Sediment Gauging

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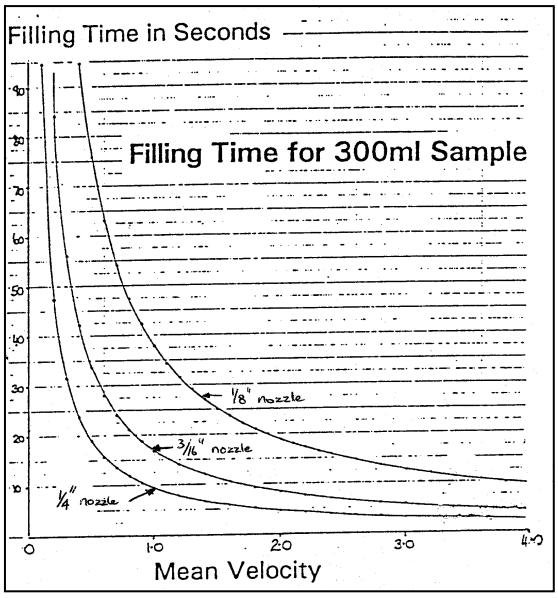
9.21.0 SUSPENDED SEDIMENT DEPTH-INTEGRATION SAMPLING PROCEDURE

STEPWISE PROCEDURE

1. Choose sampling locations
   - 3 per section or 5 if a non-uniform or wide and shallow channel.
   - Samples are taken at gauging verticals to facilitate weighted discharge calculations.

2. Check the sampler operation and condition; covering the following:
   - air outlet is clear and gasket is sealing the bottle; use the "blow" test.
   - nozzles are clean and undamaged.
   - all sample-contact surfaces (and bottles) are clean.

3. Select nozzle size, transit time and transit rate (refer graph).



- use the largest suitable nozzle size.
- note effects of any vertical angle on the depth readings.
- note limitations of sampler; D49 should not be used over 5m but this may be extended to 6m if the downward travel is slower than the upward.

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4. Calculate the transit rate (depth x 2/transit time), and check that it does not exceed 0.4 x mean velocity.

If so, use a smaller nozzle.

5. With a bottle installed, lower sampler to the water surface and make ready to begin timing.

6. With sampler pointing upstream, begin integration by lowering to the bed at the calculated transit rate. Ensure that the transit rate is constant, although different rates may be used in each direction.

7. When sampler touches the streambed, immediately reverse direction. Note the elapsed transit time against 1/2 of that calculated and decide if upward speed needs to be faster or slower. (Another person counting elapsed time aloud will facilitate this.)

8. Wind up the sampler to above water-level and observe whether water is spurting out the nozzle; if so the bottle is overfilled and you must discard it and repeat.

9. Tilt the sampler tail-downward before opening to remove the sample bottle. If it is filled more than 370ml (70mm from top) discard it and repeat.

l0. Immediately cap and store the bottle, ensuring that it is suitably identifiable for analysis.

11. Note bottle number beside the appropriate vertical on the gauging card.

The "Blow" Test

With the sampler closed and a bottle installed, close off the air outlet with a finger and blow into the nozzle. Listen for any escaping air. If the bottle is sealed properly against the gasket, there should be little or no air escape. Replace the gasket if necessary.