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(PMWIN v.5)

2006

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## **Simulation of influence of artificial recharge on ground water elevations of Sandy Dibdiba Formation in Safwan region, southern Iraq**

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### ***Abstract***

PMWIN v.5 software program is used for representing behavior of ground water flow at Sandy Dibdiba formation in Safwan region, southern Iraq. The program is numerical mathematical model has been calibrated to unsteady flow state by trail and error method. By model used its good matching has obtained for this state between measured and calculated elevations values in fourth of observed wells. Sensitivity analysis of model is sensible with change of specific storage factor and less than with transitivity Factor. The calibrated model is run for simulating within two assumptions. First, the plane of water rainfall distribution of in the study area where this water is before collected and discharged via long canal to sea without benefit at Kuwait-Iraq borders. Distribution of water operation is equaled at all model cells.

It has observed enhancement of water elevations in region wells, where up to (0.5) m. Second, it's included the plane of excess waters distribution on western south part of the region. Its slightly observed enhancement in mentioned region, and also others parts of region. The results confirm important using artificial recharge method for rehabilitation of formation, also quality enhancement of it waters, and then it's positively reflected on region future.

(Alaa and Al-Asadi, 2006)

(10-5)

2006

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( 5)

( 1 185)

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(152)

(8)

( 142.4)

(16)

( 3087)

( 25.2)

3.5)

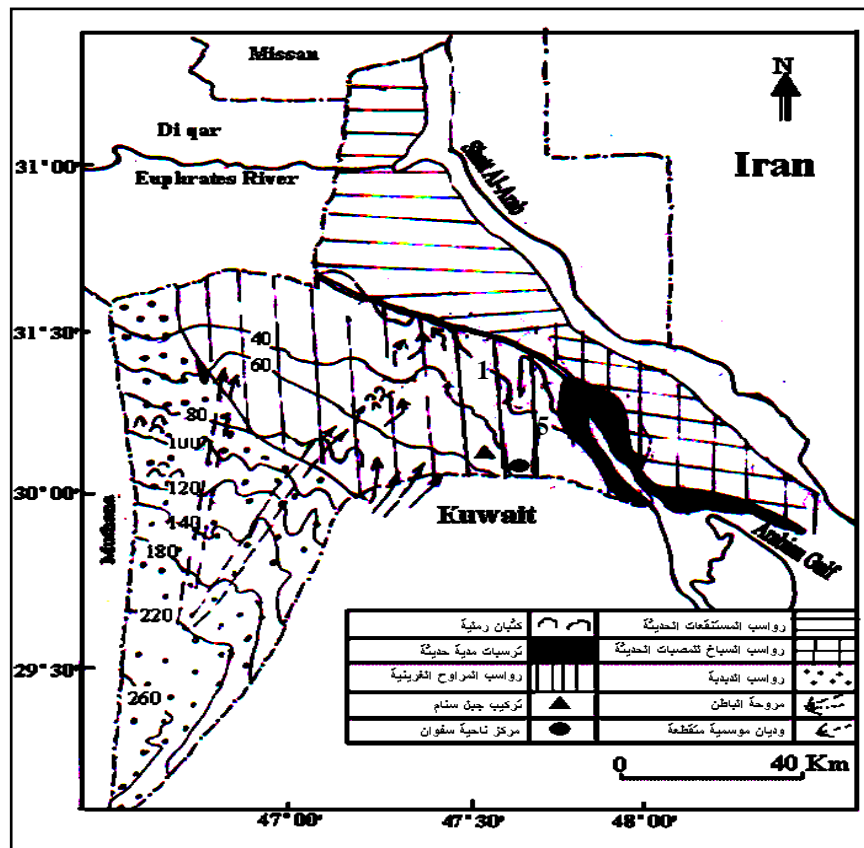
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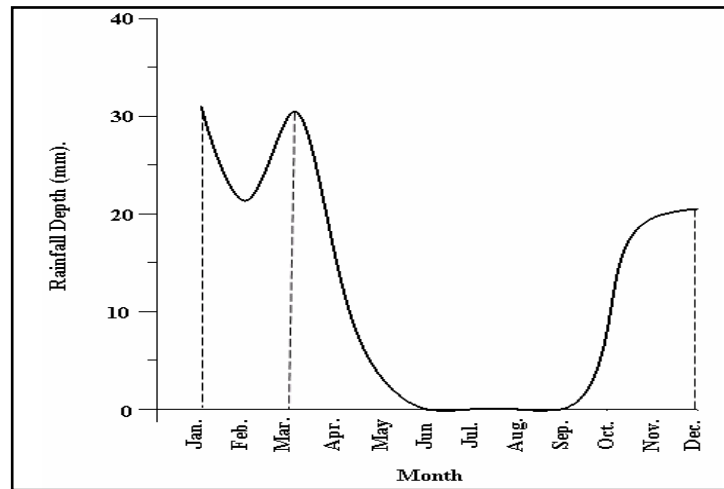
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.(2



