PART 5: RUNUP2

for transect: YK-07

Station locations shifted by: -7.62 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: YK-07

Incident significant wave height: 2.94 feet

Peak wave period: 6.94 seconds

Mean wave height: 1.84 feet

Local Depth below SWEL: 25.38 feet

Mean wave height deshoaled using Hunt approximation for
celerity assuming constant wave energy flux.
References: R.G. Dean and R.A. Dalrymple. 2000. Water

Wave Mechanics for Engineers and Scientists. World
Scientific Publishing Company, River Edge New Jersy

USACE (1985), Direct Methods for Calculating Wavelength, CETN-1-17
US Army Engineer Waterways Experiment Station Coastel Engineering
Research Center, Vicksburg, MS

also see Coastal Engineering Manual Part II-3
for discussion of shoaling coefficient

Deep water wavelength, L0 (m)
L0 = g*T*T/twopi
L0 = 32.17*5.90*5.90/6.28 = 178.04
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 178.04/5.90 = 30.19
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/5.90 = 1.07
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 1.07*1.07*25.38/32.17 = 0.90
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 24.29
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(30.19/24.29) = 1.11
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 1.84/1.11 = 1.65

Deepwater mean wave height: 1.65 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: YK-07

RUNUP2 SWEL:
9.00
9.00
9.00
9.00
9.00
9.00
9.00
9.00
9.00

RUNUP2 deepwater mean wave heights:
1.57

1.57
1.57
1.65
1.65
1.65
1.73
1.73
1.73

RUNUP2 mean wave periods:
5.60
5.90
6.19
5.60
5.90
6.19
5.60
5.90
6.19

RUNUP2 runup above SWEL:
4.18
4.27
4.36
4.41
4.50
4.58
4.61
4.74
4.82

RUNUP2 Mean runup height above SWEL: 4.50 feet

RUNUP2 2-percent runup height above SWEL: 9.89 feet

RUNUP2 2-percent runup elevation: 18.89 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 2.94 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 2.31 feet

Peak wave period: 6.94 seconds

Average beach Slope: 1:19.16 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 2.77 feet

ACES Beach 2-percent runup elevation: 11.77 feet-NAVD88

ACES BEACH RUNUP is valid

_____END ACES BEACH RESULTS_____

PART 5 COMPLETE_____