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Foul Water Drainage Assessment  
for  
Conversion of a redundant agricultural building  
to a dwelling  
At  
Hill Farm, Main Road, Mappleton HU18 1XS

## **INTRODUCTION**

This Assessment has been prepared to accompany a planning application and should be read in conjunction with the associated plans which show the site and relevant development.

## **BACKGROUND INFORMATION**

### **DEVELOPMENT DESCRIPTION**

Conversion of a redundant agricultural building to a dwelling.

### **APPLICANT**

Mr & Mrs Basham

### **AGENT**

Frank Hill & Son (Architectural Services) Ltd,  
18 Market Place,  
Pattingham,  
HU12 0RB

## DRAINAGE ASSESSMENT

### FOUL WATER DRAINAGE

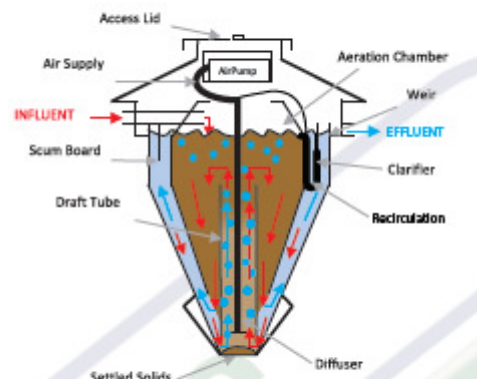
#### To serve a building to be used as a dwelling

Foul water from the site will terminate through 100mm diameter PVC drains to the proposed Bio – Pure 1 private treatment plant (see details below).

The capacity of the tank will take up to 1 to 5 people.

The Bio-Pure is a two-chamber unit and consists of a conical tank that contains an inner tank aeration chamber, which is open at the base. The space between the inner and outer tank is the clarifier chamber. A draft tube, positioned 100mm from the base of the clarifier, extends up into the aeration chamber.

Air from the compressor housed under the lid is piped to a diffuser in the draft tube. Raw sewage enters the aeration chamber and air surging up from the draft tube aerates the sewage, causing an aerobic bacterial colony to establish and digest the organic matter. As more raw sewage enters the chamber, an equal amount of effluent displaces through the open bottom into the clarifier. The quiet conditions in the clarifier allow all the suspended solids to sink to the base of the clarifier. They are drawn back up the draft tube by the upward flow of air, for further digestion in the aeration chamber. A small quantity of settled effluent from the top of the outer clarifying chamber is drawn back into the centre aeration chamber by a simple air lift system, for further digestion. The clear effluent rises to the top of the clarifier and passes over a weir into the outlet pipe. The Bio-Pure constantly recycles the sewage via gravity and the airlift system and achieves near total solids digestion. Unlike all other extended aeration plants the unit will function during low usage periods making the unit suitable for holiday lets and other infrequent usages. Unlike other sewage treatment plants that are three stage systems, the Bio-Pure does without a primary settlement tank and so can achieve extended intervals of up to 3 to 5 years without emptying.



**TESTED AND CERTIFICATED TO BS EN 12566-3**

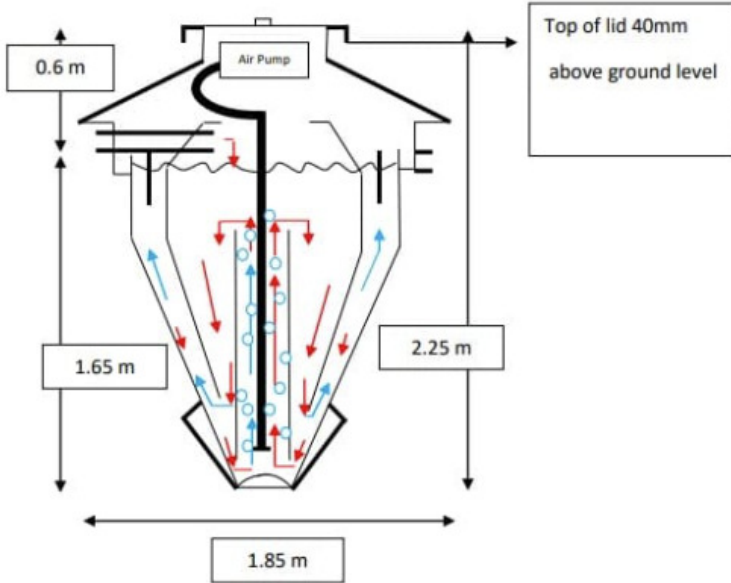
## Technical Specifications

Model	Bio-Pure 1	Bio-Pure 2	Bio-Pure 3	Bio-Pure 4	Bio-Pure 5	Bio-Pure 6	Bio-Pure 7	Bio-Pure 8	Bio-Pure 9	Bio-Pure 10
No. of persons	1 to 5	1 to 7	5 to 13	10 to 16	14 to 22	20 to 27	25 to 32	30 to 36	35 to 42	40 to 55
Max. average daily flow	750 ltr	1050 ltr	1800 ltr	2400 ltr	3300 ltr	4050 ltr	4800ltr	5400 ltr	6000 ltr	8250 ltr
Max. BOD/day	300 g	420 g	780 g	960 g	1320 g	1620 g	1820 g	2160 g	2520 g	3300 g
In ground depth	2.25 m	2.25 m	2.44 m	2.74 m	2.74 m	2.98 m	2.98 m	2 x 2.74 m	2 x 2.74 m	2 x 2.98 m
Outside Diameter	1.85 m	1.85 m	2.10 m	2.10 m	2.10 m	2.55 m	2.55 m	2 x 2.10 m	2 x 2.10 m	2 x 2.53 m
Inlet invert	570 mm	570 mm	700 mm	700 mm	700 mm	820 mm	820 mm	700 mm	700 mm	820 mm
Outlet invert	670 mm	670 mm	800 mm	800 mm	800 mm	920 mm	920 mm	900 mm	900 mm	1020 mm
Weight empty	125 kgs	125 kgs	200 kgs	230 kgs	230 kgs	350 kgs	350 kgs	460 kgs	460 kgs	800 kgs
Total capacity	2270 ltr	2270 ltr	3000 ltr	3975 ltr	3975 ltr	5610 ltr	5610 ltr	7950 ltr	7950 ltr	11220 ltr
Power consumption	44 w	74 w	92 w	148 w	184 w	184 w	240 w	332 w	368 w	424 w
E-Range	27 w	42 w	65 w	84 w	130 w	130 w	210 w	230 w	280 w	280 w

The unit can be adapted to allow for ANY Inlet or outlet Invert level.

# Bio-Pure 1 Gravity

## Bio-Pure 1 E Range Technical Sheet



Price	£2,520 (£3,024.00 Inc VAT)
Product ID	BP-1
Air Pump	60ltr
No. of Persons	1-5
Max Average Daily Flow	750ltr
Max BOD/Day	300g
In Ground Depth	2.25m
Outside Diameter	1.85m
Inlet Invert	600mm
Outlet Invert	700mm
Weight Empty	125kgs
Total Capacity	2270ltr
Power Consumption for E Range	27w