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gy₂CH gy₁CG gy₁C NgSi NgSiH

gy₂CH NgSi

NgSiH /

NgSi NgSiH

gy₁C gy₁CG

gy₁C gy₁CG

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o ' / " o ' / "

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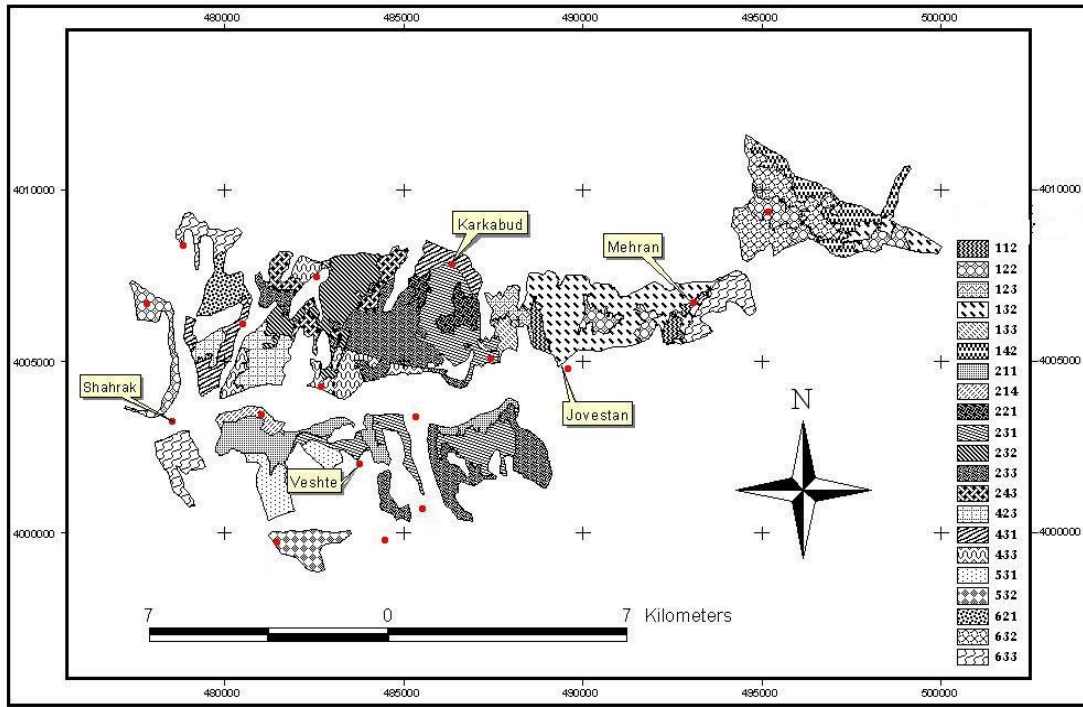
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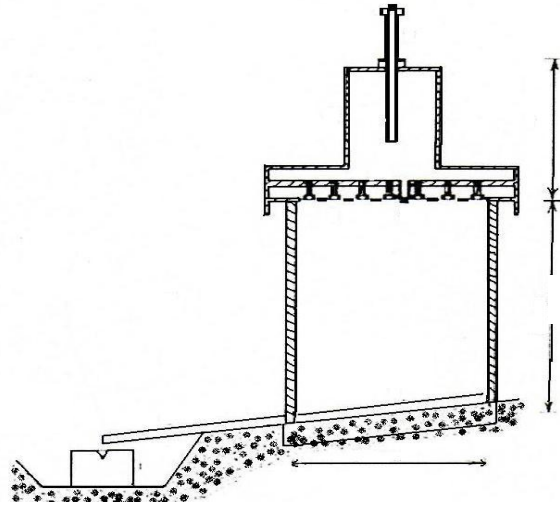
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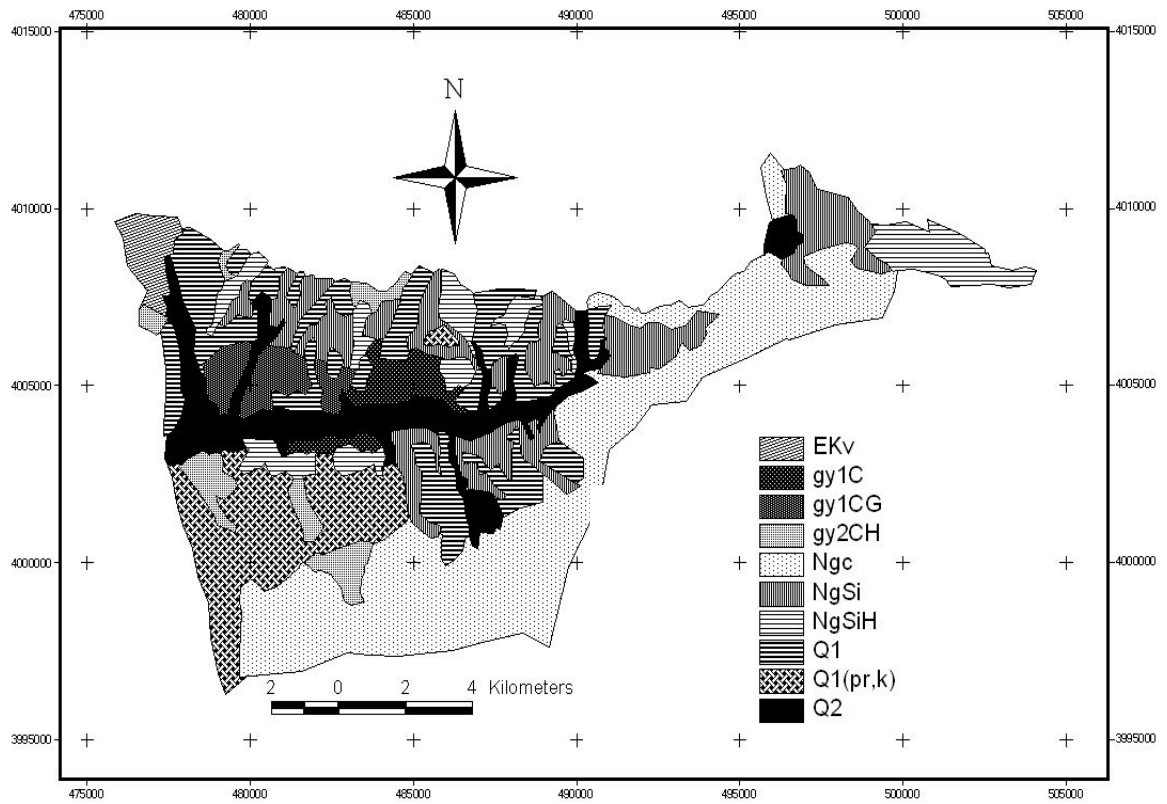
(gy1C)

