



Taylex[®] Tanks

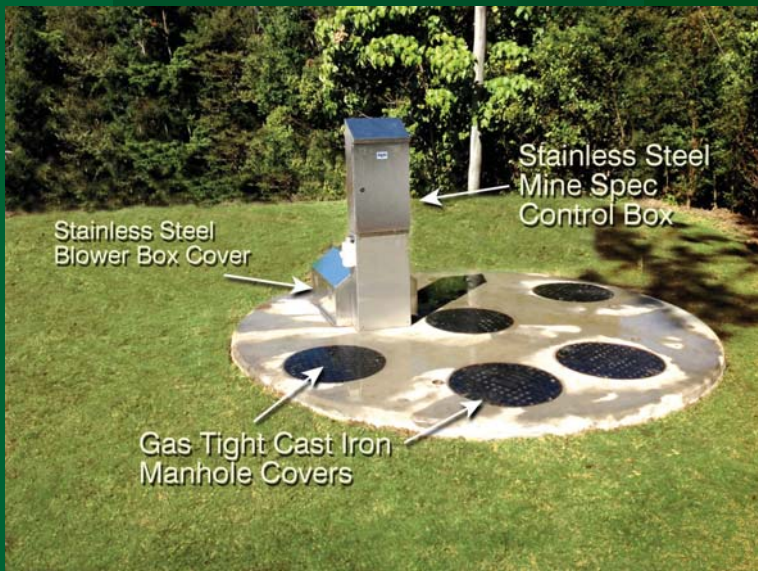
Manufacturing Tanks Since 1969

Wastewater & Rainwater Specialists

Commercial Sewage Treatment Solutions

A purpose designed, commercial treatment plant using a monolithic constructed tank that is made out of one piece of concrete with no silicone, mortar or internal joins.

Built to Last!



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About Taylex - The biggest producer of Treatment Plants in Australia



*Taylex's Queensland
Head Office*

Taylex was founded in 1969 and we were the first company to manufacture domestic Aerobic Wastewater Treatment Systems (AWTS) in Australia. Taylex continues to lead the field in both precast concrete, rotational moulding manufacturing, design & installation of Rainwater Tanks, Home and Commercial Sewage Treatment Plants.

Taylex has a National Distribution Network which is supported by factory trained licensed distributors. Our Distributors can supply, install, service and maintain our range of both concrete and plastic products from Tasmania to Darwin, Perth to Brisbane. We manufacture all our own concrete and plastic products.

Taylex is an ISO 9001 Quality Assured Company. Our range of products carries all relevant State Government Approvals throughout Australia.

Project Management for Your Installation & Commissioning

Your Taylex consultant will project manage your installation with your builder or project manager. They will advise on, and discuss matters with you that may affect the final outcome for you (eg sub-surface irrigation and positioning of tanks; possible excavation problems like rock and high water tables etc.). This ensures a trouble-free install with maximum aesthetic value and minimal environmental impact.

Taylex's Design Philosophy when building a Commercial Sewage Treatment System

It's simple... we used our 40+ years of knowledge and manufactured a range of purpose built tanks for the commercial sewage market.

We designed these systems so that they are:

- Cost effective.
- Simple to maintain
- Able to grow with your future requirements.
- Able to cope with high flows that commercial environments can generate.
- Able to treat effluent over a full 24 hour period, this gives you the best possible output from a commercial system.
- Built with large buffer zones to handle the continued influent flow despite a breakdown; almost a full day's capacity.
- Modular. No matter how it is configured, all our breakdown staff will be able to troubleshoot every system.
- Designed with all parts being 240 volt standard 3 pin plug, including the CABS controller. No electrician required for parts exchange if required.
- Fitted with a self-diagnostic controller which will indicate the nature of the fault that has occurred.

The system is that easy!

