

No. J-11015/203/2011-IA.II (M)  
Government of India  
Ministry of Environment & Forests  
IA-II (Coal Mine) Division

Paryavaran Bhawan,  
CGO Complex, Lodhi Road  
New Delhi-110003  
Dated: 03<sup>rd</sup> March, 2014

To,

The General Manger  
Tata Steel Ltd., Jharia Division,  
PO; Jamadoba, Dist. Dhanbad  
Jharkhand - 828112

**Sub.: Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area and 24<sup>0</sup>31' 30" to 24<sup>0</sup> 32' 30" N & 87<sup>0</sup> 25' 00" to 87<sup>0</sup> 30' 00" E) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand - Environment Clearance – reg.**

Sir,

This is with reference to letter no. TSLDEI/281/2011 dated 23.08.2011 with the application for Terms of Reference (TOR) and this Ministry's letter dated 30.11.2011 & revised letter no. dated 10.02.2012 granting TOR. Reference is also invited to the letter no TSLDEL/498/2012 dated 21.12.2012 and subsequent letter nos. dated 26.07.2013; 23.08.2013; 04.11.2013 and 03.01.2014 for environmental clearance on the above-mentioned subject.

2. The Ministry of Environment & Forests has considered the application. It is noted that the proposal is for grant of Environmental Clearance for expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area and 24<sup>0</sup>31' 30" to 24<sup>0</sup> 32' 30" N & 87<sup>0</sup> 25' 00" to 87<sup>0</sup> 30' 00" E) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand. The proposal was considered in the 73<sup>rd</sup> EAC meeting held on 6<sup>th</sup> – 7<sup>th</sup> May, 2013 and reconsidered in the 5<sup>th</sup> EAC meeting held on 25<sup>th</sup> - 26<sup>th</sup> November 2013. The proponent has informed that:

- i. It is an expansion proposal for which Ministry has issued the TOR dated 30.11.2011. It has been operational for last 60 years. Jamadoba coal washery receives coal from captive mines of Tata Steel & BCCL mines to beneficiate it in order to produce clean coal required for Tata Steel plant from Jharia division.
- ii. The proposal is for expansion in coal washery from 1 MTPA to 2 MTPA within the area of 7 ha with 100 % expansion.
- iii. It is a fully mechanized washery.
- iv. The company is in the process of expansion of production capacity of its mines to meet the coal demand at Jamshedpur. The demand for clean coal after expansion of the integrated steel plant at Jamshedpur (from 6.8 MTPA to 10 MTPA) has been estimated to be 7.30 MTPA.
- v. The raw coal (30-32%) is fed to the washery to produce clean coal with 15-18% ash as per customer requirement and rejects with 48 -50% ash and tailings with 38-42% ash. The process is based on cyclone separation for coarser particles and teetered bed separator and froth flotation for fine particles.

- vi. The Clean coal is sent to Jamshedpur works. The rejects are consumed in Power Plant and the tailings are disposed of to end user (viz. institutionalized customers including power plant, cement and brick kiln manufacturers).
- vii. Details of land usage are as under:

Sl. No.	Type of Land	Pre-mining	Post-mining	Core area
		Area (ha.)		
1	Main Plant	0.144	0	-
2	Office	0.0705	0	-
3	Infrastructure	0.806	0	-
4	Water Reservoir	0.25	0	-
5	Road	0.75	0	-
6	Effluent recycling system	1.90	0	-
7	Tailing slurry management	3.00	0	-
	<b>Total</b>	<b>7 Ha</b>	<b>0</b>	<b>7 Ha</b>

