TARINI MINERALS PVT. LTD.

(A UNIT OF D.R. PATNAIK & ALTRADE GROUP)

Ref No: DIOM/TMPL/MoEF /EC/COMP/2013/259 **Date: 25.11.2013**

The Member Secretary,
State Environment Impact Assessment Authority,
Ministry of Environment and Forests,
Government of India,
Qr. No-5RF-2/1, Unit-IX
Bhubaneswar -751002.

Sub: **Environmental Clearance of Deojhar Iron Ore Mining Project of M/s Tarini Minerals (P) Ltd. – Regarding six monthly compliance reports for the period April to September, 2013.**

Ref: **SEIAA Clearance letter No. SEIAA/26/09, dtd. 27.11.2009.**

Dear Sir,

We are here with submitting the six monthly compliance reports with comprehensive data analysis reports of Deojhar Iron Ore Mining Project of M/s Tarini Minerals (P) Ltd. for the period April to September, 2013 on the subject.

This is for your kind information, please.

Thanking you.

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, ODISHA
Received
No. 1284
DT. 6.12.13

Yours faithfully,
For **Deojhar Iron Ore Mines of M/s Tarini Minerals (P) Ltd.**

Mines Manager
Deojhar Iron Mines
M/s Tarini Minerals (P) Ltd

Mines Manager

Encl: As Above.

Copy to:**1.The Director (S),** Regional Office (EZ),
Ministry of Environment & Forests A-31, Chandrasekharpur, Bhubaneswar.

2. The Chairman, Central Pollution Control Board
Parivesh Bhawan, CBD-CUM Office Complex,East Arjun Nagar,Delhi – 110032.

3. The Chairman, Sate Pollution Control Board, Orissa
A/118, Nilakantha Nagar, Unit – VIII,Bhubaneswar – 751 012.

4.TheREGIONALDIRECTOR, Central Ground Water Board, Government of India
South Eastern Region,Bhubaneswar – 751 030.

A/6, Commercial Estate, Civil Township, Rourkela - 769 004, Odisha
Phone : +91-661-240-0139, 240-2227, 240-1689, Fax : +91-661-240 2226, 240-1359

Compliance Status of Environmental Clearance Conditions – "Deojhar Iron Ore Mines of M/s Tarini Minerals (P) Ltd." located near village Deojhar (Thakurani RF) of Keonjhar Dist., Orissa.

Sl. No	SPECIFIC CONDITIONS	PRESENT STATUS
i	The applicant (Project Proponent) will take necessary measures for prevention, control and mitigation of Air Pollution, water pollution, noise pollution and land pollution including solid waste management as mentioned by him in form-I, final EIA reports and Environment management Plan (EMP) in compliance with prescribed statutory norms and standards.	Preventive mitigative measures are implemented for control of fugitive dust suppression by engaging 25 KL water tankers on the haulage roads, dry fog system for screen plants. Provision of retaining wall along with garland drain all around the mines to prevent mines run off from the water bodies. Other necessary measures have also been implemented like gully plugs at regular intervals. etc. Regular maintenance of HEMMs and other vehicles are being carried to minimize the noise level. There is no such OB dumps, the sub grade dumps are stabilized at ear marked area with proper sloping and terracing, and coir matting for better stabilization. The enclosed photos are witnessing the above. The photo copy of the same is enclosed as **photo-1, 2, 3.**
ii	The applicant will take necessary steps for socio economic development after a detailed Primary Socio-economic Survey of the people of Core area on need based assessment for providing employment, education, health, drinking water and sanitation, road and communication facilities etc. A report is to be submitted by the proponent to SEIAA regularly on 1st June and 1st December of each calendar year.	Different projects has undertaken in consultation with "JANASADHANA" for the socio-economic development of the local people belongs to adjoining villages. A detailed implementation status report of the same is enclosed as **annexure-1.**
iii	The applicant will comply with the points. concerns and issues raised by the people during public hearing on 4th February, 2009 in accordance with the commitments made by him thereon.	A detailed public hearing compliance report in this regard is enclosed **as annexure - 2.**
iv.	The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of his project as and when required.	The site has already got necessary statutory clearances / approval / permissions from the concerned authorities like say; Consent to operate from SPCB, Ground Water permission from CGWA, GoI, Hazardous waste authorization for used oil, approved mining plan from IBM, Forest clearance from MoEF, etc. The photo copies of the same are enclosed as **annexure – 3A, 3B, 3C, 3D & 3E.**

Sl. No	SPECIFIC CONDITIONS	PRESENT STATUS
v.	For post environmental clearance monitoring, the applicant will submit half yearly compliance report in respect of the stipulated terms and conditions of this Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Orissa on 1st June and 1st December of each calendar year.	The half yearly compliance report is being submitted herewith for the same .i.e. for the period April to September, 2013.
vi.	The core zone should be monitored intensively with no. of stations as prescribed by CPCB, Delhi and unit of pollutant level should be expressed as NAAQ of CPCB, Delhi. The detail methodology adopted for analysis of samples shall be cleared indicated.	The monitoring of AAQ is being done in the core as well as buffer zone of the ML area. There are 1 no. of monitoring station in core zone i.e. Mines Office and there are 5 no. of monitoring stations in the buffer zone such as Deojhar village, Murgabeda Village, Mahadev nasa Village, Boneikela village and Bhadrasahi Village. Monitoring of AAQ is carried out every month except during monsoon. The monitoring report for the period April to September, 2013 reveals that the parameter like PM10, PM2.5, SO2 and NOx are well within the norm as per NAAQs notifications made by the CPCB. The monitoring report of the same is enclosed as **annexure-4.**
vii.	The proponent shall submit ground toothing baseline data on flora and fauna and CSR activities already carried out within three months to the SEIAA, Orissa.	The site specific Wild Life Conservation Plan got approved for authenticated flora and fauna from PPCF, Chief Wild Life Warden, Orissa and the detailed CSR activities on the same got submitted. Copy of the same is enclosed as **annexure – 5.**
viii	No two pits shall be simultaneously worked. After exhausting the first mine pit and before starting mining operations in the next pit, reclamation and plantation works in the exhausted pit shall be completed so as to ensure that reclamation, forest cover and vegetation should be visible during the first year of mining operations in the next pit. This process will follow till the last pit is exhausted. Adequate rehabilitation of mined pit shall be completed before any new ore body is worked.	We will follow as per the approved mining plan including PMCP.
ix	Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.	A safety zone of 7.5 m width around the ML boundary is being maintained.
x	Zero waste mining concept shall be implemented either by putting up pelletisation plant or disposal of low grade ores/fines to prospective buyers.	Steps have been initiated to work out in this context.

Sl. No	SPECIFIC CONDITIONS	PRESENT STATUS
xi	The following shall be implemented viz. (a) dump run off should be diverted into settling ponds until it is clear (b) adequate rain water harvesting and ground water recharging facilities should be developed in the core zone, (c) attempt should be made to achieve zero water balance.	a- Dump run off are being diverted to settling pits with proper checks before disposal to natural water bodies. b- In this regard KRG Rain Water foundation, Chennai got engaged in consultation with Regional Director, CGWB, Bhubaneswar and work in this regard got completed. c- Steps have been taken to achieve zero water balance like implementation of rain water and surface run of management. Apart from that project has implemented STP for treatment of domestic effluent. The photo of the same is enclosed as **photo no. 4 & 5.**
xii	Maintenance of roads through which transportation of ores are undertaken shall be carried by the project regularly at its own cost.	Regular maintenance of haul road is being carried out by engaging the grader periodically, the roads are without potholes.
xiii	Fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amentias located nearest to sources of dust generation as applicable) and records shall be submitted to the SEIAA. Orissa.	Fugitive dust emission is being under control by taking adequate measures like dry fog system in crusher & screen plants, water sprinkling in mines haulage roads etc. The monitoring of fugitive dust is being done in the mining lease area, there are 4 no. of monitoring station i.e. Mines haul road, Crushing plant, mines face, Screening plant. Monitoring of fugitive dust is being carried out in different locations of nearest human habitation in consultation with SPCB except during monsoon. The monitoring report for the period April to September, 2013 reveals that the parameter are well within the norms made by the SPCB. The analysis report are enclosed as **annexure-6.**
xiv	Transportation of ore shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore /dust takes place.	The steps are being followed by proper care towards public roads to ensure that the trucks should not be overloaded during transportation; besides these trucks are being covered with tarpaulins while transportation of the iron ore.
xv	Rain water harvesting shall be undertaken to recharge the ground water source.	In this regard KRG Rain Water foundation, Chennai got engaged in consultation with Regional Director, CGWB, and Bhubaneswar. The rain water harvesting structure got implemented towards augmentation of ground water in the camp area. The photo of the same is enclosed as **photo-6**.

