7.8E-05	3.6E-04	8.8E-05	1.4E-05	1.9E-05	5.6E-06	1.3E+04	6.3E+04	1.5E+04	2.5E+03	3.4E+03	9.8E+02
	Site-7	4.0E-04	7.8E-04	2.6E-04	4.2E-05	5.2E-05	8.5E-06	6.8E-05	1.3E-04	4.5E-05	7.3E-06	8.9E-06	1.4E-06	1.2E+04	2.3E+04	8.0E+03	1.2E+03	1.5E+03	2.5E+02
	Site-8	3.8E-04	1.1E-03	1.8E-04	7.1E-05	7.1E-05	7.3E-06	6.5E-05	2.0E-04	3.1E-05	1.2E-05	1.2E-05	1.2E-06	1.1E+04	3.5E+04	5.5E+03	2.1E+03	2.1E+03	2.1E+02
	Site-9	2.6E-04	5.6E-04	2.0E-04	6.4E-05	4.9E-05	1.6E-05	4.5E-05	9.7E-05	3.5E-05	1.1E-05	8.5E-06	8.3E-07	7.9E+03	1.7E+04	6.1E+03	1.9E+03	1.5E+03	1.4E+02
	Site-1	4.0E-02	1.0E-03	2.4E-04	2.1E-02	3.0E-01	1.0E-03	1.2E-02	6.7E-04	2.6E-04	5.4E-03	6.0E-02	1.3E-05	9.4E+03	2.1E+04	6.8E+03	3.1E+03	1.8E+03	4.3E+02
	Site-2	4.0E-02	9.2E-04	3.2E-04	2.1E-02	3.0E-01	1.0E-03	1.2E-02	6.4E-04	2.8E-04	5.4E-03	6.0E-02	1.4E-05	1.6E+04	1.6E+04	9.2E+03	3.5E+03	2.4E+03	6.2E+02
	Site-3	4.0E-02	8.0E-04	1.9E-04	2.1E-02	3.0E-01	1.0E-03	1.2E-02	6.2E-04	2.5E-04	5.4E-03	6.0E-02	1.2E-05	6.9E+03	1.3E+04	5.1E+03	1.9E+03	1.5E+03	3.2E+02
	Site-4	4.0E-02	7.5E-04	1.3E-04	2.1E-02	3.0E-01	1.0E-03	1.2E-02	6.1E-04	2.4E-04	5.4E-03	6.0E-02	1.2E-05	7.6E+03	1.1E+04	3.5E+03	2.2E+03	1.2E+03	3.2E+02
	Site-5	4.0E-02	1.0E-03	2.1E-04	2.1E-02	3.0E-01	1.0E-03	1.2E-02	6.6E-04	2.6E-04	5.4E-03	6.0E-02	1.2E-05	7.5E+03	1.9E+04	5.8E+03	1.9E+03	1.3E+03	2.9E+02
	Site-6	4.0E-02	2.5E-03	5.4E-04	2.1E-02	3.0E-01	1.0E-03	1.2E-02	9.7E-04	3.2E-04	5.4E-03	6.0E-02	1.6E-05	1.3E+04	6.3E+04	1.5E+04	2.5E+03	3.4E+03	9.8E+02
	Site-7	4.0E-02	1.1E-03	2.8E-04	2.1E-02	3.0E-01	1.0E-03	1.2E-02	6.9E-04	2.7E-04	5.4E-03	6.0E-02	1.1E-05	1.2E+04	2.3E+04	8.0E+03	1.2E+03	1.5E+03	2.5E+02
	Site-8	4.0E-02	1.5E-03	2.0E-04	2.1E-02	3.0E-01	1.0E-03	1.2E-02	7.7E-04	2.5E-04	5.4E-03	6.0E-02	1.1E-05	1.1E+04	3.5E+04	5.5E+03	2.1E+03	2.1E+03	2.1E+02
	Site-9	4.0E-02	9.2E-04	2.2E-04	2.1E-02	3.0E-01	1.0E-03	1.2E-02	6.4E-04	2.6E-04	5.4E-03	6.0E-02	1.1E-05	7.9E+03	1.7E+04	6.1E+03	1.9E+03	1.5E+03	1.4E+02
Surface soil																			
D Inhalation (mg/kg, day)	Site-1	5.0E-11	3.4E-10	1.3E-11	9.7E-12	7.7E-12	6.4E-12	1.6E-11	1.1E-10	4.6E-12	3.2E-12	2.5E-12	2.1E-12	1.8E-11	1.2E-10	5.2E-12	3.6E-12	2.9E-12	2.4E-12
	Site-2	9.3E-11	2.3E-10	1.3E-11	1.3E-11	1.4E-11	3.3E-12	3.1E-11	7.7E-11	4.4E-12	4.4E-12	4.7E-12	1.1E-12	3.5E-11	8.7E-11	5.0E-12	4.9E-12	5.3E-12	1.2E-12
	Site-3	8.8E-11	3.1E-10	1.9E-11	1.0E-11	1.5E-11	5.2E-12	2.9E-11	1.0E-10	6.4E-12	3.4E-12	5.0E-12	1.7E-12	3.3E-11	1.1E-10	7.3E-12	3.9E-12	5.6E-12	1.9E-12
	Site-4	1.0E-10	2.2E-10	2.1E-11	1.1E-11	1.1E-11	2.5E-12	3.4E-11	7.6E-11	7.0E-12	3.7E-12	3.6E-12	8.6E-13	3.8E-11	8.6E-11	7.9E-12	4.2E-12	4.1E-12	9.7E-13
	Site-5	8.8E-11	1.1E-10	1.6E-11	1.3E-11	9.8E-12	2.4E-12	2.9E-11	3.9E-11	5.3E-12	4.6E-12	3.2E-12	8.0E-13	3.3E-11	4.3E-11	6.0E-12	5.2E-12	3.7E-12	9.1E-13
	Site-6	1.3E-10	4.0E-10	1.7E-11	1.3E-11	6.8E-12	5.5E-12	4.3E-11	1.3E-10	5.8E-12	4.5E-12	2.2E-12	1.8E-12	4.9E-11	1.5E-10	6.6E-12	5.1E-12	2.5E-12	2.1E-12
	Site-7	9.4E-11	1.2E-10	2.1E-11	1.9E-11	1.5E-11	8.2E-12	3.1E-11	4.0E-11	7.3E-12	6.4E-12	5.2E-12	2.7E-12	3.5E-11	4.5E-11	8.2E-12	7.2E-12	5.9E-12	3.1E-12
	Site-8	8.7E-11	1.1E-10	1.0E-11	1.8E-11	1.5E-11	8.1E-12	2.9E-11	3.6E-11	3.6E-12	6.2E-12	5.0E-12	2.7E-12	3.2E-11	4.1E-11	4.1E-12	7.0E-12	5.6E-12	3.0E-12
	Site-9	1.2E-10	3.9E-10	1.2E-11	1.1E-11	1.4E-11	7.4E-12	4.1E-11	1.3E-10	4.2E-12	3.6E-12	4.6E-12	2.4E-12	4.7E-11	1.5E-10	4.7E-12	4.1E-12	5.2E-12	2.8E-12
Dermal contact $f_{max}f_{so}$	Site-1	1.9E-06	1.3E-05	5.4E-07	3.8E-07	3.0E-07	2.5E-07	4.1E-06	2.8E-05	1.1E-06	8.0E-07	6.3E-07	5.2E-07	1.9E-06	1.3E-05	5.3E-07	3.7E-07	3.0E-07	2.4E-07
	Site-2	3.6E-06	9.1E-06	5.2E-07	5.2E-07	5.5E-07	1.3E-07	7.6E-06	1.9E-05	1.0E-06	1.0E-06	1.1E-06	2.7E-07	3.6E-06	8.9E-06	5.1E-07	5.1E-07	5.4E-07	1.3E-07

