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Table 1
Statistical characteristics for potential toxic elements in farmland soil of Puning (mg·kg⁻¹).

Element	Cr	Hg	As	Pb	Ni	Cd	Mn	Cu	Zn	V
Max	157.80	0.43	81.60	119.20	32.47	0.67	665.70	35.40	141.80	91.00
Mean	24.76	0.10	7.20	44.26	11.59	0.07	305.28	10.63	57.27	40.16
Min	5.60	0.01	1.50	17.40	6.07	0.01	47.60	2.90	21.40	15.20
Standard deviation	17.09	0.08	10.97	16.97	3.75	0.07	134.19	7.58	21.99	15.51
Background value	30.91	0.05	6.29	53.22	14.14	0.05	316.43	11.46	63.97	51.73
Coefficient of variation	0.57	1.36	1.49	0.36	0.28	1.38	0.60	0.72	0.38	0.29
Guangdong province ^a	35.60	0.055	6.80	29.80	9.60	0.041	310.00	10.50	36.30	39.00
Risk screening value ^b	300.00	0.60	25.00	140.00	100.00	0.60	—	200.00	250.00	—

^a Background value of Guangdong province; CNEMC (China National Environmental Monitoring Center), 1990. Soil Element Background Values in China. China Environmental Science Press, Beijing, China (in Chinese).
^b Soil environmental quality standard, Ministry of Ecology and Environment of the People's Republic of China (MEE), 2018. Soil Environmental Quality Risk Control Standard for Soil Contamination of Agricultural Land (GB15618-2018) [R]. MEE, Beijing (in Chinese).

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Table 2

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 E_r^i and PER of soil PTEs from different sources under farmland soil.

	E_r^i										PER
	Cr	Hg	As	Pb	Ni	Cd	Mn	Cu	Zn	V	
Factor 1	9.09E-01	1.52E+00	5.55E+00	4.35E-01	1.60E+00	0.00E+00	2.73E-02	5.44E-01	1.36E-01	8.67E-01	1.16E+01
Factor 2	4.89E-01	6.91E+00	2.71E-11	1.33E+00	1.64E+00	1.90E+01	6.17E-01	1.34E+00	4.57E-01	6.28E-01	3.25E+01
Factor 3	3.54E-07	6.00E+00	5.32E+00	1.63E+00	3.97E-01	4.66E+00	2.55E-01	7.38E-01	1.84E-01	5.72E-02	1.92E+01
Factor 4	2.04E-01	5.54E+01	5.76E-01	7.59E-01	4.56E-01	1.43E+01	6.57E-02	1.50E+00	1.18E-01	4.75E-13	7.33E+01
Total	1.60E+00	6.98E+01	1.14E+01	4.16E+00	4.10E+00	3.80E+01	9.65E-01	4.13E+00	8.95E-01	1.55E+00	1.37E+02

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Table 3

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Statistics of non-cancer (total hazard index) and cancer risk (total cancer risk index) of PTEs from four different sources.

	Children					Adults				
	Factor 1	Factor 2	Factor 3	Factor 4	Total Factors	Factor 1	Factor 2	Factor 3	Factor 4	Total Factors
<i>Hazard index of each PTE and total hazard index</i>										
Cr	6.84E-02	3.68E-02	2.67E-08	1.54E-02	1.21E-01	1.02E-02	5.47E-03	3.96E-09	2.28E-03	1.79E-02
Hg	8.95E-08	4.07E-07	3.53E-07	3.26E-06	4.11E-06	9.99E-09	4.54E-08	3.94E-08	3.64E-07	4.59E-07
As	1.50E-01	7.32E-13	1.44E-01	1.56E-02	3.09E-01	1.64E-02	8.00E-14	1.57E-02	1.70E-03	3.38E-02
Pb	1.72E-02	5.27E-02	6.47E-02	3.01E-02	1.65E-01	1.95E-03	5.96E-03	7.33E-03	3.40E-03	1.86E-02
Ni	2.93E-03	3.00E-03	7.26E-04	8.32E-04	7.49E-03	3.24E-04	3.32E-04	8.03E-05	9.20E-05	8.82E-04
Cd	0.00E+00	5.59E-04	1.37E-04	4.18E-04	1.11E-03	0.00E+00	1.00E-04	2.45E-05	7.51E-05	2.00E-04
Mn	1.02E-03	2.30E-02	9.52E-03	2.45E-03	3.60E-02	1.93E-04	4.35E-03	1.80E-03	4.63E-04	6.81E-03
Cu	8.05E-04	1.99E-03	1.09E-03	2.22E-03	6.11E-03	8.90E-05	2.20E-04	1.21E-04	2.46E-04	6.75E-04
Zn	3.76E-04	1.26E-03	5.08E-04	3.27E-04	2.48E-03	4.19E-05	1.41E-04	5.66E-05	3.64E-05	2.76E-04
V	4.56E-02	3.30E-02	3.01E-03	2.50E-14	8.15E-02	6.41E-03	4.64E-03	4.23E-04	3.51E-15	1.15E-02
total hazard index	2.86E-01	1.52E-01	2.23E-01	6.72E-02	7.29E-01	3.56E-02	2.12E-02	2.55E-02	8.30E-03	9.06E-02
<i>Cancer risk of each PTE and total cancer risk Index</i>										
Cr	8.57E-06	4.61E-06	3.34E-12	1.92E-06	1.51E-05	4.84E-06	2.61E-06	1.89E-12	1.09E-06	8.54E-06
As	5.77E-06	2.82E-17	5.53E-06	5.99E-07	1.19E-05	2.53E-06	1.24E-17	2.43E-06	2.63E-07	5.22E-06
Pb	4.31E-08	1.32E-07	1.62E-07	7.52E-08	4.12E-07	1.85E-08	5.65E-08	6.94E-08	3.23E-08	1.77E-07
Ni	1.17E-10	1.19E-10	2.89E-11	3.31E-11	2.98E-10	2.63E-10	2.70E-10	6.52E-11	7.48E-11	6.73E-10
Cd	0.00E+00	2.11E-08	5.16E-09	1.58E-08	4.12E-08	0.00E+00	1.18E-08	2.89E-09	8.87E-09	2.36E-08
total cancer risk	1.44E-05	4.76E-06	5.70E-06	2.61E-06	2.75E-05	7.39E-06	2.68E-06	2.50E-06	1.39E-06	1.40E-05

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