adsorbed by the oleophilic adsorbent material. The oleophilic adsorbent material is then separated from the volume of wastewater thereby forming a treated volume of wastewater. Finally, the treated volume of wastewater is used in the washing step to wash the crude, condensate or combination thereof.

In one aspect, there is provided a process for removing metal particles from water, comprising contacting a volume of water containing neutrally buoyant metal particles with an oleophilic adsorbent material wherein the neutrally buoyant metal particles are adsorbed by the oleophilic adsorbent material.

In another aspect, there is provided a process for removing metal particles from crude oil, condensate or a combination thereof, comprising: a) washing a fluid volume comprising crude oil, condensate or a combination thereof and comprising metal particles with a volume of water to form a volume of wastewater thereby transferring at least a portion of the metal particles from the fluid volume into the volume of wastewater wherein the metal particles in the wastewater are neutrally buoyant metal particles; b) contacting the volume of wastewater including the transferred neutrally buoyant metal particles with an oleophilic adsorbent material wherein the neutrally buoyant metal particles are adsorbed by the oleophilic adsorbent material; c) separating the oleophilic adsorbent material from the volume of wastewater thereby forming a treated volume of wastewater; and d) using the treated volume of wastewater in step (a) to wash the crude, condensate or combination thereof.

DEFINITIONS

The following terms will be used throughout the specification and will have the following meanings unless otherwise indicated.

Wastewater refers to water that must be disposed of which contains metal particles. In one embodiment, the concentration of metals in the form of metal particles in the wastewater is greater than or equal to 1 parts per trillion (ppt) by mass. In another embodiment, the concentration of metals in the form of metal particles in the wastewater is greater than or equal to 1 parts per billion (ppb) by mass. In another embodiment, the concentration of metals in the form of metal

particles in the wastewater is greater than or equal to 1 parts per million (ppm) by mass. Examples of wastewater include produced water and refinery wastewater.

Produced Water refers to water that leaves a hydrocarbon producing well along with gas, crude and/or condensate. If the produced water leaves the well as a liquid, it is commonly referred to as formation water. If the produced water leaves the well as a vapor, and subsequently condenses to a liquid, is to commonly referred to as condensed water. Neutrally buoyant metal particles can be found in either form of produced water although they are often more abundant in formation water.

Refinery Wastewater is water that is generated during the refining of crude or condensate and can originate from any number of processes in the refinery including, but not limited to, desalters, overhead condensers, tank heels, API separators, biological oxidation ponds, and the like

Treated Wastewater is water from which at least a portion of the metal particles have been removed. The treated wastewater can be used for many purposes including, for example, washing a crude, condensate or a combination thereof in which metal particles are removed from the crude or condensate. In one embodiment, described further hereinafter, a crude and/or condensate is washed with water, the metal particles are removed from the water, and the treated