

**Appendix RESULTS OF STATISTICAL ANALYSIS**

**A. STATISTICAL ANALYSIS FOR LEAD AND ZINC AT DIFFERENT DEPTHS**

- Group 1: Element content in surface depth (0 - 10 cm)
- Group 2: Element content in middle depth (20 - 30 cm)
- Group 3: Element content in bottom depth (50 - 60 cm)

**1. Comparison of mean Pb content at different depths of background level samples**

Variable: Lead in background level samples  
 By Variable : DEPTHS

**Analysis of Variance**

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	1689.7013	844.8507	5.1310	.0089
Within Groups	57	9385.3480	164.6552		
Total	59	11075.0493			

(\*) Indicates significant differences which are shown in the lower triangle

Mean	LAYER	1	2	3
40.8200	Grp 1			
48.3600	Grp 2	G		
53.7600	Grp 3	r	r	
		P	P	P

## 2. Comparison of mean Pb content at different depths of high level samples

Variable: Lead in high level samples  
By Variable : DEPTHS

### Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	2262488.676	1131244.338	.3149	.7313
Within Groups	51	183222763.0	3592603.196		
Total	53	185485251.7			

### Levene Test for Homogeneity of Variances

Statistic	df1	df2	2-tail Sig.
.6109	2	51	.547

- No two groups are significantly different at the .050 level

Homogeneous Subsets (highest and lowest means are not significantly different)

Subset 1

Group	Grp 1	Grp 3	Grp 2
Mean	1012.6000	1271.0167	1513.9056

## 3. Comparison of mean Zn content at different depths of background level samples

Variable: Zinc in background level samples  
By Variable : DEPTHS

### Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	4311.0011	2155.5005	6.8355	.0023
Within Groups	54	17028.3779	315.3403		
Total	56	21339.3789			

(\*) Indicates significant differences which are shown in the lower triangle

			G G G
			r r r
			p p p
			1 2 3
Mean	LAYER		
62.8316	Grp 1		
68.6158	Grp 2		
83.4789	Grp 3	* *	
Homogeneous Subsets (highest and lowest means are not significantly different)			
Subset 1			
Group	Grp 1	Grp 2	
Mean	62.8316	68.6158	
-----			
Subset 2			
Group	Grp 3		
Mean	83.4789		
-----			

**4. Comparison of mean Zn content at different depths of high level samples**

Variable: Zinc in high level samples  
By Variable : DEPTHS

**Analysis of Variance**

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	336544.8382	168272.4191	.0662	.9360
Within Groups	54	137293996.0	2542481.406		
Total	56	137630540.8			

**Levene Test for Homogeneity of Variances**

Statistic	df1	df2	2-tail Sig.
.1583	2	54	.854

- No two groups are significantly different at the .050 level

Homogeneous Subsets (highest and lowest means are not significantly different)

Subset .1

Group	Grp 1	Grp 3	Grp 2
Mean	1082.8211	1190.6895	1270.3316

**B. STATISTICAL ANALYSIS FOR LEAD AND ZINC AT DIFFERENT LINES**

- Group 1: Element content in first line;
- Group 2: Element content in second line;
- Group 3: Element content in third line.

**1. Comparison of mean Pb content at different lines**

Variable: Lead  
By Variable : LINES

**Analysis of Variance**

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	2902188.583	1451094.292	121.1026	.0000
Within Groups	21	251629.3750	11982.3512		
Total	23	3153817.958			

(\*) Indicates significant differences which are shown in the lower triangle

Mean	LINES		
100.0000	Grp 3	G G G	
418.2500	Grp 2	r r r	
943.3750	Grp 1	p p p	
		3 2 1	
			*
			* *

Homogeneous Subsets (highest and lowest means are not significantly different)

Subset 1

Group            Grp 3  
 Mean            100.0000  
 -----

Subset 2

Group            Grp 2  
 Mean            418.2500  
 -----

Subset 3

Group            Grp 1  
 Mean            943.3750

**2. Comparison of mean Zn content at different lines**

Variable: Zinc

By Variable : LINES

**Analysis of Variance**

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	51023107.00	25511553.50	27.7168	.0000
Within Groups	21	19329185.50	920437.4048		
Total	23	70352292.50			

\*) Indicates significant differences which are shown in the lower triangle

Mean	LINES	
108.5000	Grp 3	
1497.2500	Grp 2	*
3652.5000	Grp 1	* *

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Homogeneous Subsets (highest and lowest means are not significantly different)