Sl. No	SPECIFIC CONDITIONS	PRESENT STATUS
xvi	Monitoring of ground and surface water quality shall be regularly conducted and records should be maintained and data shall be submitted regularly to SEIAA, Orissa.	Monitoring of the ground water quality at 7 locations namely Inside Mining lease area, Bileipada village, Deojhar village, Mahadevnasa Village, Daldir Village, Murgacamp Village & Noamundi Village. Monitoring of the surface water is also being carried out in 6 locations. The records are also maintained for this purpose & its being monitored 4 times in a year i.e. pre-monsoon, monsoon, post monsoon and winter. The monitoring of ground and surface water quality records submitted to SEIAA, Orissa bi-annually. The data is enclosed as **annexure - 7 & 8.**
xvii	The proponent shall ensure that no silt originating due to mining activity is transported in the surface water course. Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo-textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.	We have provided necessary precautionary measures like siltation pond towards protection of silt carry over into the nearby surface water bodies. Apart from that interference like guard wall, check weirs etc. got provided at bank of nearby nallah. It has also developed with garlanding drain and retaining wall along with 12, 000Sq.Meter Coir Geo-textiles towards the vegetation & stabilization for critical areas of dumps along with application of mixed grass seeds towards vegetation and dump slope stabilization. The photo of the same are enclosed **photo – 2, 3, 4 & 5.**
xviii	Trenches garland drains shall be constructed at foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams shall be constructed across seasonal or perennial nallahs (if any) flowing through the ML area be arrested. De-silting at regular intervals shall be carried out.	To arrest silt from mines run off, a no. of catch drains and sedimentation pits have been constructed with garland drain around the mines working areas. Nallah protection guard walls have also been constructed across the length. Time to time de-silting is followed. **The photo of the same is attached as photo-4, 5.**
xix	Provisions shall be made for the housing the labourers within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. the housing may be in the form of temporary structures to be removed after the completion of the project.	There is no such construction activity inside the project area. They are being engaged from the adjoining villages. However, we have provided the site specific STP for treatment of domestic effluents with a capacity of 40 KLD and the treated water is being utilized for adjoining plantation & gardening purposes. **The photo of the same is enclosed as photo - 7.**
xx	Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria	Workers are provided with protective respiratory devices & time to time training on safety & health aspects is being provided. A full time qualified Occupational health

Sl. No	SPECIFIC CONDITIONS	PRESENT STATUS
	dust eradication, HIV, and health effects on exposure to respirable mineral dust etc. shall be carried out. The proponent shall engage a full time qualified doctor who is trained in occupational health. Periodic monitoring for exposure to respirable mineral dust on the workers shall be conducted and records maintained including health records of the workers. Awareness program for workers on impact of mining on their health and precautionary measures like use of personal equipments etc. shall be carried out periodically. Review of impact of various health measures undertaken (at interval of five years or less) shall be conducted followed by follow up action wherever required. Occupational Health centre shall be established near the mine itself.	doctor with provision of Occupational Health centre has been provided near the mines area. Occupational Health Surveillance Program of the workers is being undertaken periodically along with the pre-medical examination of persons employed, who are engaged in the process of mining& are likely exposed to dust to observe any contraction due to exposure to dust and take corrective measures, if needed. This is being carried as per in compliance to Mines Act 1952 & rules 1955 and amendments there to. The last such examination held for the period April to September, 2013 for employees of the Project. The various tests include PFT, X-Ray, and lung spirometery etc. On the basis of the above tests there is none of the above mentioned employees was by Silicosis/Pneumoconiosis or occupational health related diseases. The detailed PME report along with noise level monitoring report is enclosed as **Annexure- 9 & 10 & photo no -8.**
xxi	Shelter belt i.e. (wind break of 15m width and consisting of at least around the lease facing the human habitation, school/agricultural fields etc) if any in the vicinity in the safety zone/backfilled and reclaimed areas, around voids and roads shall be raised. Green belt development and selection of plant species shall be as per SPCB guidelines. Density of trees has to be around 2500 plants per hectare, herbs and shrubs shall also form a part of afforestation program besides tree plantation. Help and guidance of local DFO may be sought in the matter. Details of year wise afforestation program including rehabilitation of mined out area shall be submitted to the SEIAA, Orissa within six months.	All the Sub-grade dumps have been planted with application of mixed grass seeds along the slope to stabilize and also to reduce wash off in case of rain cut during monsoon. Coir matting of 12, 000 M^2 in the sub-grade dumps has been provided and its 100 % biodegradable. Gap filling plantations of 6050 No's sapling of different varieties of native species was carried on the safety zone, & peripheral area of ML in the year 2013-14 (up to September, 2013). The details of year wise plantation program are being submitted to authorities. **The photo of the same is enclosed as annexure –11 and photo 9.**
xxii	This environmental clearance is subjected to forest clearance under the Forest (Conservation) Act, 1980.	Mines have obtained the forest clearance over an area of 34.365 ha vide MoEF letter no: F No.8-216/1992-FC dated 31st march 1993. Copy of the same is enclosed as **annexure – 3D.**

Sl. No	SPECIFIC CONDITIONS	PRESENT STATUS
xxiii	The mining operation shall be restricted to above ground water table and it should not intersect the groundwater table.	As such mining activity does not intersect ground water table of the area. The present working depth is 590 aMSL which is far above the ground water level and ground water level exists 540 aMSL. Therefore intersection of ground water table of the ML area will not occur.
xxiv	The top soil shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years). The topsoil shall be used for land reclamation and plantation.	There is no generation of the top soil during mining operations. In case of top soil generation generated in future, it will be stored in an earmarked area and necessary precaution will be taken to preserve its nutrient values so that it will be used for land reclamation and raising plantations.
xxv	The over burden (OB) generated during the mining operation shall be temporarily stacked at earmarked dump site(s) only and it should not be kept active for a long period of time and its phase-wise stabilization shall be carried out. Proper terracing of OB dump shall be carried out so that the overall slope shall not exceed $28^{0.}$ Back filling shall be done as per approved mining plan; back filling to start from 3^{rd} year onwards of the mining operations and the entire quantity of waste shall be backfilled and liquidated within five years. There shall be no external OB dumps after the 6^{th} year of the mining operations. The backfilled area shall be afforested. Backfilling has to be done in a manner that it is restored to the normal ground level. Monitoring and management of rehabilated areas should continue till the vegetation is established and becomes self generating compliance status to be reported to the appropriate authorities.	Previously treated OB is being treated as sub-grade as the cut off grade raised up to +45% and it is marketable. The subgrade are stacked in an identified area inside ML area by maintaining proper slope. It has also developed with garland drain and retaining wall along with 12,000 Sq. meter Coir Geo-textiles towards the vegetation & stabilization for critical area's of dump. And the plantation of native species of different varieties of plants of 6050 species has been planted over waste dumps, safety zone & peripheral area of ML in the year 2013-14. Proper care and survival of vegetation is being carried out by engaging specified water tanker**.** As per back filling, monitoring and management of rehabilitated area is concerned, we will abide by the conditions as per the approved mining scheme and progressive mine closer plan Monitoring and management of rehabilitated areas will be continued until vegetation becomes self-sustaining **Photos of the same are enclosed as Photo-9 .**
xxvi	The funds earmarked for the environment protection measures shall be judiciously utilized. Under no circumstances this funds shall be diverted for other purposes. Year wise expenditure for these funds should be reported to the SEIAA, Orissa.	The funds earmarked for environmental protection are being utilized for the same. The year wise expenditure is enclosed as **annexure -12.**
xxvii	The above mentioned stipulated conditions shall be complied in time bound manner. Failure to comply with any of the conditions mentioned above may result in withdrawal of this environmental clearance and attract	We are abiding by the said conditions.

Sl. No	SPECIFIC CONDITIONS	PRESENT STATUS
	action under the provisions of Environmental Protection (EP) Act, 1986.	

Additional information about achievements in 15th MEMC WEEK observation year 2012-13.enclosed certificates.

