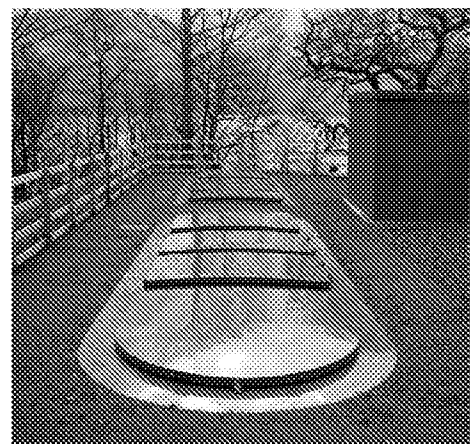


HIPAF Packaged Treatment Plants

Pollards Nursery WwTW

Redrow Homes Ltd

25.07.16



ENVIRONMENTAL WASTEWATER SOLUTIONS





WPL Limited

Units 1 & 2 Aston Road
Waterlooville
Hampshire.
PO7 7UX

Reference Number: 11375824/REV02

25/07/2016

James Bedford
Unit 1
Faraday Office Park
Basingstoke
RG24 8QQ

Dear James,

Re: Packaged Treatment Plant – Pollards Nursery WwTW

Thank you for your enquiry for a packaged treatment plant to serve the above site. We have pleasure in providing a quotation for the equipment to meet your requirements. We have based our design of the equipment on the information you have provided, this can be found in the plant loading data section of this quotation.

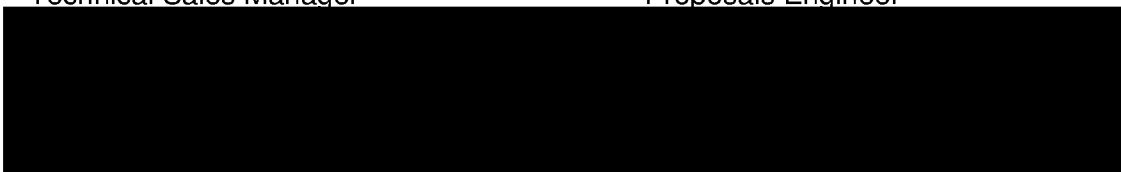
The SAF system from WPL employs a combination of fixed film and suspended biomass reactions. Our application of these technologies enables us to offer plant capable of consistently achieving even the most stringent consent standards.

Our proposal is presented in this document. We shall welcome further instructions from you in due course. Meanwhile, please do not hesitate to contact us should you have any queries or require any additional information.

Yours sincerely,

Dominic Hamblin
Technical Sales Manager

Mohammed Ali
Proposals Engineer





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1 Loading Rates

SOURCE	PE	PER PERSON / PER WASH CYCLE			PER SITE		
		FLOW	BOD	NH ₃	FLOW	BOD	NH ₃
		L/day	g/day	g/day	m ³ /day	Kg/day	Kg/day
Standard Residential	615	150.0	60.0	8.0	92.250	36.900	4.920
Totals					92.25	36.90	4.92
DWF						36.90	m ³ /d
PFT						110.70	m ³ /d
Sludge Storage						30	days

1.1 Effluent Discharge Standards

Effluent Discharge Standard: 95%ile
 BOD₅: 20 mg/L
 Suspended solids: 30 mg/L
 Ammoniacal nitrogen: 5 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.	Primary Settling Tank, GRP, Underground Installation
1 no.	Biological Treatment Tank, GRP, Underground Installation
1 no.	Secondary Settling Tank, GRP, Underground Installation
1 no.	Side Channel Blower, Duty mode
1 no.	WPL GRP Enclosure, Large Kiosk
10 m	Temperature resistance air hose
1 no.	Galvanized steel air manifold
1 no.	Control panel
1 no.	Operation and Maintenance manual

Note: Assuming Inlet Invert Depth = 0.5 m

1.4 Equipment Dimensions

1.4.1 Primary Settling Tank

Equipment	Approximate Dimensions (m)				No. of Lids/Hatches	Weight Kg
	Width	Depth	Length	Length (overall)		
HP620 000 000	2.88	3.20	6.20	8.70	4/2	TBC

1.4.2 Biological Treatment Unit

Equipment	Approximate Dimensions (m)				No. of Lids/Hatches	Weight Kg
	Width	Depth	Length	Length (overall)		
HP000 620 000	2.88	3.20	6.20	6.20	4/0	TBC

1 off Duty Blower: 4.3KW, 10.0A, 3ph

1.4.3 Secondary Settlement Unit

Equipment	Approximate Dimensions (m)				No. of Lids/Hatches	Weight Kg
	Width	Depth	Length	Length (overall)		
HP000 000 450	2.88	3.20	4.50	7.20	3/2	TBC

2 Optional Supplies

2.1 Pumping Station

Pumping Station, 90m³ Capacity, 24hrs Retention, GRP, Underground Installation.

