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**The 3rd
International
Workshop on UI
GreenMetric**



King Abdulaziz University Strategy for Water Management

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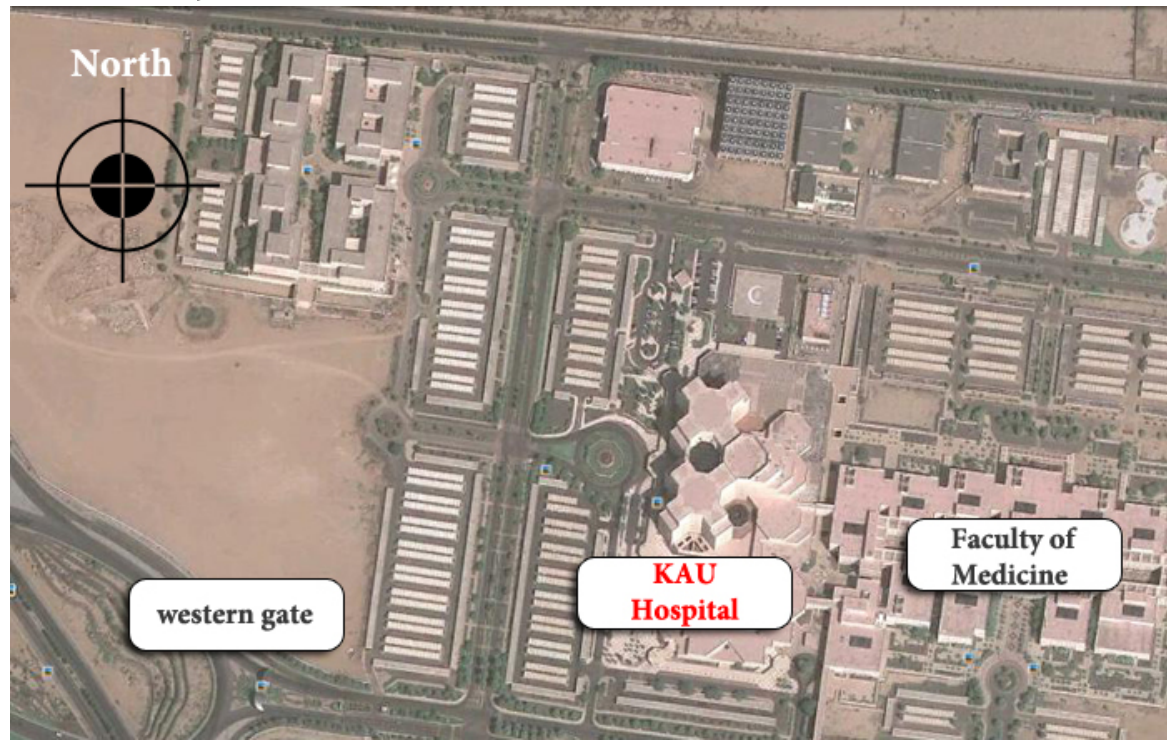
King Abdulaziz University (History)

- King Abdulaziz University (KAU) established in 1967
- National university western area of Saudi Arabia, Jeddah
- In 1973, KAU joined the Saudi public universities system



King Abdulaziz University (Description)

- KAU counts with tens of buildings spreading over an area of 520,000 square meters on KAU's main campus,
- With 4 branches
- Consists of 32 Colleges,
- 4 Excellence Research Centers,
- 5 Institutes,
- 7 Scientific Research



King Abdulaziz University (Description)

- KAU counts with almost 170.000 undergraduate male and female students
 - Almost 43.000 regular,
 - Almost 120.000 corresponding and
 - Almost 7.000 distance learning students
- **Almost 10.000 post-graduate students,**
 - **Including PhD, MS and Diploma students.**



KAU Mission

"Community Responsibility: Knowledge Development, Research, Innovation and Entrepreneurship"

Process

- KAU in fulfilment of its mission, in serving the society, has given great importance to water research, in its various spheres

Research

- KAU colleges have been devoting great attention to water studies and research: whether in exploration, assessment, modelling, management, or development.



King Abdulaziz University Water Resources

An external part comes from the National Water Company (10% - 15%)

An internal part is treated with the water used inside the university.



King Abdulaziz University Main Stations



KAU Main Stations Capacity

The University is fed by two main stations

	Capacity up to	Consumption rate is up to
Campus Station	21,000 m ³	4,200 m ³
Medical Center Station	16,000 m ³	2,000 m ³
Gross monthly consumption of the university	186,000 m ³	
Gross annual consumption of the university	2,232,000 m ³	

KAU Water Management

■ Water Research Center (WRC)



KAU Innovative Water Management Methods

Improve irrigation efficiency by using internal developed ***suitable tools*** that maintain water availability.

