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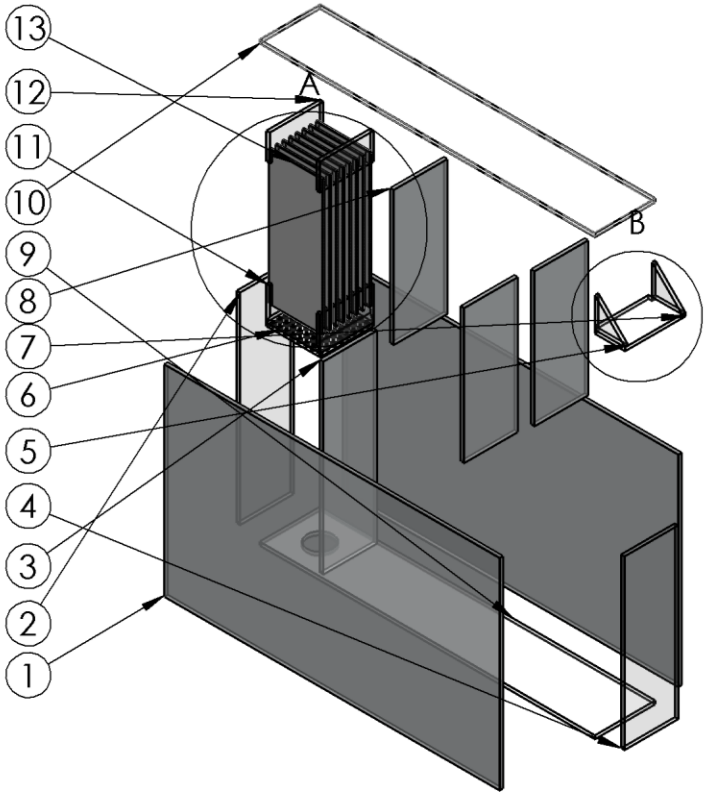
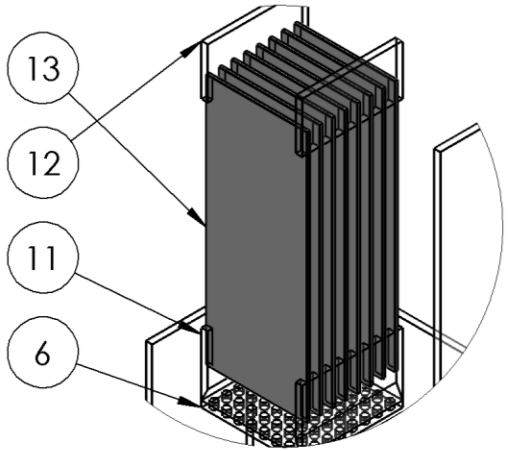
LAMPIRAN

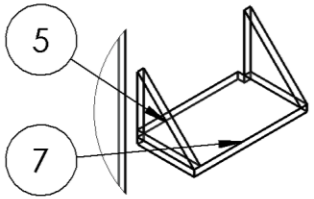
Lampiran 1. *Detail Engineering Design* Reaktor

A. Gambaran Desain Reaktor





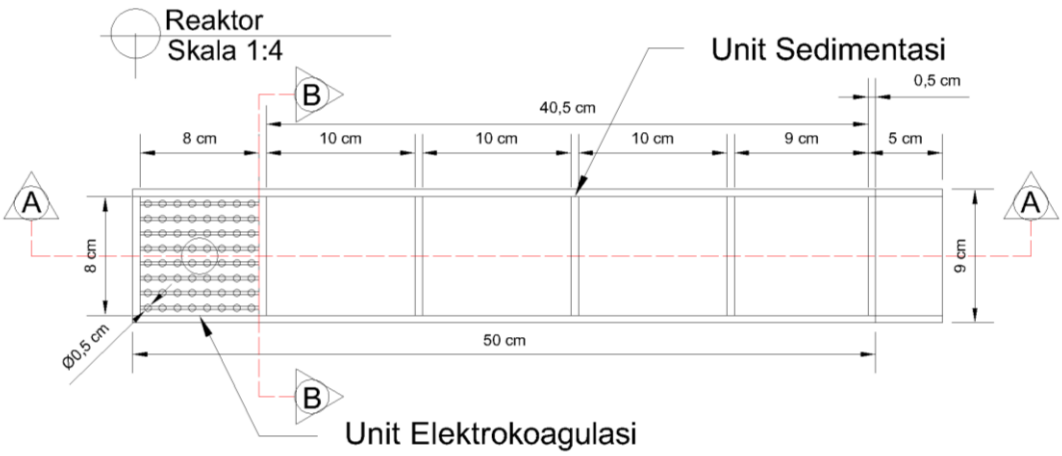
DETAIL A
SCALE 1 : 4



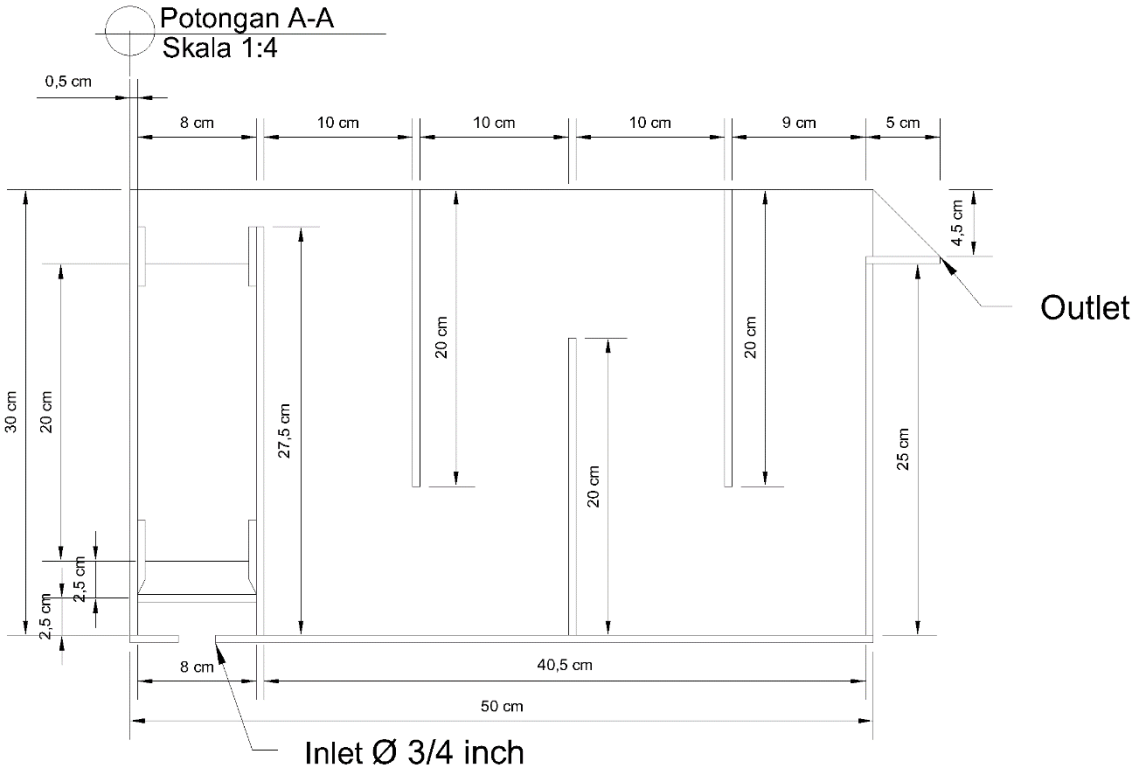
DETAIL B
SCALE 1 : 4

ITEM NO.	PART NUMBER	MATERIAL	Length (cm)	Width (cm)	Thickness (cm)	QTY.
1	A1	Glass	50	30	0.5	2
2	A2	Polyester Resin	30	8	0.5	1
3	A3	Glass	27.5	8	0.5	1
4	A4	Polyester Resin	25	8	0.5	1
5	A5	Polyester Resin	4.5	4.5	0.5	2
6	B1	Polyester Resin	8	8	0.5	1
7	B2	Polyester Resin	9	5	0.5	1
8	B3	Glass	20	8	0.5	3
9	Base	Polyester Resin	50	9	0.5	1
10	Cover	Polyester Resin	50	9	0.5	1
11	P1	Polyester Resin	8	5	0.5	2
12	P2	Polyester Resin	8	4	0.5	2
13	Electorde	1100-O Rod (SS)	20	8	0.2	8

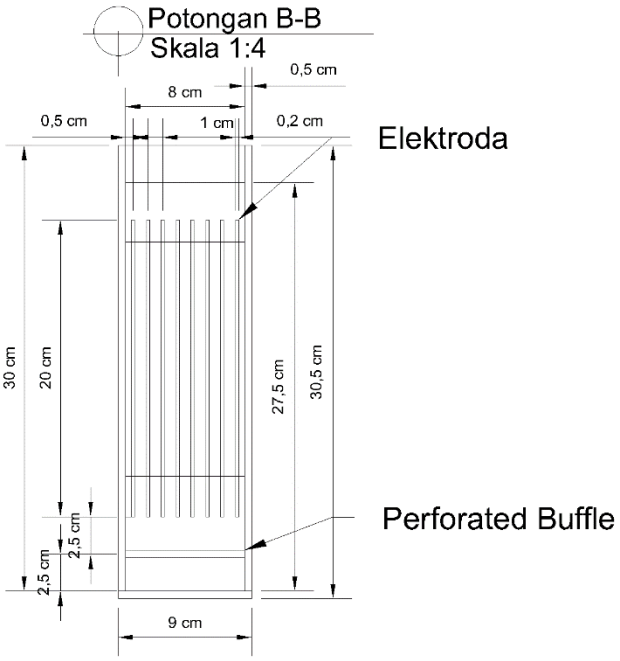
B. Tampak Atas Reaktor



C. Potongan A-A Reaktor



D. Potongan B-B Reaktor



Lampiran 2. Metode Pengujian Sampel

A. Parameter *Power of Hydrogen* (pH)

Metode pengujian sampel pada parameter pH dilakukan berdasarkan SNI 06-6989.11-2004 Tentang Air dan air limbah – Bagian 11: Cara uji derajat keasama (pH) dengan menggunakan alat pH meter. Metode pengukuran pH dilakukan berdasarkan pengukuran aktivitas ion hidrogen secara potensiometri atau elektrometri dengan menggunakan pH meter. Adapun pengujian dilakukan sebagai berikut:

