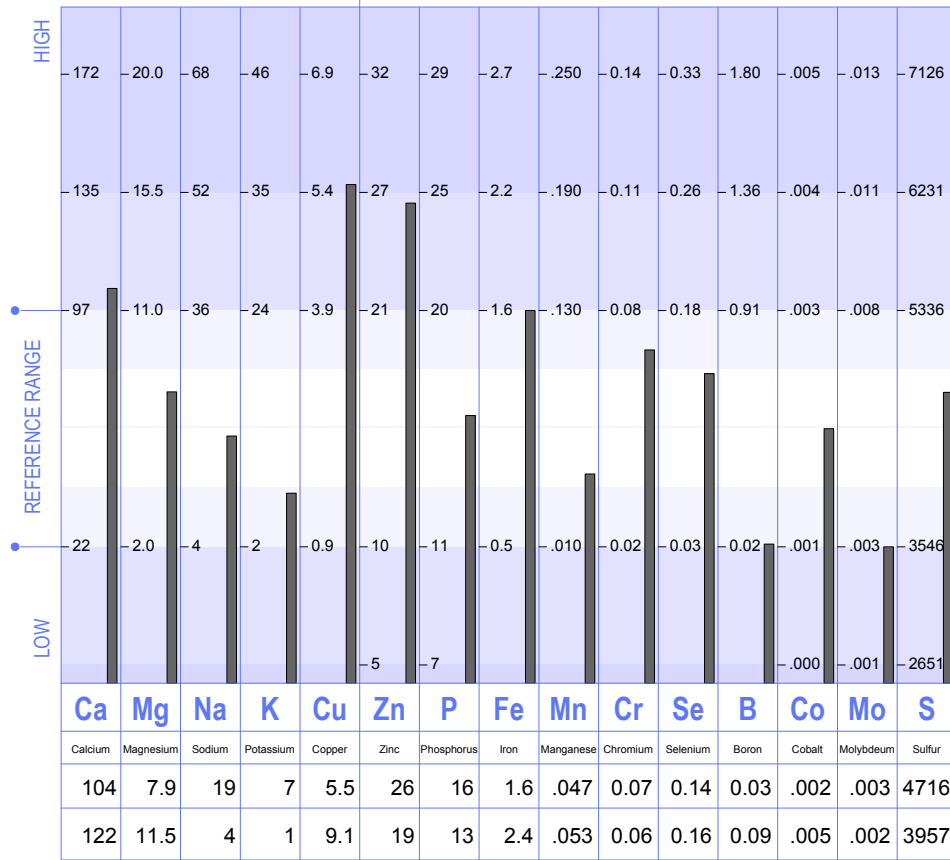
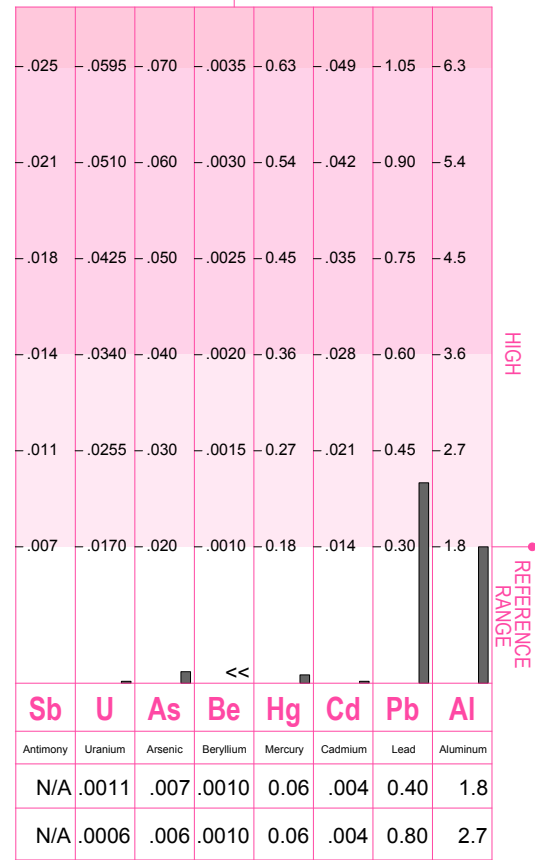


