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TM

Arc view

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(Al-Hurban & Gharib, 2004)

(Gnanasundar & Elango, 1999)

(Ahmadi & Feiznia, 1999)

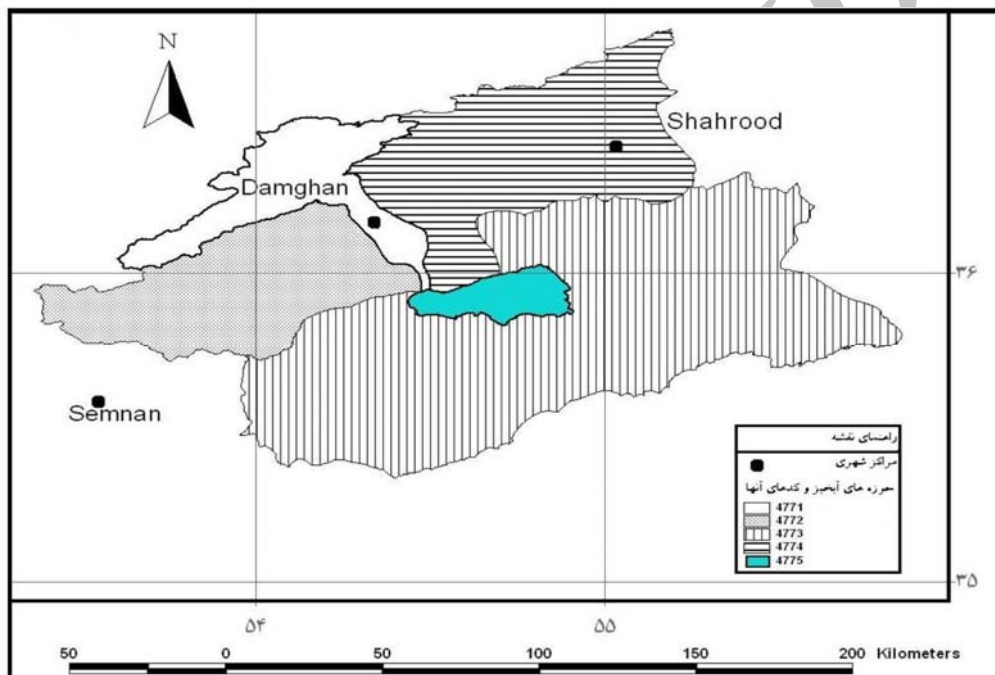
(Lashkaripour, 2003)

(Eduvie *et al.*, 2003)

(Feiznia, 1992)

(Garshasbi, 2003)

(Elkhedr *et al.*, 2004)



(Ahmadi, 1998)

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Arc view

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(TM) (Landsat) ()

