BRIEF SUMMARY ~~OF THE INVENTION~~

According to a first aspect, there is provided a method for treating an interface rag, the method comprising the steps of: removing a volume of rag from a rag source; passing the volume of rag through a pump to provide pressurized rag, the pressure provided by the pump being effective for preventing boiling a water content of the rag and preventing vaporizing a light hydrocarbon content of the rag; heating the pressurized rag to a first elevated temperature; mixing an amount of diluent with the heated rag, the amount of diluent being effective for producing a rag of about 30 API; cooling the 30 API rag to a second temperature of less than about 300° F; and treating the cooled 30 API rag in a separator device to remove at least a substantial portion of water and solids therefrom.

According to a second aspect, there is provided a method of treating collected interface rag that results from the separation of low gravity hydrocarbons, including solid constituents, from water, comprising the steps of: (1) pumping collected rag through a heater to achieve pressurized, heated rag; (2) mixing the pressurized, heated rag with a hydrocarbon diluent to provide a cooled diluted rag; and (3) subjecting the cooled diluted rag to dehydration to separate hydrocarbon product from water and solids.

A method for treating an interface rag includes the step of removing a volume of rag at a controlled rate from at least one upstream separator vessel equipped with a rag drain. The rag is then passed through a pump that provides sufficient pressure to pass the rag to a heater but prevent boiling the water content of the rag and vaporizing the light hydrocarbon content of the rag. The rag is then heated to a first temperature effective for thermally decomposing any chemical previously added to the interface rag to promote separation of the rag. A first temperature of at least 350°F has proved effective. Additional diluent is mixed with the heated rag to produce a rag having an API gravity of 30. The diluent also cools the 30 API rag to a second temperature of about 300° F. The cooled diluted rag is then passed to a separator device.

The separator device may be an electrostatic treater or a hydrocyclone cluster. The electrostatic treater is preferably a vertical electrostatic treater having a conical-shaped lower portion. To maintain agitation of the solids in the solid-laden water within the electrostatic treater, the water below the oil/water interface may be recycled within the treater. The water level may also be monitored. The solid-laden water is then extracted from the treater and passed to one or more hydrocyclones. The underflow and overflow of the hydrocyclone (or the hydrocyclone cluster) is collected.

A better understanding of the method for treating interface rag will be obtained from the following detailed description of the preferred embodiments taken in conjunction with the drawings and the attached claims.