D	Sites	Infant						Children						Adult					
		Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd
D <sub>Ingestion (mg/kg. day)</sub>	Site-3	3.4E-06	1.2E-05	7.6E-07	4.1E-07	5.9E-07	2.0E-07	7.2E-06	2.5E-05	1.6E-06	8.5E-07	1.2E-06	4.2E-07	3.4E-06	1.2E-05	7.5E-07	4.0E-07	5.8E-07	2.0E-07
	Site-4	4.0E-06	9.0E-06	8.3E-07	4.4E-07	4.3E-07	1.0E-07	8.5E-06	1.8E-05	1.7E-06	9.2E-07	9.0E-07	2.1E-07	4.0E-06	8.9E-06	8.2E-07	4.3E-07	4.2E-07	1.0E-07
	Site-5	3.4E-06	4.6E-06	6.3E-07	5.4E-07	3.9E-07	9.5E-08	7.2E-06	9.6E-06	1.3E-06	1.1E-06	8.1E-07	1.9E-07	3.4E-06	4.5E-06	6.2E-07	5.3E-07	3.8E-07	9.4E-08
	Site-6	5.1E-06	1.6E-05	6.9E-07	5.3E-07	2.7E-07	2.2E-07	1.0E-05	3.3E-05	1.4E-06	1.1E-06	5.6E-07	4.5E-07	5.0E-06	1.5E-05	6.8E-07	5.2E-07	2.6E-07	2.1E-07
	Site-7	3.7E-06	4.8E-06	8.6E-07	7.6E-07	6.2E-07	3.2E-07	7.7E-06	9.9E-06	1.8E-06	1.5E-06	1.2E-06	6.8E-07	3.6E-06	4.7E-06	8.4E-07	7.4E-07	6.1E-07	3.2E-07
	Site-8	3.4E-06	4.3E-06	4.3E-07	7.4E-07	5.9E-07	3.2E-07	7.1E-06	9.0E-06	8.9E-07	1.5E-06	1.2E-06	6.6E-07	3.3E-06	4.2E-06	4.2E-07	7.3E-07	5.8E-07	3.1E-07
	Site-9	4.9E-06	1.5E-05	5.0E-07	4.3E-07	5.5E-07	2.9E-07	1.0E-05	3.2E-05	1.0E-06	9.1E-07	1.1E-06	6.1E-07	4.8E-06	1.5E-05	4.9E-07	4.3E-07	5.4E-07	2.8E-07
	Site-1	1.0E-04	7.4E-04	3.0E-05	2.1E-05	1.6E-05	1.4E-05	1.8E-05	1.2E-04	5.1E-06	3.6E-06	2.8E-06	2.4E-06	3.2E+03	2.2E+04	9.0E+02	6.3E+02	5.0E+02	4.2E+02
	Site-2	2.0E-04	5.0E-04	2.9E-05	2.8E-05	3.0E-05	7.3E-06	3.4E-05	8.6E-05	4.9E-06	4.9E-06	5.2E-06	1.2E-06	6.0E+03	1.5E+04	8.7E+02	8.6E+02	9.2E+02	2.1E+02
Average Daily Dose (ADD) (mg/kg. day)	Site-3	1.9E-04	6.7E-04	4.2E-05	2.2E-05	3.2E-05	1.1E-05	3.3E-05	1.1E-04	7.2E-06	3.8E-06	5.6E-06	1.9E-06	5.7E+03	2.0E+04	1.2E+03	6.8E+02	9.8E+02	3.4E+02
	Site-4	2.2E-04	5.0E-04	4.6E-05	2.4E-05	2.3E-05	5.6E-06	3.8E-05	8.5E-05	7.8E-06	4.2E-06	4.1E-06	9.6E-07	6.7E+03	1.5E+04	1.3E+03	7.3E+02	7.1E+02	1.6E+02
	Site-5	1.9E-04	2.5E-04	3.5E-05	3.0E-05	2.1E-05	5.2E-06	3.2E-05	4.3E-05	6.0E-06	5.1E-06	3.6E-06	9.0E-07	5.7E+03	7.6E+03	1.0E+03	9.0E+02	6.4E+02	1.5E+02
	Site-6	2.8E-04	8.8E-04	3.8E-05	2.9E-05	1.5E-05	1.2E-05	4.8E-05	1.5E-04	6.5E-06	5.0E-06	2.5E-06	2.0E-06	8.5E+03	2.6E+04	1.1E+03	8.8E+02	4.4E+02	3.6E+02
	Site-7	2.0E-04	2.6E-04	4.7E-05	4.2E-05	3.4E-05	1.8E-05	3.5E-05	4.5E-05	8.1E-06	7.2E-06	5.8E-06	3.0E-06	6.1E+03	7.9E+03	1.4E+03	1.2E+03	1.0E+03	5.4E+02
	Site-8	1.9E-04	2.4E-04	2.3E-05	4.1E-05	3.2E-05	1.7E-05	3.2E-05	4.1E-05	4.0E-06	7.0E-06	5.6E-06	3.0E-06	5.6E+03	7.2E+03	7.1E+02	1.2E+03	9.8E+02	5.2E+02
	Site-9	2.7E-04	8.6E-04	2.7E-05	2.4E-05	3.0E-05	4.8E-06	4.6E-05	1.4E-04	4.7E-06	4.1E-06	5.2E-06	2.7E-06	8.1E+03	2.6E+04	8.2E+02	7.2E+02	9.1E+02	4.8E+02
	Site-1	4.0E-02	1.1E-03	4.5E-05	2.1E-02	3.0E-01	1.0E-03	1.2E-02	6.8E-04	2.2E-04	5.4E-03	6.0E-02	1.2E-05	3.2E+03	2.2E+04	9.0E+02	6.3E+02	5.0E+02	4.2E+02
	Site-2	4.0E-02	8.6E-04	4.3E-05	2.1E-02	3.0E-01	1.0E-03	1.2E-02	6.3E-04	2.2E-04	5.4E-03	6.0E-02	1.1E-05	6.0E+03	1.5E+04	8.7E+02	8.6E+02	9.2E+02	2.1E+02
	Site-3	4.0E-02	1.0E-03	5.7E-05	2.1E-02	3.0E-01	1.0E-03	1.2E-02	6.7E-04	2.2E-04	5.4E-03	6.0E-02	1.2E-05	5.7E+03	2.0E+04	1.2E+03	6.8E+02	9.8E+02	3.4E+02
	Site-4	4.0E-02	8.5E-04	6.1E-05	2.1E-02	3.0E-01	1.0E-03	1.2E-02	6.3E-04	2.3E-04	5.4E-03	6.0E-02	1.1E-05	6.7E+03	1.5E+04	1.3E+03	7.3E+02	7.1E+02	1.6E+02
	Site-5	4.0E-02	6.0E-04	5.0E-05	2.1E-02	3.0E-01	1.0E-03	1.2E-02	5.8E-04	2.2E-04	5.4E-03	6.0E-02	1.1E-05	5.7E+03	7.6E+03	1.0E+03	9.0E+02	6.4E+02	1.5E+02
	Site-6	4.0E-02	1.2E-03	5.3E-05	2.1E-02	3.0E-01	1.0E-03	1.2E-02	7.1E-04	2.2E-04	5.4E-03	6.0E-02	1.2E-05	8.5E+03	2.6E+04	1.1E+03	8.8E+02	4.4E+02	3.6E+02
	Site-7	4.0E-02	6.1E-04	6.2E-05	2.1E-02	3.0E-01	1.0E-03	1.2E-02	5.8E-04	2.3E-04	5.4E-03	6.0E-02	1.3E-05	6.1E+03	7.9E+03	1.4E+03	1.2E+03	1.0E+03	5.4E+02
	Site-8	4.0E-02	5.9E-04	3.8E-05	2.1E-02	3.0E-01	1.0E-03	1.2E-02	5.8E-04	2.2E-04	5.4E-03	6.0E-02	1.3E-05	5.6E+03	7.2E+03	7.1E+02	1.2E+03	9.8E+02	5.2E+02
	Site-9	4.0E-02	1.2E-03	4.2E-05	2.1E-02	3.0E-01	1.0E-03	1.2E-02	7.1E-04	2.2E-04	5.4E-03	6.0E-02	1.3E-05	8.1E+03	2.6E+04	8.2E+02	7.2E+02	9.1E+02	4.8E+02

