### Abstract

The Limit of the bacteriological pollution of the Tigris river at the intakes of water treatment plants was made for eight sites in Baghdad City: Al-Karkh, 7 Nessan, Al-Karama, Al-wathba, Al-Qadesia, Al-Wehda, Al-Dora and Al-Rasheed (middle, North and South of Baghdad). Throughout making bacteriological (examination including total bacterial count, coliform bacteria, Feacal coliform bacteria, Escherichia coli, streptococci bacteria and Feacal streptococci bacteria), Taken from the period December 2004, up to the end September 2005, the study showed the water quality of the river which is deteriorated as the river flow down stream in Baghdad city as it was expected, specially, the water quality is affected by bacteriological pollutants, which increased by the waste water discharged directly to the river by nets systems, which are combined illegally to the sewage systems or by the over flow from some sewage pump stations.

The study was aimed to find out an assessment to the suitability of the Tigris water quality to be used as a source for drinking water and to evaluate the treatment water of
the running conventional water treatment plants in Baghdad city therefore using magnetic field to decrease the highest number of bacteria groups in three sites: Al-Wathba, Al- Dora and Al- Rasheed, then to generalize the experiment to alls its of the river, which were chosen for this study with the best time and magnetic field force, the results have shown the following:

First : the number of bacteria range among Eight studied sites: the total increased ratio of the bacteria between (80-200) x10^3 cell/ 100 ml, the number of coliform between (4-10) x10^3 cell/ 100 ml the number of feacal coliform between (2-8.5) x10^3 cell/ ml the number of E- coli between (2-8) x10^3 cell/ml. the number of streptococci between (3-5.5) x10^3 cell/ml and the number of feacal cell/ml. streptococci bacteria (3.5-5) x10^3 cell/ml.

Second: magnetic field method was applied by using different force with fixed time periods (2) or (10) minutes, fixed magnetic field force with change time (2-10) minute to at successive numeric dangles to obtain the following:

A- when using allow field of magnetic force (25,51,76,102,130,154) Gauss with affixed time of (2 minutes), the highest percentage for decrease in Al-Rasheed site, especially coliform bacteria (86.7)%, Feacal coli form bacteria (88.1)%.

B- Increased time (2-10) minutes with fixed forces (130,154) Gauss lead to increase of the highest percentage for decrease to (90)% at Al- Wathba site, (89-90)% at Al- Dora site and (86-89)% at Al-Rasheed, that for coliform bacteria, Feacal coliform bacteria and E-coli, the highest percentage appeared for streptococci bacteria and Feacal streptococci bacteria from (60)% to (86-88)% in Al- wathba site, to (78-90)% in Al- Dora and (78)% in Al- Rasheed.

C- Increased was very clear when using the highest force of magnetic field (400,500,700) gauss with two minute the percentage for decrease the number of
bacteria Group (93-96)% in Al-Wathba site, (93-97.5)% at Al-Dora site and (95.6-97)% in Al-Rasheed site.

D- When using of the high force for magnetic field (700) Gauss with (10) minutes, the percentage for decrease in the samples of all intakes of the eight water treatment plants, were as follows (97) % and (98.6)% for feacal streptococci bacteria at Al-karkh and 7 Nessan sites.