- viii. Damodar River flows at a distance of 2.5 KM from the washery.
- ix. Total estimated water requirement is 1240 m<sup>3</sup>/d. Range of ground water level is 78 – 7.98 m below ground level. The source of water is underground mine water. Washery is provided with effluent recycling system so as to take care of effluent generated due to cleaning and any overflow from the plant. The existing tailings management through ponds and subsequent recycling shall be phased out in stages till the mechanical tailing dewatering system is stabilized.
- x. The ambient air quality seasonal data has been documented for December 2011 to February 2012. Some of the data recorded (PM<sub>10</sub> values) are above limits but overall the results are within prescribed limits.
- xi. **Compliance:** This washery is an old washery and has been operating since 1952 and therefore the compliance of earlier EC from MoEF Regional Office is not available.
- xii. **Cost:** Total capital Cost is Rs. 135 Crore. CSR Cost is Rs. 5 Crore for Jharia Division. Environmental Management cost is Rs 14 crore.
- xiii. There is no involvement of forest land.
- xiv. No R& R is involved.
- xv. The thrust areas for CSR activities in Jharia Division are income generation Programme, Health & Hygiene, empowerment (Including SHG Development, Employability Training etc.), water supply network for surrounding villages & Infrastructure Related Jobs.
- xvi. The CSR expenditure budget is about Rs. 5 crores. This expenditure will include the expenditure required to comply with the above assurances.
- xvii. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
- xviii. **Coal transportation:** The underground belt conveyors for coal transportation from captive underground mines to the washery site are already in practice. Transportation of coal to steel plant at Jamshedpur will be through Rail wagons.
- xix. **Afforestation:** Afforestation/ green belt development takes place every year on the open surface within leasehold areas
- xx. **Violation/Court Case:** There are no court cases/ violation pending with the project proponent.
- xxi. **Public hearing:** The public hearing was held on 20.09.2012 at Jamboda district in Dhanbad. The issues raised were increase in pollution level due to expansion, impact of washery effluents to the Damodarnadi and Dungri Jore, Maximum Nos. of tree Plantation, Medical facilities for villagers. Emergency facilities at night time, Supply of Water & Power, etc.

3. The proponent has further informed that:
- i. Jharia coal field is the only coking coal field of the country wherein mining started way back in 1896. There are total 18 seams which are coupled with number of geological distribution in the coal field and were operated by different companies.
  - ii. As per CGWB, the stage of ground water depletion in the Dhanbad district is around 30%. The highest stage of development is in Dhanbad city (58%) and Jharia (53%) blocks and hence it is in the “safe” category. The water table in the wells of the study area varied from 3.99 m to 9.89 m during month of May and 2.11 m to 3.98 m in November, However, depth of water level rises in monsoon season to a minimum level. Detailed hydrological study has been carried out by CIMFR, Dhanbad The Net annual ground water recharge is 30.49 MCM/annum. Ground water net irrigation use 0.26 MCM/annum. And Community use 6.46 MCM/annum. Net Mines discharge 0.02 MCM/annum. Therefore balance available annual ground water recharge 23.75 MCM/annum.
  - iii. As part of CSR, Tata Steel is providing huge quantity of drinking water through water pipeline as well as water tankers to the villagers. The proponent has planned to connect all the villages in the leasehold area with water pipeline connection.
  - iv. A pilot plant to convert mine water into drinking/ domestic water to supply the same to the population of Dhanbad and surrounding areas has been launched at Moonidih Coal Mining area by National Mission Project by CSIR in order to increase ground water recharge. Tanks/ponds are regularly cleaned and maintained under CSR. Plantation activities in the mine areas have been started to contain surface runoff and to increase the ground water recharge.
  - v. Occupational Health Department of the Proponent conducts health check up every year for the workers in the colliery. Major occupational health concerns are hypertension and CVS diseases. Water-borne diseases are non-existent in the community.
  - vi. TSRDS undertakes various CSR activities in over 30 villages in the leasehold area over 15000 households covering a population of about 1.4 lakh. The benefits have reached the people directly in the form of skill development, better infrastructure, improved standard of living, medical facilities, etc. The PP has incurred expenditure with respect to CSR activities in 2009-10 Rs. 91.17 lakhs, 2010-11 Rs. 86.79 lakhs, 2011-12 Rs. 100.43 lakhs, 2012-13 Rs. 503.00 lakhs and 2013-14 Rs. 271.75 lakhs (till September, 2013).
  - vii. The trucks used for the transportation of fly ash and sand are properly covered using tarpaulin sheets. Larger trucks are engaged for reducing no of cycles. The reclamation of the ash dumps has been completed.
  - viii. The PP has assured to explore the possibility of using mechanically covered trucks for the transportation of ash. Until then, the existing system of transporting via tarpaulin-covered trucks will continue.
  - ix. About 10-12% of ash will be utilized for making bricks, tiles and it will be used in pavements, embankments and as road-filling material. Rest 88-90 % of ash has been earmarked for filling abandoned open cast mines.
  - x. As desired by the EAC, no use of fly ash with sand will take place for stowing in underground mines.

