

# STUDY THE QUALITY OF WATER IN WATER SOURCES WHERE LEAD IS DETECTED



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## ABSTRACT

Studying the water quality in freshwater sources is a scientifically crucial process for maintaining the balance of ecosystems and the benefits derived from water in daily life. Analyzing chemical solutes such as elements and other compounds aids in understanding water quality, which can impact the biodiversity in water and the surrounding areas.

Examining the biological environmental conditions, including quantifying and identifying living organisms present in water sources, provides vital information for assessing the health of ecosystems and water quality. By analyzing these factors, we can predict changes in local environments and conserve water resources.

Moreover, investigating freshwater systems has practical applications in planning water resource management, improving water quality, and developing policies that promote efficient water usage within communities.

## GOAL OF PROJECT

- In order to study the water quality in the examined water sources To assess the water quality in water sources for health and environmental risk evaluation.
- To conduct assessments and measurements of water quality in water sources for the purpose of evaluating risks to both health and the environment.

## Introduction

The study of water quality in freshwater habitats, particularly in ponds, plays a crucial role in enhancing our understanding of water conditions and their impacts on living organisms and the environment. Analyzing water quality data and addressing issues arising from ponds are vital for effectively conserving aquatic environments and controlling future water-related problems. Collaborative efforts in studying and managing water in ponds are essential for efficiently utilizing water resources and ensuring sustainability in the long term. Therefore, focusing on the study of water quality in pond ecosystems is of utmost importance for environmental preservation and the well-being of both humans and aquatic life, both now and in the future.

## Experimental Procedure

First we have conducted sampling in the area to collect water samples in Khong Chai District, Kalasin Province



(16.2806775,103.4368214)



(16.2755625,103.4666976)



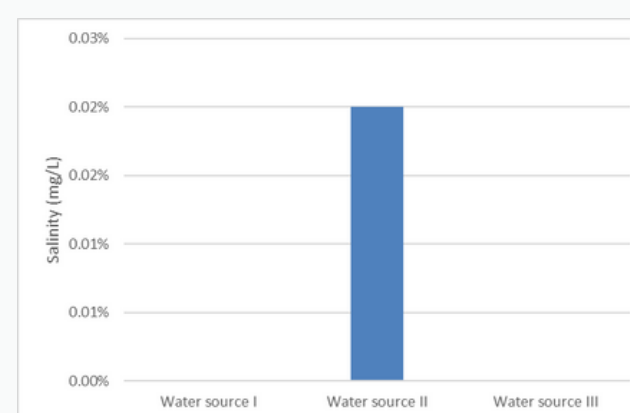
(16.2480682,103.4424333)

1. Using a Water Quality Tester: Immerse the testing device into the water to be examined and wait until the readings stabilize. Read the Electrical Conductivity (EC) value, measuring the water's ability to conduct electricity. Read the Total Dissolved Solids (TDS) value, measuring the quantity of dissolved solids, organic and inorganic, in the water. TDS is expressed in milligrams per liter (mg/L) or parts per million (ppm). Read the pH value, measuring the concentration of hydrogen ions to determine the water's acidity or alkalinity
2. Using Atomic Absorption Spectroscopy (AAS): Allow atoms to absorb light in an atomic absorption spectroscopy setup. Atoms dissolved in the water absorb light at different wavelengths. The spectrum of absorbed light from atoms is linear, distinguishing it from the spectrum of molecules. Alter the energy levels of electrons in atoms to absorb light. Utilizing both instruments provides essential information about water quality and quantifies various parameters crucial for water assessment, such as electrical conductivity, dissolved solids, and pH. These measurements help evaluate the suitability and quality of water for various applications