**Table S8: Hazard Quotation (HQ) of heavy metals in PM<sub>10</sub> and surface soil**

HQ	Sites	Infant						Children						Adult					
		Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd
PM <sub>10</sub>																			
HQ Inhalation	Site-1	4.E-09	9.E-07	7.E-06	2.E-09	1.E-10	7.E-09	1.E-09	3.E-07	2.E-06	8.E-10	3.E-11	2.E-09	1.E-09	4.E-07	3.E-06	9.E-10	4.E-11	3.E-09
	Site-2	6.E-09	7.E-07	1.E-05	3.E-09	1.E-10	1.E-08	2.E-09	2.E-07	3.E-06	9.E-10	4.E-11	3.E-09	2.E-09	3.E-07	4.E-06	1.E-09	5.E-11	4.E-09
	Site-3	3.E-09	6.E-07	6.E-06	1.E-09	8.E-11	5.E-09	9.E-10	2.E-07	2.E-06	5.E-10	3.E-11	2.E-09	1.E-09	2.E-07	2.E-06	5.E-10	3.E-11	2.E-09
	Site-4	3.E-09	5.E-07	4.E-06	2.E-09	7.E-11	5.E-09	1.E-09	2.E-07	1.E-06	5.E-10	2.E-11	2.E-09	1.E-09	2.E-07	1.E-06	6.E-10	2.E-11	2.E-09
	Site-5	3.E-09	8.E-07	6.E-06	1.E-09	7.E-11	4.E-09	1.E-09	3.E-07	2.E-06	5.E-10	2.E-11	1.E-09	1.E-09	3.E-07	2.E-06	5.E-10	3.E-11	2.E-09
	Site-6	5.E-09	3.E-06	2.E-05	2.E-09	2.E-10	2.E-08	2.E-09	9.E-07	6.E-06	6.E-10	6.E-11	5.E-09	2.E-09	1.E-06	6.E-06	7.E-10	7.E-11	6.E-09
	Site-7	5.E-09	1.E-06	9.E-06	9.E-10	8.E-11	4.E-09	2.E-09	3.E-07	3.E-06	3.E-10	3.E-11	1.E-09	2.E-09	4.E-07	3.E-06	4.E-10	3.E-11	1.E-09
	Site-8	4.E-09	2.E-06	6.E-06	2.E-09	1.E-10	3.E-09	1.E-09	5.E-07	2.E-06	5.E-10	4.E-11	1.E-09	2.E-09	6.E-07	2.E-06	6.E-10	4.E-11	1.E-09
	Site-9	3.E-09	7.E-07	7.E-06	1.E-09	8.E-11	2.E-09	1.E-09	2.E-07	2.E-06	5.E-10	3.E-11	7.E-10	1.E-09	3.E-07	2.E-06	5.E-10	3.E-11	8.E-10
HQ Dermal contact	Site-1	5.E-04	2.E-02	2.E-02	3.E-04	2.E-05	3.E-02	1.E-03	5.E-02	4.E-02	7.E-04	4.E-05	6.E-02	5.E-04	2.E-02	2.E-02	3.E-04	2.E-05	3.E-02
	Site-2	8.E-04	2.E-02	3.E-02	4.E-04	2.E-05	4.E-02	2.E-03	4.E-02	5.E-02	8.E-04	5.E-05	8.E-02	8.E-04	2.E-02	2.E-02	4.E-04	2.E-05	4.E-02
	Site-3	3.E-04	2.E-02	1.E-02	2.E-04	2.E-05	2.E-02	7.E-04	3.E-02	3.E-02	4.E-04	3.E-05	4.E-02	3.E-04	1.E-02	1.E-02	2.E-04	1.E-05	2.E-02
	Site-4	4.E-04	1.E-02	1.E-02	2.E-04	1.E-05	2.E-02	8.E-04	3.E-02	2.E-02	5.E-04	3.E-05	4.E-02	4.E-04	1.E-02	1.E-02	2.E-04	1.E-05	2.E-02
	Site-5	4.E-04	2.E-02	2.E-02	2.E-04	1.E-05	2.E-02	8.E-04	5.E-02	3.E-02	5.E-04	3.E-05	4.E-02	4.E-04	2.E-02	2.E-02	2.E-04	1.E-05	2.E-02
	Site-6	7.E-04	7.E-02	4.E-02	3.E-04	3.E-05	6.E-02	1.E-03	2.E-01	9.E-02	6.E-04	7.E-05	1.E-01	7.E-04	7.E-02	4.E-02	3.E-04	3.E-05	6.E-02
	Site-7	6.E-04	3.E-02	2.E-02	1.E-04	2.E-05	2.E-02	1.E-03	6.E-02	5.E-02	3.E-04	3.E-05	3.E-02	6.E-04	3.E-02	2.E-02	1.E-04	2.E-05	2.E-02
	Site-8	6.E-04	4.E-02	2.E-02	2.E-04	2.E-05	1.E-02	1.E-03	8.E-02	3.E-02	5.E-04	5.E-05	3.E-02	6.E-04	4.E-02	2.E-02	2.E-04	2.E-05	1.E-02
	Site-9	4.E-04	2.E-02	2.E-02	2.E-04	2.E-05	9.E-03	8.E-04	4.E-02	4.E-02	5.E-04	3.E-05	2.E-02	4.E-04	2.E-02	2.E-02	2.E-04	1.E-05	9.E-03
HQ Ingestion	Site-1	8.E-03	2.E+00	2.E+01	5.E-03	2.E-04	1.E-02	1.E-03	3.E-01	3.E+00	8.E-04	4.E-05	3.E-03	2.E+05	6.E+07	5.E+08	1.E+05	6.E+03	4.E+05
	Site-2	1.E-02	2.E+00	2.E+01	6.E-03	3.E-04	2.E-02	2.E-03	3.E-01	4.E+00	1.E-03	5.E-05	4.E-03	4.E+05	5.E+07	6.E+08	2.E+05	8.E+03	6.E+05
	Site-3	6.E-03	1.E+00	1.E+01	3.E-03	2.E-04	1.E-02	1.E-03	2.E-01	2.E+00	5.E-04	3.E-05	2.E-03	2.E+05	4.E+07	4.E+08	9.E+04	5.E+03	3.E+05
	Site-4	6.E-03	1.E+00	8.E+00	4.E-03	1.E-04	1.E-02	1.E-03	2.E-01	1.E+00	6.E-04	2.E-05	2.E-03	2.E+05	3.E+07	3.E+08	1.E+05	4.E+03	3.E+05
	Site-5	6.E-03	2.E+00	1.E+01	3.E-03	1.E-04	1.E-02	1.E-03	3.E-01	2.E+00	5.E-04	3.E-05	2.E-03	2.E+05	6.E+07	4.E+08	9.E+04	4.E+03	3.E+05