4. The proposal was reconsidered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) and recommended in its 5<sup>th</sup> meeting held on 26<sup>th</sup> - 25<sup>th</sup> November, 2013 for granting Environmental Clearance. The Ministry of Environment & Forests hereby accords environmental clearance for the above-mentioned **Expansion of Jamadoba Coal Washery (1 MTPA to 2 MTPA in 7 ha Area and 24<sup>o</sup>31' 30" to 24<sup>o</sup> 32' 30" N & 87<sup>o</sup> 25' 00" to 87<sup>o</sup> 30' 00" E) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand** under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments thereto subject to the compliance of the terms and conditions mentioned below:

**A. Specific Conditions:**

- i. Adequate green belt shall be provided around coal handling and other areas
- ii. Action plan be developed and implemented for abandoned tailing ponds and for their restoration to the original land use.
- iii. Flyash generated from the captive power plant of the washery be utilised for house construction, roads and such uses, strictly complying to the timeline in the EIA Notification, 2006 and maintaining proper records.
- iv. No use of fly ash with sand will take place for stowing in underground mines.
- v. Transportation of fly ash to be done properly by mechanically covered trucks.
- vi. The proponent shall connect all the villages in the leasehold area with water pipeline connection.
- vii. The proponent shall expedite and implement the pilot plant to convert mine water into drinking/ domestic water to supply the same to the population of Dhanbad and surrounding areas and shall continue to carry out this activity.
- viii. Tanks/ponds shall be regularly cleaned and maintained. Plantation activities shall be intensified in the mine areas.
- ix. The proponent shall expedite the activities undertaken by TSRDS in over 30 villages in the leasehold area over 15000 households covering a population of about 1.4 lakh.
- x. The CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per the annual inflation.
- xi. Cost for additional environmental protection measures shall be not less than Rs. 503.00 lakhs. The status of implementation including costs incurred shall be regularly reported to this Ministry and its respective Regional Office in the region as part of the compliance report and also uploaded on the company website.
- xii. The slope of the embankment towards the river shall at least 1:3 for stability and shall be stabilised with plantation using native species selected from the study area.
- xiii. Top soil shall be stored in the earmarked area and used within a year of its generation for green belt development and for plantation/reclamation.
- xiv. No external OB dump shall be created for the expansion project. Monitoring and management of existing reclaimed dumpsites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its respective Regional Office on yearly basis.
- xv. Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilised for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly.
- xvi. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.
- xvii. Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
- xviii. Crushers at the CHP shall be operated with high efficiency bag filters/water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system which shall be closed, haulage roads, transfer points, etc.
- xix. Drills shall be wet operated only.
- xx. Controlled blasting shall be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.
- xxi. The Washery shall be a zero-discharge and no wastewater shall be discharged from the washery into the drains/natural watercourses. No groundwater shall be used for washery operations. Recycled water shall be used for development and maintenance of green belt and in the plant operations.