- **First position in installation and use mechanical beneficiation facilities.**
- **Second prize in Top soil management.**

Annexure-01

Socio-Economic Development Activities:

INFRASTRUCTURE

- Repairing and black topping of Village Road connecting Road from Deojhar to Murgabeda being carried as & when required.
- Repairing of interior village roads

EDUCATION

- The school at village Murgabeda got improved by providing the teaching facility with the appointment of teachers from 2009 onwards.
- We are providing teachers at Mahadevnasa, Kuldum Village primary school from 2010.
- We have appointed one teacher at Sialijoda primary school in 2013.
- Renovation of school building & Angnabadi compound wall, etc.
- Additional School Bus provided to adjoining villages**.**
- Additional teachers have been posted in the adjoining villages.
- Distribution of Uniforms, Books, slates, pencil, etc. to the school students
- Mid day meal is being provided at free of cost for class IX & X at Deojhar High School,
- Facilitating the Independence & Republic Day functions at adjoining schools by funding the entire celebration by extending various tournaments among school children

HEALTH

- Health-Check-up camp covering adjoining villages and free supply of medicines have been conducted.
- Extending the Dispensary along with the ambulance facility to local villages with the availability Doctor & Staff and free medicine.

DRINKING WATER FACILITY & SANITATION

- 2. No's of deep bore wells got provided at village Murgabeda and one deep bore well for Sialijoda village
- Regular & periodical supply of drinking water to the adjoining villages with the water tankers

OTHER PERIPHERAL ACTIVITIES

- MurgaMahadev Temple renovation work (Bathing area has been tiled & guard bars, Cloth changing room, Glazed tiled Bench, etc) already completed.
- Regular maintenance of temple housekeeping, etc.
- Conducting game and entertainment programmes for local villagers.

EMPLOYMENT OPPORTUNITIES

- Locals from adjoining villages are engaged in various activities of mines.
- Besides the above Temple maintenance staff comprises 3.No. of Lady Employees are from Local villages.
- Posting of additional teachers in schools from locality**.**
- Development of self-help groups for villagers is under planning.

Year wise expenses

Sl. No	Description	Expenses for the year 2011-12 (Rs. In Lakhs)	Expenses for the year 2012-13 (Rs. In Lakhs)	2013-14 (Rs. In Lakhs) Apr 13 to Sep 13
1	Infrastructure	……..	51.8	0.15
2	Education	2.33	6.5	2.22
3	Health	1.85	8.3	3.41
4	Drinking Water Facility	1.96	4.5	1.68
5	Other Peripheral activities	1.60	1.7	2.14
6	Employment	99.80	31.5	42.0
7	**Total**	**107.56**	**104.3**	**51.6**

Annexure – 2

Sl. No.	Public Hearing consents by the Project Proponent	Compliance Status
1	The Project Proponent assured with consultation with Govt. department and as per their advice they will adopt all the measures to keep the sound pollution under control especially during blasting.	As such there is no blasting due to availability of soft material and the excavation work is carried out by engaging excavators only. Anyhow noise is being monitored and the results are well within the prescribed norms, copy is enclosed in **Annexure – 10.**
2	To construct Check dam for Mahadevnasanalla and for this the project proponent invited the village committee to come with a proposal for the same.	We ensure that natural watercourse of Mahadevnalla will not be obstructed due to our mining operations. As such necessary precautionary measures were well taken in consultation with village committe to avoid any sort of interference like providing guard wall & check weir at bank of MahadevNallah.
3	Suitable dump management system to minimize the pollution and all wastes are being dumped inside the lease area	Sub grade is being stacked in an identified area inside ML Area by maintaining proper terracing & slope. It has also developed with garlanding drain and retaining wall along with 12000 Sq. Meter Coir Geo-textiles towards the vegetation & stabilization for critical areas of dump.
4	Company has formed an Environment cell and they are monitoring this on regular basis to keep this under control.	A separate environmental management cell is in operation under the control of Mines Manager, which is looking after all environmental activities including Environmental Monitoring.
	The Project proponent will give priority in employing skilled local people such as	Local peoples are being given priority in employing skilled local people such as drivers, drillers,

5	drivers, drillers, operators, etc. according to their qualification.	operators, etc. according to their qualification.
6	The Project proponent assured that they will re-open all the schools in Murgabeda Village those are not running at present and will appoint 4 teachers in those Schools on permanent basis.	The School is running effectively with engagement of teaching facilities with appointment of teachers. Study materials like books, slates, pencils etc are being provided. Mid day meal is provided at free of cost for class IX & X at Deojhar High School. Bus is provided for Deojhar high school and for Sarswati Sisu Mandir, Bileipada. The photo of the same is attached as **photo # 10.**
7	The project proponent is already supplying drinking water to Murgabeda villages through water tanker and will continue this facility.	2 no. of bore wells with drinking water facilities are provided for the villagers of the Muragbeda, about a population of around 1000 no's. **The photo of the same is enclosed as photo – 11.**
8	The Project proponent is ready to construct inter village connecting roads in Murgabeda village and they invited proposal from the village committee for the same.	Inter connecting village roads are made up of black top in length of **1.8 Km** to suppress the dust. **The photo of the same is enclosed as photo # 12.**
9	The project proponent has already opened a dispensary here for locals for availing medical facility free of cost where a doctor is available. One Ambulance is always available there at service.	Medical facilities like dispensary and ambulances are being provided. Medical health camp is being organized at regular intervals for the local villagers. **The photo of the same is enclosed as photo-8.**
10	Regarding electrification of villages, we have requested the concerned Village committee along with Sarpancha to come forward with the latest status and the proposal so that they can support and assist the village committee for electrification.	It is being carried out with the village committee members by providing materials for Street Light Connections to nearby villages.
11	The Project Proponent assured that they are following all the Govt. rules regarding employment and statutory payments.	It is being followed.
12	The project proponent requested the Murgabeda Temple committee to come with a proposal so that they can consider for its renovation.	Temple renovation work is completed with the proposals of Temple Committee members. The bathing area has been developed with anti-slippery tiles and guard bars and a cloth changing room have provided. Two male and three female labours have deployed for proper up- keep of the temple. Photo of the same is enclosed as **photo – 13.**

Anexure-3A

BY REGD.POST

FAX : 2562822/2560385
Tel : 2564033/2563924
(PABX) : 2561909/2562847
E-mail: sorbcss@sancharnet.in
Website: www.orsbcboard.org

STATE POLLUTION CONTROL BOARD, ORISSA

[DEPARTMENT OF FOREST & ENVIRONMENT, GOVERNMENT OF ORISSA]
Paribesh Bhawan, A/118, Nilakantha Nagar, Unit – VIII
Bhubaneswar – 751 012, INDIA

FORM 2

[See rules 5(4)]

GRANT OF AUTHORIZATION FOR GENERATION, HANDLING, COLLECTION, STORAGE, AND DISPOSAL OF HAZARDOUS WASTE

1. Number of authorization **IND-IV-HW-845 /2009/15** and date of issue 2009.
2. **DEOJHAR IRON ORE MINES OF M/S TARINI MINERALS (P) LIMITED** is hereby granted an authorization to operate a facility for generation, handling, collection, storage and disposal of hazardous waste on the premises situated at, **PO DEOJHAR, JODA, TEHSIL-BARBIL, DIST-KEONJHAR.**
3. The authorization shall be in force for a period up to **31.03.2014.**
4. The authorization is subject to the conditions stated below and the such conditions as may be specified in the Rules for the time being in force under the Environment (Protection) Act, 1986.
5. The applicant shall handle hazardous waste as specified below:

S.No.	Stream	Schedule	Waste Description	Quantity	Disposal
1.	5	1	Used Oil	6.0KL/A	To registered recycler.
2.	5	1	Waste containing oil	500 kg/A	To an impervious pit

Annexure-3B

The approved mining plan copy:

REGD POST

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
MCCM CENTRAL ZONE

No. 314(3)/2010-MCCM(CZ)/MS-27 Nagpur, Dated 28th October, 2010

To,

M/s Tarini Minerals (P) Ltd,
Bonaikela, Joda
District – Keonjhar, Orissa.

Sub. : Approval of Modifications in Approved Scheme of Mining alongwith Progressive Mine Closure Plan of Deojhar Iron ore mine over an area of 34.365 hectors of M/s Tarini Minerals in Dist. Keonjhar, Orrisa, submitted under rule 10 of MCDR, 1988.

Ref : 1. Your letter No. NIL dated 29.09.2010.
2. This office letter of even no. dated 15.10.2010.
3. Your RQP's letter No. NIL dated 15.10.2010.