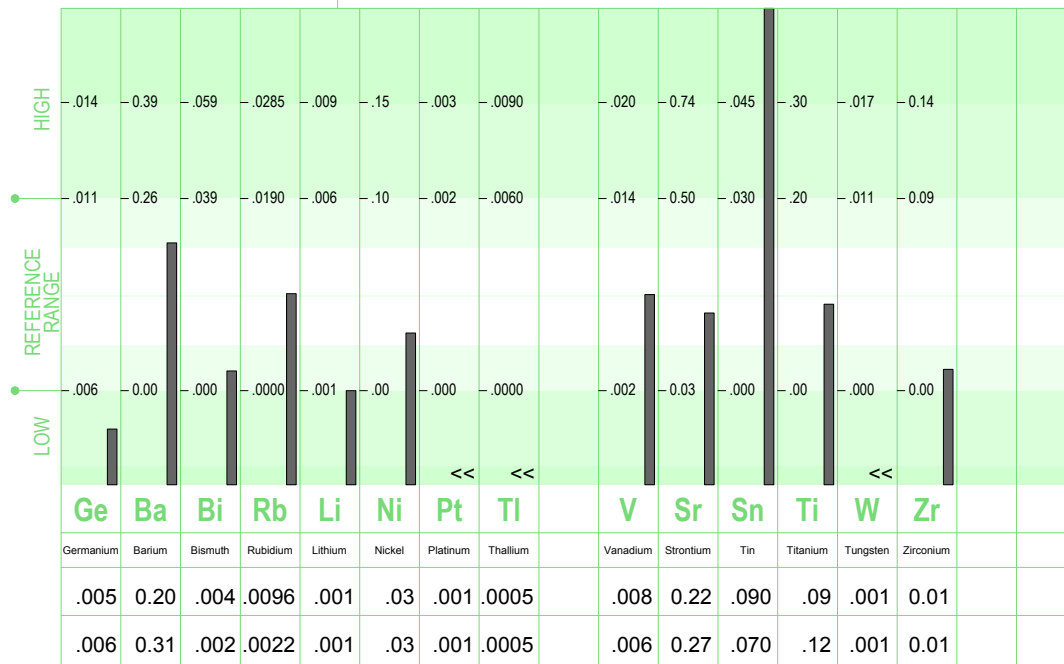
## NUTRITIONAL ELEMENTS



## TOXIC ELEMENTS



## ADDITIONAL ELEMENTS



"<<": Below Calibration Limit; Value Given Is Calibration Limit

"QNS": Sample Size Was Inadequate For Analysis.

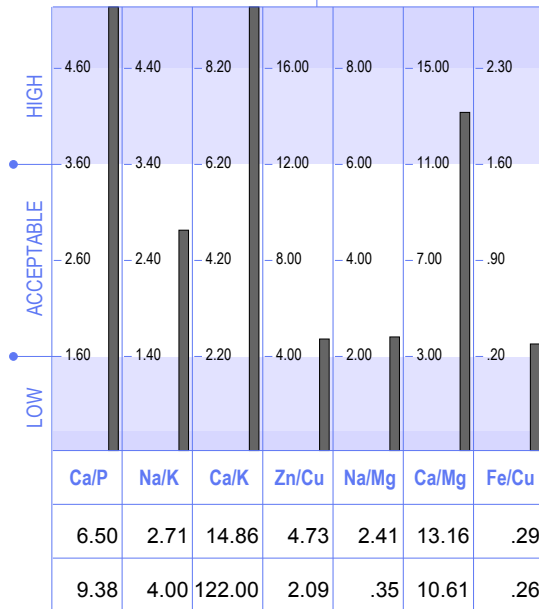
"N/A": Currently Not Available

Ideal Levels And Interpretation Have Been Based On Hair Samples Obtained From The Mid-Parietal To The Occipital Region Of The Scalp.

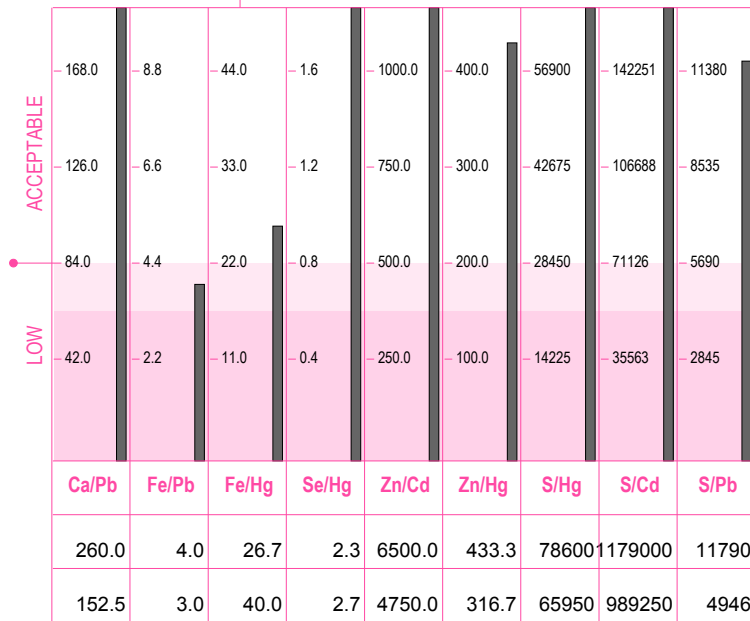
Laboratory Analysis Provided by Trace Elements, Inc., an H. H. S. Licensed Clinical Laboratory. No. 45 D0481787

