

Lampiran 1

Konversi Satuan Kandungan Kimia Airtanah



KONVERSI SATUAN

$$\text{meq/Liter (epj)} = \frac{\text{Elektron Valensi} \times \text{Jumlah ion (mg/liter)}}{\text{Berat Atom / Berat Molekul}}$$

Keterangan :

I. Berat Atom dan Berat Molekul dari unsur-unsur kimia airtanah:

- ❖ Berat Atom Na = 23
- ❖ Berat Atom K = 39
- ❖ Berat Atom Ca = 40
- ❖ Berat Atom Mg = 24,3
- ❖ Berat Atom Cl = 35,5
- ❖ Berat Molekul HCO_3 = 61 (H=1, C=12, O=16)
- ❖ Berat Moleku CO_3 = 60 (C=12, O=16)
- ❖ Berat Moleku SO_4 = 96 (S=23, O=16)

II. Elektron Valensi dari unsur-unsur kimia airtanah :

- Elektron Valensi Na = 1
- Elektron Valensi K = 1
- Elektron Valensi Ca = 2
- Elektron Valensi Mg = 2
- Elektron Valensi Cl = 2
- Elektron Valensi HCO_3 = 1
- Elektron Valensi CO_3 = 2
- Elektron Valensi SO_4 = 2

1. Konversi satuan kandungan unsur-unsur kimia dari Natrium (Na) :

- ❖ Na = 22,103 mg/liter
- $$\frac{1 \times 22,103}{23} = 0,961 \text{ meq/liter (epj)}$$

$$\diamond Na = 21,229 \text{ mg/liter}$$

$$\frac{1 \times 21,229}{23} = 0,923 \text{ meq/liter (epj)}$$

$$\diamond Na = 22,075 \text{ mg/liter}$$

$$\frac{1 \times 22,075}{23} = 0,960 \text{ meq/liter (epj)}$$

$$\diamond Na = 22,019 \text{ mg/liter}$$

$$\frac{1 \times 22,019}{23} = 0,957 \text{ meq/liter (epj)}$$

$$\diamond Na = 21,962 \text{ mg/liter}$$

$$\frac{1 \times 21,962}{23} = 0,955 \text{ meq/liter (epj)}$$

$$\diamond Na = 22,089 \text{ mg/liter}$$

$$\frac{1 \times 22,089}{23} = 0,960 \text{ meq/liter (epj)}$$

$$\diamond Na = 22,315 \text{ mg/liter}$$

$$\frac{1 \times 22,315}{23} = 0,970 \text{ meq/liter (epj)}$$

$$\diamond Na = 22,441 \text{ mg/liter}$$

$$\frac{1 \times 22,441}{23} = 0,976 \text{ meq/liter (epj)}$$

$$\diamond Na = 22,160 \text{ mg/liter}$$

$$\frac{1 \times 22,160}{23} = 0,963 \text{ meq/liter (epj)}$$

$$\diamond Na = 21,004 \text{ mg/liter}$$

$$\frac{1 \times 21,004}{23} = 0,913 \text{ meq/liter (epj)}$$

2. Konversi satuan kandungan unsur-unsur kimia dari Kalium (K) :

$$\diamond K = 67,306 \text{ mg/liter}$$

$$\frac{1 \times 67,306}{39} = 1,726 \text{ meq/liter (epj)}$$

$$\text{❖ } K = 62,980 \text{ mg/liter}$$

$$\frac{1 \times 62,980}{39} = 1,615 \text{ meq/liter (epj)}$$

$$\text{❖ } K = 62,942 \text{ mg/liter}$$

$$\frac{1 \times 62,942}{39} = 1,614 \text{ meq/liter (epj)}$$

$$\text{❖ } K = 63,920 \text{ mg/liter}$$

$$\frac{1 \times 63,920}{39} = 1,639 \text{ meq/liter (epj)}$$

$$\text{❖ } K = 62,039 \text{ mg/liter}$$

$$\frac{1 \times 62,039}{39} = 1,591 \text{ meq/liter (epj)}$$

$$\text{❖ } K = 61,400 \text{ mg/liter}$$

$$\frac{1 \times 61,400}{39} = 1,611 \text{ meq/liter (epj)}$$

$$\text{❖ } K = 62,829 \text{ mg/liter}$$

$$\frac{1 \times 62,829}{39} = 1,648 \text{ meq/liter (epj)}$$

$$\text{❖ } K = 62,302 \text{ mg/liter}$$

$$\frac{1 \times 62,302}{39} = 1,597 \text{ meq/liter (epj)}$$

$$\text{❖ } K = 6,509 \text{ mg/liter}$$

$$\frac{1 \times 6,509}{39} = 0,167 \text{ meq/liter (epj)}$$

3. Konversi satuan kandungan unsur-unsur kimia dari Kalsium (Ca) :

$$\text{❖ } Ca = 83,735 \text{ mg/liter}$$

$$\frac{2 \times 83,735}{40} = 4,187 \text{ meq/liter (epj)}$$

$$\text{❖ } Ca = 53,012 \text{ mg/liter}$$

$$\frac{2 \times 53,012}{40} = 2,651 \text{ meq/liter (epj)}$$

$$\diamond \text{ Ca} = 86,145 \text{ mg/liter}$$

$$\frac{2 \times 86,145}{40} = 4,307 \text{ meq/liter (epj)}$$

$$\diamond \text{ Ca} = 84,789 \text{ mg/liter}$$

$$\frac{2 \times 84,789}{40} = 4,293 \text{ meq/liter (epj)}$$

$$\diamond \text{ Ca} = 58,434 \text{ mg/liter}$$

$$\frac{2 \times 58,434}{40} = 2,922 \text{ meq/liter (epj)}$$

$$\diamond \text{ Ca} = 85,994 \text{ mg/liter}$$

$$\frac{2 \times 85,994}{40} = 4,300 \text{ meq/liter (epj)}$$

$$\diamond \text{ Ca} = 85,241 \text{ mg/liter}$$

$$\frac{2 \times 85,241}{40} = 4,262 \text{ meq/liter (epj)}$$

$$\diamond \text{ Ca} = 1,491 \text{ mg/liter}$$

$$\frac{2 \times 1,491}{40} = 0,075 \text{ meq/liter (epj)}$$

$$\diamond \text{ Ca} = 89,307 \text{ mg/liter}$$

$$\frac{2 \times 89,307}{40} = 4,465 \text{ meq/liter (epj)}$$

$$\diamond \text{ Ca} = 66,114 \text{ mg/liter}$$

$$\frac{2 \times 66,114}{40} = 3,306 \text{ meq/liter (epj)}$$

4. Konversi satuan kandungan unsur-unsur kimia dari Magnesium (Mg) :

$$\diamond \text{ Mg} = 50,428 \text{ mg/liter}$$

$$\frac{2 \times 50,428}{24,3} = 4,150 \text{ meq/liter (epj)}$$

$$\diamond \text{ Mg} = 35,225 \text{ mg/liter}$$

$$\frac{2 \times 35,225}{24,3} = 2,899 \text{ meq/liter (epj)}$$

$$\begin{aligned} & \text{❖ Mg} = 50,821 \text{ mg/liter} \\ & \frac{2 \times 50,821}{24,3} = 4,183 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Mg} = 68,219 \text{ mg/liter} \\ & \frac{2 \times 68,219}{24,3} = 5,615 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Mg} = 59,261 \text{ mg/liter} \\ & \frac{2 \times 59,261}{24,3} = 4,877 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Mg} = 65,882 \text{ mg/liter} \\ & \frac{2 \times 65,882}{24,3} = 5,422 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Mg} = 33,851 \text{ mg/liter} \\ & \frac{2 \times 33,851}{24,3} = 2,786 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Mg} = 31,246 \text{ mg/liter} \\ & \frac{2 \times 31,246}{24,3} = 2,572 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Mg} = 33,583 \text{ mg/liter} \\ & \frac{2 \times 33,583}{24,3} = 2,764 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Mg} = 33,744 \text{ mg/liter} \\ & \frac{2 \times 33,744}{24,3} = 2,777 \text{ meq/liter (epj)} \end{aligned}$$