(NgSi)

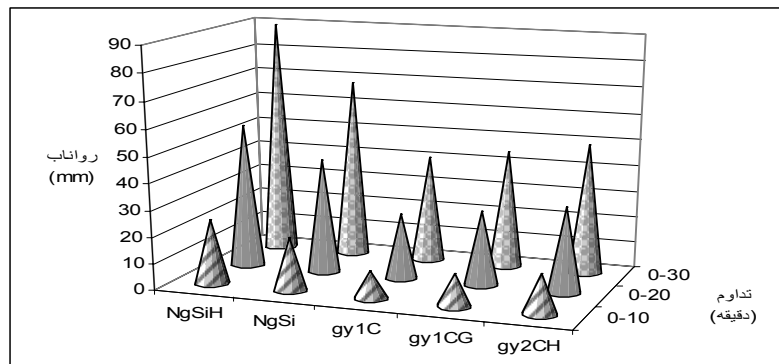
(NgSiH)

(gy1CG)

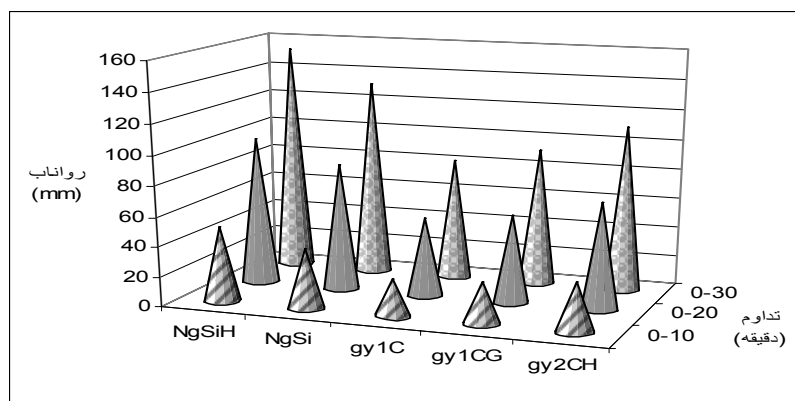
(gy2CH)



					()	(mm/h)
gy ₂ CH	gy ₁ CG	gy ₁ C	NgSi	NgSiH		
/ b	/ bc	/ c	/ ab	/ a	/	
/ c	/ cd	/ d	/ b	/ a	/	
/ c	/ cd	/ d	/ b	/ a	/	
/ c	/ cd	/ d	/ ab	/ a	/	
/ c	/ d	/ d	/ b	/ a	/	
/ c	/ d	/ d	/ b	/ a	/	



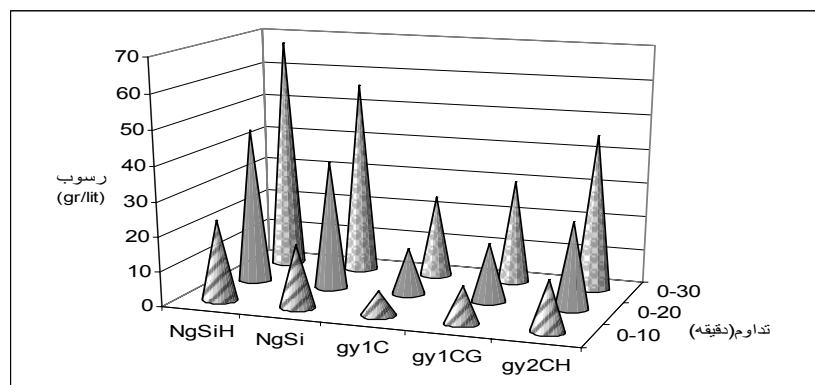
mm/h



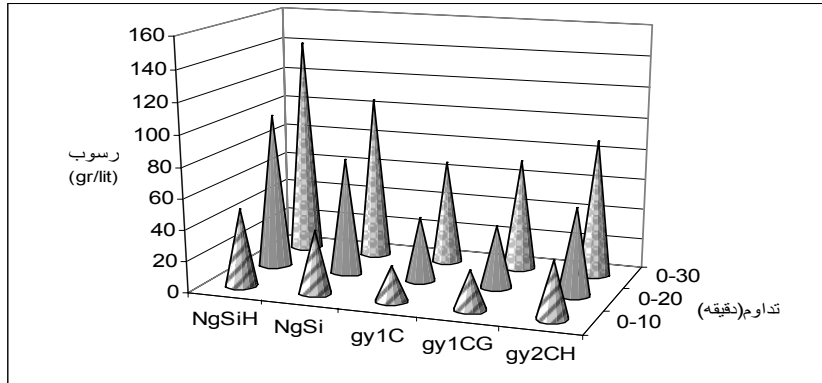
mm/h

(gr/lit)