1. Alat
   - pH meter;
   - Gelas piala 250 mL; dan
   - Kertas tisu;
2. Bahan
   - Larutan contoh uji;
   - Air bebas mineral (aquades); dan
   - Larutan penyangga (*buffer*).
3. Prosedur Pengujian
   a. Kalibrasi pH meter
      1) Bilas elektrode dengan aquades terlebih dahulu dan
      2) Lakukan kalibrasi alat pH meter dengan larutan penyangga sesuai instruksi kerja alat.
   b. Pengukuran Contoh Uji
      1) Keringkan elektrode dengan kertas tisu;
      2) Bilas elektrode dengan aquades;
      3) Bilas elektrode dengan contoh uji;
      4) Celupkan elektrode ke dalam contoh uji sampai pH meter menunjukkan pembacaan yang tetap selama 1 menit; dan
      5) Catat hasil pembacaan pada tampilan dari pH meter

B. Parameter *Chemical Oxygen Demand* (COD)

Metode pengujian sampel pada parameter COD berdasarkan SNI 06-6989.15-2005 Tentang Air dan air limbah – Bagian 15: Cara uji kebutuhan oksigen kimiawi (KOK) refluks terbuka dengan refluks terbuka secara titrimetri. Metode pengukuran ini menggunakan refluks yang berisikan zat organik yang dioksidasi dengan campuran mendidih asam sulfat dan kalium dikromat yang diketahui normalitasnya dalam suatu refluk selama 2 jam. Kelebihan kalium dikromat yang tidak tereduksi, dititrasi dengan larutan ferro ammonium sulfat (FAS). Adapun pengujian dilakukan sebagai berikut:

1. lat
   - Pendingin Liebig 30 cm;
   - Hot plate;
   - Statif dan Klem;
   - Buret 25 mL;
   - Pipet volumetrik 5 mL; 10 mL; dan 15 mL;
   - Pipet tetes;
   - Erlenmeyer 250 mL; dan
   - Timbangan analitik.
2. Bahan
   - Larutan contoh uji;
   - Air bebas mineral (aquades)
   - Larutan Kalium dikromat, $K_2Cr_2O_7$ 0,25 N;
   - Larutan Asam sulfat – perak sulfat;
   - Larutan indikator Ferroin;
   - Larutan Ferro Ammonium Sulfat, FAS 0,1 N;
   - Serbuk Merkuri sulfat, $HgSO_4$; dan
   - Batu didih.
3. Prosedur Pengujian
   a. Pipet 10 mL contoh uji, masukkan ke dalam erlenmeyer 250 mL;
   b. Tambahkan 0,2 g serbuk $HgSO_4$ dan beberapa batu didih;
   c. Tambahkan 5 mL larutan kalium dikromat, $K_2Cr_2O_7$ 0,25 N;

d. Tambahkan 15 mL pereaksi asam sulfat – perak sulfat perlahan-lahan sambil didinginkan dalam air pendingin;
e. Hubungkan dengan pendingin Liebig dan didihkan di atas hot plate selama 2 jam;
f. Dinginkan dan cuci bagian dalam dari pendingin dengan air suling hingga volume contoh uji menjadi lebih kurang 70 mL;
g. Dinginkan sampai temperatur kamar, tambahkan indikator ferroin 2, titrasi dengan larutan FAS 0,1 N sampai warna merah kecokelatan, catat volume larutan FAS; dan
h. Lakukan langkah a sampai dengan g terhadap aquades sebagai blanko. Catat volume larutan FAS.

4. Perhitungan

$$COD(mg/L) = \frac{(A - B) \times 8000 \times N}{V}$$

Keterangan

A = volume larutan FAS untuk blanko (mL)
B = volume larutan FAS untuk larutan uji (mL)
N = normalitas FAS (N)
V = volume larutan contoh uji (mL)

C. Parameter *Total Suspended Solid* (TSS)

Metode pengujian sampel pada parameter TSS berdasarkan SNI 6989.3:2019 Tentang Air dan air limbah – Bagian 3: Cara uji padatan tersuspensi total (*total suspended solids*/TSS) secara gravimetri. Pengujiam dilakukan dengan contoh uji yang telah homogen disaring dengan media penyaring yang telah ditimbang. Residu yang tertahan pada media penyaring dikeringkan pada kisaran suhu 103 ºC - 105 ºC hingga mencapai berat tetap. Kenaikan berat saringan mewakili total padatan tersuspensi. Adapun pengujian dilakukan sebagai berikut:

1. Alat
   - Desikator;
   - Oven;
   - Timbangan analitik;
   - Pipet volumetrik 10 ml;
   - Cawan;
   - Alat penyaring;
   - Sistem vakum; dan
   - Pinset.
2. Bahan
   - Larutan contoh uji;
   - Kertas saring glass microfiber dengan pori 1,2 μm (Whatman GF/C ™); dan
   - Air bebas mineral (aquades).
3. Prosedur Pengujian
   a. Persiapan kerta saring
      1) Letakkan kerta saring pada peralatan penyaring;
      2) Pasang sistem vakum, hidupkan pompa vakum kemudian bilas kerta saring dengan aquades 20 mL.
      3) Lanjutkan pengisapan hingga tiris, matikan pompa vakum;
      4) Pindahkan kertas saring ke dalam cawan menggunakan pinset.
      5) Keringkan cawan yang berisi kertas saring dalam oven selama 2 jam menit;
      6) Dinginkan cawan dan kertas saring dalam desikator; dan

7) Timbang cawan bersama kertas saring sehingga diperoleh berat tetap (W_0).

b. Pengujian total padatan tersuspesi

1) Letakkan kertas saring pada perlatan penyaring;
2) Aduk contoh uji hingga diperoleh contoh uji yang homogen;
3) Ambil contoh uji 10 mL dan masukkan ke dalam peralatan penyaring. Nyalakan sistem vakum;
4) Pindahkan kertas saring secara hati-hati dari peralatan penyaring menggunakan pinset ke cawan.
5) Keringkan cawan yang berisi kertas saring dalam oven selama 2 jam;
6) Dinginkan cawan dan kertas saring dalam desikator; dan
7) Timbang cawan berisi kertas saring sehingga diperoleh berat tetap (W_1).

4. Perhitungan

$$TSS(mg/L) = \frac{(W_1 - W_0) \times 1000}{V}$$

Keterangan:

W = berat hasil penimbangan (mg)

V = volume larutan contoh uji (mL)

D. Parameter Fosfat (PO_4)

Metode pengujian sampel pada parameter Fosfat berdasarkan SNI 06-6989.31-2005 Tentang Air dan air limbah – Bagian 31: Cara uji kadar fosfat dengan spektrofotometer secara asam askorbat. Metode ini memanfaatkan suasana asam pada amonium molibdat dan kalium antimonil tartrat yang bereaksi dengan ortofosfat membentuk senyawa asam fosfomolibdat kemudian direduksi oleh asam askorbat menjadi kompleks biru molibden. Intensitas warna biru yang terjadi diukur dengan alat spektrofotometer pada panjang gelombang 880 nm. Adapun pengujian dilakukan dengan:

1. Alat
   - Spektrofotometer;
   - Erlenmeyer 125 mL;
   - Pipat volume 50 mL;
   - Pipet ukur 10 mL;
   - Gelas piala 250 mL; dan
   - Pipet tetes.
2. Bahan
   - Larutan contoh uji;
   - Air bebas mineral (aquades);
   - Larutan induk fosfat;
   - Larutan kerja dengan 3 kadar berbeda;
   - Asam sulfat, H_2SO_4 5N;
   - Larutan campuran; dan
   - Indikator fenolftalin.
3. Prosedur Pengujian
   a. Pembuatan larutan campuran pada gelas piala yang terdiri dari:
      1) 50 mL H2SO4 5N;
      2) 5 mL larutan kalium antimonil tartrat;
      3) 15 mL larutan ammonium molibdat; dan
      4) 30 mL larutan asam askorbat
   b. Pembuatan Kurva Kalibrasi

1) Optimalkan alat spektrofotometer sesuai dengan petunjuk alat untuk pengujian kadar fosfat;
2) Ambil 50 mL larutan kerja masukkan masing-masing ke dalam erlenmeyer;
3) Tambahkan 1 tetes indikator fenolftalin. Jika terbentuk warna merah muda, tambahkan tetes demi tetes H_2SO_4 5N sampai warna hilang;
4) Tambahkan 8 mL larutan campuran dan dihomogenkan;
5) Masukkan ke dalam kuvet pada alat spektrofotometer, ukur dan catat serapannya pada panjang gelombang 880 nm dalam kisaran waktu antara 10 menit - 30 menit.
6) Buat kurva kalibrasi menggunakan data pada tahap e dan tentukan persamaan garis lurusnya; dan
7) Jika koefisien korelasi regresi linier (r) lebih kecil dari 0,995, periksa kondisi alat dan ulangi langkah pembuatan kurva kalibrasi hingga diperoleh nilai koefisien r ≥ 0,995.

c. Pengujian Kadar Fosfat
1) Pipet 50 mL contoh uji secara duplo dan masukkan masing-masing ke dalam erlenmeyer;
2) Tambahkan 1 tetes indikator fenolftalin. Jika terbentuk warna merah muda, tambahkan tetes demi tetes H_2SO_4 5N sampai warna hilang;
3) Tambahkan 8 mL larutan campuran dan dihomogenkan;
4) Masukkan ke dalam kuvet pada alat spektrofotometer, ukur dan catat serapannya pada panjang gelombang 880 nm dalam kisaran waktu antara 10 menit - 30 menit; dan
5) Tentukan kadar fosfat dari kurva kalibrasi sehingga didapatkan kadar fosfat (C).

