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Bollinger Canyon Road, San Ramon, California 94583
(US).(72) Inventors: COOPER, Russell Evan; 6001 Bollinger
Canyon Road, San Ramon, California 94583 (US).
O'REAR, Dennis John; 6001 Bollinger Canyon Road,
San Ramon, California 94583 (US). YEAN, Sujin; 6001
Bollinger Canyon Road, San Ramon, California 94583
(US). ODUYUNGBO, Seyi Abiodun; 6001 Bollinger
Canyon Road, San Ramon, California 94583 (US).(74) Agents: PHAM, Hanh T. et al.; Chevron Services Com-
pany, Post Office Box 6006, San Ramon, California
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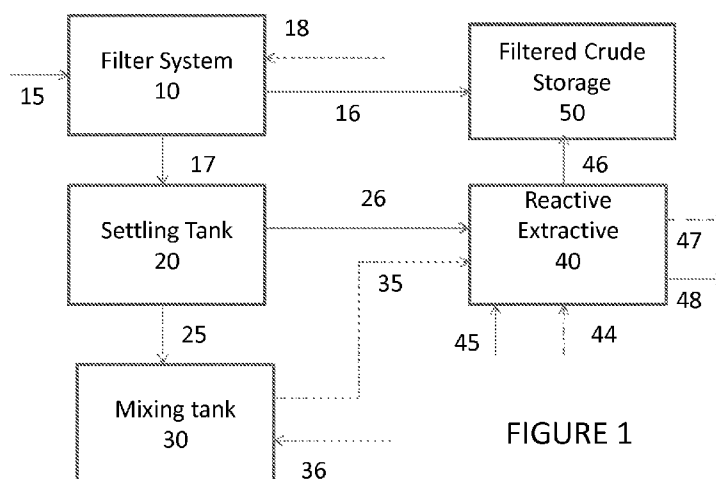


FIGURE 1

(57) Abstract: Trace element levels of mercury in crude oil are reduced by first passing the crude oil through a filtration device to generate filtered crude having a reduced concentration of mercury and a reject stream having a concentrated mercury level. In one embodiment, the filtration device is back-flushed to generate the reject stream. In another embodiment, the reject stream comprises a portion of the retentate from a cross-flow filter device. The reject stream is treated with an extractive agent selected from tetrakis (hydroxymethyl)phosphonium sulfate; tetrakis(hydroxymethyl) phosphonium chloride; an oxidizing agent; an organic or inorganic sulfidic compound to extract a portion of the mercury into a water phase for subsequent removal. In one embodiment, the extractive agent is a reductant to convert non-volatile mercury into volatile mercury.