HQ	Sites	Infant						Children						Adult					
		Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd
	Site-6	1.E-02	6.E+00	4.E+01	4.E-03	4.E-04	3.E-02	2.E-03	1.E+00	6.E+00	7.E-04	7.E-05	6.E-03	3.E+05	2.E+08	1.E+09	1.E+05	1.E+04	1.E+06
	Site-7	1.E-02	2.E+00	2.E+01	2.E-03	2.E-04	9.E-03	2.E-03	4.E-01	3.E+00	3.E-04	3.E-05	1.E-03	3.E+05	7.E+07	6.E+08	6.E+04	5.E+03	3.E+05
	Site-8	1.E-02	3.E+00	1.E+01	3.E-03	2.E-04	7.E-03	2.E-03	6.E-01	2.E+00	6.E-04	4.E-05	1.E-03	3.E+05	1.E+08	4.E+08	1.E+05	7.E+03	2.E+05
	Site-9	7.E-03	2.E+00	1.E+01	3.E-03	2.E-04	0.E+00	1.E-03	3.E-01	2.E+00	5.E-04	3.E-05	8.E-04	2.E+05	5.E+07	4.E+08	9.E+04	5.E+03	1.E+05
Surface soil																			
HQ Inhalation	Site-1	1.E-09	1.E-06	1.E-06	5.E-10	3.E-11	6.E-09	4.E-10	3.E-07	3.E-07	2.E-10	9.E-12	2.E-09	5.E-10	4.E-07	4.E-07	2.E-10	1.E-11	2.E-09
	Site-2	2.E-09	7.E-07	9.E-07	6.E-10	5.E-11	3.E-09	8.E-10	2.E-07	3.E-07	2.E-10	2.E-11	1.E-09	9.E-10	2.E-07	4.E-07	2.E-10	2.E-11	1.E-09
	Site-3	2.E-09	9.E-07	1.E-06	5.E-10	5.E-11	5.E-09	7.E-10	3.E-07	5.E-07	2.E-10	2.E-11	2.E-09	8.E-10	3.E-07	5.E-07	2.E-10	2.E-11	2.E-09
	Site-4	3.E-09	7.E-07	1.E-06	5.E-10	4.E-11	3.E-09	9.E-10	2.E-07	5.E-07	2.E-10	1.E-11	9.E-10	1.E-09	2.E-07	6.E-07	2.E-10	1.E-11	1.E-09
	Site-5	2.E-09	3.E-07	1.E-06	7.E-10	3.E-11	2.E-09	7.E-10	1.E-07	4.E-07	2.E-10	1.E-11	8.E-10	8.E-10	1.E-07	4.E-07	2.E-10	1.E-11	9.E-10
	Site-6	3.E-09	1.E-06	1.E-06	6.E-10	2.E-11	6.E-09	1.E-09	4.E-07	4.E-07	2.E-10	8.E-12	2.E-09	1.E-09	4.E-07	5.E-07	2.E-10	9.E-12	2.E-09
	Site-7	2.E-09	3.E-07	2.E-06	9.E-10	5.E-11	8.E-09	8.E-10	1.E-07	5.E-07	3.E-10	2.E-11	3.E-09	9.E-10	1.E-07	6.E-07	3.E-10	2.E-11	3.E-09
	Site-8	2.E-09	3.E-07	8.E-07	9.E-10	5.E-11	8.E-09	7.E-10	1.E-07	3.E-07	3.E-10	2.E-11	3.E-09	8.E-10	1.E-07	3.E-07	3.E-10	2.E-11	3.E-09
	Site-9	3.E-09	1.E-06	9.E-07	5.E-10	5.E-11	7.E-09	1.E-09	4.E-07	3.E-07	2.E-10	2.E-11	2.E-09	1.E-09	4.E-07	3.E-07	2.E-10	2.E-11	3.E-09
HQ Dermal contact	Site-1	2.E-04	3.E-02	2.E-03	7.E-05	5.E-06	3.E-02	3.E-04	5.E-02	5.E-03	1.E-04	1.E-05	5.E-02	2.E-04	3.E-02	2.E-03	7.E-05	5.E-06	2.E-02
	Site-2	3.E-04	2.E-02	2.E-03	1.E-04	9.E-06	1.E-02	6.E-04	4.E-02	5.E-03	2.E-04	2.E-05	3.E-02	3.E-04	2.E-02	2.E-03	1.E-04	9.E-06	1.E-02
	Site-3	3.E-04	2.E-02	3.E-03	8.E-05	1.E-05	2.E-02	6.E-04	5.E-02	7.E-03	2.E-04	2.E-05	4.E-02	3.E-04	2.E-02	3.E-03	7.E-05	1.E-05	2.E-02
	Site-4	3.E-04	2.E-02	4.E-03	8.E-05	7.E-06	1.E-02	7.E-04	4.E-02	8.E-03	2.E-04	2.E-05	2.E-02	3.E-04	2.E-02	4.E-03	8.E-05	7.E-06	1.E-02
	Site-5	3.E-04	9.E-03	3.E-03	1.E-04	6.E-06	1.E-02	6.E-04	2.E-02	6.E-03	2.E-04	1.E-05	2.E-02	3.E-04	9.E-03	3.E-03	1.E-04	6.E-06	9.E-03
	Site-6	4.E-04	3.E-02	3.E-03	1.E-04	5.E-06	2.E-02	9.E-04	6.E-02	7.E-03	2.E-04	9.E-06	5.E-02	4.E-04	3.E-02	3.E-03	1.E-04	4.E-06	2.E-02
	Site-7	3.E-04	9.E-03	4.E-03	1.E-04	1.E-05	3.E-02	6.E-04	2.E-02	8.E-03	3.E-04	2.E-05	7.E-02	3.E-04	9.E-03	4.E-03	1.E-04	1.E-05	3.E-02
	Site-8	3.E-04	8.E-03	2.E-03	1.E-04	1.E-05	3.E-02	6.E-04	2.E-02	4.E-03	3.E-04	2.E-05	7.E-02	3.E-04	8.E-03	2.E-03	1.E-04	1.E-05	3.E-02
	Site-9	4.E-04	3.E-02	2.E-03	8.E-05	9.E-06	3.E-02	9.E-04	6.E-02	5.E-03	2.E-04	2.E-05	6.E-02	4.E-04	3.E-02	2.E-03	8.E-05	9.E-06	3.E-02
HQ Ingestion	Site-1	3.E-03	2.E+00	2.E+00	1.E-03	6.E-05	1.E-02	5.E-04	4.E-01	4.E-01	2.E-04	1.E-05	2.E-03	8.E+04	6.E+07	6.E+07	3.E+04	2.E+03	4.E+05
	Site-2	5.E-03	1.E+00	2.E+00	1.E-03	1.E-04	7.E-03	9.E-04	2.E-01	3.E-01	2.E-04	2.E-05	1.E-03	2.E+05	4.E+07	6.E+07	4.E+04	3.E+03	2.E+05

HQ	Sites	Infant						Children						Adult					
		Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd
	Site-3	5.E-03	2.E+00	3.E+00	1.E-03	1.E-04	1.E-02	8.E-04	3.E-01	5.E-01	2.E-04	2.E-05	2.E-03	1.E+05	6.E+07	9.E+07	3.E+04	3.E+03	3.E+05
	Site-4	6.E-03	1.E+00	3.E+00	1.E-03	8.E-05	6.E-03	1.E-03	2.E-01	6.E-01	2.E-04	1.E-05	1.E-03	2.E+05	4.E+07	1.E+08	4.E+04	2.E+03	2.E+05
	Site-5	5.E-03	7.E-01	2.E+00	1.E-03	7.E-05	5.E-03	8.E-04	1.E-01	4.E-01	2.E-04	1.E-05	9.E-04	1.E+05	2.E+07	7.E+07	4.E+04	2.E+03	2.E+05
	Site-6	7.E-03	3.E+00	3.E+00	1.E-03	5.E-05	1.E-02	1.E-03	4.E-01	5.E-01	2.E-04	9.E-06	2.E-03	2.E+05	8.E+07	8.E+07	4.E+04	1.E+03	4.E+05
	Site-7	5.E-03	8.E-01	3.E+00	2.E-03	1.E-04	2.E-02	9.E-04	1.E-01	6.E-01	3.E-04	2.E-05	3.E-03	2.E+05	2.E+07	1.E+08	6.E+04	3.E+03	5.E+05
	Site-8	5.E-03	7.E-01	2.E+00	2.E-03	1.E-04	2.E-02	8.E-04	1.E-01	3.E-01	3.E-04	2.E-05	3.E-03	1.E+05	2.E+07	5.E+07	6.E+04	3.E+03	5.E+05
	Site-9	7.E-03	2.E+00	2.E+00	1.E-03	1.E-04	0.E+00	1.E-03	4.E-01	3.E-01	2.E-04	2.E-05	3.E-03	2.E+05	7.E+07	6.E+07	3.E+04	3.E+03	5.E+05

