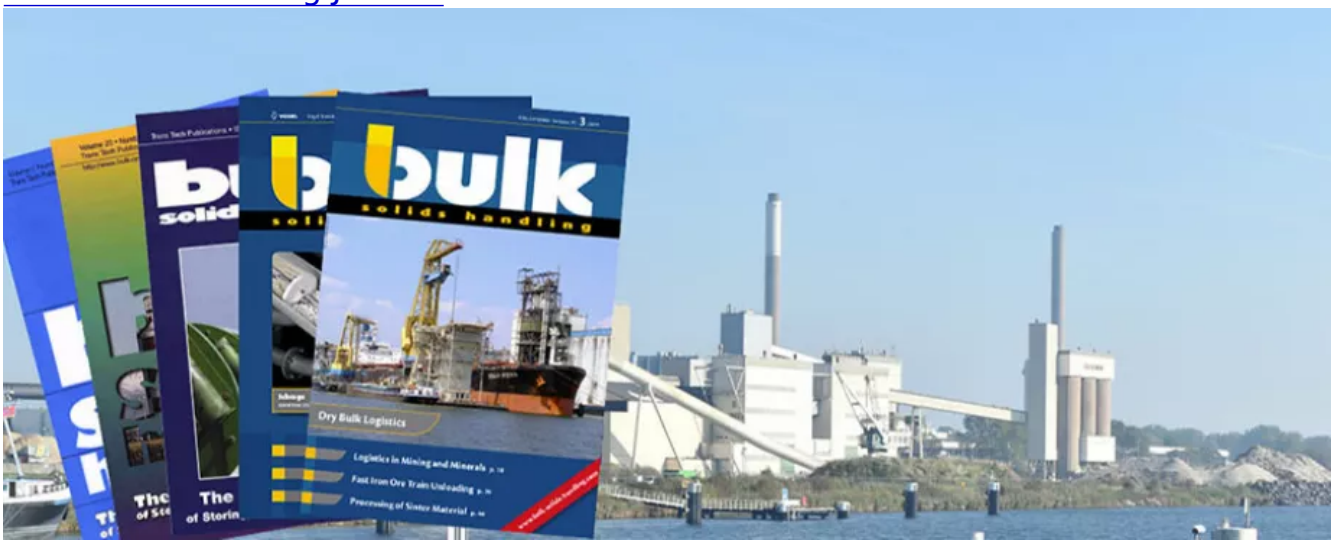
bulk solids handling Journal



Research Paper

Increase of the Suction Head by Means of the "Air-Lift" Method

Edited by on 22. Oct. 2023
Published in bulk solids handling, Vol. 2 (1982) No. 2

The use of suction methods for cleaning operations in inaccessible holes has many practical advantages. A major difficulty is the limited suction depth which can be achieved in normal use this being controlled by the atmospheric pressure, allowing only 10 m suction head in the case of water. The addition of air to the material in the 'air-lift' method allows greater depths to be achieved. The present article reviews the underlying principle and limitations of the ' airlift" technique.

For the cleaning of sewer systems and deep boreholes in many cases suction operation is the only practicable method because:

- the lowering of a pressure pump with its driving-motor is rather difficult and expensive or,
- the cross-sections are too small for it, or
- solids carried in the water cause heavy pump wear.

The suction head however is limited by the atmospheric pressure so that theoretically water can be sucked up only from a maximum depth of about 10 m, and high-density mixtures only from smaller depths.