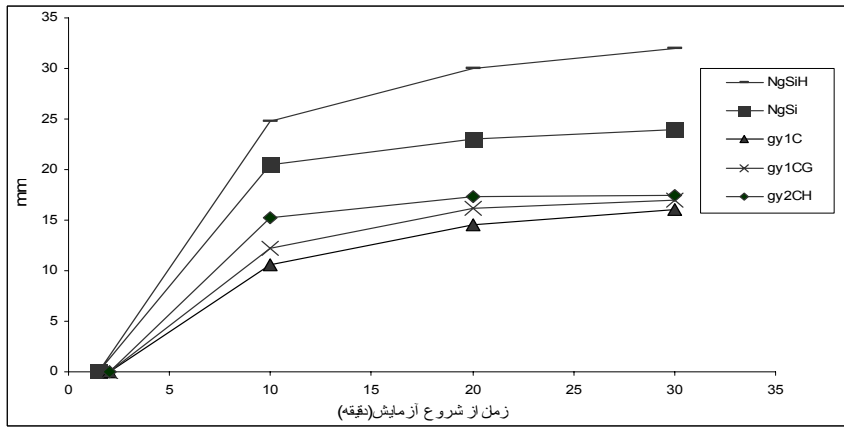
gy ₂ CH	gy ₁ CG	gy ₁ C	NgSi	NgSiH		()	(mm/h)
/ b	/ bc	/ c	/ ab	/ a	/		
/ b	/ c	/ c	/ ab	/ a	/		
/ b	/ c	/ bc	/ ab	/ a	/		
/ b	/ c	/ c	/ ab	/ a	/		
/ c	/ d	/ d	/ b	/ a	/		
/ c	/ d	/ d	/ b	/ a	/		



