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Back Analysis Of Local Failure Of Waste Dump Wall In Mine3 GOL-E-GPHAR Area

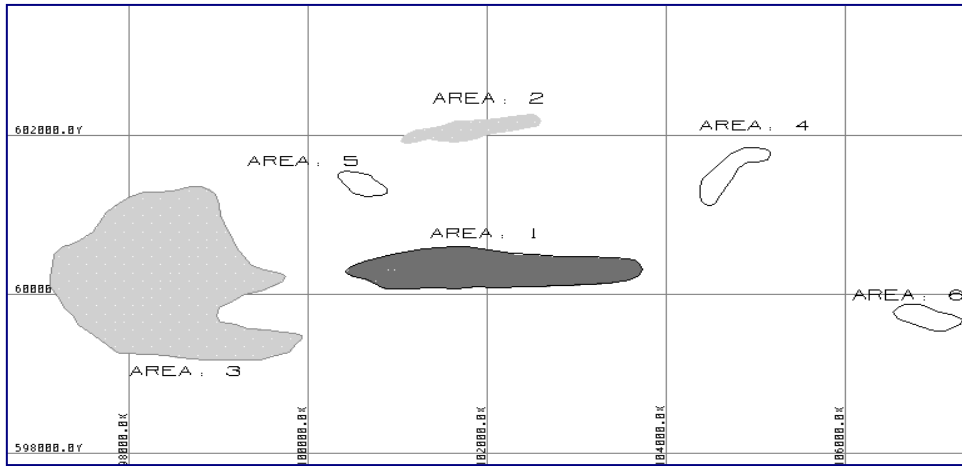
Hoseyn Akbari Javar; Ali Mirdar Mansur Panahi

Abstract

It has been observed some tension crack near the crest of waste dump and this show slope failure risk. For assessing failure risk it was obtained geometrical parameter, then with Hock and Bray charts the cohesion (C) and friction angle (ϕ) was calculated. With this parameter and according equilibrium limit method carried out some slope stability analysis. Acceptable safety factor could be obtained by changing 2 parameters: first by using the same value for bench high and reducing slope angle up to 4 (deg.), or on the other hand the same value for slope angle and reducing the bench high up to 8 meter

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(w/o) /



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ASTM

ton/m3 /

ton/m3 /

/

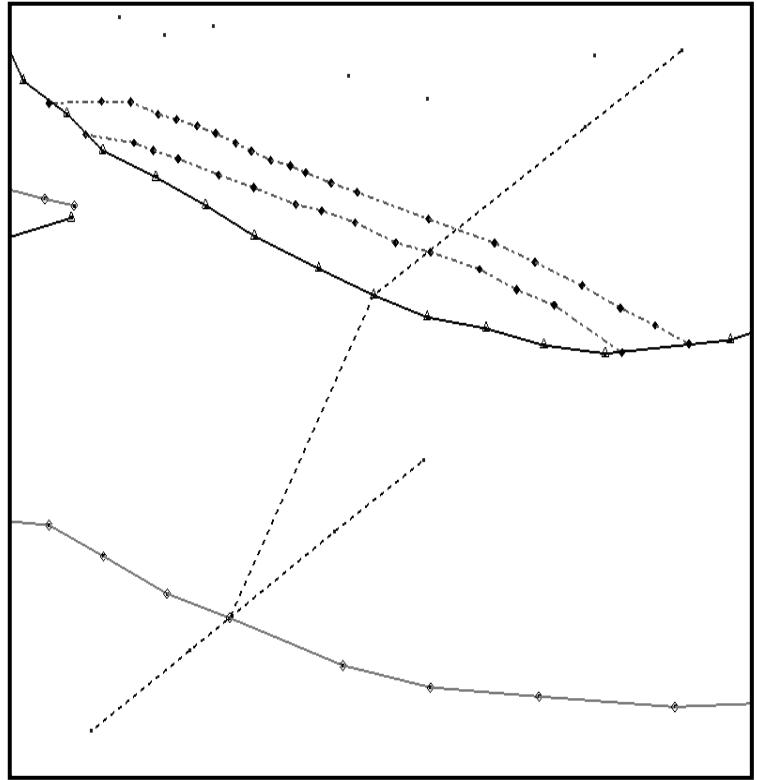
ton/m³ /

Km² /

ASTM			
Sand with Gravel		E47	1
Gravel with Sand		7S2	2
Gravel		7N5	3
		7N2	4
Silty Sand with Gravel		6S2	5
Gravel with Sand		7N1	6
Gravel with Sand		7S1	7
Silty Sand with Gravel		7E2	8
Gravel		7E3	9
Sand with Gravel		7N3	10
Sand with Gravel		6E1	11
Gravel with Sand		6S3	12
Gravel with Sand		7N4	13