Sir,

In exercise of the powers delegated to me under rule 10(2) of Mineral Conservation & Development Rules, 1988 vide Gazette Notification No.T-43010/CGBM/88 dated 27-4-1989, I hereby approve the modifications in the approved Scheme of Mining in respect of Deojhar Iron ore mines of M/s Tarini Minerals (P) Ltd, over an area of 34.965 hectares, in Keonjhar district of Orissa, submitted under rule 10 of MCDR, 1988. This approval is subject to the following conditions in addition to the conditions imposed while approving the Scheme of Mining vide letter No. 314(3)/2008-MCCM(CZ)/MP-22 dated 23.10.2008.

i) This modification in the approved Scheme of Mining is approved without prejudice to any other laws applicable to the mine/area from time to time whether made by the Central Government, State Government or any other authority.

ii) It is clarified that this approval of modification in the approved Scheme of Mining does not, in any way, imply the approval of the Government in terms of any other provisions of the Mines & Minerals (Development & Regulation) Act, 1957 or the rules framed there under or any other laws.

iii) It is further clarified that this approval of modification in the approved Scheme of Mining is subject to the provisions of Forest (Conservation) Act 1980, Forest Conservation Rule 1981 and other relevant statutes, orders and guidelines as may be applicable to the lease area from time to time.

iv) It is further clarified that the approval of modification to the approved Scheme of Mining is subject to the provision of the Mines Act 1952 and Rules & Regulations made thereunder including submission of notice of opening, appointment of manager and other statutory officials.

v) The execution of modification in the approved Scheme of Mining shall be subject to vacation of prohibitory orders/notices, if any.

vi) This approval for mining operations and associated activities is restricted to the mining lease area only. The mining lease area is as shown on the statutory plans under Rule 28 of Mineral Conservation and Development Rules 1988, by the Lessee/RQP/Applicant, and Indian Bureau of Mines has not undertaken verification of the mining lease boundary on the ground.

vii) If anything is found to be concealed as required by the Mines Act in the content of the mining plan and the proposals for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.

viii) The modification in the approved Scheme of Mining is approved without prejudice to any other order or direction from the court of competent jurisdiction.

ix) The approval of modification in the approved Scheme of Mining is subject to the compliance of CCOM's Circular No. 2/20 0 regarding Geo-referenced cadastral map within 6 months

8th Floor, 'D' Block, Indira Bhawan, Civil Lines, Nagpur – 440102
Email : com-cz@ibm.mah.nic.in : Fax : (0712) 2565603 Telephone : (0712) 2565603

Annexure-3C -NOC from CGWA

No. 21-4(94)/SER/CGWA/2008- 1790
Government of India
Ministry of Water Resources
Central Ground Water Authority
A 2, W 3, Curzon Road Barracks
Kasturba Gandhi Marg
New Delhi 110001

Dated: 31 DEC 2008

To,

M/s Tarini Minerals (P) Limited
Deojhar Iron Ore Mines
Boncikela, Joda,
District Keonjhar-758034, Orissa

Sub: No Objection for withdrawal of ground water by M/s Tarini Minerals (P) Limited, for the expansion programme of Deojhar Iron Ore mines located at Village Deojhar, Block Joda, Tehsil Barbil, District Keonjhar, Orissa -reg.

Sir,

Kindly refer to your letter dated 29.10.2008 on the above-cited subject. As the above mentioned site falls in 'Safe Category' area on ground water resource considerations, Central Ground Water Authority has no objection for the proposed additional withdrawal of 2000 m^3/day of ground water in respect of **M/s Tarini Minerals (P) Limited, for the expansion programme of Deojhar Iron Ore mines located at Village Deojhar, Block Joda, Tehsil Barbil, District Keonjhar, Orissa.**

However, taking into consideration the adverse effect of the ground water withdrawal that may arise on long term basis, the firm/industry is advised to implement Rain Water Harvesting and Conservation measures, Recycling and Re-use of water and Monitoring of the ground water levels in and around the area as per the hydrogeological investigation. The data may be submitted to this office for perusal.

The NOC is valid till the area remains under Safe Category on ground water resource consideration, or, for a period of five years from the date of issue of this letter, whichever is earlier.

Yours faithfully,

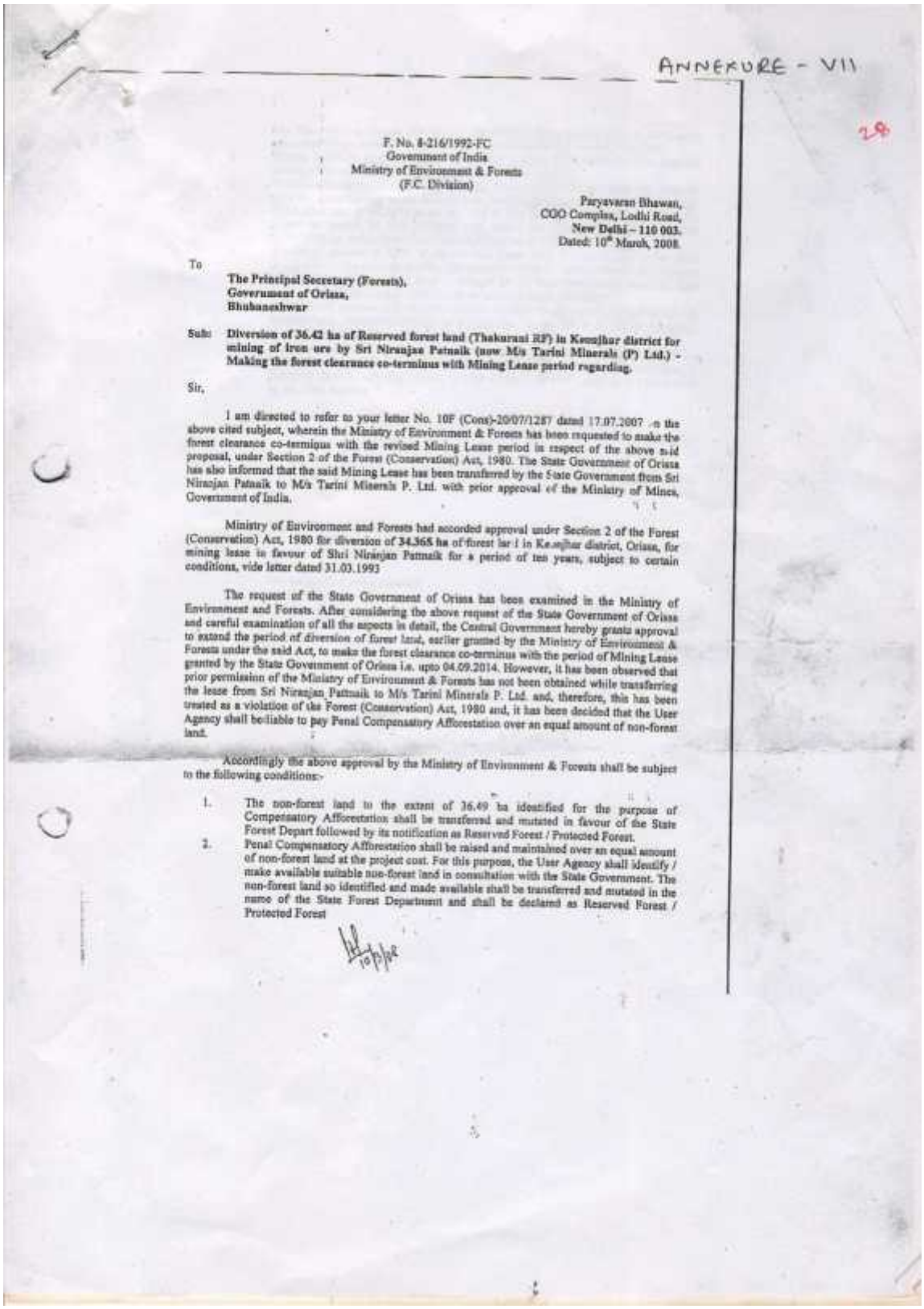
(S Bhattacharya)
Scientist 'D'
for Member Secretary

Copy for information to:

1) The Regional Director, CGWB, SER, Bhubaneswar.
2) The TS to Chairman, CGWB, NH –IV, Faridabad.

(S Bhattacharya)
Scientist 'D'
for Member Secretary

Annexure-3D - Forest Clearance Copy



ANNEXURE - VII

29

F. No. 8-216/1992-FC
Government of India
Ministry of Environment & Forests
(F.C. Division)

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi – 110 003.
Dated: 10th March, 2008

To

The Principal Secretary (Forests),
Government of Orissa,
Bhubaneshwar

Sub: **Diversion of 36.42 ha of Reserved forest land (Thakurani RF) in Keonjhar district for mining of iron ore by Sri Niranjan Patnaik (now M/s Tarini Minerals (P) Ltd.) - Making the forest clearance co-terminus with Mining Lease period regarding.**

Sir,

I am directed to refer to your letter No. 10F (Cons)-20/07/1287 dated 17.07.2007 on the above cited subject, wherein the Ministry of Environment & Forests has been requested to make the forest clearance co-terminus with the revised Mining Lease period in respect of the above said proposal, under Section 2 of the Forest (Conservation) Act, 1980. The State Government of Orissa has also informed that the said Mining Lease has been transferred by the State Government from Sri Niranjan Patnaik to M/s Tarini Minerals P. Ltd. with prior approval of the Ministry of Mines, Government of India.

