

# NIWA Advanced Pond Systems™

## Information required for the design, construction, and monitoring of APS

The design, construction, and successful operation of APS systems depend not only on the influent wastewater characteristics and flow, but also on the ambient environmental conditions at the treatment plant site. The initial information required for the design is summarised in Table 1. As the design work progresses, the further information listed in Tables 2 and 3 is required.

Should the client not have these data available, NIWA can provide the necessary testing service. The information will be kept confidential and used only by NIWA as a basis for developing the conceptual and detailed design of the APS System, as per a standard agreement binding both parties.

**Table 1:** Initial community or combined raw sewage characteristics.

Wastewater Characteristic	Median	95 percentile
Present daily average flow (m <sup>3</sup> /d)		
Peak daily flow (m <sup>3</sup> /d)		
Dry weather flow (DWF) (m <sup>3</sup> /d)		
Design daily average flow (m <sup>3</sup> /d)		
Peak wet weather flow (WWF) (m <sup>3</sup> /d)		
Settleable solids concentration (mL/l)		
TSS concentration (g/m <sup>3</sup> )		
BOD <sub>5</sub> load (kg/d <sup>1</sup> )		
BOD <sub>5</sub> concentration (g/m <sup>3</sup> )		
Faecal coliform/ <i>E. coli</i> concentration (MPN/100 mL)		



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**Table 2:** Raw wastewater nutrient characteristics.

Wastewater Characteristic	Median	95 percentile
Total nitrogen concentration (g/m <sup>3</sup> )		
NH <sub>4</sub> -N concentration (g/m <sup>3</sup> )		
Total phosphorus (g/m <sup>3</sup> )		
PO <sub>4</sub> -P concentration (g/m <sup>3</sup> )		

### OTHER INFORMATION REQUIRED

1. Project name:
2. Project location:
3. Expected start up date:
4. Design population Year
5. Specify other source and quantity of wastewater in addition to the above if any
6. Cultural issues related to wastewater discharge that need to be considered in the design, please specify:
7. Description of existing treatment system, such as number and depth of ponds, surface areas, fine screening, (type & size), grit removal, additional treatment (e.g., wetland), please provide site map (preferably contour drawings), and drawings of existing system, nearest receiving water location
8. Type of facility required, new or upgrade:

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9. Specify clearly your discharge options i.e. to surface water, to irrigate and when and for how long, discharge directly or indirectly to sea, river, stream (note 6 above) or drain:

**Table 3:** Required effluent quality.

Effluent Characteristic	Median	95 percentile
Total grease (g/m <sup>3</sup> )		
TSS (g/m <sup>3</sup> )		
BOD <sub>5</sub> (g/m <sup>3</sup> )		
Alkalinity as CaCO <sub>3</sub> (mg/L)		
Ph		
TN (g/m <sup>3</sup> )		
NH <sub>4</sub> -N (g/m <sup>3</sup> )		
TP (g/m <sup>3</sup> )		
PO <sub>4</sub> -P (g/m <sup>3</sup> )		
Sulphide and metals		
Faecal /E. coli (MPN/100 mL)		

### RECEIVING WATER

Provide information on the receiving water type (stream, river, estuary, ocean) and the expected dilution.

### SITE CONDITIONS

Provide information on site topography (contours drawings), site boundaries, geotechnical report describing soil conditions, ground water table levels, and risk of site flooding. If this information is not available, the APS team will assume the worse case scenario and will assume that all ponds are to be lined.

### Please sign and date

Name:  
Position:  
Organisation:  
Contact person:  
Contact phone and email:  
Date:

### CONTACT INFORMATION

#### Business Opportunities

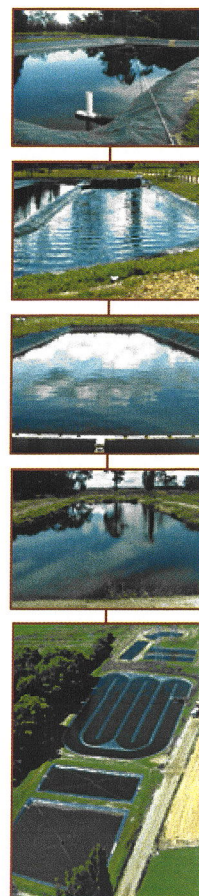
Dr. Jim Cooke  
Phone: +64-7-856 1744  
Cellular: +64-21-738587  
Email: [j.cooke@niwa.co.nz](mailto:j.cooke@niwa.co.nz)

#### Engineering & Project Management

Dr. Fouad Al Momen  
MIPENZ (CEng), MNZWWA, MPMI (USA), MCIWEM (UK), Reg. Eng.  
Phone: +64-7-859 1887  
Cellular: +64-21-0342143  
Email: [f.almomen@niwa.co.nz](mailto:f.almomen@niwa.co.nz)

#### Technical Enquiries

Dr. Rupert Craggs  
Phone: +64-7-859 1807  
Email: [r.craggs@niwa.co.nz](mailto:r.craggs@niwa.co.nz)



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