ABSTRACT

SYSTEMS AND METHOD FOR WASHING AND GRADING PARTICULATE MATERIAL

The present invention discloses a system for classification of particulate material of variable sizes and extraction of fine graded particles with waste management and water recycling system with maximum recovery of process water. The system comprises of a degritting screen (101) adapted to receive a particulate material from a feeding system (100), wherein a feed slurry with water is collected from the degritting screen (101); a conveyor (102) adapted to receive trash oversize from the degritting screen (101) for dumping; a fine screen (105) adapted to receive the feed slurry and screen out fine particles; a conveyor (106) adapted to receive dewatered coarse particles for the fine screen (105) overflow and stockpiling the same as a coarse product; a first hydrocyclone (111) adapted to receive the fine particles in slurry form for removing preselected ultrafine particles with most of water to hydrocyclone overflow as reject; a dewatering screen (112) adapted to receive the hydrocyclone underflow with desired range of particles and generate dewatered particles on a conveyor (113) where the dewatered particles are stockpiled as final product; and a water recycling system (116) adapted to receive hydrocyclone overflow for recovering and collecting water in a clean tank (117) and recirculating the water in the system using pump (118). A method for classification of particulate material of variable sizes and extraction of fine graded particles with waste management and water recycling system with maximum recovery of process water is also disclosed.

(FIGURE 1)