Ministry of Environment and Forests had accorded approval under Section 2 of the Forest (Conservation) Act, 1980 for diversion of **34.365 ha** of forest lar l in Keonjhar district, Orissa, for mining lease in favour of Shri Niranjan Patnaik for a period of ten years, subject to certain conditions, vide letter dated 31.03.1993

The request of the State Government of Orissa has been examined in the Ministry of Environment and Forests. After considering the above request of the State Government of Orissa and careful examination of all the aspects in detail, the Central Government hereby grants approval to extend the period of diversion of forest land, earlier granted by the Ministry of Environment & Forests under the said Act, to make the forest clearance co-terminus with the period of Mining Lease granted by the State Government of Orissa i.e. upto 04.09.2014. However, it has been observed that prior permission of the Ministry of Environment & Forests has not been obtained while transferring the lease from Sri Niranjan Patnaik to M/s Tarini Minerals P. Ltd. and, therefore, this has been treated as a violation of the Forest (Conservation) Act, 1980 and, it has been decided that the User Agency shall be liable to pay Penal Compensatory Afforestation over an equal amount of non-forest land.

Accordingly the above approval by the Ministry of Environment & Forests shall be subject to the following conditions:-

1. The non-forest land to the extent of 36.49 ha identified for the purpose of Compensatory Afforestation shall be transferred and mutated in favour of the State Forest Depart followed by its notification as Reserved Forest / Protected Forest.
2. Penal Compensatory Afforestation shall be raised and maintained over an equal amount of non-forest land at the project cost. For this purpose, the User Agency shall identify / make available suitable non-forest land in consultation with the State Government. The non-forest land so identified and made available shall be transferred and mutated in the name of the State Forest Department and shall be declared as Reserved Forest / Protected Forest

3E – Consent to operate Copy

BY REGD. POST WITH AD

STATE POLLUTION CONTROL BOARD, ORISSA

A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012
Phone-2561909, Fax: 2562822, 2560955

CONSENT ORDER

No. 7550 / IND-I-CON-1373 Dt. 03-05-2011

CONSENT ORDER NO. 444

Sub : **Consent for discharge of sewage and trade effluent under section 25/26 of Water (PCP) Act, 1974 and for existing / new operation of the plant under section 21 of Air (PCP) Act, 1981.**

Ref : Your application **No. DIOM-TMPL/SPCB/CON/2010-11, dtd. 8/12/2010**

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry **Deojhar Iron Ore Mines, M/s. Tarini Minerals (P) Ltd.**

Name of the Occupier & Designation **D.R. Patnaik, M.D**

Address **At/Po – Boneikela, Dist – Keonjhar**

This consent order is valid for the period up to **31.03.2016**

This consent order is valid for the product quantity, specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated therein.

A. Details of Products Manufactured

Sl. No	Product	Quantity
1.	Iron Ore	1.5 MTPA

Annexure-4:

Details of Ambient Air Quality Monitoring Stations fixed under core & buffer zone of Deojhar Iron ore Mining Project of M/s. TARINI MINERALS PVT.LTD District: Keonjhar, Orissa.		
Identification/ Abbreviation of air Quality Sampling Stations.		
Station No.	**Identification**	**Location**
1	A1	Mines-site-office
2	A1-A	Village- Deojhar
3	A2	Village -Murgabeda
4	A3	Village - MahadevNasa
5	A4	Village - Boneikela
6	A5	Village - Bhadrasahi

Ambient Air Quality Report of Deojhar Iron Ore Mines of M/s Tarini Minerals (P) Ltd
April 2013 – September 2013

Sl. No.	Sampling location	Month	Quality Parameter, Results in micro.gm/CUM				
			Range	**PM-10**	**PM-2.5**	**SO2**	**NOx**
1	**A1, Mines Office, (Industrial)**	April-13	Max	70.25	28.3	**3.85**	6.55
			Min	61.44	20.4	**2.44**	5.65
			Avg.	65.3	23.72	**3.12**	6.15
		May-13	Max	71.36	27.25	**3.65**	6.55
			Min	62.42	20.5	2.85	5.15
			Avg.	66.42	23.45	3.26	6.18

Ambient Air Quality Of Deojhar Iron Ore Mines of M/S Tarini Minerals P Ltd
April 2013 – September 2013

2	**A1-A Village Deojhar**	April-13	Max	53.45	23.35	3.42	6.25
			Min	40.2	15.45	2.44	5.1
			Avg.	49.5	18.87	2.98	5.91
		May-13	Max	51.45	21.3	3.55	6.24
			Min	44.44	16.4	2.44	5.25
			Avg.	48.96	18.67	3.1	5.9

Ambient Air Quality Of Deojhar Iron Ore Mines of M/S Tarini Minerals P Ltd
April 2013 – September 2013

Sl. No.	Sampling location	Month	Quality Parameter, Results in micro.gm/CUM				
			Range	**PM-10**	**PM-2.5**	**SO2**	**NOx**
3	**A2, Village - Murgabeda (buffer zone)**	April-13	Max	50.45	20.75	2.9	5.75
			Min	44.44	17.20	2.45	5.1
			Avg.	48.32	19.13	2.73	5.33
		May-13	Max	49.45	21.6	3.1	6.1
			Min	44.4	18.25	2.1	5.2
			Avg.	47.3	20.2	2.6	5.6

Ambient Air Quality Of Deojhar Iron Ore Mines of M/S Tarini Minerals P Ltd
April 2013 – September 2013

Sl. No.	Sampling location	Month	Quality Parameter, Results in micro.gm/CUM				
			Range	**PM-10**	**PM-2.5**	**SO2**	**NOx**
4	**A3 Village MahadevNasa (Buffer Zone)**	April-13	Max	50.45	20.54	3.6	6.66
			Min	46.1	14.45	2.4	5.75
			Avg.	48.45	17.21	2.84	6.18
		May-13	Max	50.25	19.4	3.1	6.15
			Min	45.25	14.2	2.2	5.2
			Avg.	48.59	17.13	2.49	5.5

Ambient Air Quality Of Deojhar Iron Ore Mines of M/S Tarini Minerals P Ltd
April 2013 – September 2013

Sl. No.	Sampling location	Month	Quality Parameter, Results in micro.gm/CUM				
			Range	PM-10	PM-2.5	SO2	NOx
5	**A4 Village Boneikala (Buffer Zone)**	April-13	Max	61.45	24.52	3.55	6.33
			Min	58.15	19.45	2.85	5.45
			Avg.	60.21	21.1	3.18	6.02
		May-13	Max	62.4	23.44	3.55	6.85
			Min	57.4	20.15	2.75	5.15
			Avg.	59.8	22.1	3.0	6.2

Ambient Air Quality Of Deojhar Iron Ore Mines of M/S Tarini Minerals P Ltd
Apr-13 to Sept-13

Sl.	Sampling location	Month	Quality Parameter, Results in micro.gm/CUM				
No.			Range	PM-10	PM-2.5	SO2	NOx
6	**A5, Village Bhadrasahi (Buffer Zone)**	April-13	Max	61.25	23.33	3.65	6.2
			Min	55.3	20.32	2.45	5.55
			Avg.	58.71	21.19	3.06	6.0
		May-13	Max	60.44	22.55	3.24	6.54
			Min	56.35	19.65	2.55	5.3
			Avg.	59.0	21.2	2.9	6.1

Annexure-6	Fugitive Dust Monitoring Results	
Location	**Date**	**Fugitive Dust result (in µgm/m3)**
Mines Haulage Road	02.04.2013	766.40
	17.04.2013	754.50
	01.05.2013	819.21
	18.05.2013	807.23
	01.09.2013	655.27
	17.09.2013	647.27
NORMS		**1200**
Mines Face	04.04.2013	615.50
	21.04.2013	620.40
	04.05.2013	702.13
	22.05.2013	675.23
	04.09.2013	667.23
	22.09.2013	712.27
NORMS		**1200**
Screening Plant	03.04.2013	785.80
	20.04.2013	765.60
	03.05.2013	824.72
	20.05.2013	817.16
	03.09.2013	776.16
	19.09.2013	799.27
NORMS		**1200**

Annexure- 5

WARDEN ORISSA 5TH FLOOR, B.D.A. APARTMENT, PRAKRUTI BHAWAN,
NILAKANTHA NAGAR, BHUBANESWAR- 751012.

