



To

Divisional Forest Officer  
Bonai Forest Division  
Bonai

GM/OMQ/66/11-G  
21<sup>st</sup> June 2024

**Sub:** Proposal for seeking prior approval of the Central Government under Sec-2(ii) of the Forest (Conservation) Act-1980 for non-forestry use of 42.608 Ha forest land (16.658 Ha in Keonjhar Forest Division and 25.950 Ha in Bonai Forest Division) within Kalamang West (Northern Part) Block of Iron Ore Mines in Keonjhar & Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (now amalgamated into and with M/s Tata Steel Limited)(Online proposal No: FP/OR/MIN/49169/2020).

**X-Sub:** Compliance of Stage-I approval accorded vide Letter No.8-13/2022-FC, dated 22.12.2023 of MoEF&CC, Govt. of India.

**Ref:** Letter no. 25384, dated 28.12.2023 of Conservator of Forest (Nodal), Odisha

Dear Sir,

With reference to the subject cited above and letters under reference, we are submitting herewith the compliance to the Stage-I Approval granted by MoEF&CC, Govt. of India vide letter no. 8-13/2022-FC, dated 22.12.2023 for non-forestry use of 42.608 Ha forest land (16.658 Ha in Keonjhar Forest Division and 25.950 Ha in Bonai Forest Division) within Kalamang West (Northern Part) Block of Iron Ore Mines in Keonjhar & Sundargarh District of Odisha, allotted to M/s Tata Steel Limited. The pointwise compliance is enclosed as **Annexure-1**.

We request your good office for necessary verification and onward recommendation of the same to RCCF, Rourkela.

Thanking You,

Yours's faithfully,

  
(Atul Kumar Bhatnagar)  
General Manager, OMC



Encl. As above

Copy to:

1. Principal Chief Conservator of Forests & HoFF, Odisha, Bhubaneswar
2. Regional Chief Conservator of Forests, Rourkela Circle, Rourkela
3. Divisional Forest Officer, Keonjhar Forest Division, Keonjhar

**TATA STEEL LIMITED**

Mines Division Noamundi 833 217 India  
Tel 91 9262699402

Registered Office Bombay House 24 Horni Mody Street Fort Mumbai 400 001 India  
Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website [www.tatasteel.com](http://www.tatasteel.com)

6F  
24.6.24



To

Divisional Forest Officer  
Bonai Forest Division  
Bonai

GM/OMQ/66/11-G  
21<sup>st</sup> June 2024

**Sub:** Proposal for seeking prior approval of the Central Government under Sec-2(ii) of the Forest (Conservation) Act-1980 for non-forestry use of 42.608 Ha forest land (16.658 Ha in Keonjhar Forest Division and 25.950 Ha in Bonai Forest Division) within Kalamang West (Northern Part) Block of Iron Ore Mines in Keonjhar & Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (now amalgamated into and with M/s Tata Steel Limited)(Online proposal No: FP/OR/MIN/49169/2020).

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1. Principal Chief Conservator of Forests & HoFF, Odisha, Bhubaneswar
2. Regional Chief Conservator of Forests, Rourkela Circle, Rourkela
3. Divisional Forest Officer, Keonjhar Forest Division, Keonjhar



Received.

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I/60717/2023

Government of India  
Ministry of Environment, Forest and Climate Change  
(Forest Conservation Division)

Indira Paryavaran Bhawan,  
Jor Bagh Road, Aliganj  
New Delhi – 110003

**Dated: 22<sup>nd</sup> December, 2023**

**To**

The Addl. Chief Secretary (Forests),  
Government of Odisha,  
Bhubaneswar.

**Sub: Proposal for seeking prior approval of the Central Government under Section 2 (ii) of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha of forest land (16.658 ha in Keonjhar Forest Division and 25.950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd) (Online proposal no. FP/OR/MIN/49169/2020)**

Madam/Sir,

I am directed to refer to the State Government of Odisha's letter No. FE-DIV-FLD-0048-2022-10644 dated 17.06.2022, and additional information submitted vide No. 22410/ 9F (MG) –66/2021 dated 03.11.2022, vide letter No. 4255/9F (MG) –51/2021 dated 03.03.2023, vide letter No. 15271/ 9F (MG) –66/2021 dated 28.07.2023 and vide letter No. 9F (MG)- 12/2023 dated 21.11.2023 on the above subject seeking prior approval of the Central Government in accordance with Section-2 of the Forest (Conservation) Act, 1980. The proposal was considered by the Advisory Committee (AC) in its meeting held on 29.11.2023 and to say that the proposal has been examined by the Advisory Committee constituted by the Central Government under section 3 of the aforesaid Act.

2. After careful examination of the proposal of the State Government and on the basis of the recommendations of the Advisory Committee, and approval of the same by the competent authority of the MoEF&CC, New Delhi, the Central Government hereby accords '*in-principle*' approval under Section - 2 of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha of forest land (16.658 ha in Keonjhar Forest Division and 25.950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd) subject to fulfilment of the following conditions:

1. Legal status of the diverted forest land shall remain unchanged;
2. **Compensatory Afforestation:**
  - a. The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation as per the approved CA Scheme at the current wage rate in consultation with State Forest Department in the account of CAMPA of the concerned State through online portal;
  - b. The land identified for raising Compensatory Afforestation shall be

notified by the State Government as RF under Section-4 or PF under Section-29 of the Indian Forest Act, 1927 or under the relevant Section (s) of the local Forest Act, as the case may be, before the Stage-II approval;

- c. The cost of survey, demarcation and erection of permanent pillars, if required on the identified CA land, shall be deposited in advance with the Forest Department by the user agency. The CA will be maintained for 10 years. The scheme may include afforestation of indigenous species with appropriate provision for anticipated cost increase for works scheduled for subsequent years;
- d. The compensatory afforestation over non-forest land, equal in extent to the forest land being diverted i.e. 42.608 ha, shall be raised by the State Forest Department at the project cost within three years from the date of grant of Stage - II approval. The details of CA in NFL along with KML will be submitted at the time of submission of compliance of Stage-I.
- e. Afforestation on degraded forest land to be selected elsewhere, measuring one and a half times the area under safety zone, shall also be done at the project cost under the supervisions of the State Forest Department and afforestation will be done within three years from the date of Stage-II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest Department;
- f. User agency either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40), if any, located in the area within 100 meter from outer perimeter of the mining lease. The plan for plantation and SMC activities will be prepared and submitted to MoEF &CC before Stage-II Clearance;
- g. 25% of the CA cost additionally will be spent towards soil and moisture conservation activities in the proposed CA area as per site requirement and deposited in CAF;

**3. NPV:**

- a. The User Agency shall transfer the funds towards the cost of Net Present Value (NPV) of the forest land being diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 06.01.2022 read with 22.03.2022 through online portal of CAMPA account of the State Concerned;
  - b. At the time of payment of the Net Present Value (NPV) at the present rate, the user agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;
4. *Transportation of ore shall be as per the recommendation in the report submitted by CSIR-NEERI;*
  5. *A holistic transportation plan shall be prepared by the State Govt. aiming to have minimum impact in the landscape. The same shall be implemented. Transportation of ore should be as far as possible through common conveyor*

belt, slurry pipeline, railways, etc. Transportation of ore through road should be minimized in a time bound manner;

6. An Oversight Committee shall be constituted under the Chairmanship of the DDGF (Central) RO Bhubaneswar for 10 years who will monitor and review the compliance of the conditions stipulated in the approval for these five mines [namely- 1. Netrabandha Pahar iron Ore Block (area 112.621 ha, 2. Netrabandha Pahar (West) area 66.242 ha), 3. Laserda Pacheri Manganese & Iron Ore Block (area 94.351 ha), 4. Kalmang West (Northern Part) Block for Iron Ore Mines Iron Ore Block (Area 42.608 ha) and 5. Guali Opencast Iron Ore Mines (area 194.683 ha)] twice a year and submit their yearly report to this Ministry in the month of December. This Oversight Committee shall consist following members and logistics of this Committee shall be borne by State Government at the cost of UAs:

- a. DDGF (Central) – Regional Office Bhubaneswar- Chairman.
- b. One Representative from IIFM Bhopal.
- c. One Representative from WII Dehradun.
- d. One Representative from ICFRE.
- e. One Representative from NEERI.
- f. One expert in Geology.
- g. Two other experts nominated by MoEF&CC.

The recommendation made by the said committee shall be considered by the Ministry and if agreed the same shall be binding on the UAs;

7. Integrated Regional Wildlife Conservation Plan shall be prepared for 10 years covering the forest Division of Sundargarh, Jharsuguda and Keonjhar Districts at the cost of UA. The works shall be executed as per APO and the regional plan shall have site/species specific wildlife sub plans/prescriptions;
8. A Bio-diversity Conservation Plan for this entire landscape shall also be prepared by the State Govt at the cost of UA;
9. Soil and moisture conservation measures shall be undertaken in and around 10 KM radius of the mining lease areas at project cost;
10. The conditions stipulated in EC should be strictly implemented and monitored;
11. Compensatory levies to be realized from the User Agency under the project shall be transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (<https://parivesh.nic.in/>);
12. The KML files of diverted area, the CA areas, the proposed SMC treatment area and the WLMP area shall be uploaded on the e-Green watch portal with all requisite details prior to Stage-II approval;
13. Following activities, as per approved plan / schemes, shall be undertaken in the lease area by the User Agency under the supervision of the State Forest Department. Approved scheme/plan shall be submitted to the Ministry along with compliance of Stage-I approval:
  - a. Mitigative measures to minimize soil erosion and choking of stream shall be implemented within a period of three years with effect from the issue of Stage-II clearance in accordance with the approved Plan in consultation with the State Forest Department;

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- b. Planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme;
  - c. Construction of check dams, retention /toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme;
  - d. Stabilize the overburden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than 28o; and
14. **Safety Zone Management:** Following activities, at project cost, shall be undertaken by the user agency for the management of safety zone as per relevant guidelines issued by the Ministry's guidelines:
- a. User agency shall ensure demarcation of safety zone (7.5-meter strip all along the inner boundary of the mining lease area), and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers under the supervision of the State Forest Department;
  - b. Boundary of the safety zone of the mining lease, adjacent to habitation/roads, should be properly fenced by the user agency;
  - c. Safety zone shall be maintained as green belt around mining lease and to ensure dense canopy in the area, regeneration shall be taken up in this area by the user agency at project cost under the supervision of the State Forest Department;
  - d. The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms;
15. No damage shall be caused to the top-soil and the user agency will follow the top soil management plan;
16. The User Agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km from the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User Agency shall regularly undertake desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/water bodies. A detailed approved plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage-II approval;
17. The cost of felling of trees shall be deposited by the User Agency with the State Forest Department;
18. Trees should be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO;
19. The User Agency shall undertake that afforestation of the non-mineralized virgin forest land within the mining area shall be taken up at project cost;
20. The user agency shall explore the possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department.
21. A site-specific Wildlife Management Plan shall be prepared by the State Government in consultation with the PCCF (Wildlife) for the protection and conservation of wildlife of the area. A copy of approved Plan shall be

- submitted to the Ministry along with the compliance of Stage-I approval. Entire cost of implementation of the provisions of the Wildlife Management Plan shall be deposited into the account of CAMPA of the State;
22. State Government shall complete settlement of rights, in term of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence, along with compliance of Stage-I approval, as prescribed by this Ministry's letter No. 11-9/1998-FC (Pt.) dated 03.08.2009 read with 05.07.2013, in support thereof;
  23. The User Agency shall undertake that user agency and the State Forest Department shall create and maintain from funds to be provided by the user agency alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project as per the plan duly approved by the Principal Chief Conservator of Forests (Wildlife) and the Chief Wildlife Warden Odisha. Bird nests artificially made out of eco-friendly materials shall be used in the area, including forest area and human settlements, adjoining the forest area being diverted for the project;
  24. The User Agency shall undertake that the project authority needs to take up works for construction and cleaning of garland drains, stabilizing retaining walls, proper terracing of OB dumps and checking gully formation resulting in soil erosion;
  25. The User Agency shall undertake that plants which are having lowest translocation factor can be preferred under afforestation on the OB dumps and fruit trees to be avoided in planting during biological stabilization of OB dumps;
  26. The User Agency shall undertake that prevention of fall of wild animals into mining pit by fencing the open pit area;
  27. The User Agency shall undertake that the angle of repose in OB dumps to be maintained to ensure stability and safety;
  28. The User Agency shall undertake that vetiver grass can be planted at the lower reaches of the dump to bind the soil and prevent soil erosion giving better stability to the dump;
  29. The User Agency shall undertake mining in a phased manner after taking due care for reclamation of the mined over area. The concurrent reclamation plan as per the approved mining plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the concern Addl. Principle Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities area satisfactorily executed;
  30. The User Agency shall comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other areas which may have been disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner;
  31. Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease proposed to be

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- granted under the Mines and Minerals (Development and Regulation) Act, 1957, as amended and the Rules framed there-under;
32. The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;
  33. No labour camp shall be established on the forest land and the User Agency shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas;
  34. The boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS coordinates;
  35. The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal;
  36. The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government;
  37. No damage to the flora and fauna of the adjoining area shall be caused;
  38. Any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife; and
  39. The user agency shall comply with all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.
  40. Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act, 1980 as issued by this Ministry's letter No. 5-2/2017-FC dated 28.03.2019.
  41. The User Agency shall submit the annual self -compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly; and
  42. The compliance report shall be uploaded on **e-portal** (<https://parivesh.nic.in/>).
3. After receipt of the compliance report on fulfilment of the conditions mentioned above, the proposal shall be considered for final approval under Section-2 of the Forest (Conservation) Act, 1980. Transfer of forest land shall not be affected till final approval is granted by the Central Government in this regard.

Yours Sincerely,

Signed by

Charan Jeet Singh

(Charan Jeet Singh)  
Scientist 'D'

Date: 22-12-2023 10:12:02

Copy to:

1. PCCF (HoFF), State Forest Department, Government of Odisha, Bhubaneswar
2. PCCF & Nodal Officer (FCA), O/o PCCF, State Forest Department, Government of Odisha, Bhubaneswar

I/60717/2023

3. DDGF (Central), Regional Office of MoEF&CC at Bhubaneswar.
4. User Agency.
5. Monitoring Cell, FC Division, MoEF&CC, New Delhi
6. Guard File.

## Annexure 1

Compliance to the conditions stipulated in the Stage-I approval vide F. No. 8-13/2022-FC, dated 22.12.2023 of MoEF&CC, Govt. of India, for diversion of 42,608 ha forest land for Mining of Iron Ore & Allied Activities in respect of Kalamang West (Northern Part) Iron Ore Mines of M/s Tata Steel Ltd.

Condition No.	Stage-I Approval Condition	Compliance
1.	Legal status of the diverted forest land shall remain unchanged	Legal status of the diverted forest land will not be changed. An undertaking to this effect is submitted and enclosed herewith as <b>Annexure 2(Point - 1)</b> .
2.	<b>Compensatory Afforestation</b>	Two CA Schemes have been prepared and duly approved by PCDF, Forest Division & Nodal Officer, FC Act, Odisha.
a.	The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation as per the approved CA Scheme at the current wage rate in consultation with State Forest Department in the account of CAMPA of the concerned State through online portal	CA land over 42,608 ha of non-Forest land identified in village Jaladhi under Banspal Tahsil of Keonjhar forest Division with a focus on soil & moisture conservation activities, afforestation of indigenous species and CA maintenance for a period of 10 years.  Addl. CA land over 44,002 ha of Degraded Forest land identified in Balabhadrapur RF under Keonjhar Forest Range with a focus on soil & moisture conservation activities, afforestation of indigenous species and CA maintenance for a period of 10 years.  Approved CA Scheme amount of Rs. 3,92,64,000/- only has been deposited vide UTR number HDFCR52024030686033141, dated 06.03.2024 against Demand raised by office of DFO, Keonjhar vide Letter No. 1743/Mining - 195/2017, dated 25.02.2024.  Additional CA scheme amount of Rs. 3,68,34,500/- only has also been deposited vide UTR number HDFCR52024030686033141, dated 06.03.2024 against Demand raised by Office of DFO, Keonjhar vide Letter No. 1743/Mining - 195/2017, dated 25.02.2024.

