Analysis of the Distribution of Domestic Wastewater in the Brantas River Area of Malang City

By:

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INTRODUCTION

The degradation of water quality has been considered to be a major problem in the world

Land transfer function

The Brantas River Basin → domestic waste load is equivalent to 205 tons-BOD per day. Pollution load from domestic activities → 62% of total pollutant load come into water bodies

Health Profile 2016 → Conventional processing → septic tank condition does not guarantee that the processing result meets the requirements →± 25%

Prevention → at source → Management of domestic wastewater

THE AIM OF RESEARCH

1. Assessing and analyzing the quality of domestic wastewater in Malang City in terms of domestic pollutant load of waste, especially parameters of BOD, pH and E. coli.

2. analyze the distribution of domestic wastewater distribution for BOD, pH and E.coli parameters.

METHODOLOGY

a.

Technique : instantaneous example (grab sample).

Location : in the districts of Sawojajar, Sumbersari and Kedungkandang.

Time of sampling : dry season in September 2017 and rainy season in January 2018

Parameters : pH, BOD_5 and E.coli

b.

Determination of Quality Status Water Quality

1.The quality standard domestic wastewater :

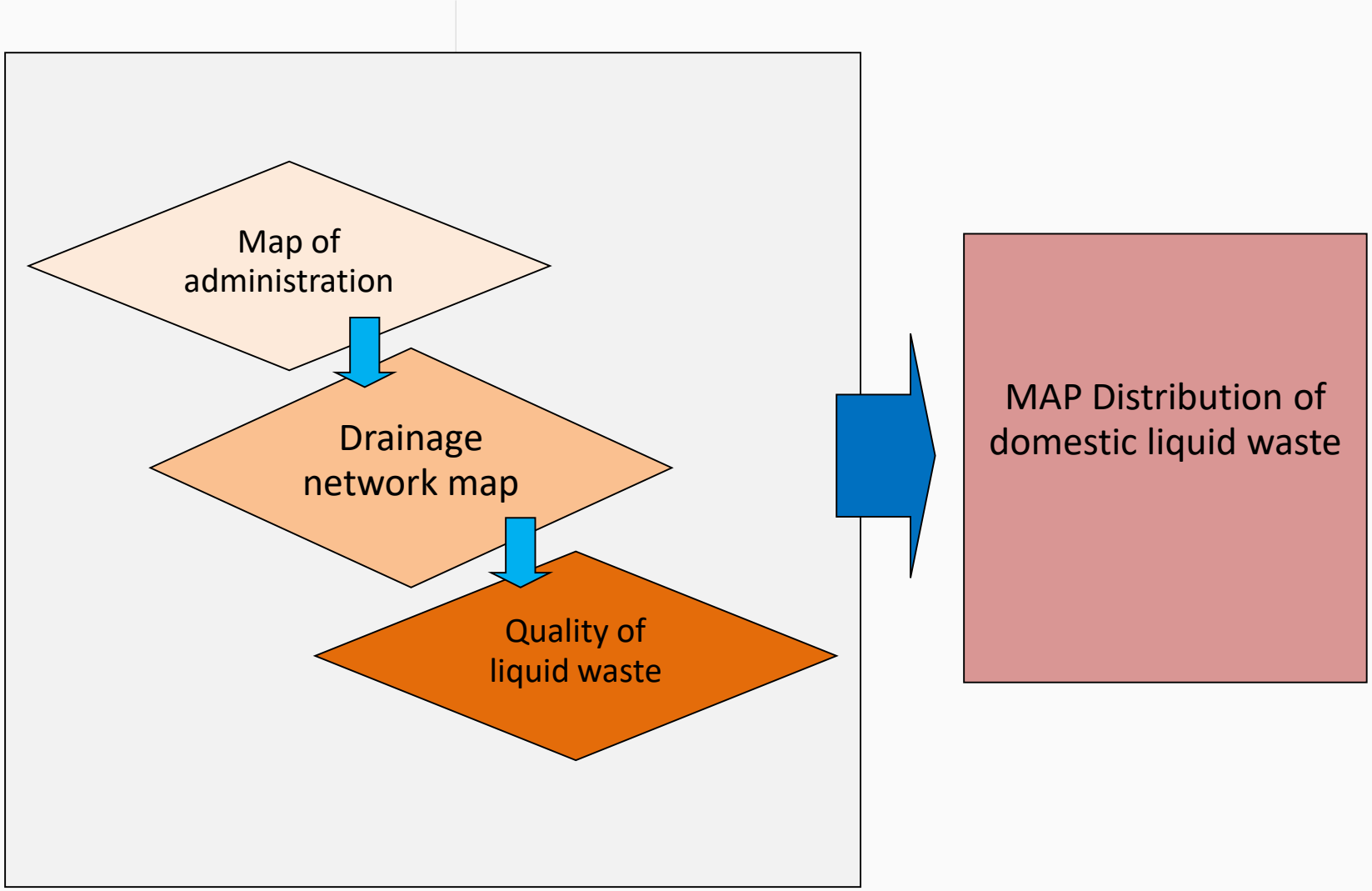
The East Java Governor Regulation No. 72 of 2013 on the Quality Standards of Domestic Waste Water (Real Estate), Restaurants (Restaurant), Offices, Commerce, Apartments, Hospitality and Dormitory.

2.The status of water quality is determined using the Pollution Index Method

c.