About the CABS (Commercial Advanced Blower System)

The Taylex CABS System is a purpose built 'off the shelf' Commercial Sewage Treatment Plant. It is not a series of Domestic Treatment Plants to make up a commercial system. It is essentially a 5,000 litre per day off-the-shelf modular system that can be used to treat commercial sewage from 5,000, 10,000, 15,000 or 20,000 litres per day. Larger systems such as 50,000 or 60,000 litres per day can also be created.

To our knowledge the 5,000 litres per day "CABS" tank is the only off-the-shelf module aerobic commercial treatment system in Australia. There are tremendous benefits with the CABS design which we will cover later in this brochure.



The system Taylex has created, is called a CABS (Commercial Advanced Blower System)

How did we do it?

Taylex is the largest producer of Domestic Treatment Systems in Australia. We sell over 2,000 systems a year and we have been in the business of sewage treatment for over 40 years. In fact, we now have our 3rd generation of family working in our business. It took us nearly 3 years from design implementation to a completed CABS on the ground.

We have built a dedicated Commercial Tank that rectifies many of these problems that all commercial systems face.

The Taylex Difference

We build our range of commercial systems to last the test of time. They are easy to maintain and operate and they are very price competitive.

Commercial treatment systems are expensive to buy, so don't just pick one on price alone. The system you are about to buy has to last many years and work constantly, 24 hours a day 7 days a week, year in year out. One of the common reasons for future problems is that the system has not been designed correctly.

**A Taylex system is scalable to your future effluent processing needs!
- Because, you can add to it at a later date**

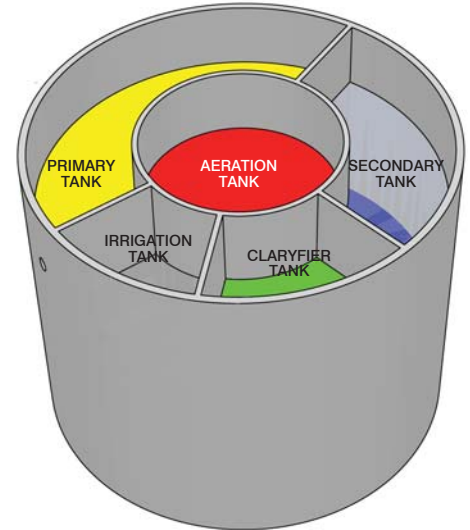
Why the Tank is such a good design

To our knowledge, Taylex is the only company in Australia that has specifically built a concrete tank to make a commercial system. It is not a rainwater tank, or a domestic treatment system that has been converted to make a commercial treatment plant.

THE TANK

Pictured to the right is a photo of why the CABS is such a good system. Taylex has specifically designed a commercial tank that has all the boxes ticked.

- A large monolithic, five chambered tank that is made out of one piece of concrete.
- The chambers go all the way to the roof to stop cross contamination between chambers.
- The tank is unbelievably strong due to its simple but effective design.
- There are no silicones, mortar or epoxy used that generally fail after several years of sitting in sewerage.
- Large buffer zone built into the tank for unforeseen breakdowns due to power loss or equipment failure. (Nealy one full day's buffer)
- And probably the most important part about the tank. Taylex has been making this tank for domestic use for more than 15 years and we have never had a structural tank failure in the field. All we have done is scale it for commercial use.



