

Schedule 18

Appendix 18L – Sampling and Analytical Plan

SECTION A. DEFINITIONS

A.1 Definitions

- A.1.1 Capitalized terms used in this Appendix 18L have the meanings set out in Schedule 18 – Technical Requirements or the Design Build Agreement.

SECTION B. SAMPLING AND ANALYTICAL PLAN

B.1 General

- B.1.1 The intent of this Appendix 18L is to ensure Design Builder provides all reasonably required sampling points and equipment for commissioning, normal operation, and abnormal operation/troubleshooting of the Works. The Sampling and Analytical Plan provided is not based on any particular design concept and is intended to be generic so as to accommodate Design Builder's Final Design.
- B.1.2 Design Builder shall submit drawings as part of its Design Submittals showing the locations of all sampling points as given in the Sampling and Analytical Plan.
- B.1.3 Design Builder shall provide:
- (a) sink with hot and cold potable water, and floor drain for each sampling station;
 - (b) hose bib and floor drain within 15 meters of any sampling locations where samples are taken using extendable pole, sampling port or by hand; and
 - (c) plunger type composite samplers as follows:
 - (i) sampler shall be installed inline for pressurized pipes;
 - (ii) for samples taken outside of pressurized pipes (e.g. channel, tanks), install a recirculation pump and necessary piping for the sampler to ensure any sample taken is representative of the process fluid;
 - (iii) for pumped sludge with a solids content greater than 3%, sampler shall be within 5 m of pump discharge; and
 - (iv) provide instrument air for the operation of the plunger.

B.2 Overview of Sampling and Analytical Plan

- B.2.1 The Sampling and Analytical Plan is presented in Attachment 1 – Sampling and Analytical Plan Details. The following table provides a guide for understanding the spreadsheet.

Table 1: Sampling and Analytical Plan Guide

Column	Column Title	Description
1	Process Code	Two-character alpha-numeric code used to identify a particular process location as follows: <ul style="list-style-type: none"> • first digit is a letter and identifies the Area Code (e.g., “D” for anaerobic digestion); and • second digit is a numeral and identifies the process code, which is a particular process located in process area. The numeral “0” is reserved for “general” (i.e., no particular process within the process area).
2	Process Description	Description of the process location identified by the process code.
3	Sample Commodity	Commodity sampled.
4	Sampling Location Description	Description of the specific location for the sampling point.
6	Sample Equipment	Type of equipment used for sampling. These include: <ul style="list-style-type: none"> • on-line instrument: for continuous monitoring; • composite sampler: usually for frequent automatic sampling; • extendable pole: grab sample with extendable pole to obtain sample at depth; • sample port: grab sample from pipe; • sample station: grab sample from surface; and • by hand: grab sample of residuals.
7	Sample Collection Description	A brief description of the sampling equipment, location, and other special instructions/information relevant to the specific location.
8	Analytical Parameters	The parameters that are to be analyzed from the sample.
9	Minimum Monitoring Frequency	How often the sample is expected to be taken. On-line instruments will monitor the location continuously. Frequencies labelled “as required” can mean: <ul style="list-style-type: none"> • a place-holder to make sure that the Design Builder accommodates this sample location with the actual frequency to be determined in the Design Builder’s Final Design; • a location where samples will be taken during abnormal operations; or • a location where samples will be taken for detailed unit process studies.
10	Primary Purpose	Primary purpose for collection and analysis of sample. These include: <ul style="list-style-type: none"> • on-line instrument check: confirmation of on-line instrument readings; • process control: results used to adjust operation of the facility;

Column	Column Title	Description
		<ul style="list-style-type: none">• product check: usually at chemical addition points to monitor the quality of the resultant solution;• regulatory: results required by Governmental Authority for reporting;• removal efficiency: samples taken downstream of a process to check the efficiency of removing parameters from the process stream;• source control: samples taken at influent points, prior to any treatment, to check the incoming water quality; and• monitoring: other general monitoring of parameters.