

Study on beneficiation of silica sand by Wet High Intensity Magnetic Separators (WHIMs) and reverse flotation technique for glass application: A case study in Sihanoukville, Cambodia

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Abstract: White silica sand samples were collected from Steuong Hav district area. The samples mixed and quartered to obtain a representative sample for physical and chemical characterization. Silica (SiO₂) and iron oxide (Fe₂O₃) content were measured by XRF. The results showed silica and iron oxide content 94.83 wt.% and 0.189 wt.% representatively. In this study, shaking table,

WHIMs and reverse flotation technique was undertaken to remove mainly iron oxide. The collectors AOA, NANZA, pine oil and depressant H₂SO₄ were used to optimize the froth performance. The Iron Oxide content was removed from 0.189wt.% to 0.062 wt.% and the silica content was upgraded from 94.83wt.% to 98.6 wt.% after the process.