

North Head Wastewater Treatment Plant technical data sheet

Primary treatment

Equipment	Design criteria	Details
Screen	Number	7 (1 standby)
	Type	Rotary drum screen
	Aperture	5 mm
	Capacity	276 ML/d/screen
Raw sewage pumps	Number	6
	Capacity	1,850-4,250 L/s/pump
	Head height	63.5 m
Grit removal	Number	4
	Type	Aerated spiral flow
	Dimensions (w x l x d)	6 m x 33.5 m x 3.75 m
	Target Grit removal	95% of 200 µm
	Grit production	2 kg/ML
Sedimentation	Number	6
	Type	High rate PST
	Dimensions (w x l x d)	6.1 m x 77 m x 3.1 m
	Detention time	25 min (@300ML/d)

Solids handling

Equipment	Design criteria	Details
Sludge screen	Number	3
	Type	Sludge press
	Aperture	5 mm
	Capacity	195 m ³ /h
Macerator	Number	1
	Capacity	195 m ³ /h
Pre-thickening storage tank	Number	1
	Volume	170 m ³
Rotary drum thickeners	Number	4
	Capacity	65 m ³ /h
	TSR Increase	5%
Digesters	Number	3
	Type	Mesophilic anaerobic
	Mixer type	Paddle
	Hydraulic Retention Time	20 days
	Temperature	37°C - 39°C
	Volume	13,200 m ³
Post-thickening storage tank	Number	1
	Volume	170 m ³
Dewatering centrifuge	Number	2
	Type	Horizontal decanter
	Hydraulic loading	23 kL/h

Chemical additions

Purpose	Design criteria	Details
Deodoriser/disinfection	Chemical added	Sodium hypochlorite
	Dosage	3-10 kL/d
pH balance	Chemical added	Sodium hydroxide
	Dosage	1-5 kL/d
Membrane and scrubber cleaning	Chemical added	Citric acid
	Dosage	500 L
Sludge thickening and dewatering	Chemical added	Cationic polymer
	Dosage	3.5 kg/TDS (Thickening – Raw sludge)
		3.0 kg/TDS (Thickening – Digested sludge)
		5.5 kg/TDS (Dewatering)

Odour Control

Equipment	Design criteria	Details
Chemical scrubber	Number	2
	Type	Wet chemical scrubber
	Outlet H ₂ S concentration	0.05 ppm
	Total design air flow	10 m ³ /s
Bio trickling filter		30 m ³ /s
	Number	1
	Type	Bio trickling filter
	Outlet H ₂ S concentration	0.05 ppm
	Total design air flow	35 m ³ /s

Energy generation

Equipment	Design criteria	Details
Cogeneration	Number	2
	Type	GE Jenbacher JMS420 GE Jenbacher JMS320
	Output (combined)	2.5 MW
Hydropower	Number	2
	Type	Tyco Tamar Pacific
	Output	2.1 MW
Plant energy	Daily use	5 MW/d
	Produced	4.6 MW/d