

<b>Practical water testing using field kits report</b>	Course 5.8	<b>NORPLAN</b> 
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### 1 COURSE DATA:

Name of course:	Practical water testing using field kits
Number of participants:	25 trainees from: RuWatSIP/MRRD, DACAAR, MEW and MOM (AGS)
Location for training:	RuWatSIP Conference Room, MRRD
Date of implementation	07-13 September 2014
Course organiser	Dr. Svein Stoveland
Supporting presenter/Focal point	Prof. Eqrar Eng Frederic Patingy, WHO

### 2 COURSE OBJECTIVES

For hydro-geologists, engineers, water technicians and lab personnel to be trained how to sample, conserve, and test samples in the field using commonly used portable field kits.

The testing will cover physical, chemical and bacteriological analysis.

The course also included some basic chemistry how to make conversions between mole, molarity, milli equivalents, milligram/ liter, or how to calculate expressions of phosphates and Nitrates as PO<sub>4</sub> or P and NO<sub>3</sub> or N mg/l respectively

### 3 PARTICIPANTS

The 23 course participants came from MRRD, MEW, DACAAR, AGS and Kabul University. The majority of the participants worked in water testing laboratories although we had hoped to have more field personnel of hydrogeologists, engineers, environmentalists etc , but this will have to be next course.

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## **4 TRAINING FOCUS GROUP**

All participants will received hands-on training using 5- 6 different water testing techniques testing 2-3 unknown samples of know concentrations so at to assess precision and usefulness and accuracy of techniques and analytical skills. Based on the training the participants would be trained also how to use other similar kits for analysis of different parameters just by following procedures described by the kit manufacturers and focused on Hydrogeologist, water engineers, chemist and water lab. staffs from DACAAR, AGS, MEW, and RuWatSIP department. Kits and tests included, Phosphates, Fluoride, Nitrate, Alkalinity, pH, conductivity.

## **5 PRACTICAL AND THEORETICAL WORK**

The duration of field kit testing was four days and started with four presentation by national and international professional staffs up to mid of first day.

The second session of first day started with practical activity of all participants as : how take water samples ( where for representative sampling) , how to handle the water sampling and make samples ready ready for analysis.

The second day was fully covered with microbiological presentation, and how to prepare the water samples for microbiological analysing and how to use the Wagtech instrument to find out the different types of micro organism in 100ml of water samples. The presentation was made by WHO, F. Patigny, and all participants receive hands on training.

The third day covered presentation of which field kits were commonly in use by different laboratories in Kabul. This was followed by basic chemistry training of calculation of concentration using different commonly used units. In the afternoon participants worked in the RuWatSIP laboratory analysing different water samples to find out the concentration of physico-chemical parameters .

Day fourth day started in the laboratory for all to complete a minimum list of tests. After complete testing, all results were listed in the class to see variation in results so at to calculate mean and standard deviation of the results. The results were then compared with known standards of the samples.

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After discussing the results and experiences from the work in the laboratory, a presentation was made for how best to report the results. The report should indicate methodology used for the tests including the precision of equipment.

In conclusion, the focus was repeated, whereby participants should be aware of what quality control means when sampling, analysing and reporting results. Mistakes in any of the steps could gravely affect the results and logical action for follow up.

After completing course evaluation, the Eng M . A. Safi closed the workshop

prepared by: By Dr.Svein Stoveland and Prof. Naim Eqrar, Norplan, September 2014