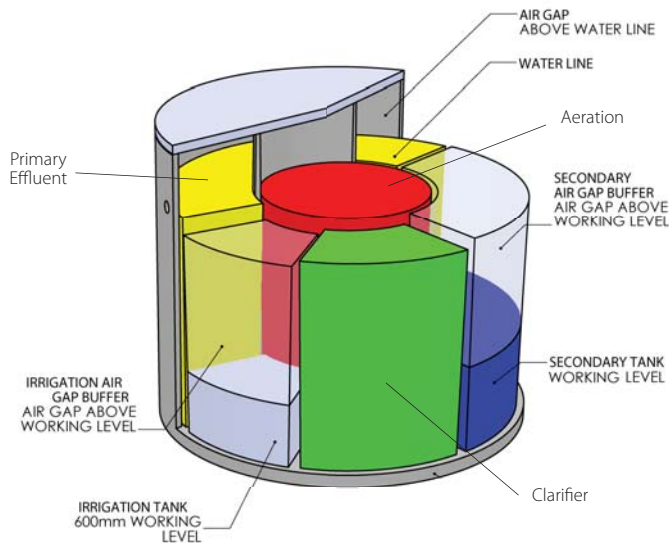
A CABS tank being de-moulded

OUR TANK DESIGN IS THAT GOOD!



2 x CABS Tanks installed at the Lake Moogerah Ski Club

How Does a 5000 Litres Per Day CABS (Commercial Advanced Blower System) Work?



Buffer Zones

Another great feature of the CABS System is the extremely large buffer zones.

The Buffer Volumes are as follows:

Primary = 1604 litres

Secondary = 1020 litres

Aeration = 1153 litres

Clarifier = 633 litres

Irrigation = 392 litres

Total buffer in case of emergencies (excluding the pump station) is 4802 litres. Or nearly one day's buffer. So, if something goes wrong, we have a day before it becomes a problem.

Proven Track Record:

The CABS System is a giant version of our domestic treatment plant which we designed in the early 1990's. We have a proven track record with literally 10's of thousands of these systems being installed all over Australia.

Irrigation Areas:

Each CABS will come with its own irrigation pump so we can irrigate to different irrigation areas if required.

Flow Meters:

All CABS tanks are fitted with a flow meter in the irrigation chamber that records the hydraulic volume used by each system. This meter over time, gives us accurate records of the volume of effluent that your CABS system produces both in quiet and busy periods.

The CABS is a specifically designed, monolithic, 5 chamber tank that can treat 5,000 litres of effluent per day. The influent is treated over a full 24 hour period using a timed buffering system.

The secret to treating commercial effluent correctly is to treat it slowly.

The CABS system allows us to hold the effluent in the secondary/buffer chamber so that it can be treated over an extended 24 hour period. Every hour we pump a controlled flow through the system. The CABS will treat 208 litres every hour. That's 5,000 litres over a 24 hour period!

Description of a CABS Process Train

The 5,000 litre per day CABS system is a 5 chambered monolithic tank that uses an extended aeration process that can be turned on and off to adjust nitrogen levels.

The effluent enters the primary chamber and then flows into the secondary/buffer chamber which then pumps the desired amount of conditioned effluent to the aeration chamber via the CABS controller unit.

This effluent is pumped from the secondary buffer tank to the aeration chamber once per hour and the amount of effluent pumped across can be varied depending on the amount of effluent that enters the system on a daily basis i.e 100 litres per hour 150, 208 litres per hour.

The aerated (aerobic) chamber has large areas of submerged fixed film growth media to promote stable biomass which acts as a biological filter through which all effluent passes many times before entering the clarifier.

From this the aeration chamber effluent flows into a coned clarifier where any solid particles remaining sink to the bottom of this cone and are pumped via a Davey D25 Vortex pump that operates 4 times a day for 10 seconds to the primary chamber.

The remaining liquid then gravity feeds through 2 Taylex TFG filters which are located in the clarifier to stop any solid particles from flowing to the irrigation chamber.

From this clarification chamber the treated, cleaned effluent is then gravity fed into the irrigation disinfection chamber, the disinfected, cleaned effluent is then pumped to the irrigation management area.