These tools are offered to support water resources at the university, as the utility professionals with the challenge of severe drought.



They help and assist in planning for water shortages by familiarizing users with alternative sources, treatment processes, etc.

KAU Innovative Water Management Methods

Improve irrigation efficiency by using internal developed ***suitable tools*** that maintain water availability.



Rehabilitation of the ***sewage treatment plants, and, stream canal project***

- Three plants in each branch of the university, the three stages of the sewage treatment process are done locally at KAU campuses, including the pre-treatment process.
 1. Sewage Treatment Plant (6000 m³/day) Using Membrane Bioractor Technology
 2. Sewage Treatment Plant (500 m³/day) Using Membrane Bioractor Technology
 3. Hardness Removal Plant (100 m³/day) Using Reverse Osmosis Technology

KAU Innovative Water Management Methods

Improve irrigation efficiency by using internal developed ***suitable tools*** that maintain water availability.

Rehabilitation of the ***sewage treatment plants, and, stream canal project***

Installation of faucets operated automatically in all new buildings

- Leading to optimal use of water resources instead of manually used taps and consumes larger quantities of water.

KAU Innovative Water Management Methods

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KAU



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KAU Water Pollution treatment



The treatment plant refine and remove the wastewater in accordance with international standards

Ensure the storage of water resources in reservoirs that keep the water sealed and equipped with pneumatic filters



Ensure the separation of the network of floods and groundwater from the sewage network to ensure that it is not contaminated

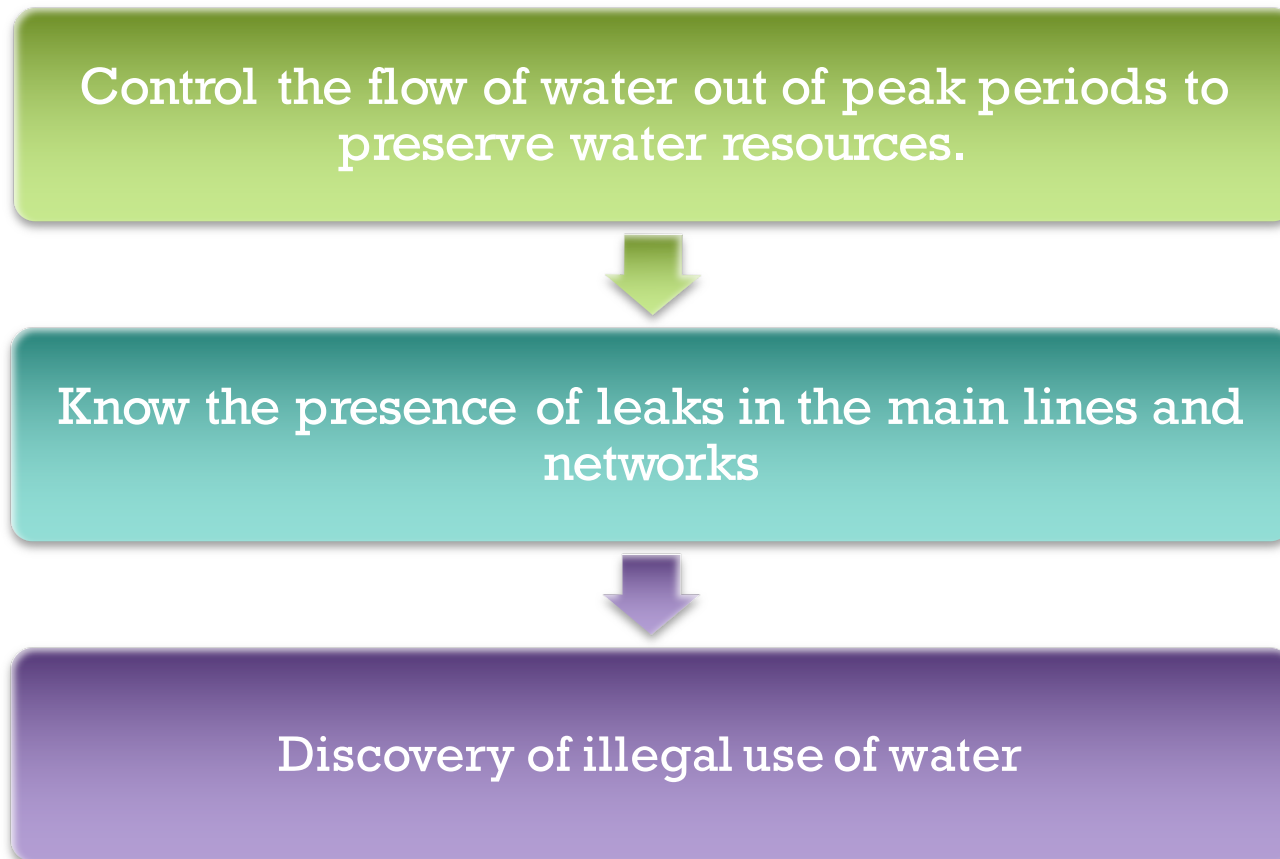
Not to use the wastewater in watering plantations.



