



June 01, 2021

Re: Letter of Introduction  
IGF SOST (Solids & Oil Separation Tank)  
Induced Gas Vertical Floater

To Whom It May Concern:

*RyKor LLC* has been in the “Produced Water” filtration business utilizing Walnut Shell Filters and proprietary designs for the IGF SOST (Solids & Oil Separation tank) for many years.

During the late 1980’s and early 1990’s it became obvious that a simple and effective solution was needed in “Produced Water” systems that could provide pre-treatment or separation before going to our walnut shell filters. There were systems available at the time such as DAF’s, CPI’s, API Separators and IGF Floater systems that were used, but often this equipment required high maintenance and a lot of chemicals and still does today.

By studying many different technologies and how they worked and interacted with produced water systems the IGF SOST System was developed and tested. There were many successes at several locations in California USA there have been many successful installations since..

The simple designs and early successes of the SYSTEM were discussed and shown to many individuals and companies during tests and over a couple of year’s time.

The main difference between the two products (Vertical/Horizontal Floaters vs IGF SOST SYSTEM) is the retention time offered by the IGF SOST SYSTEM. this retention time is many times longer and is created by the torrodial flow pattern built into the IGF SOST SYSTEM design. This unique torrodial flow pattern allows for the influent to go through the induced gas bubbles time and time again for the best oil and solids removal available. Other designs have the influent going through the induced gas bubbles for only a short time (less than 1 minute).

Time is the critical element here and the more time you can spend inside the containment environment, in this case a large tank, the better the chances for removing loadings, of both oil and solids. This helps the downstream nutshell filters maintain the desired outlet water quality and protects the system from normally occurring upsets to the system. Additionally, this longer retention time is critical for allowing chemical dosing to work better and more consistently.

Another major disadvantage of typical pressurized vertical induced gas floaters is that the influent first enters the vessel through the coalescing pack. Having the coalescing pack at the front can cause severe plugging of the coalescing pack especially where paraffin conditions are a problem. The IGF SOST SYSTEM on the other hand designed the coalescing pack at the end of the process near the outlet. Because of the long torrodial flow path created in the IGF SOST SYSTEM most of the heavy solids and oils will have already been separated. Having the coalescing pack at the end is a great advantage to better and more thorough oil removal.



Even though this new system was a pressurized vessel and contains some of the components that the IGF "STAGE" SYSTEM has it has never been tested in a side-by- side test. We would welcome a test of this nature. The retention time in the IGF SOST SYSTEM is enough to make even the most untrained person realize the advantages of this tank system over any other designs.

Problems that horizontal/vertical IGF Floaters have are not unique to them alone, but are a problem for other types of equipment as well. Upsets to normal daily loading levels are the real problem and something that no operator can plan adequately for. As the upset influent (abnormal loadings) enters and exits horizontal/vertical IGF Floaters or other separation equipment the desired effluent (outlet) quality suffers and has a negative effect on downstream nutshell filters as well as other equipment.

As discussed here our system would seem to be the best choice for all of the reasons above and we know that this system offers a much lower maintenance cost. It is also much more dependable in a bad upset condition recovering and/or allowing the operator to make the necessary corrections without losing precious operational time.

*RYKOR LLC* welcomes questions and inquiries that you may have and is available to discuss your issues.

Sincerely,

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