Equipment	Approximate Dimensions (m)		Rect. Access Shafts	Weight Kg
	DIA	Length		
SPEL	2.7	17.56	1	TBC

2 off Duty/standby Pumps: 1.5KW, 3ph, 3.9A

2.2 Primary Settlement Unit (Cylindrical)

Primary Settling Tank, GRP, Underground Installation with increased sludge storage capacity to 60 days. This would replace the settlement tank offered in the main quotation.

Equipment	Approximate Dimensions (m)		Rect. Access Shafts	Weight Kg
	DIA	Length		
SPEL	2.7	12.7	3	TBC

3 Budget Sales Price

Item	Quant	Price per item (£ exc. VAT)	Total (£ exc. VAT)
Supply of the equipment described in the item 1.3 above with WPL Primary Tank 1.4.1	1		
Delivery	1		
Supply of the equipment described in the item 1.3 above with SPEL Cylindrical Tank 2.2	1		
Delivery	1		
Supply of the equipment described in the item 2.1 above (pumping station)	1		
Delivery	1		
Extras			
500mm Invert Extensions per lid	1		
500mm Invert Extensions per hatch	1		
Sample chamber	1		
Duty Standby Blower upgrade	1		
GSM Telemetry	1		
Pumped flow Controller *	1		

*If pumping into a packaged treatment plant, the peak flow to treatment must not be exceeded, you can use the above pumped flow controller, alternatively a brake chamber (By others) would need to be constructed up front of the treatment plant to prevent shock loadings and compromising the hydraulic retention time through the plant,

Notes:

- a) A crane or telehandler (lifting device) may be required on site for offloading and positioning. Costs of the lifting device to be borne by the contractor.
- b) Delivery price estimated. Final price will be firmed up following on site survey by the relevant haulier company to verify site access conditions.

3.1 Exclusions

Please note this offer excludes the following:

- a) Site craneage for offload, except HIAB.
- b) Safety grids.
- c) Any support structures other than the support steel work specifically referred in the equipment description.
- d) Site positioning and setting to work by others.
- e) All civil works.
- f) On site M&E installation works, quoted as an extra.
- g) All external piping, manhole chambers, ducts etc.
- h) All power and control cables, installation, termination & testing, unless otherwise stated.
- i) Flow meters.
- j) Telemetry cabling and outstation and its configuration to Master station.
- k) All inlet works including storm management and screening (if necessary).
- l) All flow splitting and flow control.
- m) All pumping operations, including to above ground units.
- n) Messing and welfare facilities on site.
- o) Site offices and accommodation, where site work is required.
- p) All permits and permissions to enter site.
- q) Temporary works of any description, including provision of a generator, unless otherwise stated.
- r) Delivery to site excludes facilities for off-loading, unless by prior written agreement.
- s) Documentation to be WPL specification, unless stated elsewhere.
- t) Tagging and Labelling of M&E items excluded, unless by prior written agreement and even then only to WPL standard specification.
- u) All process testing (wet and dry), sampling and laboratory testing.
- v) Health and Safety Signage on process units to WPL specification, unless by prior written agreement.



- w) Any other items not specifically included in a written proposal should be assumed to be excluded.
- x) Performance Bonds in any form.
- y) Liquidated damages.
- z) Storage beyond the agreed delivery date of all manufactured equipment.
- aa) U.K. Value added Tax.

4 Terms of Payment

To be agreed.

5 Provisional Delivery Programme

Delivery currently is 8 to 12 weeks from acknowledgement of order dependent on factory workload. All times stated are from receipt of firm instruction to proceed and full/final technical information.

We have allowed for 2 revisions of drawings as part of our technical submission, for more revisions of this WPL may impose further charges.