Maping

Map Overlay Image



RESULTS

The distribution of domestic wastewater : the distribution of blocks was based on the drainage network and flow direction

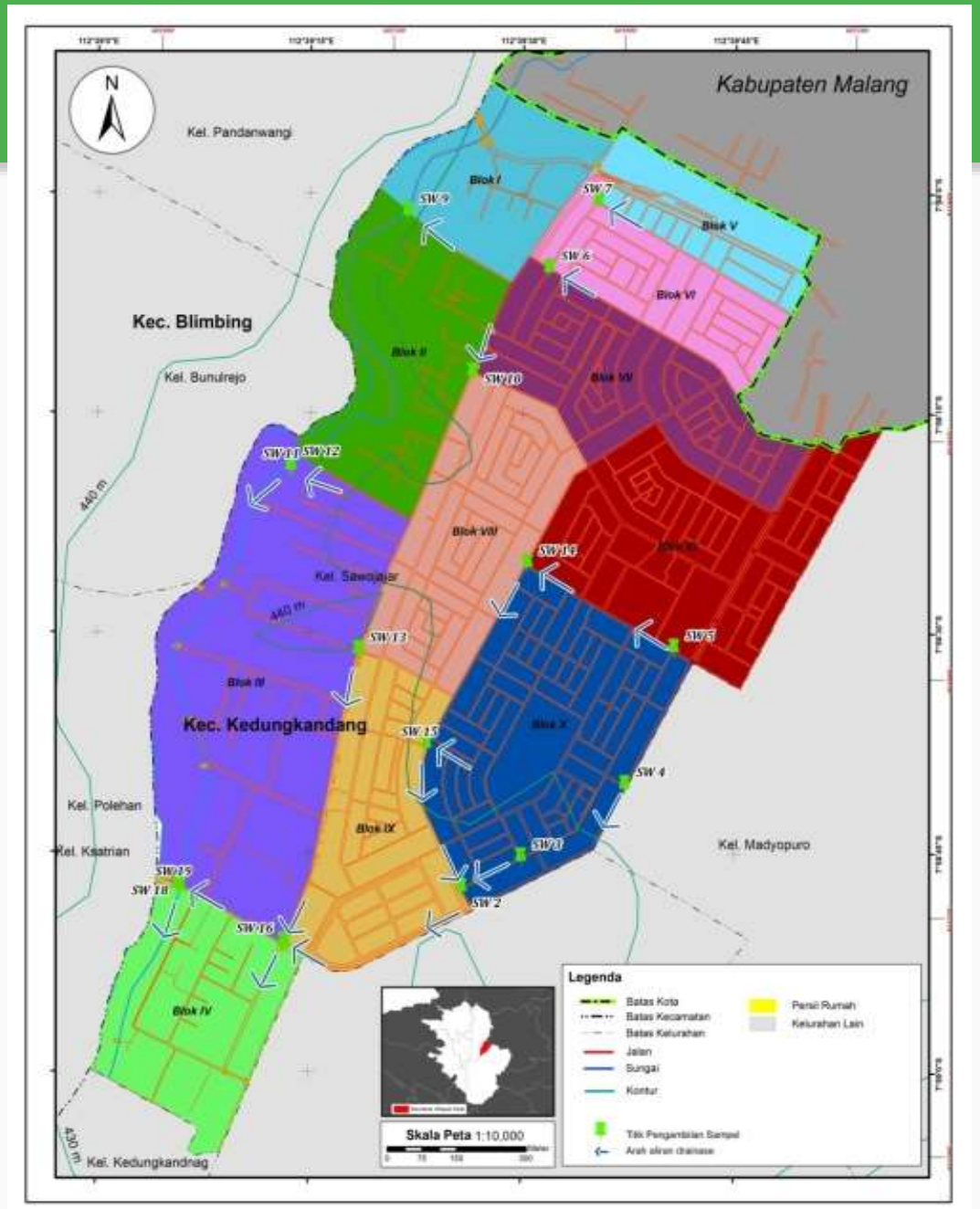
The pH parameters in both dry and rainy season in the three study areas still meet the standard of quality

