

LAMPIRAN

Lampiran 1. Tabel Perhitungan Potential Ecological Risk Index

Logam Berat Cd

No Sampel	X	Y	C _i	C _n ⁱ	C _f ⁱ	T _r ⁱ	E _r ⁱ	Tingkat Polusi
TPA 1	305791	9174220	1,188	0,600	1,979	30,000	59,375	<i>Medium</i>
TPA 2	305839	9174220	0,625	0,600	1,042	30,000	31,250	<i>Medium</i>
TPA 3	305672	9174150	1,200	0,600	2,000	30,000	60,000	<i>Medium</i>
TPA 4	305729	9174150	0,900	0,600	1,500	30,000	45,000	<i>Medium</i>
TPA 5	305790	9174150	1,375	0,600	2,292	30,000	68,750	<i>Strong</i>
TPA 6	305843	9174147	0,825	0,600	1,375	30,000	41,250	<i>Medium</i>
TPA 7	305730	9174087	0,550	0,600	0,917	30,000	27,500	<i>Medium</i>
TPA 8	305789	9174091	1,540	0,600	2,567	30,000	77,007	<i>Strong</i>
TPA 9	305850	9174089	11,907	0,600	19,845	30,000	595,356	<i>Extremely Strong</i>
TPA 10	305729	9174030	0,348	0,600	0,580	30,000	17,403	<i>Slight</i>
TPA 11	305790	9174029	0,498	0,600	0,830	30,000	24,888	<i>Slight</i>
TPA 12	305851	9174031	0,547	0,600	0,911	30,000	27,328	<i>Slight</i>
Rata-rata							89,592	<i>Strong</i>
SAWAH 1	305656	9173709	0,373	0,600	0,622	30,000	18,657	<i>Slight</i>
SAWAH 2	305815	9173781	0,422	0,600	0,703	30,000	21,102	<i>Slight</i>
SAWAH 3	305777	9173934	0,373	0,600	0,621	30,000	18,633	<i>Slight</i>
SAWAH 4	306066	9173941	0,248	0,600	0,414	30,000	12,408	<i>Slight</i>
SAWAH 5	306180	9173746	0,347	0,600	0,578	30,000	17,340	<i>Slight</i>
SAWAH 6	305973	9173620	0,173	0,600	0,289	30,000	8,662	<i>Slight</i>
Rata-rata							16,134	<i>Slight</i>

Logam Berat Cu

No Sampel	X	Y	C _i	C _n ⁱ	C _f ⁱ	T _r ⁱ	E _r ⁱ	Tingkat Polusi
TPA 1	305791	9174220	187,375	50	3,748	5	18,738	<i>Slight</i>
TPA 2	305839	9174220	87,000	50	1,740	5	8,700	<i>Slight</i>
TPA 3	305672	9174150	242,750	50	4,855	5	24,275	<i>Slight</i>
TPA 4	305729	9174150	138,250	50	2,765	5	13,825	<i>Slight</i>
TPA 5	305790	9174150	101,000	50	2,020	5	10,100	<i>Slight</i>
TPA 6	305843	9174147	167,750	50	3,355	5	16,775	<i>Slight</i>
TPA 7	305730	9174087	122,000	50	2,440	5	12,200	<i>Slight</i>

No Sampel	X	Y	Ci	C_n^i	C_f^i	T_r^i	E_r^i	Tingkat Polusi
TPA 8	305789	9174091	27,077	50	0,542	5	2,708	<i>Slight</i>
TPA 9	305850	9174089	13,966	50	0,279	5	1,397	<i>Slight</i>
TPA 10	305729	9174030	65,135	50	1,303	5	6,514	<i>Slight</i>
TPA 11	305790	9174029	42,061	50	0,841	5	4,206	<i>Slight</i>
TPA 12	305851	9174031	88,691	50	1,774	5	8,869	<i>Slight</i>
Rata-rata							10,692	<i>Slight</i>
SAWAH 1	305656	9173709	40,547	50	0,811	5	4,055	<i>Slight</i>
SAWAH 2	305815	9173781	39,474	50	0,789	5	3,947	<i>Slight</i>
SAWAH 3	305777	9173934	48,693	50	0,974	5	4,869	<i>Slight</i>
SAWAH 4	306066	9173941	28,291	50	0,566	5	2,829	<i>Slight</i>
SAWAH 5	306180	9173746	24,029	50	0,481	5	2,403	<i>Slight</i>
SAWAH 6	305973	9173620	37,121	50	0,742	5	3,712	<i>Slight</i>
Rata-rata							3,636	<i>Slight</i>

Logam Berat Cr

No Sampel	X	Y	Ci	C_n^i	C_f^i	T_r^i	E_r^i	Tingkat Polusi
TPA 1	305791	9174220	16,880	50	0,338	2	0,675	<i>Slight</i>
TPA 2	305839	9174220	49,978	50	1,000	2	1,999	<i>Slight</i>
TPA 3	305672	9174150	51,723	50	1,034	2	2,069	<i>Slight</i>
TPA 4	305729	9174150	32,303	50	0,646	2	1,292	<i>Slight</i>
TPA 5	305790	9174150	34,503	50	0,690	2	1,380	<i>Slight</i>
TPA 6	305843	9174147	32,791	50	0,656	2	1,312	<i>Slight</i>
TPA 7	305730	9174087	22,784	50	0,456	2	0,911	<i>Slight</i>
TPA 8	305789	9174091	51,118	50	1,022	2	2,045	<i>Slight</i>
TPA 9	305850	9174089	20,545	50	0,411	2	0,822	<i>Slight</i>
TPA 10	305729	9174030	27,953	50	0,559	2	1,118	<i>Slight</i>
TPA 11	305790	9174029	28,681	50	0,574	2	1,147	<i>Slight</i>
TPA 12	305851	9174031	23,942	50	0,479	2	0,958	<i>Slight</i>
Rata-rata							1,311	<i>Slight</i>
SAWAH 1	305656	9173709	34,714	50	0,694	2	1,389	<i>Slight</i>
SAWAH 2	305815	9173781	18,612	50	0,372	2	0,744	<i>Slight</i>
SAWAH 3	305777	9173934	16,409	50	0,328	2	0,656	<i>Slight</i>
SAWAH 4	306066	9173941	6,266	50	0,125	2	0,251	<i>Slight</i>
SAWAH 5	306180	9173746	14,529	50	0,291	2	0,581	<i>Slight</i>
SAWAH 6	305973	9173620	9,708	50	0,194	2	0,388	<i>Slight</i>
Rata-rata							0,668	<i>Slight</i>

