



## DURBAN COAL TERMINAL COMPANY (PTY) LTD t/a

### BULK CONNECTIONS



#### Background

Bulk Connections is part of the Bidvest group which operates a wide range of specialist material handling facilities in South Africa. The Bidvest Group is an international services, trading and distribution company listed on the Johannesburg Stock Exchange in the Industrial - Service sector. Our specialist bulk handling terminal is situated in the Port of Durban, South Africa. Bulk Connections has been in business since the early 1900's. Over the years the plant has been maintained, upgraded and state of the art equipment and systems added. The current capacity is 6 million tons per annum.

The terminal can handle a variety of different types of dry bulk products including chrome ore. Bulk Connections has four berths with a maximum draft of 10.3m, handles 4.5 mt (million tonnes) per year on an average vessel size of 30,000 tonnes. The largest single uplift is 52,000 tonnes but draught restrictions on some berths limit vessel sizes to load around 45,000 tonnes and most of these complete on a rising tide.

Ninety per cent of the vessels calling at the terminal are tramp vessels on a voyage charter. The remaining vessels are on a time charter and call at regular intervals.

The planning of vessels, trains and road trucks to arrive at the terminal is the single most important activity to ensure effective plant utilization. This is handled by the operations department which chairs weekly vessel scheduling meetings, plans the road and rail traffic and produces a variety of statistics.

The terminal operates 24 hours a day, seven days per week and will operate on public holidays if trains are arriving, vessels are loading or road vehicles are dropping cargo.



#### Multi Product Import/ Export Facility

Bulk Connections has a reputation for handling a wide range of commodities using a variety of appliances and keeping many competitive customers satisfied.

Commodities handled by the terminal include:

- chrome ore
- manganese ore,
- size sensitive coal,
- Coking coal
- steam coal,
- copper concentrate,
- metallurgical coke,
- mill scale,

- sinter and
- a range of specialized commodities.



Manganese ore

Chrome ore

Size sensitive bulk products that break easily or are large and lumpy may be handled as easily as grains, powders or concentrates. Loading methods make use of either a container loading system which operates at about 15 000 tons per day or a conveyor loading system that operates at over 20 000 tons per day. The products may come directly from road or rail wagons or from stack storage.

Vessels are discharged by grab unloaders on shore cranes that can either load road or rail wagons directly or via a stockpile system.

Various combinations can be used to ensure minimum handling, blending or separation of commodities as well as efficient just-in-time cargo management procedures.

Ships' agent facilities are available in the group as well as total logistic services that cover cross border traffic.

### Facilities

#### Sized Sensitive Loaders

Designed especially for sized sensitive products, the system is capable of loading in excess of 20,000 tonnes per ship per day. These superbly designed containers are transported to the vessel and are lowered into the vessels' hatch whereupon the doors open and the product flows out. This system is suitable for many commodities that require special handling or that cannot be handled on a conveyor.



### Rapid Loading

The vessel can be fed from the storage area, or direct from rail wagons using straddle excavators or either of the two dumpers. Flexibility and versatility enable products to be blended, weighed, dampened or separated en route to the ship loader. The machine effectively trims the hatches and can easily accept panamax size vessels.



### Grab Discharge

Two shore mounted grab unloaders are used to discharge vessels. A double rope system allows a 7m<sup>3</sup> grab to cycle in under a minute on the one machine, while the second machine, the container crane, is fitted with a 25m<sup>3</sup> hydraulic grab.

This cargo is then routed directly to rail wagons which can immediately be made up into unit trains or the cargo can be stored and railed out at a suitable time. The grabs are equipped with sealing teeth that prevent spillage of products such as grains or fertilizers. Discharge rates vary per commodity but are in excess of 6,000 tonnes per day on the rope driven machine and 15,000 tonnes per day with the hydraulic grab system.



## Stack Storage Facilities

The stacks can store in excess of 600,000 tonnes as pre assembly for shipments. Cargo can be stacked as and when the customer rails to the terminal or sends by road vehicle and stacking rates of 1,000 tonnes per hour per commodity are comfortably achieved.

Reclaim rates out of the storage area are being upgraded to exceed 2,500tph. Open, concrete lined bins connected to a stacking / reclaim conveyor can be used for parcel preparation for portions of, or entire shipments.



## Wagon Handling Equipment

Bulk Connections shunts all rail wagons on site with their own locomotives. This has proved to be the most efficient manner of ensuring that the correct cargo is moved exactly when required. Five locomotives of varying sizes are operated and maintained by terminal staff to provide this service.

## Environmental Management

Bulk Connections has recently set new standards for environmental protection. The environmental upgrade programme included raising the quay wall 200mm to ensure that no storm water could enter the bay. This was supplemented with concreting all the stockpiles and installing a series of channels which divert water to one of four retention ponds, where the water is recycled for dust suppression on roads. In addition all the roads have been paved and over 240 trees and shrubs were planted on the site to minimise the visual impact and add to a greener working environment. Each stockpile is divided by 4m high retaining walls which reduce the risk of contamination and cargoes are separated according to type and quality. Underground water, airborne dust, noise generation and water runoff are measured and all fall well below legal limits, a clear sign that Bulk Connections is getting it right. Last year Bulk Connections won an international award from International Bulk Journal for the best environmental practices in a bulk terminal. Bulk Connections has a valid Air Emission Licence (AEL 071/S3)



## Cargo planning

Each week, every agent representing their principles attends a Planning and Scheduling meeting at Bulk Connections. The vessels are planned in accordance with a tried and tested system that has been in operation for many years and was adapted for use at Richards Bay Coal Terminal. At the

same time the following week's rail programme is planned and this is entered into the Transnet Freight Rail's "Next week's Business". The vessel, stockpiles, rail cargo and road cargo is carefully monitored to minimise delays and deadfreight on vessels. Daily updates are sent to customers on email as well as an SMS on completion of every shift (i.e. three times a day). Using the terminal software a customer who has password access to the site can download all sorts of information such as delays, cargo in each hatch, train arrivals, monthly tons, trends and graphs.



### Sustainability

Broad- based Black Economic Empowerment status: Level Two

Total Number of permanent employees: ±200