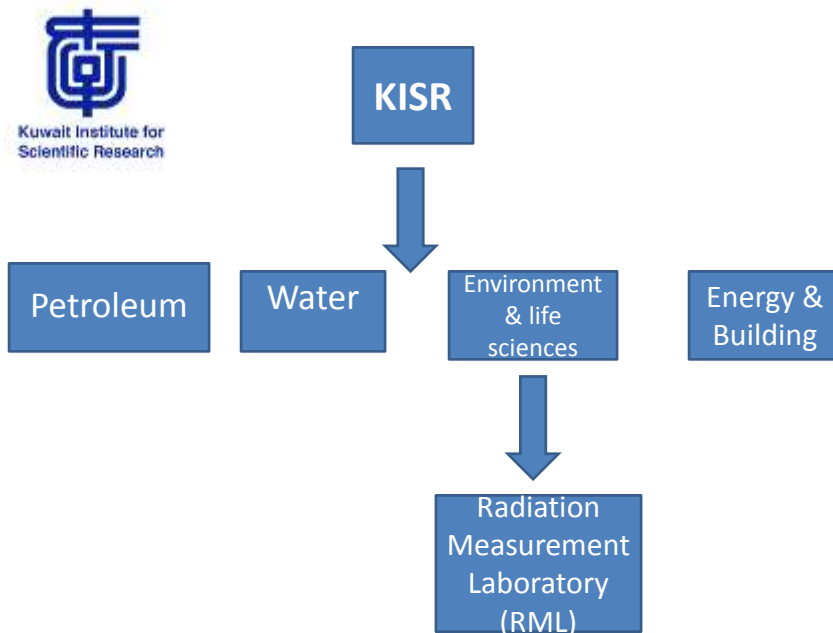




10<sup>th</sup> Annual Workshop on Radiation  
Measurement Cross Calibration, 19-21  
October 2015, Abu Dhabi, UAE.

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## RML

- Lab Purpose:

Determination of natural and man made radioisotopes in different environmental samples.

- Lab Units:

1. Gamma unit
2. Alpha unit
3. Radiochemistry unit

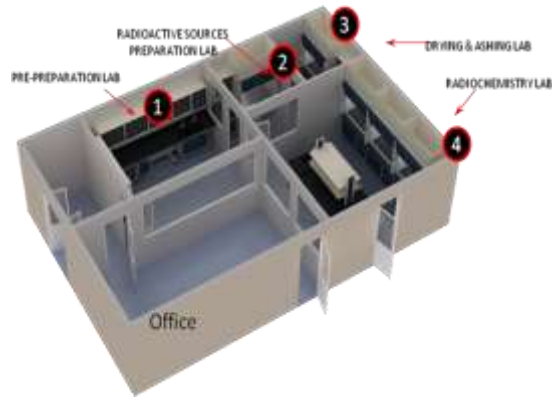


## Staff

- Abdulaziz Aba (Lab supervisor)
- Anfal Ismaeel (Senior gamma analyst)
- Omar Alboloushi (Gamma analyst)
- Aishah Alboloushi (Radio chemist)
- Hanadi Alshammari (Radio chemist)



# Radiochemistry unit



# Radiochemistry unit (cont)





## Radiochemistry unit (cont)



## Alpha unit



- ① Ortec alpha spectrometry (8 chambers).
- ② Canberra alpha spectrometry (12 chambers).
- ③ Total Alpha-Beta counting system.



## Gamma unit



- ① Ortec N-type; 50%  $EFF_{rel}$
- ② Ortec P-type; 45%  $EFF_{rel}$
- ③ Canberra Well type; 40%  $EFF_{rel}$
- ④ Canberra ULB type; 40%  $EFF_{rel}$
- ⑤ Canberra Ntype; 100%  $EFF_{rel}$



## Activities

- Completed projects:
  - 1) Evaluation of OCR through cold flow model.
- Ongoing projects
  - 1) Validation radiochemical analysis for Plutonium, Uranium, Radium, Polonium, Cesium, Americium.
  - 2) Monitoring Marine Environment In Kuwait
- General research activity on Determination of Uranium and Thorium in Kuwait Marine Environment.
- Tank level detection using gamma ray densitometry in coordinating with Petroleum center.

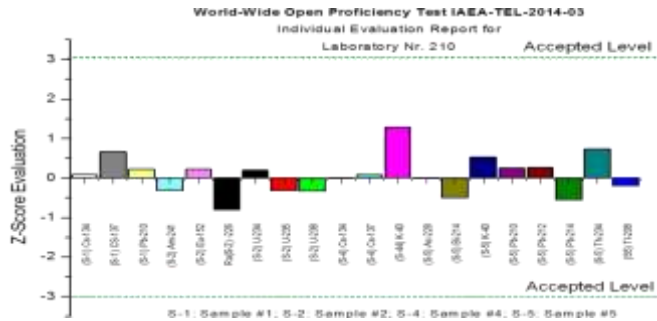


## Activities (6 SARA Stations)



## Activities (cont.)

- We have participated in IAEA-world wide proficiency test in 2014 and 2015, SANDIA (Ra-226) in 2011, and the National Physics Laboratory in 2014.



## Activities (cont.)

Participation in MAPEP 11-16-226/228 Proficiency Test  
November 2011

U.S. Department of Energy  
Radiological and Environmental Sciences Laboratory

**MAPEP** Matrix Proficiency Test Environmental Sciences Laboratory

Current Series Performance Results

Study: MAPEP 11-16-226/228, Test Standard: Radiological Reference 228 - 11-16-226

Lab: Kuwait Institute for Scientific Research  
Khawak, Jamal Abdul Nasser St.  
Kuwait City, Kuwait 13109

MAPEP 11-16-226/228 Radiological and Inorganic chemical test standard

Analyte	Result	Ref. Value	Flag	Notes	Rec. No.	Acceptance Range	Max. Value	Units (Req./Ref)
Sodium-228	811	840	A		-11.7	808 - 1222	28	Bq/g
Uranium-238	98	223				153 - 349		Bq/g
Uranium-235		227	A	Reference	-0.02	186-208		Bq/g

A - Result acceptable (See 021)  
 W - Result acceptable with warning (See 021)  
 U - Result not acceptable (See 021)  
 L - Concentration generally too low (for reference purposes only)  
 H - Concentration generally too high (for reference purposes only)  
 EF - Excess Flaming  
 FS - Test Stopped

Results are the mean of three replicate measurements by method of <sup>228</sup>Ra according to test procedure

# Thank You !