5. Konversi satuan kandungan unsur-unsur kimia dari Klorida (Cl) :

$$\begin{aligned} & \text{❖ Cl} = 0,043 \text{ mg/liter} \\ & \frac{2 \times 0,043}{35,5} = 0,002 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Cl} = 0,015 \text{ mg/liter} \\ & \frac{2 \times 0,015}{35,5} = 0,0008 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Cl} = 0,012 \text{ mg/liter} \\ & \frac{2 \times 0,012}{35,5} = 0,0007 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Cl} = 0,017 \text{ mg/liter} \\ & \frac{2 \times 0,017}{35,5} = 0,001 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Cl} = 0,019 \text{ mg/liter} \\ & \frac{2 \times 0,019}{35,5} = 0,001 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Cl} = 0,012 \text{ mg/liter} \\ & \frac{2 \times 0,012}{35,5} = 0,0007 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Cl} = 0,023 \text{ mg/liter} \\ & \frac{2 \times 0,023}{35,5} = 0,001 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Cl} = 0,013 \text{ mg/liter} \\ & \frac{2 \times 0,013}{35,5} = 0,0007 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Cl} = 0,020 \text{ mg/liter} \\ & \frac{2 \times 0,020}{35,5} = 0,001 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ Cl} = 0,014 \text{ mg/liter} \\ & \frac{2 \times 0,014}{35,5} = 0,0008 \text{ meq/liter (epj)} \end{aligned}$$

6. Konversi satuan kandungan unsur-unsur kimia dari Bikarbonat (HCO_3) :

$$\begin{aligned} & \text{❖ HCO}_3 = 225,456 \text{ mg/liter} \\ & \frac{1 \times 225,456}{61} = 3,696 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ HCO}_3 = 188,368 \text{ mg/liter} \\ & \frac{1 \times 188,368}{61} = 3,088 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{HCO}_3 = 189,334 \text{ mg/liter} \\ & \frac{1 \times 189,334}{61} = 3,104 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{HCO}_3 = 272,304 \text{ mg/liter} \\ & \frac{1 \times 272,304}{61} = 4,464 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{HCO}_3 = 180,560 \text{ mg/liter} \\ & \frac{1 \times 180,560}{61} = 2,960 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{HCO}_3 = 183,488 \text{ mg/liter} \\ & \frac{1 \times 183,488}{61} = 3,008 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{HCO}_3 = 193,248 \text{ mg/liter} \\ & \frac{1 \times 193,248}{61} = 3,168 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{HCO}_3 = 136,640 \text{ mg/liter} \\ & \frac{1 \times 136,640}{61} = 2,240 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{HCO}_3 = 162,016 \text{ mg/liter} \\ & \frac{1 \times 162,016}{61} = 2,656 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{HCO}_3 = 280,112 \text{ mg/liter} \\ & \frac{1 \times 280,112}{61} = 4,592 \text{ meq/liter (epj)} \end{aligned}$$

7. Konversi satuan kandungan unsur-unsur kimia dari Sulfat (SO_4) :

$$\begin{aligned} & \text{❖ } \text{SO}_4 = 25,581 \text{ mg/liter} \\ & \frac{2 \times 25,581}{96} = 0,533 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{SO}_4 = 15,116 \text{ mg/liter} \\ & \frac{2 \times 15,116}{96} = 0,315 \text{ meq/liter (epj)} \end{aligned}$$

$$\diamond \text{SO}_4 = 15,116 \text{ mg/liter}$$

$$\frac{2 \times 15,116}{96} = 0,315 \text{ meq/liter (epj)}$$

$$\diamond \text{SO}_4 = 20,930 \text{ mg/liter}$$

$$\frac{2 \times 20,930}{96} = 0,436 \text{ meq/liter (epj)}$$

$$\diamond \text{SO}_4 = 19,767 \text{ mg/liter}$$

$$\frac{2 \times 19,767}{96} = 0,412 \text{ meq/liter (epj)}$$

$$\diamond \text{SO}_4 = 16,279 \text{ mg/liter}$$

$$\frac{2 \times 16,279}{96} = 0,339 \text{ meq/liter (epj)}$$

$$\diamond \text{SO}_4 = 16,279 \text{ mg/liter}$$

$$\frac{2 \times 16,279}{96} = 0,339 \text{ meq/liter (epj)}$$

$$\diamond \text{SO}_4 = 9,302 \text{ mg/liter}$$

$$\frac{2 \times 9,302}{96} = 0,194 \text{ meq/liter (epj)}$$

$$\diamond \text{SO}_4 = 16,279 \text{ mg/liter}$$

$$\frac{2 \times 16,279}{96} = 0,339 \text{ meq/liter (epj)}$$

$$\diamond \text{SO}_4 = 13,953 \text{ mg/liter}$$

$$\frac{2 \times 13,953}{96} = 0,291 \text{ meq/liter (epj)}$$

8. Konversi satuan kandungan unsur-unsur kimia dari Ionkarbonat (CO_3) :

$$\diamond \text{CO}_3 = 221,760 \text{ mg/liter}$$

$$\frac{2 \times 221,760}{60} = 7,392 \text{ meq/liter (epj)}$$

$$\diamond \text{CO}_3 = 185,280 \text{ mg/liter}$$

$$\frac{2 \times 185,280}{60} = 6,176 \text{ meq/liter (epj)}$$

$$\begin{aligned} & \text{❖ } \text{CO}_3 = 186,240 \text{ mg/liter} \\ & \frac{2 \times 186,240}{60} = 6,208 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{CO}_3 = 267,840 \text{ mg/liter} \\ & \frac{2 \times 267,840}{60} = 8,928 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{CO}_3 = 177,600 \text{ mg/liter} \\ & \frac{2 \times 177,600}{60} = 5,920 \text{ meq/liter (epj)} \end{aligned}$$

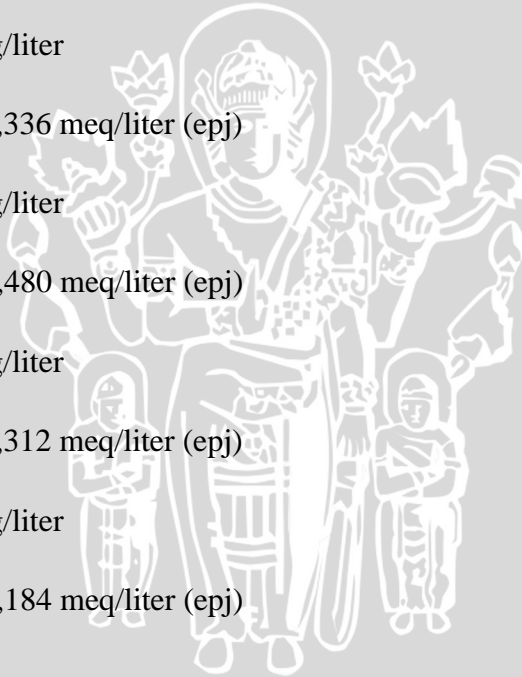
$$\begin{aligned} & \text{❖ } \text{CO}_3 = 180,480 \text{ mg/liter} \\ & \frac{2 \times 180,480}{60} = 6,016 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{CO}_3 = 190,080 \text{ mg/liter} \\ & \frac{2 \times 190,080}{60} = 6,336 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{CO}_3 = 134,400 \text{ mg/liter} \\ & \frac{2 \times 134,400}{60} = 4,480 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{CO}_3 = 159,360 \text{ mg/liter} \\ & \frac{2 \times 159,360}{60} = 5,312 \text{ meq/liter (epj)} \end{aligned}$$

$$\begin{aligned} & \text{❖ } \text{CO}_3 = 275,520 \text{ mg/liter} \\ & \frac{2 \times 275,520}{60} = 9,184 \text{ meq/liter (epj)} \end{aligned}$$



