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(54) **METHOD AND SYSTEM TO RECOVER
USABLE OIL-BASED DRILLING MUDS
FROM USED AND UNACCEPTABLE
OIL-BASED DRILLING MUDS**

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(57) **ABSTRACT**

A system for treating spent/used Oil Based Drilling Muds (OBM's) to recover High Gravity Solids (HGS) for further reuse and to separate the invert emulsion from the Light Gravity Solids (LGS) with good characteristics also for further reuse. Separated LGS is processed to extract the remaining oil in order to render an environmentally safe solid fraction. The overflow of a screening or centrifugation of spent OBM enters a reactor where reagents are added and mixed to control the oil/water ratio of the recovered emulsion and to reduce the LGS concentration. A catalyst is added before adding a final reagent that initiates the reaction. Upon centrifuging the reacted mix, the recovered emulsion is the overflow and a thin layer of LGS forms slightly below the emulsion. The underflow of this separation is further sedimented by gravity and the phase dispersant layer is decanted and sent for reuse.

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