Arc view

Arc view

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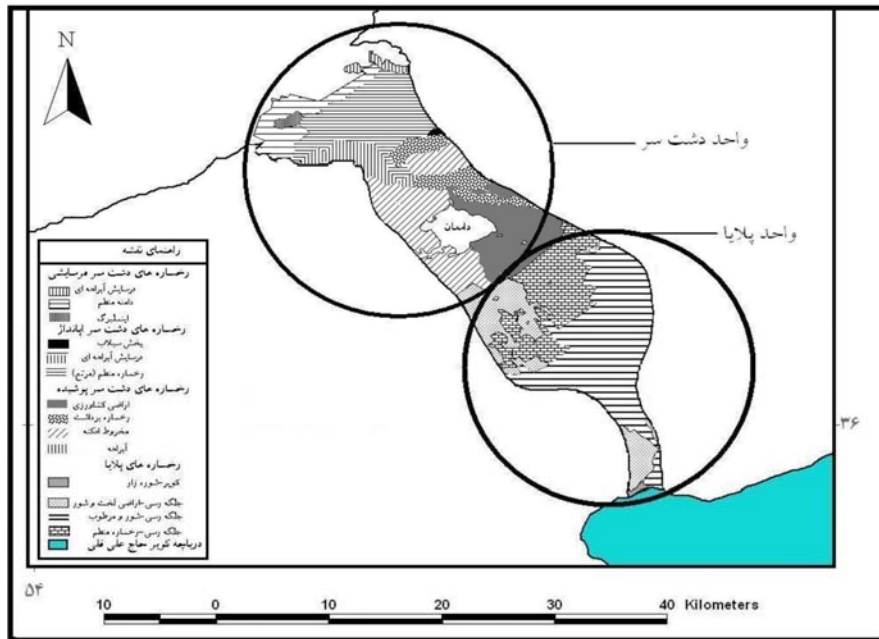
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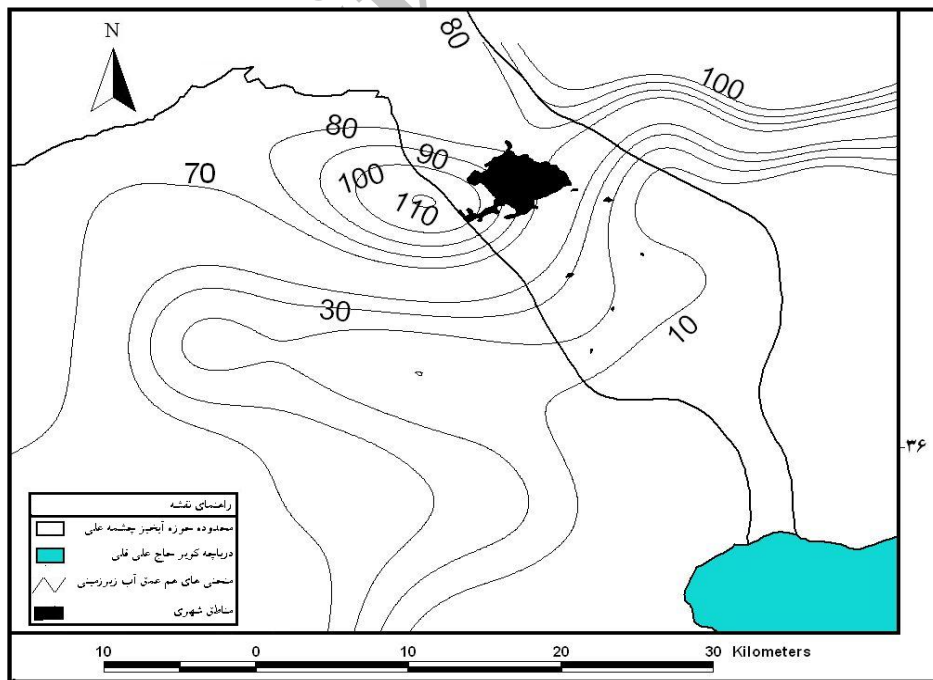
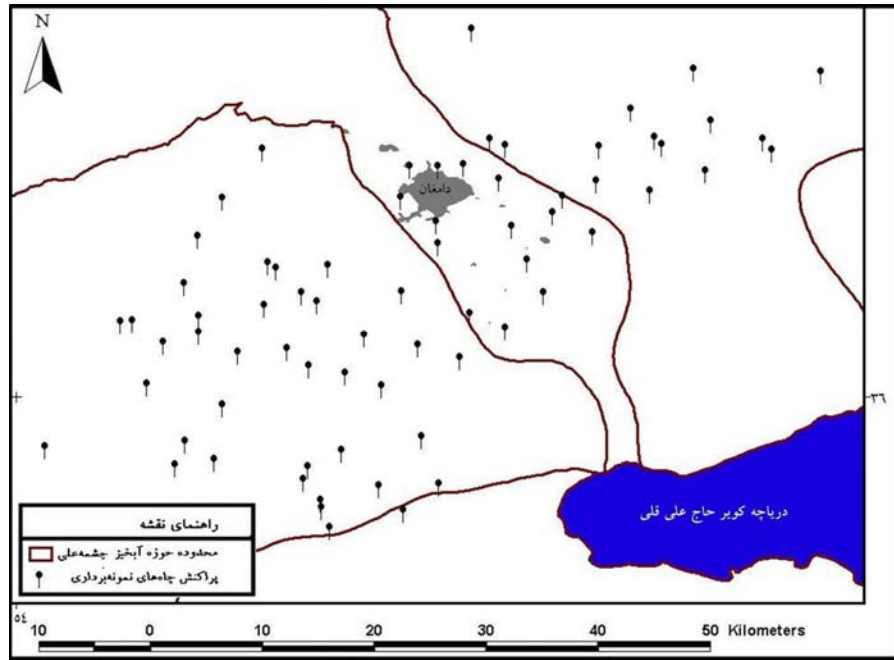
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GPS