(1998) (1)



(2)

(1998-1980)

(GUI) : 1

Chaing and Kinzelbach (2004) (PMWIN v.5)

MODFLOW-88,

.MODFLOW-96, PMPATH, MT3D, MT3DMS, MOC3D, PEST UCODE

:Conceptual Model 2  
prototype mode

.Haddad and Hawa (1979)

( 14)

: **Model grid and boundary conditions** .3

192 38 24

.(3 ) (500 × 500)

: .4

(Haddad and Hawa, 1979; Al-Jawad *et al.*, 1989; Al-Kubaisi, 1999; and Al-Suhail *et al.*, 2005)  
Al-Suhail *et al.* (2005)

15

0.0018

.(Al-Abadi, 2001)

:**Calibration** .5

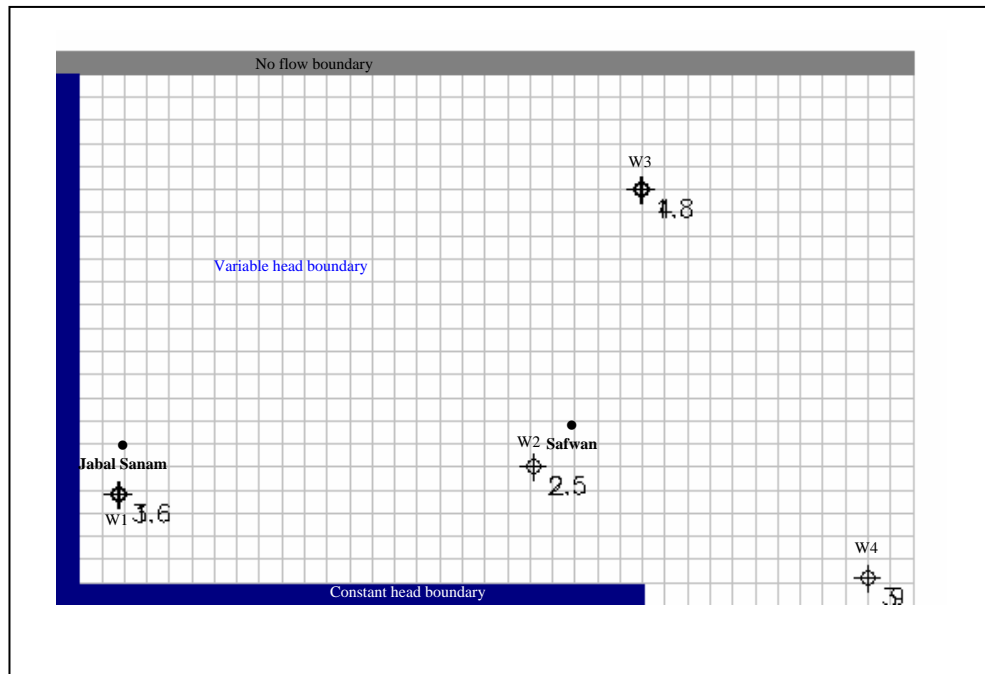
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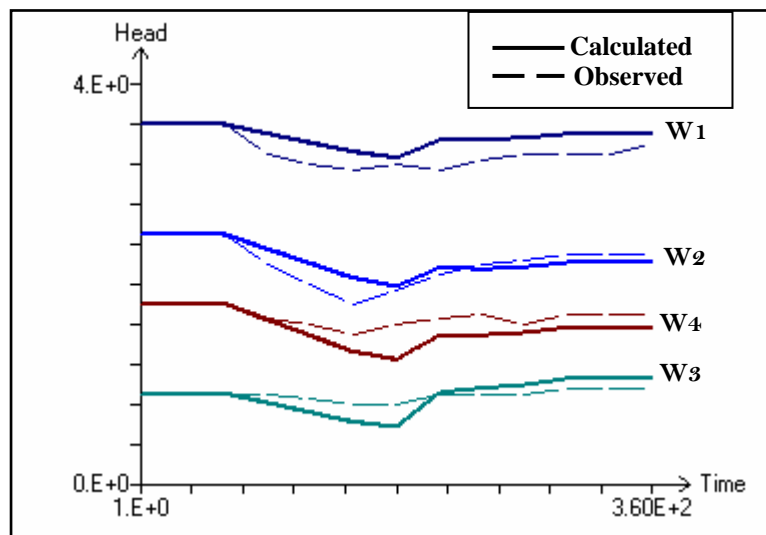
12 (time steps) .(Al-Abadi, 2001) (2001-2000) 30 (stress period)