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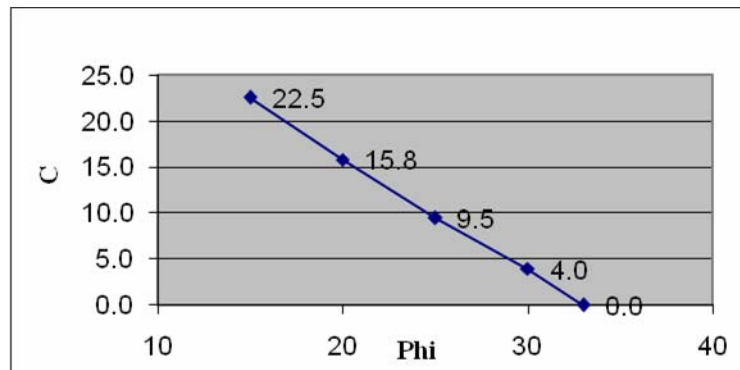
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KPa

Peak and residual friction angle of cohesionless soils (after Hough, 1957).

Classification	Friction angle ϕ'_p at peak strength (deg)		Friction angle ϕ'_r at ultimate strength (deg)
	Medium dense	Dense	
Silt (nonplastic)	28-32	30-34	26-30
Uniform fine to medium sand	30-34	32-36	26-30
Well-graded sand	34-40	38-46	30-34
Sand and gravel	36-42	40-48	32-36

Phi	C
15	۲۲/۵
20	۱۵/۸
25	۹/۵
30	۴
33	۰

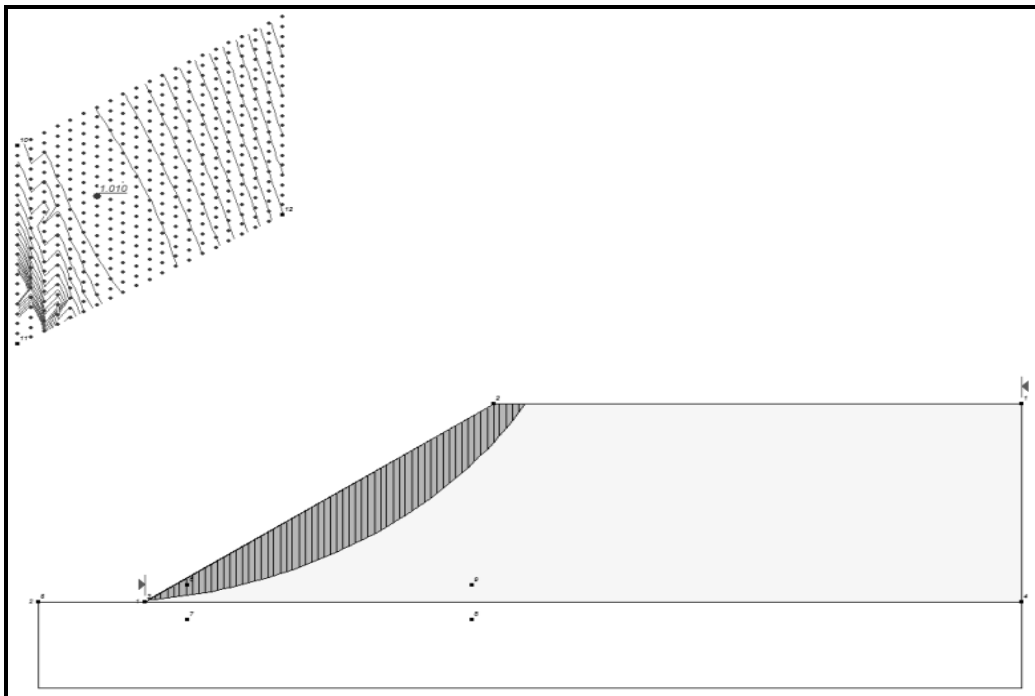


GeoSlope

(C=9.5,Phi=25) (C=4,Phi=30)

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/	/	/	/	/	/	/	/	



GeoSlope

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[2] Hoek E.& Bray J.W. ,1973; *Rock Slope Engineering*,Elsevier

[3] Hustrulid W.A., McCarter M.K., Van Zyl D.J.A. ;*Slope Stability in Surface Mining*, SME