**Table S9: Hazard Index (HI) of heavy metals in PM<sub>10</sub> and surface soil**

HQ	Sites	Infant			Children			Adult			HI
		Inhalation	Dermal contact	Ingestion	Inhalation	Dermal contact	Ingestion	Inhalation	Dermal contact	Ingestion	
PM <sub>10</sub>											
Hazard Index (HI)	Site-1	8.29E-06	2.76E-06	3.12E-06	0.070	0.147	0.069	1.8E+01	3.1E+00	5.4E+08	5.42E+08
	Site-2	1.06E-05	3.55E-06	4.00E-06	0.083	0.174	0.082	2.3E+01	4.0E+00	6.9E+08	6.95E+08
	Site-3	6.14E-06	2.05E-06	2.31E-06	0.050	0.104	0.049	1.3E+01	2.3E+00	4.0E+08	4.01E+08
	Site-4	4.36E-06	1.45E-06	1.64E-06	0.044	0.091	0.043	9.5E+00	1.6E+00	2.8E+08	2.84E+08
	Site-5	7.10E-06	2.37E-06	2.67E-06	0.056	0.117	0.055	1.5E+01	2.7E+00	4.6E+08	4.64E+08
	Site-6	1.94E-05	6.47E-06	7.29E-06	0.175	0.365	0.172	4.2E+01	7.3E+00	1.3E+09	1.27E+09
	Site-7	9.63E-06	3.21E-06	3.62E-06	0.065	0.135	0.064	2.1E+01	3.6E+00	6.3E+08	6.29E+08
	Site-8	7.55E-06	2.52E-06	2.84E-06	0.070	0.146	0.069	1.6E+01	2.8E+00	4.9E+08	4.93E+08
	Site-9	7.36E-06	2.45E-06	2.77E-06	0.046	0.095	0.045	1.6E+01	2.7E+00	4.8E+08	4.80E+08
Surface soil											
Hazard Index (HI)	Site-1	1.96E-06	6.53E-07	7.36E-07	0.054	0.112	0.053	4.2E+00	7.4E-01	1.3E+08	1.27E+08
	Site-2	1.60E-06	5.33E-07	6.01E-07	0.033	0.069	0.033	3.5E+00	6.0E-01	1.0E+08	1.04E+08
	Site-3	2.26E-06	7.52E-07	8.48E-07	0.048	0.099	0.047	4.9E+00	8.5E-01	1.5E+08	1.47E+08
	Site-4	2.14E-06	7.13E-07	8.04E-07	0.031	0.066	0.031	4.7E+00	8.0E-01	1.4E+08	1.40E+08
	Site-5	1.47E-06	4.89E-07	5.51E-07	0.022	0.045	0.021	3.2E+00	5.5E-01	9.6E+07	9.56E+07
	Site-6	2.40E-06	8.00E-07	9.02E-07	0.056	0.117	0.055	5.2E+00	9.1E-01	1.6E+08	1.56E+08
	Site-7	1.89E-06	6.30E-07	7.10E-07	0.046	0.096	0.045	4.1E+00	7.2E-01	1.2E+08	1.23E+08
	Site-8	1.09E-06	3.63E-07	4.09E-07	0.043	0.089	0.042	2.4E+00	4.2E-01	7.1E+07	7.05E+07
	Site-9	2.04E-06	6.79E-07	7.65E-07	0.062	0.129	0.061	4.4E+00	7.6E-01	1.3E+08	1.32E+08

**Table S10: Carcinogenic risk of each exposure pathway to heavy metals in PM<sub>10</sub> and surface soil**

R	Sites	Infant					Children					Adult							
		Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd
PM <sub>10</sub>																			
R <sub>Inhalation</sub>	Site-1	8.E-09	3.E-10	5.E-12			1.E-12	3.E-09	9.E-11	2.E-12			4.E-13	3.E-09	1.E-10	2.E-12			4.E-13
	Site-2	6.E-09	3.E-10	6.E-12			2.E-12	2.E-09	1.E-10	2.E-12			5.E-13	2.E-09	1.E-10	2.E-12			6.E-13
	Site-3	5.E-09	2.E-10	3.E-12			8.E-13	2.E-09	6.E-11	1.E-12			3.E-13	2.E-09	7.E-11	1.E-12			3.E-13
	Site-4	4.E-09	1.E-10	3.E-12			8.E-13	1.E-09	4.E-11	1.E-12			3.E-13	2.E-09	5.E-11	1.E-12			3.E-13
	Site-5	7.E-09	2.E-10	3.E-12			7.E-13	2.E-09	7.E-11	1.E-12			2.E-13	3.E-09	8.E-11	1.E-12			3.E-13
	Site-6	2.E-08	6.E-10	4.E-12			2.E-12	8.E-09	2.E-10	1.E-12			8.E-13	9.E-09	2.E-10	2.E-12			9.E-13
	Site-7	9.E-09	3.E-10	2.E-12			6.E-13	3.E-09	1.E-10	7.E-13			2.E-13	3.E-09	1.E-10	8.E-13			2.E-13
	Site-8	1.E-08	2.E-10	3.E-12			5.E-13	4.E-09	7.E-11	1.E-12			2.E-13	5.E-09	8.E-11	1.E-12			2.E-13
	Site-9	6.E-09	2.E-10	3.E-12			4.E-13	2.E-09	8.E-11	1.E-12			1.E-13	2.E-09	9.E-11	1.E-12			1.E-13
R <sub>Dermal contact</sub>	Site-1	2.E-03	8.E-06	2.E-06			4.E-08	3.E-03	2.E-05	5.E-06			9.E-08	1.E-03	8.E-06	2.E-06			4.E-08
	Site-2	1.E-03	1.E-05	3.E-06			6.E-08	3.E-03	2.E-05	5.E-06			1.E-07	1.E-03	1.E-05	3.E-06			6.E-08
	Site-3	9.E-04	6.E-06	1.E-06			3.E-08	2.E-03	1.E-05	3.E-06			7.E-08	9.E-04	6.E-06	1.E-06			3.E-08
	Site-4	8.E-04	4.E-06	2.E-06			3.E-08	2.E-03	9.E-06	3.E-06			7.E-08	8.E-04	4.E-06	2.E-06			3.E-08
	Site-5	1.E-03	7.E-06	1.E-06			3.E-08	3.E-03	1.E-05	3.E-06			6.E-08	1.E-03	7.E-06	1.E-06			3.E-08
	Site-6	5.E-03	2.E-05	2.E-06			9.E-08	9.E-03	4.E-05	4.E-06			2.E-07	4.E-03	2.E-05	2.E-06			9.E-08
	Site-7	2.E-03	1.E-05	9.E-07			2.E-08	3.E-03	2.E-05	2.E-06			5.E-08	2.E-03	1.E-05	9.E-07			2.E-08
	Site-8	3.E-03	7.E-06	2.E-06			2.E-08	5.E-03	1.E-05	3.E-06			4.E-08	2.E-03	7.E-06	2.E-06			2.E-08
	Site-9	1.E-03	7.E-06	1.E-06			1.E-08	3.E-03	2.E-05	3.E-06			3.E-08	1.E-03	7.E-06	1.E-06			1.E-08
R <sub>Ingestion</sub>	Site-1	8.E-02	5.E-04	1.E-04			2.E-06	1.E-02	8.E-05	2.E-05			4.E-07	3.E+06	1.E+04	4.E+03			7.E+01
	Site-2	7.E-02	6.E-04	1.E-04			3.E-06	1.E-02	1.E-04	2.E-05			6.E-07	2.E+06	2.E+04	4.E+03			1.E+02
	Site-3	5.E-02	3.E-04	8.E-05			2.E-06	9.E-03	6.E-05	1.E-05			3.E-07	2.E+06	1.E+04	2.E+03			5.E+01
	Site-4	5.E-02	2.E-04	9.E-05			2.E-06	8.E-03	4.E-05	2.E-05			3.E-07	1.E+06	7.E+03	3.E+03			5.E+01
	Site-5	8.E-02	4.E-04	8.E-05			2.E-06	1.E-02	7.E-05	1.E-05			3.E-07	2.E+06	1.E+04	2.E+03			5.E+01