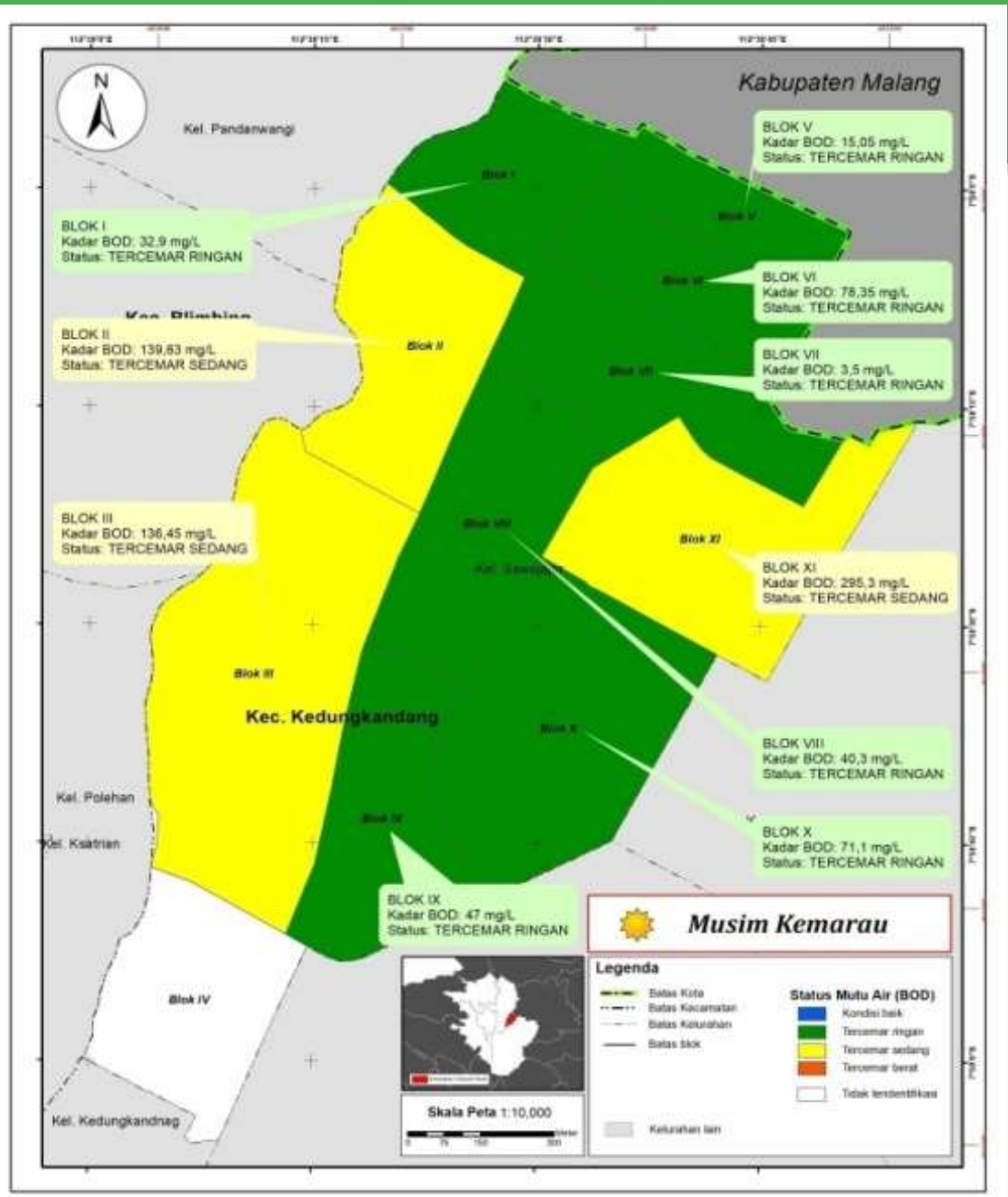
In the district of Sumbersari, it was found that block 1 has the level of fairly polluted in both dry and rainy season

During the dry season, in the district of Sawojajar, the pollution level was found to be in the fairly polluted category in three locations, namely block 2,3, 11 and 1 i.e. block 11 in the rainy season

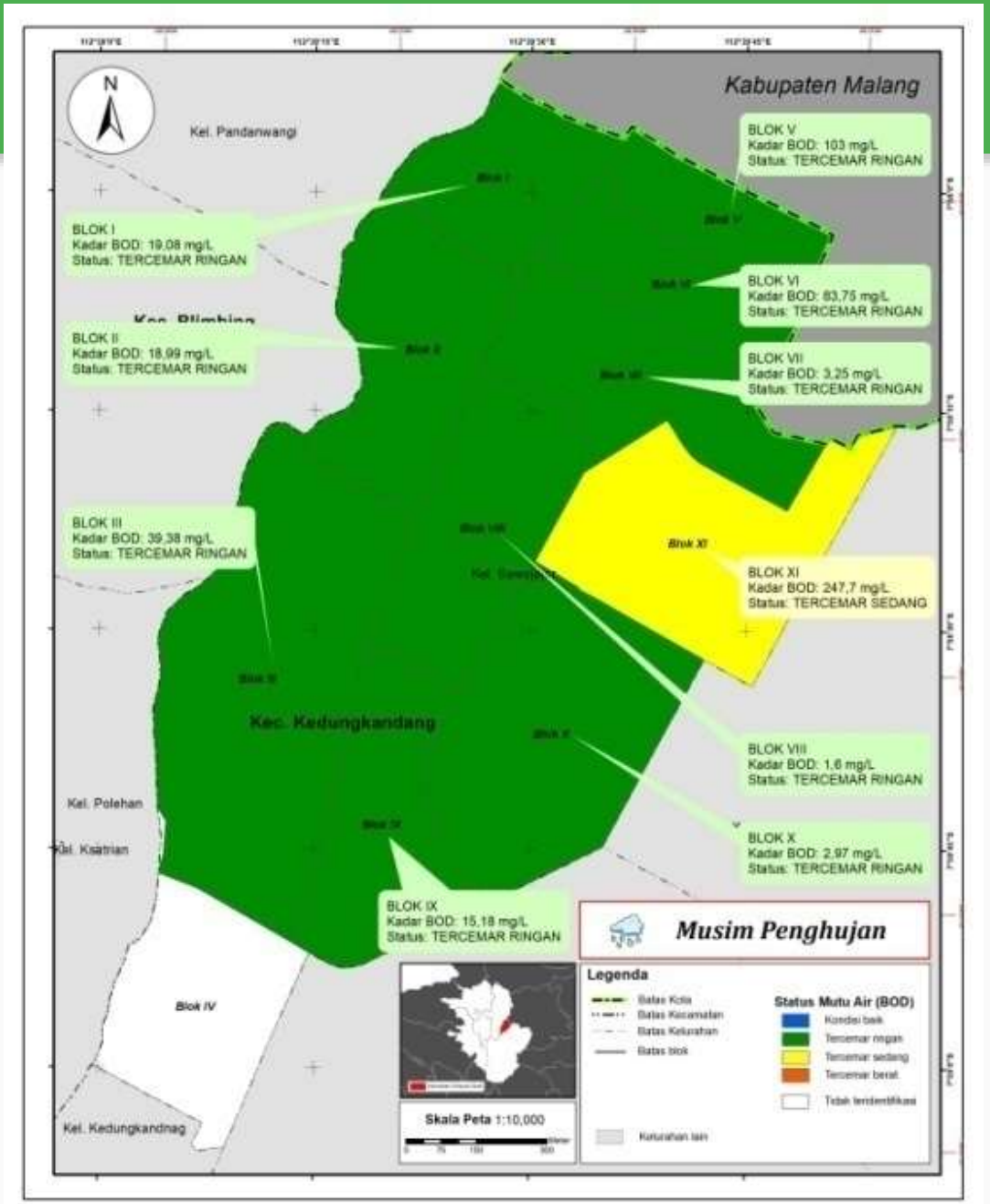
Pollution in district of Sawojajar, possibly caused by the discharge of domestic wastewater directly to the drainage without any processing or by wastewater that went through processing that has not met the standards

