

Foul Discharge Design

Project Ref: 285

Project: Lower Farm Barns

Date: 07.06.24

No foul sewer in the vicinity of the site. General binding rules indicate if there is more than one property public sewer needs to be within number of units (5) x 30m - 150m before a sewage treatment plant will be approved.

Discharge is proposed to a private sewage treatment plant within the site boundary with outflow to the land drainage ditch which discharges to the River Dee

The domestic sewage discharge loading must be designed in line with British Water Flows and Loads 4

Table of Loadings for Sewage Treatment Systems

Per person / activity / day (unless otherwise specified)

FLOW

BOD

Ammonia
as N

DOMESTIC DWELLINGS
(Grams)

(Litres)

(Grams)

Standard residential	150	60	8
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Source of Waste						Flow Litre / Day		BOD Grams / Day		NH3		
Description	No of units	No of bedrooms	Max Occupancy	P adjust *	Total Adjusted	Per Head	Total	Per Head	Total	Per Head	Total	
No 1	1	3	5	0.8	4	150	600	60	240	8	32	
No 2	1	3	5	0.8	4	150	600	60	240	8	32	
No 3	1	4	6	0.8	4.8	150	720	60	288	8	38.4	
No 4	1	4	6	0.8	4.8	150	720	60	288	8	38.4	
No 5	1	4	6	0.8	4.8	150	720	60	288	8	38.4	
TOTAL LOAD			28		22.4		3360		1344		179.2	
m3/day								3.36				
Average Daily Flow (l/s)								0.04				
Peak Flow								0.23				

* P adjust as indicated in Section 5 of British Flows and Loads 4 assuming a domestic site

Proposed sewage treatment plant reference - WTE Cyclone 30

Evaluation of the nominal sequences of the 38-week testing

Nominal organic daily load (influent)	0.22 kg BOD ₅ /d	
Nominal hydraulic daily load	0.60 m ³ /d	
Material	High-density polyethylene	
Treatment efficiency	Efficiency	Effluent
	COD	94.7 % 46 mg/l
	BOD ₅	97.7 % 8 mg/l
	TN _b	50.2 % 30 mg/l
	NH ₄ -N*	91.5 % 3.6 mg/l
	P _{tot}	38.9 % 4.5 mg/l
	SS	97.9 % 8 mg/l

Surface water is to be excluded from the foul drainage network and should not enter the sewage treatment plant

Waste Disposal and Grease Traps are not provided

The packaged sewage treatment plant will be located a minimum of 7m from habitable parts of any building and within 30m of a tanker access hardstanding area.