R	Sites	Infant					Children					Adult							
		Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd
	Site-6	2.E-01	1.E-03	1.E-04		5.E-06		4.E-02	2.E-04	2.E-05		9.E-07		7.E+06	3.E+04	3.E+03		2.E+02	
	Site-7	9.E-02	5.E-04	5.E-05		1.E-06		2.E-02	9.E-05	9.E-06		2.E-07		3.E+06	2.E+04	2.E+03		4.E+01	
	Site-8	1.E-01	4.E-04	9.E-05		1.E-06		2.E-02	6.E-05	1.E-05		2.E-07		4.E+06	1.E+04	3.E+03		3.E+01	
	Site-9	7.E-02	4.E-04	8.E-05		8.E-07		1.E-02	7.E-05	1.E-05		1.E-07		2.E+06	1.E+04	2.E+03		2.E+01	
Surface soil																			
R <sub>Inhalation</sub>	Site-1	8.E-09	3.E-11	1.E-12		1.E-12		3.E-09	1.E-11	3.E-13		3.E-13		3.E-09	1.E-11	4.E-13		4.E-13	
	Site-2	6.E-09	3.E-11	1.E-12		5.E-13		2.E-09	1.E-11	4.E-13		2.E-13		2.E-09	1.E-11	5.E-13		2.E-13	
	Site-3	7.E-09	5.E-11	1.E-12		8.E-13		2.E-09	2.E-11	4.E-13		3.E-13		3.E-09	2.E-11	4.E-13		3.E-13	
	Site-4	5.E-09	5.E-11	1.E-12		4.E-13		2.E-09	2.E-11	4.E-13		1.E-13		2.E-09	2.E-11	4.E-13		2.E-13	
	Site-5	3.E-09	4.E-11	1.E-12		4.E-13		9.E-10	1.E-11	5.E-13		1.E-13		1.E-09	1.E-11	5.E-13		1.E-13	
	Site-6	1.E-08	4.E-11	1.E-12		9.E-13		3.E-09	1.E-11	5.E-13		3.E-13		4.E-09	2.E-11	5.E-13		3.E-13	
	Site-7	3.E-09	5.E-11	2.E-12		1.E-12		1.E-09	2.E-11	7.E-13		4.E-13		1.E-09	2.E-11	7.E-13		5.E-13	
	Site-8	3.E-09	3.E-11	2.E-12		1.E-12		9.E-10	9.E-12	6.E-13		4.E-13		1.E-09	1.E-11	7.E-13		5.E-13	
	Site-9	9.E-09	3.E-11	1.E-12		1.E-12		3.E-09	1.E-11	4.E-13		4.E-13		4.E-09	1.E-11	4.E-13		4.E-13	
R <sub>Dermal contact</sub>	Site-1	2.E-03	1.E-06	5.E-07		4.E-08		3.E-03	2.E-06	1.E-06		8.E-08		2.E-03	1.E-06	5.E-07		4.E-08	
	Site-2	1.E-03	1.E-06	6.E-07		2.E-08		2.E-03	2.E-06	1.E-06		4.E-08		1.E-03	1.E-06	6.E-07		2.E-08	
	Site-3	1.E-03	2.E-06	5.E-07		3.E-08		3.E-03	3.E-06	1.E-06		7.E-08		1.E-03	2.E-06	5.E-07		3.E-08	
	Site-4	1.E-03	2.E-06	5.E-07		2.E-08		2.E-03	3.E-06	1.E-06		3.E-08		1.E-03	2.E-06	5.E-07		2.E-08	
	Site-5	5.E-04	1.E-06	7.E-07		2.E-08		1.E-03	3.E-06	1.E-06		3.E-08		5.E-04	1.E-06	6.E-07		1.E-08	
	Site-6	2.E-03	1.E-06	6.E-07		4.E-08		4.E-03	3.E-06	1.E-06		7.E-08		2.E-03	1.E-06	6.E-07		3.E-08	
	Site-7	6.E-04	2.E-06	9.E-07		5.E-08		1.E-03	4.E-06	2.E-06		1.E-07		6.E-04	2.E-06	9.E-07		5.E-08	
	Site-8	5.E-04	9.E-07	9.E-07		5.E-08		1.E-03	2.E-06	2.E-06		1.E-07		5.E-04	8.E-07	9.E-07		5.E-08	
	Site-9	2.E-03	1.E-06	5.E-07		5.E-08		4.E-03	2.E-06	1.E-06		1.E-07		2.E-03	1.E-06	5.E-07		5.E-08	
R <sub>Ingestion</sub>	Site-1	9.E-02	6.E-05	3.E-05		2.E-06		2.E-02	1.E-05	4.E-06		4.E-07		3.E+06	2.E+03	8.E+02		7.E+01	
	Site-2	6.E-02	6.E-05	3.E-05		1.E-06		1.E-02	1.E-05	6.E-06		2.E-07		2.E+06	2.E+03	1.E+03		3.E+01	

R	Sites	Infant					Children					Adult							
		Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd	Cu	Pb	Cr	Ni	Zn	Cd
	Site-3	8.E-02	8.E-05	3.E-05		2.E-06		1.E-02	1.E-05	5.E-06		3.E-07		2.E+06	3.E+03	8.E+02		5.E+01	
	Site-4	6.E-02	9.E-05	3.E-05		9.E-07		1.E-02	2.E-05	5.E-06		2.E-07		2.E+06	3.E+03	9.E+02		3.E+01	
	Site-5	3.E-02	7.E-05	4.E-05		8.E-07		5.E-03	1.E-05	6.E-06		1.E-07		9.E+05	2.E+03	1.E+03		3.E+01	
	Site-6	1.E-01	8.E-05	4.E-05		2.E-06		2.E-02	1.E-05	6.E-06		3.E-07		3.E+06	2.E+03	1.E+03		6.E+01	
	Site-7	3.E-02	1.E-04	5.E-05		3.E-06		5.E-03	2.E-05	9.E-06		5.E-07		9.E+05	3.E+03	1.E+03		9.E+01	
	Site-8	3.E-02	5.E-05	5.E-05		3.E-06		5.E-03	8.E-06	8.E-06		5.E-07		8.E+05	1.E+03	1.E+03		8.E+01	
	Site-9	1.E-01	6.E-05	3.E-05		3.E-06		2.E-02	9.E-06	5.E-06		4.E-07		3.E+06	2.E+03	9.E+02		8.E+01	

**Table S11: The Carcinogenic risk index (RI) of heavy metals in PM<sub>10</sub> and surface soil**

R	Sites	Infant			Children			Adult			RI
		Inhalation	Dermal contact	Ingestion	Inhalation	Dermal contact	Ingestion	Inhalation	Dermal contact	Ingestion	
PM <sub>10</sub>											
Total carcinogenic risk (R)	Site-1	8.03E-09	0.002	8.4E-02	2.68E-09	0.003	1.4E-02	3.02E-09	0.002	2.5E+06	2.53E+06
	Site-2	6.51E-09	0.001	6.7E-02	2.17E-09	0.003	1.1E-02	2.45E-09	0.001	2.0E+06	2.01E+06
	Site-3	5.04E-09	0.001	5.3E-02	1.68E-09	0.002	9.0E-03	1.89E-09	0.001	1.6E+06	1.58E+06
	Site-4	4.46E-09	0.001	4.7E-02	1.49E-09	0.002	8.0E-03	1.68E-09	0.001	1.4E+06	1.41E+06
	Site-5	7.25E-09	0.001	7.6E-02	2.42E-09	0.003	1.3E-02	2.72E-09	0.001	2.3E+06	2.28E+06
	Site-6	2.37E-08	0.005	2.5E-01	7.89E-09	0.009	4.3E-02	8.90E-09	0.004	7.5E+06	7.48E+06
	Site-7	8.83E-09	0.002	9.2E-02	2.94E-09	0.003	1.6E-02	3.32E-09	0.002	2.8E+06	2.77E+06
	Site-8	1.32E-08	0.003	1.4E-01	4.41E-09	0.005	2.4E-02	4.97E-09	0.003	4.2E+06	4.21E+06
	Site-9	6.45E-09	0.001	6.7E-02	2.15E-09	0.003	1.2E-02	2.42E-09	0.001	2.0E+06	2.02E+06
Surface soil											
Total carcinogenic risk (R)	Site-1	8.20E-09	0.002	8.8E-02	2.73E-09	0.003	1.5E-02	3.08E-09	0.002	2.6E+06	2.64E+06
	Site-2	5.54E-09	0.001	5.9E-02	1.85E-09	0.002	1.0E-02	2.08E-09	0.001	1.8E+06	1.78E+06
	Site-3	7.44E-09	0.001	8.0E-02	2.48E-09	0.003	1.4E-02	2.80E-09	0.001	2.4E+06	2.39E+06
	Site-4	5.52E-09	0.001	5.9E-02	1.84E-09	0.002	1.0E-02	2.07E-09	0.001	1.8E+06	1.77E+06
	Site-5	2.82E-09	0.001	3.0E-02	9.41E-10	0.001	5.2E-03	1.06E-09	0.001	9.0E+05	9.01E+05
	Site-6	9.71E-09	0.002	1.0E-01	3.24E-09	0.004	1.8E-02	3.65E-09	0.002	3.1E+06	3.12E+06
	Site-7	2.94E-09	0.001	3.1E-02	9.81E-10	0.001	5.4E-03	1.11E-09	0.001	9.4E+05	9.36E+05
	Site-8	2.65E-09	0.001	2.8E-02	8.84E-10	0.001	4.9E-03	9.97E-10	0.001	8.5E+05	8.50E+05
	Site-9	9.52E-09	0.002	1.0E-01	3.17E-09	0.004	1.8E-02	3.58E-09	0.002	3.1E+06	3.07E+06

