



## 1 PRINCIPLE OF METHOD AND SAMPLE TYPE

Two types of sample can be taken, grab samples or composite samples.

### (1) Grab sample:

A sample collected at a particular time and place can represent only the composition of the source at that time and place. This involves manual sampling and minimal equipment but may be unduly costly and time-consuming for routine or large-scale sampling programs. As the name implies 'Grab samples' are simple scoops of the wastewater being sampled and are appropriate where conditions are constant or well mixed and slow to change. This type of sample can be used for instance for Balance Tank sampling or measuring sludge solids in the aeration basin (MLSS). Care should always be taken that a grab sample is representative of the whole, and should be taken from well-mixed areas on all occasions.


### (2) Composite Samples:

Composite samples are either amalgamated or made up of smaller sub samples, and can be prepared in two ways. Automatic samplers can eliminate human errors in manual sampling, reduce labour costs, provide the means for more frequent sampling, and are used increasingly.

The simplest form is time-related composites, which are made up of sub samples of equal volume taken at specific time intervals e.g. sub samples every hour composited to make a single daily sample. A **composite sample** representing a 24hr period is considered standard for most determinations. Under other circumstances, however, a composite representing a longer time period, or a shorter time period may be preferable. The other form is **flow proportional** sampling, which requires a purpose-designed sampler. These units take samples of wastewater proportional to the flow and are usually linked to an automatic flow meter. This latter form of sampling is extremely accurate and can be used to establish the total wastewater load. Because of its accuracy, flow proportional composite sampling is preferable.

## 2 EQUIPMENT

- Sample bottles: One litre or 2 ½ litre new PVC bottles to be used for all samples taken except samples taken for bacteriological, oil based or solvent analysis.
- Sampling hand-pump with extension tube – to be used for depth sampling at low flow. Otherwise a sampling beaker (250ml, 500ml or 1000ml) with screw-in extension rods to be used for depth sampling with sufficient flow.

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	KLC/LA/E2(ii)	Attachment E.2	Wastewater Sampling Procedures - GENSOP 3.01	03/06/2010	Donal Casey



- Manhole lifters
- Markers to be used to mark Identification on sample bottles

Disposable gloves

### **3 PROCEDURE**

- I. Qualified authorised Local Authority personnel must take all samples. Sampling must be carried out taking due care to avoid personal risk or injury arising from the nature of the sample itself or the location of the sample point.
- II. Sample bottles/containers must be clearly labelled and identified. The time/date must be recorded together with all relevant details of location and sampling conditions that may be present at time of sampling, e.g. weather conditions.
- III. Sample bottles must be securely sealed following sampling and stored securely for safe transport to the laboratory in cooler boxes where necessary (see relevant test SOP).
- IV. Samples will be analysed within 24 hours of sample collection, as a general rule; however, there may be specific requirements for particular tests. The relevant SOP should be referred to in all cases.

### **4 INTERFERENCES**

- I. Heavy rainfall dilutes effluent discharging from treatment plants that are not housed. Flow into sewage treatment plants increases greatly when there is heavy rainfall, particularly in towns where the surface water flows to the sewers rather than to the streams/rivers.
- II. Care should be taken to avoid gross solids and to avoid disturbing sediment or materials adhering to surfaces of pipes, chambers, channels or watercourses.

### **5 REFERENCES**

- Environmental research unit – Parameters of water quality.
- Standard Methods for the Examination of Water and Wastewater, 19<sup>th</sup> Edition 1995.

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