Memo No. 1238 Dt. 15.2.2010
1WL-C-FC- 524/09

To

The Chief Conservator of Forests (Nodal),
O/o the Principal CCF, Orissa, Bhubaneswar.

Sub: Approval of Site Specific Wildlife Conservation Plan for Deojhar Iron Ore Mines in village Deojhar in Keonjhar district

Sir,

I am directed to inform you that the Site Specific Wildlife Conservation Plan for Deojhar Iron Ore Mines in village Deojhar in Keonjhar district of M/s Tarini Minerals Pvt. Ltd. has been approved by PCCF(WL) & Chief Wildlife Warden, Orissa with financial forecast of Rs.54.00 lakhs for the following activities.

1. For activities to be implemented by User agency in Project Area ---- Rs. 13.00 lakhs.
2. For activities to be implemented by DFO, Keonjhar Division in the Project Impact Area ----- Rs.41.00 lakhs.

Total Rs.54.00 lakhs

User agency will execute activites for Rs.13 lakhs in the lease hold area under the guidance of DFO, Keonjhar Division & Rs.41.00 lakhs may be deposited with DFO, Keonjhar division under CAMPA for activities to be executed by DFO in the zone of influence.

Conservator of Forests (WL)

Memo No. 1239 dt. 15.2.2010

Copy forwarded to the DFO, Keonjhar Division for information & necessary action with reference to Memo No. 2562 dt. 8.709 of CF., Rourakela Circle.

Conservator of Forests (WL)

Memo No. 1240 Dt. 15.2.2010

Copy forwarded to CF, Rourkela Circle for information & necessary action with reference to his office Memo No. 2561 dt.8.7.09

Conservator of Forests (WL)

Memo No. 1241 dt. 15.2.2010

Copy forwarded to the M/s Tarini Minerals Pvt. Ltd, Bonikela, Joda, Keonjhar for information & necessary action with reference to his letter dated 22.9.09.

Enc: One No. approved S.P.
WL Conservator Orissa

Conservator of Forests (WL)

Annexure – 7A

Ground Water Quality Monitoring Report, Deojhar Iron Ore Mines of M/s Tarini Minerals (P), Keonjhar, Odisha

		April- 2013 (28.04.2013)						
A.	**PHYSICAL**	**GW1**	**GW2**	**GW3**	**GW4**	**GW5**	**GW6**	**GW7**
1	Colour (apparent)	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless
2	Odour	Odorless	Odorless	Odorless	Odorless	Odorless	Odorless	Odorless
3	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	0.8	1.2	0.6	0.9	1.2	1.4	1.6
5	pH	6.54	6.52	6.52	6.57	6.13	6.52	6.58
6	Electrical Conductivity (EC)	71.3	572	614	372	639	321	860
7	Total Suspended Solids (TSS)	7	12	10	8	8	7	8
8	Total Dissolved Solids (TDS)	33.6	262	288	172	334	165	406
9	Total Solids (TS)	40.6	274	298	180	342	172	414
B.	**CHEMICAL**							
10	Calcium Hardness as $CaCO_3$	10	92	126	74	130	76	120
11	Magnesium Hardness as $CaCO_3$	12	64	96	46	44	46	72
12	Total Alkalinity	18	144	162	114	130	116	106
13	Total hardness	22	156	222	120	174	122	192
14	Silicate as SiO_4	2.4	1.98	3.16	2.34	1.95	2.42	191
15	Chloride as Cl^-	12	24	16	12	28	12	58
16	Residual Chlorine	BDL	Nil	BDL	Nil	Nil	Nil	Nil
17	Phenolic compound as C_6H_5OH	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18	Sulphate as SO_4	1.6	2.7	1.4	2.8	2.4	2.6	4.2
19	Nitrite-Nitrogen (NO_2-N)	0.021	0.052	0.012	0.012	0.016	0.012	0.092
20	Nitrate-Nitrogen (NO_3-N)	0.076	0.024	0.085	0.092	0.134	0.084	0.586
21	Phosphate-P (PO_4-P)	0.051	0.072	0.042	0.038	0.046	0.056	0.056
22	Ammonical Nitrogen (NH_4-N)	0.036	0.092	0.024	0.032	0.036	0.024	0.814
23	Free Ammonia (NH_3)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24	Chemical Oxygen Demand (COD)	1.8	2.4	1.6	1.8	2.8	1.8	2.6
25	Dissolved Oxygen (DO)	-	-	-	-	-	-	-
26	Biochemical Oxygen Demand (BOD) at 20^0C for 5days	-	-	-	-	-	-	-
27	Oil and grease	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28	Fluoride F^-	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29	Sodium (Na)	2.8	8.42	10.42	10.62	12.6	3.74	16.24
30	Potassium (K)	1.4	5.24	4.62	6.84	7.82	2.82	8.68
31	Calcium as Ca^{2+}	4.0	36.8	43.2	29.6	52.0	30.4	48.0
32	Magnesium as Mg^{2+}	2.9	15.6	31.2	11.2	10.7	11.2	17.5
33	Iron (Fe)	0.40	0.59	0.048	0.053	0.85	0.047	0.875
34	Copper (Cu)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
35	Manganese (Mn)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
36	Arsenic (As)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
37	Lead (Pb)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
38	Zinc (Zn)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
39	Hexavelent Chromium (Cr^{+6})	BDL	BDL	BDL	BDL	BDL	BDL	BDL
40	Chromium (Cr)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
41	Mercury (Hg)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
42	Cadmium (Cd)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
43	Selenium (Se)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
44	Aluminum (Al)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
45	Boron (B)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
BDL	**C. BACTERIOLOGICAL**							
46	Total Coli form at 37^0C	BDL	BDL	BDL	BDL	BDL	BDL	BDL

GW1: Inside ML Area

GW2: Bileipada village

GW3: Village deojhar

GW4: Village Mahadev Nasa

GW5:Vilalge Daladir

GW6: Murgabeda Camp Area

GW7 : Village Nuamundi

Annexure – 7B

Ground Water Quality Monitoring Report, Deojhar Iron Ore Mines of M/s Tarini Minerals (P), Keonjhar, Odisha

A. PHYSICAL		**August-2013(22.08.2013)**						
1	Colour (apparent)	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless
2	Odour	Odorless	Odorless	Odorless	Odorless	Odorless	Odorless	Odorless
3	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	0.85	1.24	0.92	0.87	1.04	1.64	1.82
5	pH	6.52	6.18	6.54	6.72	6.51	6.42	6.57
6	Electrical Conductivity (EC)	82.4	727	528	398	542	285	612
7	Total Suspended Solids (TSS)	6.0	12	8.0	10	12	9.0	11.0
8	Total Dissolved Solids (TDS)	40.6	348.0	262.0	192	260	138	288
9	Total Solids (TS)	46.6	360.0	270.0	202	272	147	299
B. CHEMICAL								
10	Calcium Hardness as $CaCO_3$	14.0	164.0	90.0	88.0	104.0	74.0	148.0
11	Magnesium Hardness as $CaCO_3$	10.0	160.0	114.0	86.0	120.0	50.0	126.0
12	Total Alkalinity	22.0	168.0	158.0	130.0	178.0	96.0	138.0
13	Total hardness	24.0	324.0	204.0	174.0	224.0	124.0	274.0
14	Silicate as SiO_4	1.4	3.39	2.29	2.6	2.13	2.36	3.02
15	Chloride as Cl^-	9.0	72.0	12.0	14.0	13.0	12.0	66.0
16	Residual Chlorine	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17	Phenolic compound as C_6H_5OH	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18	Sulphate as SO_4	1.78	3.2	1.24	2.94	1.95	2.76	3.25
19	Nitrite-Nitrogen (NO_2-N)	0.012	0.043	0.021	0.02	0.014	0.019	0.045
20	Nitrate-Nitrogen (NO_3-N)	0.146	0.24	0.135	0.099	0.135	0.114	0.271
21	Phosphate-P (PO_4-P)	0.041	0.093	0.047	0.056	0.041	0.047	0.06
22	Ammonical Nitrogen (NH_4-N)	0.022	0.076	0.039	0.036	0.023	0.034	0.082
23	Free Ammonia (NH_3)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24	Chemical Oxygen Demand (COD)	2.0	2.8	2.4	2.0	1.8	2.2	2.8
25	Dissolved Oxygen (DO)	-	-	-	-	-	-	-
26	Biochemical Oxygen Demand (BOD) at 20^0C for 5days	-	-	-	-	-	-	-
27	Oil and grease	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28	Fluoride F^-	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29	Sodium (Na)	2.95	24.2	12.84	13.24	15.7	10.27	23.4
30	Potassium (K)	1.76	8.26	6.28	5.72	8.24	4.85	7.54
31	Calcium as Ca^{2+}	5.6	65.6	36.0	35.2	41.6	29.6	59.2
32	Magnesium as Mg^{2+}	2.43	38.88	27.7	20.9	29.16	12.15	30.62
33	Iron (Fe)	0.564	0.997	0.596	0.65	0.531	0.488	0.824
34	Copper (Cu)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
35	Manganese (Mn)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
36	Arsenic (As)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
37	Lead (Pb)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
38	Zinc (Zn)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
39	Hexavelent Chromium (Cr^{+6})	BDL	BDL	BDL	BDL	BDL	BDL	BDL
40	Chromium (Cr)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
41	Mercury (Hg)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
42	Cadmium (Cd)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
43	Selenium (Se)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
44	Aluminum (Al)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
45	Boron (B)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
C. BACTERIOLOGICAL								
46	Total Coli form at 37^0C	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Bdl- Below Detection Limit

