Case Study on Cabana Bar Grease Trap Utilising Aquatemp Enzyme Dosing Treatment

Location: Southport Australian Football Club, Cnr Musgrave & Olsen Avenues, Southport 4215, Queensland

Problem: Since the refurbishment and installation of a 1000 litre grease trap for the Cabana Bar in 2011 there have been ongoing issues with odour plus general performance issues. The odour that has been emitted from the grease trap was so bad that employees had complained that it was making them nauseous. The problem was particularly acute whenever any of the grease trap lids were opened for cleaning with the odour engulfing the entire area. There is also ongoing problems caused by the pumps in the pump well having a constant flow of grease discharging from the grease trap chambers into the pump well that is effecting the pumps plus appearing to be causing lining issues in the discharge pipe and causing odour issues in the staff toilets.

Solution: On 5 July 2013 Gary Mays from Whywait Plumbing attended on site with odours once again being an issue in the staff toilets downstairs and in the outside undercover parking area. The problem was tracked to the male toilets where a toilet pan had lost the trap seal as a result of the grease trap pumps creating a siphon. The odours in the staff toilets and in the grease trap were identical.

As a result we met with Chris Jones from Southport Sharks to discuss utilising enzyme daily dosing of the grease trap to investigate if it would solve the multitude of ongoing problems. It was decided to proceed with a manual dosing program beginning immediately with Gary Mays to train Southport Sharks employees on how to install 160mL of enzyme grease and waste digester into the grease trap every morning.

As the odour emission was so bad on 6 July the grease trap was given at 6.15am a 320mL dose of Aquatemp enzyme grease and waste digester directly through the attached inspection opening which allowed the grease and waste digester to flow directly into the first receiving chamber of the grease trap. This was repeated on 7 July with Southport Sharks staff being trained on the procedure on 8 July to allow for the manual dosing to occur every morning at around 6am to ensure the enzymes were allowed to work without inflows until the bar opened at 5pm.

Manual dosing of the grease trap continued until 11 September when it was replaced with an automated monitoring and dosing unit installed under the bar sink. This unit automatically releases 300mL every day at 2.30am into the trap system under the bar which then flows through to the grease trap.