Lampiran 2

Hasil Pengujian Laboratorium Untuk Sampel Penelitian Sumur



Lampiran 2.1. Hasil Pengujian Laboratorium untuk Sampel Penelitian Sumur 1



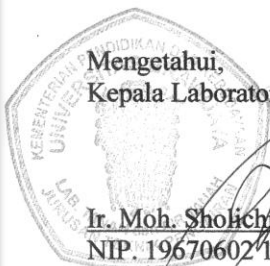
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LAPORAN HASIL ANALISA

Tanggal Penyerahan Sampel : 3 Juli 2012
 Nama Pemilik Sampel : Hari Siswoyo, ST., MT.
 Jenis Sampel : Air Sumur Gali (sumur 1)
 Lokasi : Jl. Untung Sudiro Rt 4 Rw 4, Cemorokandang
 Nama Penerima Sampel : Prasetyo Rubiantoro, SP.

No.	Parameter	Metode	Satuan	Hasil Analisa
1.	pH	pHmeter	-	5,78
2.	Suhu	Thermometer	°C	24,4
3.	DHL	ECmeter	mS/cm	0,605
4.	Klorida (Cl)	Volumetri	mg/L	0,043
5.	Sulfat (SO ₄)	Spektrofotometri	mg/L	25,581
6.	CO ₃	Volumetri	mg/L	221,760
7.	HCO ₃	Volumetri	mg/L	225,456
8.	Kalium (K)	Spektrofotometri	mg/L	67,306
9.	Natrium (Na)	Spektrofotometri	mg/L	22,103
10.	Magnesium (Mg)	Spektrofotometri	mg/L	50,428
11.	Kalsium (Ca)	Spektrofotometri	mg/L	83,735



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Lampiran 2.2. Hasil Pengujian Laboratorium untuk Sampel Penelitian Sumur 2



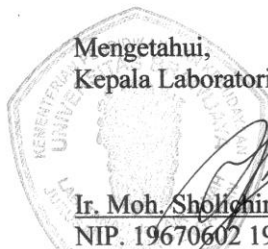
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LAPORAN HASIL ANALISA

Tanggal Penyerahan Sampel : 3 Juli 2012
 Nama Pemilik Sampel : Hari Siswoyo, ST., MT.
 Jenis Sampel : Air Sumur Gali (sumur 2)
 Lokasi : Jl. Santoso Rt 3 Rw 5, Cemorokandang
 Nama Penerima Sampel : Prasetyo Rubiantoro, SP.

No.	Parameter	Metode	Satuan	Hasil Analisa
1.	pH	pHmeter	-	5,59
2.	Suhu	Thermometer	°C	21,4
3.	DHL	ECmeter	mS/cm	0,384
4.	Klorida (Cl)	Volumetri	mg/L	0,015
5.	Sulfat (SO ₄)	Spektrofotometri	mg/L	15,116
6.	CO ₃	Volumetri	mg/L	185,280
7.	HCO ₃	Volumetri	mg/L	188,368
8.	Kalium (K)	Spektrofotometri	mg/L	62,980
9.	Natrium (Na)	Spektrofotometri	mg/L	21,229
10.	Magnesium (Mg)	Spektrofotometri	mg/L	35,225
11.	Kalsium (Ca)	Spektrofotometri	mg/L	53,012



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Lampiran 2.3. Hasil Pengujian Laboratorium untuk Sampel Penelitian Sumur 3



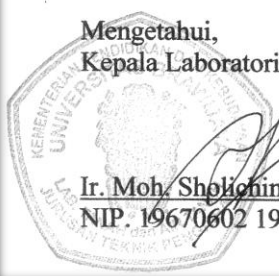
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LAPORAN HASIL ANALISA

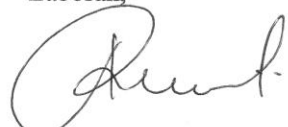
Tanggal Penyerahan Sampel : 3 Juli 2012
 Nama Pemilik Sampel : Hari Siswoyo, ST., MT.
 Jenis Sampel : Air Sumur Bor (sumur 3)
 Lokasi : Perumahan Buring, Cemorokandang
 Nama Penerima Sampel : Prasetyo Rubiantoro, SP.

No.	Parameter	Metode	Satuan	Hasil Analisa
1.	pH	pHmeter	-	5,8
2.	Suhu	Thermometer	°C	23,6
3.	DHL	ECmeter	mS/cm	0,377
4.	Klorida (Cl)	Volumetri	mg/L	0,012
5.	Sulfat (SO ₄)	Spektrofotometri	mg/L	15,116
6.	CO ₃	Volumetri	mg/L	186,240
7.	HCO ₃	Volumetri	mg/L	189,344
8.	Kalium (K)	Spektrofotometri	mg/L	62,942
9.	Natrium (Na)	Spektrofotometri	mg/L	22,075
10.	Magnesium (Mg)	Spektrofotometri	mg/L	50,821
11.	Kalsium (Ca)	Spektrofotometri	mg/L	86,145



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Lampiran 2.4. Hasil Pengujian Laboratorium untuk Sampel Penelitian Sumur 4



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LAPORAN HASIL ANALISA

Tanggal Penyerahan Sampel : 3 Juli 2012
 Nama Pemilik Sampel : Hari Siswoyo, ST., MT.
 Jenis Sampel : Air Sumur Gali (sumur 4)
 Lokasi : Jl. Untung Sudiro, Cemorokandang
 Nama Penerima Sampel : Prasetyo Rubiantoro, SP.

No.	Parameter	Metode	Satuan	Hasil Analisa
1.	pH	pHmeter	-	5,67
2.	Suhu	Thermometer	°C	24,6
3.	DHL	ECmeter	mS/cm	0,500
4.	Klorida (Cl)	Volumetri	mg/L	0,017
5.	Sulfat (SO ₄)	Spektrofotometri	mg/L	20,930
6.	CO ₃	Volumetri	mg/L	267,840
7.	HCO ₃	Volumetri	mg/L	272,304
8.	Kalium (K)	Spektrofotometri	mg/L	63,920
9.	Natrium (Na)	Spektrofotometri	mg/L	22,019
10.	Magnesium (Mg)	Spektrofotometri	mg/L	68,219
11.	Kalsium (Ca)	Spektrofotometri	mg/L	84,789

Mengetahui,
 Kepala Laboratorium Tanah dan Airtanah

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 NIP. 19801210 200212 1 002

Lampiran 2.5. Hasil Pengujian Laboratorium untuk Sampel Penelitian Sumur 5



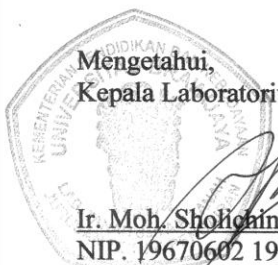
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<http://pengairan.ub.ac.id> E-mail : tsa_ub@ub.ac.id

LAPORAN HASIL ANALISA

Tanggal Penyerahan Sampel : 3 Juli 2012
 Nama Pemilik Sampel : Hari Siswoyo, ST., MT.
 Jenis Sampel : Air Sumur Gali (sumur 5)
 Lokasi : Jl. Santoso Rt 8 Rw 4, Cemorokandang
 Nama Penerima Sampel : Prasetyo Rubiantoro, SP.