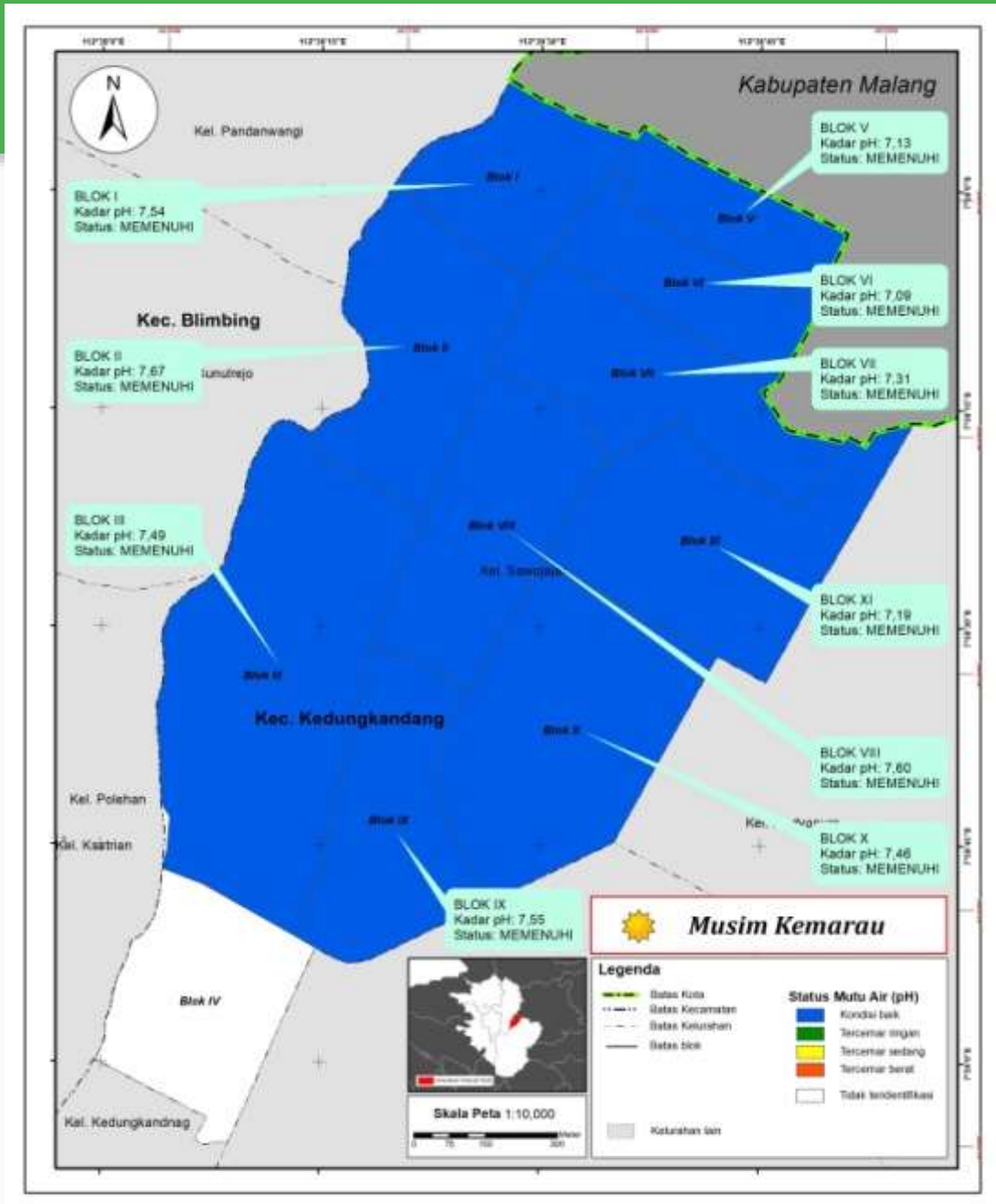
This condition is supported by the high content of *E.coli* in water samples tested together with BOD parameters. The findings in blocks 2 and 3 were 85 and 143.50 MPN / 100 ml (dry season) and block 11 it was 295.30 MPN / 100 ml (dry season) and 30 MPN / 100 ml (rainy season).





