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PART 5: RUNUP2

for transect: YK-15

Station locations shifted by: -0.43 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

_____RUNUP2 INPUT CONVERSIONS_____
for transect: YK-15

Incident significant wave height: 8.18 feet

Peak wave period: 13.06 seconds

Mean wave height: 5.12 feet

Local Depth below SWEL: 13.70 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 = 13.70
Period, T = 11.10
Waveheight, H = 5.12
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*11.10*11.10/6.28 = 631.24
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 631.24/11.10 = 56.85
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/11.10 = 0.57
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 0.57*0.57*13.70/32.17 = 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 = 20.51
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(56.85/20.51) = 1.66
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 5.12/1.66 = 3.08

Deepwater mean wave height: 3.08 feet

_____END RUNUP2 CONVERSIONS_____

_____RUNUP2 RESULTS_____
for transect: YK-15

RUNUP2 SWEL:
9.30
9.30
9.30
9.30

9.30
9.30
9.30
9.30
9.30

RUNUP2 deepwater mean wave heights:
2.92
2.92
2.92
3.08
3.08
3.08
3.23
3.23
3.23

RUNUP2 mean wave periods:
10.55
11.10
11.66
10.55
11.10
11.66
10.55
11.10
11.66

RUNUP2 runup above SWEL:
5.41
5.87
6.24
5.77
6.10
6.47
5.98
6.35
6.70

RUNUP2 Mean runup height above SWEL: 6.10 feet

RUNUP2 2-percent runup height above SWEL: 13.42 feet

RUNUP2 2-percent runup elevation: 22.72 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 8.18 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 4.31 feet

Peak wave period: 13.06 seconds

Average beach Slope: 1:15.80 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 7.44 feet

ACES Beach 2-percent runup elevation: 16.74 feet-NAVD88

ACES BEACH RUNUP is valid

_____________END ACES BEACH RESULTS____________________

PART 5 COMPLETE____