4. Perhitungan

$$Kadar\ Fosfat\ (mg\ P/L) = C \times fp$$

Keterangan

A = kadar fosfat yang didapatkan dari hasil pengukuran (ml/L)

fp = faktor pengenceran

Lampiran 3. Baku Mutu Air Limbah Detergen

-27-

LAMPIRAN X
PERATURAN MENTERI LINGKUNGAN HIDUP
REPUBLIK INDONESIA
NOMOR 5 TAHUN 2014
TENTANG
BAKU MUTU AIR LIMBAH

BAKU MUTU AIR LIMBAH BAGI USAHA DAN/ATAU KEGIATAN
INDUSTRI SABUN, DETERJEN DAN PRODUK-PRODUK MINYAK NABATI

Parameter	Kadar Paling Tinggi (mg/L)	Beban Pencemaran Paling Tinggi (kg/ton)		
		Sabun	Minyak Nabati	Diterjen
BOD_5	75	0,60	1,88	0,075
COD	180	1,44	4,50	0,180
TSS	60	0,48	1,50	0,06
Minyak dan Lemak	15	0,120	0,375	0,015
Fosfat (PO_4)	2	0,016	0,05	0,002
MBAS	3	0,024	0,075	0,003
pH	6,0 - 9,0			
Debit Limbah Paling Tinggi sabun		8 m^3 per ton Produk sabun	25 m^3 per ton produk minyak nabati	1 m^3 per ton Produk diterjen

Catatan:
1. Kadar paling tinggi untuk setiap parameter pada tabel di atas dinyatakan dalam miligram parameter per liter air limbah.
2. Beban pencemaran paling tinggi untuk setiap parameter pada tabel di atas dinyatakan dalam kg parameter per ton produk sabun, minyak nabati dan diterjen.

MENTERI LINGKUNGAN HIDUP
REPUBLIK INDONESIA,

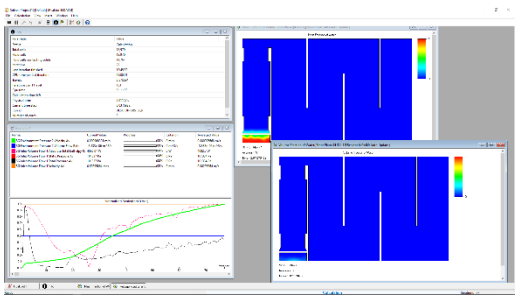
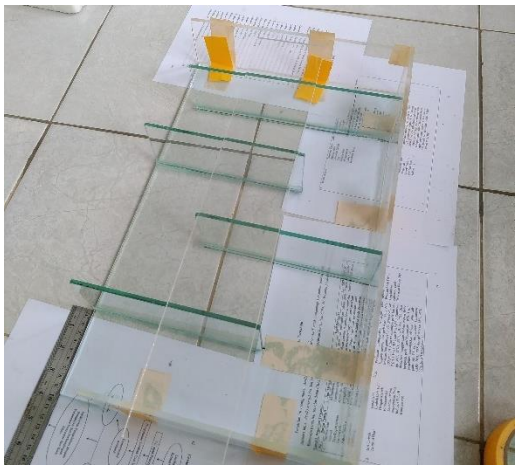
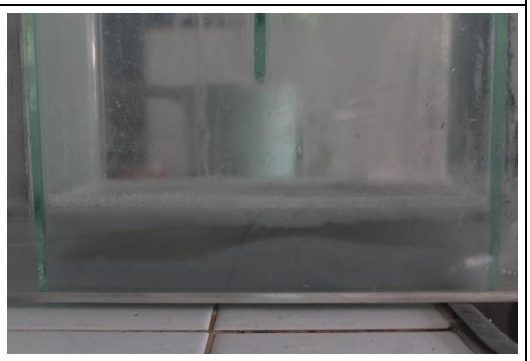
ttd

BALTHASAR KAMBUAYA

Salinan sesuai dengan aslinya
Kepala Biro Hukum dan Humas

Rosa Vivien Ratnawati

Lampiran 4. Dokumentasi

<table>
<tr><th colspan="2">Perencanaan Desain Reaktor</th></tr>
<tr><td> 
Perancangan desain reaktor pada aplikasi SolidWorks</td><td> 
Simulasi aliran air Computational Fluid Dynamics (CFD) pada aplikasi SolidWorks Flow Simulation</td></tr>
<tr><th colspan="2">Persiapan Eksperimen</th></tr>
<tr><td> 
Pembuatan reaktor elektrokoagulasi</td><td> 
Pengambilan sampel air limbah detergen</td></tr>
<tr><th colspan="2">Pengujian Pengolahan Air Limbah</th></tr>
<tr><td> 
Pelaksanaan pengolahan air limbah</td><td> 
Pembentukan padatan yang tersedimentasi</td></tr>
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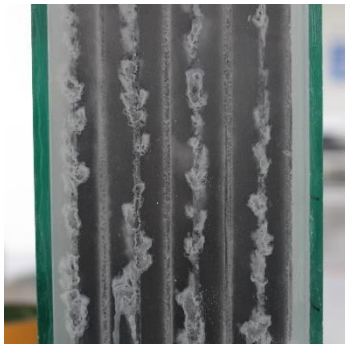
<table>
<tr><td> 
Proses elektrokoagulasi pada elektrode</td><td> 
Sampel hasil pengolahan</td></tr>
<tr><td colspan="2">Pengujian Sampel Air Limbah</td></tr>
<tr><td colspan="2">Pengujian pH</td></tr>
<tr><td> 
Instrumen pH meter</td><td> 
Pengujian menggunakan pH meter</td></tr>
<tr><td colspan="2">Pengujian COD</td></tr>
<tr><td> 
Sampel hasil pengujian COD</td><td> 
Pengujian COD dengan metode volumetri</td></tr>
</table>

Pengujian TSS	
	
Sampel hasil pengujian TSS	Pengujian TSS dengan metode gravimetri
Pengujian Fosfat	
	
Sampel hasil pengujian fosfat	Pengujian fosfat dengan metode spektrofotmetri

Lampiran 5. Laporan Hasil Pengujian

LABORATORIUM KUALITAS AIR
DEPARTEMEN TEKNIK LINGKUNGAN
FAKULTAS TEKNIK UNIVERSITAS HASANUDDIN
Lantai 3 Gedung Sipil Fakultas Teknik Universitas Hasanuddin
Jln. Poros Malino KM.6, Bonto Marannu (92172) Gowa, Sulawesi Selatan

LAPORAN HASIL PENGUJIAN

Berdasarkan pengujian sampel air yang dilakukan di Laboratorium Kualitas Air Departemen Teknik Lingkungan Fakultas Teknik Universitas Hasanuddin oleh:

Nama Praktikan : Irsyaad Caesar Ramadhan

Lokasi Sampel : Laundry Shifa, Kecamatan Bontomarannu, Kabupaten Gowa, Sulawesi Selatan dan Departemen Teknik Lingkungan Fakultas Teknik Universitas Hasanuddin.

Hari, Tanggal Sampel : Senin, 10 Januari 2022 – Selasa, 25 Januari 2022

Hari, Tanggal Analisis : Selasa, 11 Januari 2022 – Kamis, 27 Januari 2022

Maka dilampirkan hasil pengujian terhadap sampel air sebagai berikut:

A. Parameter *Power of Hydrogen* (SNI 06-6989.11-2004)

Variasi	Konsentrasi			Baku Mutu*	Ket.**
	I	II	Rata-Rata		
Q0V0	10,41	10,42	10,42		TM
Q1V1	10,38	10,38	10,38		TM
Q1V2	10,36	10,36	10,36		TM
Q1V3	10,30	10,30	10,30		TM
Q1V4	10,23	10,22	10,23		TM
Q2V1	10,39	10,39	10,39		TM
Q2V2	10,39	10,38	10,39		TM
Q2V3	10,37	10,37	10,37		TM
Q2V4	10,32	10,31	10,32	6 - 9	TM
Q3V1	10,39	10,40	10,40		TM
Q3V2	10,39	10,39	10,39		TM
Q3V3	10,38	10,38	10,38		TM
Q3V4	10,37	10,36	10,37		TM
Q4V1	10,41	10,41	10,41		TM
Q4V2	10,40	10,41	10,41		TM
Q4V3	10,40	10,40	10,40		TM
Q4V4	10,40	10,39	10,40		TM

* *Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia Nomor 5 Tahun 2014 Tentang Baku Mutu Air Limbah*

** *M=Memenuhi; TM=Tidak Memenuhi*

LABORATORIUM KUALITAS AIR
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Jln. Poros Malino KM.6, Bonto Marannu (92172) Gowa, Sulawesi Selatan

B. Parameter *Chemical Oxygen Demand* (SNI 06-6989.15-2005)

Variasi	Konsentrasi (mg/L)			Baku Mutu* (mg/L)	Ket.**
	I	II	Rata-Rata		
Q0V0	8440	8440	8440		TM
Q1V1	7360	7360	7360		TM
Q1V2	7040	7060	7050		TM
Q1V3	7000	7020	7010		TM
Q1V4	6520	6540	6530		TM
Q2V1	8020	8040	8030		TM
Q2V2	7920	7920	7920		TM
Q2V3	7360	7400	7380		TM
Q2V4	7200	7000	7100	180	TM
Q3V1	8240	8200	8220		TM
Q3V2	8060	8080	8070		TM
Q3V3	7880	7880	7880		TM
Q3V4	7440	7440	7440		TM
Q4V1	8400	8380	8390		TM
Q4V2	8340	8360	8350		TM
Q4V3	8320	8320	8320		TM
Q4V4	8280	8260	8270		TM