23/03/2012  
CURRENT TEST RESULTS  
18/10/2011  
PREVIOUS TEST RESULTS

## SIGNIFICANT RATIOS



## TOXIC RATIOS



## ADDITIONAL RATIOS

RATIO	CALCULATED VALUE		EXPECTED
	Current	Previous	
Ca/Sr	472.73	451.85	131/1
Cr/V	8.75	10.00	13/1
Cu/Mo	1833.33	4550.00	625/1
Fe/Co	800.00	480.00	440/1
K/Co	3500.00	200.00	2000/1
K/Li	7000.00	1000.00	2500/1
Mg/B	263.33	127.78	40/1
S/Cu	857.45	434.84	1138/1
Se/Tl	280.00	N/A	37/1
Se/Sn	1.56	2.29	0.67/1
Zn/Sn	288.89	271.43	167/1

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## LEVELS

All mineral levels are reported in milligrams percent (milligrams per one-hundred grams of hair). One milligram percent (mg%) is equal to ten parts per million (ppm).

### NUTRITIONAL ELEMENTS

Extensively studied, the nutrient elements have been well defined and are considered essential for many biological functions in the human body. They play key roles in such metabolic processes as muscular activity, endocrine function, reproduction, skeletal integrity and overall development.

### TOXIC ELEMENTS

The toxic elements or "heavy metals" are well-known for their interference upon normal biochemical function. They are commonly found in the environment and therefore are present to some degree, in all biological systems. However, these metals clearly pose a concern for toxicity when accumulation occurs to excess.

### ADDITIONAL ELEMENTS

These elements are considered as possibly essential by the human body. Additional studies are being conducted to better define their requirements and amounts needed.

## RATIOS

A calculated comparison of two elements to each other is called a ratio. To calculate a ratio value, the first mineral level is divided by the second mineral level.

EXAMPLE: A sodium (Na) test level of 24 mg% divided by a potassium (K) level of 10 mg% equals a Na/K ratio of 2.4 to 1.

### SIGNIFICANT RATIOS

If the synergistic relationship (or ratio) between certain minerals in the body is disturbed, studies show that normal biological functions and metabolic activity can be adversely affected. Even at extremely low concentrations, the synergistic and/or antagonistic relationships between minerals still exist, which can indirectly affect metabolism.

### TOXIC RATIOS

It is important to note that individuals with elevated toxic levels may not always exhibit clinical symptoms associated with those particular toxic minerals. However, research has shown that toxic minerals can also produce an antagonistic effect on various essential minerals eventually leading to disturbances in their metabolic utilization.

### ADDITIONAL RATIOS

These ratios are being reported solely for the purpose of gathering research data. This information will then be used to help the attending health-care professional in evaluating their impact upon health.

## REFERENCE RANGES

Generally, reference ranges should be considered as guidelines for comparison with the reported test values. These reference ranges have been statistically established from studying an international population of "healthy" individuals.

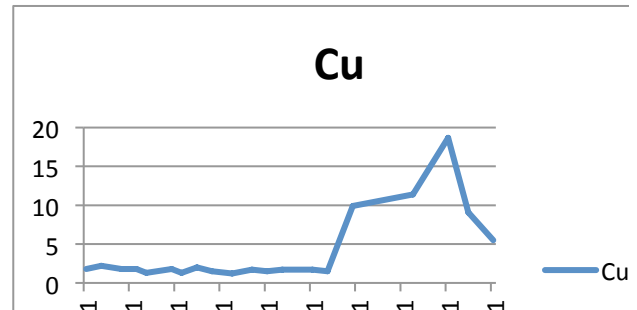
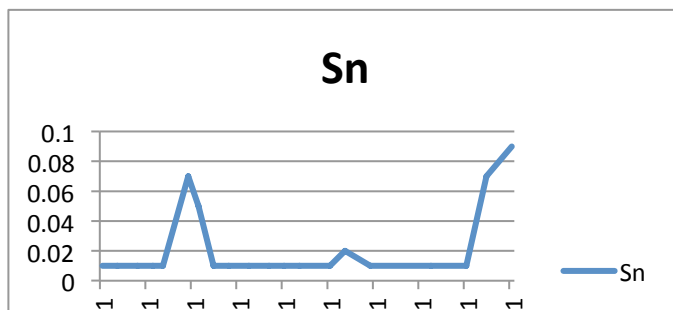
Important Note: The reference ranges should not be considered as absolute limits for determining deficiency, toxicity or acceptance.

