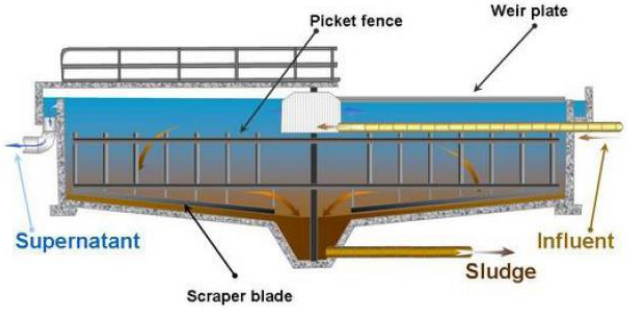
Problem	Possible Cause	Corrective Action
Septic odour and rising sludge	Sludge pumping rate is too low	Increase pumping rate of thickened sludge
	Scraper mechanism not functioning properly	Increase scraper speed or repair mechanism
	Supernatant overflow rate is too low	Increase influent flow to thickener
Underflow sludge not thick enough	Supernatant overflow rate is too high	Decrease influent flow rate
	Sludge pumping rate is too high	Decrease pumping rate of thickened sludge
	Short-circuit of low through tank	Check overflow weirs and influent baffles; repair or relocate
Torque overload of sludge collecting mechanism	Heavy accumulation of sludge	Agitate sludge blanket in front of collector arms with water jets; Increase sludge removal rate
	Foreign object on floor bottom	Remove foreign object with big magnets on rope or empty tank

Comments on problems which may be encountered with gravity thickeners	
Issue	**Comments**
Grease and scum handling	Scum problems are often encountered when the sludge is kept too long in the gravity thickener. Fitting a high-pressure spray that covers a portion of the tank can often solve these problems. Grease build-up in underflow lines is a potential problem especially in works where no grease and fat removal is practised in the PST. Grease and fat particles cling to the sludge particles and settle out. High-pressure water hoses can be used to flush out the sludge lines.
Rising sludge	Rising and floating sludge and foul odours can result in a poor supernatant and a dilute underflow. The causes can vary from septicity to problems associated with the other unit processes.
Odours	Odours usually result from long hydraulic retention times and septicity in the PST and gravity thickener. Aeration of the thickener influent or a reduction in retention time will usually help reduce odours. Deodorising liquids or powders can be used to counteract the odours in the short-term
Rat holing or coning	This occurs in the gravity thickener when liquid of low solids concentration is drawn through the sludge blanket to the drawoff point yielding a low thickened sludge concentration. Desludging rates should be reduced and the period of de-sludging should be increased.
Blocked piping	This usually occurs due to grease build-up in the sludge lines. The best solution is to prevent the grease from reaching the thickener tank. High-pressure water jets can be used to flush out blocked lines. If the pipes are blocked solid, then a drain-cleaning rod may have to be used.



References: Water Institute of Southern Africa (2002): Handbook for the operation of wastewater treatment plants