Commercial Advanced Blower System (CABS)

Features

Benefits

A Purpose Built Commercial System	→	Not a Converted Domestic Treatment System
Large Purpose Built Tank	→	Designed to handle Commercial Effluent
Walls that go all the way to the roof	→	Minimising Cross Contamination Issues
Tank & Chambers poured all at the same time	→	No Leaking Internal Walls - Extremely Strong Tank
Purpose Built Simple Diagnostic Controller.	→	The System tells you exactly what's wrong with it. Simple to read and understand.
Timed Dose Pump in Secondary Chamber	→	The Effluent is treated evenly over a full 24 hour period
Every electrical item is fitted with its own Earth Leakage Safety Switch	→	If there is a fault with any electrical component the system will shut off that electrical component and not the entire treatment plant. The alarm will then sound so the fault can be fixed.
Timed Controlled Aeration	→	The Aeration motor can be turned off and on to suit the system's needs where possible, saving power.
Systems can be added to at a later stage	→	A very cost effective way to add to the systems as your needs grow
All electrical components are 3 pin, plug-in, plug-out	→	No electrician required to change components

Taylex Manufacture The Most Reliable Vessel for a Commercial Sewage Treatment Plant in Australia

Design Parameters for Effluent

The Taylex CABS Commercial System will achieve the below effluent discharge provided the incoming influent is not greater than the table below, and/or the system is not overloaded by adverse chemicals.

Parameter	Unit	Influent (In)	Effluent (Out)
Biological Oxygen Demand (BOD ₅)	mg/L	400	<10
Total Suspended Solids (TSS)	mg/L	350	<10
Oil & Grease	mg/L	75	<5
pH		6.5 - 8.2	
Faecal Coliforms, FC	cfu/100mL		<10/100

Phosphorus Removal:

Sometime in 2013, most of the major manufacturers of detergents in Australia will cease using phosphates in their manufacturing processes as they did in America some years ago. This being the case, phosphate should not be an issue in treatment plants but if for some reason you have a treatment plant that needs phosphate reduction, Taylex has a phosphorus reduction system that can be fitted.

Nitrogen Reduction:

This is a very complex issue in treatment plants and there is no easy fix to nitrogen reduction. There are many ways to reduce nitrogen in treatment systems and we have found that each site is unique and comes with its own set of challenges depending on the grade of influent that each commercial site produces. Nitrogen reduction has to be treated on a site by site basis and we will not know the actual levels that can be achieved until the treatment plant is fully functional.

The Working Parts to a CABS (Commercial Advanced Blower System)



CABS Control Panel

Each CABS tank has only five working parts which are off the shelf and very reasonably priced.

Davey D25 Submersible pump to transfer effluent from the Secondary Chamber



Nitto Air Blower



Davey D25 Submersible pump to transfer effluent from the Clarifier to the Primary Chamber



Submersible pump from the Irrigation Chamber. The size of this pump may vary depending on the irrigation requirements



Toro Irrigation Flow Meter



Taylex TFS (Taylex Filter Septic)

Taylex has a range of filters that we build. In the CABS System we use two TFS filters which reduce solid carry over from the clarification chamber to the irrigation chamber. These filters greatly reduce solid matter from entering the irrigation field and assist greatly with the final effluent results. The Taylex TFS filters are extremely robust and are cleaned during regular routine maintenance programs.