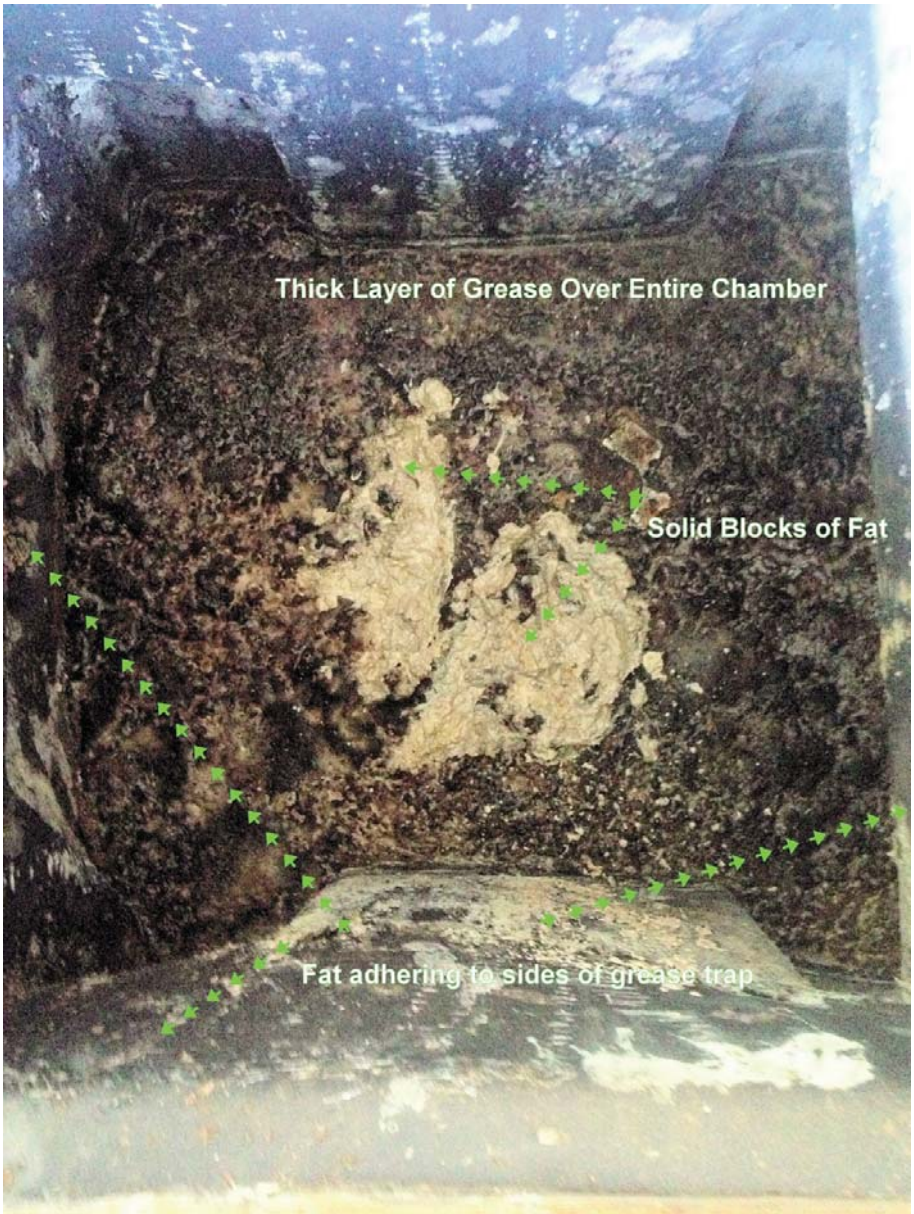
The required pump out of the grease trap has continued throughout the trial period which has enabled us to see the improvement at monthly intervals in the overall condition of the waste water in the grease trap and pump well. Key dates within the trial are:

- **06 July 2013:** commence manual dosing with Southport Sharks staff trained on 8 July and then undertaking on a daily basis
- **17 July 2013:** grease trap & pump well pumped out, cleaned with pump well filled with clean water to pump height
- **14 August 2013:** grease trap & pump well pumped out, cleaned with pump well filled with clean water to pump height

- **11 September 2013:** grease trap & pump well pumped out, cleaned with pump well filled with clean water to pump height plus automated monitoring and dosing unit installed
- **09 October 2013:** grease trap & pump well pumped out, cleaned with pump well filled with clean water to pump height

Why Use Aquatemp Enzyme Grease and Waste Digester: Very simply the discharges into a grease trap are decaying biomass and for the most part are organic. It is the decaying biomass that causes odour and causes fatty grease to stick to the sides of the grease trap or to the pumps or to the pump discharge pipes. Enzymes are catalysts that will break down organic biomass, speed up reactions and eliminate the odour.