No.	Parameter	Metode	Satuan	Hasil Analisa
1.	pH	pHmeter	-	5,67
2.	Suhu	Thermometer	°C	21,2
3.	DHL	ECmeter	mS/cm	0,401
4.	Klorida (Cl)	Volumetri	mg/L	0,019
5.	Sulfat (SO ₄)	Spektrofotometri	mg/L	19,767
6.	CO ₃	Volumetri	mg/L	177,6
7.	HCO ₃	Volumetri	mg/L	180,560
8.	Kalium (K)	Spektrofotometri	mg/L	62,039
9.	Natrium (Na)	Spektrofotometri	mg/L	21,962
10.	Magnesium (Mg)	Spektrofotometri	mg/L	59,261
11.	Kalsium (Ca)	Spektrofotometri	mg/L	58,434



Mengetahui,
 Kepala Laboratorium Tanah dan Airtanah
 Ir. Moh. Sholichin, MT., Ph.D.
 NIP. 19670602 19980806 1 001

Malang, 11 Juli 2012
 Laboran,

 Prasetyo Rubiantoro, SP.
 NIP. 19801210 200212 1 002

Lampiran 2.6. Hasil Pengujian Laboratorium untuk Sampel Penelitian Sumur 6



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LAPORAN HASIL ANALISA

Tanggal Penyerahan Sampel : 3 Juli 2012
 Nama Pemilik Sampel : Hari Siswoyo, ST., MT.
 Jenis Sampel : Air Sumur Gali (sumur 6)
 Lokasi : Depan SMK Negeri 9, Cemorokandang
 Nama Penerima Sampel : Prasetyo Rubiantoro, SP.

No.	Parameter	Metode	Satuan	Hasil Analisa
1.	pH	pHmeter	-	6,49
2.	Suhu	Thermometer	°C	21,5
3.	DHL	^t ECmeter	mS/cm	0,345
4.	Klorida (Cl)	Volumetri	mg/L	0,012
5.	Sulfat (SO ₄)	Spektrofotometri	mg/L	16,279
6.	CO ₃	Volumetri	mg/L	180,480
7.	HCO ₃	Volumetri	mg/L	183,488
8.	Kalium (K)	Spektrofotometri	mg/L	61,400
9.	Natrium (Na)	Spektrofotometri	mg/L	22,089
10.	Magnesium (Mg)	Spektrofotometri	mg/L	65,882
11.	Kalsium (Ca)	Spektrofotometri	mg/L	85,994

Mengetahui,
 Kepala Laboratorium Tanah dan Airtanah

 Ir. Moh. Shohchin, MT., Ph.D.
 NIP. 19670602 19980806 1 001

Malang, 11 Juli 2012
 Laboran,

 Prasetyo Rubiantoro, SP.
 NIP. 19801210 200212 1 002

Lampiran 2.7. Hasil Pengujian Laboratorium untuk Sampel Penelitian Sumur 7



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LAPORAN HASIL ANALISA

Tanggal Penyerahan Sampel : 3 Juli 2012
 Nama Pemilik Sampel : Hari Siswoyo, ST., MT.
 Jenis Sampel : Air Sumur Gali (sumur 7)
 Lokasi : Jl. Santoso, Cemorokandang
 Nama Penerima Sampel : Prasetyo Rubiantoro, SP.

No.	Parameter	Metode	Satuan	Hasil Analisa
1.	pH	pHmeter	-	5,71
2.	Suhu	Thermometer	°C	23,9
3.	DHL	ECmeter	mS/cm	0,417
4.	Klorida (Cl)	Volumetri	mg/L	0,023
5.	Sulfat (SO ₄)	Spektrofotometri	mg/L	16,279
6.	CO ₃	Volumetri	mg/L	190,080
7.	HCO ₃	Volumetri	mg/L	193,248
8.	Kalium (K)	Spektrofotometri	mg/L	62,829
9.	Natrium (Na)	Spektrofotometri	mg/L	22,315
10.	Magnesium (Mg)	Spektrofotometri	mg/L	33,851
11.	Kalsium (Ca)	Spektrofotometri	mg/L	85,241

Mengetahui,
 Kepala Laboratorium Tanah dan Airtanah

 Ir. Moh. Sholichin, MT., Ph.D.
 NIP. 19670602 19980806 1 001

Malang, 11 Juli 2012
 Laboran,

 Prasetyo Rubiantoro, SP.
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Lampiran 2.8. Hasil Pengujian Laboratorium untuk Sampel Penelitian Sumur 8



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LAPORAN HASIL ANALISA

Tanggal Penyerahan Sampel : 3 Juli 2012
 Nama Pemilik Sampel : Hari Siswoyo, ST., MT.
 Jenis Sampel : Air Sumur Bor (sumur 8)
 Lokasi : Ds. Tempurang Rt 2 Rw 6, Cemorokandang
 Nama Penerima Sampel : Prasetyo Rubiantoro, SP.

No.	Parameter	Metode	Satuan	Hasil Analisa
1.	pH	pHmeter	-	7,48
2.	Suhu	Thermometer	°C	22,6
3.	DHL	ECmeter	mS/cm	0,258
4.	Klorida (Cl)	Volumetri	mg/L	0,013
5.	Sulfat (SO ₄)	Spektrofotometri	mg/L	9,302
6.	CO ₃	Volumetri	mg/L	134,400
7.	HCO ₃	Volumetri	mg/L	136,640
8.	Kalium (K)	Spektrofotometri	mg/L	64,259
9.	Natrium (Na)	Spektrofotometri	mg/L	22,441
10.	Magnesium (Mg)	Spektrofotometri	mg/L	31,246
11.	Kalsium (Ca)	Spektrofotometri	mg/L	1,491

Mengetahui,
 Kepala Laboratorium Tanah dan Airtanah

 Ir. Moh. Sholichin, MT., Ph.D.
 NIP. 19670602 19980806 1 001

Malang, 11 Juli 2012
 Laboran,

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Lampiran 2.9. Hasil Pengujian Laboratorium untuk Sampel Penelitian Sumur 9



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<http://pengairan.ub.ac.id> E-mail : tsa_ub@ub.ac.id

LAPORAN HASIL ANALISA

Tanggal Penyerahan Sampel : 3 Juli 2012
 Nama Pemilik Sampel : Hari Siswoyo, ST., MT.
 Jenis Sampel : Air Sumur Gali (sumur 9)
 Lokasi : Ds. Kendang Pakem Rt 4 Rw 3, Cemorokandang
 Nama Penerima Sampel : Prasetyo Rubiantoro, SP.

