

Supplementary Material Figure S1 - Correlation matrices for pXRF and pSpec data.

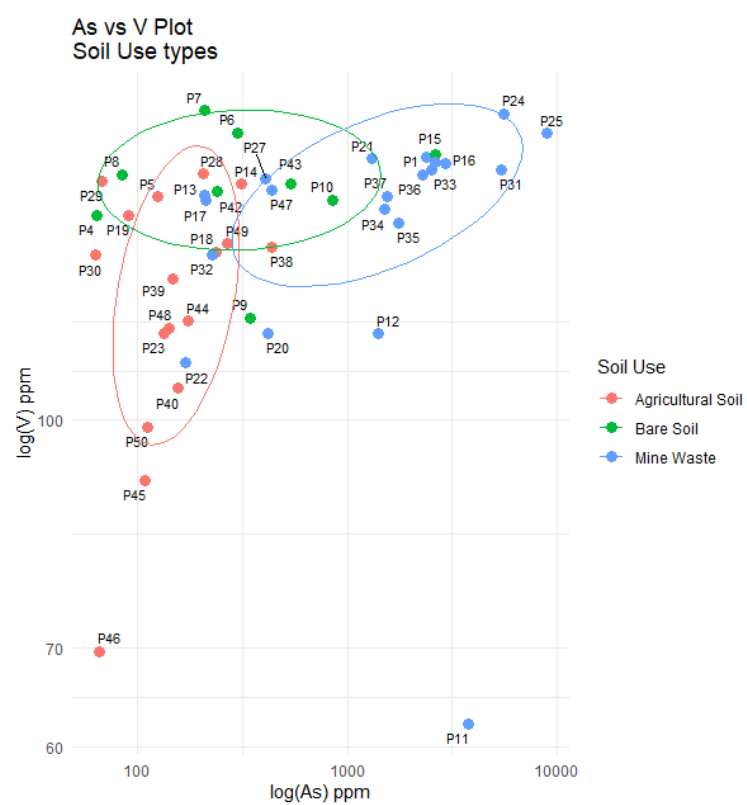
Zn	-0.54	-0.18	-0.27	-0.41	-0.5	-0.45	-0.66	-0.53	-0.54
-0.54	V	0.22	0.35	0.5	0.43	0.36	0.25	0.51	0.24
-0.18	0.22	Pb	0.61	0.6	0.75	0.75	0.29	0.54	0.6
-0.27	0.35	0.61	Mn	0.74	0.8	0.78	0.47	0.63	0.51
-0.41	0.5	0.6	0.74	Cr	0.85	0.83	0.47	0.74	0.58
-0.5	0.43	0.75	0.8	0.85	Fe(%)	0.99	0.56	0.79	0.73
-0.45	0.36	0.75	0.78	0.83	0.99	Co	0.53	0.76	0.69
-0.66	0.25	0.29	0.47	0.47	0.56	0.53	Cu	0.59	0.6
-0.53	0.51	0.54	0.63	0.74	0.79	0.76	0.59	Ni	0.76
-0.54	0.24	0.6	0.51	0.58	0.73	0.69	0.6	0.76	As

Figure S1. A) Correlation matrix for the analysed elements by pXRF.