## Figures



Figure S1: Gallery of workshops and factories photos in Al-Akrasha area

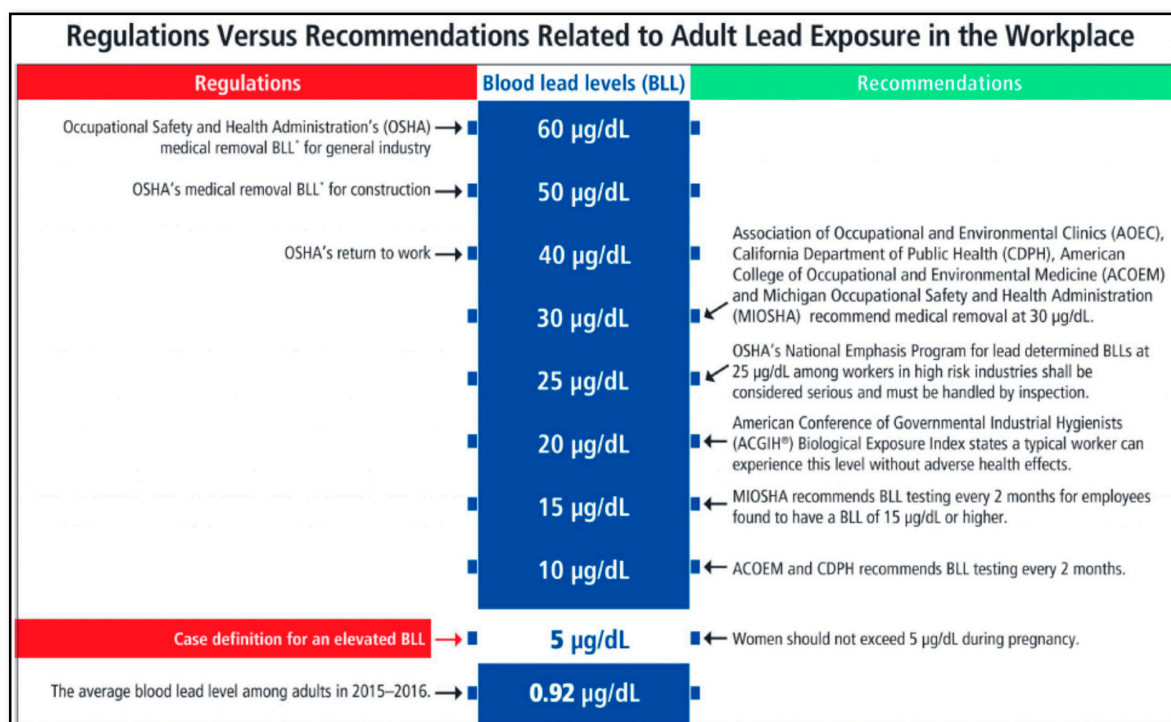


Figure S2: Regulations versus recommendations related to adult lead exposure in workplace [125-128].



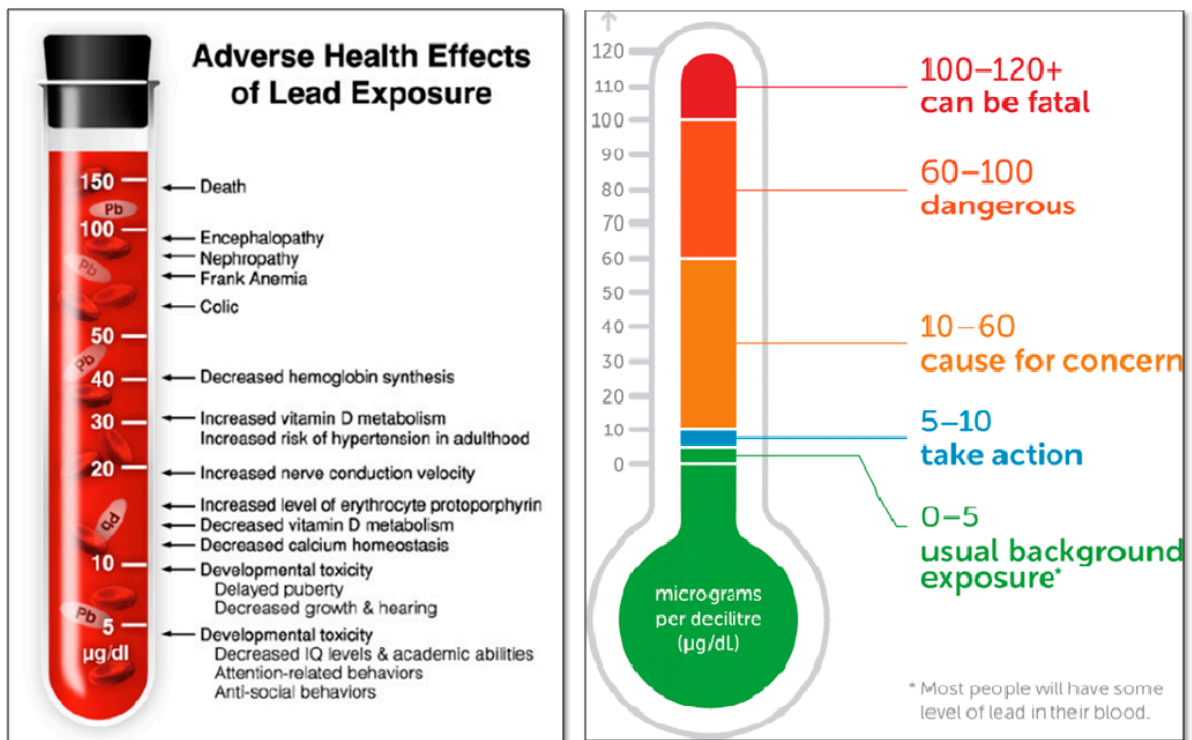


Figure S3: Adverse Health Effects of Lead Exposure [129-130].

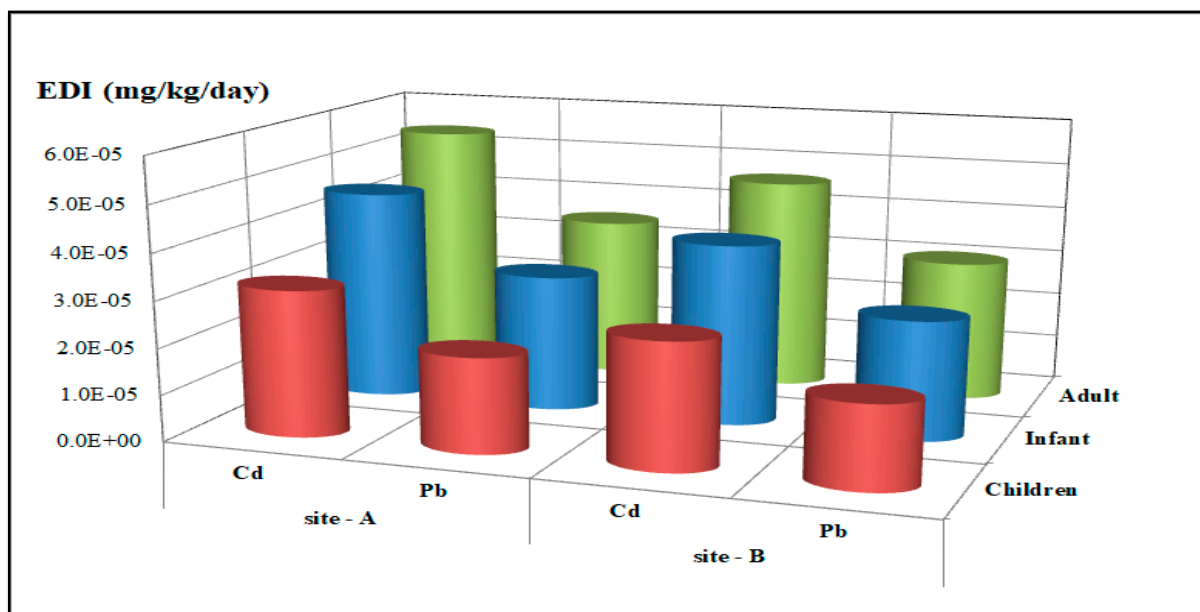


Figure S4: The Estimated of Daily Intake (EDI) for heavy metals (Pb and Cd) in edible fish of tilapia samples, which collected from Ismailia canal at two sites near Al-Akrasha region during 2019-2020.