Logam Berat Fe

No Sampel	X	Y	Ci	C_n^i	C_f^i	T_r^i	E_r^i	Tingkat Polusi	
TPA 1	305791	9174220	7966,000	55000	0,145	1	0,145	<i>Slight</i>	
TPA 2	305839	9174220	17924,000	55000	0,326	1	0,326	<i>Slight</i>	
TPA 3	305672	9174150	13494,500	55000	0,245	1	0,245	<i>Slight</i>	
TPA 4	305729	9174150	21774,250	55000	0,396	1	0,396	<i>Slight</i>	
TPA 5	305790	9174150	18317,250	55000	0,333	1	0,333	<i>Slight</i>	
TPA 6	305843	9174147	13292,250	55000	0,242	1	0,242	<i>Slight</i>	
TPA 7	305730	9174087	17814,000	55000	0,324	1	0,324	<i>Slight</i>	
TPA 8	305789	9174091	23947,486	55000	0,435	1	0,435	<i>Slight</i>	
TPA 9	305850	9174089	11824,519	55000	0,215	1	0,215	<i>Slight</i>	
TPA 10	305729	9174030	19529,385	55000	0,355	1	0,355	<i>Slight</i>	
TPA 11	305790	9174029	20204,828	55000	0,367	1	0,367	<i>Slight</i>	
TPA 12	305851	9174031	29481,765	55000	0,536	1	0,536	<i>Slight</i>	
Rata-rata								0,327	<i>Slight</i>
SAWAH 1	305656	9173709	18997,264	55000	0,345	1	0,345	<i>Slight</i>	
SAWAH 2	305815	9173781	19217,726	55000	0,349	1	0,349	<i>Slight</i>	
SAWAH 3	305777	9173934	32572,295	55000	0,592	1	0,592	<i>Slight</i>	
SAWAH 4	306066	9173941	31151,744	55000	0,566	1	0,566	<i>Slight</i>	
SAWAH 5	306180	9173746	19564,742	55000	0,356	1	0,356	<i>Slight</i>	
SAWAH 6	305973	9173620	19639,769	55000	0,357	1	0,357	<i>Slight</i>	
Rata-rata								0,428	<i>Slight</i>

Logam Berat Mn

No Sampel	X	Y	Ci	C_n^i	C_f^i	T_r^i	E_r^i	Tingkat Polusi
TPA 1	305791	9174220	276,438	1800	0,154	1	0,154	<i>Slight</i>
TPA 2	305839	9174220	507,250	1800	0,282	1	0,282	<i>Slight</i>
TPA 3	305672	9174150	469,075	1800	0,261	1	0,261	<i>Slight</i>
TPA 4	305729	9174150	564,425	1800	0,314	1	0,314	<i>Slight</i>
TPA 5	305790	9174150	566,125	1800	0,315	1	0,315	<i>Slight</i>
TPA 6	305843	9174147	460,800	1800	0,256	1	0,256	<i>Slight</i>
TPA 7	305730	9174087	1431,500	1800	0,795	1	0,795	<i>Slight</i>
TPA 8	305789	9174091	666,460	1800	0,370	1	0,370	<i>Slight</i>
TPA 9	305850	9174089	391,893	1800	0,218	1	0,218	<i>Slight</i>
TPA 10	305729	9174030	1297,235	1800	0,721	1	0,721	<i>Slight</i>
TPA 11	305790	9174029	496,142	1800	0,276	1	0,276	<i>Slight</i>

No Sampel	X	Y	Ci	C_n^i	C_f^i	T_r^i	E_r^i	Tingkat Polusi
TPA 12	305851	9174031	931,979	1800	0,518	1	0,518	<i>Slight</i>
Rata-rata							0,373	<i>Slight</i>
SAWAH 1	305656	9173709	342,73632	1800	0,190	1	0,190	<i>Slight</i>
SAWAH 2	305815	9173781	636,19662	1800	0,353	1	0,353	<i>Slight</i>
SAWAH 3	305777	9173934	709,7784	1800	0,394	1	0,394	<i>Slight</i>
SAWAH 4	306066	9173941	629,69029	1800	0,350	1	0,350	<i>Slight</i>
SAWAH 5	306180	9173746	552,36821	1800	0,307	1	0,307	<i>Slight</i>
SAWAH 6	305973	9173620	834,48822	1800	0,464	1	0,464	<i>Slight</i>
Rata-rata							0,343	<i>Slight</i>

Logam Berat Zn

No Sampel	X	Y	Ci	C_n^i	C_f^i	T_r^i	E_r^i	Tingkat Polusi
TPA 1	305791	9174220	342,975	200	1,715	1	1,715	<i>Slight</i>
TPA 2	305839	9174220	459,025	200	2,295	1	2,295	<i>Slight</i>
TPA 3	305672	9174150	519,250	200	2,596	1	2,596	<i>Slight</i>
TPA 4	305729	9174150	1517,500	200	7,588	1	7,588	<i>Slight</i>
TPA 5	305790	9174150	941,250	200	4,706	1	4,706	<i>Slight</i>
TPA 6	305843	9174147	1867,000	200	9,335	1	9,335	<i>Slight</i>
TPA 7	305730	9174087	282,625	200	1,413	1	1,413	<i>Slight</i>
TPA 8	305789	9174091	5084,211	200	25,421	1	25,421	<i>Slight</i>
TPA 9	305850	9174089	2988,192	200	14,941	1	14,941	<i>Slight</i>
TPA 10	305729	9174030	486,277	200	2,431	1	2,431	<i>Slight</i>
TPA 11	305790	9174029	148,357	200	0,742	1	0,742	<i>Slight</i>
TPA 12	305851	9174031	364,702	200	1,824	1	1,824	<i>Slight</i>
Rata-rata							6,251	<i>Slight</i>
SAWAH 1	305656	9173709	163,756	200	0,819	1	0,819	<i>Slight</i>
SAWAH 2	305815	9173781	136,097	200	0,680	1	0,680	<i>Slight</i>
SAWAH 3	305777	9173934	170,724	200	0,854	1	0,854	<i>Slight</i>
SAWAH 4	306066	9173941	190,193	200	0,951	1	0,951	<i>Slight</i>
SAWAH 5	306180	9173746	188,912	200	0,945	1	0,945	<i>Slight</i>
SAWAH 6	305973	9173620	290,141	200	1,451	1	1,451	<i>Slight</i>
Rata-rata							0,950	<i>Slight</i>

Logam Berat Pb

No Sampel	X	Y	C _i	C _n ⁱ	C _f ⁱ	T _r ⁱ	E _r ⁱ	Tingkat Polusi
TPA 1	305791	9174220	0	80	0,000	5	0,000	<i>Slight</i>
TPA 2	305839	9174220	54,9	80	0,686	5	3,431	<i>Slight</i>
TPA 3	305672	9174150	32,8	80	0,410	5	2,050	<i>Slight</i>
TPA 4	305729	9174150	94,675	80	1,183	5	5,917	<i>Slight</i>
TPA 5	305790	9174150	79,25	80	0,991	5	4,953	<i>Slight</i>
TPA 6	305843	9174147	109,625	80	1,370	5	6,852	<i>Slight</i>
TPA 7	305730	9174087	0	80	0,000	5	0,000	<i>Slight</i>
TPA 8	305789	9174091	186,6306	80	2,333	5	11,664	<i>Slight</i>
TPA 9	305850	9174089	54,64874	80	0,683	5	3,416	<i>Slight</i>
TPA 10	305729	9174030	0	80	0,000	5	0,000	<i>Slight</i>
TPA 11	305790	9174029	0	80	0,000	5	0,000	<i>Slight</i>
TPA 12	305851	9174031	40,02286	80	0,500	5	2,501	<i>Slight</i>
Rata-rata							3,399	<i>Slight</i>
SAWAH 1	305656	9173709	0	80	0,000	5	0,000	<i>Slight</i>
SAWAH 2	305815	9173781	0	80	0,000	5	0,000	<i>Slight</i>
SAWAH 3	305777	9173934	0	80	0,000	5	0,000	<i>Slight</i>
SAWAH 4	306066	9173941	0	80	0,000	5	0,000	<i>Slight</i>
SAWAH 5	306180	9173746	0	80	0,000	5	0,000	<i>Slight</i>
SAWAH 6	305973	9173620	0	80	0,000	5	0,000	<i>Slight</i>
Rata-rata							0,000	<i>Slight</i>

