

HIPAF Packaged Treatment Plants



ENVIRONMENTAL WASTEWATER SOLUTIONS

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PO7 7UX

Molly
Mayclothling

Dear Molly,

WPL Hi-PAF – Sewage Treatment Plant – Ian Barr

Thank you for your enquiry for a packaged treatment plant to serve the above site. We have pleasure in providing a revised quotation for the equipment to meet your requirements.

The design of the WPL HiPAf is based on the Submerged Aerated Filtration process and has been successfully installed at many sites similar to your project, the system has a number of distinct advantages:

- Very robust process; consistently complying with discharge permit requirements.
- Low operation and maintenance costs.
- Capability of dealing with variable flows and loads (down to 10% of design load).
- Small footprint, keeping installation costs down.
- Ease of installation, saving valuable time on site.

We hope we have interpreted your requirements correctly, we will contact you shortly to determine the next steps.

Yours Faithfully

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1 Loading Rates:

		Flow	BOD	NH3	Flow	BOD	NH3
SOURCE	P.E	L/day	g/day	g/day	m3/d	Kg/d	Kg/d
Standard Residential	14	150.0	60.0	8.0	2.100	0.840	0.112
Caravans Static fully serviced	76	150.0	60.0	8.0	11.400	4.560	0.608
				Totals	13.500	5.400	0.720
				DWF	0.16	l/s	
				pe	90	90	90
				PFT	40.50	m3/d	
					0.47	l/s	

Desludge Frequency	60	Days
Population Equivalent	82	PE
pH	7 to 9	

1.1 Effluent Discharge Standards

Effluent Discharge Standard: 95%ile
 BOD₅: 20 mg/L
 Suspended solids: 30 mg/L
 Ammoniacal nitrogen: 10 mg/L
 (Subject to sufficient alkalinity being present in the raw sewage)
 ✓ No toxic substances or biological inhibitors to be present in the influent

1.2 Important Remarks

Where influent includes discharge from a commercial kitchen or catering facility, adequate provision for removal of grease and oils must be provided. No allowance has been made for untreated grease or oils entering the WPL plant.

The plant offered has been designed to satisfy the specified effluent discharge standard, based on the above loadings and strengths. **These must not be exceeded. It is very important to check that the plant loading data matches the operating conditions of the site;** always incorporating any waste water from laundries, catering facilities and nursing homes.

To ensure that the system can treat the incoming Ammoniacal Nitrogen (NH₄-N) to the guaranteed effluent quality there must be a sufficient level of total alkalinity (as calcium carbonate) within the incoming water supply. The **minimum** level needs to be 7.1 times that of the NH₄-N to be removed. In the event that there is insufficient alkalinity, calcium carbonate dosing must be considered, we are able to supply a dosing unit at an additional cost, if required.

If installed below ground the tanks are designed assuming that the ground water table is less than 1.5m above the base of the tank. If a higher water table or difficult ground conditions are encountered, please seek specialist advice or contact WPL.

1.3 Scope of Supply

Quant.	Equipment
1 no.	Treatment Plant: (Primary Settlement Tank, Biological Treatment Zone, Humus Tank).
1 no.	Side Channel Blower
1 no.	WPL GRP Kiosk
10 m	Temperature resistance air hose
1 no.	Galvanized steel air manifold
1 no.	Control panel
1 no.	Operation and Maintenance manual
1 no.	Any item in section 2.1 marked as "Included"

Note: Assuming Inlet Invert Depth = 0.5 m

1.4 Equipment Dimensions

1.4.1 HiPAF Biological Treatment Plant

Equipment	Approximate Dimensions (m)				No. of Lids/Hatches
	Width	Depth	Length	Length (overall)	
HP140 FEP080045	2.88	3.20	2.20	4.00	

1.4.2 Side Channel

Blower

1.4.3 GRP Enclosure

Equipment	Motor Power (KW)	Absorbed Power (KW)	Current FLC (A)	Voltage (V)	Phase
2BH7510	1.5	1.5	4.3	415	3
Type	Dimensions (mm)				
	Width	Length		Height	
GRP Enclosure	1400	1100		1000	

15 dB(A) attenuation

COMPOUND	MAXIMUM (mg/l)	COMPOUND	MAXIMUM (mg/l)
Arsenic	0.1	Magnesium	5
Boron	0.1	Mercury	0.1
Cadmium	5	Nickel	0.25
Calcium	750	Perchloroethylene	0.001
Chromium (Hexavalent)	0.2	Phenols	5
Chromium (Total)	1	Silver	0.05
Colbalt	0.08	Sulphates	500
Copper	0.05	Thiourea	0.01
Cresols	5	Trichloroethylene	0.001
Cyanide	0.1	Zinc	0.2
Fats Oils and Grease	30	2-4 Dinitro Phenol	150
Iron	20	Free available Chlorine	< 1
Lead	50	Cationic/Anionic Surfactants	< 0.01