- xxii. The raw coal, washed coal and middling and coal wastes (rejects) shall be stacked properly at earmarked site(s) within sheds/stockyards fitted with wind breakers/shields. Adequate measures shall be taken to ensure that the stored minerals do not catch fire. The storage period shall be not more than 2-3 days.
- xxiii. (xiii) The proponent shall maintain proper records of the ash content of raw (ROM) coal, clean coal, middling and coal rejects along with quantum of raw coal obtained and washed and dispatched every month and the same shall be uploaded on the company website every month.
- xxiv. All internal roads shall be concreted or black topped and the approach roads used for the project shall be blacked topped. Facilities for parking of trucks carrying raw coal from the linked coalmines shall be created within the Unit.
- xxv. Roads used for coal transportation to the linked DRI/TPP shall be developed with 3-tier avenue plantation using a mix of native species. The trucks used for coal transportation shall be high capacity trucks. Drivers of trucks for coal transportation shall be engaged based on past records of road safety and compliance of safety regulations and shall be suitably sensitised about road safety and maintenance of vehicles to keep vehicular emissions to be within prescribed limits.
- xxvi. The roads (internal/approach/and roads used for the project) shall be regularly cleaned with mechanical sweepers and with water sprinklers. A 3-tier avenue plantation shall be developed along the major approach roads, internal roads and nearby roads used by the company.
- xxvii. Green belt shall be developed along the areas such as the washery unit, crushing unit, and stockyards and at transfer points and in between mine operations and habitations.
- xxviii. Hoppers of the coal crushing unit at the crushing shed and washery unit shall be fitted with high efficiency bag filters/Dust extractors and mist spray water sprinkling system shall be installed and operated effectively at all times of operation to check fugitive emissions from crushing operations, transfer points of belt conveyor systems which shall be closed and from transportation roads.
- xxix. The proponent shall ensure that coal such as stones, shale and other wastes of an ash content of 77% or more only shall dumped into the mine voids. Coal rejects with an ash content of 76% or less shall be fully utilised for power generation in linked TPP.
- xxx. Regular monitoring of groundwater level and quality including levels of heavy metals such as Hg, Cd, Cr., Se, etc shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity and quality of ground water as per IS:10500 shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons. Proper records of the data thus collected shall be maintained submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.
- xxxi. As the entire mine water is proposed to be used for the mine-cum-washery operations, measures shall be taken for recharging ground water in and around the mine in the study area. A Plan for water conservation and recharge measures of ground water along with budgetary provisions be prepared and implemented in consultation with the Central/State Ground Water Board to mitigate the adverse impact of mining which may lead to depletion of ground water in the area. The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring of groundwater levels indicate decline of water table. Any additional water requirement for mining operation shall be met from rainwater use only. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- xxxii. ETP shall also be provided for treatment of effluents from workshop, CHP and an STP shall be provided in the colony and the treated effluents shall be used for green belt development. Outflow of rainfall, if any, from the mine shall meet prescribed norms and the water quality of such discharge including levels of heavy metals such as Hg, Cd, Cr., Se, etc shall be monitored at the exit points and records maintained thereof and also uploaded on the company website. Online monitoring equipment shall be installed by the proponent to ensure that the water quality parameters of mine water discharge are well within the General Discharge Standards under EP, Rules, 1986.

- xxxiii. Besides carrying out regular periodic health check-up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through a recognised agency found in the district, and the results reported to this Ministry and to DGMS.
- xxxiv. For monitoring land use pattern and for post mining land use, a time series of landuse maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its concerned Regional Office in the region.
- xxxv. Land oustees shall be compensated as per the norms laid out R&R Policy of CIL or the National R&R Policy or R&R Policy of the State Government whichever is higher.
- xxxvi. A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests five year before mine closure for approval. Habitat Restoration Plan of the mine area shall be carried out using a mix of native species found in the original ecosystem, which were conserved in-situ and ex-situ in an identified area within the lease for reintroduction in the mine during mine reclamation and at the post mining stage for habitat restoration and for development of grasslands.
- xxxvii. 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 mining 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 of production for quantum of mineral coal 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 PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> monitoring. 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, etc carried out at least once in six months.
- iv. Data on ambient air quality (PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub>) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office 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 EPA rules, 1986 shall be furnished as part of 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, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May 1993 and 31<sup>st</sup> December

1993 or as amended from time to time before discharge. 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 transporting 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 EPA Rules, 1986.
- ix. 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.
- x. 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 and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.
- 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 concerned Regional Office.
- 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 concern 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 company's website.
- xv. A copy of the environmental clearance letter shall be shall also 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 Sector 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 environmental clearance 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 public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.
- xvii. The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Office s of CPCB and the SPCB.
- xviii. The Regional Office of this Ministry located in the Region 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 31 March in For -V is mandated to be submitted by the project proponent for 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.

5. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.

6. The proponent shall establish an Environmental Audit Cell, which should be responsible and accountable to ensure compliance of all conditions stipulated in the EC.
7. The proponent is required to obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
8. The Ministry or any other Competent Authority may stipulate any further condition for environmental protection.
9. 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.
10. 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. Member-Secretary, Jharkhand State Pollution Control Board, TA Building, HEC Complex, PO Dhurwa, Ranchi.
5. Member-Secretary, 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 Connaught Place, New Delhi
9. IG (Wild Life), Ministry of Environment and Forests, New Delhi
10. Monitoring File            11. Guard File            12. Record File            13. Notice Board

(Dr. Manoranjan Hota)  
Director