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY



ATUL KUMAR BHATTACHARYA

Condition No.	Stage-I Approval Condition	Compliance
		<p>The payment receipt of Rs. 15,96,15,300/- having UTR number HDFCR52024030390033141, dated 06.03.2024 consist of payments made towards Approved CA scheme (Rs. 3,92,64,000). Approved Additional CA scheme (Rs. 3,69,34,500) and SSWLMP (Rs. 6,34,16,800).</p> <p>The receipts of payment and demand letter are enclosed herewith as Annexure 3.</p>
b.	The land identified for raising Compensatory Afforestation shall be notified by the State Government as RF under Section-4 or PF under Section-29 of the Indian Forest Act, 1927 or under the relevant Section (b) of the local Forest Act, as the case may be, before the Stage-II approval.	<p>The identified non-forest CA land over 42.608ha in village Jaladhi under Banspal, Tahasil of Keonjhar forest Division has been transferred and mutated in favour of State Forest Dept. A copy of Record of Rights (RoR) after its transfer and mutation is enclosed here with as Annexure 4.</p> <p>Office of DFO, Keonjhar has forwarded Draft PF notification for declaring non forest mutated land to PCCF, Forest Division and Nodal Officer, F C Act, O/o - the PCCF, HoFF, Odisha, Bhubaneswar, vide Memo No. 4879/5F-Mining-13/2022, dated 21<sup>st</sup> June 2024. Letter enclosed herewith as Annexure 4(a).</p>
c.	The cost of survey, demarcation and erection of permanent pillars, if required on the identified CA land, shall be deposited in advance with the Forest Department by the user agency. The CA will be maintained for 10 years. The scheme may include afforestation of indigenous species with appropriate provision for anticipated cost increase for works scheduled for subsequent years.	<p>The identified non-forest CA land over 42.608ha in village Jaladhi under Banspal, Tahasil of Keonjhar forest Division has been demarcated and erection of permanent pillars completed. While preparing the CA scheme indigenous species has been considered and appropriate provision provided for anticipated cost increase for works scheduled for subsequent years.</p>
d.	The compensatory afforestation over non-forest land, equal in extent to the forest land being diverted i.e. 42.608 ha, shall be raised by the State Forest Department at the project cost within three years from the date of grant of Stage - II approval. The details of CA in NFL along with KML will be submitted at the time of submission of compliance of Stage-I.	<p>The KML files of the area to be diverted over 42.608ha and CA over 42.608ha and additional CA land over 44.002 ha have been provided at your good office which consist of all the KML file.</p>
e.	Afforestation on degraded forest land to be selected elsewhere, measuring one and a half times the area under safety zone, shall also be done at the project cost under the supervisions of the State	<p>Identification of degraded forest land equivalent to 1.5 times of safety zone 3.573 Ha for afforestation has been done in Nagaria PRF and scheme for</p>

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

*Atul*

ATUL KUMAR BHATTACHARJEE

Condition No.	Stage-I Approval Condition	Compliance
	from the date of Stage-II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest Department	<p>The payment towards forestation over 3.573 ha of 1.5 times Safety Zone has already been deposited online vide HDFC Bank UTR no. HDFCR52024050755078512, Dated 07.05.2024 against demand raised by office of DFO, Bonai, vide letter no. 4342/6F-(Mg.), dated 03.05.2024.</p> <p>The payment receipt of Rs. 57,55,500/- having UTR number HDFCR52024050755078512, dated 07.05.2024 consist of payments made towards approved scheme for 1.5 times safety zone afforestation (Rs. 52,87,500) and approved scheme for creation and maintenance of alternate habitat for avifauna (Rs. 4,68,000).</p> <p>The details of demand letter and payment proof enclosed herewith as Annexure 5(a). Afforestation will be done within three years from the date of grant of Stage-II clearance by the forest department.</p> <p>To restock and rejuvenate the degraded open forest, an area of 1.432Ha of DLC forest has been identified in village Ghodabudani, Tahsil Koria and District Sundergarh within 100m of outer periphery adjacent to lease pillars U &amp; V. The plan for plantation along with the SMC activities has been prepared and approved scheme enclosed herewith as Annexure 6. An Undertaking to implement the condition is submitted as Annexure 2, (Point-2).</p> <p>An amount of Rs 98,16,000/- being 25% of CA cost towards soil and moisture conservation activities in the proposed CA area has been deposited vide UTR number HDFCR52024032090433858, dated 20.03.2024, in the CAF against Demand raised by office of DFO, Bonai vide letter no. 2468/6F-(Mg.) dated 07.03.2024. The details of demand letter and payment proof enclosed herewith as Annexure 7.</p> <p>The payment receipt of Rs. 57,55,500/- having UTR number HDFCR52024032090433858, dated 20.03.2024 consist of payments made towards 25% of CA cost (Rs. 98,16,000) and Regional Wildlife Conservation plan (Rs. 95,75,413)</p>
f.	User agency either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40), if any, located in the area within 100 meter from outer perimeter of the mining lease. The plan for plantation and SMC activities will be prepared and submitted to MoEF & CC before Stage-II Clearance	
g.	25% of the CA cost additionally will be spent towards soil and moisture conservation activities in the proposed CA area as per site requirement and deposited in CAF	
3	NPV	

FOR AND ON BEHALF OF  
TATA STEEL LIMITED

BY THEIR CONSTITUTED ATTORNEY

  
ATUL KUMAR BHATTACHARYA


Condition No.	Stage-I Approval Condition	Compliance
a.	The User Agency shall transfer the funds towards the cost of Net Present Value (NPV) of the forest land being diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 06.01.2022 read with 22.03.2022 through online portal of CAMPA account of the State Concerned	An amount of Rs. 6,12,13,636/- towards the cost of NPV, fund has already been deposited vide UTR number HOFGR52022041250557883, dated 12.04.2022 through online portal of CAMPA account of the state of Odisha. The receipts of payment are enclosed herewith as [Annexure 8].
b.	At the time of payment of the Net Present Value (NPV) at the present rate, the user agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India	An undertaking to this effect that the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India is submitted and enclosed here with as Annexure 2(Point-3)
4.	Transportation of ore shall be as per the recommendation in the report submitted by CSIR-NEERI.	Transportation will be done as per the guidelines provided in CSIR- NEERI recommendation. Kalamang West (Northern Part) Iron Ore Mines falls under the SoTM-3, hence 70% of material shall be transported through public siding and 30% of material can be transported directly to the destination. An Undertaking to implement the condition is submitted as Annexure 2(Point-4). Further company is proposing to transport iron through 221 km slurry pipeline with its upstream facility located at Kalamang lease.
5.	A holistic transportation plan shall be prepared by the State Govt. aiming to have minimum impact in the landscape. The same shall be implemented. Transportation of ore should be as far as possible through common conveyor belt, slurry pipeline, railways, etc. Transportation of ore through road should be minimized in a time bound manner	Transportation plan has been prepared considering minimum transportation through road to have minimum impact in the landscape. There is a proposal for transportation of ore through slurry pipeline in future. An Undertaking to implement the condition is submitted as Annexure 2(Point-5). Further company is proposing to transport iron through 221 km slurry pipeline with its upstream facility located at Kalamang lease. The project is like to get commission in next 3-4 Years time.
6.	An Oversight Committee shall be constituted under the Chairmanship of the DDGF (Central) RO Bhubaneswar for 10 years who will monitor and review the compliance of the conditions stipulated in the approval for these five mines [namely 1,	To be complied by State government. An Undertaking to implement the condition is submitted as Annexure 2(Point-6).

FOR AND ON BEHALF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY  
  
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Condition No.	Stage-I Approval Condition	Compliance
	<p>Netrabandha Pahar Iron Ore Block (area 112.621 ha, 2. Netrabandha Pahar (West) area 66.242 ha), 3. Lasarda Pachheri Manganesse &amp; Iron Ore Block (area 94.351 ha), 4. Kalmaung West (Northern Part) Block for Iron Ore Mines Iron Ore Block (Area 42.608 ha) and 5. Guali Opencast Iron Ore Mines (area 194.883 ha)) twice a year and submit their yearly report to this Ministry in the month of December. This Oversight Committee shall consist following members and logistics of this Committee shall be borne by State Government at the cost of UAs</p> <p>a) DDGF (Central) – Regional Office Bhubaneswar- Chairman.  b) One Representative from IIM Bhopal  c) One Representative from WII Dehradun  d) One Representative from ICFRE  e) One Representative from NEERI  f) One expert in Geology  g) Two other experts nominated by MoEF&amp;CC.</p> <p>The recommendation made by the said committee shall be considered by the Ministry and if agreed the same shall be binding on the UAs.</p>	
7.	<p>Integrated Regional Wildlife Conservation Plan shall be prepared for 10 years covering the forest Division of Sundargarh, Jharsuguda and Keonjhar Districts at the cost of UA. The works shall be executed as per APO and the regional plan shall have site/species specific wildlife sub plans/prescriptions.</p>	<p>Integrated Regional Wildlife Conservation Plan comprising forest Division of Sundargarh, Jharsuguda and Keonjhar has been prepared. The proportionate cost for an amount Rs. 95,75,413/- vide UTR number HDFCR52024032060433858, dated 20.03.2024, has been deposited in CAMPA against the demand letter from office of DFO, Bona, vide letter no. 2560/6F-(Mg.), dated 11.03.2024 and demand letter from office of DFO, Keonjhar vide letter no. 2302/Mining-195/2017 dated 14.03.2024</p> <p>Details of demand letter and payment proof enclosed herewith Annexure 9. An Undertaking to implement the condition is submitted as Annexure 2(Point-7).</p>

FOR AND ON BEHALF OF  
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Condition No.	Stage-I Approval Condition	Compliance
8.	A Bio diversity Conservation Plan for this entire landscape shall also be prepared by the State Govt at the cost of UA.	The proportionate cost for an amount Rs. 2,38,99,99/- has been submitted towards the 50% of the Total Cost of Consultancy to be deposited in respect of Kallamang West (Northern Part) Iron Ore Mine in favour of Director, 3792/6F Mining Indian Institute of Forest Management, Bhopal for the 'Preparation of Biodiversity Conservation Plan for the entire Landscape of Notrabandhepahar' through RTGS with reference no. 4008025794. Demand letter and payment proof enclosed herewith as Annexure 10. An Undertaking to implement the condition is submitted as Annexure 2 (Point -9).
9.	Soil and moisture conservation measures shall be undertaken in and around 10 KM radius of the mining lease areas at project cost.	As per approved scheme, SMC within 10km radius area of mining lease proposed within un-overlapped area. SMC work construction of water body and check dam proposed inside Medhatanuni RF in Bonai Forest division. Details enclosed herewith as Annexure 11. An Undertaking to implement the condition is submitted as Annexure 2 (Point-9).
10.	The conditions stipulated in EC should be strictly implemented and monitored	Conditions given under EC is positively implemented and monitored regularly and six monthly compliance report is submitted to MoEF&CC, IRO Office Bhubaneswar and State Pollution Control Board, Odisha along with the other concerned authorities. An Undertaking to implement the condition is submitted as Annexure 2 (Point 9(a)).
11.	Compensatory levies to be realized from the User Agency under the project shall be transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal ( <a href="https://perivesth.nic.in/">https://perivesth.nic.in/</a> )	The details of compensatory levies deposited through e-challan, into the account of CAMPA pertaining to the Odisha State concerned through e-portal ( <a href="https://perivesth.nic.in/">https://perivesth.nic.in/</a> ) Details enclosed herewith as Annexure 12
12.	The KML files of diverted area, the CA areas, the proposed SMC treatment area and the WLMF area shall be uploaded on the e-Green watch portal with all requisite details prior to Stage-II approval.	The KML files of the area to be diverted over 42.608ha and CA over 42.508ha and Addl CA land over 44.002ha. SMC & WLMF have been provided at your good office which consist of all the KML files.
13.	Following activities, as per approved plan / schemes, shall be undertaken in the lease area by the User Agency under the supervision of the State Forest Department. Approved scheme/plan	Approved schemes have been attached and submitted for complying the Stage-I approval. FOR AND ON BEHALF OF TATA STEEL LIMITED BY THEIR CONSTITUTED ATTORNEY  ATUL KUMAR BHATTACHARYA

Condition No.	Stage-I Approval Condition	Compliance
	<p>a) Mitigative measures to minimize soil erosion and choking of stream shall be implemented within a period of three years with effect from the issue of Stage-I clearance in accordance with the approved Plan in consultation with the State Forest Department.</p> <p>b) Planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme;</p> <p>c) Construction of check dams, retention /ice walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme</p> <p>d) Stabilize the overburden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than 28°.</p>	<p>a) Mitigative measures has been prepared to minimize soil erosion and choking of stream such as Structural measures like loose boulder structure construction which will prevent soil erosion &amp; enrichment of vegetation &amp; greenery development, construction of garland drain, settling pit, desiliation and coir matting etc. The approved scheme is enclosed herewith as Annexure 13. An Undertaking to implement the condition is submitted as Annexure 2(Point-10).</p> <p>b) As per our approved scheme we have proposed for plantation of drought hardy species over 5Ha in dump area and sowing of seeds over the entire dump area. The approved scheme is enclosed herewith as Annexure 14. An Undertaking to implement the condition is submitted as Annexure 2(Point-11).</p> <p>c) We have proposed to construct check dams over the drainage systems, near dump area and retaining wall to resist the lateral pressure of soil if there is change of ground elevation exceeding angle of repose of soil. The approved scheme is enclosed herewith as Annexure 15. An Undertaking to implement the condition is submitted as Annexure 2(Point-12).</p> <p>d) To stabilize the OB dump, measures has been proposed in our approved scheme. Structural measures such as construction of garland drain, retaining wall, check dam, settling tank and Loose boulder structure etc. Biological measures such as Agave plantation on OB dumps, Terracing of OB dumps within permissible range and construction of pyramid structure catch drain to stream line the flow of surface runoff from dump to foot of the dump. The approved scheme is enclosed herewith as Annexure 16. An Undertaking to implement the condition is submitted as Annexure 2(Point-13).</p>

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TATA STEEL LIMITED  
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Condition No.	Stage-I Approval Condition	Compliance
14.	<p>Safety Zone Management: Following activities, at project cost, shall be undertaken by the user agency for the management of safety zone as per relevant guidelines issued by the Ministry's guidelines:</p> <p>a. User agency shall ensure demarcation of safety zone (7.5-meter strip all along the inner boundary of the mining lease area), and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers under the supervision of the State Forest Department.</p> <p>b. Boundary of the safety zone of the mining lease, adjacent to habitation/roads, should be properly fenced by the user agency.</p> <p>c. Safety zone shall be maintained as green belt around mining lease and to ensure dense canopy in the area, regeneration shall be taken up in this area by the user agency at project cost under the supervision of the State Forest Department.</p> <p>d. The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms.</p>	<p>In respect of Safety Zone of the Lease:</p> <p>a) Scheme for fencing, protection and regeneration of the safety zone over 3.972Ha all along the inner boundary of ML area 92.875Ha has been approved by RCCF Rourkela and enclosed herewith as Annexure 17. An Undertaking to implement the condition is submitted as Annexure 2(Point-14).</p> <p>b) Safety zone adjacent to habitation of the mining lease, shall be properly fenced. An Undertaking to implement the condition is submitted as Annexure 2(Point-15).</p> <p>c) Scheme for fencing, protection and regeneration of the safety zone over 3.972Ha all along the inner boundary of ML area 92.875Ha has been approved and enclosed herewith as Annexure 17. An Undertaking to implement the condition is submitted as Annexure 2(Point-16).</p> <p>d) Safety zone will be maintained as per prescribed norms. An Undertaking to implement the condition is submitted as Annexure 2(Point-17).</p>
15.	No damage shall be caused to the top-soil and the user agency will follow the top soil management plan.	Measures have been proposed in approved scheme for efficient and effective management of Top soil. Such as collection and storage of top soil which will be utilized and managed for plantation, grass seeding plantation to prevent erosion and construction of retaining wall and gulland drain. Details enclosed herewith as Annexure 18. An Undertaking to implement the condition is submitted as Annexure 2(Point-18).

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Condition No.	Stage-I Approval Condition	Compliance
16.	The User Agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km from the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User Agency shall regularly undertake desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/water bodies. A detailed approved plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to McEF & CC before Stage-II approval.	List of existing village tank and other water body within 5km has been prepared and verified by DFO in approved scheme.  Pond or water body will be desilted by mechanical or manual means depending on accumulation of water quantity and various measures also proposed such as desiltation, earthwork excavation and bathing ghats (separately for men and women). The approved scheme is enclosed herewith as Annexure 19. An Undertaking to implement the condition is submitted as Annexure 2(Point-19).
17.	The cost of felling of trees shall be deposited by the User Agency with the State Forest Department.	Cost for tree felling will be deposited to State Forest department only and an undertaking to this effect is submitted and enclosed here with as Annexure 2(Point-20).
18.	Trees should be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO.	Tree felling will be done in phased manner and an undertaking to this effect is submitted and enclosed here with as Annexure 2(Point-21).
19.	The User Agency shall undertake that afforestation of the non-mineralized virgin forest land within the mining area shall be taken up at project cost.	Company shall undertake that afforestation of the non-mineralized virgin forest land within the mining area shall be taken up at project cost. An undertaking to this effect is submitted and enclosed here with as Annexure 2(Point-22).
20.	The user agency shall explore the possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of that too under strict supervision of the State Forest Department.	Company shall explore the possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department. An undertaking to this effect is submitted and enclosed here with as Annexure 2(Point-23).
21.	A site-specific Wildlife Management Plan shall be prepared by the State Government in consultation with the PCCF (Wildlife) for the protection and conservation of wildlife of this area. A copy of approved Plan shall be submitted to the Ministry along with the compliance of Stage-I approval. Entire cost of implementation of the provisions of the Wildlife Management Plan shall be deposited into the account of CAMPA of the State.	Site specific Wildlife conservation plan of Kalamang West (Northern Part) Iron ore mine is approved by PCCF (Wildlife) on dated. 30.10.2023. An amount of Rs. 8,34,16,800/- has been deposited vide UTR number HDFCR52024030880033141, dated 06.03.2024. The payment receipt of Rs. 15,96,15,300/- having UTR number HDFCR52024030880033141, dated 06.03.2024 consist of payments made towards Approved CA scheme (Rs. 3,92,64,000). Approved Additional CA scheme (Rs. 3,69,34,500) and SSWLMP (Rs. 8,34,16,800)

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Condition No.	Stage-I Approval Condition	Compliance
		Copy of approved plan and payment proof receipt enclosed herewith as Annexure 20. An Undertaking to implement the condition in core zone is submitted as Annexure 2(Point-24).
22.	State Government shall complete settlement of rights, in term of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence, along with compliance of Stage-I approval, as prescribed by this Ministry's letter No. 11-9/1998-FC (PL) dated 03.08.2009 read with 05.07.2013, in support thereof.	Completed the process of identification and settlement of rights under FRA has been carried out for entire 42,608Ha of forest land proposed for division and completed the process of settlement of rights under Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA for short). The FRA certificate issued by Collector, Keonjhar and Collector Sundergarh for respective forest land vide Letter no. XIX-10-7/2023 dated 28.11.2023 and letter no 1327/ITDA(FRA), dated 04.05.2023 respectively is enclosed herewith as Annexure 21. The plan for alternate habitat/home to the avifauna has been prepared and approved by PCCF (Wildlife) and the Chief Wildlife Warden Odisha, letter no. 4649, dated 24.04.2024 with financial outlay of Rs 4.68 Lakh. Approved scheme enclosed herewith as Annexure 22.
23.	The User Agency shall undertake that user agency and the State Forest Department shall create and maintain from funds to be provided by the user agency alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project as per the plan duly approved by the Principal Chief Conservator of Forests (Wildlife) and the Chief Wildlife Warden Odisha. Bird nests artificially made out of eco-friendly materials shall be used in the area, including forest area and human settlements, adjoining the forest area being diverted for the project.	The payment towards alternate avifauna has already been paid vide HDFC Bank UTR no. HDFCR52024050755078512, Dated 07.05.2024 against demand letter raised by Office of DFO, Bonai, vide letter no. 4346/BI-(Mg.), dated 03.05.2024. Payment proof and demand letter enclosed herewith as Annexure 22(a).
24.	The User Agency shall undertake that the project authority needs to take up works for construction and cleaning of gulland drains, stabilizing retaining walls, proper terracing of OB dumps, and checking gully formation resulting in soil erosion.	As per approved scheme we have proposed working on construction of gulland drains, stabilizing retaining walls, proper terracing of OB dumps and gully formation. Details enclosed herewith as Annexure 13,14 and 15. An Undertaking to implement the condition is submitted as Annexure 2(Point-25).
25.	The User Agency shall undertake that plants which are having lowest translocation factor can be preferred under afforestation on	In approved scheme, it is proposed to plant eugave plants in place of fruit bearing tree in degraded and poor soils along slope and toe of OB Dumps.