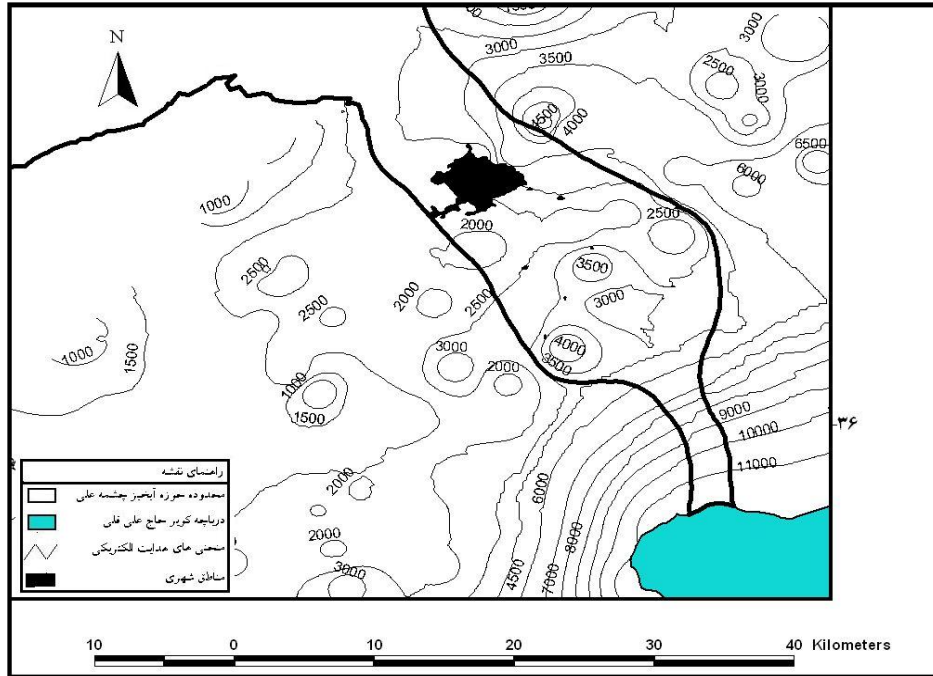
Arc view

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Ministry of) ()