Picture of CABS Dual Filter setup

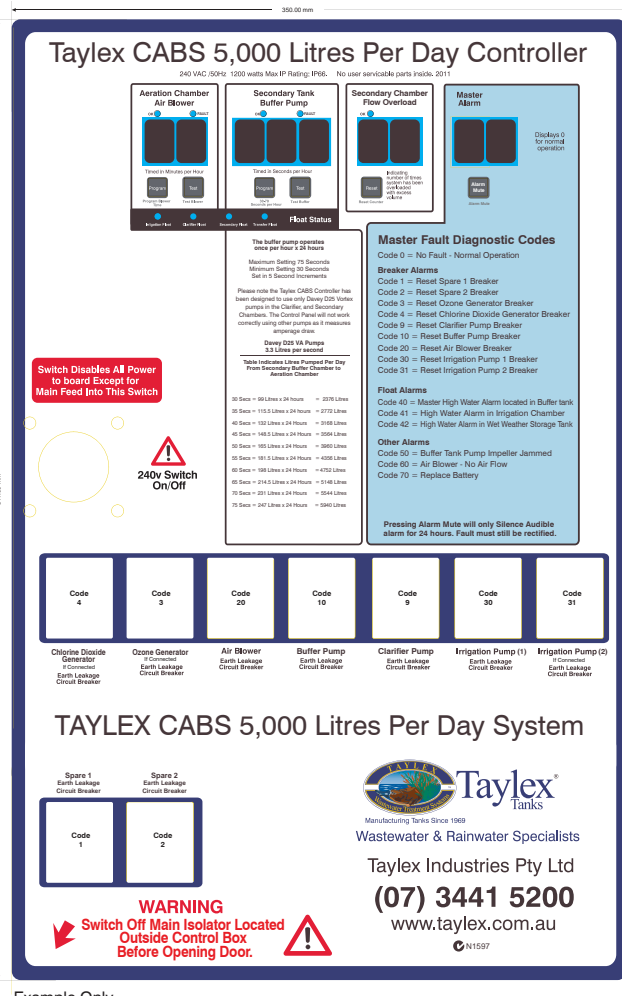
Taylex TFG Filter



Filter Cannister Filter

Self Diagnostic Commercial Controller

The CABS Controller tells us exactly what the system is doing and indicates if there is a fault.



Example Only

The Taylex CABS controller has a built in visual flashing light and an audible alarm if a fault occurs. The controller has a mute button that will silence the alarm when pressed. The alarm will automatically re-activate after 24 hours if the fault is not rectified. The controller is also fitted with a battery backup. In case of power failure the alarm will activate.

Master Fault Diagnostic Codes

Code 0 = No Fault - Normal Operation

Breaker Alarms

- Code 1 = Reset Master Breaker /Power Failure
- Code 2 = Reset Secondary pump Breaker
- Code 3 = Reset Clarifier Breaker
- Code 4 = Reset Blower Breaker
- Code 5 = Reset Irrigation Breaker

Float Alarms

- Code 6 = Master High Level Secondary tank
- Code 7 = Irrigation Chamber High water alarm

Other Alarms

- Code 8 = Secondary Tank Pump Impeller Jammed
- Code 9 = Blower- No Air Flow
- Low Battery = Flashing 0 Replace Backup Battery

Pushing Mute Alarm will Silence the Alarm for 24 Hours Only. The fault still needs to be rectified.

Having a large modular system like the CABS has some great advantages...

The CABS is a very simple system to maintain and operate due to its simple design. Each CABS comes with a simple self diagnostic controller that will give you a fault code which will indicate the nature of a fault.

Breakdowns: Due to our large buffer system, if a CABS breakdown occurs due to power loss etc, and it can't be fixed immediately, you can by-pass the affected CABS unit and allow the other units to take the extra load for a short period of time. Each CABS system has nearly one day's buffer of extra capacity before the sewerage causes a problem.

Electrical Components: All electrical components are 240 volt standard 3 pin plug, including the CABS controller so no electrician is required for failed parts exchange! Every electrical part in the system is protected by an individual circuit breaker allowing the continued operation of the system in the event of a single component failure. Fault-finding is then a quick and easy process.

For remote sites: Because of the CABS' simple nature, Taylex will supply our customers, if required, with the four replaceable spare parts in a CABS system that your staff can fit when required.

The system is that easy!