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Condition No.	Stage-I Approval Condition	Compliance
	to a condition which is fit for growth of fodder, flora fauna, etc. in a timely manner.	Undertaking to implement the condition is submitted as Annexure 2(Point-31).
31.	Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease proposed to be granted under the Mines and Minerals (Development and Regulation) Act, 1957, as amended and the Rules framed there-under.	Noted. Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease i.e. 50 years from 21.12.2022 (till 20.12.2070).
32.	The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required.	Environmental Clearance has been granted by SE/IAA, Odisha vide letter no. 55807/88-MINB/108-2022, dated 18.10.2022. Copy is enclosed as Annexure-23.
33.	No labour camp shall be established on the forest land and the User Agency shall provide fuels, preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas.	No labour camp shall be established on the forest land and company shall be facilitating usage of LPG cylinders as an alternate fuel to the labourers. An Undertaking to implement the condition is submitted as Annexure 2 (Point-32).
34.	The boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS coordinates.	The boundary of the forest land proposed to be diverted has been demarcated on the ground by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number. Details of DGPS coordinates and distance from adjoining pillars and photographs has been enclosed herewith as Annexure 24.
35.	The layout plan of the mining plant proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal.	Noted. Layout plan of proposal will not be changed and if changes are required, prior approval will be taken by Central Government. An Undertaking to implement the condition is submitted as Annexure 2 (Point-33).
36.	The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government.	Noted. The forest land of 42.608 Ha proposed to be diverted will not be transferred to any other agency, department or person without prior approval of the Central Government. An Undertaking to implement the condition is submitted as Annexure 2(Point-34).
37.	No damage to the flora and fauna of the adjoining area shall be caused.	Noted. No damage to the flora and fauna of the adjoining area shall be caused. An Undertaking to implement the condition is submitted as Annexure 2(Point-35).
38.	Any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in	Same will be complied, if any. An Undertaking to this effect is enclosed herewith as Annexure 2(Point-36).

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Condition No.	Stage-I Approval Condition	Compliance
	the interest of conservation, protection and development of forests & wildlife; and The user agency shall comply with all the provisions of all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.	The Company shall comply with all the provisions of all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project. An Undertaking to this effect is enclosed herewith as Annexure 2(Point-37)
39.	Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act, 1980 as issued by this Ministry's letter No. 5-2/2017-FC dated 28.03.2019.	Noted. An Undertaking to implement the condition is submitted as Annexure 2(Point-38).
40.	The User Agency shall submit the annual self-compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly.	Annual self-compliance report will be submitted regularly within the timeframe. Undertaking to be provided. An Undertaking to implement the condition is submitted as Annexure 2(Point-39).
41.	The compliance report shall be uploaded on e-portal ( <a href="https://parivesh.mca.nic.in/">https://parivesh.mca.nic.in/</a> )	The compliance report of Stage-I approval shall be uploaded on e-Portal once it gets approved by your office.

FOR AND ON BEHALF OF  
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## UNDERTAKING

## ANNEXURE-2

1. We hereby, undertake that Legal status of forest land proposed for diversion shall remain unchanged as per **Condition No. 1** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
2. We hereby, undertake that we will implement Gap plantation and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40), if any, located in the area within 100 meter from outer perimeter of the mining lease as per approved scheme and **Condition 2 (f)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
3. We hereby, undertake to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India as per **Condition 3 (b)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
4. We hereby, undertake transportation of ore shall be as per the recommendation in the report submitted by CSIR-NEERI as per **Condition 4** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
5. We hereby, undertake transportation of ore should be as far as possible through common conveyor belt, slurry pipeline, railways, etc. Transportation of ore through road should be minimized in a time bound manner as per **Condition 5** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
6. We hereby, undertake to comply all the recommendations given as per Oversight Committee constituted under the Chairmanship of the DDGF (Central) RO Bhubaneswar as per **Condition 6** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
7. We have made the payment towards preparation of cost of Regional Wildlife Conservation Plan and undertake to implement recommendations pertaining to User Agency as per **Condition 7** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
8. We have paid 50% cost for preparation of Bio-diversity Conservation Plan for this entire landscape as per direction of State Forest Department. We hereby, undertake to pay balance amount as per advice of State Forest Department in compliance with **Condition 8** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.



Signature of User Agency  
(Authorized Signatory)

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### UNDERTAKING

9. We hereby, undertake to comply all the measures given in approved scheme of Soil and moisture conservation in and around 10 KM radius of the mining lease areas as per **Condition 9** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
- 9(a). We hereby, undertake to monitor and strict implementation of the conditions stipulated in EC as per **Condition 10** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
10. We hereby, undertake to implement the Mitigative measures as per approved scheme to minimize soil erosion and choking of stream within a period of three years with effect from the issue of Stage-II clearance as per **Condition 13 (a)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
11. We hereby, undertake to Planting of adequate drought hardy plant species and sowing of seeds as per approved scheme, in the appropriate area within the mining lease to arrest soil erosion as per **Condition 13 (b)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
12. We hereby, undertake to the Construction of check dams, retention /toe walls as per approved scheme to arrest sliding down of the excavated material along the contour as per **Condition 13 (c)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
13. We hereby, undertake to Stabilize the overburden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than  $28^{\circ}$  as per **Condition 13 (d)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
14. We hereby, undertake to demarcation, fencing, protection and regeneration of safety zone (7.5-meter strip all along the inner boundary of the mining lease area) as per approved scheme by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers as per **Condition 14 (a)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.



Signature of User Agency  
(Authorized Signatory)  
**FOR AND ON BEHALF OF**  
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**BY THEIR CONSTITUTED ATTORNEY**

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### UNDERTAKING

15. We hereby, undertake to fencing of boundary of the safety zone of the mining lease, adjacent to habitation/roads as per approved scheme and **Condition 14 (b)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
16. We hereby, undertake Safety zone shall be maintained and regenerate as green belt around mining lease as per approved scheme to ensure dense canopy in the area, as per **Condition 14 (c)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
17. We hereby, undertake Safety zone will be maintained as per the prescribed norms and given **Condition 14 (d)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
18. We hereby, undertake no damage shall be caused to the topsoil and will follow the top soil management plan as per approved scheme and in given **Condition 15** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
19. We hereby, undertake Desilting of village tanks and other water bodies as per approved scheme so as to mitigate the impact of siltation of such tanks/water bodies as per **Condition 16** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
20. We hereby, undertake that the cost of felling of trees shall be deposited with the State Forest Department as per **Condition 17** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
21. We hereby, undertake that trees will be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO as per **Condition 18** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
22. We hereby, undertake that Afforestation of the non-mineralized virgin forest land within the mining area shall be taken up as per **Condition 19** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.



Signature of User Agency  
(Authorized Signatory)  
**FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY**

**ATUL KUMAR BHATNAGAR**

## UNDERTAKING

23. We hereby, undertake to explore possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department as per **Condition 20** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
24. We hereby, undertake to protect and conservation of wildlife of the area as per approved Site-Specific Wildlife Management Plan as per **Condition 21** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
25. We hereby, undertake to works for construction and cleaning of garland drains, stabilizing retaining walls, proper terracing of OB dumps and checking gully formation as per approved scheme and as per **Condition 24** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
26. We hereby, undertake That plants which are having lowest translocation factor can be preferred under afforestation as per approved scheme on the OB dumps and fruit trees to be avoided in planting during biological stabilization of OB dumps as per **Condition 25** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
27. We hereby, undertake Prevention of fall of wild animals into mining pit by fencing the open pit area as per **Condition 26** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
28. We hereby, undertake Angle of repose in OB dumps to be maintained less than  $28^{\circ}$  by appropriate benching as per approved scheme to ensure stability and safety as per **Condition 27** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
29. We hereby, undertake Vetiver grass can be planted at the lower reaches of the dump as per approved scheme to bind the soil and prevent soil erosion giving better stability to the dump as per **Condition 28** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.



Signature of User Agency  
(Authorized Signatory)  
**FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY**

**ATUL KUMAR BHATTACHARYA**

## UNDERTAKING

30. We hereby, undertake that Mining in a phased manner after taking due care for reclamation in a phased manner as per the approved mining plan. Annual report on implementation there of shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry as per **Condition 29** of the Stage-I approval under Section 2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
31. We hereby, undertake to comply with the Hon'ble Supreme Court order on regressing, and re-grass the mining area and any other areas which may have been disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. In a timely manner as per **Condition 30** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
32. We hereby, undertake No labour camp shall be established on the forest land and shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas as per **Condition 33** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
33. We hereby, undertake Layout plan of the Mining plan/ proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal as per **Condition 35** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
34. We hereby, undertake Forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government as per **Condition 36** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
35. We hereby, undertake No damage to the flora and fauna of the adjoining area shall be caused as per **Condition 37** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
36. We hereby, undertake to implement any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection, and development of forests & wildlife as per **Condition 38** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.

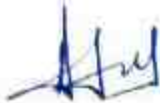


Signature of User Agency  
(Authorized Signatory)  
**FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY**

**ATUL KUMAR BHATTACHARYA**

## UNDERTAKING

37. We hereby, undertake that Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act, 1980 as issued by this Ministry's letter No. 5-2/2017-FC dated 28.03.2019 as per **Condition 40** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
38. We hereby, undertake to submit the annual self-compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly as per **Condition 41** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.



Signature of User Agency  
(Authorized Signatory)  
**FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY**

**ATUL KUMAR BHATNAGAR**



## OFFICE OF THE DIVISIONAL FOREST OFFICER, KEONJHAR DIVISION

Phone No- 06766-254315, email ID- [dfo.keonjhar@odisha.gov.in](mailto:dfo.keonjhar@odisha.gov.in)

No. 1743 /Mining- 195/2017

Dated, Keonjhar the 25-02-2024

To

The Authorised Signatory,  
M/s. Tata Steel Limited, Khopoli  
Narendrapur, Po- Kusupanga,  
Via- Meramandali, Dist- Dhenkanal.

Sub:

Proposal for seeking prior approval of the Central Government under Section 2 (ii) of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha of forest land (16.658 ha in Keonjhar Forest Division and 25.950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd) (Online proposal no. FP/OR/MIN/49169/2020).

X-Sub:

Demand of revised financial outlay of fund towards CA &amp; ACA Schemes.

Ref:

Memo No. 2362 dt. 07.02.2024 & online EDS dated 23.02.2024 of Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, FC Act, O/O. the PCCF & HoFF, Odisha, Bhubaneswar and this Office Order No. 56 dt. 25.02.2024.

Sir

The Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, FC Act, O/O. the PCCF & HoFF, Odisha, Bhubaneswar has raised EDS dated 23.02.2024 to revise the financial outlay of the above schemes. The undersigned has revised the financial outlay of said 2 nos schemes i.e. CA & ACA with financial outlay of Rs. 3,92,64,000/- & Rs. 3,69,34,500/- respectively. Accordingly, you are requested to deposit the approved amount of **Rs. 7,61,98,500/- (Rupees seven crore sixty-one lakh ninety-eight thousand five hundred)** only towards the cost of Compensatory Afforestation Scheme through e-portal of MoEF&CC, Govt. of India as provided in the <https://parivesh.nic.in/> and the proof /evidence of the deposit of fund be submitted to this office for further necessary action at this end.

**Details approved of CA & ACA Schemes**

Sl. No.	Particulars	Amount to be deposited.
1.	Scheme for Compensatory Afforestation over 42.608 ha non-forest land identified in village Jaladihi Under Banspal Tahasil.	3,92,64,000.00
2.	Scheme for Additional Compensatory Afforestation over 44.002 ha degraded forest land identified in Balabhadrapur RF under Keonjhar Forest Range.	3,69,34,500.00
	<b>Total</b>	<b>7,61,98,500.00</b>

(Rupees seven crore sixty-one lakh ninety-eight thousand five hundred) only.

Yours faithfully,

*(Signature)*  
Divisional Forest Officer,  
Keonjhar Division.

23/2


**Memo No. 1744 /Dated 25-02-24**

Copy forwarded to the Principal Chief Conservator of Forests, Forest  
Division & Nodal Officer, FC Act, O/O. the PCCF & HoFF, Odisha, Bhubaneswar for  
favour of information and necessary action with reference to online EDS dt. 23.02.2024.

  
**Divisional Forest Officer,  
Keonjhar Division**


**Memo No. 1745 /Dated 25-02-24** 

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela  
Circle, Rourkela for favour of information and necessary action.

  
**Divisional Forest Officer,  
Keonjhar Division**

**Memo No. 1746 /Dated 25-02-24** 

Copy forwarded to the Divisional Forest Officer, Bonai Division for  
information and necessary action.

  
**Divisional forest Officer,  
Keonjhar Division**





**OFFICE OF THE DIVISIONAL FOREST OFFICER, KEONJHAR DIVISION**

Phone No- 06766-254315, email ID- [dfo.keonjhar@odisha.gov.in](mailto:dfo.keonjhar@odisha.gov.in)

Office Order No. 56 /Mining-195/2017.

Dated, Keonjhar the 25-02-2024

**Revised Estimate Approval Order**


In continuation to this office order No. 36 dt. 08.02.2024, as per the point no. 4 of the Guideline issued vide order no. 1087/12 (Affn.) 25/2018 dt. 02.11.2021 by Principal Chief Conservator of Forests & HoFF, Odisha the following revised CA & ACA scheme pertaining to proposal for diversion of 42.608 ha in respect of Kalamang West (Northern Part) Block for Iron Ore Block in Keonjhar and Sundargarh District allotted to M/s Tata Steel BSL Limited (Formerly known as M/s Bhushan Steel Limited) are hereby approved based on the onetime cost norm matrix for 2023-24 with a maintenance period of ten years.

Sl. No.	Name of the Scheme	Revised scheme technically approved by DFO, Keonjhar
1	Scheme for Compensatory Afforestation over 42.608 ha non-forest land identified in village Jaladihi Under Banspal Tahasil.	Technically approved for Rs. 3,92,64,000/- (Rupees three crore ninety-two lakh sixty-four thousand) only.
2	Scheme for Addl. Compensatory Afforestation over 44.002 ha degraded forest land identified in Balabhadrapur RF under Keonjhar Forest Range	Technically approved for Rs. 3,69,34,500/- (Rupees three crore sixty-nine lakh thirty-four thousand five hundred) only.

  
(Dharmraj J.D., IFS)  
Divisional Forest Officer,  
Keonjhar Division

Memo No. 1741 /Dated 25-02-24 23/2

Copy forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, FC Act, O/O. the PCCF & HoFF, Odisha, Bhubaneswar for favour of information and necessary action with reference to memo No. 2362 dt. 07.02.2024.

  
Divisional Forest Officer,  
Keonjhar Division

Memo No. 1742 /Dated 25-02-24 23/2

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela for favour of information and necessary action with reference to memo No. 2361 dt. 07.02.2024 of Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, FC Act, O/O. the PCCF & HoFF, Odisha, Bhubaneswar.

  
Divisional Forest Officer,  
Keonjhar Division

23/2

CA + ACA + SSWLCP

**AGENCY COPY**

यूनियन बैंक  **Union Bank**  
of India

**NEFT / RTGS CHALLAN for CAMPA Funds**  
Date : 28-02-2024

Agency Name.	M/s. Tata Steel Limited, Khopoli
Application No.	5849169311
MoEF/SG File No.	8-13/2022-FC
Location.	ORRISA
Address.	Narendrapur, Po-Kusupanga, Via-Meramandali, Dist-DhenkanalDhenkanal
Amount(In Rs)	159615300/-

Amount in Words :Fifteen Crore Ninety-Six Lakh Fifteen Thousand Three Hundred Rupees. Only

**NEFT/RTGS to be made as per following details;**

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825849169311 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jalita Towers, Mission Road, Bengaluru-560027

• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

**BANK COPY**

यूनियन बैंक  **Union Bank**  
of India

**NEFT / RTGS CHALLAN for CAMPA Funds**  
Date : 28-02-2024

Agency Name.	M/s. Tata Steel Limited, Khopoli
Application No.	5849169311
MoEF/SG File No.	8-13/2022-FC
Location.	ORRISA
Address:	Narendrapur, Po-Kusupanga, Via-Meramandali, Dist-DhenkanalDhenkanal
Amount(In Rs)	159615300/-

Amount in Words :Fifteen Crore Ninety-Six Lakh Fifteen Thousand Three Hundred Rupees. Only

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Pay to Account No.	150825849169311 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jalita Towers, Mission Road, Bengaluru-560027

• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

Note: After making the required payment through challan, if the payment status has not been updated even after 7 working days, then kindly mail a copy of your challan with transaction date and reference id to Email: [fcblr@unionbankofindia.bank](mailto:fcblr@unionbankofindia.bank), [epurse@unionbankofindia.bank](mailto:epurse@unionbankofindia.bank), [ubin0903710@unionbankofindia.bank](mailto:ubin0903710@unionbankofindia.bank)

Print Back

Customer Name - ORRISA CAMPA  
Beneficiary Account - 150825849169311  
IFSC Code - UBIN0996335  
Amount Paid - 15,96,15,300.00/-  
UTR No - HDFCLR52024030686029141  
Payment Date - 06-03-2024



Date 11/03/2024

TO WHOM IT MAY CONCERN

This is to certify that following payments made with Tata Steel account 00870310000884 to following Tata Steel vendor with UTR and other details attached. In case any discrepancy please come back to us within a week.

Customer name : ORRISA CAMPA  
Beneficiary Account : 150825849169311  
IFSC Code : UBIN0996335  
Amount paid : 15,96,15,300.00/  
UTR No : HDFCR52024030686033141  
Payment Date : 06-03-2024

Thanks & Regards

For, HDFC Bank Ltd



Schedule I Form No.39-A

ଅବିଭାଗ

ଜାମିନ : ଛବିବିହାରୀ  
ପ୍ରାନ୍ତ : ଗଞ୍ଜାମ  
ପ୍ରାନ୍ତ ନମ୍ବର : 56

କେସ୍ ନମ୍ବର : 63/2024  
କେସ୍ ନମ୍ବର : 05  
ବିଭାଗ : ଗଞ୍ଜାମ

କ୍ଷତିପାରିତ ନାମ ଓ କ୍ଷତିପାରିତ ବା ଅବିଭାଗର କ୍ରମିକ ନମ୍ବର	ଓଡ଼ିଶା ସରକାର ପ୍ରଦତ୍ତ ଜାମିନ ଗୋଷ୍ଠୀ ନମ୍ବର ।
୧) ଅବିଭାଗର କ୍ରମିକ ନଂ	70/1
୨) ପ୍ରକାର ନାମ, ପିତାଙ୍କ ନାମ, ଭାଗ ଓ ବାସସ୍ଥାନ	ରାଜ୍ୟ ଗଞ୍ଜାମ, ପଶ୍ଚିମେଞ୍ଚ ଓ ଜୟଦାମ୍ଭ ପରିବର୍ତ୍ତନ ବିଭାଗ , ଓଡ଼ିଶା

କ୍ରମିକ	ମୂଲ୍ୟ					୪) କ୍ରମବର୍ତ୍ତନଶୀଳ ଖବରର ବିବରଣୀ
	କ୍ରମବର୍ତ୍ତନଶୀଳ	ଖବର	ପ୍ରକାର	ନିଷ୍ପାଦନ ସେତୁ ଓ ଅନ୍ୟାନ୍ୟ ସେତୁ ମଧ୍ୟ କିଛି ଅଂଶ	ମୋଟ	
୫) ମୂଲ୍ୟ		0.00	0.00	0.00	0.00	

୬) ବିଶେଷ ଅନୁବନ୍ଧ ଯଦି କିଛି ଅଂଶ	Alienation Case No. 04/2024 (ଦା.ଖା କେସ୍ ନଂ 63/2024) ହୁ.ମୁ.ପ୍ରା. ନଂ 1 ରକବା ହେ 11.5520, ପ୍ରା. ନଂ 2 ରକବା ହେ 15.1360, ପ୍ରା. ନଂ 3 ରକବା ହେ 11.7840, ପ୍ରା. ନଂ 4/911 ରକବା ହେ 4.1360 ଖା.ଖା 70 ଟୁ 1
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ପ୍ରାପ୍ତ ପ୍ରାକାଶନ ତାରିଖ : 18/09/1980  
ଗଞ୍ଜାମ ଶାସନ ଚାକିରି :  
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COURT OF THE TAHASILDAR  
BANSAL  
ADDL. TAHASILDAR  
BANSAL  
11/06/2024

ପ୍ରାଥମିକ ସୂଚନା ନଂ : ୩୮		ବର୍ଷ : ୨୦୨୨			ପ୍ରା - ପ୍ରାପ୍ତି	
ପ୍ରାଥମିକ ସୂଚନା ନଂ	ପ୍ରାଥମିକ ସୂଚନା ନାମ	ପ୍ରାଥମିକ ସୂଚନା ନାମ ଓ ବର୍ଷ	ପ୍ରାଥମିକ ସୂଚନା			ମୋଟ
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 11/06/2024  
 ADDL. TAHASILDAR  
 BANSPAL

ପ୍ରାଥମିକ ସୂଚନା ନାମ, ବର୍ଷ

ପ୍ରାଥମିକ ସୂଚନା (ବି.ନି.ନି.)