No.	Parameter	Metode	Satuan	Hasil Analisa
1.	pH	pHmeter	-	5,72
2.	Suhu	Thermometer	°C	21,1
3.	DHL	ECmeter	mS/cm	0,398
4.	Klorida (Cl)	Volumetri	mg/L	0,020
5.	Sulfat (SO ₄)	Spektrofotometri	mg/L	16,279
6.	CO ₃	Volumetri	mg/L	159,360
7.	HCO ₃	Volumetri	mg/L	162,016
8.	Kalium (K)	Spektrofotometri	mg/L	62,302
9.	Natrium (Na)	Spektrofotometri	mg/L	22,160
10.	Magnesium (Mg)	Spektrofotometri	mg/L	33,583
11.	Kalsium (Ca)	Spektrofotometri	mg/L	89,307

Mengetahui,
 Kepala Laboratorium Tanah dan Airtanah

 Ir. Moh. Sholichin, MT., Ph.D.
 NIP. 19670602 19980806 1 001

Malang, 11 Juli 2012
 Laboran,

 Prasetyo Rubiantoro, SP.
 NIP. 19801210 200212 1 002

Lampiran 2.10. Hasil Pengujian Laboratorium untuk Sampel Penelitian Sumur 10



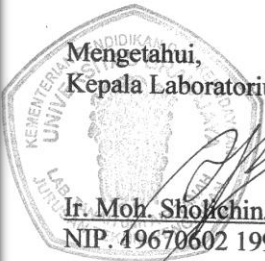
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LAPORAN HASIL ANALISA

Tanggal Penyerahan Sampel : 3 Juli 2012
 Nama Pemilik Sampel : Hari Siswoyo, ST., MT.
 Jenis Sampel : Air Sumur Gali (sumur 10)
 Lokasi : Jl. Untung Sudiro Rt 2 Rw 4, Cemorokandang
 Nama Penerima Sampel : Prasetyo Rubiantoro, SP.

No.	Parameter	Metode	Satuan	Hasil Analisa
1.	pH	pHmeter	-	6,37
2.	Suhu	Thermometer	°C	22,0
3.	DHL	ECmeter	mS/cm	0,485
4.	Klorida (Cl)	Volumetri	mg/L	0,014
5.	Sulfat (SO ₄)	Spektrofotometri	mg/L	13,953
6.	CO ₃	Volumetri	mg/L	275,520
7.	HCO ₃	Volumetri	mg/L	280,112
8.	Kalium (K)	Spektrofotometri	mg/L	6,509
9.	Natrium (Na)	Spektrofotometri	mg/L	21,004
10.	Magnesium (Mg)	Spektrofotometri	mg/L	33,744
11.	Kalsium (Ca)	Spektrofotometri	mg/L	66,114



Mengetahui,
 Kepala Laboratorium Tanah dan Airtanah

Irfan Moh. Sholichin, MT., Ph.D.
 NIP. 49670602 19980806 1 001

Malang, 11 Juli 2012
 Laboran,

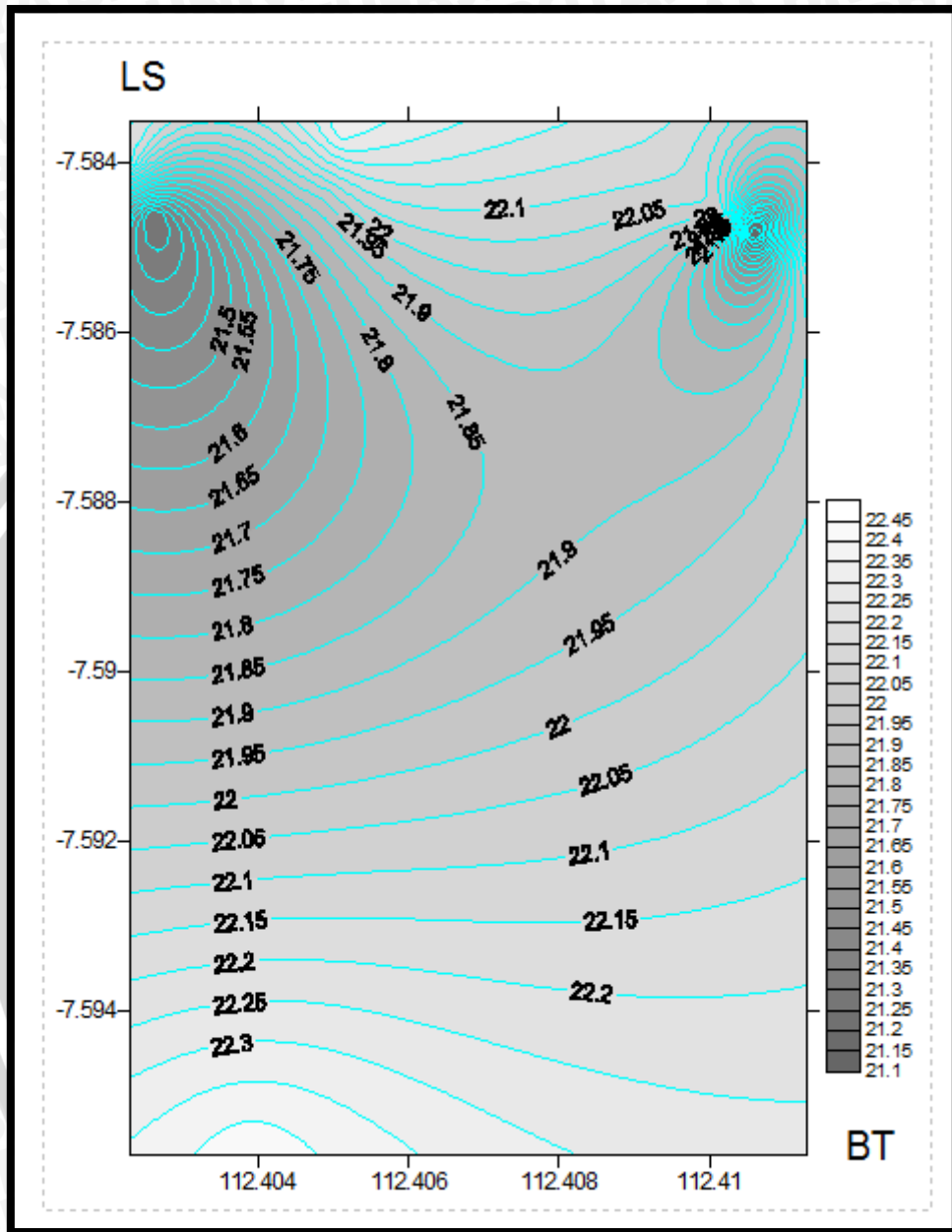
Prasetyo Rubiantoro, SP.
 NIP. 19801210 200212 1 002