* *Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia Nomor 5 Tahun 2014 Tentang Baku Mutu Air Limbah*

** *M=Memenuhi; TM=Tidak Memenuhi*

C. Parameter *Total Suspended Solid* (SNI 6989.3:2019)

Variasi	Konsentrasi (mg/L)			Baku Mutu* (mg/L)	Ket.**
	I	II	Rata-Rata		
Q0V0	1978	1975	1976		TM
Q1V1	310	305	308		TM
Q1V2	123	125	124		TM
Q1V3	95	95	95		TM
Q1V4	60	57	58		M
Q2V1	485	428	456		TM
Q2V2	252	260	256		TM
Q2V3	130	127	128		TM
Q2V4	67	63	65	60	TM
Q3V1	628	660	644		TM
Q3V2	325	318	322		TM
Q3V3	142	135	138		TM
Q3V4	93	93	93		TM
Q4V1	1270	1230	1250		TM
Q4V2	658	672	665		TM
Q4V3	220	220	220		TM
Q4V4	112	123	118		TM

* *Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia Nomor 5 Tahun 2014 Tentang Baku Mutu Air Limbah*

** *M=Memenuhi; TM=Tidak Memenuhi*

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D. Parameter Fosfat (SNI 06-6989.31-2005)

Variasi	Konsentrasi (mg/L)			Baku Mutu* (mg/L)	Ket.**
	I	II	Rata-Rata		
Q0V0	3,350	3,329	3,340		TM
Q1V1	1,733	1,754	10,38		M
Q1V2	1,567	1,546	10,36		M
Q1V3	1,194	1,215	10,30		M
Q1V4	0,759	0,779	10,23		M
Q2V1	2,023	2,044	10,39		TM
Q2V2	1,837	1,857	10,39		M
Q2V3	1,339	1,339	10,37		M
Q2V4	1,194	1,194	10,32	2	M
Q3V1	2,168	2,189	10,40		TM
Q3V2	1,920	1,899	10,39		M
Q3V3	1,588	1,609	10,38		M
Q3V4	1,339	1,318	10,37		M
Q4V1	2,417	2,396	10,41		TM
Q4V2	1,959	2,044	10,41		M
Q4V3	1,712	1,712	10,40		M
Q4V4	1,484	1,484	10,40		M

* *Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia Nomor 5 Tahun 2014 Tentang Baku Mutu Air Limbah*

** *M=Memenuhi; TM=Tidak Memenuhi*

Demikian pelaporan hasil pengujian sampel untuk dapat digunakan sebagai mana mestinya.

Gowa, 27 Januari 2022

Mengetahui,
Laboran Laboratorium Kualitas Air
Departemen Teknik Lingkungan

Syarifuddin, S.T
NIP. 19600730 198903 1 003

Praktikan Laboratorium Kualitas Air
Departemen Teknik Lingkungan

Irsyaad Caesar Ramadhan
NIM D131171303

Lampiran 6. Hasil Analisis Statistika

A. Pengaruh Tegangan Listrik dan Debit Aliran Regresi Linier Berganda

```
REGRESSION
 /MISSING LISTWISE
 /STATISTICS COEFF OUTS CI(95) R ANOVA CHANGE
 /CRITERIA=PIN(.05) POUT(.10)
 /NOORIGIN
 /DEPENDENT Y1
 /METHOD=ENTER X1 X2
 /RESIDUALS DURBIN.
```

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Debit Aliran, Tegangan Listrik[b]	.	Enter

a. Dependent Variable: pH

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					R Square Change	F Change
1	.878[a]	.771	.736	.0248500	.771	21.929

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.027	2	.014	21.929	.000[b]
	Residual	.008	13	.001		
	Total	.035	15			

a. Dependent Variable: pH

b. Predictors: (Constant), Debit Aliran, Tegangan Listrik

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	10.373	.025		420.075	.000
	Tegangan Listrik	-.004	.001	-.552	-4.162	.001
	Debit Aliran	.000	.000	.683	5.151	.000

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Y2
  /METHOD=ENTER X1 X2
  /RESIDUALS DURBIN.
```

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Debit Aliran, Tegangan Listrik[b]	.	Enter

a. Dependent Variable: COD

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					R Square Change	F Change
1	.960[a]	.921	.909	.0208861	.921	75.845

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.066	2	.033	75.845	.000[b]
	Residual	.006	13	.000		
	Total	.072	15			

a. Dependent Variable: COD

b. Predictors: (Constant), Debit Aliran, Tegangan Listrik

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.124	.021		5.977	.000
	Tegangan Listrik	.004	.001	.434	5.568	.000
	Debit Aliran	.000	.000	-.856	-10.986	.000

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Y3
  /METHOD=ENTER X1 X2
  /RESIDUALS DURBIN.
```

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Debit Aliran, Tegangan Listrik[b]	.	Enter

a. Dependent Variable: TSS

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					R Square Change	F Change
1	.856[a]	.733	.692	.0889804	.733	17.821

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.282	2	.141	17.821	.000[b]
	Residual	.103	13	.008		
	Total	.385	15			

a. Dependent Variable: TSS

b. Predictors: (Constant), Debit Aliran, Tegangan Listrik

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.668	.088		7.553	.000
	Tegangan Listrik	.016	.003	.707	4.931	.000
	Debit Aliran	.000	.000	-.483	-3.366	.005

```
REGRESSION
 /MISSING LISTWISE
 /STATISTICS COEFF OUTS CI(95) R ANOVA CHANGE
 /CRITERIA=PIN(.05) POUT(.10)
 /NOORIGIN
 /DEPENDENT Y4
 /METHOD=ENTER X1 X2
 /RESIDUALS DURBIN.
```

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Debit Aliran, Tegangan Listrik[b]	.	Enter

a. Dependent Variable: Fosfat

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					R Square Change	F Change
1	.986[a]	.972	.968	.0227279	.972	227.385

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.235	2	.117	227.385	.000[b]
	Residual	.007	13	.001		
	Total	.242	15			

a. Dependent Variable: Fosfat

b. Predictors: (Constant), Debit Aliran, Tegangan Listrik

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.330	.023		14.612	.000
	Tegangan Listrik	.015	.001	.845	18.277	.000
	Debit Aliran	.000	.000	-.508	-10.988	.000

B. Pengaruh Tegangan Listrik Regresi Linier

```
TSET NEWVAR=NONE.
CURVEFIT
  /VARIABLES=Y1 Y2 Y3 Y4 WITH X1
  /CONSTANT
  /MODEL=LINEAR
  /PRINT ANOVA
  /PLOT FIT.
```

Model Description

Model Name		MOD_1
Dependent Variable	1	pH
	2	COD
	3	TSS
	4	Fosfat
Equation	1	Linear
Independent Variable		Tegangan Listrik
Constant		Included
Variable Whose Values Label Observations in Plots		Unspecified

Variable Processing Summary

		Variables Dependent			
		pH	COD	TSS	Fosfat
Number of Positive Values		16	16	16	16
Number of Zeros		0	0	0	0
Number of Negative Values		0	0	0	0
Number of Missing Values	User-Missing	0	0	0	0
	System-Missing	0	0	0	0

pH

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.552	.305	.255	.042

The independent variable is Tegangan Listrik.

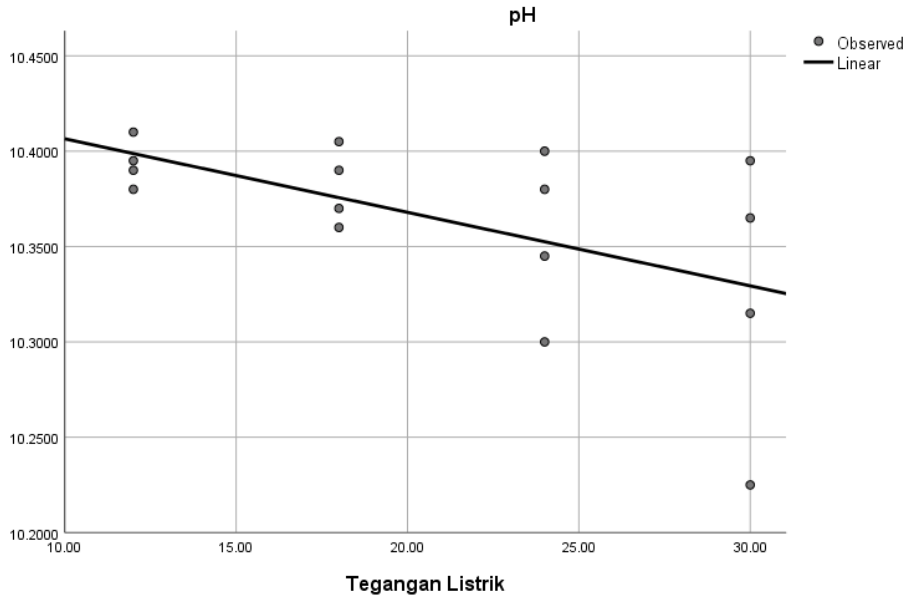
ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.011	1	.011	6.133	.027
Residual	.024	14	.002		
Total	.035	15			

The independent variable is Tegangan Listrik.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Tegangan Listrik	-.004	.002	-.552	-2.476	.027
(Constant)	10.445	.034		304.429	.000



COD

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.434	.188	.130	.065

The independent variable is Tegangan Listrik.