11/06/2024

## ଖଟିୟାନ

ମୌଜା : ଜଳବିହି  
 ଥାନା : ନୟାକୋଟ  
 ଥାନା ନମ୍ବର : 56

ଟଙ୍କାପତ୍ର : ବାଂଶପାଳ  
 ଟଙ୍କାପତ୍ର ନମ୍ବର : 05  
 ଡିଭିଜନ : କେନ୍ଦୁଝର

ଜମିଦାରଙ୍କ ନାମ ଓ ଖେତାବ ବା ଖଟିୟାନର କ୍ରମିକ ନମ୍ବର		ଓଡ଼ିଶା ସରକାର ପ୍ରଥମ ଭାଗ ଖେତାବ ନମ୍ବର ।				
1) ଖଟିୟାନର କ୍ରମିକ ନମ୍ବର		70/1				
2) ପ୍ରଜାର ନାମ, ପିତାର ନାମ, ଜାତି ଓ ବାସସ୍ଥାନ		ରାଜ୍ୟ ଜଙ୍ଗଲ, ପରିବେଶ ଓ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ବିଭାଗ, ଓଡ଼ିଶା				
3) ବୃତ୍ତ						
4) ବେସ :	ଜଳକର	ଖଜଣା	ସେୟ	ଟିସ୍ତାର ସେୟ ଓ ଅନ୍ୟାନ୍ୟ ସେୟ ଯଦି କିଛି ଆଏ	ମୋଟ	5) କ୍ରମବର୍ତ୍ତନଶୀଳ ଖଜଣାର ବିବରଣୀ
6) ବିଶେଷ ଅନୁପତ୍ର ଯଦି କିଛି ଆଏ		Alienation Case No. 04/2024 (ଡା.ଶା କେଶ ନଂ 63/2024) ହୁ.ପୁ ପ୍ଲଟ ନଂ 1 ରକବା ହେ 11.5520, ପ୍ଲଟ ନଂ 2 ରକବା ହେ 15.1360, ପ୍ଲଟ ନଂ 3 ରକବା ହେ 11.7840, ପ୍ଲଟ ନଂ 4/911 ରକବା ହେ 4.1360 ଖା.ଖା 70 ରୁ ।				
BLANK SPACE FOR STAMPING						
ଅନ୍ତିମ ପ୍ରକାଶନ ତାରିଖ - 18/09/1980						
ଖଜଣା ଧାର୍ଯ୍ୟ ତାରିଖ -						

ଉତ୍ତରାଞ୍ଚଳ ଡ୍ରମିକ ନଂ : 70/1		ମୌଜା : ଚଳନ୍ଦିହି			ଜିଲ୍ଲା : କେନ୍ଦୁଝର	
ପ୍ଲଟ ନମ୍ବର ଓ ଚଳର ନାମ	ଜିସମ ଓ ପ୍ଲଟର ଉଚ୍ଚତା	ଜିସମର ବିଷ୍ଣୁଗିରି ବିବରଣୀ ଓ ଶୈକ୍ଷିକ	ଭାଗ			ମାତ୍ରା
			ଘ.	ଫି.	ହେକ୍ଟର	
7	8	9	10		11	12
1	ପର୍ବତ ଏକ		28	5450	11.5520	
2	ପର୍ବତ ଏକ		37	4010	15.1360	
3	ପର୍ବତ ଦୁଇ		29	1180	11.7840	
4/911	ପର୍ବତ ଦୁଇ		10	2200	4.1360	
4 plots			105	2840	42.6080	



## OFFICE OF THE DIVISIONAL FOREST OFFICER, KEONJHAR DIVISION

Phone No- 06766-254315, email ID- [dfo.keonjhar@odisha.gov.in](mailto:dfo.keonjhar@odisha.gov.in)Memo No. 4879  
Dated, Keonjhar the/6F-Mining-13/2022  
21st June, 2024

To

The Principal Chief Conservator of Forests,  
Forest Diversion and Nodal Officer, F C Act,  
O/o- the PCCF, HoFF, Odisha, Bhubaneswar.

Sub:

Draft Notification for declaring non-forest land mutated in favour of State Forest, Environment &amp; Climate Change Department for compensatory afforestation in village Jaladihi under Banspal Tahasil against diversion of 42.608 ha forest land (16.658 ha in Keonjhar Forest Division and 25.950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines of M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd.), as "Protected Forest" under section 33 of Orissa Forest Act, 1972.

Ref:

1. Letter No.8-13/2022-FC dated 22.12.2023 of MoEF&CC, Govt. of India, New Delhi.
2. No. 1548/Rev dated 23.09.2017 & No. 879/Rev dated 23.04.2024 of Collector, Keonjhar.
3. Letter No.507 dated 29.02.2024 Tahasildar, Banspal Tahasil.

With reference to the subject cited above this is to intimate that, the following non-forest Govt. land situated in village- Jaladihi under Banspal Tahasil of Keonjhar District has been mutated and transferred in favour of State Forest, Environment & Climate Change Department for raising of compensatory afforestation therein against diversion of 42.608 ha forest land (16.658 ha in Keonjhar Forest Division and 25.950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines of M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd.) under Banspal Tahasil of Keonjhar District. Accordingly the draft PF Notification in triplicate, Map of village- Jaladihi in triplicate and the Xerox copy of RoR are submitted herewith for favour of your kind information and onwards transmission to the Government for declaration of PF Notification.

Name of the Village	Area to be notified	Project related
Vill-Jaladihi, Tahsil- Banspal	42.608 ha	Diversion of 42.608 ha forest land (16.658 ha in Keonjhar Forest Division and 25.950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines of M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd.).

Encl:-

1. Alienation Sanction Order No. 879/Rev dated 23.04.2024 of Collector, Keonjhar & Letter No.1231 dated 18.06.2024 of Tahasildar, Banspal.
2. Draft PF Notification along with Map & RoR of Vill- Jaladihi.
3. Stage-I approval order dated 22.12.2023 of MoEF&CC, Gol, New Delhi.

*[Signature]*  
Divisional Forest Officer,  
Keonjhar Division.

PTO


**Memo No. 4880 /Dated 21.06.2024**

Copy submitted to the Regional Chief Conservator of Forests, Rourkela Circle,  
Rourkela for favour of kind information and necessary action.

  
**Divisional Forest Officer,  
Keonjhar Division.**

**Memo No. 4881 /Dated 21.06.2024**

Copy forwarded to the Divisional Forest Officer, Bonai Forest Division for  
information and necessary action.

  
**Divisional Forest Officer,  
Keonjhar Division.**

**GOVERNMENT OF ODISHA  
FOREST, ENVIRONMENT & CLIMATE CHANGE DEPARTMENT  
NOTIFICATION**

No. /FE & CC, Dated, the 2024

In exercise of the powers conferred under Section -33 of the Odisha Forest Act, 1972 (Odisha Act 14 of 72), the State Government do hereby declare that the following land situated in Vill- Jaladihi under in Banspal Tahasil of Keonjhar District mutated and transferred in favour of State Forest, Environment and Climate Change Department for Compensatory Afforestation purpose against the approved diversion of 42.608 ha forest land of mining lease in Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar & Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd.) under Banspal Tahasil of Keonjhar District vide Letter No.8-13/2022-FC Dated 22.12.2023 of the Government of India, Ministry of Environment, Forest & Climate Change, New Delhi under Section 2 of the Forest Conservation Act, 1980, the limits of which are specified below and the area of which is 42.608 ha. Shall be Protected Forests with effect from the date of issue of the Notification and shall be known as **Jaladihi Protected Forests**.

**Forest Block** : Jaladihi PF  
**Name of the Protected Forest** : Jaladihi PF  
**Area in Ha.** : 42.608 ha  
**Name of the Village** : Jaladihi  
**Name of the P.S.** : Kanjipani  
**Name of the Tahasil** : Banspal  
**Name of the Sub-Division** : Keonjhar  
**Name of the District** : Keonjhar

**Land Schedule**

Land Schedule								
Village	Khata No.	Plot No.	Kissam	Total Area (Ha.)	Boundary Description (Plot nos. existing)			
					North	South	East	West
Jaladihi	70/1	01	Parbat-I	11.5520	Podadihi village Boundary	Plot No. 258(P)	Plot No. 2	Podadihi village Boundary
		02	Parbat-I	15.1360	Podadihi village Boundary	Plot No.258, 240,239 & 233	Plot No.3	Plot No.1
		03	Parbat-II	11.7840	Podadihi village Boundary	Plot No.230	Plot No.4(P) & 850 (P)	Plot No.2
		04/911	Parbat-II	4.1360	Podadihi village Boundary	Plot No.850	Plot No.4	Plot No.3
		Total				42.608		

**BY ORDERS OF THE GOVERNOR OF ODISHA**

Prepared & Verified

Divisional Forest Officer,  
Keonjhar Division.

**ADDL. CHIEF SECRETARY  
GOVERNMENT OF ODISHA  
FOREST, ENVIRONMENT &  
CLIMATE CHANGE DEPARTMENT**

2023

**Memo No \_\_\_\_\_/Dated**

Copy forwarded to the Director of Printing, Stationery and Publication, Odisha, Cuttack for publication in an extra ordinary issue of the Odisha Gazette and supply 10 copy of each to this Department/ Director of land Records and Survey, Odisha, Cuttack/ Collector, Keonjhar/Divisional Forest Officer, Keonjhar / Tahsildar, Banspal.

The Notification is a Statutory may be assigned S.R.O number.

**Deputy Secretary to Government.**

**Memo No \_\_\_\_\_/Dated**

Copy forwarded to the Revenue and Excise Department / Director of Land Records and Surveys, Odisha, Cuttack/ R.D.C (ND), Sambalpur for information and necessary action.

**Deputy Secretary to Government.**

**Memo No \_\_\_\_\_/Dated**

Copy forwarded to the Principal Chief Converter Forest and HoFF, Odisha Bhubaneswar/Principal Chief Conservator of Forest, Forest Diversion and Nodal Officer, O/o Principal Chief Conservator of Forest and HoFF, Odisha, Bhubaneswar/ Regional Chief Conservator of Forest, Rourkela Circle for information and necessary action.

**Deputy Secretary to Government.**

30717/2023

Government of India  
Ministry of Environment, Forest and Climate Change  
(Forest Conservation Division)

Indira Paryavaran Bhawan,  
Jor Bagh Road, Aliganj  
New Delhi - 110003

Dated: 22<sup>nd</sup> December, 2023

To

The Addl. Chief Secretary (Forests),  
Government of Odisha,  
Bhubaneswar.

**Sub: Proposal for seeking prior approval of the Central Government under Section 2 (ii) of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha of forest land (16.658 ha in Keonjhar Forest Division and 25.950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd) (Online proposal no. FP/OR/MIN/49169/2020)**

Madam/Sir,

I am directed to refer to the State Government of Odisha's letter No. FE-DIV-FLD-0048-2022-10644 dated 17.06.2022, and additional information submitted vide No. 22410/ 9F (MG) -66/2021 dated 03.11.2022, vide letter No. 4255/9F (MG) -51/2021 dated 03.03.2023, vide letter No. 15271/ 9F (MG) -66/2021 dated 28.07.2023 and vide letter No. 9F (MG)- 12/2023 dated 21.11.2023 on the above subject seeking prior approval of the Central Government in accordance with Section-2 of the Forest (Conservation) Act, 1980. The proposal was considered by the Advisory Committee (AC) in its meeting held on 29.11.2023 and to say that the proposal has been examined by the Advisory Committee constituted by the Central Government under section 3 of the aforesaid Act.

2. After careful examination of the proposal of the State Government and on the basis of the recommendations of the Advisory Committee, and approval of the same by the competent authority of the MoEF&CC, New Delhi, the Central Government hereby accords '*in-principle*' approval under Section - 2 of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha of forest land (16.658 ha in Keonjhar Forest Division and 25.950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd) subject to fulfilment of the following conditions:

1. Legal status of the diverted forest land shall remain unchanged;
2. **Compensatory Afforestation:**
  - a. The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation as per the approved CA Scheme at the current wage rate in consultation with State Forest Department in the account of CAMPA of the concerned State through online portal;
  - b. The land identified for raising Compensatory Afforestation shall be

1/60717/2023

notified by the State Government as RF under Section-4 or PF under Section-29 of the Indian Forest Act, 1927 or under the relevant Section (s) of the local Forest Act, as the case may be, before the Stage-II approval;

- c. The cost of survey, demarcation and erection of permanent pillars, if required on the identified CA land, shall be deposited in advance with the Forest Department by the user agency. The CA will be maintained for 10 years. The scheme may include afforestation of indigenous species with appropriate provision for anticipated cost increase for works scheduled for subsequent years;
- d. The compensatory afforestation over non-forest land, equal in extent to the forest land being diverted i.e. 42.608 ha, shall be raised by the State Forest Department at the project cost within three years from the date of grant of Stage - II approval. The details of CA in NFL along with KML will be submitted at the time of submission of compliance of Stage-I.
- e. Afforestation on degraded forest land to be selected elsewhere, measuring one and a half times the area under safety zone, shall also be done at the project cost under the supervisions of the State Forest Department and afforestation will be done within three years from the date of Stage-II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest Department;
- f. User agency either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40), if any, located in the area within 100 meter from outer perimeter of the mining lease. The plan for plantation and SMC activities will be prepared and submitted to MoEF &CC before Stage-II Clearance;
- g. 25% of the CA cost additionally will be spent towards soil and moisture conservation activities in the proposed CA area as per site requirement and deposited in CAF;

### 3. NPV:

- a. The User Agency shall transfer the funds towards the cost of Net Present Value (NPV) of the forest land being diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 06.01.2022 read with 22.03.2022 through online portal of CAMPA account of the State Concerned;
- b. At the time of payment of the Net Present Value (NPV) at the present rate, the user agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;

4. *Transportation of ore shall be as per the recommendation in the report submitted by CSIR-NEERI;*

5. *A holistic transportation plan shall be prepared by the State Govt. aiming to have minimum impact in the landscape. The same shall be implemented. Transportation of ore should be as far as possible through common conveyor*

17/2023

belt, slurry pipeline, railways, etc. Transportation of ore through road should be minimized in a time bound manner;

6. An Oversight Committee shall be constituted under the Chairmanship of the DDGF (Central) RO Bhubaneswar for 10 years who will monitor and review the compliance of the conditions stipulated in the approval for these five mines [namely- 1. Netrabandha Pahar Iron Ore Block (area 112.621 ha, 2. Netrabandha Pahar (West) area 66.242 ha), 3. Laserda Pacheri Manganese & Iron Ore Block (area 94.351 ha), 4. Kalmang West (Northern Part) Block for Iron Ore Mines Iron Ore Block (Area 42.608 ha) and 5. Guali Opencast Iron Ore Mines (area 194.683 ha)] twice a year and submit their yearly report to this Ministry in the month of December. This Oversight Committee shall consist following members and logistics of this Committee shall be borne by State Government at the cost of UAs:

- a. DDGF (Central) – Regional Office Bhubaneswar- Chairman.
- b. One Representative from IIFM Bhopal.
- c. One Representative from WII Dehradun.
- d. One Representative from ICFRE.
- e. One Representative from NEERI.
- f. One expert in Geology.
- g. Two other experts nominated by MoEF&CC.

