



(Fore bay)

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(Fore bay)



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Gordon , J.L. and A.C. , 1979 , Greager W.D , and J.D Justin, 1970).

(penman

/ m ³ /s	
/ m ³ /s	
/ m ³ /s	
m ³	
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m ³	



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α

β

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(Free board)

(U.S.Army crops of Eng.,1966)



(b)

β و α

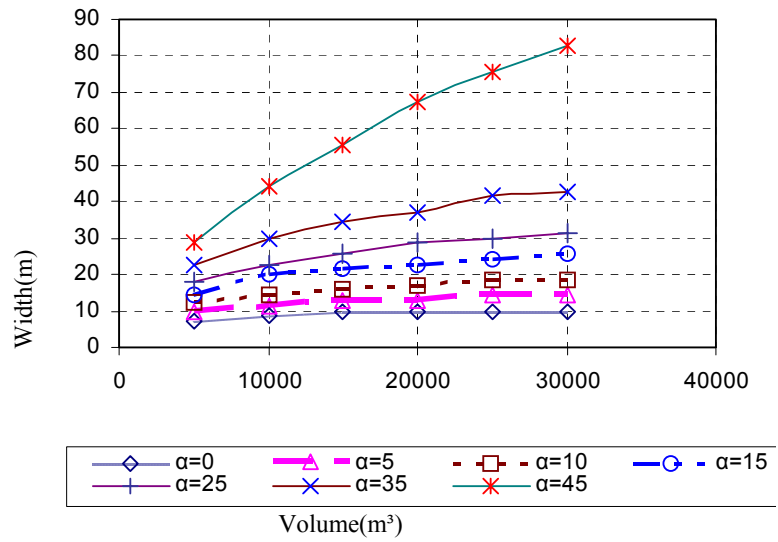
β و α

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$\beta(0.5h:1v)$



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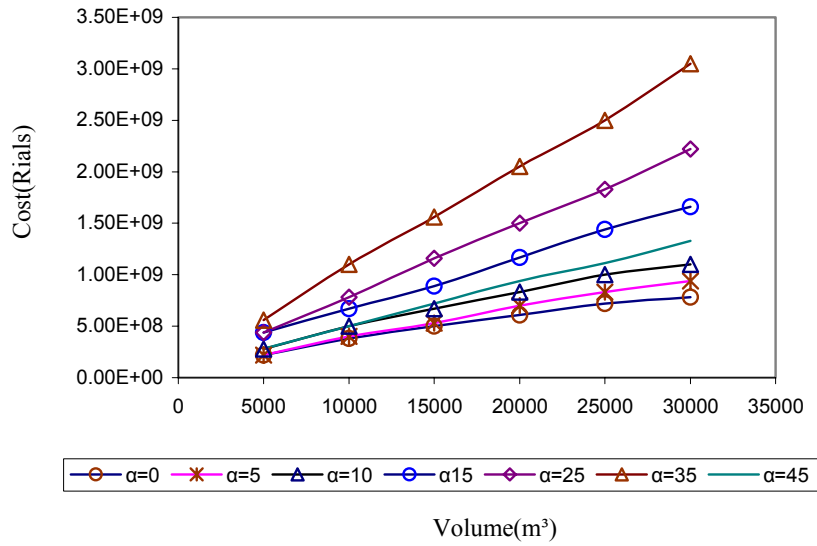
%

(crush rock)

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$\beta(0.5h:1v)$

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.(1979 , Juck , J, Fritz, , 1984 , Warnick C. C.)

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(over flow)

(Box calvert)

M₂

HEC-RAS



HEC-RAS

()

(Fore bay)

) ()

(

(slide

gate)

Juck , J, ,1975)

(vortex)

(Eberhardt , A. , 1979 , Serkaria , C. , 1984 , Fritz

() () ()



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