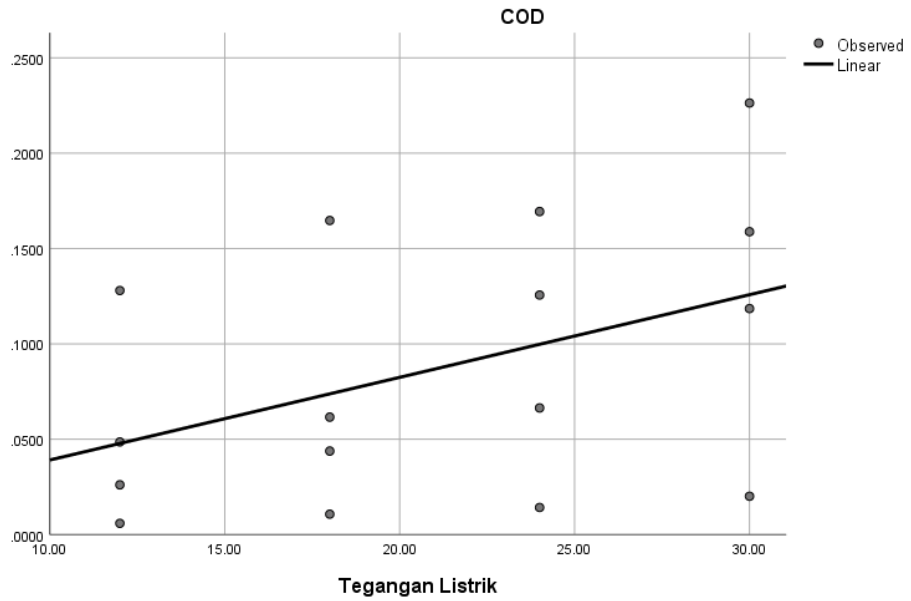
ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.014	1	.014	3.246	.093
Residual	.058	14	.004		
Total	.072	15			

The independent variable is Tegangan Listrik.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Tegangan Listrik	.004	.002	.434	1.802	.093
(Constant)	-.004	.053		-.079	.938



TSS

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.707	.500	.464	.117

The independent variable is Tegangan Listrik.

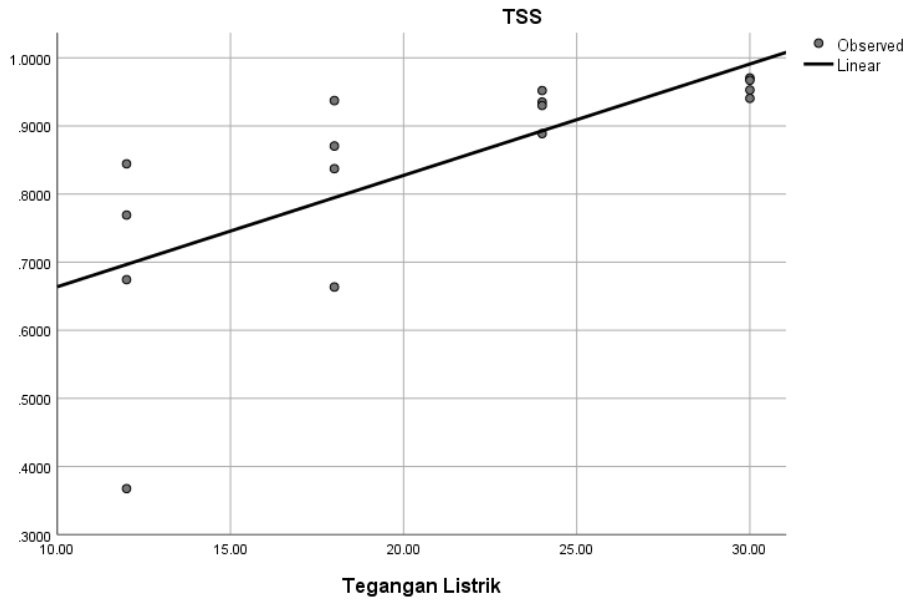
ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.192	1	.192	13.989	.002
Residual	.193	14	.014		
Total	.385	15			

The independent variable is Tegangan Listrik.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Tegangan Listrik	.016	.004	.707	3.740	.002
(Constant)	.500	.096		5.192	.000



Fosfat

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.845	.714	.694	.070

The independent variable is Tegangan Listrik.

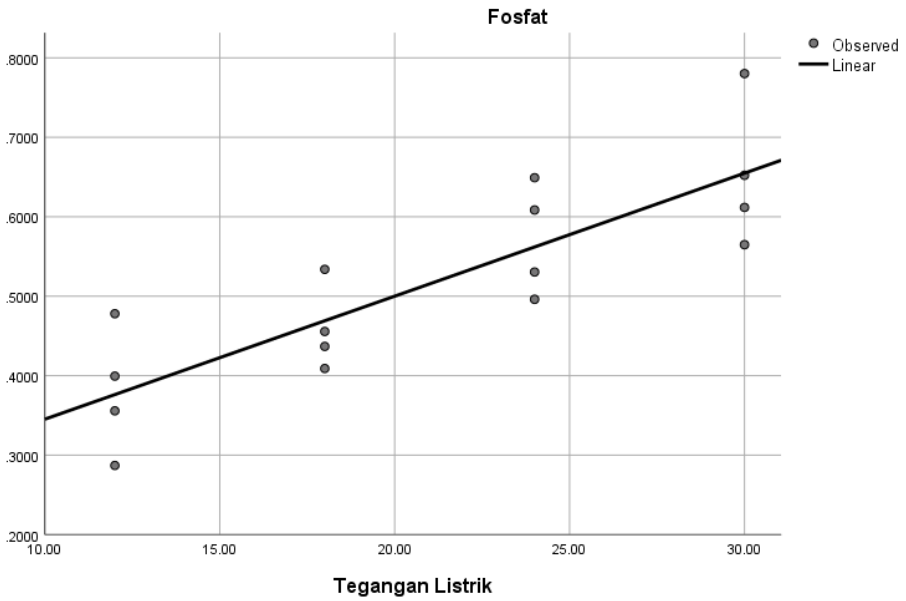
ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.173	1	.173	34.971	.000
Residual	.069	14	.005		
Total	.242	15			

The independent variable is Tegangan Listrik.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Tegangan Listrik	.015	.003	.845	5.914	.000
(Constant)	.190	.058		3.300	.005



C. Pengaruh Debit Aliran Regresi Linier

```
TSET NEWVAR=NONE.
CURVEFIT
  /VARIABLES=Y1 Y2 Y3 Y4 WITH X2
  /CONSTANT
  /MODEL=LINEAR
  /PRINT ANOVA
  /PLOT FIT.
```

Model Description

Model Name		MOD_2
Dependent Variable	1	pH
	2	COD
	3	TSS
	4	Fosfat
Equation	1	Linear
Independent Variable		Debit Aliran
Constant		Included
Variable Whose Values Label Observations in Plots		Unspecified

Variable Processing Summary

		Variables			
		Dependent			
		pH	COD	TSS	Fosfat
Number of Positive Values		16	16	16	16
Number of Zeros		0	0	0	0
Number of Negative Values		0	0	0	0
Number of Missing Values	User-Missing	0	0	0	0
	System-Missing	0	0	0	0

pH

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.683	.467	.429	.037

The independent variable is Debit Aliran.

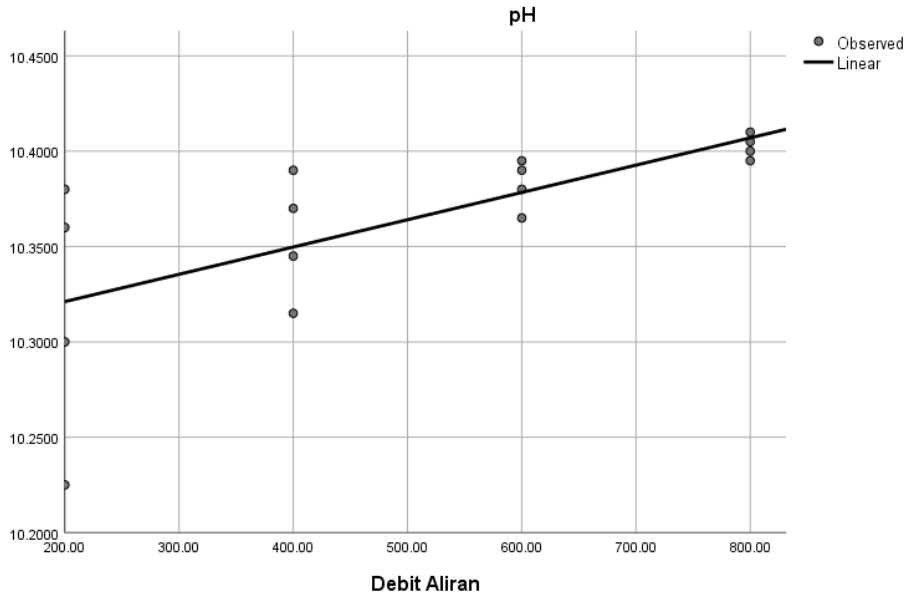
ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.016	1	.016	12.254	.004
Residual	.019	14	.001		
Total	.035	15			

The independent variable is Debit Aliran.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Debit Aliran	.000	.000	.683	3.501	.004
(Constant)	10.293	.022		459.600	.000



COD

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.856	.733	.714	.037

The independent variable is Debit Aliran.