The district of Sawojajar





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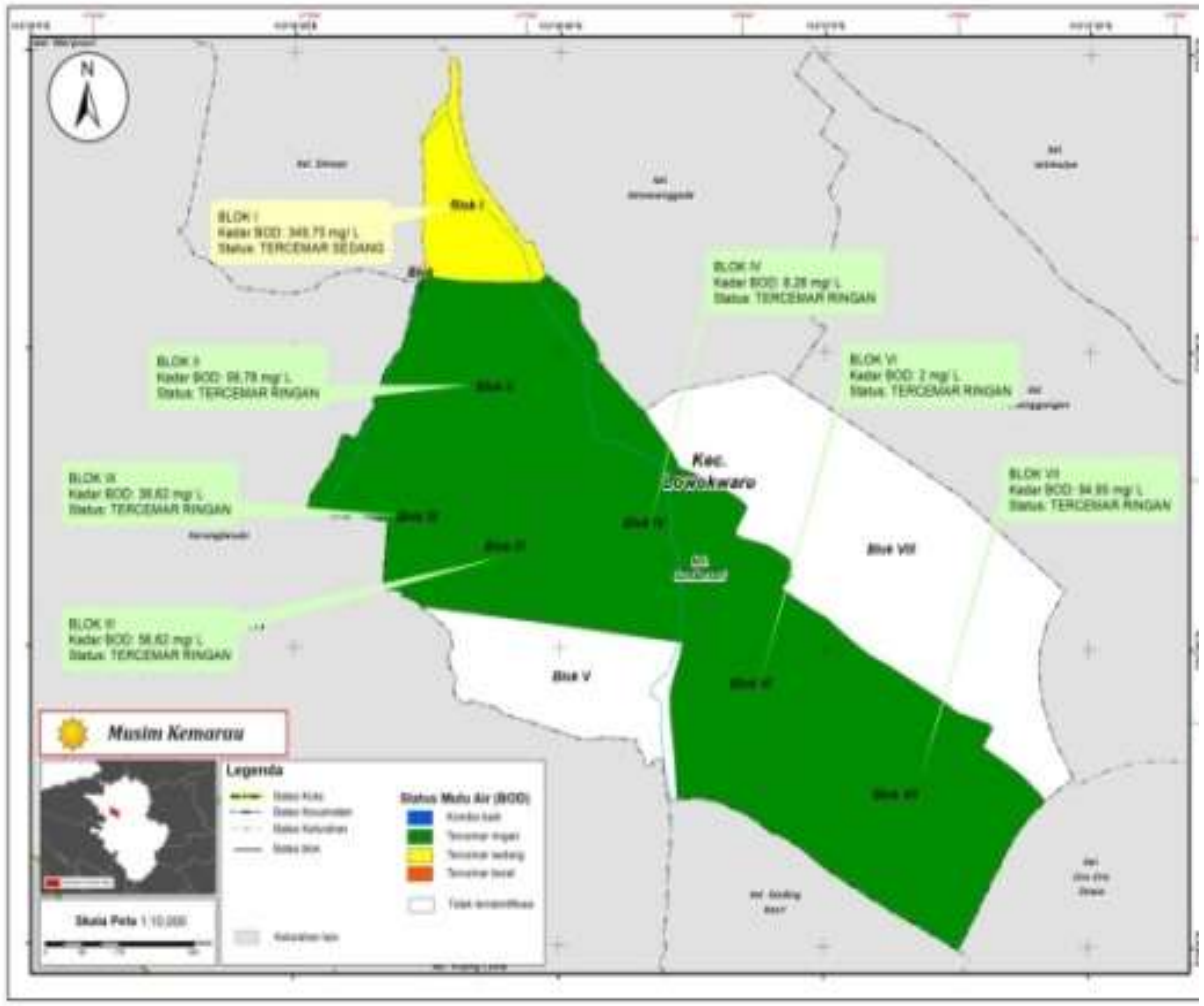
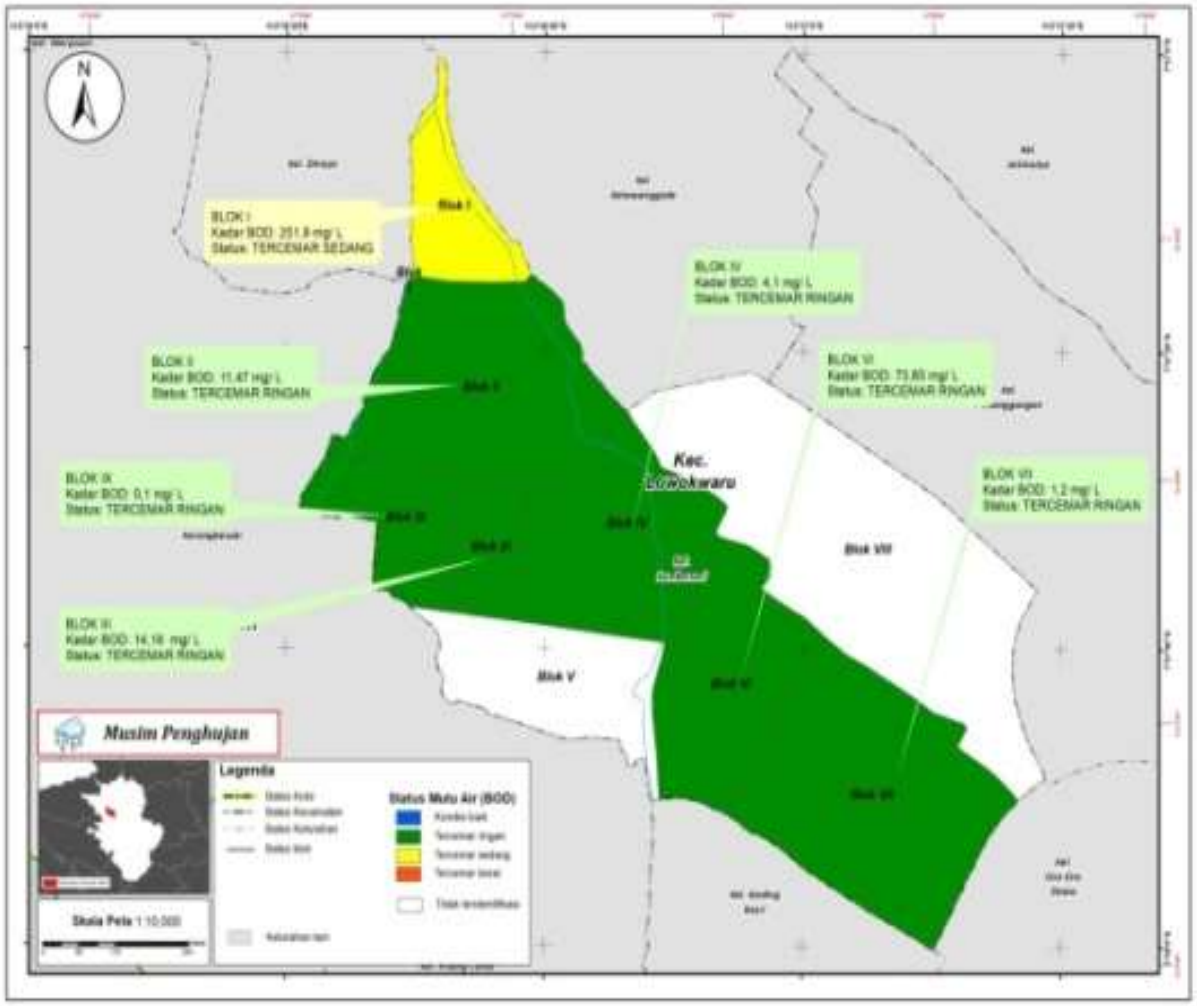
