Note on “Transportation of Minerals”
Joda West Iron & Manganese Mine, M/s Tata Steel Limited

For an annual production of 1,80,000 MT of manganese ore in 300 working days, about 600 piece-rated workers will be deployed for production of 600 t/day. Subsequent to manual processing of ROM, the different quality of ores are then loaded manually to the dumpers and transported to stacking ground for stacking the ore in regular geometrical shapes and samples are collected and analysed at our laboratory.

The customer wise monthly despatch requirement is informed and on the basis of availability of stacks at mines the future production is planned. Accordingly, the schedules are prepared and samples of the particular stacks are collected from our internal Natural Resource Division and then submitted to the Government Lab. The Government Certified analysis report in Form-K is then collected from Government Lab. The online application is then made in the i3ms system in Form-J with Form-K to Deputy Director of Mines, Joda. After the field inspection of the Inspector of Mines, the recommendation is made to Deputy Director of Mines, Joda for issue of permission to despatch. Then removal permission is obtained from Mining & Geology Department of State Government after stack verification. Thereafter, the stacks are dispatched to our FAP Plant Joda and railway siding by road. The ore from railway siding is transported through rail to different parties.

Then the royalty payment is made and final approval for despatch is granted in Form-L. The customers are then communicated to apply in From-H.

In the transportation process, the approved list of vehicles is submitted to Deputy Director Mines, Joda Office one day before the transportation. All listed vehicles are checked at security gates and a loading slip is issued. The vehicles are then allowed to load the ore from respective stacks in the Stack yard as mentioned in the loading slip. The permitted quantity is loaded and is ensured with the help of Weigh Bridge. After that, a transit pass is generated from the i3ms system, online. The haul road used is maintained to minimize undulation so as to avoid spillage; also, the vehicles are covered with tarpaulins to alleviate the air borne dust from ores enroute. The haul road is water sprinkled at regular intervals so as to minimise the dust generation caused by the hauling of the ore loaded vehicles.

Further, the fines generated during manual processing of ROM are kept separately for screening to recover residual lump. After recovery of the lumps, the fines are stacked separately and sold whenever a market for such ore is available. Miscellaneous operations in the mine includes levelling of dumping yard, preparation and maintenance of haul roads, dozing of boulders from mine face, loading of trucks at stack yard etc.

The outline process flow of the production and transportation of mineral is being shown in Figure -1.
There is also a proposal to install Utility Corridor (having conveyor line for transportation of iron ore, 33 KV transmission line, Water pipeline and road etc.) from Company's Khondbond lease to siding at Joda East through Joda West Iron & Manganese lease. The conveyor route shall also be utilized for laying water and power line from Joda to Khondbond.

Khondbond Iron & Manganese Mine is located about 2.3 Km south of Joda West and Joda East Iron Mine is located about 1.5 km north-east of Joda West Iron & Manganese Mine. At present, Khondbond Iron Mine is operated for 4.0 MTPA of iron ore only and the Steel Company has plan to augment its capacity to 8 MTPA by 2016. The Mining Plan of Khondbond for 8.0 MTPA has already been approved by the Indian Bureau of Mines, Govt. of India.

The existing facility at Khondbond Iron & Manganese Mine includes a 4.0 MTPA capacity of Crushing and Screening plant which produced sized iron ore and fines ore. The sized ore produced from the mine is transported in trucks to Tata Sponge Iron Limited and fines ore to Joda East Iron Mine. However, with increase in production from Khondbond mine up to 8.0 MTPA, it will not be possible to continue transportation of mineral by road. Therefore, the Steel Company proposes to transport the mineral by a long distance conveyor (10.60 Km) from Khondbond Iron & Manganese Mine to Joda East Iron Mine Siding. The conveyor route has been selected by maximum utilization of company's own leases and part of the conveyor route (3.4 km) is passing through Joda West Iron & Manganese Lease of the company.

The conveyor corridor will also be utilized for laying water, power and slurry line from Joda to Khondbond for which the Steel Company has not asked any other area. These other facilities are also very much essential for expansion of Khondbond Iron & Manganese Mine of the Steel Company.
The route for conveyor corridor has been selected taking into account of bareness of the area as well as along the lease boundaries so that future mining operations in Joda West lease is not restricted due to conveyor corridor. The Mining Plan of Joda West Iron & Manganese Mine lease incorporating proposed conveyor from Khondbond to Joda East via Joda West lease has already been approved by Indian Bureau of Mines, Govt. of India. The Steel Company will select the "State-of-the-Art" technology for selection of the conveyor so that flora and fauna of the area is conserved. MoEF has also granted EC for the conveyor corridor.

In view of the above facts conveyor corridor within Joda West lease is essential for expansion of Khondbond Iron Mine owned by the Steel Company for transportation of iron ore from Khondbond to Joda East Siding by long distance conveyor via Joda West Iron & Manganese lease.