

PHYSICAL MODELS;SAND TANKS;BIODEGRADATION;AQUIFER
REHABILITATION; NUMERICAL MODELS;TRANSPORT MODELS;FLOW
ANALYSIS;MATHEMATICAL MODELS; PATH OF
POLLUTANTS;DISPERSION;AQUIFER CHARACTERISTICS;TRACERS;IN SITU
TREATMENT;AEROBIC BACTERIA;ATTENUATION
AFFILIATION OREGON STATE UNIV;CHEVRON RESEARCH AND
TECHNOLOGY

ABSTRACT

THE TWO-DIMENSIONAL TRANSPORT OF DISSOLVED OXYGEN WAS
INVESTIGATED IN EXPERIMENTS CONDUCTED IN A LARGE-SCALE
PHYSICAL AQUIFER MODEL WHERE A GAS PHASE IS TRAPPED IN THE PORE
SPACES OF AN OTHERWISE SATURATED POROUS MEDIUM. THE
THEORETICAL MODEL FOR DISSOLVED GAS TRANSPORT IN THE PRESENCE
OF A TRAPPED GAS PHASE WAS EVALUATED IN A TWO-DIMENSIONAL
GROUND WATER FLOW FIELD USING THE USGS NUMERICAL MODEL "MOC".
THE PRESENCE OF EVEN A SMALL AMOUNT OF A TRAPPED GAS PHASE IN
AN AQUIFER WILL SIGNIFICANTLY AFFECT THE DISTRIBUTION AND
TRANSPORT OF DISSOLVED OXYGEN.