

BY SPEED POST

No. J-11015/372/2010-IA.II (M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
CGO Complex, Lodhi Road
New Delhi-110510.

Dated: 30th September, 2013

To,

Mr. C. H. Divaker
General manger
Jharia Division, Tata Steel Ltd.,
PO; Jealgora, Dist. Dhanbad
Jharkhand - 828103

Sub.: Digwadih Colliery of M/s Tata Steel Ltd. for (Expansion from 0.38 MTPA to 0.6 MTPA in ML area 314.57 ha), dist. Dhanbad, Jharkhand - Environment Clearance – reg.

Sir,

This has reference to letter no. TSLDEI/405/2010 dated 04th November, 2010 for Terms of Reference (TOR) and this Ministry's letter dated 09.02.2011 granting TOR to the above mentioned Project and letter from M/s Tata Steel Ltd., vide no. TSLDEI/496/2012 dated 21st December, 2012 and subsequent letter no. dated 10.07.2013 submitting therewith the final EIA/EMP seeking for Environmental Clearance for the above mentioned subject.

2. The Ministry of Environment & Forests has considered the application. The proposal was considered in the 71st Expert Appraisal Committee held on 8-9 April, 2013 which recommended the project for the Environmental Clearance. It is noted that the application is for environmental clearance for **Digwadih Colliery of M/s Tata Steel Ltd. for (Expansion from 0.38 MTPA to 0.6 MTPA in ML area 314.57 ha), dist. Dhanbad, Jharkhand.** The proponent informed that:

- i. It is an expansion proposal for underground mining from 0.38 MTPA to 0.6 MTPA for which Ministry had issued the TOR, vide letter no. J-11015/372/2010-IA.II(M) dated 9th February, 2011.
- ii. The land use of the project will be as follows:

S. No.	Type of Land	Pre-mining	Post-mining	Core area
		Area (Ha.)		
1.	Land under office building	8.17	0	-
2.	Land under bungalow, colony, etc.	88.71	0	-
3.	Land under village	148.81	148.81	-

4.	Area for plantation and park	2.25	2.25	-
5.	Land under tank, drain, nallah, etc.	4.99	4.99	-
6.	Land under road network	1.24	1.24	-
7.	Land under railways	46.76	46.76	-
8.	Land under agriculture	13.65	13.65	-
	Total	314.57	217.69	314.57

- iii. The total geological reserve is 51.963 MT. The mineable reserve is 46.65 MT, extractable reserve is 16.35 MT with percent of extraction of 30%. The coal grade is W and the average gradient is 1 in 7. There will be total five seams and the category of gaseousness is Degree III. Thickness of the seams ranges from 2.94 m to 7.31 m.
- iv. The subsidence study was conducted by CIMFR team which suggested that the maximum subsidence over stowed panel was 2.48% of extraction thickness. The subsidence movement did not cause any damage to surface features and structures. 100% sand stowing is being done to ensure backfilling of all underground mined out areas.
- v. Damodar River flows at a distance of 2 Km from lease boundary which is a main drainage of the area. Dungri jore tributary carries the water from high lands to Damodar River. Water drains through natural slope of the terrain to Dungri Jore that ultimately discharges into the Damodar River. The Project Proponent has diverted the water through pucca and kutchha drains. The permeable sandstone beds intercalated with shale and coal seams behave as individual hydro-geological units and form a multi-aquifer system.
- vi. The level of ground water ranges from 2.78 – 7.98 m below ground level. The total estimated water requirement is 7255 m³/day of which 3432 m³/day for stowing, 1035 m³/day for colony & villages, 1100 m³/day for water treatment plant and 1689 m³/day for irrigation & gardening
- vii. The Method of mining would be semi-mechanised Bord and Pillar system.
- viii. Approvals: Mining plan has been approved vide letter no. 30411/(22)/2009-CPAM dated 08.03.2010. Progressive mining closure plan has been approved. The final mine closure plan is yet to be approved.
- ix. There are no external/internal OB dumps as it is underground mine.
- x. The seasonal data for ambient air quality has been documented for the summer season (April, 2011 to June 2011) and all results at all stations are within prescribed limits.
- xi. The water from this area is coursed through kuthcha drains which finally drain into the Damodar River after passing through the BCCL areas also. The water does not reach to the Dungri Jore from the Digwadiah leasehold area.
- xii. The mine water from the colliery is first collected in the settling tank located near the colliery pit head. It has a capacity of 675 m³. The mine water is then utilized for underground stowing purpose and is recycled. Some of the water is utilized in the Water treatment plants and balance water is used for the colonies and supplied to the villagers for their uses. Any excess water overflows from the tank after sedimentation occurs. We regularly monitor the mine water discharge quality parameters and are found within the norms.
- xiii. The progressive mine closure plan is approved in Mining Plan of Digwadiah Colliery. The final mine closure plan is currently being prepared by CIMFR, Dhanbad and will be submitted for approval from MOC.
- xiv. The list of flora and fauna has been authenticated by NABET-accredited Ecology and Biodiversity FAE of CIMFR, Dhanbad. No White Vulture (Gyps Bengalensis) is found in the surrounding areas.
- xv. The mine water from the colliery is first collected in the settling tank located near the colliery pit head. It has a capacity of 675 m³.
- xvi. No water is taken from the river for use in colliery. Any excess water overflows from the