# 1 Hair Tissue Mineral Analysis - InterClinical

Element	2005/06/30	2005/09/29	2006/01/02	2006/04/05	2006/06/30	2006/11/03	2007/01/30	2007/04/22
Metabolic type	Fast 4 Exhaust	Fast 4 Exhaust	Slow 1	Fast 4 Exhaust	Fast 4 Exhaust	Slow 1	Slow 1	Slow 1
Ca	29	28	57	26	22	47	37	36
Mg	3.8	2.8	9.8	8.4	3.1	12.8	11	6.7
Na	9	3	4	13	5	10	4	3
K	3	1	1	1	2	3	1	1
Cu	1.8	2.2	1.8	1.8	1.3	1.8	1.3	2
Zn	14	19	21	27	16	19	21	19
P	14	13	14	12	12	15	13	13
Fe	0.6	0.5	0.6	0.4	0.4	0.6	0.5	0.4
Mn	0.009	0.008	0.015	0.009	0.009	0.026	0.017	0.031
Cr	0.04	0.04	0.05	0.07	0.06	0.05	0.05	0.04
Se	0.05	0.07	0.07	0.06	0.07	0.09	0.07	0.06
B	0.57	0.44	0.89	0.8	1.93	0.29	5.18	0.23
Co	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001
Mo	<<.001	<<.001	0.002	0.001	0.002	<<.001	0.006	0.001
S	4413	4446	4194	4018	4025	5143	4325	4327
Ge	0.004	0.006	0.012	0.007	0.004	0.006	0.006	0.003
Ba	0.05	0.04	0.06	0.03	0.02	0.06	0.05	0.05
Bi	<<.002	<<.002	0.011	0.002	0.002	<<.002	<<.002	<<.002
Rb	0.0037	0.0017	0.0018	0.0017	0.0018	0.0034	0.0016	0.0011
Li	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001
Ni	0.02	0.03	0.02	0.02	0.01	0.04	0.05	0.02
Pt	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001
Tl	<<.0005	<<.0005	<<.0005	<<.0005	<<.0005	<<.0005	<<.0005	<<.0005
I	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
V	0.004	0.003	0.004	0.017	0.007	0.003	0.008	0.003
Sr	0.11	0.09	0.22	0.15	0.04	0.14	0.17	0.15
Sn	0.01	0.01	0.01	0.01	0.01	0.07	0.05	0.01
Ti	0.05	0.04	0.08	0.05	0.04	0.05	0.03	0.05
W	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001
Zr	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01
Ratio								
Ca/P	2.07	2.15	4.07	2.17	1.83	3.13	2.85	2.77
Na/K	3	3	4	13	2.5	3.33	4	3
Ca/K	9.67	28	57	26	11	15.67	30	36
Zn/Cu	7.78	8.64	11.67	15	12.31	10.56	16.15	9.5
Na/Mg	2.37	1.07	0.41	1.55	1.61	0.78	0.36	0.45
Ca/Mg	7.63	10	5.82	3.1	7.1	3.67	3.36	5.37

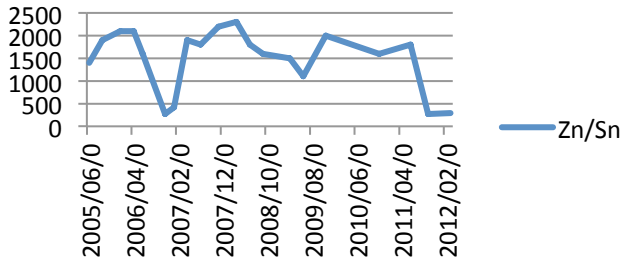
Fe/Cu	0.33	0.23	0.33	0.22	0.31	0.33	0.38	0.2
Ca/Sr	263.64	311.11	259.09	173.33	550	335.71	217.65	240
Cr/V	10	13.33	12.5	4.12	8.57	16.67	6.25	13.33
Cu/Mo	1800	2200	900	1800	650	1800	216.67	2000
Fe/Co	600	500	600	400	400	300	250	400
K/Co	3000	1000	1000	1000	2000	1500	500	1000
K/Li	3000	1000	1000	1000	2000	3000	1000	1000
Mg/B	6.67	6.36	11.01	10.5	1.61	44.14	2.12	29.13
S/Cu	2451.67	2020.91	2330	2232.22	3096.15	2857.22	3326.92	2163.5
Se/Tl	100	140	140	120	140	180	140	120
Se/Sn	5	7	7	6	7	1.29	1.4	6
Zn/Sn	1400	1900	2100	2100	1600	271.43	420	1900
Toxicity								
Sb	N/A	N/A	N/A	N/A	N/A	0.002	N/A	N/A
U	<<.0005	<<.0005	0.0007	0.0016	0.0005	0.0009	<<.0005	<<.0005
As	0.004	0.006	0.005	0.012	0.007	0.004	0.006	0.004
Be	<<.0010	<<.0010	<<.0010	<<.0010	<<.0010	<<.0010	<<.0010	<<.0010
Hg	0.02	0.04	0.04	0.07	0.09	0.05	0.02	0.01
Cd	0.006	0.014	0.007	0.002	0.001	0.001	0.002	0.001
Pb	<<.10	<<.10	0.1	0.1	0.1	<<.10	<<.10	<<.10
Al	<<.3	<<.3	0.3	0.3	0.3	<<.3	<<.3	0.4
Toxic Ratio								
Ca/Pb	290	280	570	260	220	470	370	360
Fe/Pb	6	5	6	4	4	6	5	4
Fe/Hg	30	12.5	15	5.7	4.4	12	25	40
Se/Hg	2.5	1.8	1.8	0.9	0.8	1.8	3.5	6
Zn/Cd	2333.3	1357.1	3000	13500	16000	19000	10500	19000
Zn/Hg	700	475	525	385.7	177.8	380	1050	1900
S/Hg	220650	111150	104850	57400	44722	102860	216250	432700
S/Cd	735500	317571	599143	2009000	4025000	5143000	2162500	4327000
S/Pb	44130	44460	41940	40180	40250	51430	43250	43250