Design Parameters of the CABS Tank

Water Volume

Primary	5,420
Secondary	1,342
Secondary Air Gap Buffer	2,068
Aeration	3,927
Clarifier	1,726

Total Working Capacity 14,483 Litres

Plus Irrigation	392
Plus Irrigation Air Gap Buffer	897
Total Working Capacity	1,289

Air Volume

Primary	1,604
Secondary Air Gap	from Working Volume 1,020
Aeration	1,153
Clarifier	633
Irrigation Air Gap	from Working Volume 534

Total Air Volume 4,944 Litres

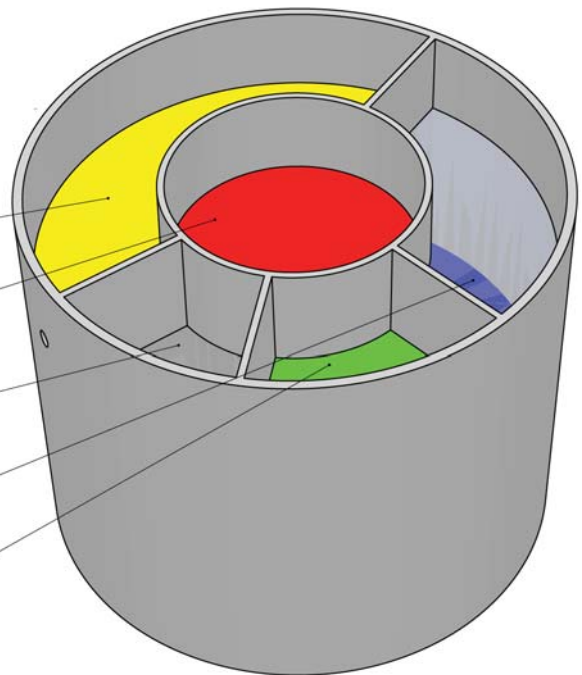
Tank Construction - All Concrete

Height	2835mm
Inlet Invert (from Base)	2165mm
Tank Diameter	3450mm

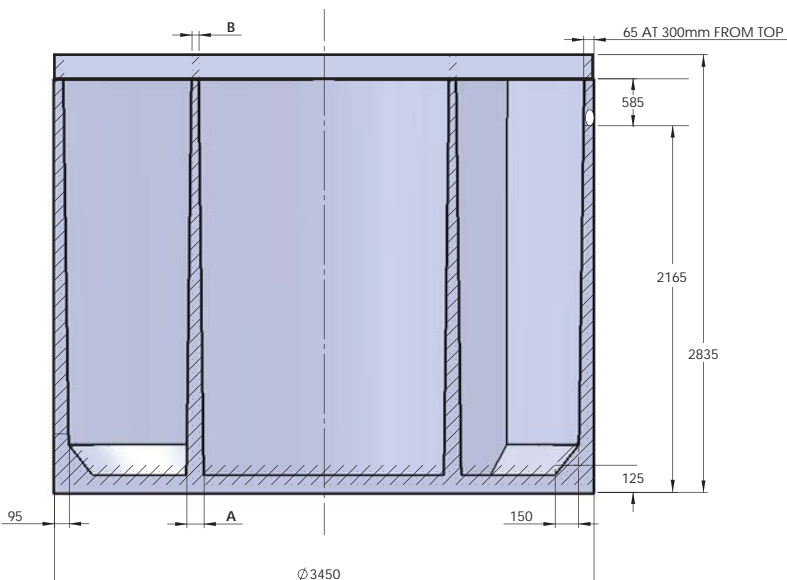
Tank Dry Weight	11.5 tonnes
Lid Dry Weight	2 tonnes

Total Tank Weight 13.5 tonnes

Maximum Hydraulic Loading	5,000 Litres/day
Operating Capacity	14,483 Litres
Total Tank Capacity	20,716 Litres