settling tank only after sedimentation occurs. mine water discharge quality parameters are regularly monitored and are found within the prescribed norms. The water from this area is coursed through kuthcha drains which are finally drained into the Damodar River after passing through the BCCL areas also. The water does not reach to the Dungri Jore from the Digwadih leasehold area directly.

- xvii. **Transportation:** The Coal transportation of coal to washery is done through a network of underground belt conveyor system and hence there is no surface transportation of coal. Material transport is done through shaft and by means of haulage in underground.
- xviii. Life of mine is 26 Years.
- xix. **Cost:** The capital cost of the project is Rs. 2500 Lakhs. The cost of production included in the final cost of production of steel. The CSR Cost is Rs. 5.50 crores (FY14 budget) for Jharia Division. Annual breakup of CSR spent (Rs. 5.03 cr) for the year 2012-13 to be submitted to the MoEF for record. Environmental Management Cost is Rs. 85 lakhs.
- xx. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves within 10 km buffer zone.
- xxi. **Forestry issues:** There is no forest land involved.
- xxii. Total afforestation/green belt development takes place every year on the open surface within leasehold areas. The density of the plantation 2500 trees per ha.
- xxiii. **Violation/ Court Case:** There are no court cases/ violation pending.
- xxiv. **Public hearing:** The public hearing was held on 21.09.2012. The issues raised were regarding drinking water facility for villagers, repair and cleaning of drains and roads, tree plantation, medical facilities for villagers, free coaching to small children, cleaning of parks and ponds as well as heightening of wall around sand yard, sand spillage during transportation, etc

3. The proposal was considered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) and recommended in its 71st Expert Appraisal Committee held on 8-9 April, 2013 for granting Environmental Clearance. The Ministry of Environment & Forests hereby accords environmental clearance for the above-mentioned **Digwadih Colliery of M/s Tata Steel Ltd. for (Expansion from 0.38 MTPA to 0.6 MTPA in ML area 314.57 ha), dist. Dhanbad, Jharkhand** under the provisions of the Environmental Impact Assessment Notification, 2006 and subsequent amendments thereto subject to the compliance of the terms and conditions in addition to the general conditions as mentioned below:

A. Specific Conditions:

- i. The maximum production from the mines shall not exceed beyond that for which environmental clearance has been granted.
- ii. The impact on the Damodar river due to mining activity which is at a distance of 2 km be studied through a reputed 3rd Party and submitted to the SPCB and the regional office of the MoEF for monitoring
- iii. Details of underground transportation of coal from mine to coal yard/ rail yard be submitted to the MoEF for record.
- iv. Adequate care be taken to prevent sand spillages from the trucks/tippers.
- v. The test results of the study of leaching of heavy metals from bottom-ash be submitted SPCB and the regional office of the MoEF for monitoring.
- vi. The CSR activities shall be need based and detailed CSR plan be prepared for implementation.
- vii. The detailed breakup of funds during 2012-13 be submitted to the MoEF for record. A social audit to be got done annually by a reputed institute and uploaded on the company's website
- viii. There should be no OB dumps at the end of the mining.
- ix. Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of

subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.