Annexure -8A

Surface Water Quality Monitoring Report, Deojhar Iron Ore Mining Project of M/s Tarini Minerals (P), Keonjhar, Odisha

April – 2013 (22.04.2013)

A.	PHYSICAL	SW1	SW2	SW3	SW4	SW5	SW6
1	Colour (apparent)	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless
2	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless
3	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	2.4	4.2	3.8	1.8	2.4	2.8
5	pH	6.72	6.35	6.72	6.56	6.76	6.82
6	Electrical Conductivity (EC)	115	113	129	153	198	142
7	Total Suspended Solids (TSS)	16.0	14.0	12.0	16.0	11.0	16.0
8	Total Dissolved Solids (TDS)	54.2	53.4	61.4	74.1	94.0	42.4
9	Total Solids (TS)	70.2	67.4	73.4	90.1	105.0	58.4
B.	**CHEMICAL**						
10	Calcium Hardness as $CaCO_3$	18.0	20.0	26.0	32.0	46.0	32.0
11	Magnesium Hardness as $CaCO_3$	18.0	18.0	26.0	22.0	24.0	22.0
12	Total Alkalinity	25.0	32.0	44.0	50.0	64.0	46.0
13	Total hardness	36.0	38.0	52.0	54.0	70.0	54.0
14	Silicate as SiO_4	3.24	2.14	2.62	2.85	3.42	2.64
15	Chloride as Cl^-	10.	10.0	9.0	14.0	14.0	14.0
16	Residual Chlorine	BDL	BDL	BDL	BDL	BDL	BDL
17	Phenolic compound as C_6H_5OH	BDL	BDL	BDL	BDL	BDL	BDL
18	Sulphate as SO_4	5.8	3.6	2.8	1.4	2.4	2.8
19	Nitrite-Nitrogen (NO_2-N)	0.034	0.024	0.032	0.032	0.021	0.024
20	Nitrate-Nitrogen (NO_3-N)	0.142	0.128	0.142	0.013	0.094	0.183
21	Phosphate-P (PO_4-P)	0.085	0.056	0.056	0.072	0.072	0.065
22	Ammonical Nitrogen (NH_4-N)	0.052	0.042	0.038	0.045	0.043	0.52
23	Free Ammonia (NH_3)	BDL	BDL	BDL	BDL	BDL	BDL
24	Chemical Oxygen Demand (COD)	4.8	5.6	6.0	6.2	5.2	6.8
25	Dissolved Oxygen (DO)	4.22	4.78	4.87	5.24	4.86	5.2
26	Biochemical Oxygen Demand (BOD) at 20^0C for 5days	1.68	1.64	1.98	1.97	1.85	1.98
27	Oil and grease	1.8	2.4	2.1	2.4	2.0	1.8
28	Fluoride F^-	BDL	BDL	BDL	BDL	BDL	BDL
29	Sodium (Na)	4.32	3.24	3.42	4.34	5.62	3.46
30	Potassium (K)	2.54	1.84	2.1	2.85	3.84	2.72
31	Calcium as Ca^{2+}	7.2	8.0	10.4	12.8	18.4	12.8
32	Magnesium as Mg^{2+}	BDL	BDL	BDL	BDL	BDL	BDL
33	Iron (Fe)	0.685	0.685	0.71	0.58	0.069	0.856
34	Copper (Cu)	BDL	BDL	BDL	BDL	BDL	BDL
35	Manganese (Mn)	BDL	BDL	BDL	BDL	BDL	BDL
36	Arsenic (As)	BDL	BDL	BDL	BDL	BDL	BDL
37	Lead (Pb)	BDL	BDL	BDL	BDL	BDL	BDL
38	Zinc (Zn)	BDL	BDL	BDL	BDL	BDL	BDL
39	Hexavelent Chromium (Cr^{+6})	BDL	BDL	BDL	BDL	BDL	BDL
40	Chromium (Cr)	BDL	BDL	BDL	BDL	BDL	BDL
41	Mercury (Hg)	BDL	BDL	BDL	BDL	BDL	BDL
42	Cadmium (Cd)	BDL	BDL	BDL	BDL	BDL	BDL
43	Selenium (Se)	BDL	BDL	BDL	BDL	BDL	BDL
44	Aluminum (Al)	BDL	BDL	BDL	BDL	BDL	BDL
45	Boron (B)	BDL	BDL	BDL	BDL	BDL	BDL
C. BACTERIOLOGICAL							
	Total Coli form at 37^0C	11.4	10.4	10.2	10.8	10.6	10.1

Bdl- Below Detection Limit

Surface Water Quality Monitoring Report, Deojhar Iron Ore Mining Project of M/s Tarini Minerals (P), Keonjhar, Odisha.

Aug- 2013 (22.08.2013)

A. PHYSICAL		**SW1**	**SW2**	**SW3**	**SW4**	**SW5**	**SW6**
1	Colour (apparent)	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless
2	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	Odourless
3	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	6.28	8.24	7.38	4.24	5.26	6.24
5	pH	6.82	6.38	6.62	6.52	6.79	6.72
6	Electrical Conductivity (EC)	78.2	92.4	96.8	188.0	198.0	138.0
7	Total Suspended Solids (TSS)	10.0	9.0	12.0	14.0	12.0	16.0
8	Total Dissolved Solids (TDS)	38.4	43.2	46.4	94.8	98.6	72.2
9	Total Solids (TS)	48.4	52.2	58.4	108.8	110.6	88.2
B. CHEMICAL							
10	Calcium Hardness as $CaCO_3$	10.0	8.0	14.0	36.0	40.0	26.0
11	Magnesium Hardness as $CaCO_3$	8.0	10.0	8.0	26.0	20.0	22.0
12	Total Alkalinity	24.0	22.0	26.0	58.0	54.0	44.0
13	Total hardness	18.0	18.0	22.0	62.0	60.0	48.0
14	Silicate as SiO_4	2.17	2.29	2.36	1.77	2.0	2.88
15	Chloride as Cl^-	10.0	9.0	11.0	12.0	10.0	11.0
16	Residual Chlorine	BDL	BDL	BDL	BDL	BDL	BDL
17	Phenolic compound as C_6H_5OH	BDL	BDL	BDL	BDL	BDL	BDL
18	Sulphate as SO_4	1.92	2.42	2.96	3.14	5.24	4.26
19	Nitrite-Nitrogen (NO_2-N)	0.012	0.019	0.024	0.02	0.023	0.026
20	Nitrate-Nitrogen (NO_3-N)	0.097	0.1	0.104	0.09	0.096	0.116
21	Phosphate-P (PO_4-P)	0.056	0.078	0.072	0.093	0.086	0.082
22	Ammonical Nitrogen (NH_4-N)	0.021	0.034	0.044	0.037	0.041	0.048
23	Free Ammonia (NH_3)	BDL	BDL	BDL	BDL	BDL	BDL
24	Chemical Oxygen Demand (COD)	5.2	5.6	5.2	6.0	5.6	6.4
25	Dissolved Oxygen (DO)	4.875	5.2	4.87	4.55	4.22	5.2
26	Biochemical Oxygen Demand (BOD) at 20^0C for 5days	1.65	1.98	1.81	1.97	1.65	2.3
27	Oil and grease	1.6	1.8	1.4	1.6	1.2	1.4
28	Fluoride F^-	BDL	BDL	BDL	BDL	BDL	BDL
29	Sodium (Na)	2.68	2.45	3.12	5.24	4.78	3.87
30	Potassium (K)	1.24	1.38	1.54	2.87	2.14	2.72
31	Calcium as Ca^{2+}	4.0	3.2	5.6	14.4	16.0	10.4
32	Magnesium as Mg^{2+}	1.94	2.43	1.94	6.31	4.86	5.35
33	Iron (Fe)	0.943	0.867	0.899	0.824	0.78	0.954
34	Copper (Cu)	BDL	BDL	BDL	BDL	BDL	BDL
35	Manganese (Mn)	BDL	BDL	BDL	BDL	BDL	BDL
36	Arsenic (As)	BDL	BDL	BDL	BDL	BDL	BDL
37	Lead (Pb)	BDL	BDL	BDL	BDL	BDL	BDL
38	Zinc (Zn)	BDL	BDL	BDL	BDL	BDL	BDL
39	Hexavelent Chromium (Cr^{+6})	BDL	BDL	BDL	BDL	BDL	BDL
40	Chromium (Cr)	BDL	BDL	BDL	BDL	BDL	BDL
41	Mercury (Hg)	BDL	BDL	BDL	BDL	BDL	BDL
42	Cadmium (Cd)	BDL	BDL	BDL	BDL	BDL	BDL
43	Selenium (Se)	BDL	BDL	BDL	BDL	BDL	BDL
44	Aluminum (Al)	BDL	BDL	BDL	BDL	BDL	BDL
45	Boron (B)	BDL	BDL	BDL	BDL	BDL	BDL
C. BACTERIOLOGICAL							
46	Total Coli form at 37^0C	10.8	10.1	10.3	10.5	10.4	10.2