<<nn indicates level was below calibration limit of nn



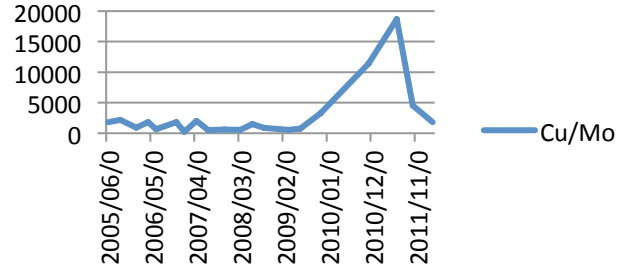
2005/06/0  
2006/03/0  
2006/12/0  
2007/09/0  
2008/06/0  
2009/03/0  
2009/12/0  
2010/09/0  
2011/06/0  
2012/03/0

### Zn/Sn

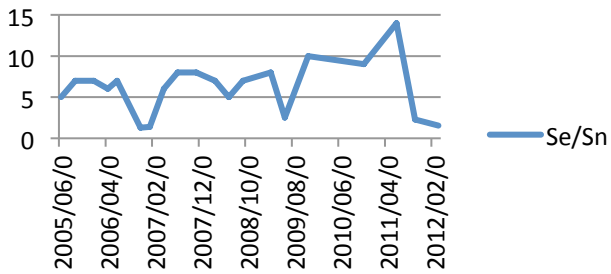


2005/06/0  
2006/03/0  
2006/12/0  
2007/09/0  
2008/06/0  
2009/03/0  
2009/12/0  
2010/09/0  
2011/06/0  
2012/03/0