Nilai Potensi Resiko Lingkungan Area TPA								
	E _r ⁱ							RI
	Cd	Cu	Cr	Fe	Mn	Zn	Pb	
Maximum	595,356	24,275	2,069	0,536	0,795	25,421	11,664	660,117
Minimum	17,403	2,403	0,675	0,145	0,154	0,742	0,000	21,521
Mean	89,592	10,692	1,311	0,327	0,373	6,251	3,399	111,944

Nilai Potensi Resiko Lingkungan Area Persawahan								
	E _r ⁱ							RI
	Cd	Cu	Cr	Fe	Mn	Zn	Pb	
Maximum	21,102	4,869	1,389	0,592	0,464	1,451	0,000	29,867
Minimum	8,662	2,403	0,251	0,345	0,190	0,680	0,000	12,531
Mean	16,134	3,636	0,668	0,428	0,343	0,950	0,000	22,158

Lampiran 2. Contoh Perhitungan *Potential Ecological Risk Index*

$$C_f^i = \frac{C^i}{C_n^i}$$

$$E_r^i = T_r^i \times C_f^i$$

$$RI = \sum E_r^i$$

Dimana :

C^i = Konsentrasi logam berat tiap titik sampling

C_n^i = Baku mutu logam berat

C_f^i = Koefisien Pencemar

T_r^i = Faktor toxic biologis, (Zn=1, Cr=2, Cu=5, Pb=5, Fe=1, Mn=1 dan Cd=30)

E_r^i = Index Potensi Risiko Lingkungan (Satu Elemen)

RI = Total Index Potensi Risiko Lingkungan

Berikut merupakan Contoh Perhitungan *Potential Ecological Risk Index* pada logam berat Cd Titik Sampel 1 area TPA :

Diketahui :

$$C^i = 1,188 \text{ mg/kg}$$

$$C_n^i = 0,6 \text{ mg/kg}$$

$$\text{Maka, } C_f^i = \frac{1,188 \text{ mg/kg}}{0,6 \text{ mg/kg}} = 1,979$$

T_r^i untuk logam berat Cd sebesar = 30

$$\text{Maka, } E_r^i = 30 \times 1,979 = 59,375$$

Lampiran 3. Cara Kerja Kurva Kalibrasi Kromium (Cr), Kadmium (Cd), Tembaga (Cu), Besi (Fe), Mangan (Mn), Seng (Zn), dan Timbal (Pb).

1. Disiapkan sebanyak 6 (enam) buah labu ukur 100 mL.
2. Masing-masing labu diisi dengan 0; 0,5; 1,0; 1,5; 2,0 dan 2,5 mL larutan induk Kromium 1000 ppm
3. Kedalam masing-masing labu kemudian ditambahkan aquades hingga setengah dari volume labu
4. Larutan digojlok secara berulang, kemudian ditambahkan aquades hingga tanda batas
5. Absorbansi masing-masing larutan standard diukur dengan menggunakan Spektrofotometer Serapan Atom Sistem Nyala pada panjang gelombang (λ) 228,80 nm
6. Kurva kalibrasi dibuat dengan memplot konsentrasi (sumbu X) terhadap Absorbansi (sumbu Y)
7. Prosedur 1 sampai dengan 6 diulangi untuk membuat kurva kalibrasi Kadmium, Tembaga, Besi, Mangan, Seng, dan Timbal dengan menggunakan larutan induk Kadmium, Tembaga, Besi, Mangan, Seng, dan Timbal 1000 ppm serta λ pengukuran berturut-turut adalah 228,80 nm, 324,80 nm, 248,30 nm, 279,5 nm, 213,90 nm, 217 nm.

Lampiran 4. Cara Kerja Preparasi Sampel Tanah

1. Sampel tanah dari masing-masing titik sampel diambil sebanyak 500 gram. Sampel tersebut kemudian dikeringkan dengan panas matahari selama satu hari.
2. Sampel yang telah benar-benar kering diambil sebanyak 500 gram dan digerus hingga halus dan diayak dengan ukuran 100 mesh.
3. Ditimbang 1 g tanah halus dan dimasukkan kedalam tabung biggest
4. Ditambahkan aquades 100ml, dan ± 10 ml campuran $\text{HNO}_3(\text{P})$
5. Didestruksi dengan menggunakan kompor listrik di lemari asam hingga jernih.
6. Disaring dengan saringan $\text{Ø}200\text{mm}$, saringan $\text{Ø}150$ mm, dan saringan $\text{Ø}70$ mm.
7. Diencerkan dengan aquades menjadi 100 ml lalu dikocok hingga homogen dan ditambahkan lagi dengan 5 ml $\text{HNO}_3(\text{P})$
8. Didestruksi dengan menggunakan kompor listrik di lemari asam hingga jernih
9. Disaring dengan saringan $\text{Ø}70\text{mm}$, ditambahkan aquades hingga 25 ml.
10. Dikocok hingga homogen dan dibiarkan hingga mencapai suhu kamar.
11. Disimpan dalam botol steril sebelum analisa logam berat.
12. Dianalisa ke SSA pada panjang gelombang (λ) untuk analisis Cr, Cd, Cu, Fe, Mn, Zn, Pb secara berturut-turut adalah 228,80 nm, 228,80 nm, 324,80 nm , 248,30 nm , 279,5 nm, 213,90 nm, 217 nm.

Lampiran 5. Dokumentasi Kegiatan



Gambar 1. Pengambilan sampel tanah di area TPA (a) dan di area persawahan (b) dilakukan dengan mencari lokasi sampel menggunakan GPS yang sudah diplot sebelumnya dengan aplikasi QGIS, pengambilan sampel ini menggunakan alat bor tangan dan langsung dimasukkan kedalam plastik serta diberi label sesuai lokasi sampel.



Gambar 2. Sampel tanah yang akan dikeringkan dan di ayak dengan ukuran 100 mesh sebelum nantinya diuji kandungan logam berat dengan menggunakan metode AAS Flame



(a)



(b)

Gambar 3. Destruksi sampel dengan lemari asam (a) dilakukan untuk memisahkan kandungan murni logam berat dengan zat organik yang ada dalam tanah dengan menggunakan larutan HNO_3 , sehingga dapat terbaca oleh mesin AAS Flame (b).

Lampiran 6. Tabel *Limit of Detection* (LOD)

DATA LOD LOGAM Pb

No	Abs	C	Ci-Crt	(Ci-Crt) ²
1	0,0073	0,191	0,034	0,001
2	0,002	0,119	-0,039	0,001
3	0,0064	0,179	0,022	0,000
4	0,0021	0,120	-0,037	0,001
5	0,0048	0,157	0,000	0,000
6	0,0063	0,178	0,020	0,000
		0,157		0,005
	sd =	0,031		0,031
	LOD =	0,251		
	LOQ =	0,471		

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Tasyono
Analis

DATA LOD LOGAM Cu

No	Abs	C	Ci-Crt	(Ci-Crt)2
1	0,044	0,001	-2,410	5,807
2	0,045	0,009	-2,402	5,769
3	0,043	-0,007	-2,418	5,845
4	0,046	0,017	-2,394	5,731
5	0,044	0,001	-2,410	5,807
6	0,048	0,033	-2,378	5,656
7	0,05	0,049	-2,362	5,581
8	0,044	0,001	-2,410	5,807
9	0,047	0,025	-2,386	5,693
10	0,046	0,017	-2,394	5,731
		0,015		57,424
	sd =	0,017		2,526
	LOD	0,051		
	LOQ	0,171		