Subset 1

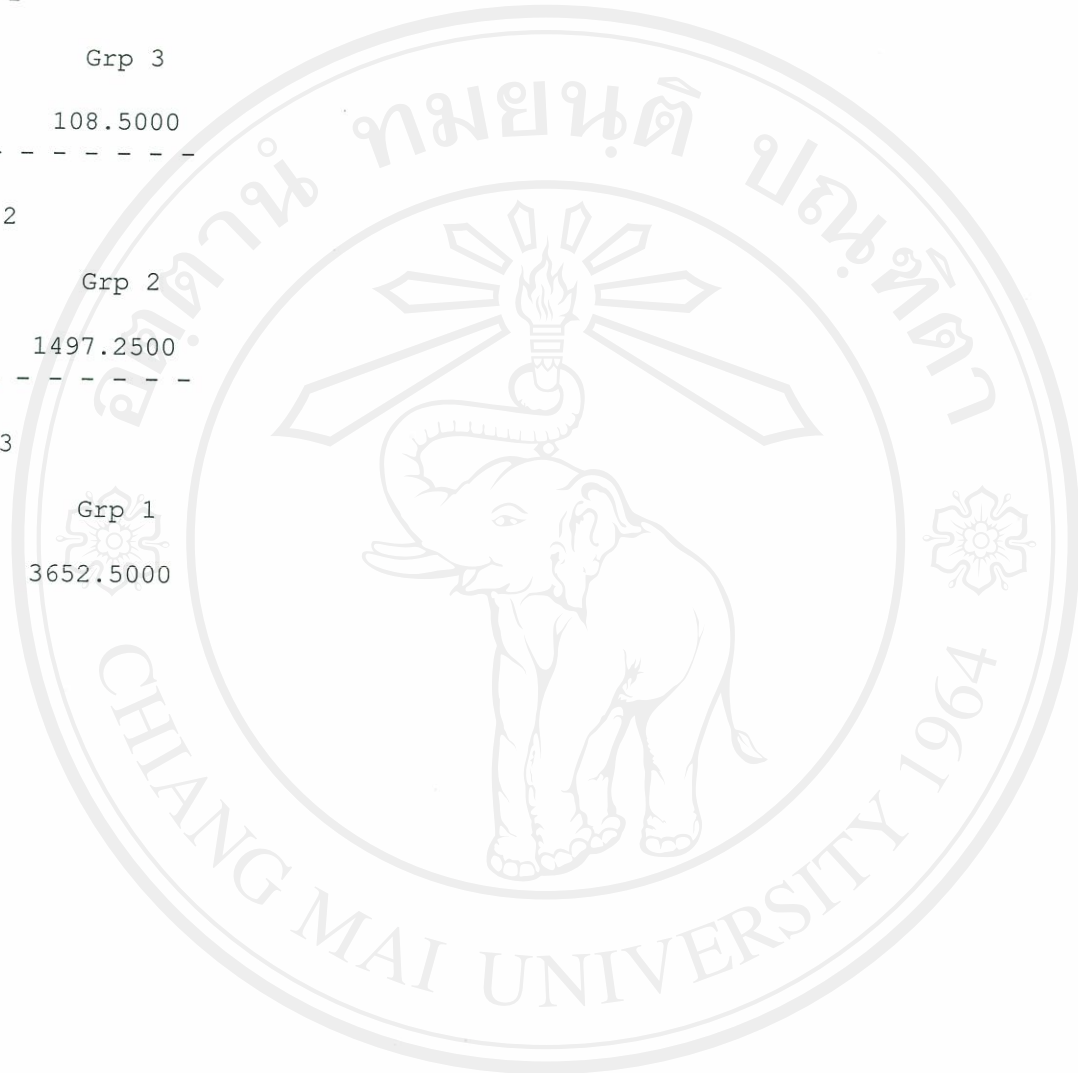
Group	Grp 3
Mean	108.5000
-----	

Subset 2

Group	Grp 2
Mean	1497.2500
-----	

Subset 3

Group	Grp 1
Mean	3652.5000



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### C. DATA FOR CALCULATION OF CV FOR ANALYTICAL METHOD

#### 1. The precision test for lead and zinc in soil samples

Table A.1 Data obtained from precision test for determination of lead in soil

1. duplication	2. duplication	Mean	SD	CV
169.3	181.3	175.3	8.49	4.84
64.8	58.7	61.8	4.31	6.99
61.4	68.4	64.9	4.95	7.63
79.9	82.6	81.3	1.91	2.35
537.2	497.5	517.4	28.07	5.43
48.3	52.3	50.3	2.83	5.62
69.4	76.3	72.9	4.89	6.71
95.8	89.2	92.5	4.67	5.05
330.2	318.2	324.2	8.49	2.62
86.4	77.6	82.0	6.22	7.59
61.8	55.9	58.8	4.23	7.19
450.3	495.3	472.8	31.82	6.73
380.2	363.7	372.0	11.67	3.14
112.4	99.1	105.8	9.40	8.89
104.9	96.2	100.6	6.15	6.12
Mean CV (%) = 5.79				

Table A.2 Data obtained from precision test for determination of zinc in soil

1. duplication	2. duplication	Mean	SD	CV (%)
420.1	386.4	403.3	23.83	5.91
43.4	48.3	45.9	3.46	7.56
440.2	420.8	430.5	13.72	3.19
68.6	75.2	71.9	4.67	6.49
158.3	146.3	152.3	8.49	5.57
87.6	78.7	83.2	6.29	7.57
55.2	49.4	52.3	4.10	7.84
61.3	56.9	59.1	3.11	5.26
343.4	332.2	337.8	7.90	2.34
47.2	52.8	50.0	4.96	7.92
51.3	58.2	54.8	4.88	8.91
466.4	435.6	451.0	21.76	4.83
837.5	862.1	849.8	17.39	2.05
39.8	44.9	42.4	3.61	8.52
105.4	119.2	112.3	9.76	8.69
Mean CV (%) = 6.18				

## 2. The precision test for lead and zinc in plant samples

Table A.3 Data obtained from precision test for determination of lead in plant tissue

1. duplication	2. duplication	Mean	SD	CV (%)
2.5	2.2	2.4	0.25	10.46
1.3	1.5	1.4	0.13	8.90
6.9	6.0	6.4	0.62	9.68
9.4	8.1	8.8	0.92	10.48
5.8	6.6	6.2	0.59	9.58
Mean CV (%) = 9.82				

Table A.4 Data obtained from precision test for determination of zinc in plant tissue

1. duplication	2. duplication	Mean	SD	CV (%)
35.7	39.2	37.5	2.47	6.41
23.5	26.1	24.8	1.87	9.69
35.9	29.5	32.7	4.53	7.34
31.6	28.3	30.0	2.33	8.01
40.8	32.6	36.7	5.80	6.54
Mean CV (%) = 7.60				



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