



**AIN-SHAMS UNIVERSITY  
INSTITUTE OF ENVIRONMENTAL STUDIES AND  
RESEARCH**

**"ENVIRONMENTAL HYDROGEOLOGIC IMPACTS OF GROUNDWATER  
WITHDRAWAL IN THE EASTERN NILE DELTA REGION WITH  
EMPHASIS ON GROUND-WATER POLLUTION POTENTIAL"**

**BY  
ATEF KAMAL FARID SAAD**

**THESIS  
SUBMITTED TO  
INSTITUTE OF ENVIRONMENTAL STUDIES AND RESEARCH  
AIN-SHAMS UNIVERSITY  
FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY IN ENVIRONMENTAL SCIENCES**

**DEPARTMENT OF NATURAL SCIENCES AND BIOLOGY  
(1997)**





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AIN SHAMS UNIVERSITY  
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ENVIRONMENTAL STUDIES  
AND RESEARCH

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Thesis Title: **ENVIRONMENTAL HYDROGEOLOGIC IMPACTS  
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Thesis submitted in Ph.D. degree in Environmental Sciences, Departement of Natural Sciences and Biology.

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