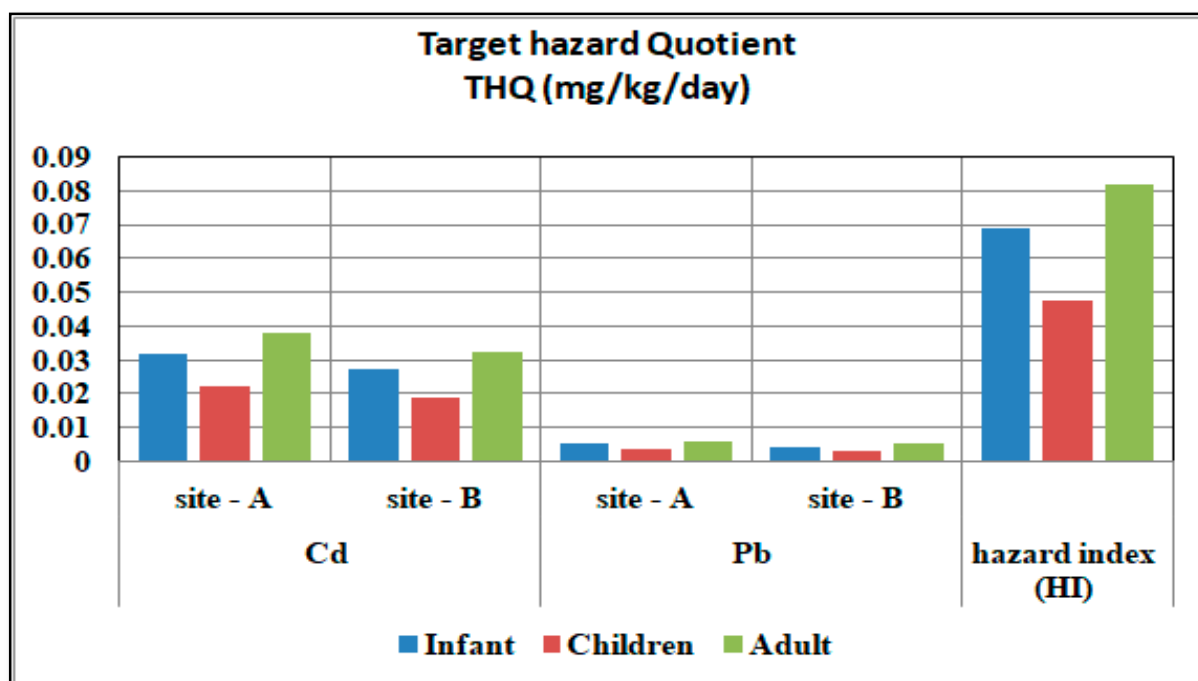


Figure S5: The Target hazard Quotient (THQ) and the hazard index (HI) for heavy metals (Pb and Cd) in edible fish of tilapia samples, which collected from Ismailia canal at two sites near Al-Akrasha region during 2019-2020.



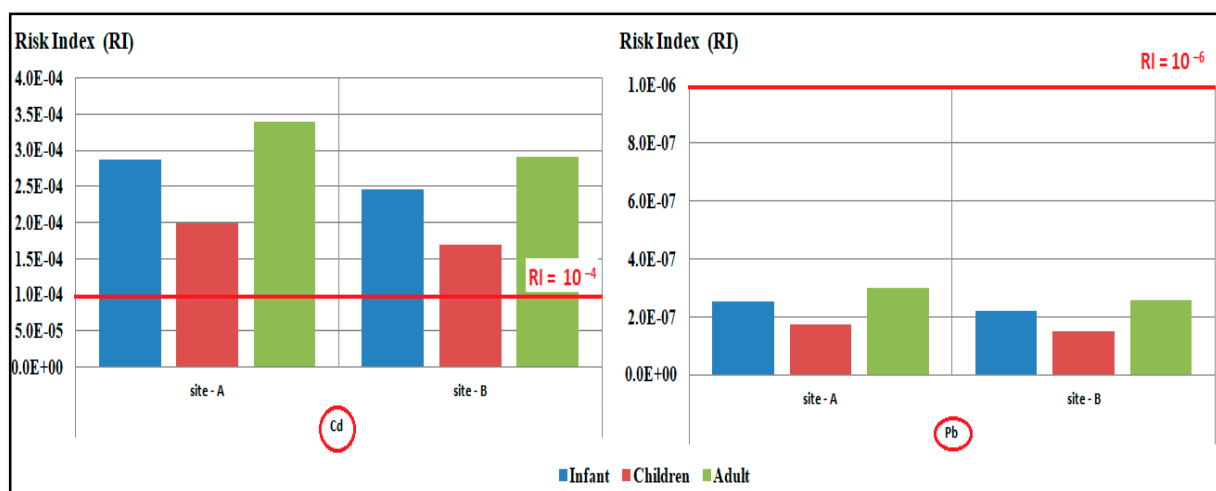


Figure S6: The risk index (RI) for heavy metals (Pb and Cd) in edible fish of tilapia samples, which collected from Ismailia canal at two sites near Al-Akrasha region during 2019-2020.

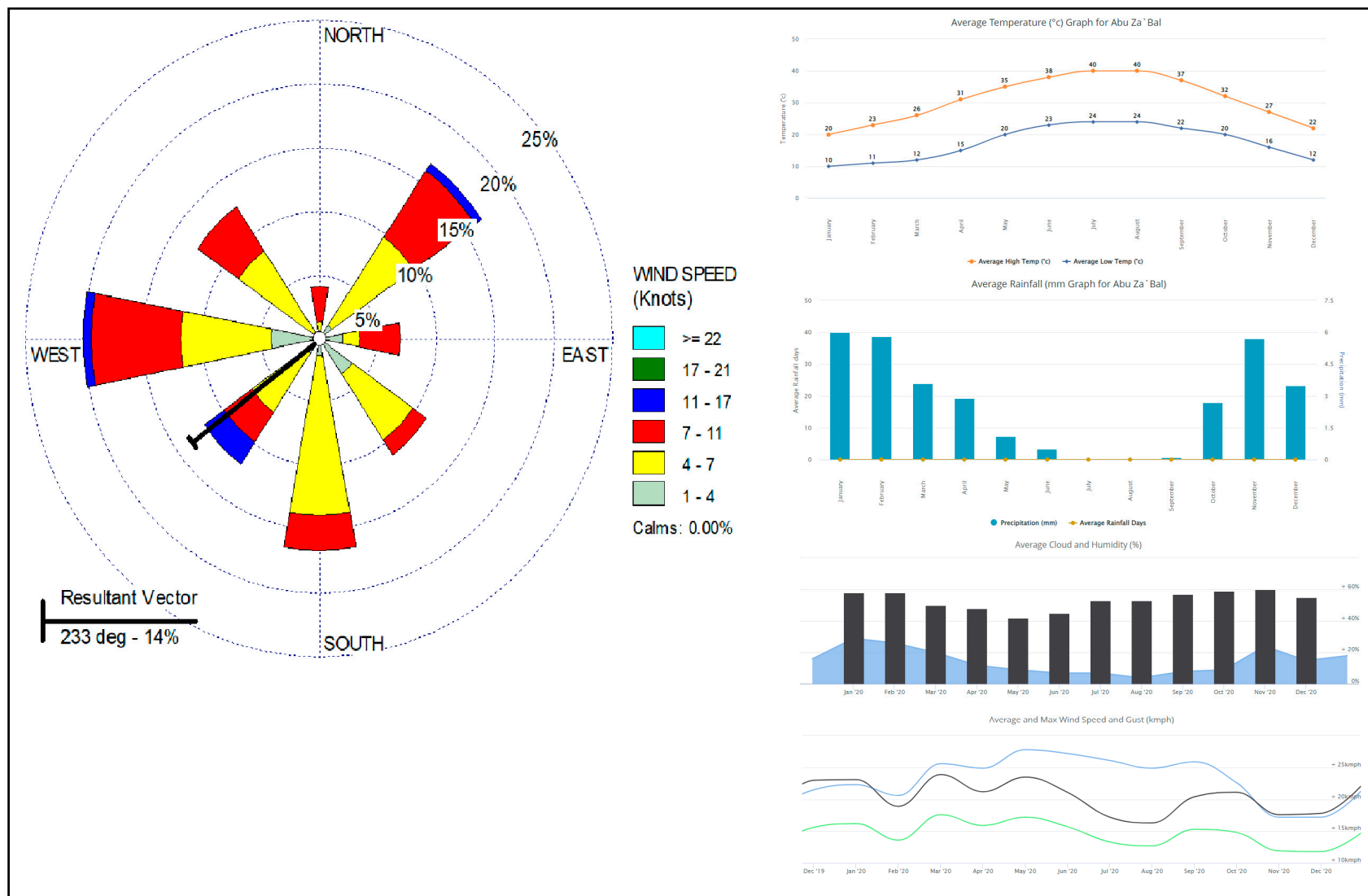


Figure S7: The meteorological parameters of Al-Akrasha area during 2020.

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