

# Pumping Simulation using 3D Groundwater Flow Model of Minami –Yamashiro District at Kyoto Basin

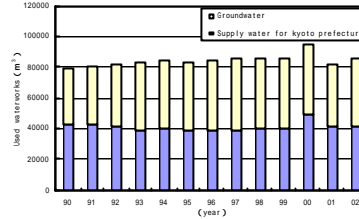
## Background

Kyoto Southern-yamashiro district at Kyoto basin are using the groundwater for agriculture, industry and drinking water for long time.

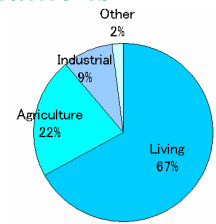
The sustainable using system of groundwater are required

The establishment of pumping simulation system using 3D groundwater model for Yawata city in Kyoto basin

## The groundwater using conditions



The quantity of using waterworks wells for each year at Yawata city

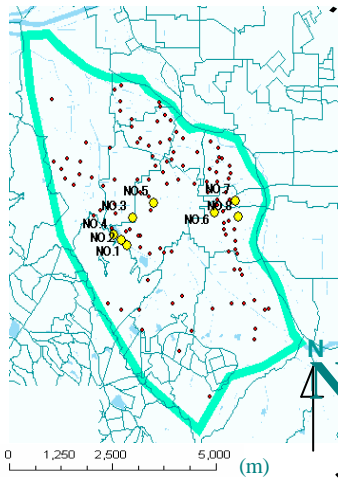


Classification of using type for well

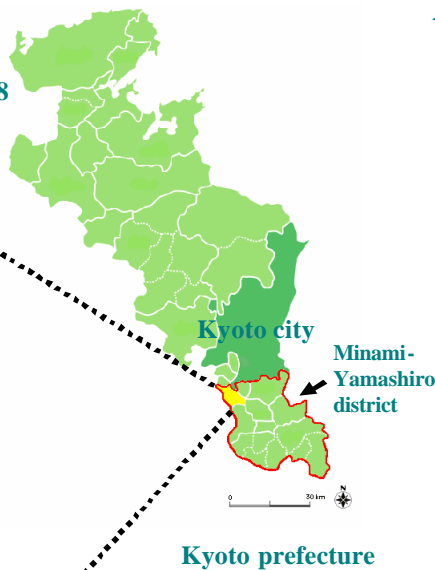
## Yawata city

Number of waterworks wells :8

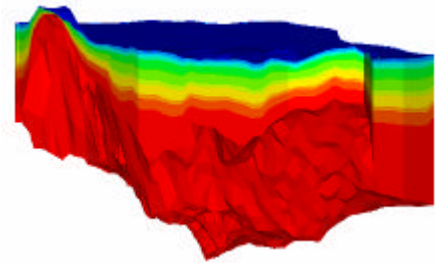
Number of private wells for living, agriculture and industry :109



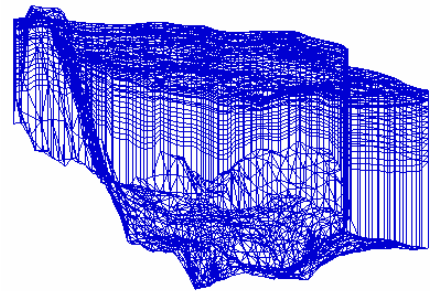
Yawata city



## Analysis model

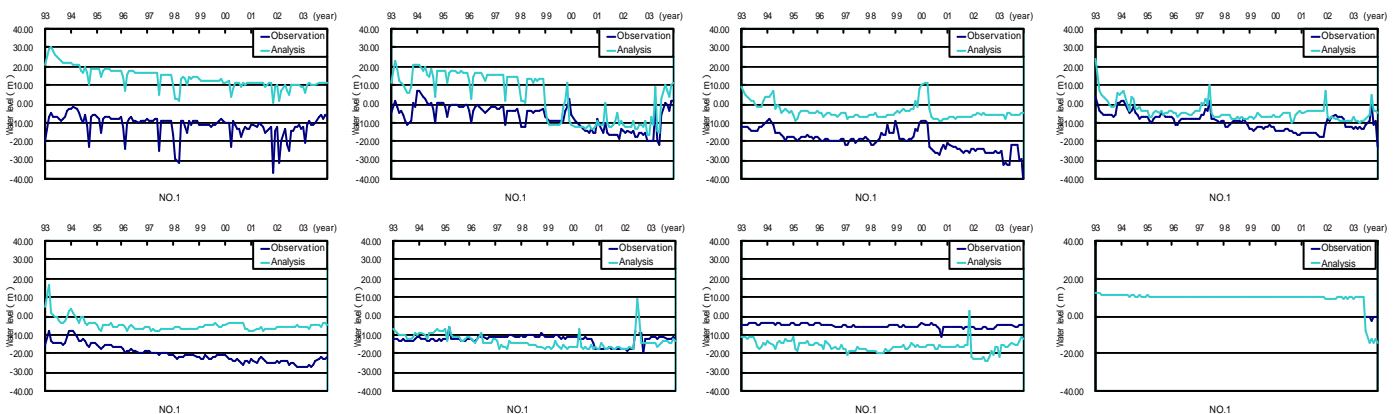


Geological classification of 3D analysis model



The division of mesh distributed in the analysis area

## The result which changed the pumping rate as flow boundary conditions



Comparison with the observation groundwater table and the analysis these in each waterworks wells