The recommendation made by the said committee shall be considered by the Ministry and if agreed the same shall be binding on the UAs;

7. Integrated Regional Wildlife Conservation Plan shall be prepared for 10 years covering the forest Division of Sundargarh, Jharsuguda and Keonjhar Districts at the cost of UA. The works shall be executed as per APO and the regional plan shall have site/species specific wildlife sub plans/prescriptions;
8. A Bio-diversity Conservation Plan for this entire landscape shall also be prepared by the State Govt at the cost of UA;
9. Soil and moisture conservation measures shall be undertaken in and around 10 KM radius of the mining lease areas at project cost;
10. The conditions stipulated in EC should be strictly implemented and monitored;
11. Compensatory levies to be realized from the User Agency under the project shall be transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (<https://parivesh.nic.in/>);
12. The KML files of diverted area, the CA areas, the proposed SMC treatment area and the WLMP area shall be uploaded on the e-Green watch portal with all requisite details prior to Stage-II approval;
13. Following activities, as per approved plan / schemes, shall be undertaken in the lease area by the User Agency under the supervision of the State Forest Department. Approved scheme/plan shall be submitted to the Ministry along with compliance of Stage-I approval:
  - a. Mitigative measures to minimize soil erosion and choking of stream shall be implemented within a period of three years with effect from the issue of Stage-II clearance in accordance with the approved Plan in consultation with the State Forest Department;

1/60717/2023

- b. Planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme;
  - c. Construction of check dams, retention /toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme;
  - d. Stabilize the overburden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than 28°; and
14. **Safety Zone Management:** Following activities, at project cost, shall be undertaken by the user agency for the management of safety zone as per relevant guidelines issued by the Ministry's guidelines:
- a. User agency shall ensure demarcation of safety zone (7.5-meter strip all along the inner boundary of the mining lease area), and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers under the supervision of the State Forest Department;
  - b. Boundary of the safety zone of the mining lease, adjacent to habitation/roads, should be properly fenced by the user agency;
  - c. Safety zone shall be maintained as green belt around mining lease and to ensure dense canopy in the area, regeneration shall be taken up in this area by the user agency at project cost under the supervision of the State Forest Department;
  - d. The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms;
15. No damage shall be caused to the top-soil and the user agency will follow the top soil management plan;
16. The User Agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km from the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User Agency shall regularly undertake desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/water bodies. A detailed approved plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage-II approval;
17. The cost of felling of trees shall be deposited by the User Agency with the State Forest Department;
18. Trees should be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO;
19. The User Agency shall undertake that afforestation of the non-mineralized virgin forest land within the mining area shall be taken up at project cost;
20. The user agency shall explore the possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department.
21. A site-specific Wildlife Management Plan shall be prepared by the State Government in consultation with the PCCF (Wildlife) for the protection and conservation of wildlife of the area. A copy of approved Plan shall be

07/17/2023

- submitted to the Ministry along with the compliance of Stage-I approval. Entire cost of implementation of the provisions of the Wildlife Management Plan shall be deposited into the account of CAMPA of the State;
22. State Government shall complete settlement of rights, in term of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence, along with compliance of Stage-I approval, as prescribed by this Ministry's letter No. 11-9/1998-FC (Pt.) dated 03.08.2009 read with 05.07.2013, in support thereof;
  23. The User Agency shall undertake that user agency and the State Forest Department shall create and maintain from funds to be provided by the user agency alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project as per the plan duly approved by the Principal Chief Conservator of Forests (Wildlife) and the Chief Wildlife Warden Odisha. Bird nests artificially made out of eco-friendly materials shall be used in the area, including forest area and human settlements, adjoining the forest area being diverted for the project;
  24. The User Agency shall undertake that the project authority needs to take up works for construction and cleaning of garland drains, stabilizing retaining walls, proper terracing of OB dumps and checking gully formation resulting in soil erosion;
  25. The User Agency shall undertake that plants which are having lowest translocation factor can be preferred under afforestation on the OB dumps and fruit trees to be avoided in planting during biological stabilization of OB dumps;
  26. The User Agency shall undertake that prevention of fall of wild animals into mining pit by fencing the open pit area;
  27. The User Agency shall undertake that the angle of repose in OB dumps to be maintained to ensure stability and safety;
  28. The User Agency shall undertake that vetiver grass can be planted at the lower reaches of the dump to bind the soil and prevent soil erosion giving better stability to the dump;
  29. The User Agency shall undertake mining in a phased manner after taking due care for reclamation of the mined over area. The concurrent reclamation plan as per the approved mining plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the concern Addl. Principle Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities area satisfactorily executed;
  30. The User Agency shall comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other areas which may have been disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner;
  31. Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease proposed to be

I/60717/2023

- granted under the Mines and Minerals (Development and Regulation) Act, 1957, as amended and the Rules framed there-under;
32. The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;
  33. No labour camp shall be established on the forest land and the User Agency shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas;
  34. The boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS coordinates;
  35. The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal;
  36. The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government;
  37. No damage to the flora and fauna of the adjoining area shall be caused;
  38. Any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife; and
  39. The user agency shall comply with all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.
  40. Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act, 1980 as issued by this Ministry's letter No. 5-2/2017-FC dated 28.03.2019.
  41. The User Agency shall submit the annual self-compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly; and
  42. The compliance report shall be uploaded on **e-portal** (<https://parivesh.nic.in/>).
3. After receipt of the compliance report on fulfilment of the conditions mentioned above, the proposal shall be considered for final approval under Section-2 of the Forest (Conservation) Act, 1980. Transfer of forest land shall not be affected till final approval is granted by the Central Government in this regard.

Yours Sincerely,

Signed by

Charan Jeet Singh

(Charan Jeet Singh)

Scientist 'D'

Copy to:

Date: 22-12-2023 10:12:02

1. PCCF (HoFF), State Forest Department, Government of Odisha, Bhubaneswar
2. PCCF & Nodal Officer (FCA), O/o PCCF, State Forest Department, Government of Odisha, Bhubaneswar

17/2023

3. DDGF (Central), Regional Office of MoEF&CC at Bhubaneswar.
4. User Agency.
5. Monitoring Cell, FC Division, MoEF&CC, New Delhi
6. Guard File.

OFFICE OF THE COLLECTOR

DISTRICT MAGISTRATE, KEONJHAR

To

No 1548

23.09.2017

The Divisional Forest Officer,  
Keonjhar Division, Keonjhar

Sub:-

Identification/allocation of non-forest Government land for raising compensatory afforestation in lieu of forest land to be diverted for Kalamang west(Northern part) Iron Ore Mines in Keonjhar and Sundargarh District allotted to M/s Bhusan steel Ltd.

Ref:-

Your memo No.4366 dt.29.6.17

Sir,

With reference to the letters on the subject cited above, I am to say that the following schedule of non-forest government land measuring 42.608 Ha. in village Jaladihi under Banspal Tahasil has been identified for raising Compensatory afforestation in lieu of forest land to be diverted for the Kalamang west(Northern Part) Iron Ore Mines in Keonjhar and Sundargarh District allotted to M/s Bhusan Steel Ltd. The land has been jointly verified by the Tahasildar, Banspal, Forest Section office and Range Officer, BJP Range on dt.4.8.2017 as reported by the Tahasildar, Banspal. Copy of the joint verification report is enclosed for reference.

Land Schedule  
Name of the Tahasil-Banspal  
Name of village-Jaladihi

Name of the village	Khata no.	Plot No	Total Area (in Ha.)	Proposed area for C.A.(in Ha.)	kissam
Jaladihi under Banspal Tahasil	70(A.A.A.)	1	11.552	11.552	Parbat-I
		2	15.136	15.136	Parbat-I
		3	11.784	11.784	Parbat-II
		4	6.384	4.136	Parbat-II
		Total	44.856	42.608	

Further, In pursuance of guideline issued vide letter F.No.11-306/2014-FC dated 07.10.2014 of MOEF & CC, Govt. of India, I am to say that the above schedule of non-forest land identified for the purpose stated above will be transferred and mutated in favour of the State Forest & Environment Department for

P.T.O

creation of CA against the projects indicated in the land schedule on payment of premium of the land by the project proponent immediately on receipt of stage-I approval under the FC Act for diversion of forest land required by the project proponent.

You are also requested to file requisition before the Tahasildar, Banspal for sanction of alienation in favour of the State Forest & Environment Department after receipt of receipt of Stage-I approval under F.C. Act.

Yours faithfully,

  
Collector, Keonjhar

Memo No 1549 /Rev/Dt 23.09.17

Copy submitted to the Joint Secretary to Government, Revenue & D.M. Department, Odisha, Bhubaneswar for information.

  
Collector, Keonjhar

Memo No 1550 /Rev/Dt 23.09.17

Copy forwarded to the Sub-Collector, Keonjhar for information and necessary action.

Copy forwarded to the Tahasildar, Banspal for information and necessary action with reference to his letter No.1521 dt.4.9.2017

Copy forwarded to Mining Officer, Keonjhar for information  
Copy to Guard File (Lease Branch).

  
23.9.17  
Addl. District Magistrate,  
Keonjhar

Memo No 1551 /Rev/Dt 23.09.17

Copy forwarded to the Asst. Vice President, M/s Bhusan Steel Ltd. 41HIG-BDA, Jayadev Vihar, Bhubaneswar-751013 for information and necessary action with reference to his letter no. 176 dt.28.6.2017

  
23.9.17  
Addl. District Magistrate,  
Keonjhar



ON/IS 6F  
18.6.24

Through Special Messenger

**OFFICE OF THE TAHASILDAR, BANSPAL**

No. 1231 /Rev. dated 18/06/2024

To

The Divisional Forest Officer, Keonjhar Division.



Sub:- Alienation of non forest Government land for compensatory afforestation  
Submission of R.O.R. thereof.

Ref :- District Office Memo No.881/Rev.dt.23.04.2024.

Sir,

In inviting a kind reference to the letter on the subject cited above, I am to say that the Collector, Keonjhar has been please to sanction the alienation of the following schedule of land in favour of State Forest, Environment & Climate Change Department for raising compensatory afforestation against diversion of 42.6080Ha. Forest land Keonjhar Division proposed to be diverted with Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundergarh District of Odisha allotted to M/s Tata Steel BSL Limited vide Sanctioned Order No. 879 /Rev.dt.23.04.2024.

01. Alienation Case No.04/2024

**LAND SCHEDULE**

LAND SCHEDULE					
Name of the village	Khata No.	Plot No.	Total area (in Hc.)	Proposed Area (in Hc.)	Kisam
1	2	3	4	5	6
Jaladihi	70 (AAA)	1	11.5520	11.5520	Parbat-I
		2	15.1360	15.1360	Parbat-I
		3	11.7840	11.7840	Parbat-II
		4 (P)	6.3840	4.1360	Parbat-II
TOTAL				42.6080	

As per sanction order of the Collector, Keonjhar, the said land shall be utilized exclusively for the purpose for which it is alienated and shall not be transferred or otherwise dispose of. Infringement of any of the conditions of the alienation shall result in immediate resumption of the land by the Government in Revenue Disaster Management Department free from all encumbrances.

After receiving of sanction orders alongwith alienation case records referred above the R.O.R. has been prepared by this Office as per rule 20, 21 & 22 of \* Orissa Survey & Settlement rules, 1962\* for which the Khata & Plots has been

(Contd...P/2...)

Changed in Bhulek Software and the details of schedule of land are given below:-

**LAND SCHEDULE**

LAND SCHEDULE				
Name of the village	Khata No.	Plot No.	Area (In Hc.)	Kisam
Jaladihi	70/1	1	11.5520	Parbat-I
		2	15.1360	Parbat-I
		3	11.7840	Parbat-II
		4/911	4.1360	Parbat-II
Total		4 Plots	42.6080	

The R.O.R. bearing No.70/1 in respect of Mouza-Jaladihi is enclosed herewith the receipt of the same may kindly be acknowledged.

Encl : As above

Yours faithfully,

*Kaushik*  
18/06/2024  
TAHASILDAR, BANSPAL

Memo No. 1232 /Rev.dated 18/06/2024

Copy submitted to the Sub-Collector, Keonjhar for favour of kind information and necessary action.

*Kaushik*  
18/06/2024  
TAHASILDAR, BANSPAL

Memo No. 1233 /Rev.dated 18/06/2024

Copy submitted to the Addl. District Magistrate, Keonjhar for favour of kind information and necessary action.

*Kaushik*  
18/06/2024  
TAHASILDAR, BANSPAL

Memo No. 1234 /Rev.dated 18/06/2024

Copy forwarded to the Director, M/s Tata Steel BSL, Limited, Joda, District-Keonjhar-758035 for information and necessary action with reference to District Office memo No.883/Rev.dt.23.04.2024.

*Kaushik*  
18/06/2024  
TAHASILDAR, BANSPAL

Memo No. 1235 /Rev.dated 18/06/2024

Copy to Revenue Inspector, Uperralgoda for Information and necessary action. She is directed to hand over possession of the aforementioned land to authorised Official of the Divisional Forest Officer, Keonjhar Division and report compliance.

*Kaushik*  
18/06/2024  
TAHASILDAR, BANSPAL

Schedule I Form No.39-A

ଖତିୟାନ

ମୌଜା : କଳଡ଼ିହି

ତହସିଲ : ବାଂଶପାଳ

ଥାନା : ନୟାବୋଡ଼

ତହସିଲ ନମ୍ବର : 05

ଥାନା ନମ୍ବର : 56

ଜିଲ୍ଲା : କେନ୍ଦୁଝର

ଜମିଦାରଙ୍କ ନାମ ଓ ଶାସ୍ତ୍ରୀଙ୍କ ବା ଖତିୟାନର କ୍ରମିକ ନମ୍ବର	ଓଡ଼ିଶା ସରକାର ପ୍ରଥମ ଭାଗ ଖୋଲାଢ଼ ନମ୍ବର 1
୧) ଖତିୟାନର କ୍ରମିକ ନଂ	70/1
୨) ପ୍ରକାର ନାମ, ପିତାଙ୍କ ନାମ, ଜାତି ଓ ବାସସ୍ଥାନ	ରାଜ୍ୟ ଜଙ୍ଗଲ, ପରିବେଶ ଓ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ବିଭାଗ, ଓଡ଼ିଶା

ଖ) ସେତ	ଗ) ସ୍ୱତ୍ୱ					୫) କ୍ରମବର୍ତ୍ତନଶୀଳ ଖଜଣାର ବିବରଣୀ
	ଜମିଦାର	ଖଜଣା	ସେତ	ନିଶ୍ଚାର ସେତ ଓ ଅନ୍ୟାନ୍ୟ ସେତ ନାହିଁ କିଛି ଥାଏ	ମୋଟ	
୪) ସେତ		0.00	0.00	0.00	0.00	

୬) ବିବେଚନା ଅନୁସାରେ ସବି କିଛି ଥାଏ	<p>Alienation Case No. 04/2024 (ବା.ଖା କେଶ ନଂ 63/2024) ହୁ.ମୁ.ମୁ.ଟ ନଂ 1 ରକବା ହେ 11.5520, ମୁ.ଟ ନଂ 2 ରକବା ହେ 15.1360, ମୁ.ଟ ନଂ 3 ରକବା ହେ 11.7840, ମୁ.ଟ ନଂ 4/911 ରକବା ହେ 4.1360 ଖା.ଖା 70 ରୁ</p>
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ଅନ୍ତିମ ପ୍ରକାଶନ ତାରିଖ: 18/09/1980

ଖଜଣା ଆୟର ତାରିଖ:

BLANK STAMPING



ADDL. TAHASILDAR  
BANSPAL

11/06/2024

ଖଣ୍ଡସାମାନ୍ୟ ପ୍ରମାଣ ନଂ : 70/1		ମୌଜା ବିବରଣୀ			କିସା : କେନ୍ଦୁଗଡ଼
ପ୍ରତି କରଦର ଓ ଚକର ନମ୍ବର	କିସାନ ଓ ପ୍ରତିକ୍ଷା ସଂଖ୍ୟା	କିସାନର ବିଭାଗିକ ବିବରଣୀ ଓ ବିବରଣୀ	ପ୍ରମାଣ		
			ଏକର	ଫି	ଚେକ୍ସ
୭	୮	୯	୧୦	୧୧	୧୨
1	ପ୍ରମୋଦ ଶର୍ମା		28.545	11.5520	
2	ପ୍ରମୋଦ ଶର୍ମା		17.401	15.1350	
3	ପ୍ରମୋଦ ଶର୍ମା		29.118	11.7840	
4/୧11	ପ୍ରମୋଦ ଶର୍ମା		10.220	4.1360	
4/୧୧			105.284	42.6030	

ADDL. TAHASILDAR  
BANSIPAL

ଖଣ୍ଡସାମାନ୍ୟ ପ୍ରମାଣ ନଂ : 70/1

ମୁଖ୍ୟ ମନ୍ତ୍ରୀ (ସିନିଆ)

11/06/2024

**SCHEME FOR**  
**1.5 TIMES SAFETY ZONE AFFORESTATION**  
**OVER 3.573 HA. IN DEGRADED**  
**FOREST LAND IDENTIFIED**  
**IN NAGARIA P.R.F.**  
**OF**  
**KULIPOSH RANGE**  
**OF**  
**BONAI FOREST DIVISION**  
**FOR KALMANG WEST (NORTHERN PART)**  
**IRON ORE BLOCK**  
**OF**  
**M/S TATA STEEL LIMITED.**

**SCHEME FOR 1.5 TIMES SAFETY ZONE AFFORESTATION OVER 3.573 HA.  
IN DEGRADED FOREST LAND IDENTIFIED IN NAGARIA P.R.F. OF KULIPOSH  
RANGE OF BONAI FOREST DIVISION FOR KALMANG WEST  
(NORTHERN PART) IRON ORE BLOCK OF  
M/S TATA STEEL LTD.**

**1. INTRODUCTION:**

Government of India in the Ministry of Environment, Forest and Climate Change, Govt. of India has granted Stage-I approval for diversion of 42.608 ha. of forest land (25.950 ha. in Bonai Forest Division and 16.658 ha. in Keonjhar Forest Division) (including 2.382 ha. of Safety Zone) for Kalmang West (Northern Part) Iron Ore Block of M/s TATA Steel Ltd. within their said allotted Block of 92.875 ha. in Bonai & Keonjhar Forest Division vide his Letter No.8-13/2022-FC dt.22.12.2023. The MoEF & CC has stipulated certain conditions for fulfillment. As per Condition No.2 (e) of the MoEF & CC, the afforestation on degraded forest land to be selected elsewhere measuring one and half times the area under safety zone shall be done at the project cost. The total Safety zone in the forest area comes to 2.382 ha. (Bonai-1.148 ha. + Keonjhar-1.234 ha.) Forest Division. So, 1.5 times Safety Zone area comes to 3.573 ha. (2.382 ha. X 1.5 times). Accordingly, the Range Officer, Kuliposh Range has identified 3.573 ha. of degraded forest land. The location of the 1.5 times Safety zone afforestation area has been shown in the Topo map vide **Annexure-IX**.

Plantation of 1000 nos. of seedlings per ha. at a spacing of 2.5 Mt. x 2.5 Mt. will be taken up over 3.573 Ha. of identified area. The cost estimate for this plantation calculated as per cost norm for AR plantation is enclosed as **Annexure-I**.

**2. IDENTIFICATION OF THE DEGRADED FOREST AREA:**

An area of 3.573 ha. of degraded forest land has been identified in Nagaria PRF of Kuliposh Range of Bonai Forest Division for taking up 1.5 times Safety Zone Afforestation. Nagaria PRF comes under Protection Working Circle as per the Working Plan of Bonai Forest Division. The area has been inspected by the Range Officer, Kuliposh Range and found to be suitable for 1.5 times Safety Zone Afforestation, and free from encroachment & encumbrances. Certificate to this effect furnished by the Range Officer, Kuliposh Range (**Annexure-V**).

Further the identified area has been verified with the help of Decision Support System (DSS) & found the area suitable for plantation. The DSS report is attached as (**Annexure-VI**).

The Certificate on DSS analysis report in the prescribed format is enclosed as (**Annexure-VII**).

3. **TOPOGRAPHY AND SOIL:**

The forest land identified for this purpose is Hilly to slope, gravel and soil mixed. The area experiences tropical climate with monsoon rainfall.

4. **CLIMATE**

The area experiences Sub-tropical climate. It is characterized by very hot summer and cool winter. Maximum temperature during summer rises upto 44<sup>o</sup> Celsius and the minimum goes down to 8<sup>o</sup> Celsius. The area gets rain from South-East Monsoon, which breaks during second fortnight of June and continues upto last week of September. The annual rainfall varies from 780 to 1880mm. The annual average rainfall is 1500mm. The bulk of precipitation occurs during July-August. During April-May, occasional rainfall occurs along with thunder storm.