Yogyakarta, 6 September 2017



Tasyono
Analisis

DATA LOD LOGAM Cr

No	Abs	C	Ci-Crt	(Ci-Crt) ²
1	0,004	0,023	0,021	0,000
2	-0,001	0,016	0,014	0,000
3	0,004	0,023	0,021	0,000
4	0	0,018	0,015	0,000
5	0	0,018	0,015	0,000
6	0,002	0,020	0,018	0,000
7	0	0,018	0,015	0,000
8	0,004	0,023	0,021	0,000
9	0,003	0,022	0,019	0,000
10	0,005	0,024	0,022	0,000
		0,020		0,003
	sd =	0,003		0,019
	L _{0D} =	0,009		
	L _{0Q} =	0,030		

Yogyakarta, 6 September 2017



Tasyono
Analisis

DATA LOD LOGAM Cd

No	Abs	C	Ci-Crt	(Ci-Crt) ²
1	0,0066	0,011	0,002	0,000
2	0,005	0,008	-0,001	0,000
3	0,0041	0,006	-0,002	0,000
4	0,007	0,011	0,003	0,000
5	0,005	0,008	-0,001	0,000
6	0,005	0,008	-0,001	0,000
7	0,0053	0,008	0,000	0,000
8	0,007	0,011	0,003	0,000
9	0,004	0,006	-0,002	0,000
10	0,004	0,006	-0,002	0,000
		0,008		0,000
	sd =	0,002		0,002
	LOD	0,007		
	LOQ	0,022		

Yogyakarta, 6 September 2017



Tasyono
Analisis

Lampiran 7. Hasil Pengujian Logam Berat dengan AAS

Results File

D:\GBC AAS\Flame AAS\2017\hasil\36 Cu.res

Analysis

Filename

Element

Date

C:\Program Files\GBC Avanta Ver 2.02\Analysis1 anl

Cu,

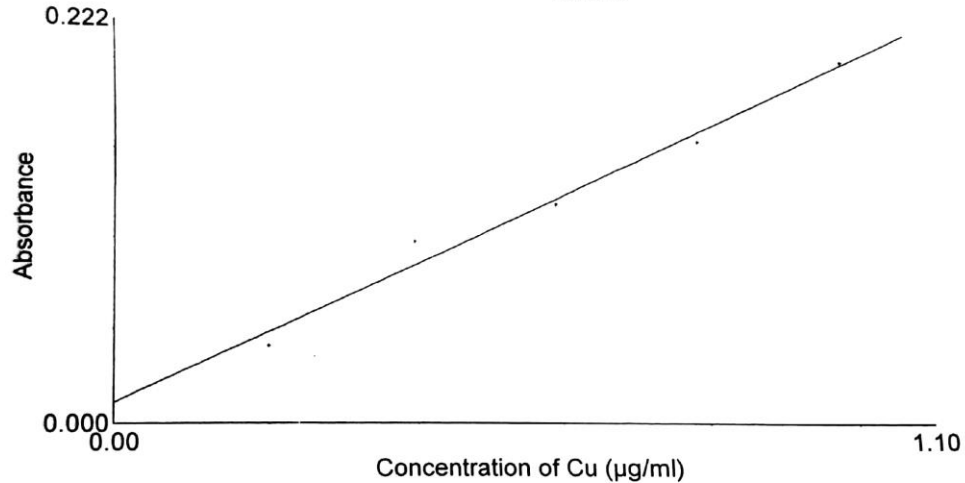
Tue Jun 06 12:26:01 2017

Full Calibration

Calibration Mode

Linear Least Squares Max Error : 0.0703 R² : 0.9817 R : 0.99
 Conc = -0.0564 + 5.2655 * Abs

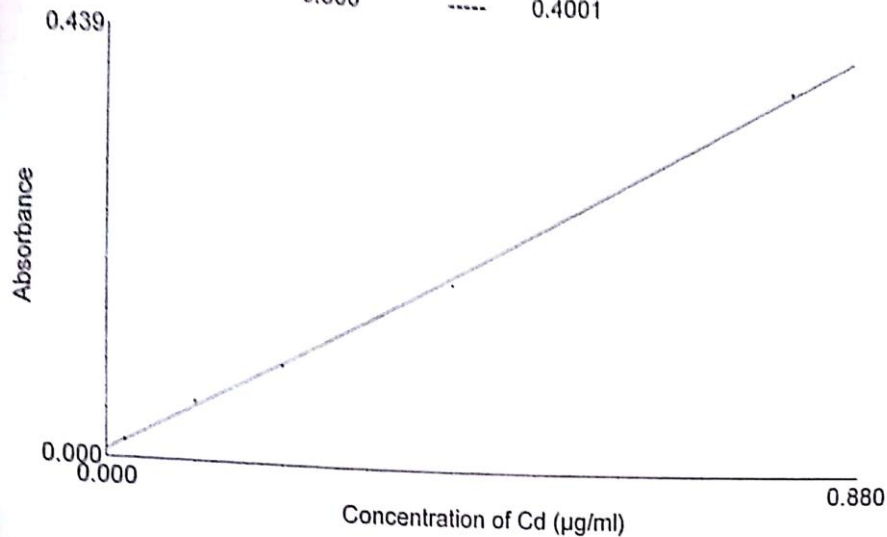
Sample Label	Conc. (µg/ml)	%RSD	Mean Abs.	Replicates
Table Blank	-----	-----	0.0000	
Standard 1	0.200	-----	0.0413	
Standard 2	0.400	-----	0.1000	
Standard 3	0.600	-----	0.1220	
Standard 4	0.800	-----	0.1575	
Standard 5	1.000	-----	0.2025	



Sample Label	Conc. (µg/ml)	%RSD	Mean Abs.	Replicates
Afif 1	0.432	2.93	0.0928	0.0903 0.0957 0.0924
Afif 2	0.348	2.11	0.0769	0.0779 0.0750 0.0777
Afif 3	0.971	0.85	0.1952	0.1957 0.1965 0.1933
Afif 4	0.553	2.17	0.1157	0.1137 0.1148 0.1185
Afif 5	0.404	18.03	0.0875	0.0743 0.0833 0.1050
Afif 6	High	10.93	0.2748	0.3064 0.2714 0.2466
Afif 7	0.766	HIGH	0.1562	0.1928 0.1801 0.0957
Afif 8	0.109	3.82	0.0314	0.0314 0.0326 0.0302
Afif 9	0.563	1.30	0.1177	0.1174 0.1194 0.1164
Afif 10	0.262	1.91	0.0604	0.0593 0.0603 0.0616
Afif 11	0.169	2.92	0.0429	0.0442 0.0428 0.0417
Afif 12	0.357	0.83	0.0786	0.0779 0.0792 0.0787
Afif 13	0.163	4.60	0.0416	0.0434 0.0419 0.0396
Afif 14	0.159	3.54	0.0410	0.0411 0.0395 0.0424