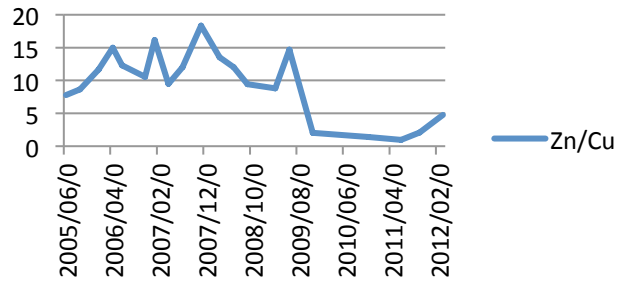
### Cu/Mo



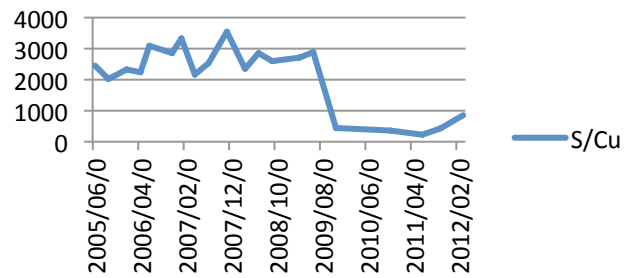
### Se/Sn



### Zn/Cu



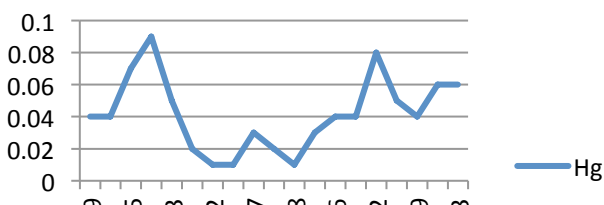
### S/Cu



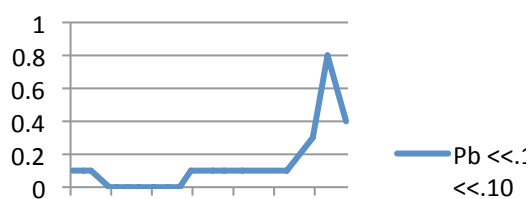
2007/07/20	2007/11/27	2008/03/28	2008/06/18	2008/09/23	2009/03/06	2009/06/24	2009/11/12	2010/11/17
Fast 4 Exhaust	Fast 2 Alarm	Fast 4 Resist	Fast 4 Exhaust	Slow 1	Slow 1	Slow 1	Slow 1	Slow 1
21	24	21	24	35	66	118	65	56
6.4	8.7	5.9	3.1	6.1	9.1	15.7	12.5	7.2
3	40	2	4	15	10	3	31	16
1	2	2	2	4	7	<<1	8	6
1.5	1.2	1.7	1.5	1.7	1.7	1.5	9.9	11.4
18	22	23	18	16	15	22	20	16
14	15	13	15	13	12	13	15	14
0.4	0.4	0.3	0.5	0.5	0.6	0.7	0.8	1.2
0.013	0.012	0.013	0.011	0.018	0.019	0.014	0.014	0.03
0.05	0.05	0.04	0.04	0.06	0.05	0.05	0.06	0.07
0.08	0.08	0.07	0.05	0.07	0.08	0.05	0.1	0.09
0.2	0.84	1.25	1.58	0.42	0.03	0.06	0.03	0.05
0.001	0.001	0.001	0.001	0.002	0.002	0.003	0.002	0.002
0.003	0.002	0.003	0.001	0.002	0.003	0.002	0.003	0.001
3802	4251	3993	4289	4417	4610	4325	4326	4126
0.006	0.005	0.007	0.009	0.01	0.01	0.01	0.009	0.003
0.04	0.03	0.04	0.03	0.07	0.09	0.07	0.11	0.08
0.003	<<.002	<<.002	0.002	0.002	<<.002	<<.002	<<.002	<<.002
0.0017	0.0023	0.0013	0.0027	0.0062	0.0096	0.0007	0.0092	0.0064
<<.001	0.001	0.002	0.001	0.001	<<.001	<<.001	0.002	<<.001
0.03	0.02	0.04	0.02	0.03	0.02	0.02	0.06	0.02
<<.001	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001
<<.0005	<<.0005	<<.0005	<<.0005	<<.0005	<<.0005	0.0019	<<.0005	<<.0005
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0.007	0.009	0.016	0.003	0.004	0.005	0.005	0.005	0.005
0.06	0.15	0.11	0.08	0.14	0.24	0.47	0.24	0.17
0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01
0.05	0.04	0.08	0.04	0.04	0.04	0.04	0.05	0.07
<<.001	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001	<<.001
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1.5	1.6	1.62	1.6	2.69	5.5	9.08	4.33	4
3	20	1	2	3.75	1.43	3	3.88	2.67
21	12	10.5	12	8.75	9.43	118	8.13	9.33
12	18.33	13.53	12	9.41	8.82	14.67	2.02	1.4
0.7	4.6	0.34	1.29	2.46	1.1	0.19	2.48	2.22
4.88	2.76	3.56	7.74	5.74	7.25	7.25	5.2	7.78

0.27	0.33	0.18	0.33	0.29	0.35	0.47	0.08	0.11
350	160	190.91	300	250	275	251.06	270.83	329.41
7.14	5.56	2.5	13.33	15	10	10	12	14
500	600	566.67	1500	850	566.67	750	3300	11400
400	400	300	500	250	300	233.33	400	600
1000	2000	2000	2000	2000	3500	333.33	4000	3000
1000	2000	1000	2000	4000	7000	1000	4000	6000
21.5	10.36	4.72	1.96	14.52	303.33	261.67	416.67	144
2534.67	3542.5	2348.82	2859.33	2598.24	2711.76	2883.33	436.97	361.93
160	160	140	100	140	160	26.32	200	180
8	8	7	5	7	8	2.5	10	9
1800	2200	2300	1800	1600	1500	1100	2000	1600
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<<.0005	<<.0005	<<.0005	<<.0005	<<.0005	0.0014	0.0007	0.0012	0.0005
0.007	0.007	0.003	0.004	0.004	0.006	0.004	0.005	0.004
<<.0010	<<.0010	<<.0010	<<.0010	<<.0010	<<.0010	<<.0010	<<.0010	<<.0010
0.01	0.03	0.02	0.01	0.03	0.04	0.04	0.08	0.05
0.001	0.002	0.003	0.002	0.002	0.004	0.003	0.004	0.002
<<.10	<<.10	<<.10	<<.10	0.1	0.1	0.1	0.1	0.1
0.3	<<.3	0.3	0.3	0.3	0.6	0.3	0.4	0.8
210	240	210	240	350	660	1180	650	560
4	4	3	5	5	6	7	8	12
40	13.3	15	50	16.7	15.1	17.5	10	24
8	2.7	3.5	5	2.3	2	1.3	1.3	1.8
18000	11000	7666.7	9000	8000	3750	7333.3	5000	8000
1800	733.3	1150	1800	533.3	375	550	250	320
380200	141700	199650	428900	147233	115250	108125	54075	82520
3802000	2125500	1331000	2144500	220850	1152500	1441667	181500	2063000
38020	42510	39930	42890	44170	46100	43250	43260	41260