- Submission of data sheets, drawings and documents for approval: 2 weeks
- Method statements, risk assessments: 21 days before start on site

Important notes:

- a) All the above subject to our factory loading on receipt of firm instructions to proceed.
- b) The programme of works can only be considered as 'For Information only' until such time when a definite production slot can be reserved following the issue of an order/contract acknowledgment.
- c) Unless otherwise specified or agreed, WPL LTD will assume the duty as designer under the CDM regulations 2015 (Regulation 9 and 10). WPL LTD, will take in to consideration the general principles of prevention and mitigate design risks for what is considered 'reasonably practicable'.

6 Validity

This quotation is valid for 60 days and is made subject to WPL's standard Conditions of Contract.

7 Delivery Terms and Conditions

7.1 Delivery of WPL Equipment

- a) Delivery to site will be made with an articulated lorry.
- b) Where access to site and/or available space for movement is restricted delivery will be made to the nearest hard road suitable for an articulated vehicle having min. headroom of 5 metres & width of 4.5m.
- c) Upon arrival a crane may be required to offload the plant, the cost and arrangement of all such craneage and lift supervision etc. not included in above prices; cost to be borne by contractor.
- d) On site, at least 2 contractor's site personnel will be necessary to assist in the off-loading operation (no allowance for the cost of the contractor's site personnel allowed for within the 'WPL' prices; cost to be borne by contractor.
- e) If the site has any special access requirements then please advise WPL as earlier as possible so that arrangements for a site visit to verify delivery possibilities, will be charged for at cost to the client.
- f) If there are any access issues that require any special delivery procedures, personnel, equipment or vehicles etc. will be charged for at cost to the client.

7.2 WPL Policy on Delivery to Site

- a) The delivery of WPL equipment to site will be strictly as described above, any departure will be charged for at cost to the client.
- b) WPL will provide any practical and reasonable assistance it can to resolve any issues.
- c) WPL will **not** be providing a "lifting plan" or any lifting supervision unless specifically requested, will be charged for at cost to the client.
- d) Any requirement for delivery personnel to attend H&S lectures, videos or courses prior to or at the time of delivery will be charged for at cost to the client.
- e) Important that the customer to advises WPL by the time of order placement of any additional requirement.
- f) The driver of the vehicle will be the final arbiter of what he considers safe.

8 Process Guarantee

The process is guaranteed to meet the specified discharge standard on a 95%ile basis, in accordance with standard sampling procedure.

The following conditions will apply to the above guarantees:

- All aspects of the installation, operation & maintenance manuals and users guide are adhered to.
- The flows & loads, which are provided by the client do not exceed those stated on the design sheet.
- That the influent pH is between 7 – 9.
- That there is sufficient hardness in the water, where nitrification is required.
- Grease from commercial kitchens is not present in the treatment plant influent.
- Biological inhibitors are not present in the treatment plant influent.
- Performance is measured after the plant is matured.
- Samples are taken in accordance with regulations and best practice.
- The maximum BOD loadings in the sewage should not exceed the stated in the design load.
- The hydraulic loading should not exceed the hydraulic loadings detailed within the design data.

Loading:

- The plant should receive a minimum load of 10% of its maximum design loading at all times, unless otherwise sanctioned by WPL personnel.
- Variable loads – any increase in load should not exceed 40% of the maximum design load spread over a 7 day period.
- The flows and loads do not exceed those stated on the design sheet.
- Pumped flows are controlled to the maximum peak flow to treatment.
- In the event of the temperature dropping below 5 Celsius nitrification may be lost and will only return when temperatures increase to above 10 Celsius for an extended period.
- Chemicals listed in the following table should be restricted to the stated maximum amounts.

COMPOUND	MAXIMUM (mg/l)
Arsenic	0.1
Boron	0.1
Cadmium	5.0
Calcium	750.0
Chromium (Hexavalent)	0.2
Chromium (Total)	1.0
Colbalt	0.08
Copper	0.05
Cresols	5.0
Cyanide	0.1
Iron	20.0
Lead	0.1

Magnesium	50.0
Manganese	5.0
Mercury	0.1
Nickel	0.25
Perchloroethylene	0.001
Phenols	5.0
Silver	0.05
Sulphates	500.0
Thiourea	0.01
Trichloroethylene	0.001
Zinc	0.2
2-4 Dinitro Phenol	150.0
Fats, oils and grease	30.0
Free available Chlorine	< 1
Cationic/Anionic Surfactants	< 0.01