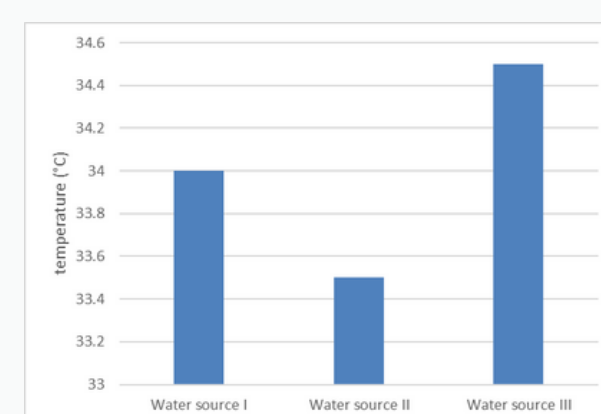
## Reference

Thai PBS, 2018. "Random Inspection of 'Heavy Metals' in 5-Year-Olds at Risk in Khong Chai Village." Conducted on September 13, 2018. Source: <https://www.thaipbs.or.th/news/content>  
Department of Pollution Control, 2018. "Water Quality and Water Pollution." Accessed on September 13, 2018. Source: <https://www.pcd.go.th/>

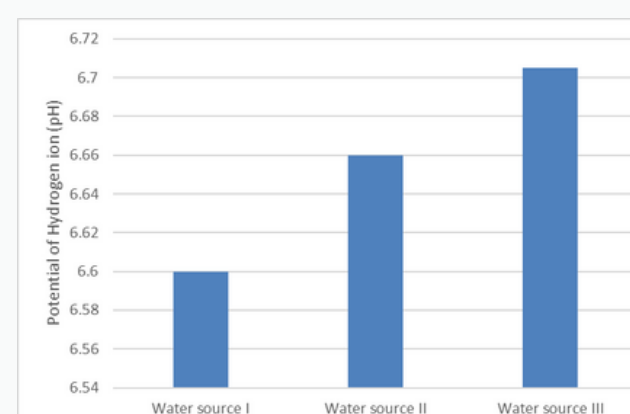
## RESULTS



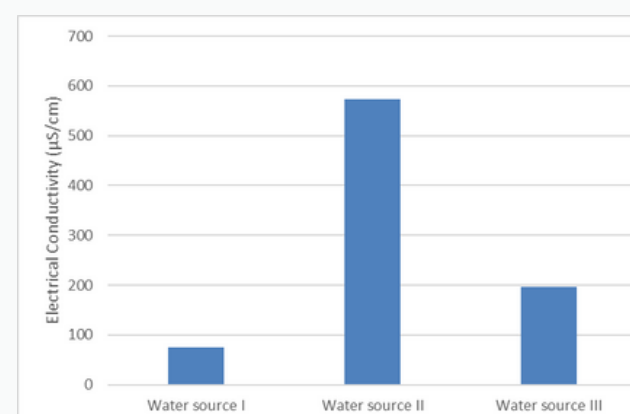
The graph provided illustrates the salinity levels of three different water sources



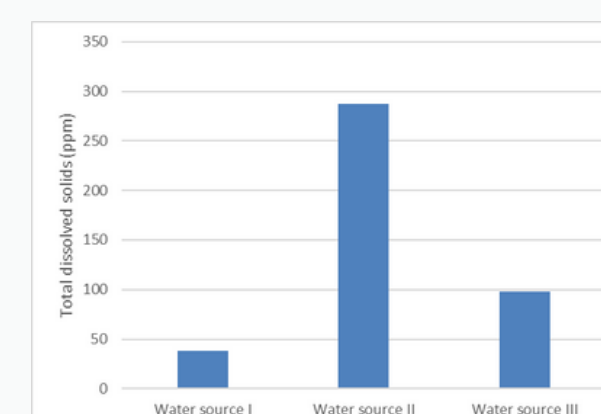
The graph provided illustrates the electrical conductivity of three different water sources.



The graph provided illustrates the pH levels of three different water sources.



The graph provided offers valuable insights into the temperature variations among three distinct water sources



The graph provided offers insights into the Total Dissolved Solids (TDS) levels in mg/L across three water sources.

## CONCLUSION

Analyzing the water quality at estuarine sources is a process intricately linked to a deep understanding of the physical and chemical nature of water. Collecting samples from various water sources enables us to examine the natural diversity present in these waters.

The concentration of dissolved substances in water significantly impacts the sustainability of aquatic life and the economic viability of water resources. The pH level influences the effectiveness of diluting substances, while electrical conductivity relates to the transportation of dissolved substances through electrical currents.

The data obtained from studying water quality at estuarine sites is pivotal for developing water management policies and maintaining water resources at appropriate levels. Furthermore, it is crucial to utilize this information for sustainable water usage planning and to mitigate potential environmental issues.