

**IMPLIKASI PERUBAHAN GUNA LAHAN TERHADAP
KUALITAS
AIR BAKU KOTA BATAM**

T E S I S

Disusun Dalam Rangka Memenuhi Persyaratan
Program Studi Magister Teknik Pembangunan Kota

Oleh :

**MUHAMMAD DICKY
L4D 005 085**



**PROGRAM PASCASARJANA
MAGISTER TEKNIK PEMBANGUNAN WILAYAH DAN KOTA
UNIVERSITAS DIPONEGORO
SEMARANG
2008**

ABSTRACT

Water is the substantial needs for human being. Along with rapid growth of population, clean water which required by people increases also. However, the raw water quality for drinks, the production expense gets increase, and the result is not good enough. Clean water supply has not according to the standard and impure in physically, biologic, or chemically. It could cause negative impact for people's or inhabitant's health in short of period. Therefore, clean water supply should be able to provide water for people with comply healthy standard.

Duriangkang Dam is one of the biggest dam in Batam Island, among 6 (six) existed dam. This Dam used to fulfil 78% of raw water needs, it caused by soil was hard to absorb water, and so that most of Batam City's area has not ground water reserve.

This research aims to analysis the impact of land conversion into raw water quality in Duriangkang Dam, Batam City. While, to achieve the aim, this research performed. Some of activities are identifying land use conversion around Duriangkang Dam, Batam City, analysis the water contamination resource and provide recommendation due to handling raw water contamination in area of Duriangkang Dam Batam City.

The method is descriptive by analysis development of land use which occurs in houses area around Duriangkang Dam. Furthermore, it continued by analysis the water quality, impact of domestic waste contamination to raw water Duriangkang Dam and relationship analysis of land use to Duriangkang Dam contamination.

Based on analysis result, concluded that most of land use in study area for house is. Land use of houses get increases in 2000 to 2007 for 54.31 Ha or 18,17%. It is triggered by resident growth rate/year in study area from 2000 to 2007 for 18.73% which is influenced generally by resident growth in Batam City and the geographic position of study region that is strategic, near industrial area, governmental centre, trade, and others city's infrastructures such as international harbour and airport. There are many people's activities in study area that cause decreases of raw water quality in Duriangkang Dam. The domestic waste that entering Dam came from septic tank which connected to drainage through houses and ended in Duriangkang Dam. Contamination in Duriangkang Dam shows increase is from 2000 to 2006, especially for ammonia parameter from 0.3 mg/l to be 6.58 mg/l, colour from 55 TCU become 87.08 TCU and e coli from 65.22/100ml to be 129.58/100 ml.

The availability of raw water in a few Dam in Batam City, especially Duriangkang Dam used to fulfil people's need should be maintained and protected, both the quality and quantity especially from domestic waste contamination which came from around people's activities. There are needs to perform socialization due to environmental cleanliness also performing waste processing both communal and centralized

Keywords: land use, raw water, water quality and contamination