Sample Label	Conc. (µg/ml)	%RSD	Mean Abs.	Replicates		
Afif 15	0.196	1.74	0.0479	0.0486	0.0482	0.0470
Afif 16	0.114	3.75	0.0323	0.0330	0.0330	0.0309
Afif 17	0.097	HIGH	0.0291	0.0439	0.0428	0.0006
Afif 18	0.150	4.78	0.0392	0.0384	0.0413	0.0378
Afif 19	1.067	4.00	0.2133	0.2037	0.2200	0.2162
Afif 20	0.671	0.77	0.1382	0.1370	0.1386	0.1390
Afif 21	0.210	0.30	0.0506	0.0506	0.0508	0.0505
Afif 21	High	2.15	0.2224	0.2170	0.2241	0.2261
Ida 1	0.069	1.48	0.0238	0.0241	0.0238	0.0234
Ida 2	0.121	3.42	0.0336	0.0325	0.0336	0.0348
Ida 3	0.745	1.14	0.1521	0.1515	0.1541	0.1508
Ida 4	0.084	5.24	0.0268	0.0254	0.0282	0.0267
Ida 5	0.064	4.66	0.0230	0.0224	0.0242	0.0223
Ida 6	0.031	9.57	0.0167	0.0159	0.0185	0.0156
Ida 7	0.041	9.67	0.0186	0.0179	0.0172	0.0206
Ida 8	0.083	3.79	0.0265	0.0257	0.0261	0.0276
Ida 9	0.090	1.30	0.0278	0.0279	0.0274	0.0281
Ida 10	0.080	2.90	0.0260	0.0259	0.0253	0.0268
Ida 11	-0.004	HIGH	0.0099	0.0155	0.0143	0.0000
Ida 11	0.021	8.50	0.0147	0.0151	0.0133	0.0157
Ida 12	0.032	3.86	0.0169	0.0162	0.0175	0.0169
Fadlul 1	-0.020	HIGH	0.0070	0.0066	0.0057	0.0086
Fadlul 2	0.113	2.07	0.0322	0.0328	0.0315	0.0324
Fadlul 3	0.116	2.60	0.0327	0.0336	0.0327	0.0319
Fadlul 4	0.165	5.12	0.0421	0.0423	0.0442	0.0399
Fadlul 5	0.049	1.26	0.0200	0.0202	0.0197	0.0200
Fadlul 6	0.361	1.26	0.0794	0.0793	0.0804	0.0784
Fadlul 7	0.294	14.68	0.0665	0.0639	0.0773	0.0583
Fadlul 8	0.088	1.52	0.0275	0.0276	0.0270	0.0278
Fadlul 9	0.182	0.92	0.0453	0.0450	0.0452	0.0458
Fadlul 10	-0.022	HIGH	0.0066	0.0060	0.0054	0.0084
Fadlul 11	-0.016	15.60	0.0077	0.0076	0.0090	0.0066
Fadlul 12	0.483	0.99	0.1025	0.1036	0.1023	0.1016
Blanko	ND	HIGH	0.0003	0.0008	0.0000	0.0000

Sample Label	Conc. (µg/ml)	%RSD	Mean Abs.	Replicates
Table Blank				
Standard 1	-----	-----	0.0000	
Standard 2	0.020	-----	0.0180	
Standard 3	0.100	-----	0.0612	
Standard 4	0.200	-----	0.1031	
Standard 5	0.400	-----	0.1949	
	0.800	-----	0.4001	



Sample Label	Conc. (µg/ml)	%RSD	Mean Abs.	Replicates
Fadlul 1	0.011	5.42	0.0131	0.0137 0.0132 0.0123
Fadlul 2	0.025	9.66	0.0198	0.0219 0.0190 0.0183
Fadlul 3	0.015	12.95	0.0147	0.0135 0.0169 0.0137
Fadlul 4	0.013	17.66	0.0137	0.0151 0.0109 0.0151
Fadlul 5	0.010	13.46	0.0126	0.0109 0.0143 0.0126
Fadlul 6	0.016	3.23	0.0153	0.0150 0.0158 0.0149
Fadlul 7	0.010	12.11	0.0125	0.0118 0.0142 0.0114
Fadlul 8	0.003	9.16	0.0089	0.0082 0.0098 0.0087
Fadlul 9	0.011	13.38	0.0132	0.0117 0.0151 0.0126
Fadlul 10	0.004	4.25	0.0095	0.0094 0.0099 0.0091
Fadlul 11	0.004	HIGH	0.0094	0.0123 0.0078 0.0080
Fadlul 12	0.013	8.39	0.0140	0.0148 0.0144 0.0126
Ida 1	0.004	19.25	0.0095	0.0103 0.0108 0.0074
Ida 2	0.003	15.82	0.0090	0.0074 0.0102 0.0092
Ida 3	0.003	10.44	0.0089	0.0078 0.0095 0.0093
Ida 4	-0.003	18.38	0.0061	0.0056 0.0052 0.0073
Ida 5	0.003	15.35	0.0092	0.0081 0.0108 0.0087
Ida 6	-0.006	14.63	0.0047	0.0051 0.0039 0.0051
Ida 7	-0.004	7.91	0.0057	0.0057 0.0052 0.0061
Ida 8	0.007	13.60	0.0108	0.0091 0.0117 0.0116
Ida 9	-0.002	HIGH	0.0064	0.0074 0.0078 0.0040
Ida 10	-0.002	HIGH	0.0066	0.0094 0.0058 0.0046
Ida 11	-0.004	19.97	0.0059	0.0067 0.0045 0.0063
Ida 12	0.021	2.82	0.0177	0.0182 0.0172 0.0177
Afif 1	0.057	6.88	0.0352	0.0370 0.0360 0.0324
Afif 2	0.025	2.80	0.0197	0.0197 0.0202 0.0191

Sample Label	Conc. (µg/ml)	%RSD	Mean Abs.	Replicates		
Afif 3	0.048					
Afif 4	0.036	3.29	0.0308	0.0319	0.0301	0.0302
Afif 5	0.055	3.97	0.0252	0.0244	0.0248	0.0263
Afif 6	0.033	3.77	0.0346	0.0358	0.0332	0.0347
Afif 7	0.023	8.49	0.0235	0.0218	0.0257	0.0230
Afif 8	0.062	0.93	0.0186	0.0187	0.0187	0.0184
Afif 9	0.480	4.50	0.0379	0.0374	0.0365	0.0398
Afif 10	0.014	1.02	0.2411	0.2382	0.2426	0.2423
Afif 11	0.020	16.16	0.0146	0.0171	0.0124	0.0143
Afif 12	0.022	3.19	0.0174	0.0173	0.0169	0.0180
Afif 13	0.015	6.76	0.0185	0.0184	0.0173	0.0198
Afif 14	0.017	15.24	0.0150	0.0129	0.0174	0.0145
Afif 15	0.015	4.16	0.0160	0.0164	0.0163	0.0152
Afif 16	0.015	9.43	0.0149	0.0162	0.0134	0.0150
Afif 17	0.010	3.22	0.0124	0.0128	0.0124	0.0120
Afif 18	0.014	5.88	0.0145	0.0153	0.0136	0.0146
Afif 19	0.007	7.01	0.0111	0.0106	0.0107	0.0120
Afif 20	0.038	3.65	0.0261	0.0267	0.0250	0.0266
Afif 21	0.033	2.15	0.0239	0.0243	0.0240	0.0233
Nindi 1	0.021	14.91	0.0180	0.0163	0.0211	0.0166
Nindi 2	0.022	14.54	0.0182	0.0176	0.0159	0.0211
Nindi 3	0.007	6.52	0.0111	0.0119	0.0107	0.0106
Nindi 4	0.008	15.69	0.0116	0.0108	0.0136	0.0102
Nindi 5	0.002	HIGH	0.0088	0.0083	0.0150	0.0029
Nindi 6	-0.008	HIGH	0.0040	0.0063	0.0056	0.0000
Nindi 6	0.011	HIGH	0.0132	0.0167	0.0141	0.0086
Blanko	0.010	4.37	0.0126	0.0123	0.0132	0.0122
	-0.010	HIGH	0.0026	0.0039	0.0014	0.0023