Lampiran 3

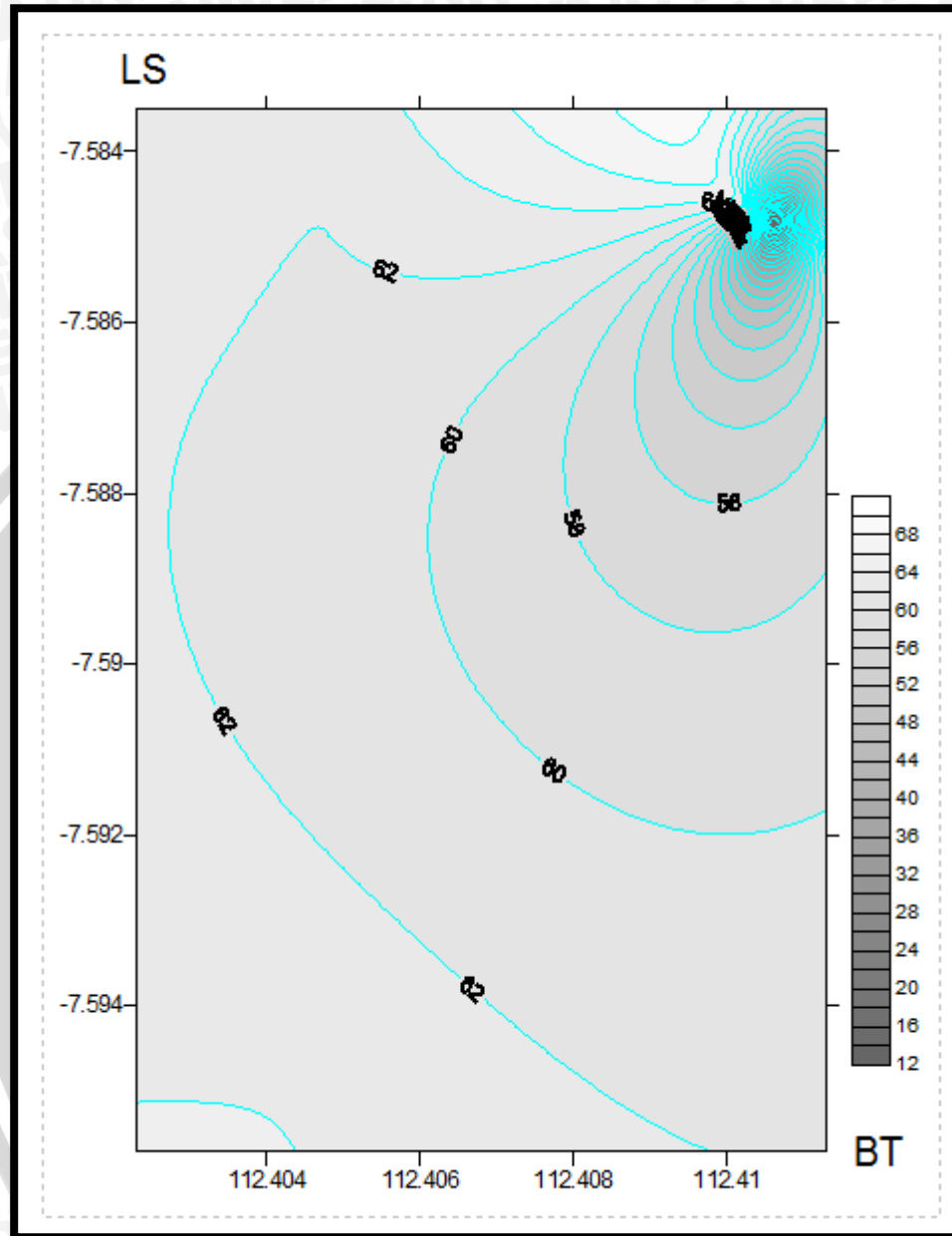
Detail Kontur Kandungan Kimia Airtanah



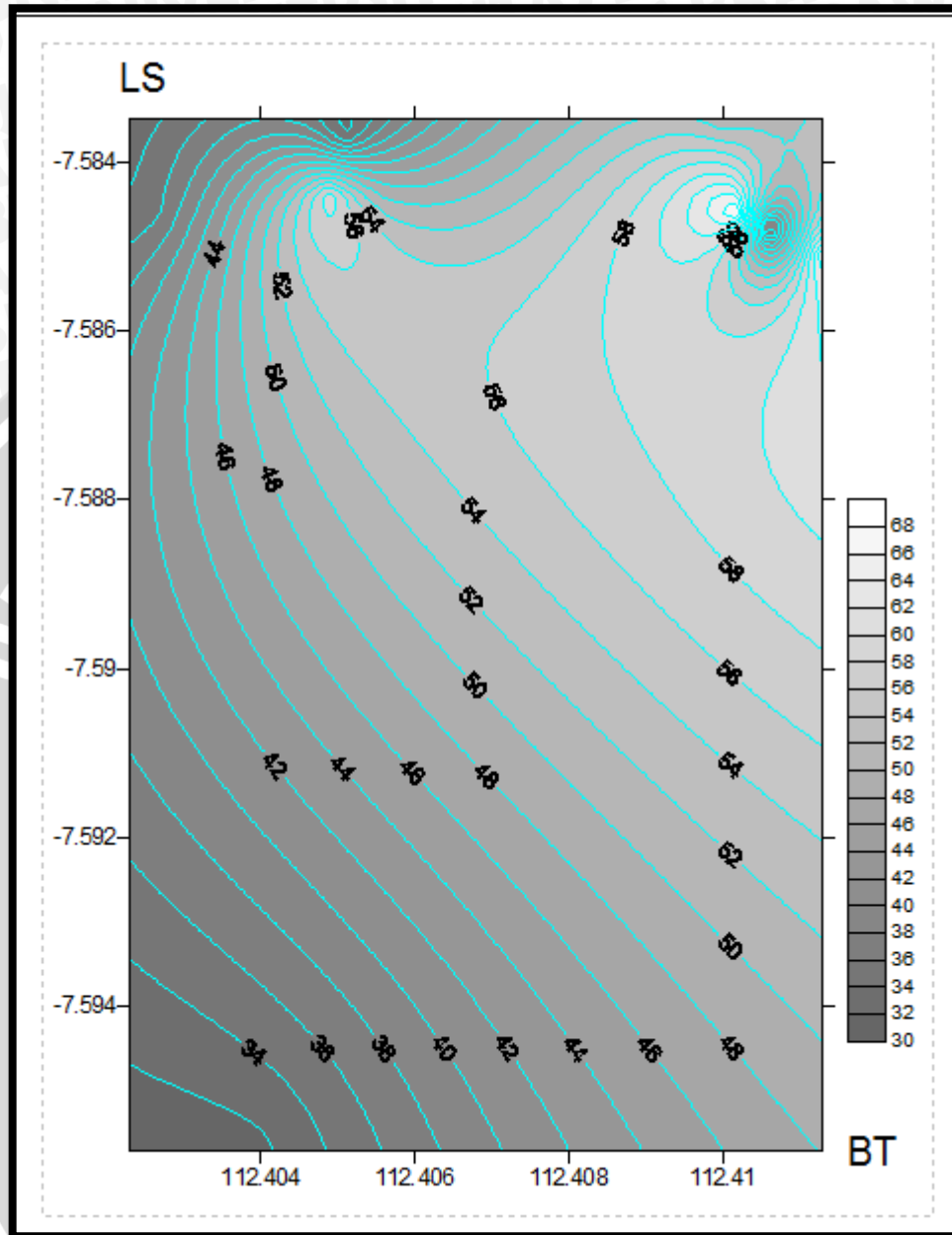
Lampiran 3.1. Detail Kontur IsoNatrium