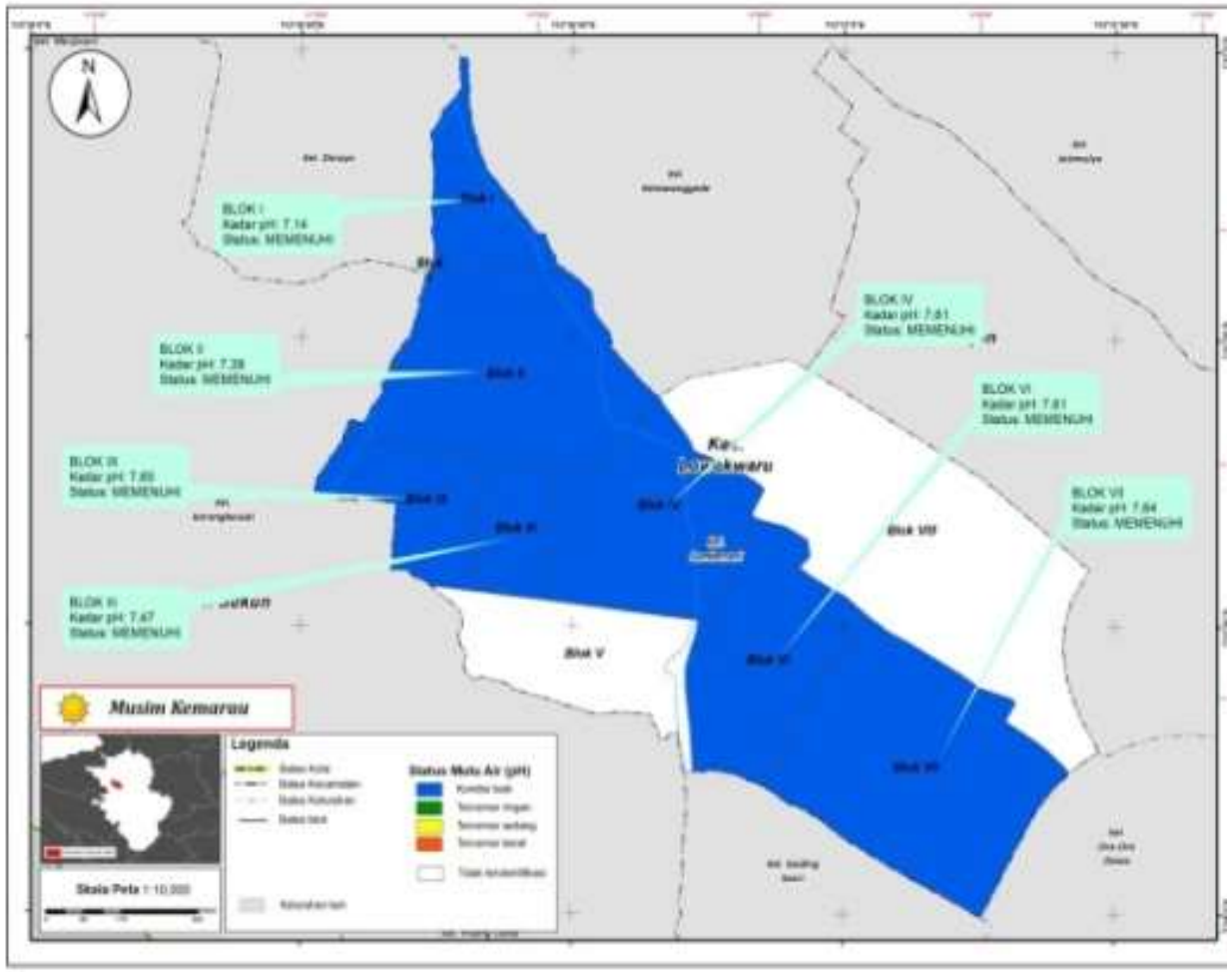
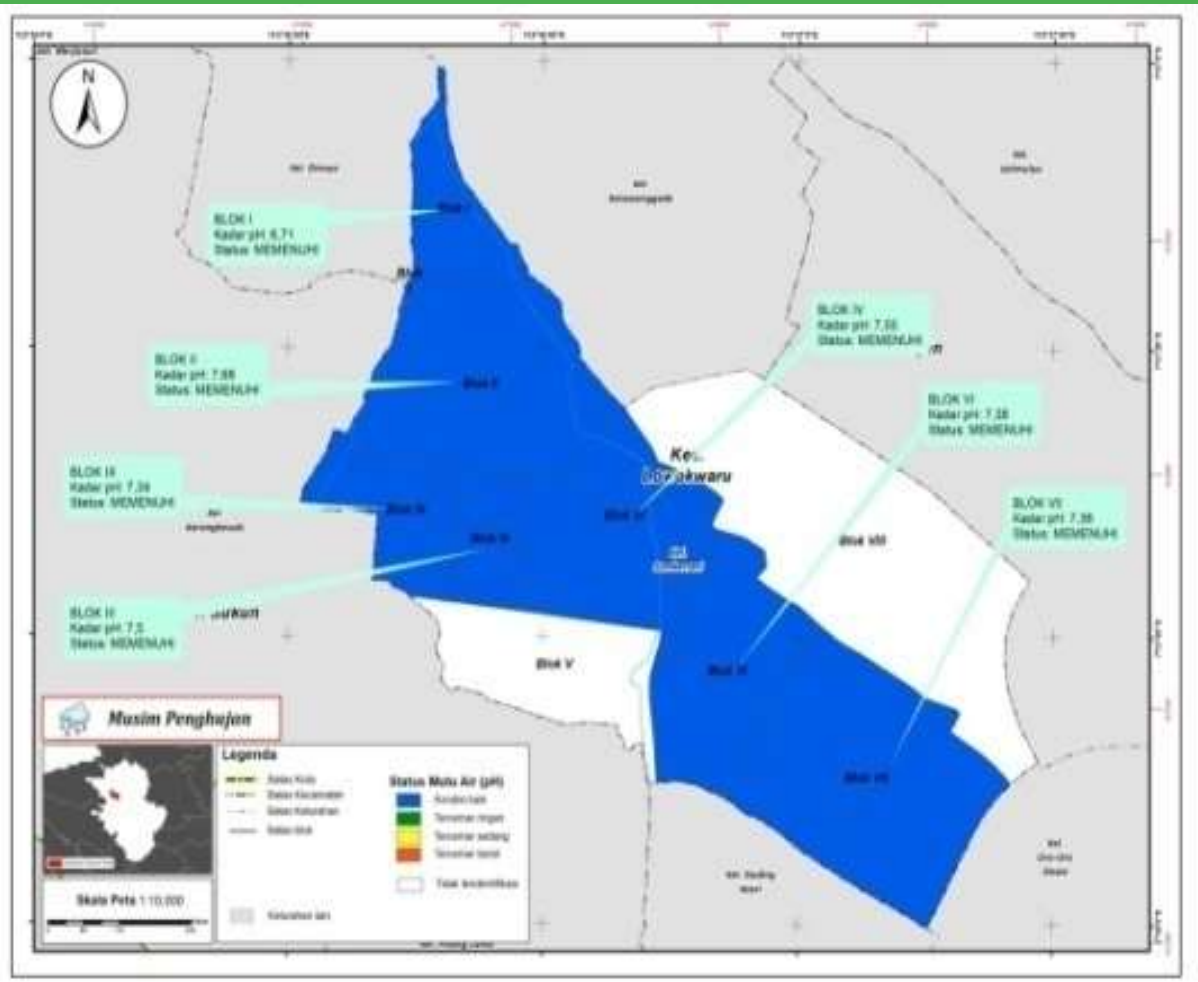