- x. If subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement of the landowners.
- xi. Mining shall be carried out as per statuette at a safe distance from the river/nallah flowing adjacent to the lease boundary.
- xii. High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
- xiii. Coal Extraction shall also be optimised in areas where agricultural production is continuing. Some pillars shall be left below the agricultural land. No depillaring & coal extraction should be carried out below habitation, H.T. Lines & beneath road, water bodies
- xiv. Subsidence shall be monitored closely and if subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement with the landowners.
- xv. 3-tier plantation should be developed 2 km stretch of road from the mine using native species
- xvi. Garland drains (size, gradient and length) around the safety areas such as mine shaft and low lying areas and sump capacity shall be designed keeping 50% safety margin over an above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.
- xvii. Specific mitigative measures identified for the Jharia Coalfields in the Environmental Action Plan prepared for Dhanbad as a critically polluted area and relevant for Digwadih colliery shall be implemented.
- xviii. The locations of monitoring stations in the Jharia Coalfields should be finalised in consultation with the Jharkhand State Pollution Control Board. The smoke/dust emission vary from source to source (fuel wood, coal, flyash from TPPs, silica from natural dust, etc.). Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM₁₀ and PM_{2.5}) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate mitigative measures could be taken.
- xix. Water sprinkling system shall be provided to check fugitive emissions from loading operations, conveyor system, haulage roads, transfer points, etc. Major approach roads shall be black topped and properly maintained.
- xx. Transportation of coal from the mine to railway siding should be by 20T mechanically covered trucks.
- xxi. A progressive afforestation plan shall be prepared and implemented over the mine lease area acquired and shall include areas under green belt development, areas along roads, infrastructure, along ML boundary and township etc, by planting native species in consultation with the local DFO/Agriculture Department.
- xxii. Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.
- xxiii. Acid Water Treatment Plant, volume of water to be treated and disposal of brine should be provided.
- xxiv. Mine discharge water outside the ML shall be monitored, particularly for TDS and treated to conform to prescribed levels before discharge into the natural environment.
- xxv. The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource, in case water table shows a declining trend. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.

- xxvi. Besides carrying out regular periodic health checkup of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health checkup for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahmadabad within a period of one year and the results reported to this Ministry and to DGMS.
- xxvii. The mining in the existing mines would be phased out after expiry of the current mining lease and after reclamation of mined over area. The operating mines may be analysed and monitored for compliance of conditions, having bearing with movement of wild life until such time they are closed/phased out.
- xxviii. Project specific CSR for an amount of Rs 5/Tonne of coal production should be provided for the activities under CSR undertaken for the neighboring villages shall be for not less than Rs 10 per tonne of coal and the progress made thereon shall be uploaded on the company annually on the company website. Monitoring of the impacts of activities under CSR shall be carried out periodically.
- xxix. A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.
- xxx. Corporate Environment Responsibility:
 - a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
 - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.
 - d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

B. General Conditions:

- i No change in technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.
- ii No change in the calendar plan including quantum of mineral coal and waste being produced shall be made.
- iii Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, in RSPM etc. shall be carried out at least once in six months.
- iv Data on ambient air quality (PM₁₀, PM_{2.5}, SO₂ and NO_x and heavy metals such as Hg, As, Ni, Cr, etc) and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhopal and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EP Rules, 1986 shall be furnished as part of the compliance report.
- v Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
- vi Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, and treated so as to conform to the standards including for heavy metals before discharge prescribed

- under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.
- vii Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of the mineral shall be covered with tarpaulins and optimally loaded.
 - viii Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EP Rules, 1986.
 - ix Monitoring of outlet points should be carried out and records of same should be maintained and submitted to the Regional Office of the MOEF as part of the Compliance Report.
 - x Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.
 - xi A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
 - xii The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhopal.
 - xiii The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at <http://envfor.nic.in>
 - xiv A copy of the environmental clearance letter shall be marked to concerned Panchayat/Zila Parishad, Municipal Corporation or Urban Local Body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on the company's website.
 - xv A copy of the clearance letter shall be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.
 - xvi The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in the public domain. The monitoring data of environmental quality parameters (air, water, noise and soil) and critical pollutants such as PM₁₀, PM_{2.5}, SO₂ and NO_x (ambient and stack if any) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mines office and in corporate office and on the company's website.
 - xvii The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the MOEF, the respective Zonal offices of CPCB and the SPCB.
 - xviii The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
 - xix The environmental statement for each financial year ending 31st March in Form-V is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MOEF by E-mail.

4. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.
5. The proponent is required to obtain all necessary clearances/approvals that may be required before the start of the project.
6. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
7. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.
8. The above conditions will be enforced *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.

(Dr. Manoranjan Hota)
Director

Copy to:

1. Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Jharkhand, Secretariat, Ranchi.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A/3 Chandrashekarapur, Bhubaneswar 751023.
4. Chairman, Jharkhand State Pollution Control Board, TA Building, HEC Complex, PO Dhurwa, Ranchi.
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi 110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. District Collector, Dhanbad, Government of Jharkhand.
8. Shri Chanakya Choudhary, Chief Resident Executive, M/s Tata Steel Ltd., Tower- I, 10th Floor, Jeevan Bharati Building Commaught Place, New Delhi
9. Monitoring File 10. Guard File 11. Record File 12. Notice Board

(Dr. Manoranjan Hota)
Director