- PRIMARY TANK**
USABLE WATER VOLUME: 5,420 lts
AIR GAP VOLUME: 1,604 lts
WATER LINE: 2045mm FROM TANK BASE
- AERATION TANK**
USABLE WATER VOLUME: 3,927 lts
AIR GAP VOLUME: 1,153 lts
WATER LINE: 2045mm FROM TANK BASE
- IRRIGATION TANK**
USABLE WATER VOLUME: 392 lts
AIR GAP BUFFER: 897 lts
AIR GAP VOLUME: 534 lts
WATER LINE: 600mm FROM TANK BASE
AIR GAP BUFFER: 1900mm FROM TANK BASE
- SECONDARY TANK**
USABLE WATER VOLUME: 1,342 lts
AIR GAP BUFFER: 2,068 lts
AIR GAP VOLUME: 1,020 lts
WATER LINE: 825mm FROM TANK BASE
- CLARIFIER TANK**
USABLE WATER VOLUME: 1,726 lts
AIR GAP VOLUME: 633 lts
WATER LINE: 1950mm FROM TANK BASE



The CABS Tank

A Purpose Built Commercial Treatment System

Total Weight 13.5 Tonnes

The 5 Stage Process

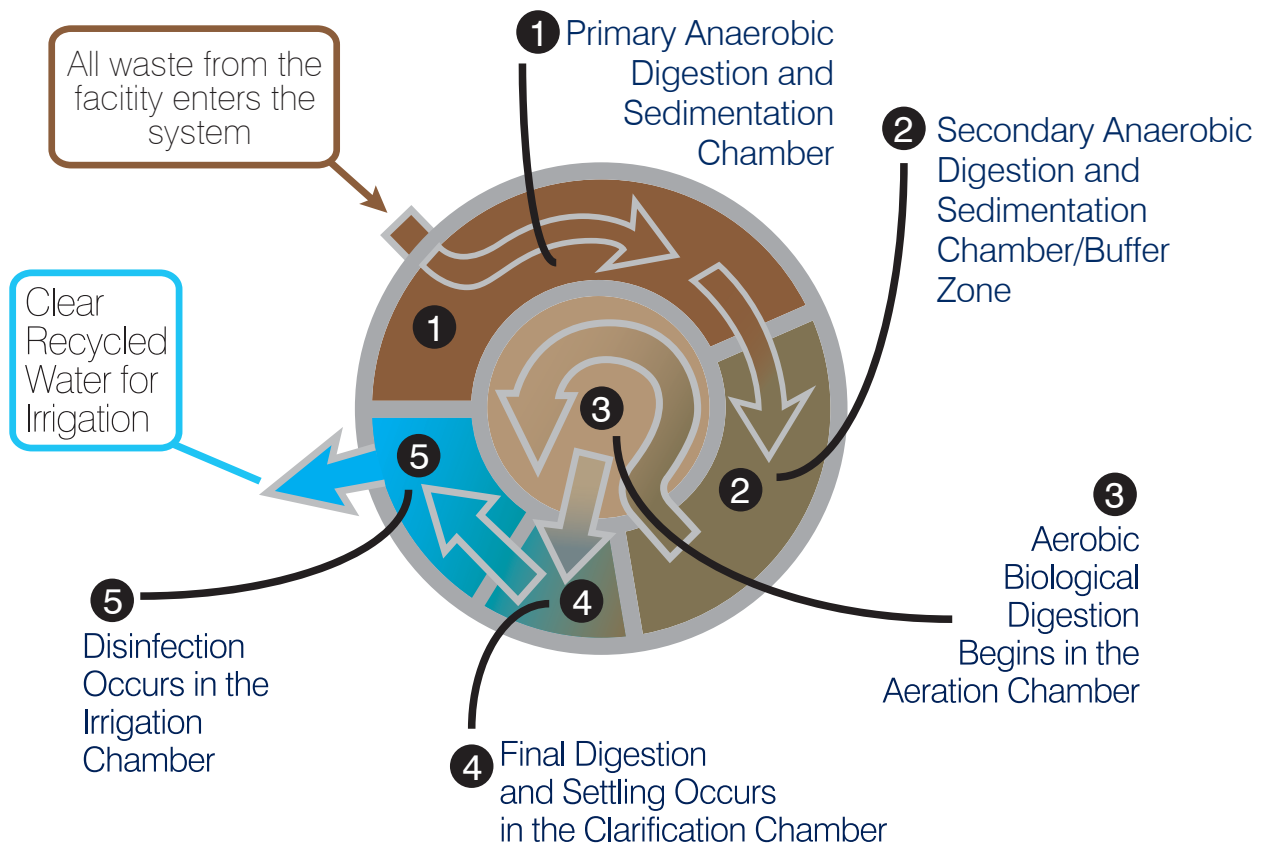
Step 1 & 2: All waste from the facility enters the primary pre-treatment chamber of the Taylex System with liquid then flowing into the secondary/buffer chamber. The time that waste spends in both these anaerobic chambers allows bacterial action to condition it before it is then control pumped evenly over a 24 hour period into the aeration chamber.

