PART 5: RUNUP2

for transect: YK-14

Station locations shifted by: -0.20 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: YK-14

Incident significant wave height: 12.46 feet

Peak wave period: 14.03 seconds

Mean wave height: 7.80 feet

Local Depth below SWEL: 15.66 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

Depth, D = 15.66
Period, T = 11.93
Waveheight, H = 7.80
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*11.93*11.93/6.28 = 728.42
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 728.42/11.93 = 61.07
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/11.93 = 0.53
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 0.53*0.53*15.66/32.17 = 0.14
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 21.94
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(61.07/21.94) = 1.67
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 7.80/1.67 = 4.67

Deepwater mean wave height: 4.67 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: YK-14

RUNUP2 SWEL:
9.20
9.20
9.20
9.20

9.20
9.20
9.20
9.20
9.20

RUNUP2 deepwater mean wave heights:
4.44
4.44
4.44
4.67
4.67
4.67
4.91
4.91
4.91

RUNUP2 mean wave periods:
11.33
11.93
12.52
11.33
11.93
12.52
11.33
11.93
12.52

RUNUP2 runup above SWEL:
5.10
5.63
6.06
5.27
5.79
6.33
5.44
5.93
5.91

RUNUP2 Mean runup height above SWEL: 5.72 feet

RUNUP2 2-percent runup height above SWEL: 12.58 feet

RUNUP2 2-percent runup elevation: 21.78 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 12.46 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 6.54 feet

Peak wave period: 14.03 seconds

Average beach Slope: 1:20.78 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 8.44 feet

ACES Beach 2-percent runup elevation: 17.64 feet-NAVD88

ACES BEACH RUNUP is valid

_____________END ACES BEACH RESULTS____________________

PART 5 COMPLETE____