

EFA Testing of Sample2 (Pushed)

Upstream flood plain

Vane test: Undrained Shear Strength 26.5 kPa

Undrained Residual Shear Strength 9 kPa

Test data: 04-07-2004

Observation during the testing:

The sample consists of clay block and loose fine sand. Some small roots were found in the big clay block.

1. In first step, velocity of testing was 0.2m/s. No scour was found after about 50 minutes.
2. Then velocity was increased to 1.5m/s. Before that, 0.7m/s velocity was tested and no scour took place. The sample exposed in the flow proved to be a big clay block.
3. When the velocity was increased to 1.7m/s, the loose fine particles below the block was sucked out quickly, and a large settlement appeared. The testing was stopped.
4. After taking out the block, the loose sand layer was pushed to the tube end level. Velocities of 0.35 m/s and 0.4 m/s were set to test the sand layer respectively.
5. When the velocity was set to 0.6 m/s, all the loose sand was removed instantly. Another large clay block was exposed.
6. This time 1.7 m/s and 2.4m/s were set respectively. Under the condition of 2.4m/s, a large block was removed wholly after a few minutes.

Table 1 Shear Stress, Velocity, and Erosion Rate in EFA testing of Sample2 (pushed)

Velocity (m/sec)	0.23	0.36	0.39	0.64	1.58	1.76	2.03	2.75	4.69
Shear Stress (Pa)	0.20	0.42	0.49	1.15	5.40	6.77	8.69	14.78	37.61
Erosion Rate (mm/hr)	0	4.04	38.25	0	32.84	20.97	22.79	78.83	272.72