Results File

D:\GBC AAS\Flame AAS\2017\hasil\37 Cr.res

Analysis

Filename

C:\Program Files\GBC Avanta Ver 2.02\Analysis1.anl

Element

Cr,

Date

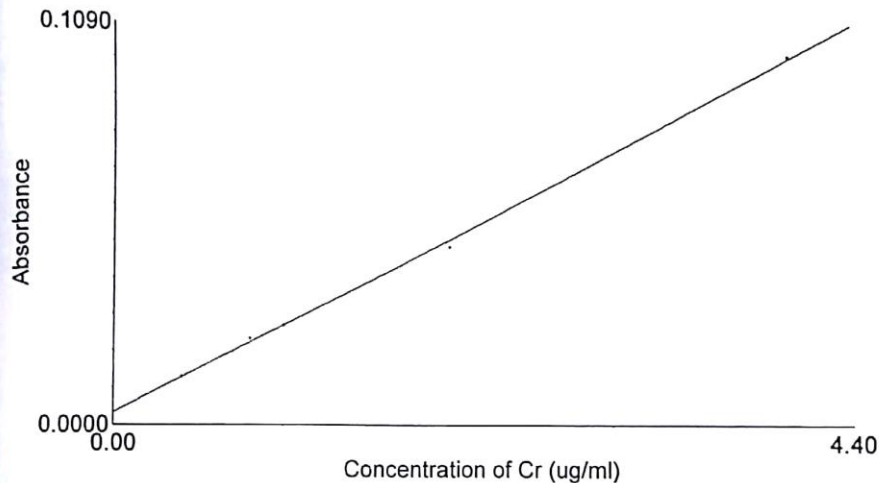
Tue Jun 06 13:25:55 2017

Full Calibration

Calibration Mode

Linear Least Squares Max Error : 0.0800 R² : 0.9989 R : 0.9994
 Conc = -0.1339 + 41.9173 * Abs

Sample Label	Conc. (ug/ml)	%RSD	Mean Abs.	Replicates
Table Blank	-----	-----	0.0000	
Standard 1	0.4000	-----	0.0129	
Standard 2	0.8000	-----	0.0233	
Standard 3	1.0000	-----	0.0270	
Standard 4	2.0000	-----	0.0490	
Standard 5	4.0000	-----	0.0994	



Sample Label	Conc. (ug/ml)	%RSD	Mean Abs.	Replicates
Afif 1	0.4146	9.30	0.0131	0.0145 0.0125 0.0123
Afif 2	1.9991	1.94	0.0509	0.0506 0.0501 0.0520
Afif 3	2.0689	0.58	0.0526	0.0523 0.0525 0.0529
Afif 4	1.2921	4.78	0.0340	0.0326 0.0358 0.0337
Afif 5	1.3801	3.52	0.0361	0.0376 0.0354 0.0354
Afif 6	1.7113	1.39	0.0440	0.0435 0.0439 0.0447
Afif 7	1.0266	0.63	0.0277	0.0278 0.0275 0.0278
Afif 8	2.0578	1.01	0.0523	0.0517 0.0525 0.0527
Afif 9	0.8282	1.96	0.0230	0.0234 0.0230 0.0225
Afif 10	1.1244	2.12	0.0300	0.0304 0.0304 0.0293
Afif 11	1.1524	1.30	0.0307	0.0303 0.0311 0.0307
Afif 12	0.9637	3.64	0.0262	0.0268 0.0267 0.0251
Afif 13	1.3955	1.67	0.0365	0.0368 0.0358 0.0369
Afif 14	0.7597	3.64	0.0213	0.0222 0.0211 0.0207

Sample Label	Conc. (ug/ml)	%RSD	Mean Abs.	Replicates		
Afif 15	0.6605	7.39	0.0190	0.0194	0.0174	0.0201
Afif 16	0.2525	8.70	0.0092	0.0093	0.0084	0.0100
Afif 17	0.5865	2.54	0.0172	0.0167	0.0174	0.0175
Afif 18	0.3923	4.01	0.0126	0.0121	0.0131	0.0125
Afif 19	0.9358	5.32	0.0255	0.0248	0.0247	0.0271
Afif 20	0.9120	3.93	0.0250	0.0244	0.0244	0.0261
Afif 21	0.7961	2.81	0.0222	0.0224	0.0227	0.0215
Ida 1	-0.1339*	0.00	0.0000	0.0000	0.0000	0.0000

Analysis

Filename

C:\Program Files\GBC Avanta Ver 2.02\Analysis1.anl

Element

Cr,

Date

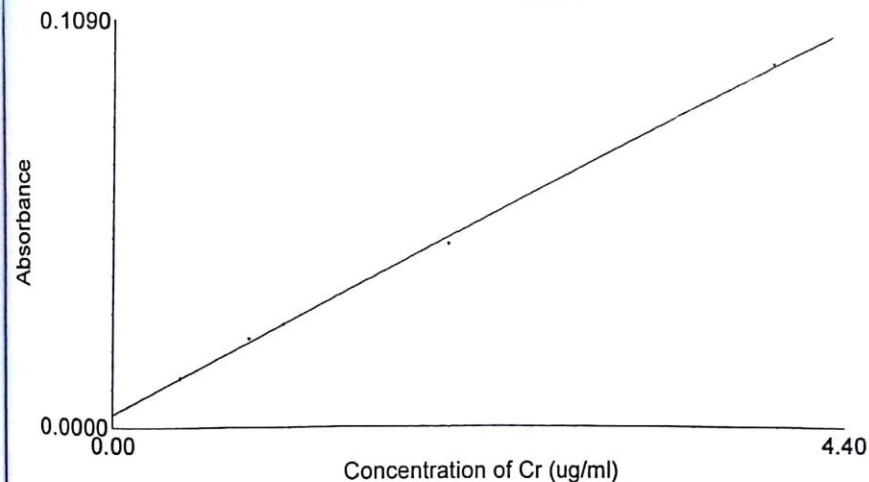
Tue Jun 06 13:36:40 2017

Full Calibration

Calibration Mode

Linear Least Squares Max Error : 0.0800 R² : 0.9989 R : 0.9994
 Conc = -0.1339 + 41.9173 * Abs

Sample Label	Conc. (ug/ml)	%RSD	Mean Abs.	Replicates		
Table Blank	----	----	0.0000			
Standard 1	0.4000	----	0.0129			
Standard 2	0.8000	----	0.0233			
Standard 3	1.0000	----	0.0270			
Standard 4	2.0000	----	0.0490			
Standard 5	4.0000	----	0.0994			



Sample Label	Conc. (ug/ml)	%RSD	Mean Abs.	Replicates		
Ida 2	0.0539	2.23	0.0045	0.0044	0.0046	0.0045
Ida 3	0.0567	17.08	0.0045	0.0037	0.0052	0.0048
Ida 4	0.0106	HIGH	0.0034	0.0039	0.0026	0.0039