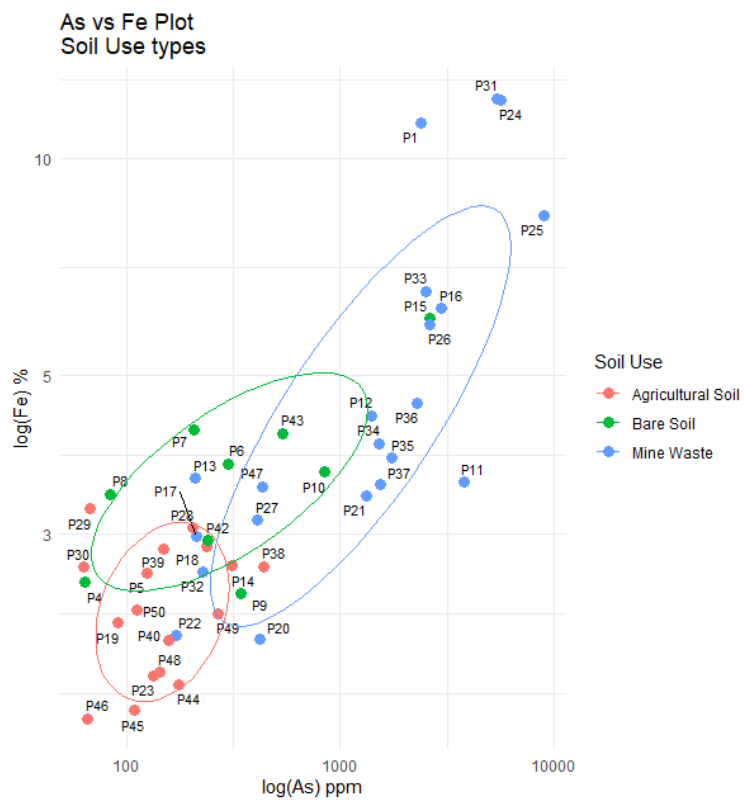
nir	1	0.88	0.76	0.82	0.87
1	x2	0.88	0.78	0.83	0.88
0.88	0.88	red	0.89	0.94	0.97
0.76	0.78	0.89	x1	0.98	0.94
0.82	0.83	0.94	0.98	blue	0.99
0.87	0.88	0.97	0.94	0.99	green

Figure S1 b). Correlation diagram for the spectroradiometric data.

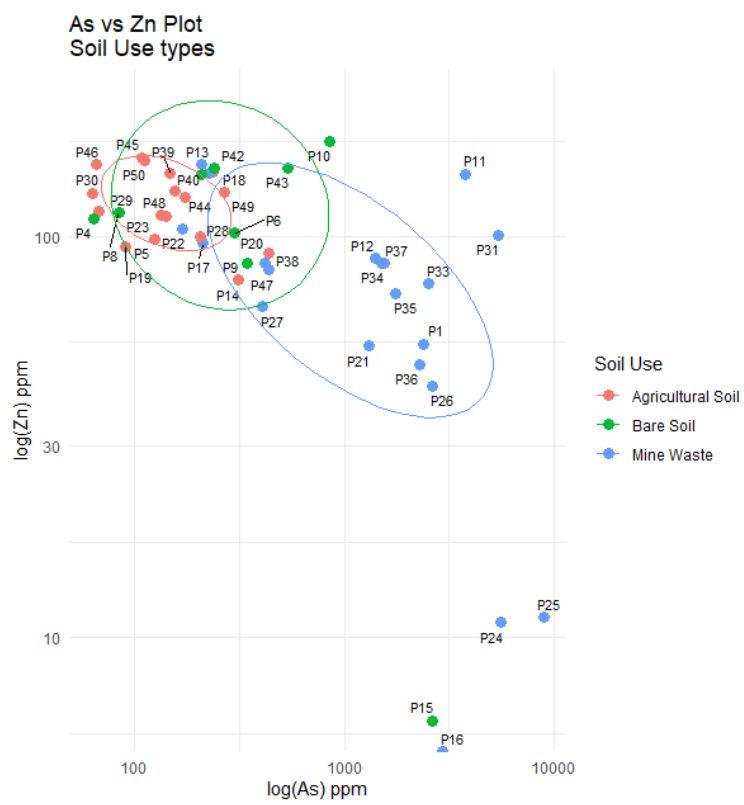
Supplementary Material Figure S2 -Selected scatter plots of metals: discriminated (colors) by Soil Use.