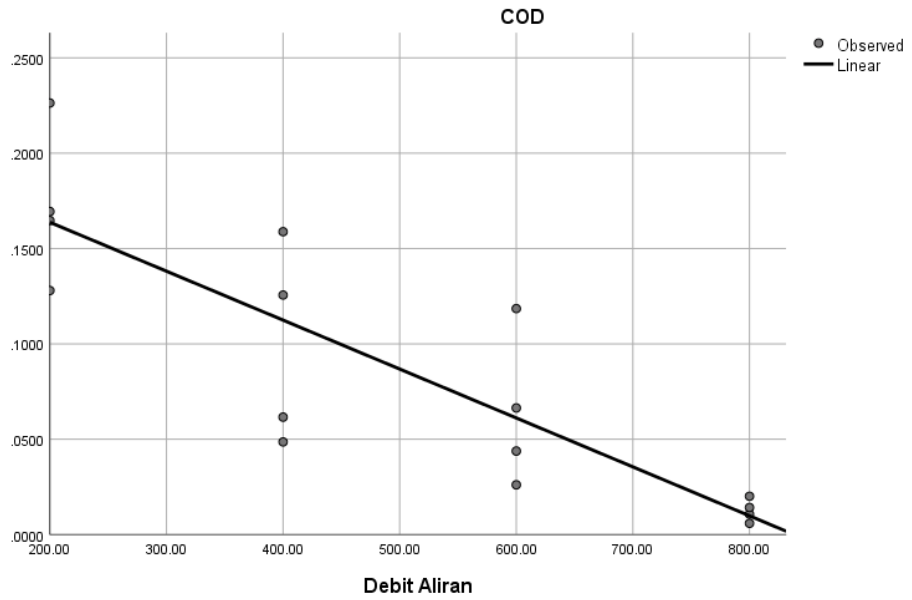
ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.053	1	.053	38.403	.000
Residual	.019	14	.001		
Total	.072	15			

The independent variable is Debit Aliran.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Debit Aliran	.000	.000	-.856	-6.197	.000
(Constant)	.215	.023		9.485	.000



TSS

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.483	.233	.178	.145

The independent variable is Debit Aliran.

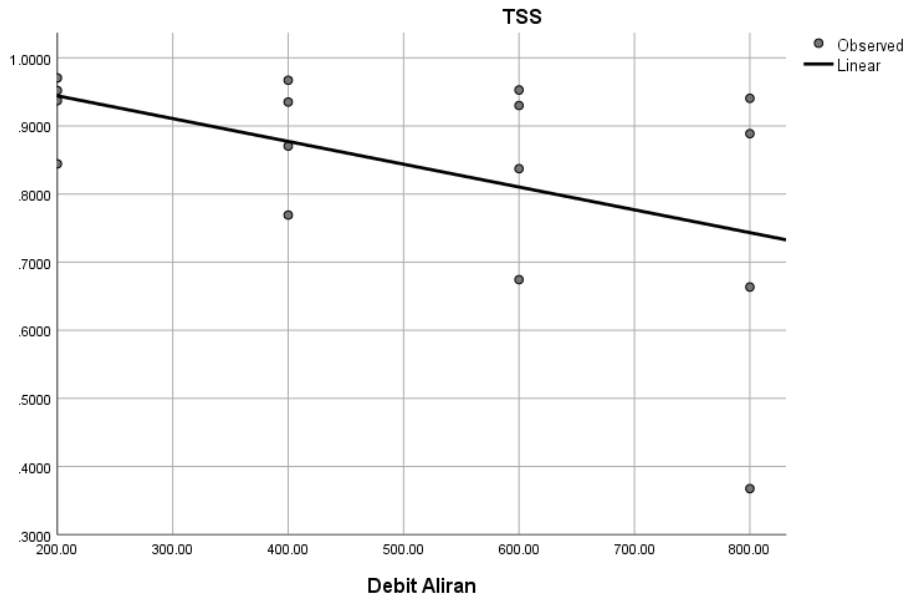
ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.090	1	.090	4.251	.058
Residual	.295	14	.021		
Total	.385	15			

The independent variable is Debit Aliran.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Debit Aliran	.000	.000	-.483	-2.062	.058
(Constant)	1.011	.089		11.368	.000



Fosfat

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.508	.258	.205	.113

The independent variable is Debit Aliran.

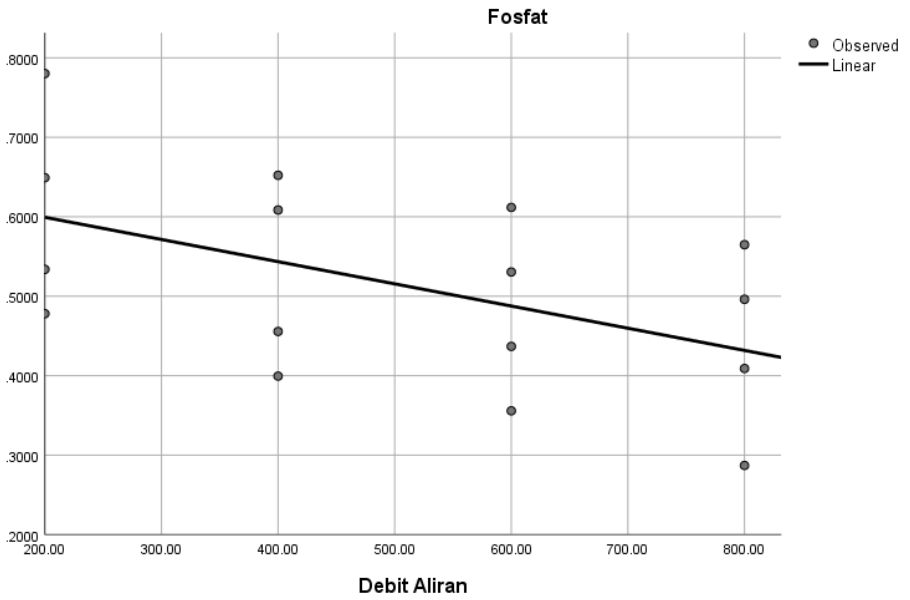
ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.062	1	.062	4.870	.045
Residual	.179	14	.013		
Total	.242	15			

The independent variable is Debit Aliran.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Debit Aliran	.000	.000	-.508	-2.207	.045
(Constant)	.655	.069		9.454	.000



D. *Curve Fitting* Hubungan Konsentrasi Aluminium

Curve Estimation.

```
TSET NEWVAR=NONE.
CURVEFIT
  /VARIABLES=Y1 Y2 Y3 Y4 WITH X3
  /CONSTANT
  /MODEL=LINEAR POWER EXPONENTIAL
  /PRINT ANOVA
  /PLOT FIT.
```

Curve Fit

Model Description

Model Name		MOD_2
Dependent Variable	1	pH
	2	COD
	3	TSS
	4	Fosfat
Equation	1	Linear
	2	Power[a]
	3	Exponential[a]
Independent Variable		Konsentrasi Aluminium
Constant		Included
Variable Whose Values Label Observations in Plots		Unspecified

a. The model requires all non-missing values to be positive.

Variable Processing Summary

		Variables			
		Dependent			
		pH	COD	TSS	Fosfat
Number of Positive Values		16	16	16	16
Number of Zeros		0	0	0	0
Number of Negative Values		0	0	0	0
Number of Missing Values	User-Missing	0	0	0	0
	System-Missing	0	0	0	0

pH

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.968	.936	.932	.013

The independent variable is Konsentrasi Aluminium.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.033	1	.033	206.126	.000
Residual	.002	14	.000		
Total	.035	15			

The independent variable is Konsentrasi Aluminium.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsentrasi Aluminium	-.001	.000	-.968	-14.357	.000
(Constant)	10.426	.005		1951.365	.000

Power

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.874	.764	.747	.002

The independent variable is Konsentrasi Aluminium.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.000	1	.000	45.284	.000
Residual	.000	14	.000		
Total	.000	15			

The independent variable is Konsentrasi Aluminium.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
ln(Konsentrasi Aluminium)	-.006	.001	-.874	-6.729	.000
(Constant)	10.581	.033		318.221	.000

The dependent variable is ln(pH).

Exponential

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.968	.936	.932	.001

The independent variable is Konsentrasi Aluminium.

ANOVA

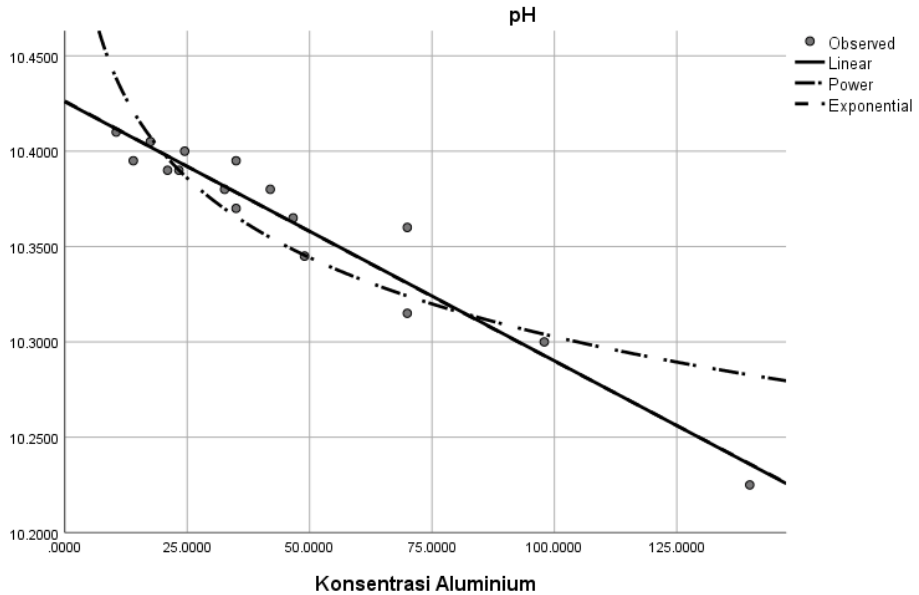
	Sum of Squares	df	Mean Square	F	Sig.
Regression	.000	1	.000	205.736	.000
Residual	.000	14	.000		
Total	.000	15			

The independent variable is Konsentrasi Aluminium.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsentrasi Aluminium	.000	.000	-.968	-14.343	.000
(Constant)	10.426	.005		1930.655	.000

The dependent variable is ln(pH).



COD

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.915	.837	.825	244.356

The independent variable is Konsentrasi Aluminium.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	4281164.211	1	4281164.211	71.700	.000
Residual	835935.789	14	59709.699		
Total	5117100.000	15			

The independent variable is Konsentrasi Aluminium.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsentrasi Aluminium	-15.506	1.831	-.915	-8.468	.000
(Constant)	8413.638	103.375		81.390	.000

Power

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.930	.865	.856	.029

The independent variable is Konsentrasi Aluminium.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.078	1	.078	90.004	.000
Residual	.012	14	.001		
Total	.090	15			

The independent variable is Konsentrasi Aluminium.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
ln(Konsentrasi Aluminium)	-.102	.011	-.930	-9.487	.000
(Constant)	11074.848	434.082		25.513	.000

The dependent variable is ln(COD).