5. **EXISTING VEGETATION.**

The vegetation of degraded forest land identified for raising 1.5 times of Safety Zone area in Nagaria PRF comprises of Kusum, Mahul, Sal ect. The canopy density has been reported to be below 0.2.

6. **OBJECTIVE OF THE SCHEME:**

- i) To restock the barren forest land by planting suitable species.
- ii) To improve the micro-edaphic conditions by undertaking suitable soil and moisture conservation measures.
- iii) To protect the area against encroachment, illicit felling, fire occurrence, grazing etc., so as to check further degradation of the area.
- iv) To provide gainful employment to the local people mainly involving SC/ST population.
- v) To create awareness among the local villagers on protection and maintenance of plantation and forest.

7. **PROPOSED TECHNIQUE:**

To achieve the above objectives, it has been proposed to take up AR Plantation @ 1000 seedlings per hectare at a spacing of 2.5 mtr x 2.5 mtr over 3.573 ha. (18 months old seedlings) in the identified degraded forest area of Nagaria PRF of Kuliposh Range. The said plantation work shall be undertaken in the 0<sup>th</sup> year (Pre-plantation operation) followed by first year plantation work and maintenance during 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, & 10<sup>th</sup> year. The detailed expenditure statement per hectare is enclosed as Annexure-I.

**(A). SURVEY AND DEMARCATION:**

The area is surveyed and demarcated in the field with the help of G.P.S. The GPS co-ordinates of the boundary of the site are mentioned in the Map. RCC Pillars of usual size will be posted along the boundary line. This operation will be helpful in future maintenance and management. The GPS Map showing the identified area has been enclosed as Annexure-VIII.

**(B). REGENERATION CLEANING AND TENDING OPERATION:**

The operation aims at tending the existing crop silviculturally for better growth. It involves removal of inferior and diseased tree growth. During this operation, climbers etc which interferes with the growth of the existing crop are to be cut. This operation helps sapling to grow better and faster. The site clearance is to be done by cutting and removal of Eupatorium and all other unwanted growth.

The following operation will be carried out during the operation.

- i) Cutting back of individual inferior poles interfering with the growth of better ones.
- ii) Cutting back of malformed and diseased individuals.
- iii) Singling of coppice shoots & retaining healthier ones.
- iv) Cutting of climbers.
- v) Cutting back of high stumps flush to the ground.
- vi) Pruning the branches of the poles up to hand reach.

During 1<sup>st</sup> year operation, climber cutting, high stump cutting, and cutting of shrub, herbs, malformed and diseased plants will be done. In the next two years, cutting of individuals and singling of economically important species will be done.

**(C). PLANTATION:**

The area will be stocked by way of raising plantation in AR with gap Plantation. Taking in to consideration the soil condition, the local habitation and suitability of the site, the following species are selected.

- |  |  |
|--|--|
| 1. <i>Dalbergia latifolia</i> (Sisoo)  | 7. <i>Gmelina arborea</i> (Gambhari)       |
| 2. <i>Pongamia pinnata</i> (Karanja)   | 8. <i>Mangifera indica</i> (Mango)         |
| 3. <i>Emblica officinalis</i> (Amla)   | 9. <i>Artocarpus heterophyllus</i> (Panas) |
| 4. <i>Terminalia belerica</i> (Bahada) | 10. <i>Limonia acidissima</i> (Kaitha)     |
| 5. <i>Terminalia chebula</i> (Harida)  | 11. <i>Syzygium cumini</i> (Jamu)          |
| 6. <i>Acacia catechu</i> (Khair)       |  |

The following operations will be taken up for plantation;

**i) Raising of nursery:**

Seedlings required for plantation shall be raised in a temporary nursery nearer to the planting site and water sources. Nursery work will be started 18 months prior to the year of plantation so that quality seedling stock will be available for plantation. The seedlings shall be raised 10% extra besides the actual requirement to compensate the casualties. Seedlings will be raised in polythene bags of 9" x 5" size following standard nursery practice.

**ii) Alignment and pitting:**

Alignment and pitting will be taken up in the month of March-April, Pits of size 45cm x 45cm x 45cm will be dug maintaining a spacing of 2.5mtr x 2.5mtr @1000 seedlings per ha. It is proposed to take up Plantation in the blank patches.

**iii) Actual Planting:**

The seedlings will be planted @1000 seedlings per ha. in the dug out pits of size 45cm x 45cm x 45cm with a spacing of 2.5mtr x 2.5mtr. Plantation shall be taken up after first regular shower of monsoon and completed by the end of July. Species will be planted as per suitability of the soil condition. NPK/ Bio fertilizer @50gms per plant shall be applied as basal dosage. Anti-termite insecticide shall also be applied to each pit while planting. Casualties if any noticed shall be replaced with the excess seedlings raised for the purpose. During second year also, casualty replacement will be done for which seedlings shall be raised.

**iv) Weeding, Soil working & manuring :**

For establishment and better growth of the planted seedlings, timely weeding, soil working and manuring are necessary. It is proposed to carry out two weedings, soil working and manuring during the first year and second year of plantation and one weeding and soil working during third year. During first year and second year, first weeding and manuring shall be carried out during August-September and the second one during October-November along with soil working. First weeding shall be around the plants and the second will be of strip weeding. The weeding of third year will be around the plants, which will be carried out during August.

After each weeding, soil working will be done around each plant at a radius of 0.5mtr, and manuring of each plant will be done @50grms of NPK/ Bio fertilizer per plant in ring form.

**v) Application of insecticides:**

After planting of good healthy seedlings, the plantation site may cause influx of insects, which usually eat and damage the tender leaves and shoots of the plants. To get rid of such insect attack, application of insecticides will be taken up in required doses at desired intervals. Spraying of insecticides shall be done preferably in a sunny day in the forenoon as per requirement.

**vi) Fire line tracing and maintenance:**

Fire causes heavy loss to the forest & plantation during fire season. To prevent incidence of fire, the area shall be divided in to suitable blocks by tracing fire lines. Boundaries of the plantation patches and these block lines will be scrapped of the growth to a width of 2.0mtr during February-March and the cut back materials and the dry leaves stacked along these lines will be burnt under strict supervision. This operation shall be carried out for three years.

**8. SOIL CONSERVATION MEASURES:**

The site selected for 1.5 times Safety Zone Afforestation is degraded Proposed Reserve Forest, undulating, and gullies have been formed due to erosion. So, Soil Conservation Measures like Staggered Trench, Percolation Pit, Contour Trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub surface Dyke and WHS as per site requirement have been proposed. The cost norm of SMC is enclosed as Annexure-III.

**9. WATCH AND WARD:**

The plantation area is exposed to biotic interference. Hence, 1 no. of special watchers for protection of the Plantation have been proposed.

**10 FENCING:**

To protect the AR plantation from biotic interference, Angle Iron & Chain link wire mesh fencing is proposed over the identified area of 3.573 ha. in Nagaria Proposed Reserve Forest of Kuliposh Range. The total perimeter of the said identified area is 784 RMT (Or, 0.784 Km) length of boundary.

The cost norm for Angle Iron & Chain link wire mesh fencing is enclosed as Annexure-II.

**11. WATERING :**

Watering of the plantation (Watering Model-W-III) will be carried out aided by solar system (One Solar Energy Pump / 5 ha. Plantation). The cost norm is furnished as Annexure-IV.

**12. MOTIVATION OF PEOPLE:**

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e. Pureipani village is to be involved in protection and management of plantation. Before execution of the work, a meeting will be conducted in the above villages and resolution regarding support to plantation activities will be made. To motivate the people in this direction, they will be provided with incentives in shape of different community articles, buildings, and different community amenities of fixed and movable type through entry point activities (EPA). Health camps shall also be organized in the villages.

**13. EXECUTING AGENCY :**

The Divisional Forest Officer, Bonai Division shall execute the work by involving the local VSS mentioned above.

**14. INSPECTION, MONITORING & EVALUATION:**

In order to make the Afforestation under this 1.5 times Safety Zone Afforestation Scheme successful, intensive inspection of the plantation by the Forest field staff and the Officers at the Divisional level is necessary. Moreover, frequent monitoring and evaluation shall have to be done at different stages.

**15. REQUIREMENT OF FUNDS:**

For implementation of all prescriptions outlined above ₹ 52,87,500/- (Rupees Fifty Two Lakh Eighty Seven Thousand Five Hundred) only will be required as detailed below.

1.	AR Plantation @1000 plants per hectare over 3.573 ha. @₹2,71,716/-	₹	9,70,841.00
2.	Angle Iron & Chain link wire mesh fencing over 0.784 KM (Or, 784 RMT) @₹1,941.728/- per RMT.	₹	15,22,315.00
3.	Soil conservation measures structures like staggered trench, percolation pit, contour trench, graded earthen bund, LBCD, wire mesh, LBCD, Sub surface Dyke and Water Harvesting structures = 3.573 ha X ₹41,248/-.	₹	1,47,379.00
4.	Special plantation watcher 1 No. (1 x 13500 x 12 x 10 years).	₹	16,20,000.00
5.	Water Model-W-III, water provision to plantation: Solar system (One Solar Energy pump for 5 ha. Plantation) @ ₹5,46,274/- X 1 no.	₹	5,46,274.00
	<b>Sub-Total :-</b>	₹	<b>48,06,809.00</b>
6.	Entry Point Activities (10%) of the cost		4,80,681.00
	<b>G. TOTAL :-</b>	₹	<b>52,87,490.00</b> Or, <b>₹ 52,87,500.00</b>

(Rupees Fifty Two Lakh Eighty Seven Thousand Five Hundred) only.

**Technically Approved**

**Regional Chief Conservator of Forests**  
Boudh Circle

**Divisional Forest Officer,**  
Divisional Forest Officer,  
Bonai Division

## ANNEXURE-I

ANNEXURE-4						
BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1000 PLANTS PER HECTARE (18 months old seedlings)						
WAGE RATE Rs. 111/- PER MANDAY						
Sl. No.	Details of work	Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
<b>5th Year (Advance work) Pre-Planting Operation</b>						
1	Survey, Demarcation and Pillar marking	Nov/Dec	2	222	0	222
2	Preparation of Exposed Mass (thrust Mass)	Nov/Dec	1	111	309	411
3	Site preparation (Clearing & removal of stones)	Nov/Dec	12	1332	0	1332
4	Construction of 4.00 m wide protection Poles	Feb/Mar	1	111	0	111
5	Adjustment and stacking of pits	Feb/Mar	1	111	0	111
6	Dipping of pits (15 cm x 45 cm x 45 cm) in lime and agricultural soil	Feb/Mar	80	12480	0	12480
7	Construction of Temporary Labour shed, Drinking water facility and First Aid etc.	Jan/Mar	0	0	3500	3500
<b>Total</b>			<b>97</b>	<b>12722</b>	<b>3400</b>	<b>21327</b>
<b>1st Year Planting Year</b>						
1	Refilling of pits by sowing the required seed of the plant, application of organic composture/ COM/ FYM & mixing the same properly	Jan/Feb	2.5	277.50	3000	7322.50
2	Transportation of 18 months old polythene bag seedlings in hired truck / tractor from the Government/ Mega nursery to planting site including loading & unloading. (Average load of 10 RRs) & stacking the seedling @ Rs.6/- per Seedling (1100 nos.)	Jul/Aug	8	0	6600	6600
3	Watering polythene bag seedlings at planting site	Jul/Aug	2	222	0	222
4	Conveyance of polythene seedlings up head land from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after dumping the soil with other applied materials & spreading the soil perfectly around the planted seedlings.	Jul/Aug	22.5	2497.50	0	6997.50
5	Cost of Fertilizer & Insecticide: (a) NPK/500-fertilizer @ 50 gms/plant at head land = 50kg @ Rs.30/- per kg = Rs. 1500/- (b) Urea/Vermicompost/No. 1000/any other fertilizer in two subsequent doses @ Rs. 250/- (c) Insecticide/ Bio-pesticide @ 5 gms/plant @ Rs.150/- per kg = Rs. 750/-	Jul/Aug	0	0	3000	3000
6	Grassery Replacement @ 1800 (180 nos.)	Jul/Aug	2.5	277.5	0	277.5
7	1st weeding & Manuring	Aug/Sept	12	1332	0	1332
8	2nd Weeding, Soil working (1m. diameter around the plants) & Manuring	Oct/Nov	15	1665	0	1665
9	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of fire line till 1st year	Feb/Mar	3	333	0	333
10	Watch & Ward including watering as per requirement	Jan-Mar	12	1332	0	1332
<b>Total</b>			<b>76.50</b>	<b>2779.50</b>	<b>14600.00</b>	<b>20191.50</b>
<b>2nd Year Maintenance</b>						
1	Transportation of 100 seedlings from Nursery to plantation site including loading, unloading & unhooking by Tractor @ Rs.6/- per seedling	Jul	0	0	600	600
2	Grassery replacement 10%	Jul	2.5	277.5	0	277.5
3	Cost of Fertilizer & Insecticide: A) Cost of Insecticide/ Bio-pesticide @ 5 gms/plant = 0.5 kg @ Rs.150/- per kg = Rs.75/- B) Urea/NPK/500-fertilizer/Vermicompost/No. 1000/any other fertilizer @ Rs. 2000/-	Jul/Aug	0	0	2075	2075
4	Weeding (Complete weeding), Manuring & Soil working (1m. diameter around the plants)	Sept/Oct	15	1665	0	1665
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of fire line till 2nd year	Feb/Mar	3	333	0	333
6	Watch & Ward including watering as per requirement	Apr-May	10	1110	0	1110
7	Maintenance of Temporary Labour shed, Drinking water facility and First Aid etc.	Apr-May	0	0	1000	1000
<b>Total</b>			<b>28.5</b>	<b>11473.5</b>	<b>4475</b>	<b>16448.5</b>

Sl. No.	Items of work	Performable Period of Execution	No. of Mandays	Labourer Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
3rd Year Maintenance						
1	Cost of Fertiliser/Urea/NPK/Bio-fertiliser/Vermicompost/Mo Khata/any other fertiliser	July/Aug	0	0	2800	2800
2	Weeding (Complete weeding), Manuring & Soil working (1st & 2nd weeding around the plants)	Sep/Oct	15	4650	0	4650
3	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
4	Watch & Ward including watering as per arrangements	Apr/May	18	5598	0	5598
5	Maintenance of Temporary Labourer Shed, Drinking water facility and First Aid etc.	Apr/May	0	0	1000	1000
Total			36.0	11178	3800	14978
4th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
2	Watch & Ward including maintenance of vegetation line etc.	Apr/May	18	5598	0	5598
Total			21	6531	0	6531
5th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/May	18	5598.00	0	5598
Total			21	6531	0	6531
6th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long)	Feb/Mar	3	933.00	0	933.0
2	Pruning of branches, felling out of multiple shoots	Feb/Mar	3	933.00	0	933.0
3	Watch & Ward	Apr/May	18	5598.00	0	5598.0
Total			24	7464	0	7464.0
7th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/May	18	5598.00	0	5598
Total			21	6531	0	6531
8th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/May	18	5598.00	0	5598
Total			21	6531	0	6531
9th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/May	18	5598.00	0	5598
Total			21	6531	0	6531
10th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long)	Feb/Mar	3	933	0	933
2	Watch & Ward	Apr/May	18	5598.00	0	5598
Total			21	6531	0	6531
Year wise Abstract of Cost Norms (showing receding cost separately)						
Total			21	6531	0	6531

Sl. No.	Items of work	Preferable Period of Institution	No. of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)	
Sl. No.	Year	No. of Mandays	Labour cost (In Rs.)	Material Cost (In Rs.)	Monitoring, Evaluation, Learning, Documentation and other Contingency (5% of (4+5))	Cost of Seedlings @Rs.50.31 per seedlings	TOTAL COST(In Rs.)
1	2	3	4	5	6	7	8
1	1st year	57.0	372,27.0	3600.0	971.00	0.00	22258.00
2	2nd year	76.5	22793.5	1600.0	1918.50	55941.00	85511.00
3	3rd year	88.5	11473.5	6425.0	321.50	5021.00	23301.00
4	4th year	36.0	11196.0	2000.0	749.00	0.00	15245.00
5	5th year	21.0	6321.0	0.0	326.00	0.00	6647.00
6	6th year	21.0	6321.0	0.0	326.00	0.00	6647.00
7	7th year	24.0	7464.0	0.0	371.00	0.00	7835.00
8	8th year	21.0	6321.0	0.0	326.00	0.00	6647.00
9	9th year	21.0	6321.0	0.0	326.00	0.00	6647.00
10	10th year	21.0	6321.0	0.0	326.00	0.00	6647.00
11	11th year	21.0	6321.0	0.0	326.00	0.00	6647.00
	Total	558.0	111338.0	26425.0	6791.0	60372.0	234976.0

**Note:**

1. Priority must be given to the indigenous local species available nearby to the site of plantation.
2. 10-15 indigenous fruit bearing trees must be preferred in plantation.
3. Site specific soil conservation work like LRCR, Gully Plugging, Staggered Trench, Contour Trench, Graded Bund, etc. may be taken up.
4. Chain link fencing can be adopted in the CA plantation taken up outside the forest area and Bamboo strip fencing may be preferred.
5. Watering facilities for protection of water & watering may be adopted as per the availability of water.
6. The Cost Norm of various items can be changed with the approval of the concerned RSCPs keeping the overall cost norm fixed for each financial year.