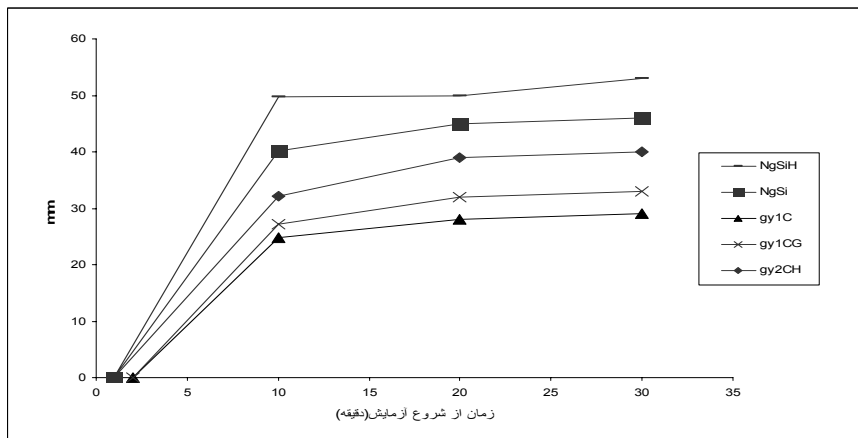
mm/h



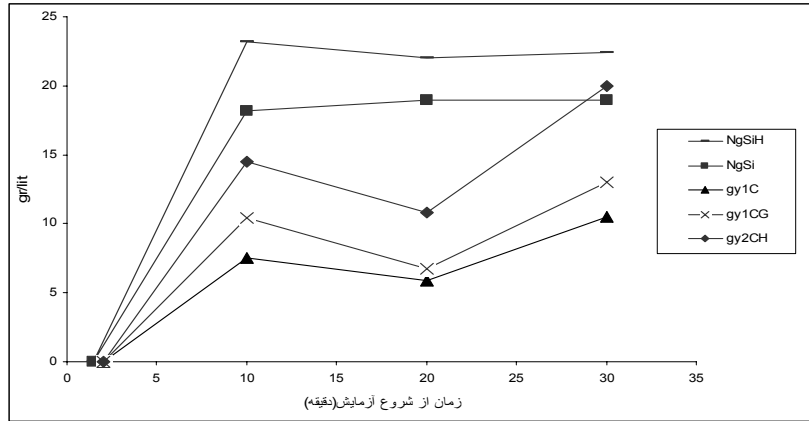
mm/h



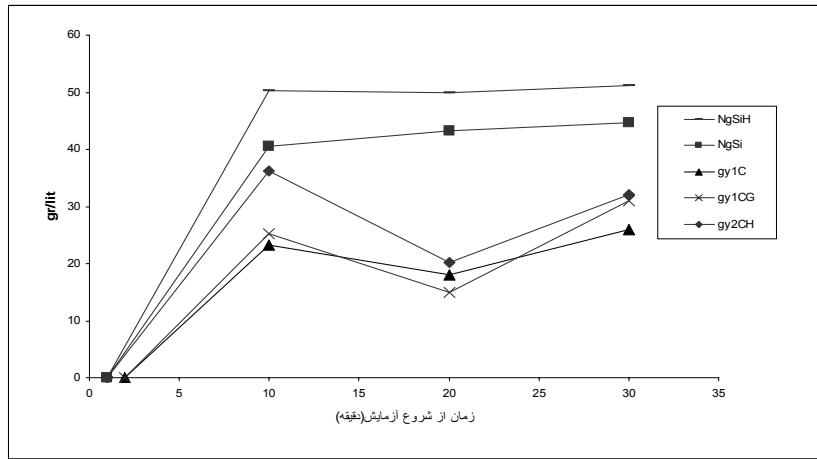
mm/h



mm/h



mm/h



mm/h

NgSiH

gy₁C gy₁CG gy₂CH NgSi

NgSiH

gy₁CG gy₂CH NgSi NgSiH

()

gy₁C

NgSi

NgSi NgSiH

gy₂CH gy₁CG gy₁C

NgSi NgSiH

gy₁C

gy₁C gy₁CG

gy₂CH gy₁C gy₂CH gy₁CG

gy₁C gy₁CG NgSi NgSiH

NgSiH

gy₁C gy₁CG gy₂CH

gy₁CG

gy₂CH gy₁C

NgSi NgSiH

NgSiH NgSi

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NgSiH

NgSi

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Assessment of runoff and sediment generation in Neogene's units under rainfall simulator (Case study: Taleghan Basin)

S. H. Hosseini^{*1}, S. Feiznia², H. R. Peyrovan³ and Gh. R. Zehtabian²

¹ Ph. D. Graduate, Science & Research Branch, Islamic Azad University, I.R.Iran

² Professor, Faculty of Natural Resource, University of Tehran, I.R.Iran

³ Associate Prof, Soil Conservation & Watershed Management Research Institute, I.R.Iran

(Received 17 February 2008, Accepted 03 October 2008)

Abstract

In Iran, fine grained formations (Neogene's units) are very susceptible to erosion. Also, they are the units producing runoff and causing soil loss in watersheds. The objectives of this study is to assess the effect of physical - chemical and mechanical properties of these formations on sediment and runoff rates at different rainfall intensities, based on using field simulator in Taleghan Basin. For this purpose, Neogene's units were separated into five sub-units including Halite siltstone (NgSiH), Siltstone (NgSi), Mudstone (gy₁C), Gypsum mudstone (gy1CG) and Halite clay stone (gy2CH), based on physical and chemical properties. Then, runoff and sediment rates were determined in each sub-units at two different intensities (30 and 60 mm/h) using rainfall simulator. Analysis of variance and Duncan's tests showed that NgSiH sub-unit has produced the highest amount of runoff and sediment rates and then the runoff and sediment rates of other subunits in decreasing order are as follows: NgSi, gy2CH, gy1CG and gy₁C are 5% significant level. The trend of induced runoff and sediment rates at different times showed that in NgSiH and NgSi sub-units, runoff amounts were fixed rapidly at second ten minutes. Also, on the other sub-units, runoff amounts were fixed at third ten minutes but sediment yield was increased rapidly at third ten minutes.

Keywords: Sediment, Runoff, Rainfall simulator, Neogene's units, Taleghan