Rehabilitation and treatment of the water used in the university hospital before discharge into the sewage network.

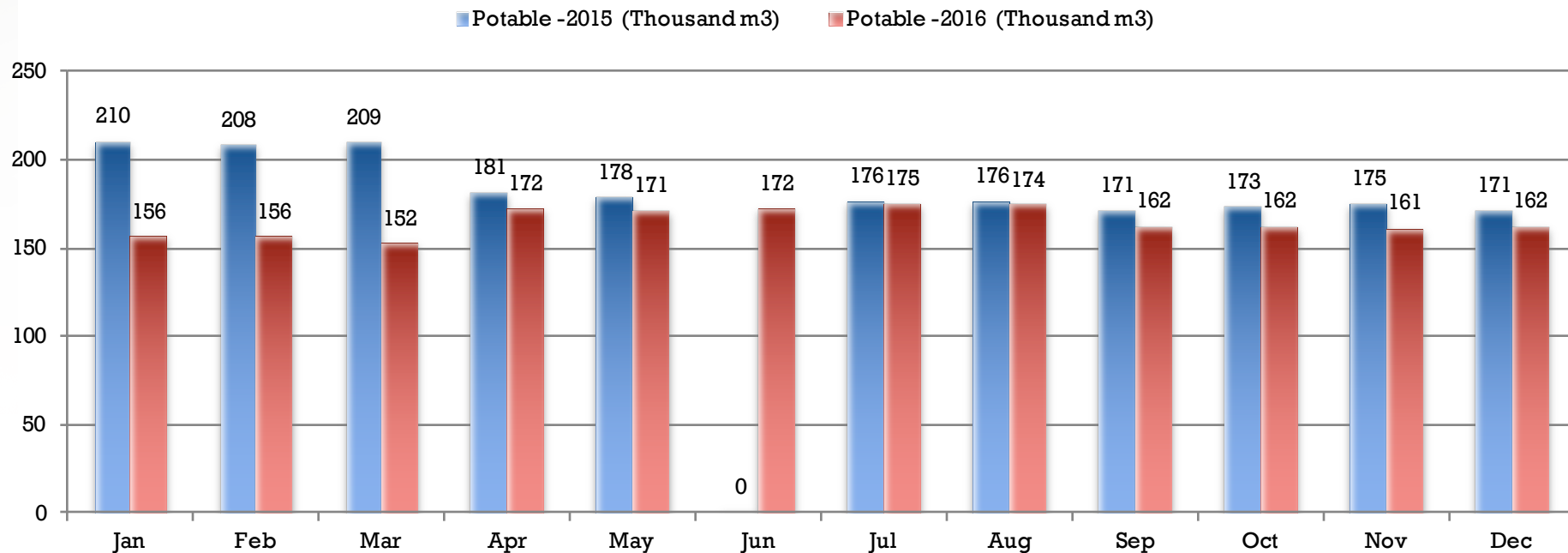
KAU method of reuse of water

- **Monitoring and evaluation of water in the university:** by taking meter readings, pressure and flow measuring instruments, data analysis and technical reporting, to:



Results: Water Management System - Potable Water Consumption

Details	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Potable -2015 (Thousand m3)	210	208	209	181	178	178	176	176	171	173	175	171	2.028
Potable -2016 (Thousand m3)	156	156	152	172	171	172	175	174	162	162	161	162	1.975



KAU Academic and Research Commitment

Number of courses related to environment and sustainability offered	688
Total number of courses offered	4.617
Total research funds dedicated to environmental and sustainability research (in US Dollars)	36.400.500
Number of scholarly publications on environment and sustainability published	951 / 11.200
Number of scholarly events related to environment and sustainability	24
Number of student organizations related to environment and sustainability	34

KAU Commitment to Improve in Sustainability

As a result of KAU dedicated work and involvement in water management process. King Abdulaziz University is being distinguished in this field through its:

Hydrologic Department, which focus on studies that are related to managing surface water, groundwater, water resources, irrigation, and drainage;



Water Resource Center, which deals with integrated management and sustainable development of water resources as well as conducting studies and research on surface water



King Abdulaziz University Strategy for Water Management

Thank you