Reductions of PPM in thickener overflow

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Thickener is one of the most widely used solid/liquid separation device. When a single isolated particle settles without disturbance from other particles it is called "free sedimentation". But when the concentration of particles in suspension rises, the velocity of a solitary particle decreases because of interference with other particles and this is termed as "hindered settling".

The term "Lamella sedimentation" describes natural sedimentation of particles in liquid, with or without a flocculant over an inclined plane, known as lamella plane. The purpose of this kind of sedimentation is to recirculate maximum possible process water on continuous basis. To recirculate this water it is required that it contains minimum possible suspended solids which is measured in terms of ppm (parts per million) of thickener overflow. Thickener underflow is discharged as tailings by pumping it to tailing dam.

This project helps in understanding the limitations of lamella thickener and various parameters affecting its performance. This study is in accordance with the present ore of deposit 10/11A and ore characteristics being sensitive parameter in mineral processing may change in forthcoming years. So, conclusion and suggestions are helpful for present circumstances as they may yield better results with no extra cost.