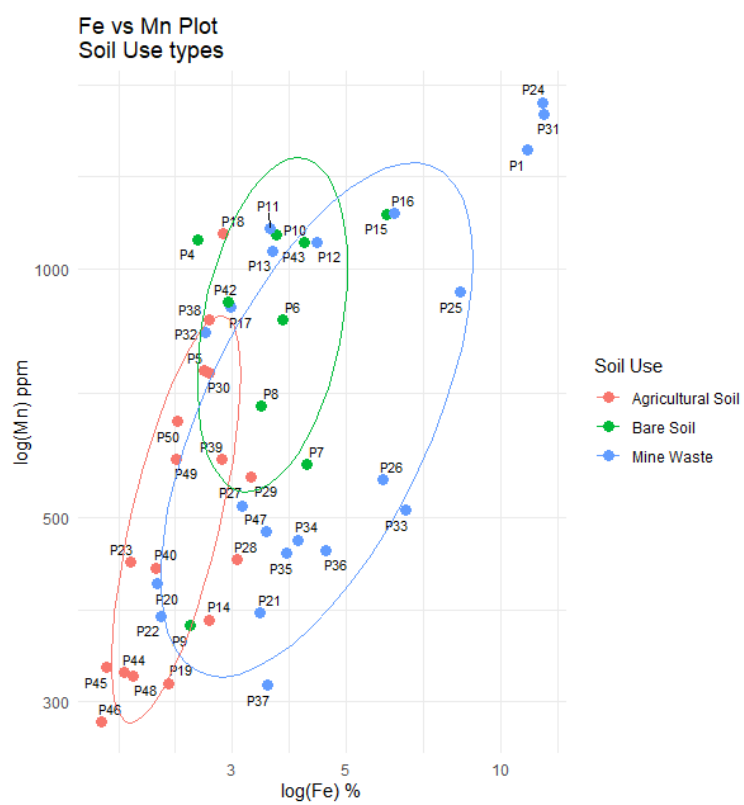
S2 a) As vs V



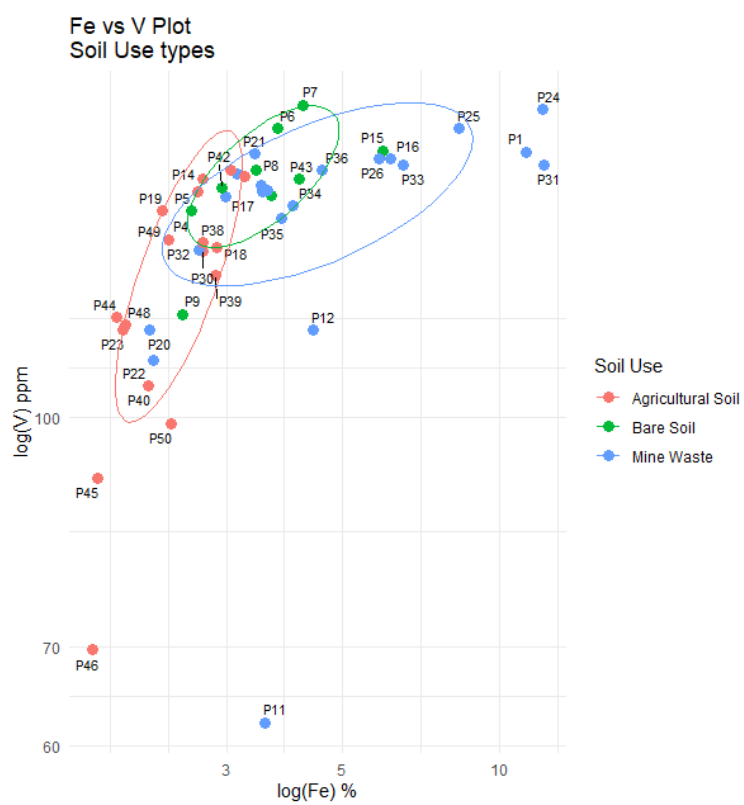
S2 b) As vs Fe



S2 c) As vs Zn

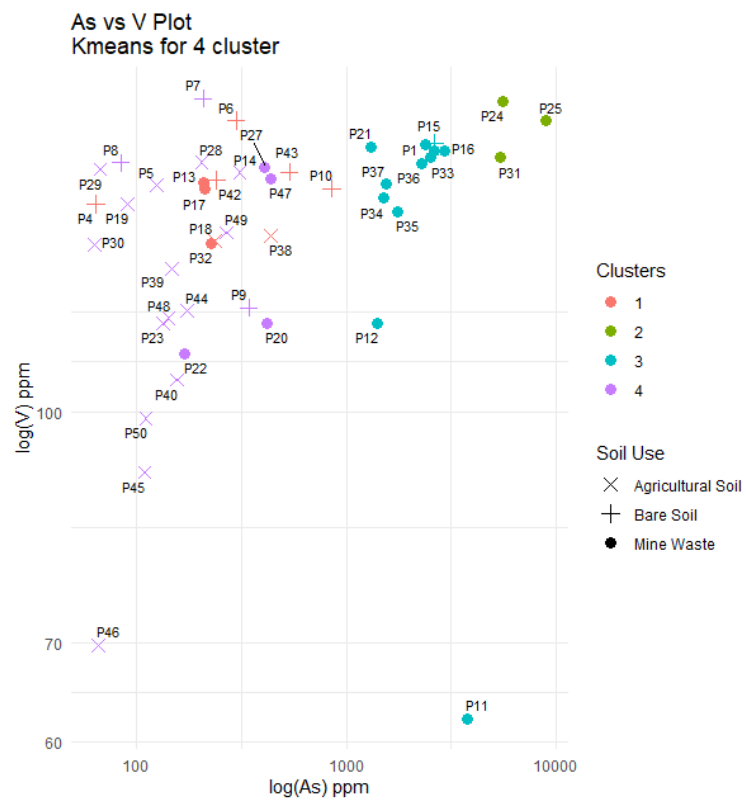


S2 d) Fe vs Mn