Results File

D:\GBC AAS\Flame AAS\2017\hasil\38 Fe Afif.res

Analysis

Filename

C:\Program Files\GBC Avanta Ver 2.02\Analysis1.anl

Element

Fe,

Date

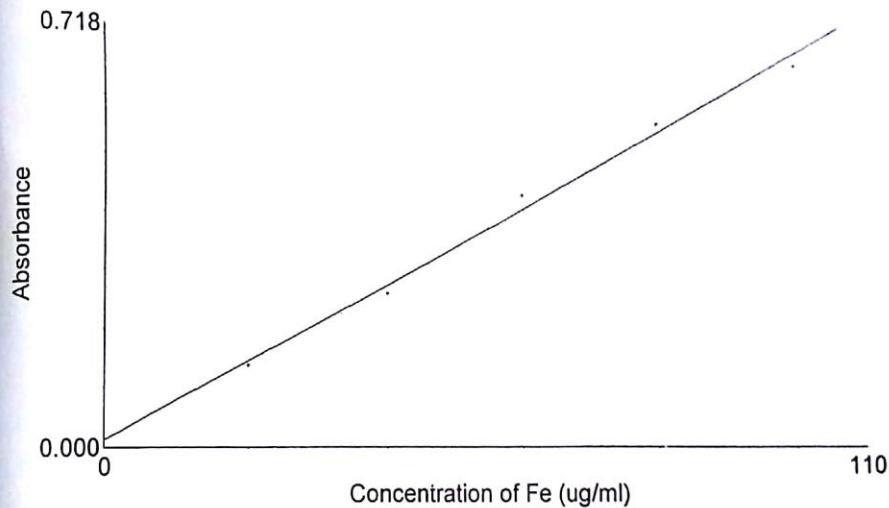
Wed Jun 07 11:06:30 2017

Full Calibration

Calibration Mode

Linear Least Squares Max Error : 3.8420 R² : 0.9913 R : 0.9956
 Conc = -1.7728 + 150.7462 * Abs

Sample Label	Conc. (ug/ml)	%RSD	Mean Abs.	Replicates		
Cal Blank	-----	HIGH	0.0242	0.0022	0.0008	0.0695
Standard 1	20.000	2.41	0.1373	0.1357	0.1411	0.1351
Standard 2	40.000	1.00	0.2644	0.2667	0.2615	0.2649
Standard 3	60.000	0.86	0.4353	0.4374	0.4374	0.4309
Standard 4	80.000	1.47	0.5580	0.5548	0.5673	0.5518
Standard 5	100.000	1.00	0.6539	0.6465	0.6561	0.6590



Sample Label	Conc. (ug/ml)	%RSD	Mean Abs.	Replicates		
Afif 1	30.085	0.36	0.2113	0.2121	0.2106	0.2112
Afif 2	71.696	2.01	0.4874	0.4834	0.4801	0.4985
Afif 3	53.978	0.73	0.3698	0.3729	0.3681	0.3684
Afif 4	87.097	1.07	0.5895	0.5824	0.5917	0.5944
Afif 5	73.269	0.52	0.4978	0.4971	0.4956	0.5006
Afif 6	78.615	0.27	0.5333	0.5346	0.5317	0.5334
Afif 7	98.217	0.97	0.6633	0.6662	0.6677	0.6559
Afif 8	96.403	4.84	0.6513	0.6818	0.6531	0.6188
Afif 9	47.667	0.27	0.3280	0.3289	0.3277	0.3272
Afif 10	78.555	1.36	0.5329	0.5251	0.5395	0.5339
Afif 11	81.183	1.40	0.5503	0.5591	0.5449	0.5468
Afif 12	High	0.52	0.7547	0.7570	0.7501	0.7569
Afif 12 (20x)	59.335	1.48	0.4054	0.4027	0.4122	0.4011
Afif 13	76.369	1.30	0.5184	0.5165	0.5127	0.5258

Sample Label	Conc. (ug/ml)	%RSD	Mean Abs.	Replicates		
Afif 14	77.409	0.37	0.5253	0.5266	0.5230	0.5261
Afif 15	High	0.24	0.8169	0.8164	0.8152	0.8191
Afif 15	65.555	0.46	0.4466	0.4486	0.4467	0.4445
Afif 16	62.696	5.45	0.4277	0.4519	0.4256	0.4054
Afif 17	39.376	1.25	0.2730	0.2692	0.2737	0.2759
Afif 18	39.527	1.18	0.2740	0.2731	0.2775	0.2712
Afif 19	33.643	1.66	0.2349	0.2374	0.2304	0.2369
Afif 20	27.723	0.77	0.1957	0.1963	0.1939	0.1967
Afif 21	44.295	2.47	0.3056	0.3138	0.3039	0.2990
Blanko	ND	2.90	-0.0235	-0.0242	-0.0234	-0.0229

20x

Results File

D:\GBC AAS\Flame AAS\2017\hasil\40 Zn.res

Analysis

Filename

C:\Program Files\GBC Avanta Ver 2.02\Analysis1.anl

Element

Zn,

Date

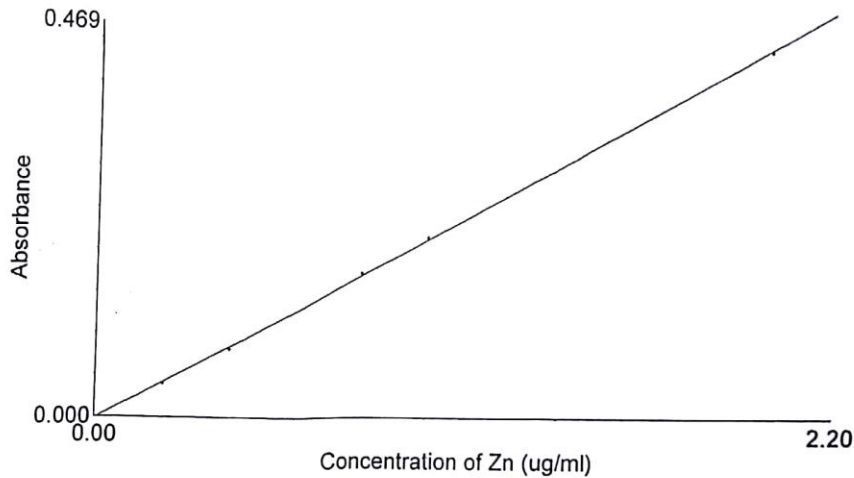
Wed Jun 07 12:16:55 2017

Full Calibration

Calibration Mode

Linear Least Squares Max Error : 0.0183 R² : 0.9995 R : 0.999
Conc = 0.0109 + 4.6424 * Abs

Sample Label	Conc. (ug/ml)	%RSD	Mean Abs.	Replicates
Table Blank	-----	-----	0.0000	
Standard 2	0.2000	-----	0.0390	
Standard 3	0.4000	-----	0.0810	
Standard 4	0.8000	-----	0.1730	
Standard 5	1.0000	-----	0.2170	
Standard 5	2.0000	-----	0.4260	



Sample Label	Conc. (ug/ml)	%RSD	Mean Abs.	Replicates
Afif 1	1.1181	0.93	0.2385	0.2408 0.2382 0.2364
Afif 2	1.8361	0.27	0.3932	0.3936 0.3939 0.3919
Afif 3	0.2077	1.66	0.0424	0.0417 0.0431 0.0423
Afif 4	0.6070	1.25	0.1284	0.1302 0.1277 0.1272
Afif 5	0.3765	1.73	0.0788	0.0803 0.0781 0.0778
Afif 6	0.3891	0.87	0.0815	0.0813 0.0822 0.0808
Afif 7	0.6090	0.79	0.1288	0.1286 0.1279 0.1299
Afif 8	2.0467	0.36	0.4385	0.4396 0.4392 0.4367
Afif 9	1.2046	2.10	0.2571	0.2511 0.2586 0.2616
Afif 10	0.1956	0.95	0.0398	0.0396 0.0395 0.0402
Afif 11	0.5961	0.91	0.1261	0.1260 0.1249 0.1272
Afif 12	0.7340	2.14	0.1558	0.1519 0.1573 0.1580
Afif 13	0.6583	1.19	0.1395	0.1413 0.1389 0.1381
Afif 14	0.5482	3.08	0.1157	0.1133 0.1140 0.1198

