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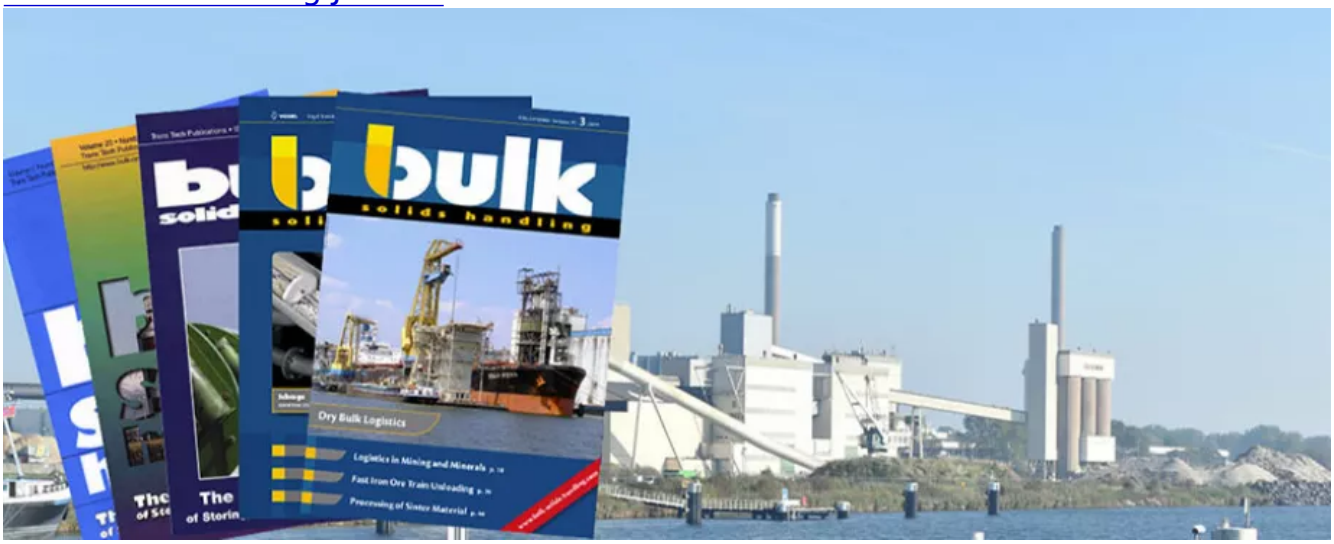

Case Study

15 Years Oilsand Transportation by Belt Conveyor Systems - From a Manufacturer's Viewpoint

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The authors review the special problems related to handling oilsand by conveyor belts. Very low temperatures and the nature of the product to be conveyed pose the most serious problems.

1. Introduction

In the current period of expensive energy and growing demand for raw materials, various articles reported in detail on the oilsand deposits in Northern Canada. Initial steps to develop these deposits were taken about 20 years ago. The oilsand mines, opened in this region caused a change from wilderness to industrialization. In the meantime this development has been the subject of various controversial discussions. There is, however, no doubt that the activities undertaken in this region permitted access to enormous oil reserves and have caused a significant advance in technology.

The following figures highlight the technical details of the extraction of oil: After passage through the extraction plant 1 m3 oilsand in situ is processed to 1.4 m3 loose sand, 0.22 m3 bitumen and 15 m3 gas, as well as secondary products, such

as oil coke and sulphur. The daily production of 188,000 barrels of oil, obtained by Suncor and Syncrude, requires a throughput of 395,000 t of oilsand per day.

Since this is not the place to report on the enormous difficulties which had to be overcome it would fill books with interesting stories the present paper only reports on the conveying problems of the mines.

These problems can be mainly attributed to the following:

- operation has to be continued at temperatures as low as -45°C,.
- oilsand is an extremely difficult material: abrasive and sticky with partly sharp-edged/large lumps.

Owners invested a lot of spirit and persistence in solving these problems. The engagement of the equipment manufacturers contributed also to the required high technological standard of equipment.

Demag Lauchhammer is among the suppliers for the two opencast mines of Suncor and Syncrude and has done pioneer work in development of belt conveyor systems for oilsand transport.

For the basic outfitting of all mine conveyors as well as for subsequent extensions and further supplies, the Owners could make profitable use of our rich experience in this special field. The belt conveyor length designed, built, erected and commissioned by Demag for the Athabasca region totals about 22 km.