Step 3: The CABS system uses an air blower to introduce oxygen into the aeration chamber. The aerobic bacteria multiplies rapidly in this oxygen enriched environment and are thoroughly mixed with the pre-treated liquid to ensure complete digestion of organic material. The blower is set to turn on and off as needed to accommodate the flow of each individual treatment system.

Step 4: The liquid then flows into the clarification chamber for settlement where the remaining organics are then pumped back to the Primary Chamber. The remaining liquid then flows through to the Irrigation Chamber.

Step 5: Pre-treated, aerated and settled, the liquid then passes through Taylex outlet filters prior to disinfection. The filtered liquid passes through a chlorinator, ozone unit, chlorine dioxide unit or U.V. light which ensures the disinfection of the reclaimed effluent. Then your reclaimed effluent is returned to the environment via spray or underground irrigation by a silent pump.

The Five Stages to a Taylex Commercial Treatment System



Increasing the System's Capacity at a Later Stage

The CABS system was designed so that at a later stage, you can cost effectively add another CABS System as your needs grow.

In most cases to add one CABS tank is a one day job.

Steps to putting an extra CABS tank in:

- 1) Dig the new CABS tank into the ground.
- 2) Run power to the new CABS.
- 3) Run a line to the irrigation field.
- 4) Run an extra 32mm line from the pump station to the new CABS tank.

It's that easy!

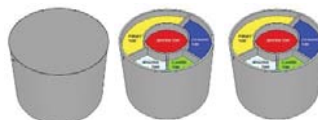
We can make a CABS Bigger

This is a simple process.

PUMP STATIONS

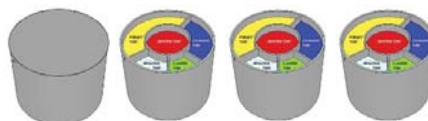
- One pump station can supply to 2 to 4 CABS Tanks.

10,000 LITRE PER DAY SYSTEM



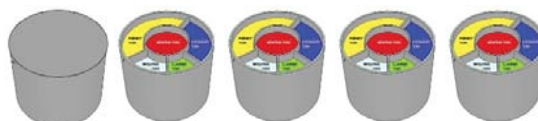
2 x CABS plus 1 x 10,000Lt Up-Front Pump Station

15,000 LITRE PER DAY SYSTEM



3 x CABS plus 1 x 10,000Lt Up-Front Pump Station

20,000 LITRE PER DAY SYSTEM



4 x CABS plus 1 x 22,000Lt Up-Front Pump Station

The Taylex
Yatala
Factory



TAYLEX WARRANTY

CABS (Commercial Advanced Blower System)

15 year manufacturer's warranty.

There is a 15 year warranty on the precast concrete tank including baffles and a 12 month warranty on all electrical and mechanical components, including the irrigation pumps and blower, control panel and a 12 month extended warranty is available.

Please refer to your Taylex distributor for more information.



1300 660 225 Australia Wide



Taylex[®]
Tanks

Manufacturing Tanks Since 1969

Wastewater & Rainwater Specialists

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Ask us about the Taylex Difference