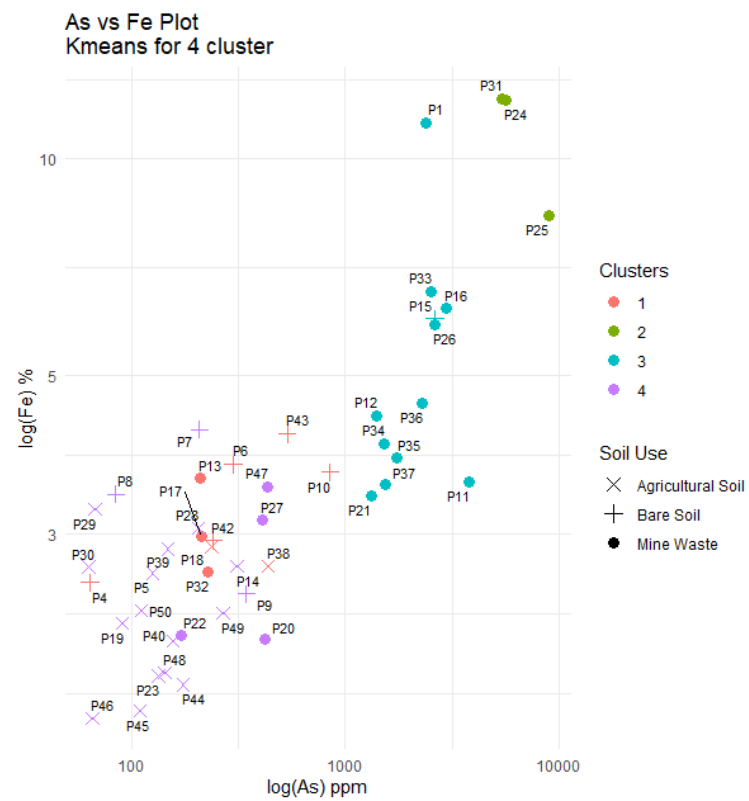


S2 e) Fe vs V

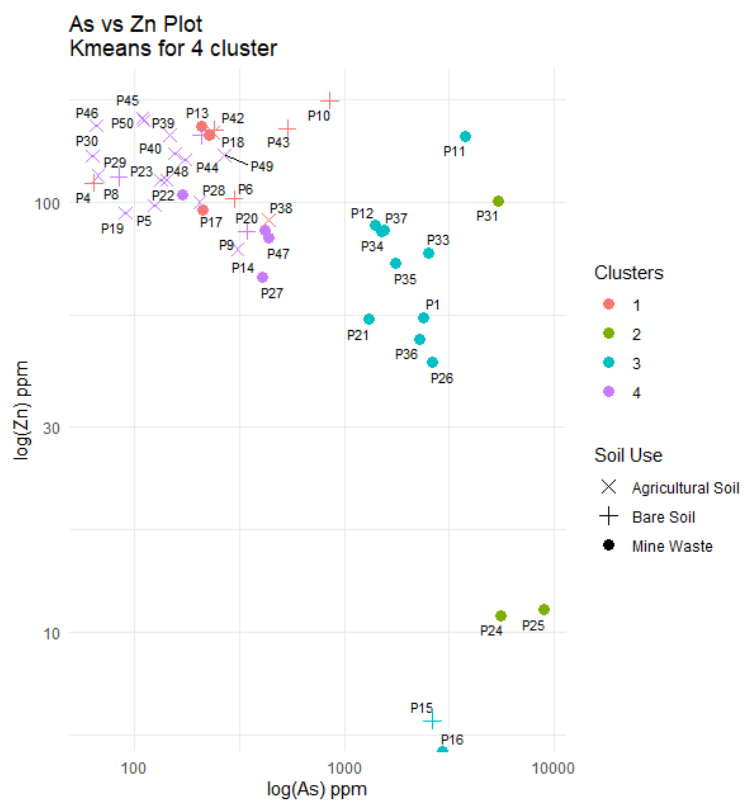
Supplementary Material Figure S3 - Selected scatter plot of metals: discriminated by K-means cluster.



