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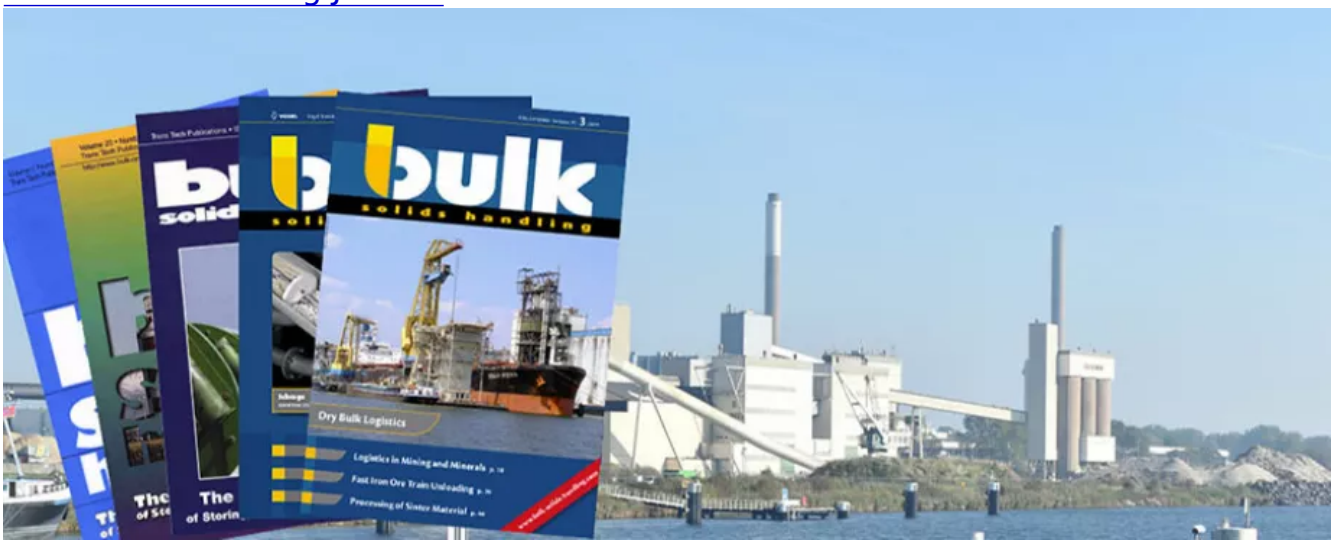

White Paper

Overland Conveyor System at Thunder Bay Terminals

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The overland conveyor system at Thunder Bay Terminals transports lignite from the transshipping terminal, under a river and parkland area, before it surfaces to cross the wet low-lands to the thermal power generating station, a distance of 2 km. This paper describes the design concepts and equipment of the single flight conveyor and the slewing stacker that was commissioned in 1981 to handle 1.4 million tonnes annually.

Thunder Bay Terminals Ltd., located on McKellar Island at Thunder Bay, Ontario, is a bulk materials terminal receiving coal by unit trains from western Canada for stockpiling and transshipment by self-unloading ships to markets in eastern Canada The initial phase of the system commenced operation in 1978 with an annual capacity of 2.7 -106 tonnes.

The 9,000 tonnes unit trains discharge their load in the rotary car dumper station at the rate of 3,630 t/h. From here the material is conveyed by an inclined outhaul conveyor to the 1,950 mm (78") wide x 1,071 m long yard conveyor where a traveling stacker with a 45.7 m boom discharges the coal onto the 19.8 m high stockpiles. The coal that is destined for loading into the ships is reclaimed by a bucket wheel reclaimer with a 45.7 m boom at the rate of 5,440t/h and is then conveyed by the common yard conveyor to the surge silo and from there to the

shiploader.

Stephens-Adamson supplied the majority of the bulk material handling systems comprising belt conveyors traveling stacker, bucket wheel reclaimer and belt feeders.

In addition to the thermal coal, Thunder Bay Terminals also receives 1.4-106 tonnes of lignite annually by unit train which is stockpiled in one area of the storage yard for further trans. port by an overland conveyor to the new Ontario Hydrothermal generating station located on the adjacent Mission Island. This system comprising the overland conveyor and slewing stacker was also supplied by Stephens-Adamson and commissioned in the spring of 1981.