APCCF (Forest Division & NO, FC Act)

Matrix for Model 1-A Conventional CA Emissions (All) 1000 pounds per day

CA Emission NO. Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	Total Emission (10 years)
Base Emission	27100	30000	22300	13040	6400	6500	7000	8000	8000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	200000
1 2015-20	27100	30000	22300	13040	6400	6500	7000	8000	8000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	200000
2 2015-20	27100	30000	22300	13040	6400	6500	7000	8000	8000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	200000
3 2015-20	27100	30000	22300	13040	6400	6500	7000	8000	8000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	200000
4 2015-20	27100	30000	22300	13040	6400	6500	7000	8000	8000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	200000
5 2015-20	27100	30000	22300	13040	6400	6500	7000	8000	8000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	200000
6 2015-20	27100	30000	22300	13040	6400	6500	7000	8000	8000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	200000
7 2015-20	27100	30000	22300	13040	6400	6500	7000	8000	8000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	200000
8 2015-20	27100	30000	22300	13040	6400	6500	7000	8000	8000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	200000
9 2015-20	27100	30000	22300	13040	6400	6500	7000	8000	8000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	200000
10 2015-20	27100	30000	22300	13040	6400	6500	7000	8000	8000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	200000

APCD (Forest Division & NO. FC Act)

*[Signature]*

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Fencing for Compensatory Plantation raised outside the Forest Areas using Angle Iron & Chain Link wire mesh (250 Rmt./ Ha.)						
WAGE RATE Rs. 313/- PER DAY						
Sr. No.	Items of work	Preferable Period of Execution	Man Days	Wages	Material cost (Rs)	Total Cost (Rs. per Ha.)
	<b>1st Year (PPO)</b>					
1	Earth work (Excavation) to 10' in hard soil at a suitable place. 0.40m x 0.40m x 0.40m = 0.064 cu m = 5.370 cum @ Rs. 110/- cum = Rs. 758.		2.42	759.62	0.0	752.6
2	Gravel concrete (1:1.5:4) @ 200 mm thick B.H.G. mesh 0.4 x 0.40m x 0.40m x 0.10m = 0.064 cu m = 1.344 @ 253.94/cum		8	0	5,047.4	5,017.4
3	Angle brace pole of size 50 mm x 50 mm x 6 mm at height 2.40 mt. @ 2.40 = 201.60 Sqmt. @ 4.50/kg/Sqmt. = 907.20 kg @ 69.52 per kg				63,950.0	63,950.0
4	Cement concrete (1:2:4) for laying ducted angle pole using 12mm B.H.G. Column 0.4 x 0.40m x 0.40m x 0.30m = 0.032 cum @ 5186.77/cum				22,123.0	22,123.0
5	Cost of Chain link mesh using 4 mm Dia U2 wire having gap size 90 mm x 50 mm. 250 Rmt x 6.10 mt. = 1525 Sq.mt @ 33.45/m² = Rs. 1,73,779				1,73,779.0	1,73,779.0
6	Double end painting of wire angle post over a dust oil primer using good quality enamel paint @ 2.10 x 0.20 = 0.42 sqmt. @ Rs. 125.00/Sqmt				52.50	52.50
7	Painting of all chain link mesh 250 x 2.10 x 2 = 1050 Sq.mt. @ Rs. 108.00/Sqmt.				113,400.0	113,400.0
8	Transportation of Chain link mesh, from supply, to site after loading of chain link mesh etc. @ 2% of the total cost.				5,600.0	5,600.0
	<b>TOTAL</b>		<b>2.42</b>	<b>759.62</b>	<b>2,84,857.4</b>	<b>2,85,610.0</b>
<b>Rate per running mt. 2.85,610 / 250 = Rs. 1142/Rmt</b>						
	<b>1st Year Maintenance</b>					
1	No. Maintenance is required	Sept/Oct	0	0	0	0
	<b>2nd Year Maintenance</b>					
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept/Oct	0	0	1100	1100
	<b>3rd Year Maintenance</b>					
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept/Oct	0	0	1100	1100
	<b>4th Year Maintenance</b>					
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept/Oct	0	0	1100	1100
	<b>5th Year Maintenance</b>					
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept/Oct	0	0	1100	1100
	<b>6th Year Maintenance</b>					
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept/Oct	0	0	1100	1100
	<b>7th Year Maintenance</b>					
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept/Oct	0	0	1100	1100
	<b>8th Year Maintenance</b>					
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept/Oct	0	0	1100	1100
	<b>9th Year Maintenance</b>					
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept/Oct	0	0	1100	1100
	<b>10th Year Maintenance</b>					
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept/Oct	0	0	1100	1100

Sl. No.	Items of work.	Preferable Period of execution	Man days	Wages	Material cost (Rs.)	Total Cost (Rs. per Ha.)
1	Maintenance of wire mesh fence @ 10% per annum cost of installation in 1st yr. $11475.700 \times 11.42 \text{ per Rs. 11}$	Sept./Oct.	0	0	11600	11600

Abstract:					
Sl. No.	Year	No. per (one days)	Labour cost @ Rs. 111/- per day	Material Cost	Total cost (Rs.)
		2.42	267.62	294057.4	295610.0
1	0th year	0.0	0.0	0.0	0.0
2	1st year	0.0	0.0	11600.0	11600.0
3	2nd year	0.0	0.0	11600.0	11600.0
4	3rd year	0.0	0.0	11600.0	11600.0
5	4th year	0.0	0.0	11600.0	11600.0
6	5th year	0.0	0.0	11600.0	11600.0
7	6th year	0.0	0.0	11600.0	11600.0
8	7th year	0.0	0.0	11600.0	11600.0
9	8th year	0.0	0.0	11600.0	11600.0
10	9th year	0.0	0.0	11600.0	11600.0
11	10th year	0.0	0.0	11600.0	11600.0
	Total	2.42	267.62	294057.4	295610.0

APCCF (Forest Division & NC, FC Act)



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**ANNEXURE-III**

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Annexure-11			
Cost Norms for creation of Compensatory Afforestation with Stabilization of Soil & Conservation of Moisture (1000)			
WAGE RATE Rs. 311/- PER DAY			
Sl.No	Item of Works	Feasible Period of Execution	Total Cost
0th Year (Pre-Planting Operation)			
1	Nil		0
1st Year			
2	Soil Conservation measure structures like Staggered Trench, Percolation pit, Contour trench, Graded garden bed, LBCD, Wire mesh LBCD, Sub surface Dye & WHS as per the slope & site requirement on Li	Apr/Sept.	20,215
2nd Year			
3	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032
3rd Year			
4	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032
4th Year			
5	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032
5th Year			
6	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032
Total			32,343.0

Abstract				
Sl. No	Year	No. person Days	Labour cost @ Rs. 311/- per day	Total cost (Rs.)
1	0th year	0.0	0.0	0.0
2	1st year	0.0	0.0	20,215.00
3	2nd year	0.0	0.0	3,032.00
4	3rd year	0.0	0.0	3,032.00
5	4th year	0.0	0.0	3,032.00
6	5th year	0.0	0.0	3,032.00
Total		0.00	0.00	32,343.0

Different types of SMC structures may be taken up as per the slope & requirements of the plantation site out of the design & specification of different structures annexed along this document.

  
APCCF (Forest Division & NG), FT, Act)

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Matrix for (SMC)

Sl. NO.	Commence Project Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
	Base Norm	0	20215	3033	3032	3032	3032											
1	2021-22	0	21276	3342	5510	3685	3640											35635
2	2022-23		0	27287	3509	3636	3669	4064										37415
3	2023-24			4	23401	3634	3670	4062	4237									39284
4	2024-25				0	24571	3669	4064	4235	4430								43246
5	2025-26					0	25600	4061	4257	4479	4704							43310
6	2026-27						0	27563	4264	4480	4707	4930						45475
7	2027-28							0	28549	4477	4704	4937	5165					47145
8	2028-29								0	28867	4705	4939	5181	5403				50136
9	2029-30									0	31190	5316	5186	5443	5717			52642
10	2030-31										0	22618	5183	5445	5715	6003		55274

In Rupees

*[Signature]*  
 AFOCF (Forest Division & NO, FC Act)

**ANNEXURE-IV**

Watering Model-W-III					
Watering provision to CA Plantation					
Solar System (One Solar Energy Pump / 5 Ha Plantation, Wage rate @ Rs.311/-)					
Year of Installation (0th Year)					
1	Cost of Borewell			55000	
2	Installation of Solar panel & other Systems			30000	
3	Cost of 9.8 HP submersible motor with accessories			5000	
4	Water Storage Tanks/ Flexible pipes			1500	
Total				5,15,000	
Cost of Water per Plant ( $\frac{515000}{5000}$ ) = Rs. 103/-					
Cost of Water per Ha = Rs. 5,00,000/-					
1st Year Watering					
a.	Cost of Water- 103 x 1000			0	
b.	Watering 1000 Plants (Nov-Mar) @ 200 plants/MD with 7 days rotation 20 MD x 5 months = 100 MD x 311 =			31,100	
Total				31,100	
2nd Year Watering					
a.	Cost of Water per plant @ 20% of installation year cost $103 \times 20\% = 20.60$ or 21.00 For 1000 plants = $21 \times 1000 =$			21,000	
b.	Watering 1000 Plants (April-June & Nov-Mar, 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =			49,760	
Total				70,760	
3rd Year Watering					
a.	Cost of Water per plant @ 20% of installation year cost $103 \times 20\% = 20.60$ or 21.00 For 1000 plants = $21 \times 1000 =$			21,000	
b.	Watering 1000 Plants (April-June & Nov-Mar, 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =			49,760	
Total				70,760	
4th Year Watering					
a.	Cost of Water per plant @ 20% of installation year cost $103 \times 20\% = 20.60$ or 21.00 For 1000 plants = $21 \times 1000 =$			21,000	
b.	Watering 1000 Plants (April-June & Nov-Mar, 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =			49,760	
Total				70,760	
5th Year Watering					
a.	Cost of Water per plant @ 20% of installation year cost $103 \times 20\% = 20.60$ or 21.00 For 1000 plants = $21 \times 1000 =$			21,000	
b.	Watering 1000 Plants (April-June & Nov-Mar, 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =			49,760	
Total				70,760	
Abstract					
No.	Type	No. person days	Labour cost @ Rs. 311/- per day	Material Cost	Total cost (Rs.)
1	0th year	0	0.0	100000.0	100000.0
2	1st year	100.0	31100.0	0.0	31100.0
3	2nd year	160.0	49760.0	21000.0	70760.0
4	3rd year	160.0	49760.0	21000.0	70760.0
5	4th year	160.0	49760.0	21000.0	70760.0
6	5th year	160.0	49760.0	21000.0	70760.0
Total:		740.0	230160.0	107000.0	337160.0



A.P.C.C.F. (Forest Division & NO, FC Act)

Matrix for Model-W-III Watering (Solar System Fitted with Borewell) per Ha (One solar pump/ 5 Ha)

In Rupees

Sl. No.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
Base Norm.		151000	31100	70750	70750	70750	70750											
1	2021-22	105000	22650	28000	81311	86000	86000											471693
2	2022-23		105100	58780	41606	86011	86028	86028										469487
3	2023-24			113658	36000	86000	86012	86028	86035									500580
4	2024-25				116798	81312	86012	86028	86035	120543								546274
5	2025-26					125198	86012	86028	86035	120543	120790							572987
6	2026-27						125198	86028	86035	120543	120790	115259						632257
7	2027-28							120000	86035	120543	120790	115259	110021					682380
8	2028-29								141840	120543	120790	115259	110021	120790				866200
9	2029-30									151840	120543	115259	110021	120790	120790			697200
10	2030-31											151840	120543	120790	120790	120790	140038	750050

ARCC (Forest Division & NO, FC Act)

ବନାଞ୍ଚଳ ଅଧିକାରୀଙ୍କ କାର୍ଯ୍ୟାଳୟ, କୁଳିପୋଷ ବନାଞ୍ଚଳ  
OFFICE OF THE FOREST RANGE OFFICER, KULIPOSCH RANGE

Email: kuliposchrange@rediffmail.com

Memo No. 423 Dt. 22.04.2024

To,

The Divisional Forest Officer,  
Bona: Forest Division

Sub: Proposal for seeking prior approval of the Central Government under Section 2(ii) of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha forest land ( 16.658) ha in Keonjhar Forest Division and 25.950 ha. in Bona: Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundergarh District of Odisha, allotted to m/s Tata Steel BSL Limited ( Formerly known as Bhushan Steel Ltd. ) (Online Proposal No.Fp /OR/ MIN/ 49169/ 2020) - stage - I approval regarding.

X-Sub: - Regarding identification of degraded forest land of 1.5 times safety Zone

Ref: Your office Memo No. 145/6r-(Mg)-Dt. 01.01.2024.

Sr,

With reference to the above subject, I would like to report you that an area of 3.573 ha. (2.382 ha. X 1.5 times) of degraded forest land for raising of compensatory Afforestation has been identified to accommodate 1000/Ha. seedlings in Nagaria PRF of this Range and the following certificate is furnished below.

1.	Name of the degraded forest land and Compartment no.	Nagarla PRF and Compartment No.N-15 (a)
2.	Certificate regarding boundary description of the area along with GPS reading from pillar to pillar.	Attached in Annexure-I.
3.	RCC Pillars should be posted around the demarcated area and pillars should be numbered at the cost of User Agency.	RCC pillars have already been posted and Serial Numbered from 01 to 09 by user Agency.
4.	Density of vegetation with reference to existing forest growth, and name of the species available	The density of vegetation below 0.2 and available species are Kusum, Mahula, Sal etc.
5.	Suitability of the area for additional Compensatory Afforestation to accommodate 500 of seedlings for plantation.	Suitable for AR Plantation @ 1000/ Ha. seedlings.
6.	Suitability of the site from Management point of view	The Site is suitable for management.
7.	Whether the area is free from encroachment and encumbrances, and not included under FRA 2006	The area is free from encroachment and encumbrances and not included in FRA 2006.
8.	That the area has not been allotted previously for any other Project.	The area has not been allotted previously.
9.	GPS Map, Treatment Map, and Photograph of the sites are to be enclosed.	GPS Map, Topo Map attached in Annexure-II.

For fencing to protect the plantation area vegetative fencing / Bamboo twinge fencing may be provided. One no of Bore well with drip irrigation including all facilities is required for watering to the above plantation area.

This is for favor of your kind information and necessary action.

End: As above

Yours faithfully,



Forest Range Officer,  
Kulipash Range.

# ANNEXURE -VI



Scale 1:50,000

Scale

ORISSA

COORDINATE



Divisional Forest Officer  
Bonal Division

## CERTIFICATE ON DSS ANALYSIS FOR CA/ACA/PCA

This is to certify that DSS Analysis of land identified for CA/ ACA/ PCA and subsequent ground truthing have been done. The outcome is as mentioned below:

Sl. No	Name of Range	Name of the Forest Block (RF/PRF/PF/DPF/Revenue Forest)	Area identified for CA/ACA/PCA (in ha.)	Classification of identified land (in ha.)								Area suitable for plantation				Plantation Model (AR/ANR)	Remark
				Very Dense Forest	Moderately Dense Forest	Open Forest	Non-Forest	Scrub	Water	Total	Open Forest	Non-Forest	Scrub	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	Kuliposh	Nagaria PRF	3.573	-	0.573	3.000	-	-	-	3.573	-	-	-	3.573	AR@1000 plant / Ha. over 3.573 ha.	-	

Countersigned

RCCF, Rourkela Circle



Divisional Forest Officer

Bonai Forest Division



# ANNEXURE -VI

10. 25.2010

10. 25.2010

OR R55A

10. 25.2010



Divisional Forest Officer  
Bonai Division

## CERTIFICATE ON DSS ANALYSIS FOR CA/ACA/PCA

This is to certify that DSS Analysis of land identified for CA/ ACA/ PCA and subsequent ground truthing have been done. The outcome is as mentioned below:

Sl. No	Name of Range	Name of the Forest Block (RF/PRF/PF/DPF/Revenue Forest)	Area identified for CA/ACA/PCA (in ha.)	Classification of identified land (in ha.)							Area suitable for plantation				Plantation Model (AR/ANR)	Remark
				Very Dense Forest	Moderately Dense Forest	Open Forest	Non-Forest	Scrub	Water	Total	Open Forest	Non-Forest	Scrub	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Kuliposh	Nagaria PRF	3.573	-	0.573	3.000	-	-	-	3.573	-	-	-	3.573	AR@1000 plant / Ha. over 3.573 ha.	-

Countersigned

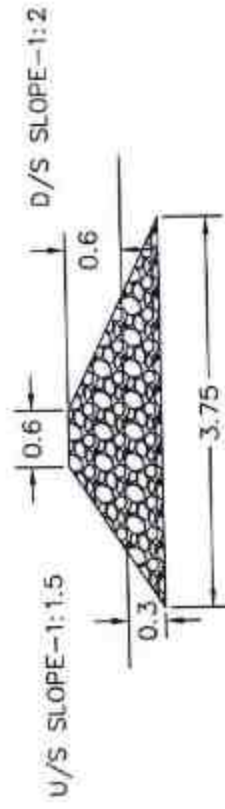
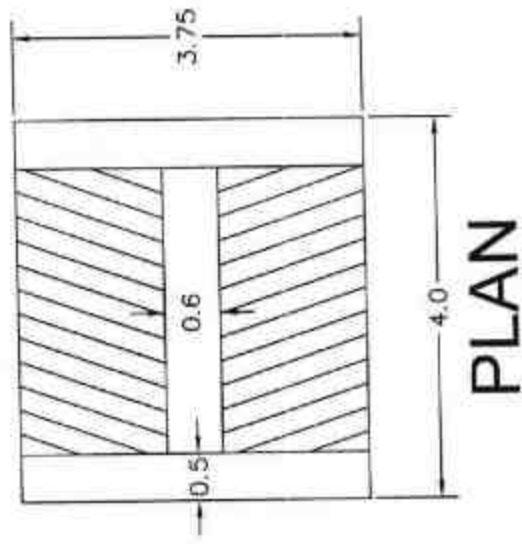
RCCF, Rourkela Circle



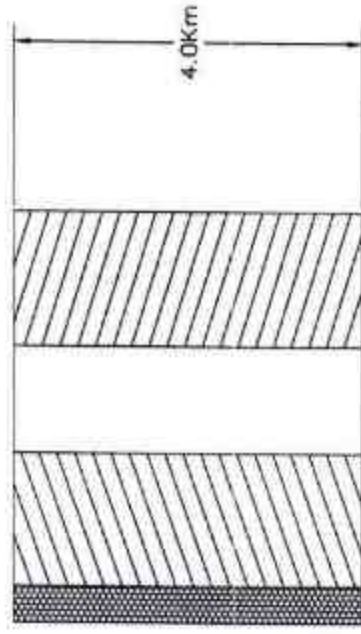
Divisional Forest Officer

Bonai Forest Division

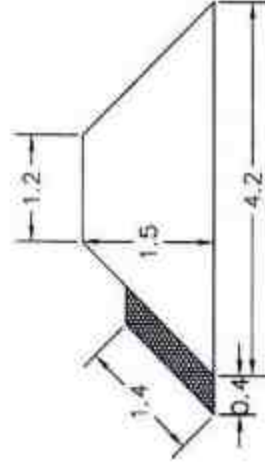
## SCHEMATIC VIEW & CROSS SECTION OF LBCD



