وزارة التـعـليم
Ministry of Education

A study on of the physics and Chemical prop of the water of The Ain Ancient Village

Presented By

Wejdan Ali Salem Alzahrani

To

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Coordinator of Globe Program

Eida Ali Hussein Al Rashedi

Research Supervisor School Leader

Aisha Khader Mohammed Al Zaili

Abstract

Reservoirs are vital to the world's economy for their role in electricity generation, flood control, water supply, and recreation, which are all dependent on water storage capacity. However, dams are effective traps of sediment, and capacity is reduced as deltas prograde into reservoirs.

Air, water and soil from three area at The Ain Ancient Village were investigated. The tools that provided with Globe program were used to determine the properties of air, water sample. The results of physical and chemical analysis of water samples confirmed that some sample of water are contaminated with nitrite and nitrate. In general, we can conclude the properties of the water, in The Ain Ancient Village, Al Makhwah area.

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1-Introduction

Al Makhwah district is located on the coast the climate is warm in the winter and hot in the summer. Rainfall lies in the range of 229–581 mm; the average is 100–250 mm annually. Water and vegetables are essential for the human diet; in particular provide the trace elements, whereas they are vital for good health if they come from plant or an organic source.

Of all the natural resources, water is unarguably the most essential and appreciated. Life began in water and spirit is nurtured by water. It is a universal solvent and as a solvent it provides the ionic balance and nutrients, which support all forms of life. Water is one of the most abundant resources on earth, covering three fourths of the

planet's surface. About 97% of the earth's water are saline water in the oceans and 3% is fresh water contained in the poles (in the form of ice), ground water, lakes and rivers, extremely valuable and with the country's rapid growth, the demand for water is increasing.

Water scarcity in Saudi Arabia is a major problem, due to the shortage of natural freshwater resources for domestic purposes. In addition, the demand for water in the Kingdom increases annually at a rate of 3% or more. In Saudi Arabia the major source of water used to meet the domestic, agricultural and industrial needs is the ground water.

In Saudi Arabia the recent source of water is various. This water is used for agriculture. Since no previous work has been conducted in this subject and thus no results have been published on this subject until now, this study could then serve as a guideline for further and thorough analyses of well waters in Almakhwah, The Ain Ancient Village.

Little information is obtainable for the estimation of health effects in relation to the water in reservoirs.

The main objective of this study is monitoring the physical properties of the air, and water of The Ain Ancient Village.

2- **Materials and methods**

2-1 Description of the sampling sites

Three areas were chosen for this study located within The Ain Ancient Village region, Al Makhwa, Table 1. Al Makhwah is a populated place in Saudi Arabia, Asia. It is located at an elevation of 448 meters above sea level and its coordinates are 19°46'46" N and 41°26'8" E in DMS (Degrees, Minutes Seconds) or 19.7794 and 41.4356 (in decimal degrees). It is an excellent agricultural region. In the western part of Saudi Arabia, the main source of water or almost the single source is groundwater. The Geographic location of the Al - Makhwah city is shown in Fig. .1. Figs .2 show the Geographic of The The Ain Ancient Village

The area of study was surveyed during 2022. The water samples were collected in polyethylene bottles (1.5 liters capacity). The sample bottles were covered immediately, after water samples from groundwater wells were taken by lowering the polyethylene bottles to about 0.5 m under the water level

Table 1

Name and coordinates of studied Dam

Name	coordinates						Heigh,m
	Latitude			longitude			
The Ain Ancient Village	19	41	477	41	23	211	761.3

Fig. 1 Saudi Arabia map showing Al Makhwa city

Fig. 2 Saudi Arabia map showing Deh ain vallage

Results and discussion

3-1Study Area and Sample Collection

In Saudi Arabia the recent source of water is lemeted. Dams, River and Ains are used to capture surface water after frequent flash floods.. This water is used for agriculture. Since no previous work has been conducted in this subject and thus no results have been published on this subject until now, this study could then serve as a guideline for further and thorough analyses of well waters in The Ain Ancient Village. Almakhwah, the Kingdom

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2-3Analysis of atmospheric and climate

Table 2 shows the date of investigation of atmospheric and climate. As shown the current temperature is 28ºC, maximum temperature 31 ºC and minimum is 20 ºC. . % The humidity for all spots has a value 31
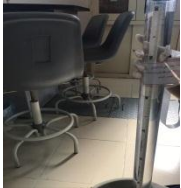
3-3Analysis of soil samples

The physical and chemical properties of collected water samples from studies area are filled in Table 3. It is clearly shown that the water has 60 cm 2 .Transparency. Water have 1 mg/L dissolved oxygen

All the samples is near to neutral. All samples have salinity increased to 490 mg/L that make the water in suitable for domestic uses. The chemical analysis were shown that water have high content from nitrite and nitrate which increase about .the local standard limits for water

Title	Pictures
1-Determination of air temperature	
2-Determination of soil temperature	
3-Humidity app aratus	
4-Clouds	

Title	Pictures	Title	Pictures
1- Determination of dissolved oxygen		4- Conductivity	
2- Test of nitrate in water		5- PH	
3- Transparency tube		6- Salinity	

Table 2

Analysis of atmospheric and climate

Date	Time	Air Temperature °C			Soil temperature °C			Heat and humidity		Relative atmospheric pressure ,mabr	Clouds		
		Current	Maximum	Minimum	Current	Maximum	Minimum	Ambient air temperature, °C	Humidity,%		Cloud cover	Type	Proportion ,%
11/2/2022	4:15 pm 13:15 pm	28.3	31.0	20.5	25.2	32.6	21.2	27.5	36	928.94	natural	cumuls	50

Table 3

Analysis of water

	Physical properties						
	Transparency Cm^2	Temperature °C	Dissolved oxygen mg/L	PH	Conductivity mS/cm	Salinity	Nitrates mg/L
1	60	28.7	1	7.9	514	4.9	10

3-Conclusion

We can summarize some of the results as the following:-

1. The results of the analysis of well water showed that it contains large percentages of salinity, nitrate and nitrite, which makes it unsuitable for different uses.

Acknowledgement

Badges

Cooperate	Contact a stem specialist	Communication between schools
Students Jana Ahmed Al-Abdali and Wejdan Ali Al-Zahrani 1-Go to the traditional to The Ain Ancient Village 2-Taking quantities of water and different types of soil 3-Use of instruments for weather measurements 4-Conducting experiments for water and soil measurements in the school 5-Searching and reading about books that help in the research	1-The teacher: Fatima Al-Adawani, a master's degree in Biology and a Biology teacher, translating research into English 2-The teacher: Aida Al-Rashidi, the chemistry teacher, supervising the experiments and research of the students 3-School lab teacher: Alia Al-Zahrani 4-School Principal: Aisha Al-Zailai provided support and assistance	Contacting Professor: Fayza Bahri at El-Matn Intermediate and Secondary School to assist in the Globe research

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Work Plan

The project's head, Aisha Khader Mohammed Al Zaili, distributed the work to the team as follows:

.Students collect samples from various sites over a period of days

Field studies were carried out for five different farms in the Nwan area and measurements of different weather conditions at each site.

.Test and analysis the samples (water, soil and air) on Globe program devices

Make reports about each site

Assigning the Globe program coordinator, Ida Ali Hussein Al-Rashedi, to follow up the students during the experiments on the environmental globules and to establish sites for field studies on the school's Globe website.

The project leader communicates with the academic supervisor to conduct some specialized analysis, quality and consultation.