**Hg**

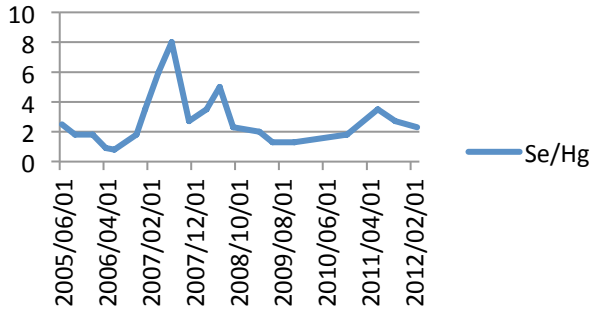


**Pb <<.10 <<.10**



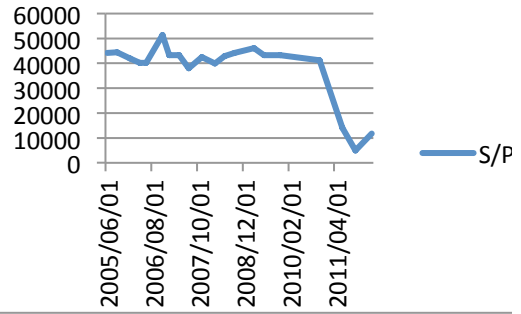
2005/09/25  
2006/04/05  
2006/11/05  
2007/04/22  
2007/11/27  
2008/06/18  
2009/03/06  
2009/11/12  
2011/06/05  
2012/03/25

### Se/Hg

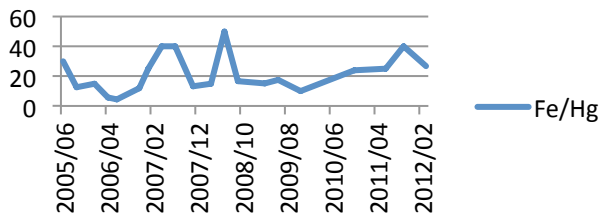


2006/01/01  
2006/12/01  
2007/11/01  
2008/10/01  
2009/09/01  
2010/08/01  
2011/07/01

