بسم الله الرحمن الرحيم

قال تعالى:

(أَوَلَمْ يَرَ الَّذِينَ كَفَرُوا أَنَّ السَّمَاوَاتِ وَالْأَرْضَ كَانَتَا رَتْقًا فَفَتَقْنَاهُمَا ۖ وَجَعَلْنَا مِنَ الْمَاءِ كُلَّ شَيْءٍ حَيٍّ ۖ أَفَلَا يُؤْمِنُونَ)

صدق الله العظيم

الأنبياء (30)

Dedication

Dedicated to; my parents, my husband, brothers, and sisters**.**

Acknowledgement

First of all I would like to thank Almighty Allah who gave me strength and good health while doing this work.

I would like to thank my supervisor Dr. Mai Makki Mahmoud who never failed to help and guide me.

Special thanks are due to all staff at (National Public Health Laboratory) for their facilities.

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Abstract

In this study analysis was carried for seven samples of water. Physical and chemical characteristics of water were analyzed by using standard methods. The samples were taken from (River Nile, Blue Nile, White Nile, Mayou, Elengaz, Alhaj Yousof, and Zamzam water). The results were found as follows respectively:

pH (7.6, 7.04, 7.6, 7.6, 7.3, 6.8 & 8.05), electrical conductivity (310, 300, 310, 480, 820, 460& 800) µs/cm, the total alkalinity (140, 140, 140, 230, 215, 210& 200) mg/L, the total hardness (92, 130, 92, 140, 232, 200& 200) mg/L. The total dissolve solids were found (185, 180, 185, 250,370, 275&480) mg/L.

Calcium hardness (28, 36, 26, 21, 62, 37&53) mg/L, Magnesium (7, 9, 7, 21, 18, 26&17) mg/L, Sodium (32, 22, 32, 50, 50, 30& 80) mg/L, Potassium (13, 3, 13, 6, 6, 2&27) mg/L.

Chloride (17, 8, 17, 14, 69, 22&27) mg/L, Fluoride (0.45, 0.5, 0.4, 0.45, 0.6& 0.4) mg/L, Sulfate (2, 15, 5, 2, 38, 33&74) mg/L. Finally Nitrate (5, 3, 3, 0, 2, 0& 32) mg/L.

From results obtained all measured values were below the permissible level except the total hardness in some samples was high concentration.

المستخلص

في هذا البحث تم جمع وتحليل سبع عينات مياه مختلفة و تم تحديد بعض الخواص الفيزيائية والكيميائية بالطرق المخصصة لذلك.

عينات المياه هي: (نهر النيل ،النيل الازرق، النيل الابيض ، مايو، الانقاذ ،الحاج يوسف بالاضافة لماء زمزم) وكانت النتائج كالأتي:

تركيز ايون الهيدروجين (7.6, 7.04, 7.6, 7.6, 7.3, 6.8, 8.05).

التوصيليه الكهربيه (310, 300, 310, 480, 820, 460, 800) ميكروسيمنز/سم.

القاعدية (140, 140, 140, 230, 215, 210, 200) ملغم/لتر،

و لعسر الماء الكلي (92, 130, 92, 140, 232, 200, 200) ملغم/لتر.

بالنسبة لذوبان الاملاح الصلبة (185, 180, 185, 250, 370, 275, 480) ملغم/لتر.

لايون الكالسيوم (28, 36, 26, 21, 62, 37, 53) ملغم/لتر،

أيون الماغنيسيوم(7, 9, 7, 21, 18, 26, 17) ملغم/لتر،

و لأيون الصوديوم (32, 22, 32, 50, 50, 30, 80)ملغم/لتر ،

ولايون البوتاسيوم (13, 3, 13, 6, 6, 2, 27) ملغم/لتر،

و لأيون الكلور (17, 8, 17, 14, 69, 22, 75) ملغم/لتر ،

ولايون الفلور(0.45, 0, 0.5, 0.4, 0.45, 0.6, 0.4) ملغم/لتر ،

ولأيون الكبريتات (2, 15, 5, 2, 38, 33, 74) ملغم/لتر،

وبالنسبة لأيون النترات(5, 3, 3, 0, 2, 0, 32) ملغم/لتر،

وضحت جميع النتائج انها اقل من الحد المسموح به ماعدا عسر الماء الكلي في بعض العينات فان تركيزه اعلى.

Abbreviation:

TDS	Total Dissolve Solids.
TH	Total Hardness.
EC	Electrical conductivity.
COD	Chemical Oxygen Demand.
BOD	Biological Oxygen Demand.
WHO	World Health Organization.
SSMO	Sudanese Standards & Metrology Organization.

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