(trail and error)

.(4 )



(3)



(4)

:Sensitivity analysis .6

: Prediction Run .7

$(32 \times 10^6)$

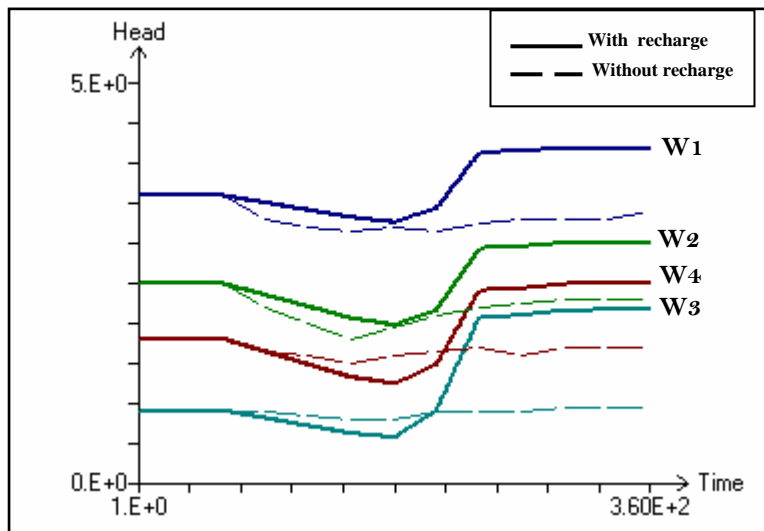
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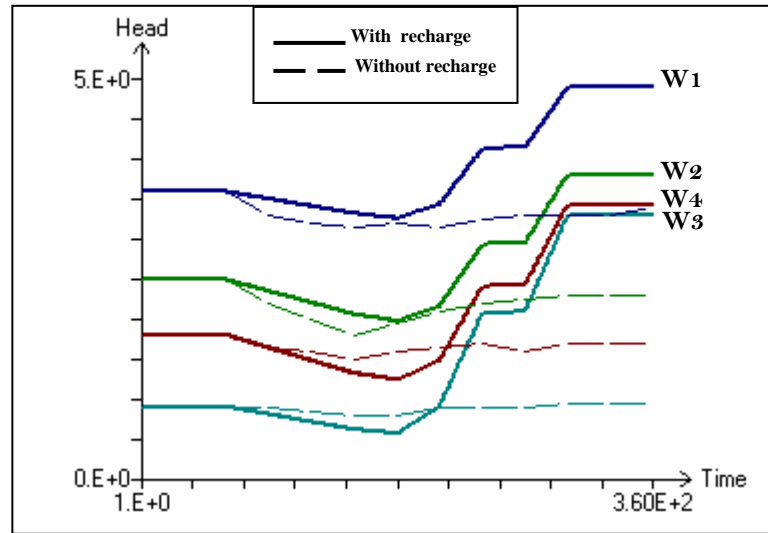
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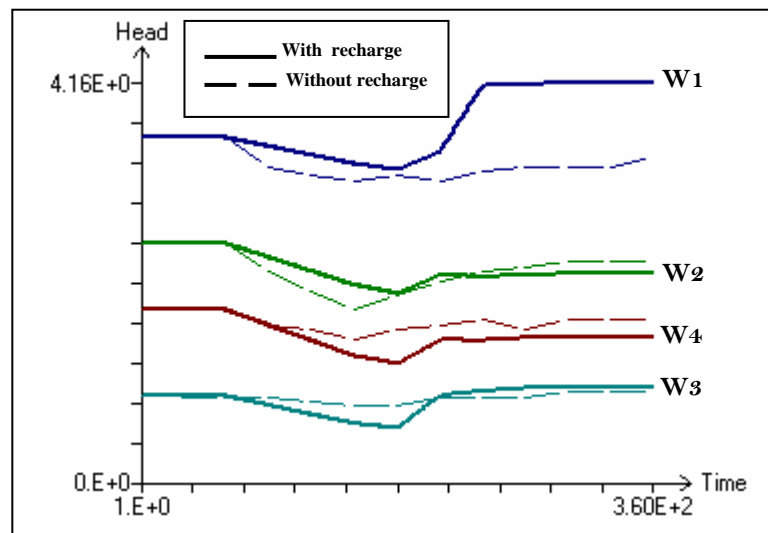
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