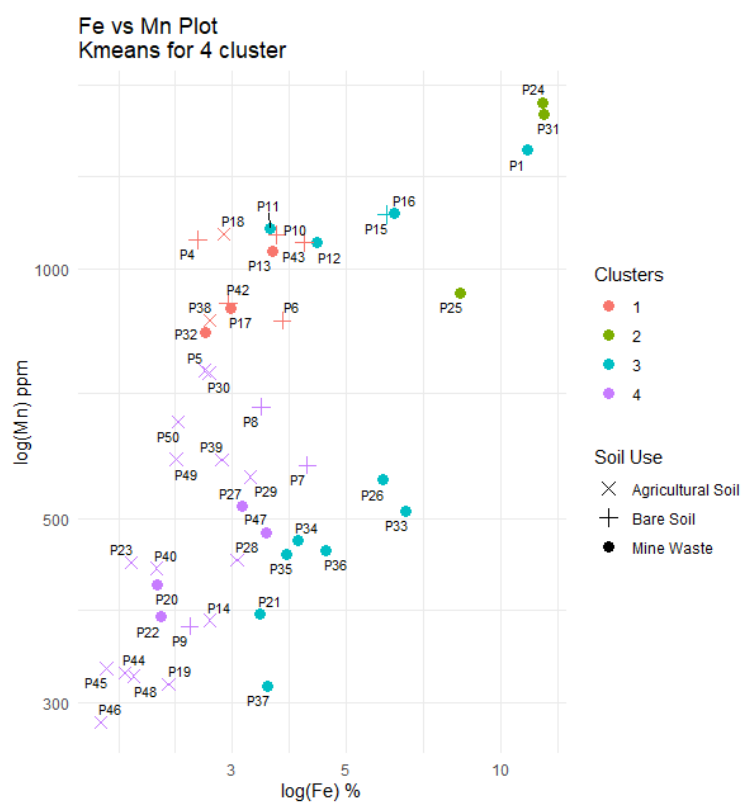
S3 a) As vs V



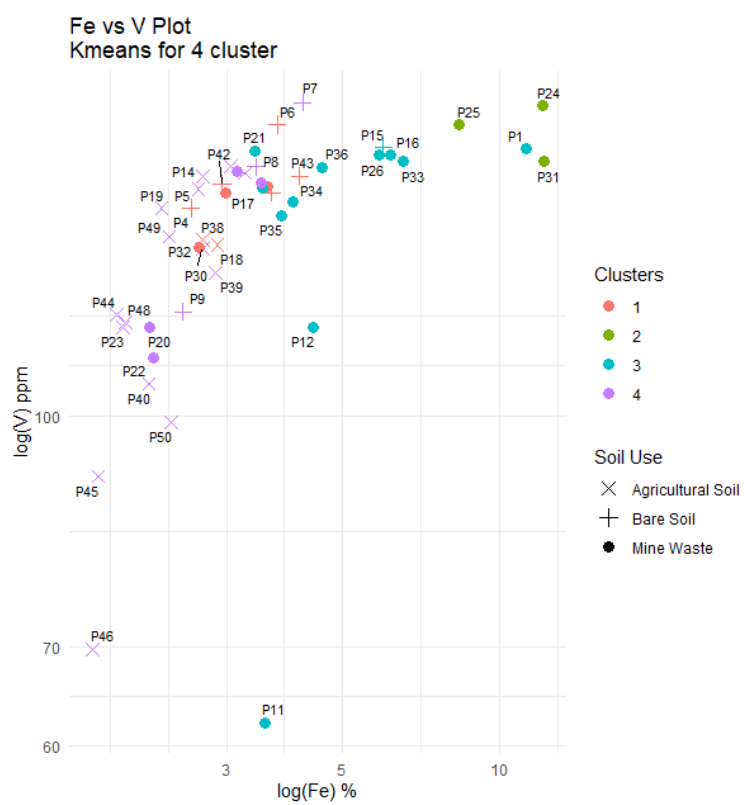
S3 b) As vs Fe



S3 c) As vs Zn

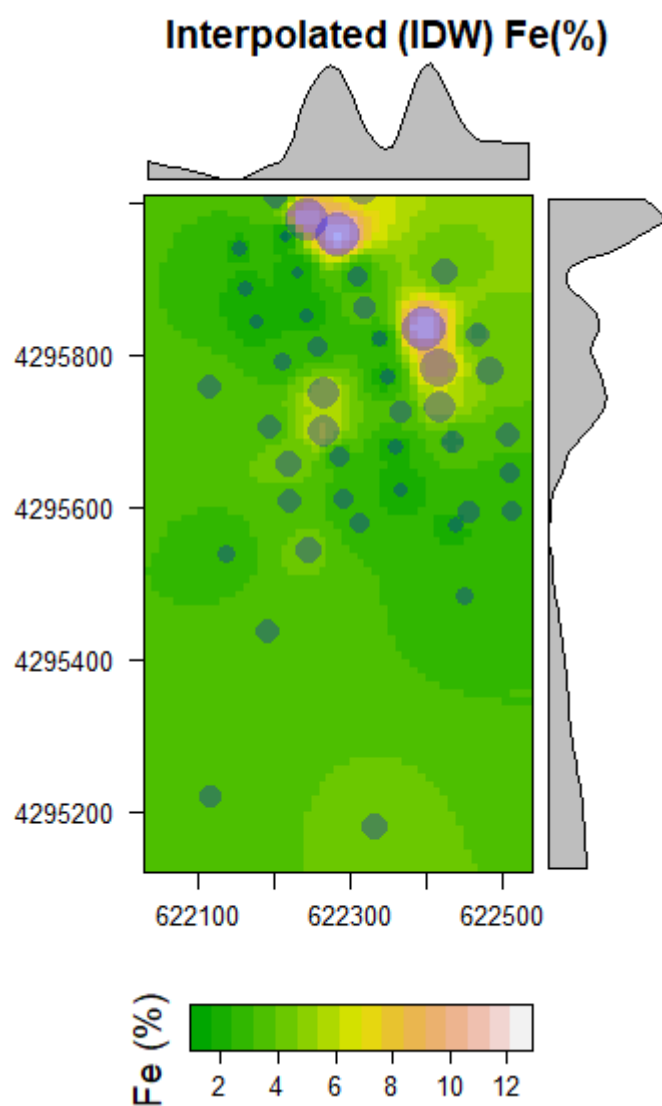


S3 d) Fe vs Mn

