WE CLAIM:

1. A method for classification of various materials and/or mineral with variable sizes comprising the steps of

    i. feeding the material and/or mineral to by the integrated Feeding system (00);

    ii. discharging the material from the feeding system to the Feed boot (01) for onward processing;

    iii. adding suitable amount of water on the Split Rinsing Screen (02) through Booster Pump (13) for washing out the coarse particles;

    iv. dewatering the coarse particles obtained in step iii on the Split Rinsing Screen (02) and provided it to the integrated Product Conveyor 1 (06) for stock piling;

    v. discharging the recovered water from Split Rinsing Screen along with fine particles obtained in step iv to Sump (03) in slurry form;

    vi. pumping the slurry to hydro-cyclone (04) obtained in step v with specified pressure through slurry pump (05);

    vii. obtaining the mixture from sump and slurry pump and simultaneously eliminating the wastes;

    viii. recovering the fine particles;

    ix. discharging the fine particles obtained in step vii by hydro-cyclone(s) in a slurry form;

    x. dewatering and discharging the fine particles to Product Conveyor 2 (07) for stockpiling;

xi. recirculating the recovered water and fine particles obtained from Split Rinsing Screen;

xii. feeding the waste slurry from Hydro-cyclone(s) through wear resistant pipe to pre-fabricated Blending Chamber (08) being located at the side of the Main Slurry Tank (09) of the water reclamation system;

xiii. cleaning, discharging the clean water from Peripheral Clean Water Tank (11) and recirculating it to the Split Rinsing Screen and Sump through Booster Pump;

xiv. discharging the deposited sludge at the bottom of Main Slurry Tank with Scrapping Mechanism (12);

xv. discharging further the sludge obtained in step xiii by Evacuation Pump (14) and pneumatically operated valves, actuated by Air Compressor (15), to the desired sludge disposal area; and

xvi. obtaining the extracted fine graded products with maximum recovery of process water for reuse.

2. The method as claimed in claim 1, wherein said fine particles can be selected from sand and minerals.

3. The method as claimed in claim 2, wherein said sand particles are selected from crusher dust, river sand, glass grade sand and foundry sand.

4. The method as claimed in claim 2, wherein said minerals are selected from iron ore, bauxite, manganese, coal, lignite and chromite.

5. The method as claimed in claim 1, wherein said fine particles is having particle size ranging from 0.045micron to 10mm.

6. A system for classification of various materials and/or mineral of variable sizes and extraction of fine graded particles with waste management and recycling system with maximum recovery of process comprising

   a. an integrated feeding system for processing the materials and/or mineral; said system consisting of a feed hopper, feeder and a belt conveyor wherein said feeding system is adapted to transport the material to the Feed boot (01) and Split Rinsing Screen (02);

   b. a dewatering and discharging system comprising Split Rinsing Screen (02); hydrocyclone device (04) integrated Product Conveyor 1 (06); and Sump (03) for obtaining the dewatered and discharged particles in slurry form;

   c. a sizing system comprising hydrocyclone device (04) provided with specified pressure through slurry pump (05) for eliminating the remaining particles and removing the ultra fine particles; and

   d. a waste management system comprising of Blending Chamber (08) being located at the side of the Main Slurry Tank (09) with Scrapping Mechanism (12) and Peripheral Clean Water Tank (11) for obtaining the clean water to recirculate to the process and discharging the sludge to the desired sludge disposal area.

7. The system as claimed in claim 6, wherein said size of the particles ranges from 0.045micron to 10mm.

8. The system as claimed in claim 6, wherein said system further comprises pre-fabricated Blending Chamber (08) being located at the side of the Main Slurry Tank (09) of the water reclamation system.

9. The system as claimed in claim 6, wherein said system further comprises a Booster pump (13) adapted for recirculation of clean water obtained from Peripheral Clean Water Tank (11).

10. The system as claimed in claim 6, wherein said system further comprises a Scraping mechanism (12) adapted to provide the discharged sludge.

11. The system as claimed in claim 6, wherein said system further comprises Evacuation Pump (14) and pneumatically operated valves, actuated by Air Compressor (15) for obtaining the discharged sludge.

12. The system as claimed in claim 6, wherein said system further comprises a programmable logic controlled motor Control Panel (16) adapted to monitor the system.