(Power, 1982

D-D C-C B-B A-A

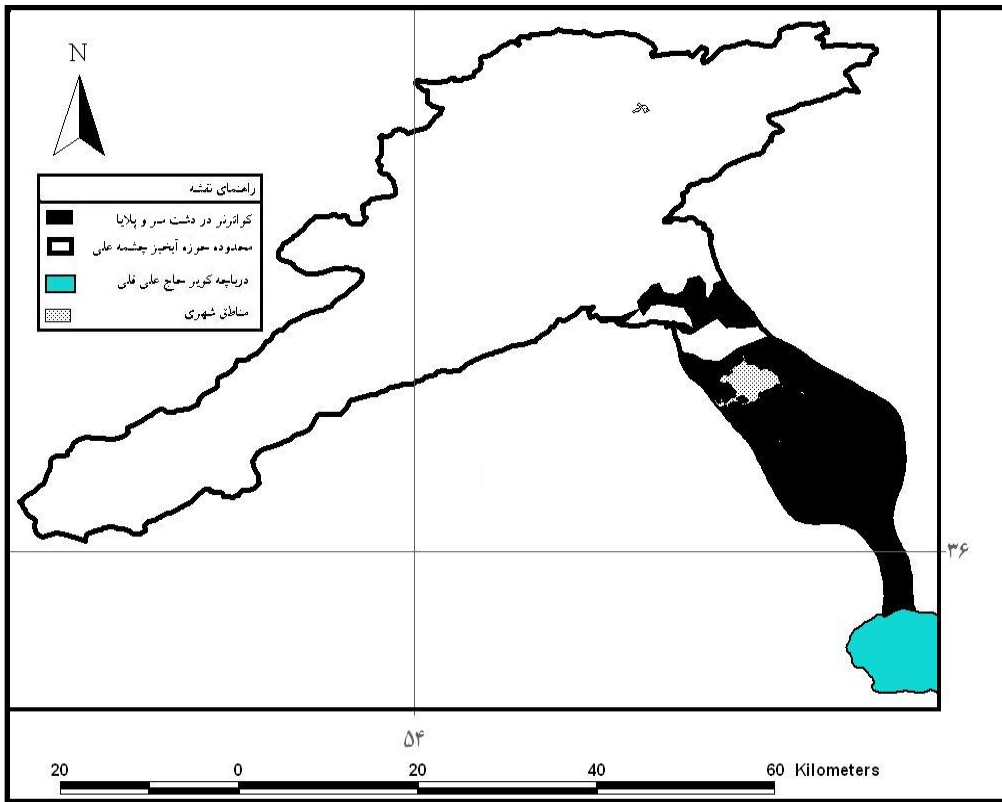
(Ministry of Power, 1982) ()

(Ministry of Power, 1982)

Arc View

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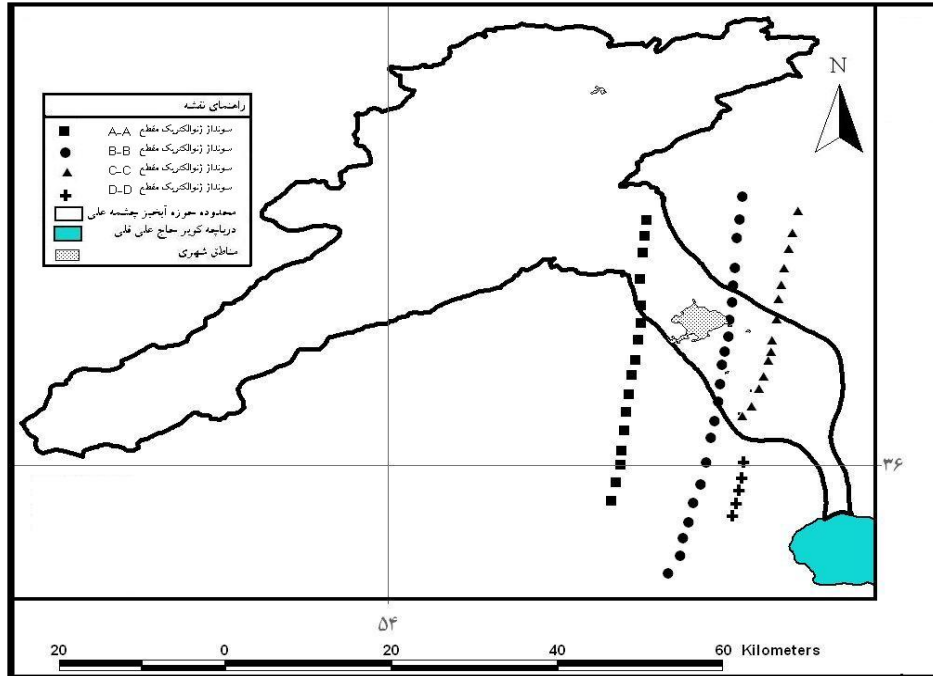
(Ministry of Power, 1982)