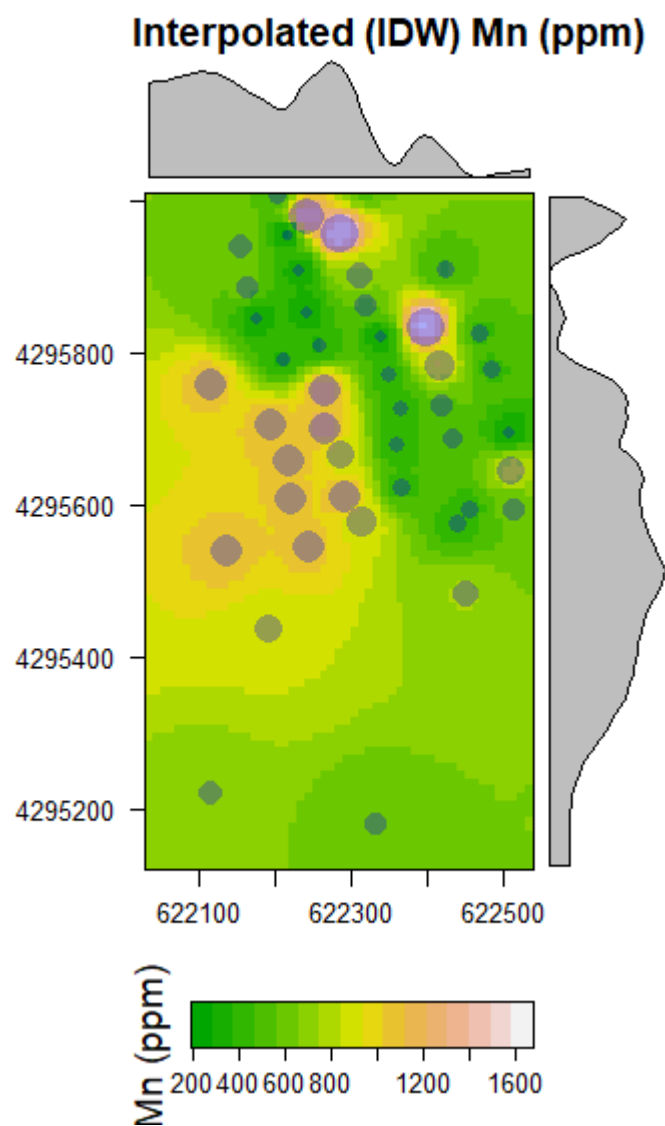


S3 e) Fe vs V

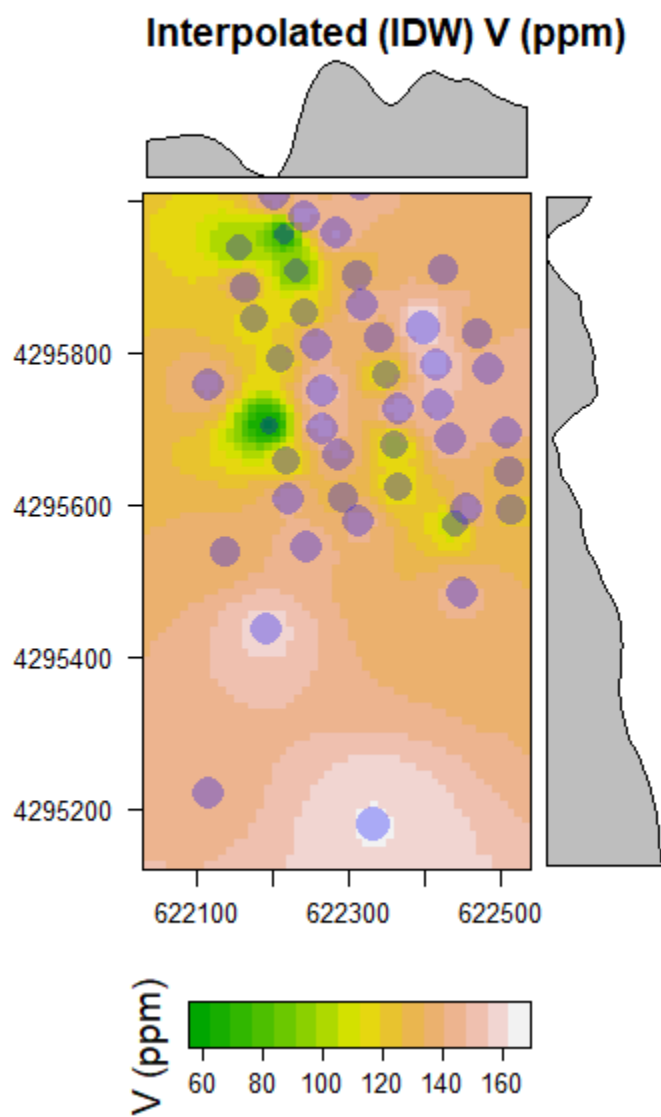
Supplementary Material Figure S4 - Interpolated maps (IDW) of Fe, Mn, and V.



S4 a) Interpolated (IDW) map with the Fe(%) distribution.



S4 b) Interpolated (IDW) map with the Mn (ppm) distribution.



S4 c) Interpolated (IDW) map with the V (ppm) distribution.