Bdl- Below Detection Limit
ND : Not detected

SW1 : Jojo Camp Nallah Water
SW2 : Mahadev Nallah U/S
SW3 : Mahadev nallah D/S
SW4 : Suna rive U/S
SW5 : Suna River D/S
SW6 : River Baitarini

Annexure – 9–IME / PME report

HI-TECH DIAGNOSTIC CENTRE

BANSPANI ROAD, OPPOSITE MAA MANGALA TEMPLE

JODA- 758034, DIST. : KEONJHAR, ODISHA

07.11.2013

Certificate

As per Occupational Health Surveillance program of Deojhar Iron Ore Mines of "M/S.Tarini Mineral Pvt.Ltd having an lease area over an extent of 34.65 Hectares, Periodical Medical Examination and Initial Medical Examination of the persons engaged in the process of mining, crushing and who are likely to be exposed to dust and noise was conducted for 101 numbers.

The employees were subjected to various tests including Lung Spirometry and Hi Resolution X-Ray of the chest to observe the condition and functioning of lungs due to exposure of dust.

On the basis of the above tests we have found none of the above mentioned employees affected by Silicosis/Pneumoconiosis.

Also a list of persons who have undergone the test from 16.11.2012 to 07.11.2013 is enclosed for your perusal

Dr. Ratanlal Singh M.B.B.S
Regd. No-12571 (B.M.C.)
Trained in-occupational Health

DR.RATANLAL SINGH,M.B.B.S

Regd.No.-12571(BMC)

Medical Officer

Annexure - 10: Noise Monitoring Report.

WORK ZONE AMBIENT NOISE LEVEL MONITORING						
Monitoring Locations	**NOISE LEVEL, dB(A) in Leq**					
	April-13	**May-13**	**June-13**	**July-13**	**Aug-13**	**Sept-13**
WORK ZONE						
Screening Plant Area	66.55	65.30	65.10	65.15	62.44	59.22
Loading Point	57.47	59.35	57.66	59.40	56.92	58.88
Weigh Bridge	58.65	55.45	57.52	58.72	55.66	56.11
Mines Office	55.11	54.44	54.44	58.49	56.12	55.65
AMBIENT AREA						
Village Murgabeda	46.25	49.30	49.30	51.44	45.12	44.72
Village MahadevNasa	46.33	46.25	48.25	49.22	45.70	45.11
Village Boniekala	47.2	45.40	45.20	45.52	46.10	46.10
Village Bhadrasahi	45.21	45.55	46.45	47.44	45.22	47.23
Village Deojhar	45.25	45.44	45.47	45.32	46.10	47.99
NORMS						
Residential, Leq	**Day Time : 55 dB (A) , Night Time : 45 dB (A)**					
Industrial, Leq	**Day Time : 75 dB (A) , Night Time : 70 dB (A)**					
During Eight hr exposure the Noise level equivalent to be 85 dB (A) –Maximum.						

Annexure - 12

Environmental Expenditure of Deojhar Iron ore Mining Project of M/s. Tarini Minerals Pvt. Ltd, District: Keonjhar, Orissa.

		Cost, Rs. in lakhs		
Sl. No.	**Activity**	**Year 2011-12**	**Year 2012-13**	**Year 2013-14 (Period April' 13 to September'13)**
1	Dry-fog system installed & maintenance	4.00	1.00	0.10
2	Arrangement of wetting provision at drilling machine	0.00	0.00	0.00
3	Water tankers two no's for water sprinkling	4.70	4.10	1.68
4	Plantation Program with maintenance cost	1.43	2.60	0.33
5	Purchasing & monitoring equipments	0.89	0.00	0.00
6	Occupational Health & Hygiene	5.74	3.45	0.40
7	Rain water harvesting structures	4.45	0.20	0.20
8	Check dam, retaining wall maintenance work	2.10	1.80	3.12
9	Site specific sewage treatment plant with maintenance	1.20	0.50	0.50
10	Dump stabilization with Coir-Geo textiles and vegetation	3.22	12.50	1.43
9	Service centre cum ETP & its maintenance.	0.45	1.00	0.50
Total amount incurred (Rs. Eight lakhs and seventy thousand only)		**28.18**	**27.15**	**8.26**

Annexure - 11

DEOJHAR IRON ORE MINES
M/S TARINI MINERALS (P) LTD
PLANTATION DETAILS

Plantation details		
Deojhar Iron Ore Mines of M/s Tarini Minerals (P) Ltd.		
Sl. No.	**Year**	**No. of sapling**
1	**2004-05**	**1900**
2	**2005-06**	**1200**
3	**2006-07**	**2000**
4	**2007-08**	**2400**
5	**2008-09**	**3100**
6	**2009-10**	**3623**
7	**2010-11**	**2050**
8	**2011-12**	**1727**
9	**2012-13**	**6000**
10	**2013-14**	**6050**
	Cumulative	**30050**

PHOTO # 1 SHOWING THE WATER TANKER ON HAULAGE ROAD FOR DUST SUPPRESSION

PHOTO # 2: SHOWING RETAINING WALL ALONG WITH GARLAND DRAIN ALL ALONG THE DUMPS

PHOTO # 3 SHOWING THE DUMP STABILIZATION WITH COIR MATTING, RETAINING WALL FOLLOWED BY GARLAND DRAIN

PHOTO # 4A: SHOWING CHECK DAM CUM SETTLING PIT BEFORE FINAL DISPOSAL TO OUTSIDE WATER BODIES

PHOTO # 4B: SHOWING CHECK WEIRS & SETTLING PIT PROVISIONS AT THE STRAGIC LOCATIONS TOWARDS PREVENTIONS OF THE MINES SURFACE RUN OFF BEFORE FINAL DISPOSAL TO OUTSIDE WATER BODIES

PHOTO # 5 : SHOWING GUARD WALL ALL ALONG THE NALLAH

PHOTO # 6 : SHOWING RAIN WATER HARVESTING STRUCTURE FOR GROUND WATER RECHARGE @ CAMP AREA

PHOTO # 7 : SHOWING THE STP FOR TREATMENT OF DOMESTIC EFFLUENTS

PHOTO # 8 SHOWING PROVISION OF DISPENSARY NEAR TO MINES AREA

PHOTO # 9 SHOWING THE SAFETY ZONE & ROAD SIDE PLANTATION

PHOTO # 11 SHOWING BORE WELLS PROVIDED FOR VILLAGERS

PHOTO # 10 SHOWING PROVISION OF SCHOOL BUS FOR LOCAL SCHOOL CHILDREN

PHOTO # 13 SHOWING MAHA DEV NASA TEMPLE RENOVATION WORK

PHOTO # 12 SHOWING BLACK TOPPING OF VILLAGE ROAD