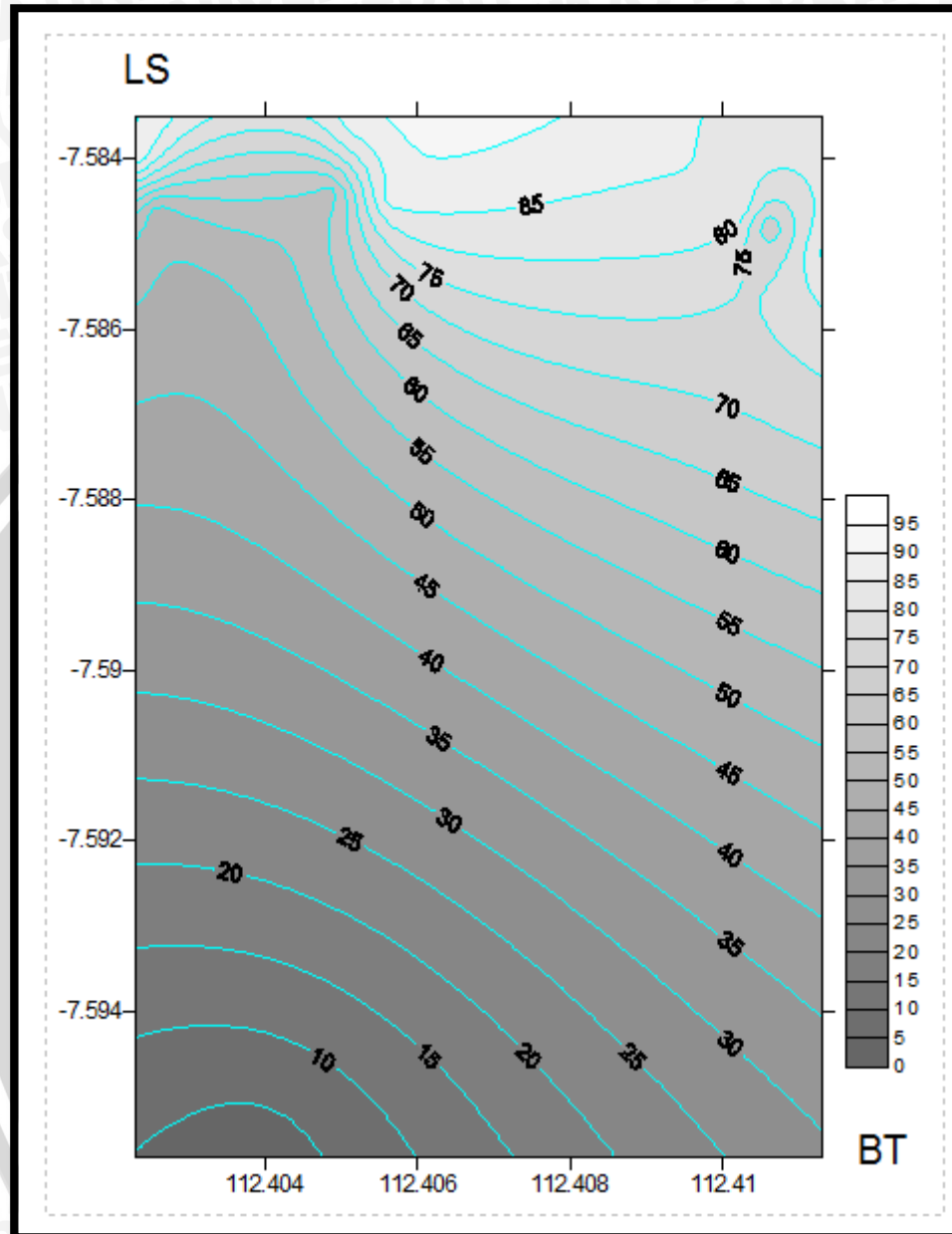
Lampiran 3.2. Detail Kontur IsoKalium



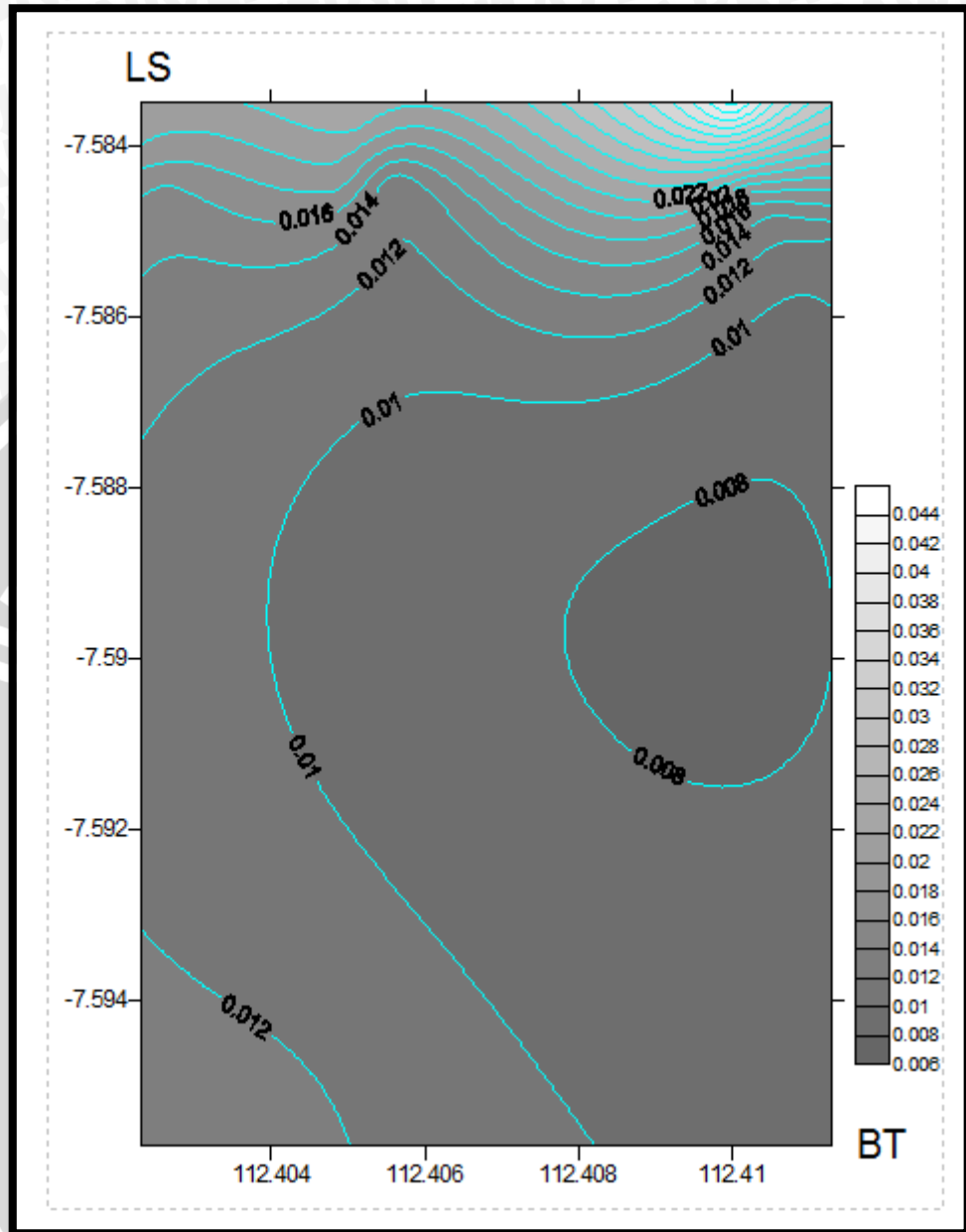
Lampiran 3.3. Detail Kontur IsoMagnesium