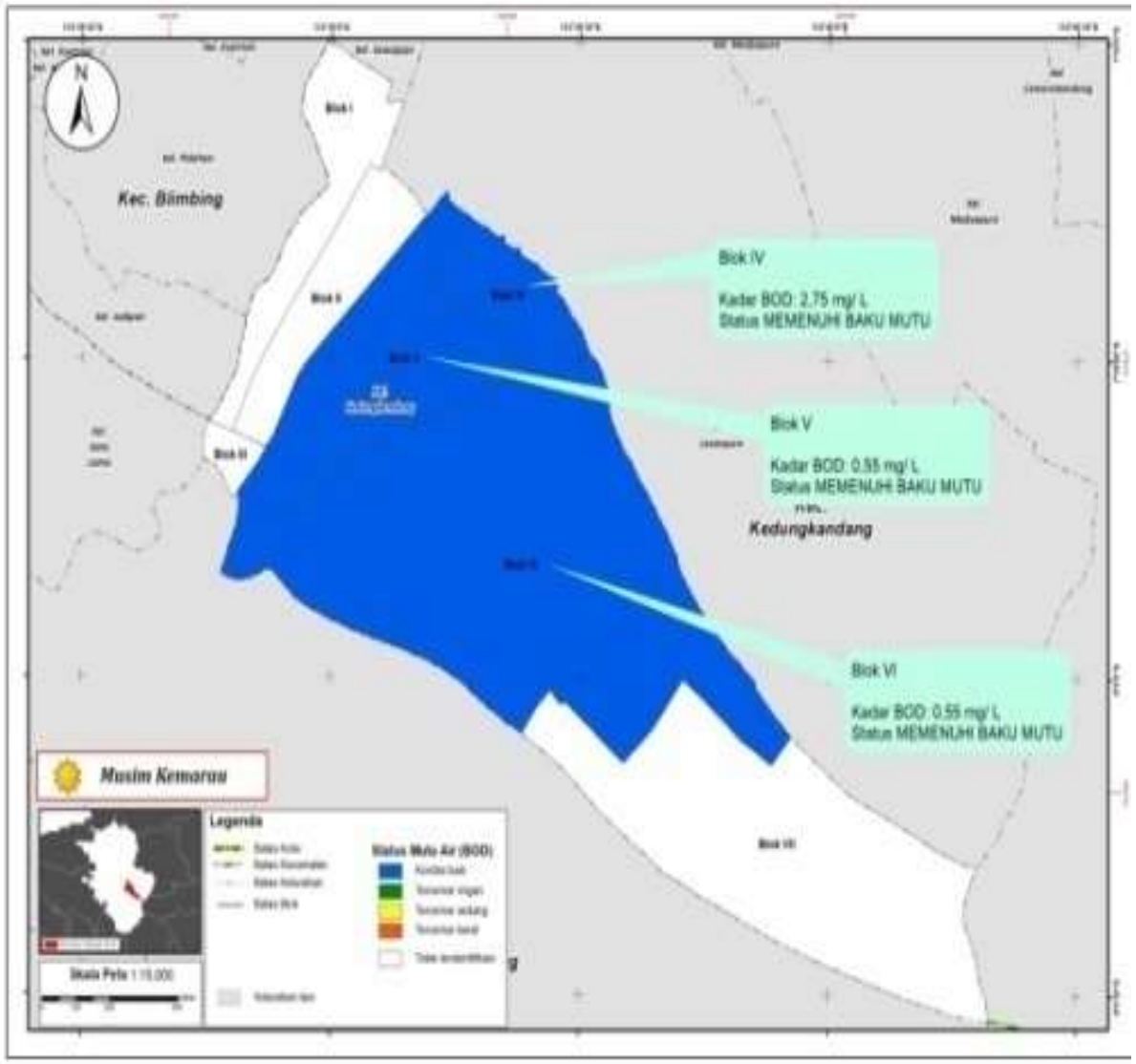


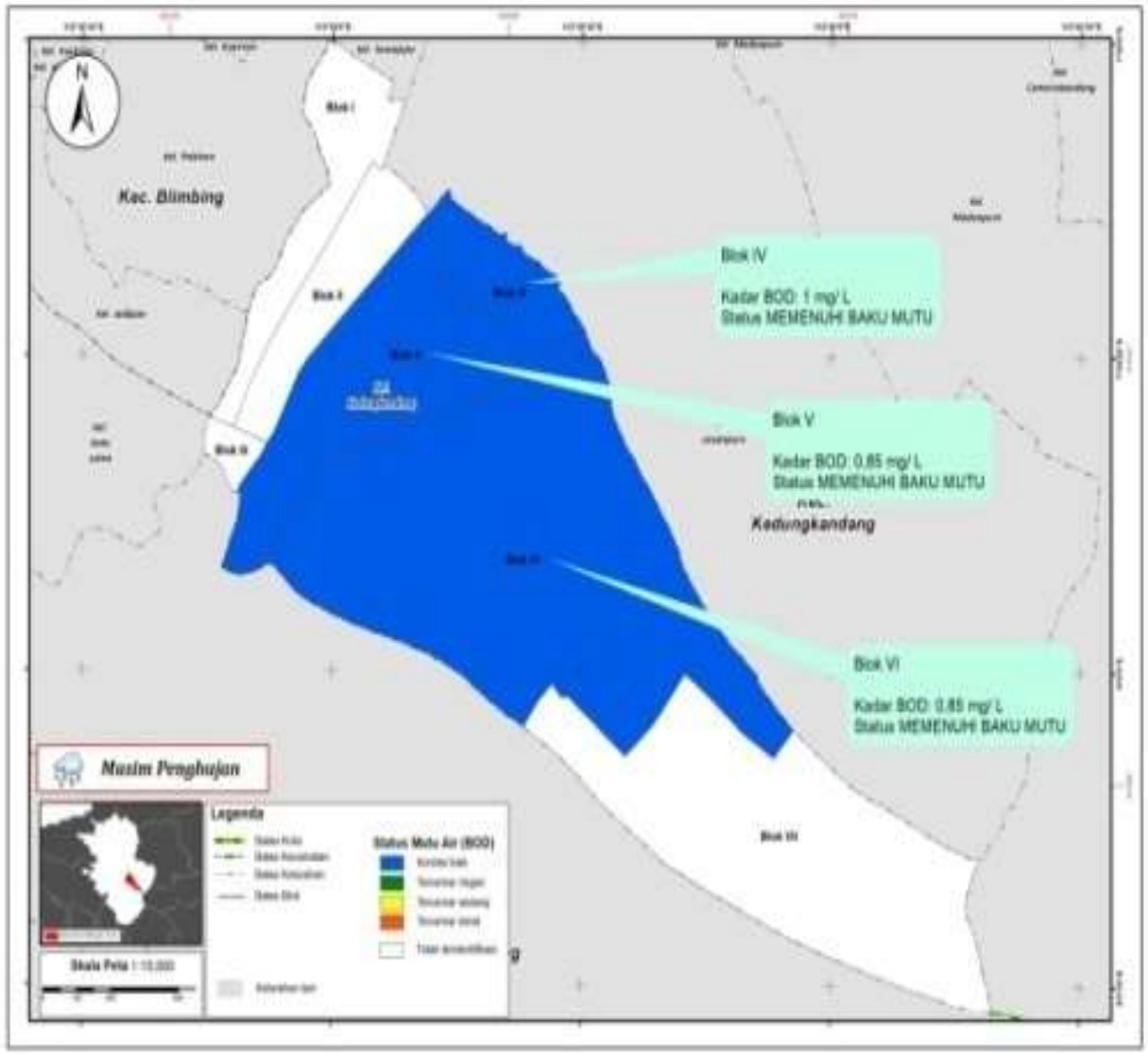
The district of Sumbersari





The district of Sumbersari





The district of Kedungkandang

CONCLUSIONS

- The level of pollution in the districts of Sawojajar and Sumbersari is categorized as light pollution with averages IP 4.09 and 4.02.
- The district of Kedungkandang included in the category still meet the quality standards of domestic waste water.
- Further management of domestic wastewater is required to anticipate increased pollution from domestic wastewater.
- The distribution of domestic wastewater is influenced by the abundance and quality of discharged wastewater.

THANK YOU