Exponential

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.925	.856	.846	.030

The independent variable is Konsentrasi Aluminium.

ANOVA

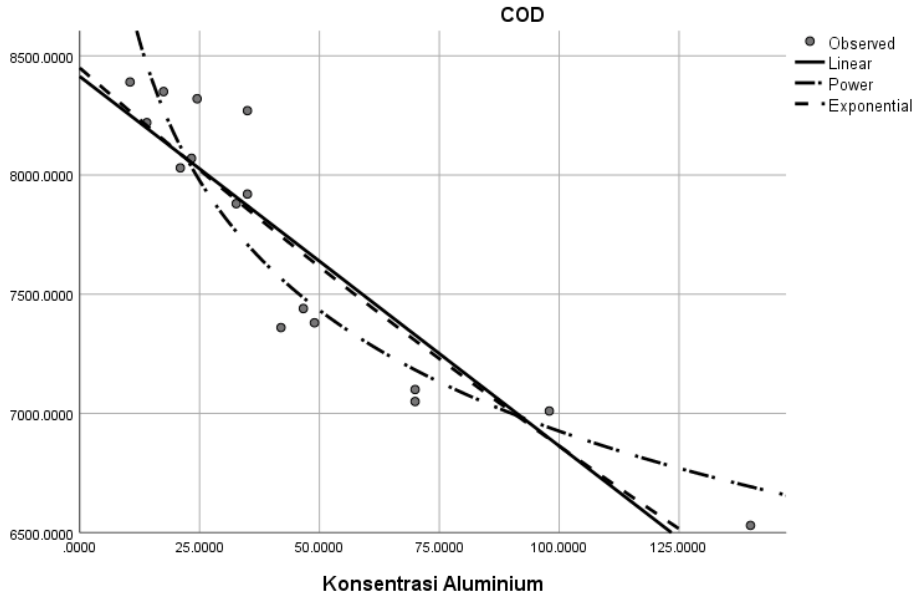
	Sum of Squares	df	Mean Square	F	Sig.
Regression	.077	1	.077	83.393	.000
Residual	.013	14	.001		
Total	.090	15			

The independent variable is Konsentrasi Aluminium.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsentrasi Aluminium	-.002	.000	-.925	-9.132	.000
(Constant)	8449.529	108.601		77.803	.000

The dependent variable is ln(COD).



TSS

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.593	.351	.305	264.072

The independent variable is Konsentrasi Aluminium.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	528374.278	1	528374.278	7.577	.016
Residual	976272.722	14	69733.766		
Total	1504647.000	15			

The independent variable is Konsentrasi Aluminium.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsentrasi Aluminium	-5.447	1.979	-.593	-2.753	.016
(Constant)	556.823	111.715		4.984	.000

Power

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.908	.824	.811	.390

The independent variable is Konsentrasi Aluminium.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.959	1	9.959	65.402	.000
Residual	2.132	14	.152		
Total	12.090	15			

The independent variable is Konsentrasi Aluminium.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
ln(Konsentrasi Aluminium)	-1.153	.143	-.908	-8.087	.000
(Constant)	12929.127	6726.062		1.922	.075

The dependent variable is ln(TSS).

Exponential

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.773	.598	.569	.589

The independent variable is Konsentrasi Aluminium.

ANOVA

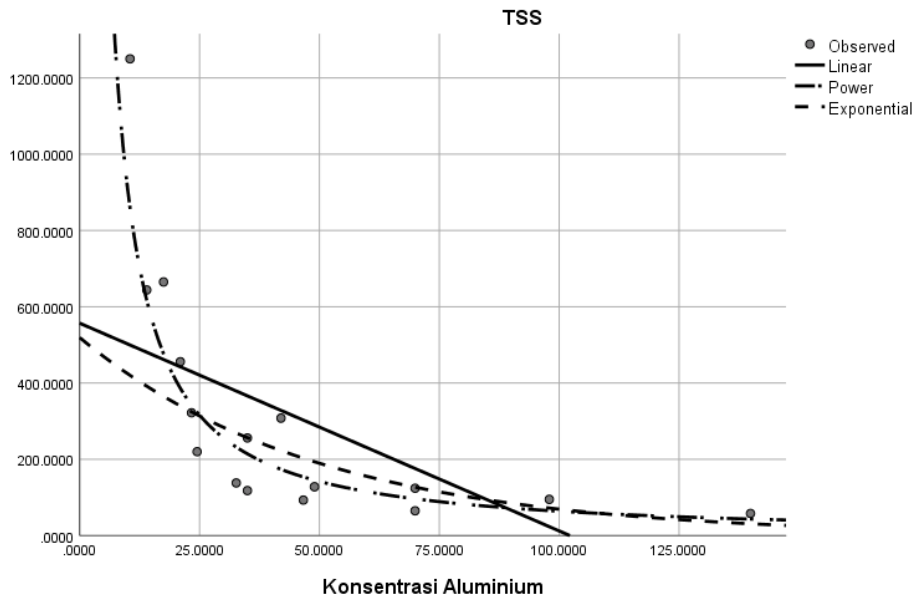
	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.227	1	7.227	20.801	.000
Residual	4.864	14	.347		
Total	12.090	15			

The independent variable is Konsentrasi Aluminium.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsentrasi Aluminium	-.020	.004	-.773	-4.561	.000
(Constant)	519.144	129.451		4.010	.001

The dependent variable is ln(TSS).



Fosfat

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.873	.763	.746	.214

The independent variable is Konsentrasi Aluminium.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.056	1	2.056	44.954	.000
Residual	.640	14	.046		
Total	2.696	15			

The independent variable is Konsentrasi Aluminium.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsentrasi Aluminium	-.011	.002	-.873	-6.705	.000
(Constant)	2.107	.090		23.293	.000

Power

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.914	.836	.825	.123

The independent variable is Konsentrasi Aluminium.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.075	1	1.075	71.511	.000
Residual	.210	14	.015		
Total	1.285	15			

The independent variable is Konsentrasi Aluminium.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
ln(Konsentrasi Aluminium)	-.379	.045	-.914	-8.456	.000
(Constant)	6.062	.991		6.118	.000

The dependent variable is ln(Fosfat).

Exponential

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.919	.844	.833	.120

The independent variable is Konsentrasi Aluminium.

ANOVA

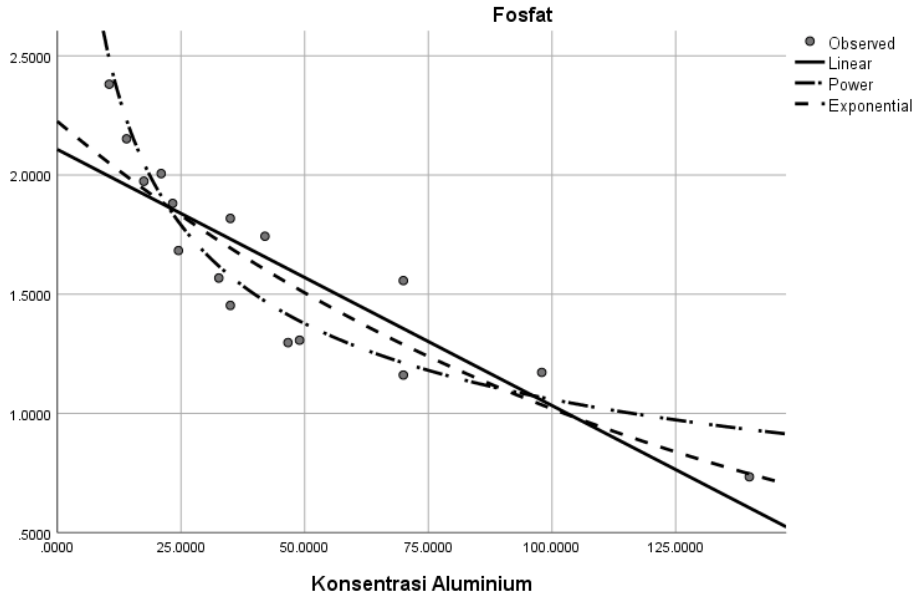
	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.085	1	1.085	75.985	.000
Residual	.200	14	.014		
Total	1.285	15			

The independent variable is Konsentrasi Aluminium.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsentrasi Aluminium	-.008	.001	-.919	-8.717	.000
(Constant)	2.225	.113		19.778	.000

The dependent variable is ln(Fosfat).



E. *Curve Fitting* Hubungan Konsumsi Energi

Curve Estimation.

```
TSET NEWVAR=NONE.
CURVEFIT
  /VARIABLES=Y1 Y2 Y3 Y4 WITH X4
  /CONSTANT
  /MODEL=LINEAR POWER EXPONENTIAL
  /PRINT ANOVA
  /PLOT FIT.
```

Curve Fit

Model Description

Model Name		MOD_3
Dependent Variable	1	pH
	2	COD
	3	TSS
	4	Fosfat
Equation	1	Linear
	2	Power[a]
	3	Exponential[a]
Independent Variable		Konsumsi Energi
Constant		Included
Variable Whose Values Label Observations in Plots		Unspecified

a. The model requires all non-missing values to be positive.

Variable Processing Summary

		Variables			
		Dependent			
		pH	COD	TSS	Fosfat
Number of Positive Values		16	16	16	16
Number of Zeros		0	0	0	0
Number of Negative Values		0	0	0	0
Number of Missing Values	User-Missing	0	0	0	0
	System-Missing	0	0	0	0

pH

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.968	.938	.933	.013

The independent variable is Konsumsi Energi.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.033	1	.033	210.507	.000
Residual	.002	14	.000		
Total	.035	15			

The independent variable is Konsumsi Energi.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsumsi Energi	-.015	.001	-.968	-14.509	.000
(Constant)	10.412	.005		2290.848	.000

Power

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.828	.685	.663	.003

The independent variable is Konsumsi Energi.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.000	1	.000	30.474	.000
Residual	.000	14	.000		
Total	.000	15			

The independent variable is Konsumsi Energi.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
ln(Konsumsi Energi)	-.004	.001	-.828	-5.520	.000
(Constant)	10.395	.009		1147.099	.000

The dependent variable is ln(pH).