Grease Trap 8 July

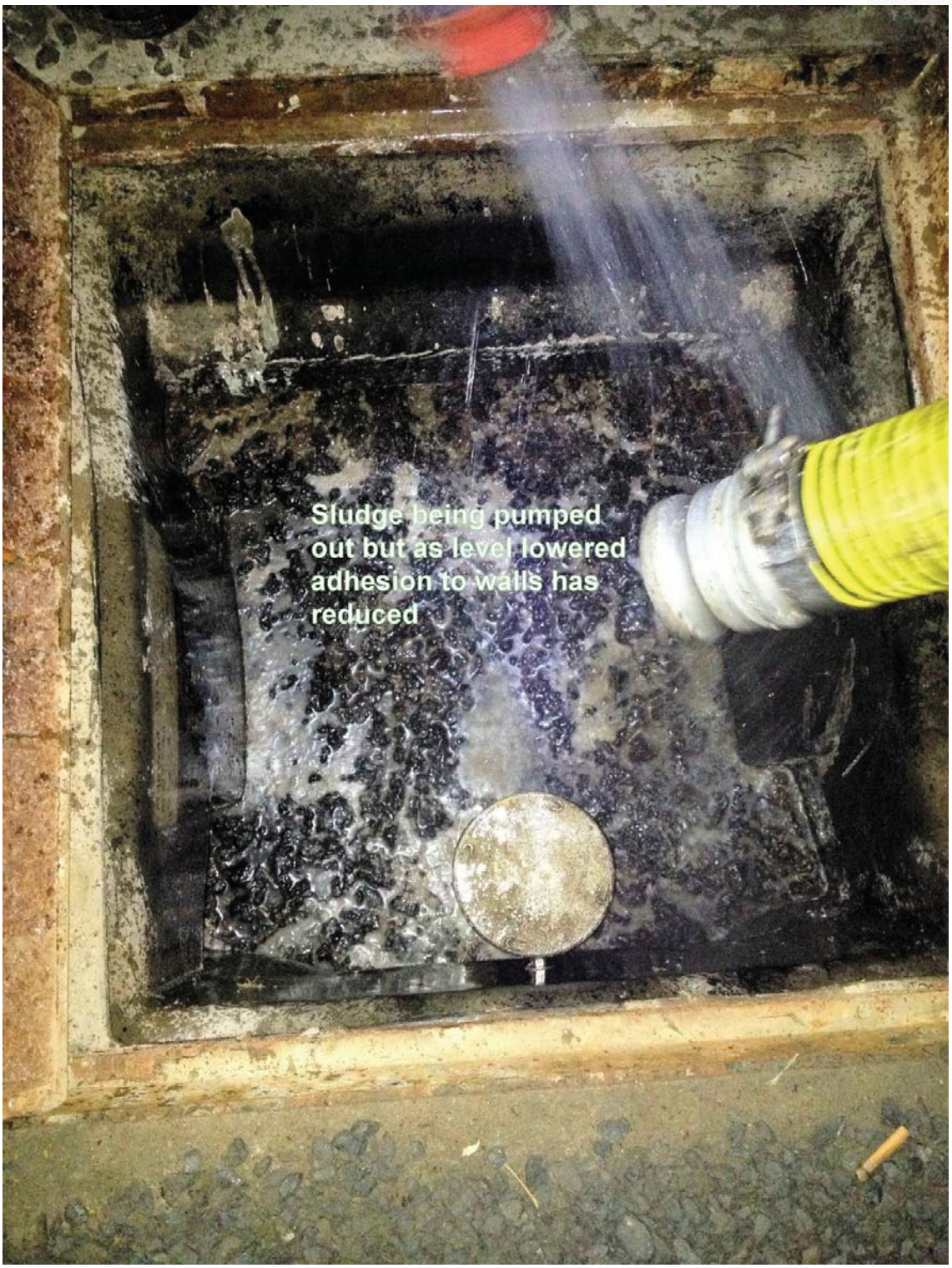


As can be seen the first chamber was full of solid blocks of fat and grease floating on the surface and adhering to the side of the grease trap. The photo below of the second chamber is similar although it should not be if the grease trap is working correctly. The connection to the pump well can be seen to be full of fat and grease which was flowing direct to the pump well. The odour emissions whenever any lid is removed cannot be understated as they are truly nauseous.

Grease Trap 17 July

All Southport Sharks grease traps are pumped out monthly and the photos below are of the grease trap after 10 days of manual dosing.

The first pit still had considerable solid fats but the odour issues were nowhere near as bad as on 8 July and as can be seen the fats were not in large lumps.