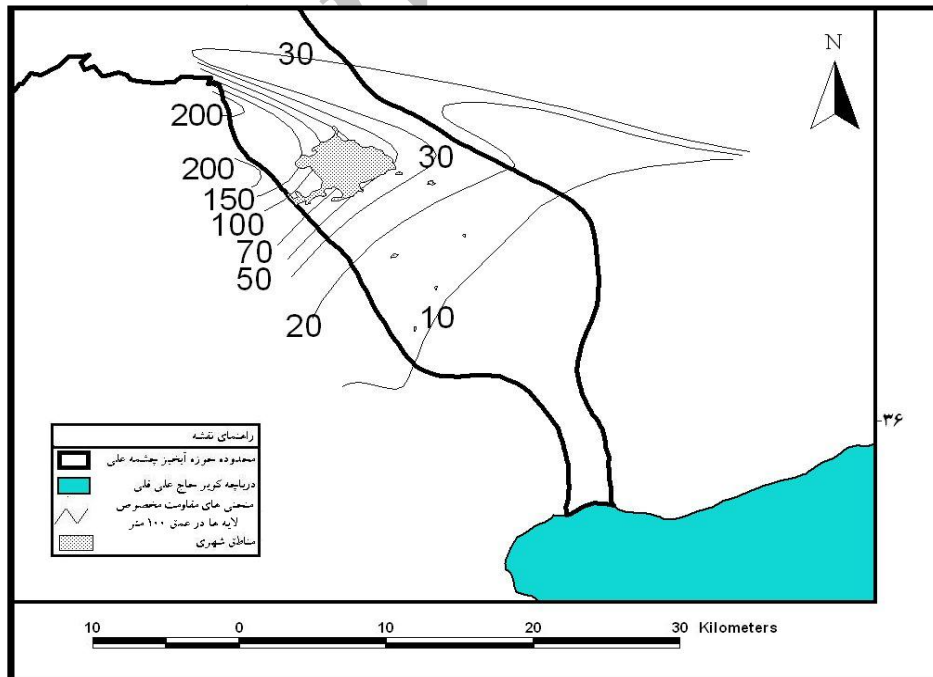
(Ministry of Power, 1982)

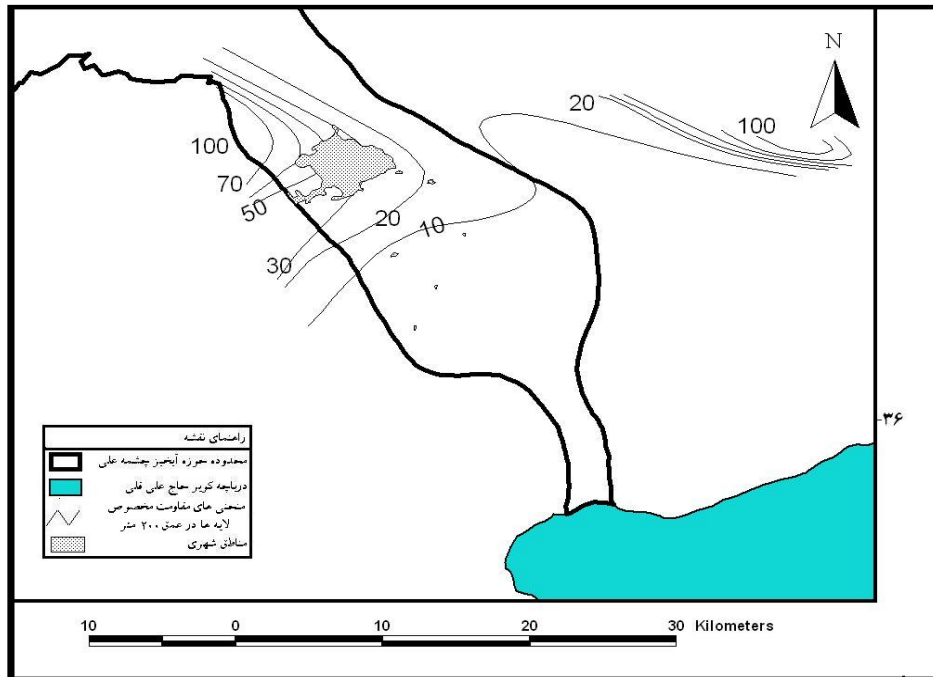
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A, B, C, D