Exponential

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.969	.938	.934	.001

The independent variable is Konsumsi Energi.

ANOVA

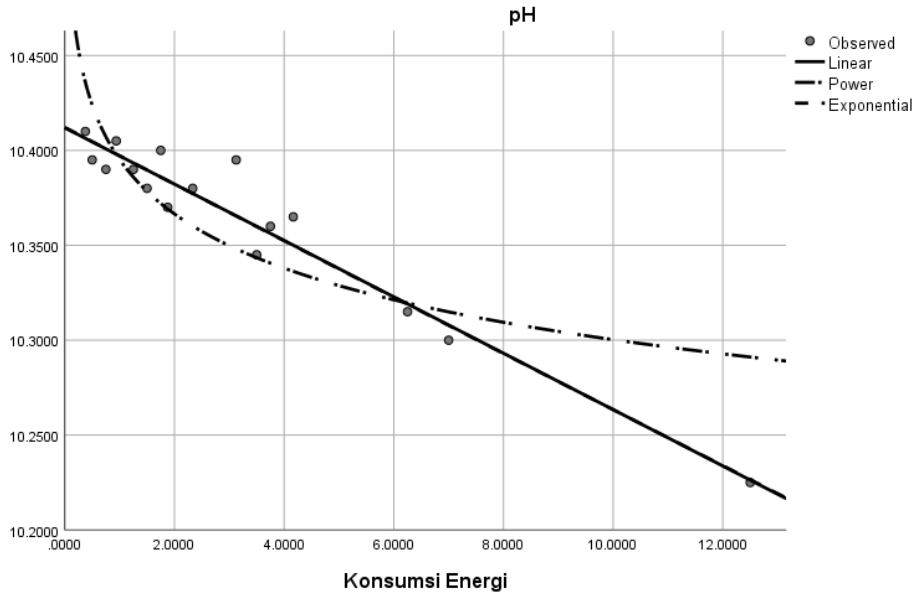
	Sum of Squares	df	Mean Square	F	Sig.
Regression	.000	1	.000	211.927	.000
Residual	.000	14	.000		
Total	.000	15			

The independent variable is Konsumsi Energi.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsumsi Energi	-.001	.000	-.969	-14.558	.000
(Constant)	10.412	.005		2278.775	.000

The dependent variable is ln(pH).



COD

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.840	.705	.684	328.316

The independent variable is Konsumsi Energi.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	3608019.622	1	3608019.622	33.472	.000
Residual	1509080.378	14	107791.456		
Total	5117100.000	15			

The independent variable is Konsumsi Energi.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsumsi Energi	-155.481	26.874	-.840	-5.786	.000
(Constant)	8208.567	119.322		68.793	.000

Power

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.829	.687	.665	.045

The independent variable is Konsumsi Energi.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.062	1	.062	30.762	.000
Residual	.028	14	.002		
Total	.090	15			

The independent variable is Konsumsi Energi.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
ln(Konsumsi Energi)	-.066	.012	-.829	-5.546	.000
(Constant)	8078.500	115.971		69.659	.000

The dependent variable is ln(COD).

Exponential

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.853	.728	.709	.042

The independent variable is Konsumsi Energi.

ANOVA

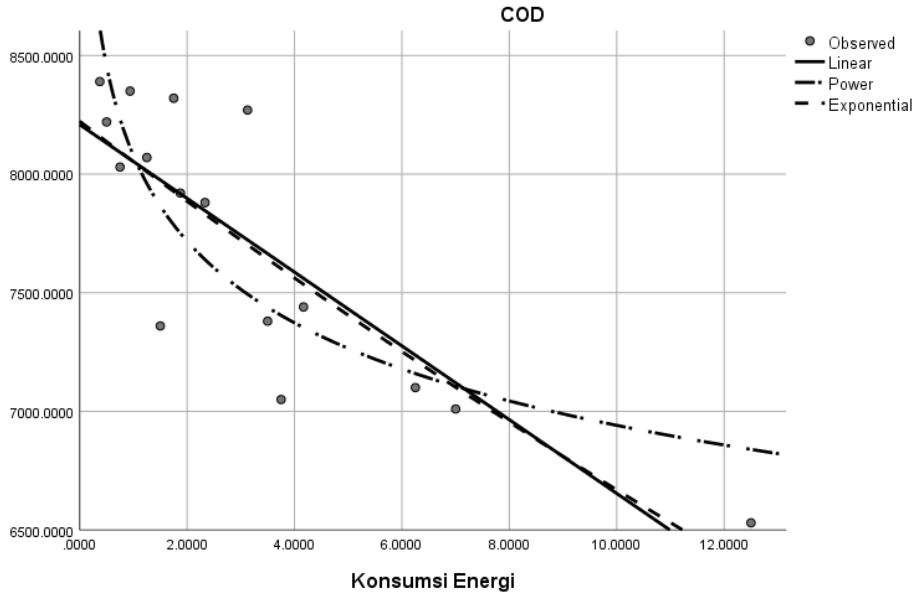
	Sum of Squares	df	Mean Square	F	Sig.
Regression	.065	1	.065	37.487	.000
Residual	.024	14	.002		
Total	.090	15			

The independent variable is Konsumsi Energi.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsumsi Energi	-.021	.003	-.853	-6.123	.000
(Constant)	8222.819	124.875		65.848	.000

The dependent variable is ln(COD).



TSS

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.577	.333	.285	267.758

The independent variable is Konsumsi Energi.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	500927.397	1	500927.397	6.987	.019
Residual	1003719.603	14	71694.257		
Total	1504647.000	15			

The independent variable is Konsumsi Energi.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsumsi Energi	-57.934	21.917	-.577	-2.643	.019
(Constant)	495.452	97.313		5.091	.000

Power

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.969	.939	.935	.229

The independent variable is Konsumsi Energi.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.354	1	11.354	215.987	.000
Residual	.736	14	.053		
Total	12.090	15			

The independent variable is Konsumsi Energi.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
ln(Konsumsi Energi)	-.894	.061	-.969	-14.697	.000
(Constant)	407.327	29.917		13.615	.000

The dependent variable is ln(TSS).

Exponential

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.795	.632	.605	.564

The independent variable is Konsumsi Energi.

ANOVA

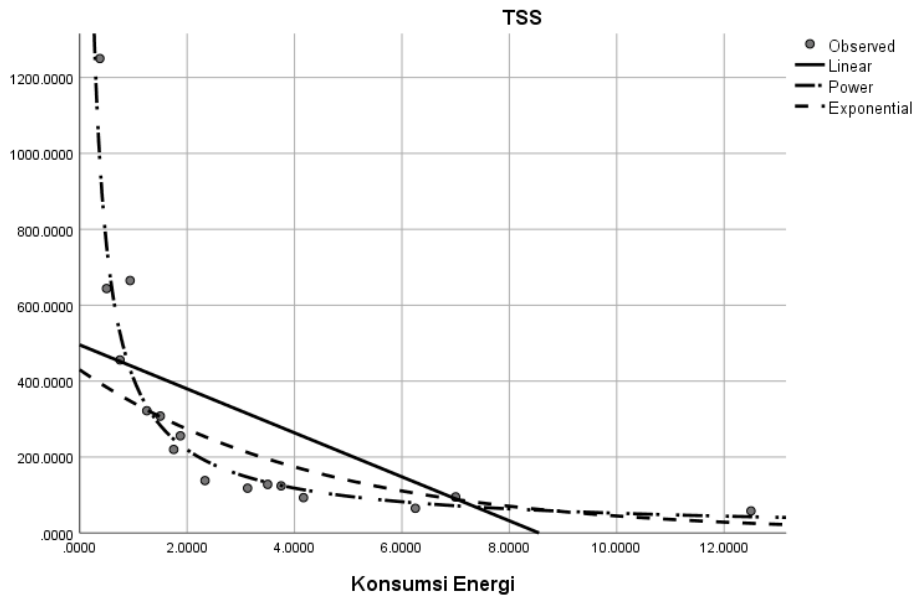
	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.635	1	7.635	23.994	.000
Residual	4.455	14	.318		
Total	12.090	15			

The independent variable is Konsumsi Energi.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsumsi Energi	-.226	.046	-.795	-4.898	.000
(Constant)	429.945	88.147		4.878	.000

The dependent variable is ln(TSS).



Fosfat

Linear

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.904	.817	.804	.188

The independent variable is Konsumsi Energi.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.202	1	2.202	62.416	.000
Residual	.494	14	.035		
Total	2.696	15			

The independent variable is Konsumsi Energi.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsumsi Energi	-.121	.015	-.904	-7.900	.000
(Constant)	2.009	.068		29.435	.000

Power

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.950	.902	.895	.095

The independent variable is Konsumsi Energi.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.160	1	1.160	129.524	.000
Residual	.125	14	.009		
Total	1.285	15			

The independent variable is Konsumsi Energi.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
ln(Konsumsi Energi)	-.286	.025	-.950	-11.381	.000
(Constant)	1.935	.059		32.988	.000

The dependent variable is ln(Fosfat).

Exponential

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.961	.923	.918	.084

The independent variable is Konsumsi Energi.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.187	1	1.187	168.521	.000
Residual	.099	14	.007		
Total	1.285	15			

The independent variable is Konsumsi Energi.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Konsumsi Energi	-.089	.007	-.961	-12.982	.000
(Constant)	2.079	.063		32.788	.000

The dependent variable is ln(Fosfat).