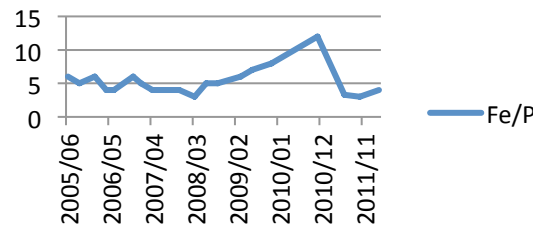
### S/Pb



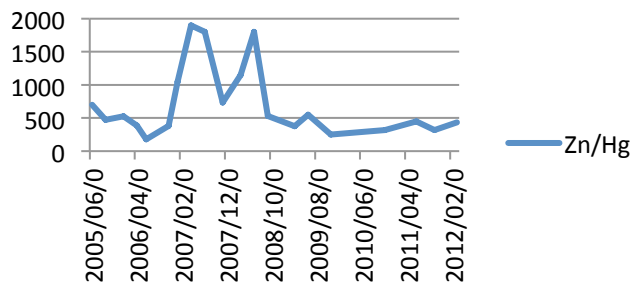
### Fe/Hg



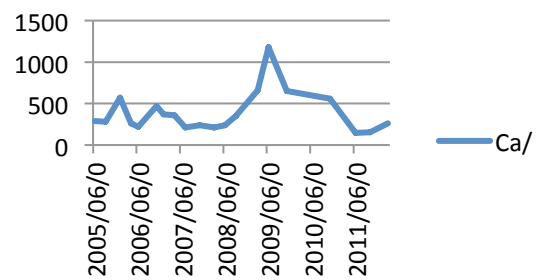
### Fe/Pb



### Zn/Hg



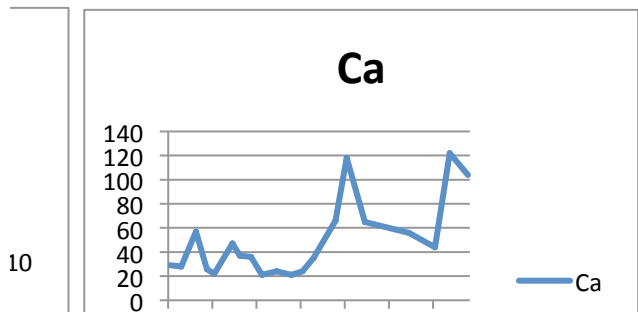
### Ca/Pb





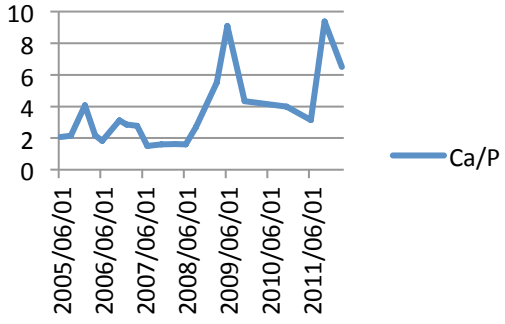
2011/06/09	2011/10/18	2012/03/23	Ref Range	Unit
Slow 1	Slow 1	Slow 1		
44	122	104	22-97	mg%
7.3	11.5	7.9	02-Nov	mg%
8	4	19	Apr-36	mg%
1	1	7	Feb-24	mg%
18.7	9.1	5.5	.9-3.9	mg%
18	19	26	Oct-21	mg%
14	13	16	Nov-20	mg%
1	2.4	1.6	.5-1.6	mg%
0.019	0.053	0.047	.01-.130	mg%
0.05	0.06	0.07	.02-.08	mg%
0.14	0.16	0.14	.03-.18	mg%
0.05	0.09	0.03	.02-.91	mg%
0.003	0.005	0.002	.001-.003	mg%
0.001	0.002	0.003	.003-.008	mg%
4207	3957	4716	3546-5336	mg%
0.004	0.006	0.005	.006-.011	mg%
0.05	0.31	0.02	0.00-.26	mg%
<<.002	<<.002	0.004	0.00-.039	mg%
0.0017	0.0022	0.0096	.0000- .0190	mg%
0.003	0.001	0.001	.001-.006	mg%
0.03	0.03	0.03	.00-.10	mg%
<<.001	<<.001	<<.001	.000-.002	mg%
<<.0005	<<.0005	<<.0005	.000-.0060	mg%
N/A	N/A	N/A		
0.004	0.006	0.008	.002-.014	mg%
0.13	0.27	0.22	.03-.50	mg%
0.01	0.07	0.09	.000-.030	mg%
0.07	0.12	0.12	.00-.20	mg%
<<.001	<<.001	<<.001	.000-.011	mg%
0.01	0.01	0.01	.00-.09	mg%
			Ref Range	
3.14	9.38	6.5	1.6-3.60/1	
8	4	2.71	1.40- 8.00/1	
44	122	14.68	2.2-4.20/1	
0.96	2.09	4.74	2.00- 8.00/1	
1.1	0.35	2.41	2.00- 4.00/1	
6.03	10.61	13.16	3.00- 7.00/1	

0.05	0.26	0.29	.2-.90/1	
338.46	451.85	472.72	131/1	
12.5	10	8.75	13-Jan	
18700	4550	1833.33	625/1	
333.33	480	800	440/1	
333.33	200	3500	2000/1	
333.33	1000	7000	2500/1	
243.33	127.78	263.33	40/1	
224.97	434.84	857.45	1138/1	
280	320	280	37/1	
14	2.29	1.56	.67/1	
1800	271.43	288.89	167/1	
			Ref Range	Unit
N/A	N/A	N/A	<.007	mg%
<<.0005	0.0006	0.0011	<.017	mg%
0.006	0.006	0.007	<.020	mg%
<<.0010	<<.0010	<<.0010	<.0010	mg%
0.04	0.06	0.06	<.18	mg%
0.003	0.004	0.004	<.014	mg%
0.3	0.8	0.4	<.30	mg%
0.6	2.7	1.8	<1.8	mg%
			Ref Range	
146.7	152.5	260	>84.00/1	
3.3	3	4	>4.40/1	
25	40	26.7	>22.00/1	
3.5	2.7	2.3	>.80/1	
6000	4750	6500	>500.00/1	
450	316.7	433.3	>200.00/1	
105175	65950	78600	>28450/1	
1402333	989250	1179000	>71126/2	
14023	4946	11790	>5690/1	



2005/06/01  
2006/06/01  
2007/06/01  
2008/06/01  
2009/06/01  
2010/06/01  
2011/06/01

### Ca/P



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