Sample Label	Conc. (ug/ml)	%RSD	Mean Abs.	Replicates		
Afif 15	0.3436	3.60	0.0717	0.0695	0.0745	0.0709
Afif 16	0.3832	1.46	0.0802	0.0804	0.0789	0.0812
Afif 17	0.3813	1.26	0.0798	0.0807	0.0799	0.0787
Afif 18	0.5862	1.28	0.1239	0.1251	0.1245	0.1221
Afif 19	1.6257	0.43	0.3478	0.3494	0.3476	0.3464
Afif 20	1.1045	0.84	0.2356	0.2342	0.2378	0.2346
Afif 21	0.5215	1.77	0.1100	0.1086	0.1091	0.1122
Ida 1	1.8028	12.65	0.3860	0.4355	0.3845	0.3379
Ida 2	0.5290	0.85	0.1116	0.1125	0.1116	0.1106
Ida 3	0.7544	0.50	0.1602	0.1593	0.1609	0.1602
Ida 4	0.3368	0.67	0.0702	0.0698	0.0707	0.0700
Ida 5	0.3967	2.46	0.0831	0.0853	0.0826	0.0813
Ida 6	0.3570	3.09	0.0746	0.0719	0.0762	0.0755
Ida 7	0.3861	1.52	0.0808	0.0822	0.0803	0.0799
Ida 8	0.3940	1.47	0.0825	0.0823	0.0838	0.0814
Ida 9	0.4457	2.70	0.0937	0.0959	0.0941	0.0909
Ida 10	0.3690	1.50	0.0771	0.0770	0.0783	0.0760
Ida 11	0.3032	2.30	0.0630	0.0629	0.0644	0.0615
Ida 12	0.3440	6.16	0.0718	0.0759	0.0722	0.0671
Fadlul 1	0.4109	1.44	0.0862	0.0868	0.0847	0.0869
Fadlul 2	0.3024	1.22	0.0628	0.0621	0.0626	0.0636
Fadlul 3	0.2811	1.55	0.0582	0.0573	0.0581	0.0591
Fadlul 4	0.3273	0.59	0.0682	0.0682	0.0677	0.0685
Fadlul 5	0.1938	3.22	0.0394	0.0380	0.0405	0.0396
Fadlul 6	0.2551	1.34	0.0526	0.0533	0.0525	0.0519
Fadlul 7	0.2546	3.81	0.0525	0.0545	0.0505	0.0524
Fadlul 8	0.9370	1.29	0.1995	0.1965	0.2009	0.2010
Fadlul 9	0.1751	0.86	0.0354	0.0356	0.0354	0.0350
Fadlul 9	0.7447	1.11	0.1581	0.1599	0.1564	0.1578
Fadlul 10	1.2143	0.74	0.2592	0.2612	0.2590	0.2574
Fadlul 11	0.2620	4.36	0.0541	0.0563	0.0543	0.0516
Fadlul 12	1.8728	0.47	0.4011	0.3990	0.4027	0.4014

Results File

D:\GBC AAS\Flame AAS\2017\hasil\41 Pb 2 AFIF.res

Analysis

Filename

C:\Program Files\GBC Avanta Ver 2.02\Analysis1.anl

Element

Pb,

Date

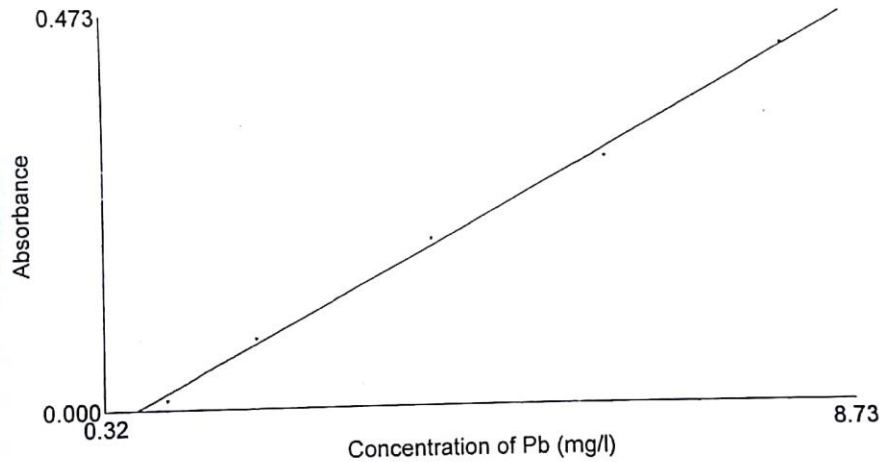
Wed Jun 07 13:59:41 2017

Full Calibration

Calibration Mode

Linear Least Squares Max Error : 0.1821 R² : 0.9972 R : 0.9986
 Conc = 0.6849 + 17.1368 * Abs

Sample Label	Conc. (mg/l)	%RSD	Mean Abs.	Replicates		
Cal Blank	-----	15.21	0.0701	0.0781	0.0580	0.0742
Standard 1	1.000	HIGH	0.0105	0.0077	0.0284	-0.0047
Standard 2	2.000	2.08	0.0834	0.0845	0.0814	0.0843
Standard 3	4.000	1.78	0.2026	0.2062	0.2027	0.1990
Standard 4	6.000	4.33	0.2995	0.3015	0.2857	0.3114
Standard 5	8.000	3.46	0.4296	0.4402	0.4126	0.4359



Sample Label	Conc. (mg/l)	%RSD	Mean Abs.	Replicates		
Afif 1	ND	8.54	-0.0668	-0.0602	-0.0701	-0.0701
Afif 2	2.196	14.47	0.0882	0.0757	0.0876	0.1012
Afif 3	1.312	HIGH	0.0366	0.0354	0.0480	0.0263
Afif 4	3.787	3.84	0.1810	0.1870	0.1827	0.1734
Afif 5	3.170	12.62	0.1450	0.1245	0.1597	0.1508
Afif 6	4.356	3.97	0.2142	0.2239	0.2080	0.2107
Afif 7	ND	9.64	-0.0664	-0.0701	-0.0701	-0.0590
Afif 8	7.513	2.31	0.3984	0.4049	0.3879	0.4025
Afif 9	2.203	HIGH	0.0886	0.1090	0.0822	0.0745
Afif 10	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Afif 11	ND	19.72	-0.0624	-0.0689	-0.0482	-0.0701
Afif 12	1.611	8.58	0.0540	0.0571	0.0487	0.0563
Afif 13	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Afif 14	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701

Sample Label	Conc. (mg/l)	%RSD	Mean Abs.	Replicates		
Afif 15	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Afif 16	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Afif 17	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Afif 18	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Afif 19	ND	10.95	-0.0317	-0.0339	-0.0335	-0.0277
Afif 20	4.414	3.28	0.2176	0.2205	0.2095	0.2229
Afif 21	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Ida 1	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Ida 2	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Ida 3	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Ida 4	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Ida 5	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Ida 6	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Ida 7	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Ida 8	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Ida 9	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Ida 10	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Ida 11	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Ida 12	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Fadlul 1	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Fadlul 2	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Fadlul 3	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Fadlul 4	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Fadlul 5	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Fadlul 6	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Fadlul 7	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Fadlul 8	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Fadlul 9	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Fadlul 10	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Fadlul 11	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Fadlul 12	ND	0.00	-0.0701	-0.0701	-0.0701	-0.0701
Blanko	ND	8.18	-0.0669	-0.0701	-0.0606	-0.0701