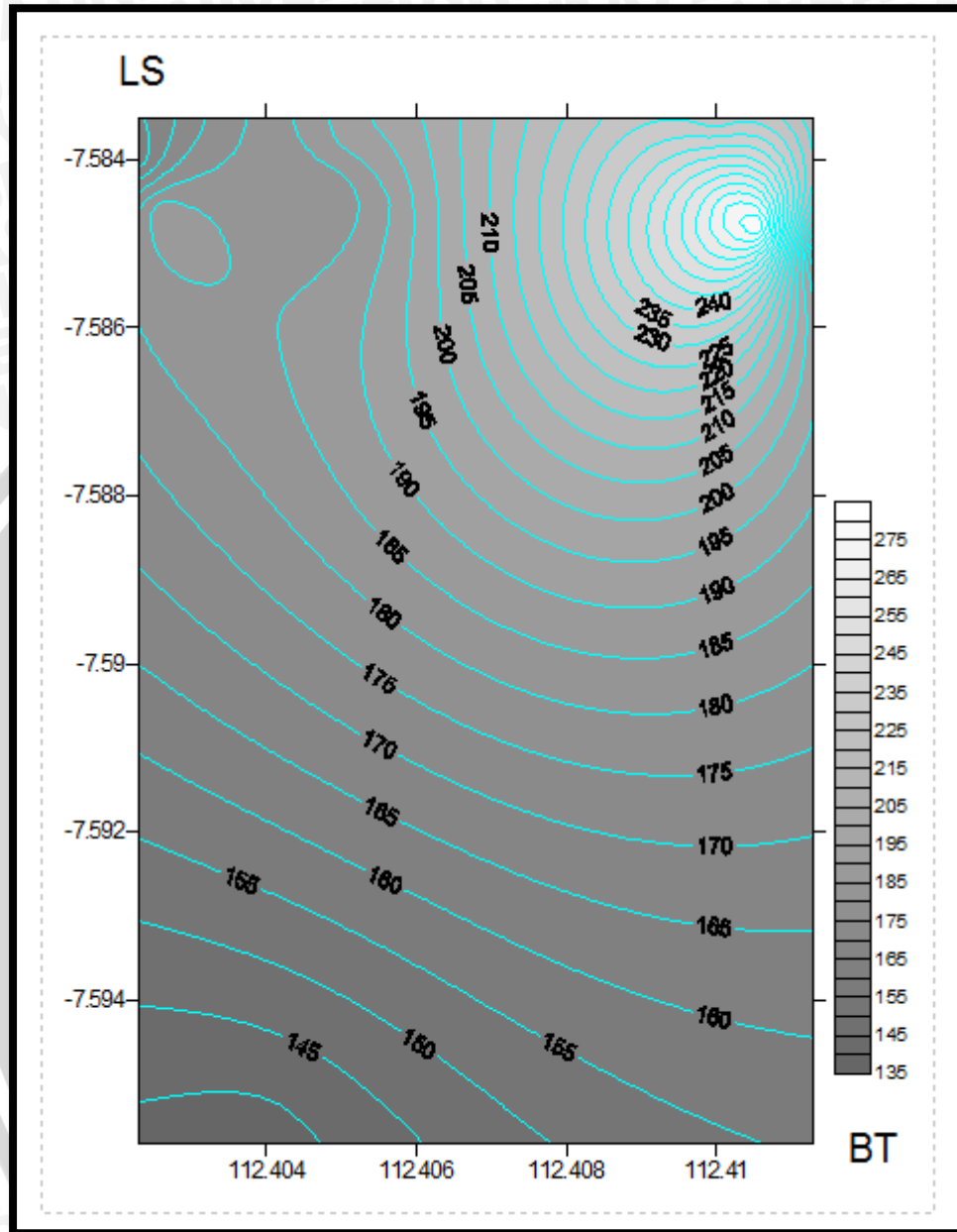
Lampiran 3.4. Detail Kontur IsoKalsium



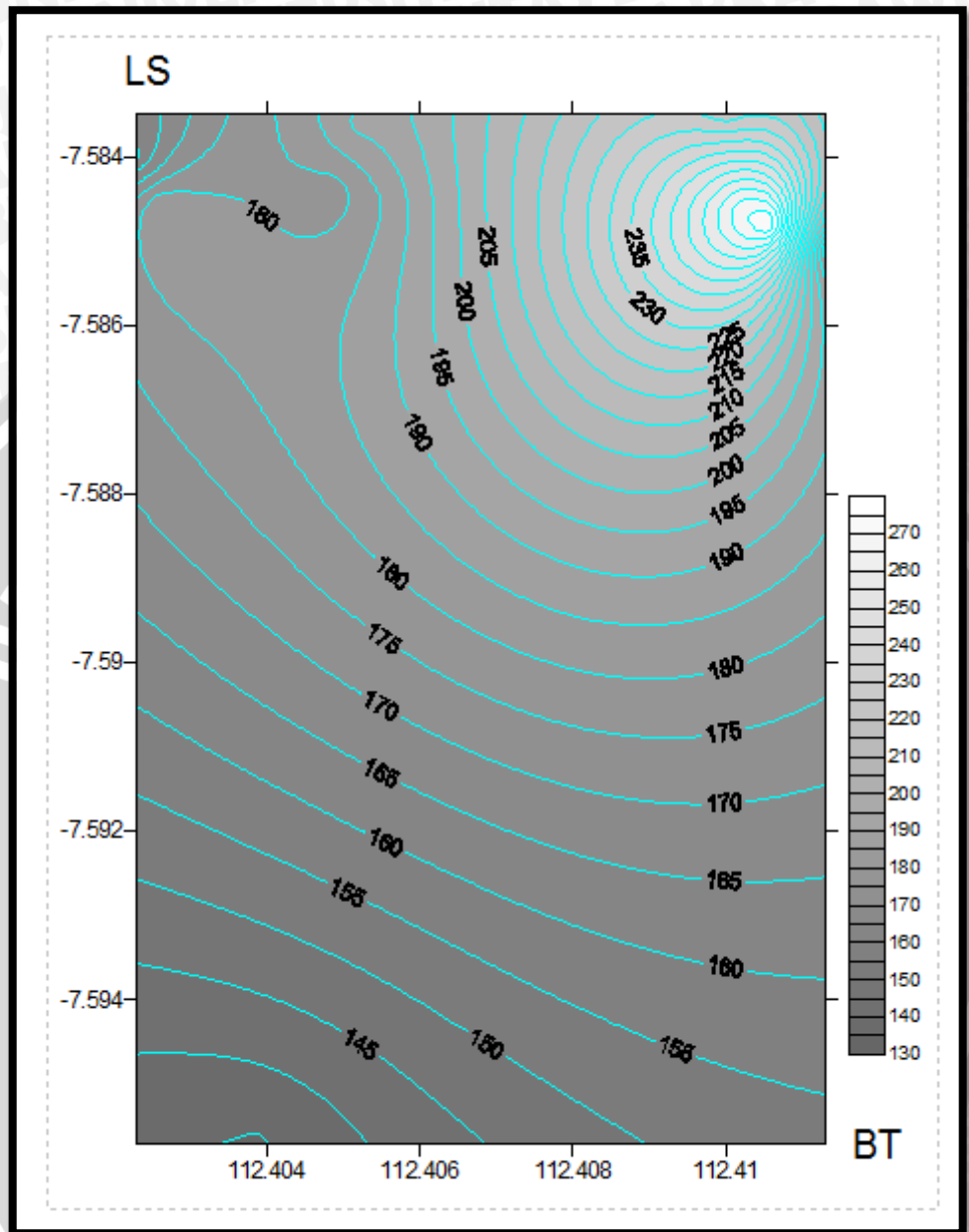
Lampiran 3.5. Detail Kontur IsoKlorida



Lampiran 3.6. Detail Kontur IsoBikarbonat



Lampiran 3.7. Detail Kontur IsoKarbonat



Lampiran 3.8. Detail Kontur IsoSulfat