Sludge being pumped
out but as level lowered
adhesion to walls has
reduced

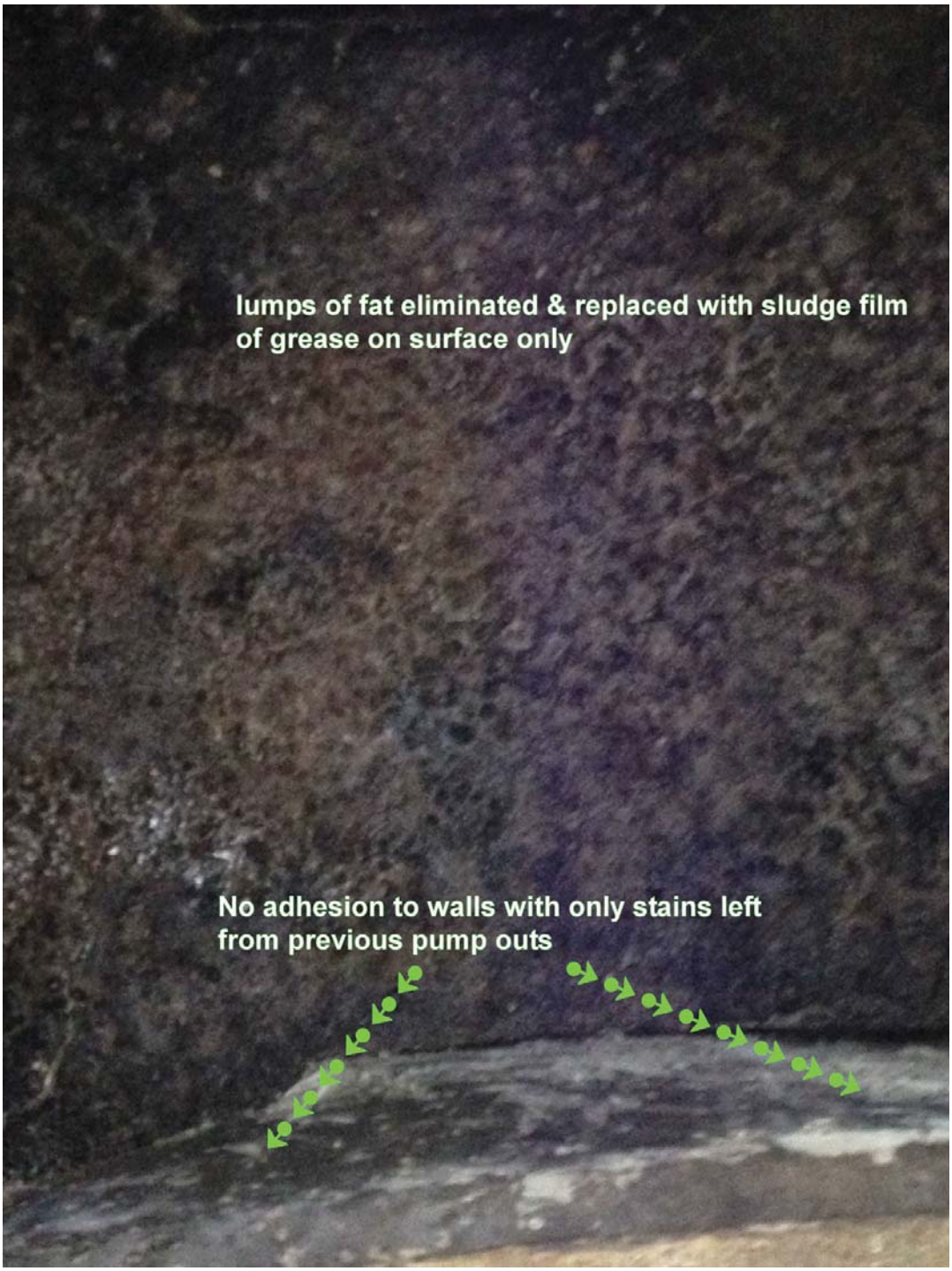

Trade waste drainage
pipe inlet to grease trap
pressure cleaning fat adhesion
to grease trap inlet

The pump well photo below still has far too much fat and grease being discharged into it which will affect the pumps operationally and with life expectancy plus discharging grease into the pipe lines which is causing odour issues inside the club.

As can be seen there is constant flows down the inlet which is also adhering to all the working parts in the pump well.

Grease Trap 14 August

On 14 August the monthly pump out was due and the photos below show a marked change in the fats and grease with there being little solids and there only being a film of grease on the surface. Plus there was virtually no odour and for the first time all three lids could be opened at the same time.




film layer of grease on the surface with
no lumps of fat