(Ahmadi, 1998)

(Ahmadi, 1995)

(Ahmadi, 1998)

(Nasiri, 1993)

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(Ahmadi, 1998)

(Ahmadi *et al.*, 1986)

(Ahmadi, 1998)

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(Ahmadi, 1998)

(Ministry of Power, 1982)

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Ministry of Power,)

(Ahmadi, 1998)

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Na>Ca>Mg , Na>Mg>Ca

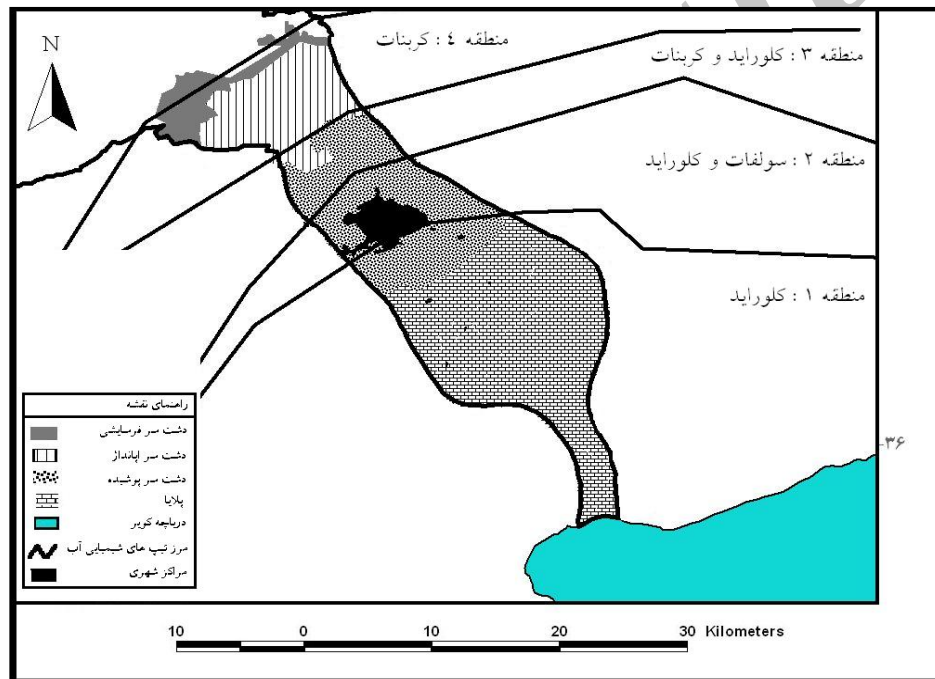
SO₄>Cl>HCO₃ , Cl>SO₄>HCO₃

Na>Mg>Ca , Na>Ca>Mg

HCO₃>SO₄>Cl , HCO₃>Cl>SO₄

Mg>Ca>Na , Ca>Mg>Na

Cl>HCO₃>SO₄

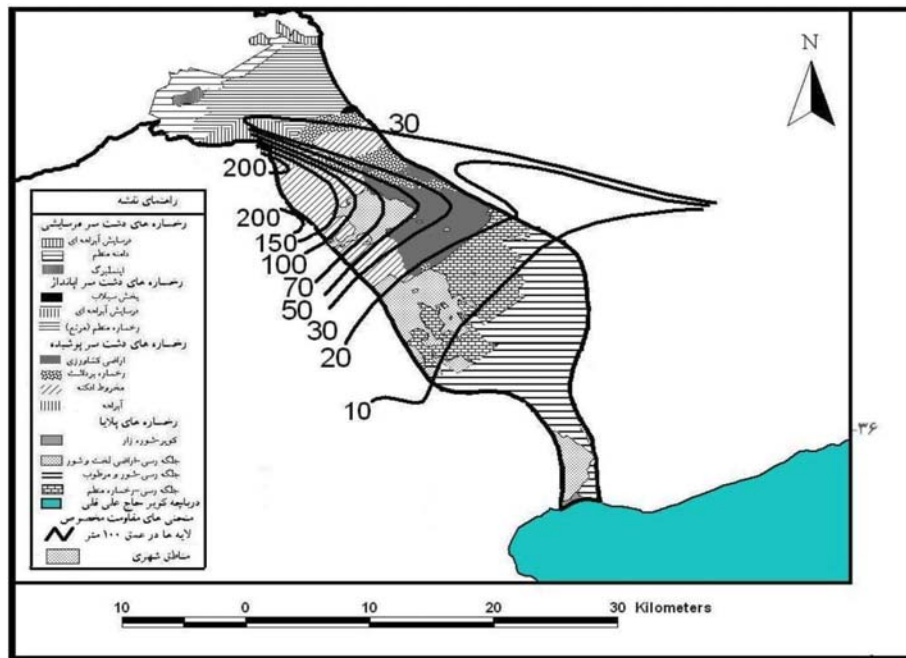


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Archive of SID
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(Karimpoor *et al.*, 2002)



(Baradaran Nasiri, 1993)

(Ahmadi, 1998)

(Sala, 2004)

(Feiznia, 1992)

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Relationship between Quaternary Sediments, Geomorphological Facies and Groundwater (Case Study: Cheshmeh-Ali Catchment and Hajaligholi Playa, Damghan)

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Abstract

In this research, quaternary sediments as the representative areas of different geomorphological facies and reservoir of groundwater and also their relationships were studied. The studied area is pediment and playa in Cheshmeh-Ali, Damghan. The characteristics of quaternary deposits and its bedrock were studied using geological map with the scale of 1:100000 and geoelectric sounding data from 100 and 200 meters depth. For geomorphological studies, digital geological maps with the scale of 1:100000, topography map with the scale of 1:50000 and Landsat satellite images were used and checked by field studies. The results of anion, cation and electrical conductivity analyses of groundwater samples were used as qualitative characteristics. On the basis of dominant ions, four chemical zones were detected in the sediments. Data related to depth were used as quantitative characteristics for groundwater studies. Relative maps were generated and interpreted using Arc View software. Based on the results, dry shallow coarse piedmont sediments are predominant and have 30 OM specific resistivity, coarse piedmont sediments containing carbonate type water have 30 to 100 OM specific resistivity, dry coarse water-spreading facies of piedmont containing little chloride-carbonate type water have 100 to 200 OM specific resistivity, fine to semi coarse sediments of piedmont containing sulfate-chloride type water have 20 to 100 OM specific resistivity, fine sediments of the playa containing saline chloride type water in depth of more than 10 meters have 10 to 20 OM specific resistivity and fine sediments of the playa containing superficial saline chloride type water have less than 10 OM specific resistivity. Consequently, it can be concluded that there is a direct relationship between quaternary deposits characteristics, groundwater properties and geomorphological facies characteristics in the studied region.

Keywords: Quaternary deposits, Geomorphology, Groundwater, Geographic Information System (GIS).

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