## SCHEMATIC VIEW & CROSS SECTION OF GRADED BUND



PLAN



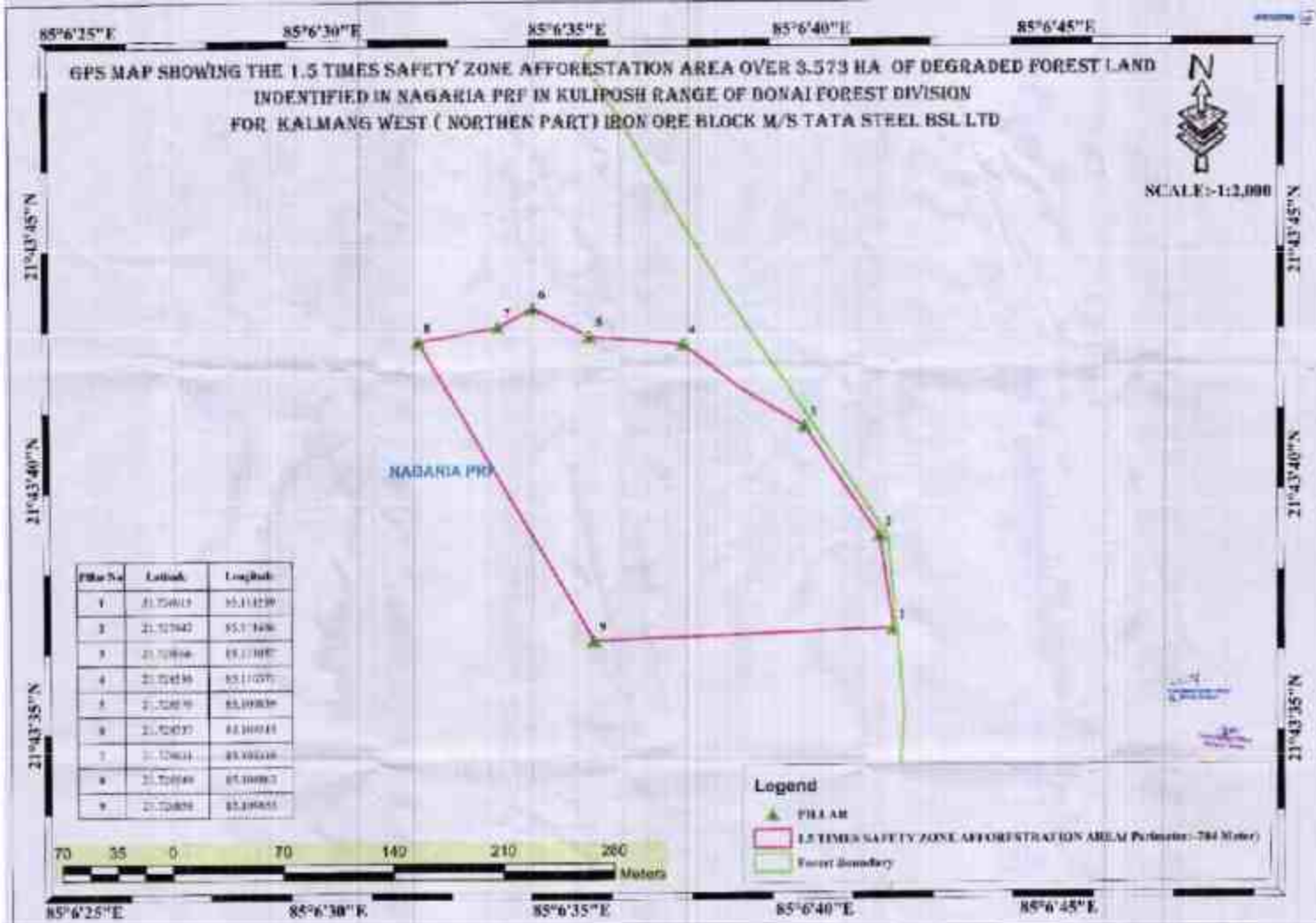
CROSS SECTION

TOPO MAP SHOWING THE 1.5 TIMES SAFETY ZONE AFFORESTATION AREA OVER 3.573 HA OF DEGRADED FOREST LAND  
 IDENTIFIED IN NAGARIA PRF IN KULIPOSH RANGE OF BOKAI FOREST DIVISION  
 FOR KALMANG WEST (NORTHERN PART) IRON ORE BLOCK M/S TATA STEEL BSL LTD



Station No.	Latitude	Longitude
1	21.726915	85.111259
2	21.727942	85.111488
3	21.728066	85.111497
4	21.728556	85.111571
5	21.728579	85.109839
6	21.728737	85.109312
7	21.728421	85.109316
8	21.729589	85.109943
9	21.729810	85.109955







By E-mail

## ବନଖଣ୍ଡ ଅଧିକାରୀଙ୍କ କାର୍ଯ୍ୟାଳୟ : ବଣାଇ ବନଖଣ୍ଡ

OFFICE OF THE DIVISIONAL FOREST OFFICER: BONAI FOREST DIVISION

Phone 06626-244454; E-mail- dfo.bonai@odisha.gov.in

No. 4342 /6F-(Mg.) Dt: 03.05.2024

To

The General Manager,  
OMQ, Tata Steel Ltd., Mines Division,  
Noamundi-733217.

Sub: -

Proposal for seeking prior approval of the Central Government under Section 2 (ii) of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha. forest land (16.858 ha. in Keonjhar Forest Division and 25.950 ha. in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd.) (Online Proposal No.FP/OR/MIN/49169 /2020)-Stage-I approval regarding.

Ref:-

Memo No.1831 dt.30.04.2024 of the RCCF, Rourkela addressed to this office and copy endorsed to you in the subsequent memo of even date.


Sir,

With reference to above, it is to inform you that the following scheme has been approved by the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela vide his memo under reference.


1.	Scheme for 1.5 times Safety Zone Afforestation over 3.573 ha. identified in Nagaria PRF.	₹	52,87,500.00
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Hence, you are requested to deposit above amount of ₹52,87,500/- (Rupees Fifty Two Lakhs Eighty Seven Thousand Five Hundred only) through e-portal of MoEF & CC as provided in the <http://parivesh.nic.in>, and submit the original proof with seal and signature of the issuing Bank to this office for needful.


Yours faithfully,

  
Divisional Forest Officer,  
Bonai Division.
Memo No. 4343 /6F-Dt: 03.05.2024


Copy forwarded to the Principal Chief Conservator of Forests, (Wildlife) & CWLW, Odisha, Bhubaneswar for favour of kind information and necessary action with reference to his Memo No.4649 dt.24.04.2024.

  
Divisional Forest Officer,  
Bonai Division.
Memo No. 4344 /6F-Dt: 03.05.2024

Copy forwarded to the Principal Chief Conservator of Forests, Forest Division & Nodal Officer, F.C. Act O/O the P.C.C.F., Odisha Bhubaneswar for favour of kind information and necessary action.

  
Divisional Forest Officer,  
Bonai Division.
Memo No. 4345 /6F-Dt: 03.05.2024

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela for favour of kind information and necessary action with reference to his Memo No.4650 dt.24.4.2024.

  
Divisional Forest Officer,  
Bonai Division.

यूनिआन बैंक  
Union Bank



McGraw-Hill  
Learning

Date : 07-05-2024


Agency Name.	M/s. Tata Steel Limited, Khopoli
Application No.	5848169401
MoEF/SG File No.	8-13/2022-FC
Location.	ORRISA
Address.	Narendrapur, Po- Kusumpanga, Via- Meramandali, Dist- DhenkanalDhenkanal
Amount(In Rs)	5755500/-

Amount in Words: Fifty-Seven Lakh Fifty-Five Thousand Five Hundred Rupees Only

**NEFT/RTGS to be made as per following details:**

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825849169401 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCS Centre, 2/1/1, III Floor, Jalitha Towers, Mission Road, Bengaluru-560027

- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

यूनिशन बैंक  
of India  
 Union Bank  
of India

**STREET**  
**ARTS**  
**AND**  
**THEATRE**

**Date : 07-05-2024**

Agency Name.	M/s. Tata Steel Limited, Khopoli
Application No.	5849169401
MoEF/S&G File No.	8-13/2022-FC
Location.	ORPUSA
Address:	Narendrapur, Po- Kusumpanga, Via- Maramandali, Dist- Dhenkanal Dhenkanal
Amount(In Rs)	5755500/-

Amount in Words : Fifty-Seven Lakh Fifty-Five Thousand Five Hundred Rupees Only

**NEFT/RTGS to be made as per following details;**

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0986335
Pay to Account No.	150825849168401
	Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jelita Towers, Mission Road, Bengaluru-560027

- This Challen is strictly to be used for making payment to CAMPA by NEFT/RTGS only

1.5 safety zone + Avifauna

118

V. 2 -  
M.N.A. National Museum  
Collection - 3rd Floor  
P.N. 1009 / 2 / 1009 - 602 / 0009

Classification - Internal



HDFC Bank Ltd,  
105, SNP Area,  
Sakchi  
Date 14/05/2024  
Jainimcopur-831 001.

TO WHOM IT MAY CONCERN

This is to certify that following payments made with Tata Steel account 00870310000884 to following Tata Steel vendor with UTR and other details attached. In case any discrepancy please come back to us within a week.

Customer name : ORISSA CAMPA  
Beneficiary Account : 150825849169401  
IFSC Code : UBIN0996335  
Amount paid : ₹7,55,500.00  
UTR No : HDFCR52024050755078512  
Payment Date : 07/05/2024

Thanks & Regards



For, HDFC Bank Ltd



[www.hdfcbank.com](http://www.hdfcbank.com)

Regd. Office: HDFC Bank Ltd., HDFC Bank House, Senapati Bapat Marg, Lower Parel (West), Mumbai - 400 013  
Corporate Identity No.: L65920MH1994PLC080618



*Scheme*

*For*

**GAP PLANTING, SOIL & MOISTURE CONSERVATION ACTIVITIES  
TO RESTOCK AND REJUVINATE DEGRADED OPEN FORESTS  
(HAVING CROWN DENSITY <0.4) WITHIN 100 M OUTER PERIMETER  
OF MINING LEASE**

*in compliance*

*with*

*Condition No.2 (f) of*

*Stage-I approval granted vide*

*Letter No.8-13/2022-FC, Dated.22.12.2023*

*of Govt. of India, Ministry of Environment, Forests*

*& Climate Change,*

*New Delhi.*

*For*

*Diversion of 42.608 Hects of Forest Land for U/s-2 (ii) (including  
2.382 ha. of Safety Zone) OF FC Act-1980*

*within 92.875 Ha. Iron Ore Mining Lease*

*of*

**M/S Tata Steel BSL Limited (now amalgamated into & with Tata Steel  
Limited).**

**in village Kalamang and Ghodabudhani of Koira tahsil, Sundargarh  
District and Gandhalpada village in Barbil Tahsil, Keonjhar District**

**Odisha.**

## Introduction

The Govt. of Odisha vide Letter No.5285/DM dt.24.06.2017, read with Letter No.6287/SM dt.27.07.2017, issued Letter of Intent (LoI) for grant of Mining Lease of Kalmang West (Northern Part) Iron Ore Block in favour of M/s Bhushan Steel Limited over an area of 92.875 hectare in village Kalmang and Ghodabudhani, of Sundargarh District and Gandhalpada village of Keonjhar District for a period of 50 years. The Letter of Intent was transferred in favour of M/s Tata Steel BSL Limited on taking over of Bhushan Steel Limited basing on the Order of NCLT vide Steel & Mines Dept. Letter No: 4261/SM dated 27.05.2021. Govt. of Odisha Steel & Mines Dept. have further approved the amalgamation of M/s Tata Steel BSL Limited into & with M/s Tata Steel Limited vide letter no: 541/SM dated 21.01.2022 which makes M/s Tata Steel Limited, eligible LOI holder of Kalmang West (Northern Part) Iron Ore Block.

As per the Terms & Conditions of LOI the Applicant shall fulfill the provisions of all Acts and Rules applicable to the Project. Accordingly, M/s Tata Steel Bhushan Limited has submitted the proposal to obtain approval of the Central Govt. over 42,608 hectare of forest land including Safety Zone 2,382 Ha U/s-2 (ii), of the Forest (Conservation) Act 1980 within the above Mining Lease area.

Further, Stage-I approval over 42,608 ha. of Forest Land U/s-2 (ii) [including 2,382 ha. of Safety Zone] has been granted by MoEF & CC vide their Letter No. 8-13/2022-FC, dated 22.12.2023 where in it has been stipulated as per **Condition No. 2 (f) for undertaking gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forest (having crown density less than 0.40), if any, located in the area within 100m from outer perimeter of the mining lease.**

## **1. LOCATION**

The mining lease area finds place in the Survey of India Topo sheet No.F45N5 (73 G/5) and situated between the latitude  $21^{\circ} 56' 47.75784''$  to  $21^{\circ} 57' 32.34779''$  N and longitude  $85^{\circ} 17' 06.65892''$  to  $85^{\circ} 17' 57.53148''$  E. The above ML area covering villages such as Kalmang, and Ghodabudhani in Kaira Range, Bonai Forest Division, Sundargarh District and Gandhalpada village of Barbil Range, Keonjhar Forest Division, Dist-Keonjhar, Odisha.

## **2. TOPOGRAPHY**

The above allotted block under study is a highly rugged terrain, with elongated hills trending ENE-WSW direction, low mounds and narrow valleys. The highest elevation of ridges in the area is 690 m above MSL forming the ridge. Lowest elevation is 585 m above MSL which forms the valley floor in this block.

## **3. SOIL TYPE**

The low-lying areas are filled up with alluvial soil which is ferruginous in nature and reddish brown in colour. In most of the area the soil is moderately coarse in nature whereas it is loamy in the cultivated land. Since the area is devoid of any perennial nala or river, the soil has been deposited in the valley area mostly from the low order nala or from the slope wash of the nearby hillock occupied by the iron ore group of rocks.

#### 4. CLIMATE

The lease area lies in tropical region where climate is characterized by an oppressively hot summer and cool winter. Summer is typically from April to July when monthly temperature ranges from a maximum of 42 degree centigrade during day time to a minimum of 15 Degree Centigrade at night time. Winter is from November to February when the maximum temperature during daytime goes to 37 Degree Centigrade and minimum temperature at night- becomes as low as 8 Degree Centigrade. The average annual rainfall as recorded at IMD observatory at Keonjhar is 1269.1 mm.

#### 5. LAND USE PATTERN

During the life of the mine, about 92.875 hectares will be utilized for mining, Minerals processing, Road, and green belt plantation in Safety Zone area etc. The details of land use pattern will be as follows:

Village wise break up of total land

Sl.No	District Name	Forest land in Ha	Non forest land in Ha	Total land in Ha
1	Keonjhar	16.658	0	16.658
2	Sundargarh	25.95	50.267	76.217
<b>Total in Ha</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

#### Item wise Proposed Land Use Pattern in Forest and Non-Forest Land of Total Lease Hold Area

Sl. No	Type of Land Use	Forest Land in Ha.	Non- Forest Land in Ha.	Grand Total in Ha.
1	Area under excavation including the backfilled area	36.458	38.919	75.377
2	Overburden/Waste Dumping	2.109	4.962	7.071
3	Topsoil Stacking	0.228	0.615	0.843
4	Mineral Reject stack	0.032	1.410	1.442
5	Green Belt in the south beyond the UPL	1.399	2.771	4.170
6	7.5 meter along the inner side of ML boundary	2.382	1.590	3.972
<b>Total</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

## **6.DRAINAGE**

The dendritic type of drainage pattern is generally displayed by the area. Because of the hilly topography, there is only one seasonal drainage Lekerapali Nalla found in the western part of the area. Sunanadi is a perennial river flowing from south to north outside the area at a distance of 2 km towards south-east and it becomes west-east from Malda and debouch into river Baitarani. The drainage channel originating in the western part of the area traverses through the area towards south.

## **7. AVAILABILITY OF DEGRADED FOREST LAND HAVING CANOPY DENSITY LESS THAN 0.4 WITHIN 100M OF OUTER PERIPHERY OF MINING LEASE**

- a) The M.L. area of the instant project is 92.875 Ha. The adjoining area within 100m it is shown in **plate-1**. It is worth mentioning here that there are other mines namely Nuagaon Iron Ore Mine of M/s JSW, Sagasahi-Ghodabudani Iron Ore Mine of M/s AMNS, Gandharpada Iron Ore Block of M/s Tala Steel Ltd. (erstwhile TSML), adjoining to the instant mining area, an area of 1.432 Ha. of DLC forest adjacent to lease pillars U & V is available for gap planting. 3 number of plots of private and Government types are available on the east side of the lease adjacent to lease pillars G, H & I but these are not suitable (kissam Gharbari, Bijesthali and Patifa) for gap plantation.

From the above the plantation area within 100 mtrs periphery that can be taken up is furnished in the following table.

Legal status	Point No	GPS Location		Outer perimeter in mtr	Area in Ha
		Latitude	Longitude		
DLC-Forest	1	21° 57' 13.247"	85° 17' 6.842"	494	1.432
	2	21° 57' 12.406"	85° 17' 3.475"		
	3	21° 57' 7.896"	85° 17' 6.207"		
	4	21° 57' 9.574"	85° 17' 9.236"		

The inner periphery of the above patches is the lease boundary where pillars have been posted by the user agency to know their limit of ML area. Hence the outer periphery of the above patches has to be fenced by angle iron & chain link wire to complete the fencing work.

- b) The classification wise and DSS report the category of density etc. of the area selected above is furnished below.

District	Tahsil	Village	Khata No.	Plot No	ROR Area (Ac)	Area available (Ha)	Type as per DSS	No. Of seedlings/Ha @500
Sundergarh	Kolra	Ghodabudani	15	1	57.32	1.432	N.F	1.432 x500=716

## **8. EXISTING VEGETATION**

The above area is devoid of any promising forest growth but contains bushy growth of mainly miscellaneous species. During field visit it is observed that trees like Sal, Aswastha, Bel, Kali Kendu, Kusum, Kanchan, Mahul etc. are available within 100 mtr outer periphery of the lease area. About 1000 no of seedlings per Ha i.e about 1432 seedling of indigenous species to be planted as per onetime cost norm approved by PCCF & HoFF, Odisha.

## **9. OBJECTIVE OF THE SCHEME**

The main objective of the present scheme is to fulfill the Condition No 2(f) of the Stage-I approval granted vide Letter No.8-13/2022-FC, Dated.22.12.2023 of MoEF& CC to undertake "gap plantation and soil & moisture conservation activities to restock and rejuvenate the degraded open forest (having crown density less than 0.4) if any, located in the area within 100m from outer perimeter of the mining lease". The steps to be followed are as under:

- a) To re-stock and re-rejuvenate degraded forest land by AR plantation within 100m from the outer perimeter of the lease area.
- b) To Demarcate and fence the area in ground to dispense with biotic interference.
- c) To improve the micro edaphic conditions by undertaking suitable soil and moisture conservation measures within the AR Plantation.
- d) To create awareness among the local villagers for protection and maintenance of this plantation and the adjoining forest for ensuring enrichment of the ecosystem in general.

## **10. SELECTION OF SITE FOR GAP PLANTING**

The area for gap plantation is to be within 100 m outer perimeter of the mining lease of Iron ore mining project of M/s Tata Steel Ltd. in Sundargarh & Keonjhar districts of Odisha. The proposed area has been explored through field inspection to find such area by user agencies and forest department staff.

The M.L area of the instant project is 92.875 Ha. The adjoining area within 100m. It is worth mentioning here that there are other mines namely Nuagaon Iron Ore Mine of M/s JSW, Sagasahi-Ghodabudani Iron Ore Mine of M/s AMNS, Gandhalpada Iron Ore Block of M/s Tata Steel Ltd. (erstwhile TSML), adjoining to the instant mining area, an area of 1.432 Ha. of DLC forest is available for gap planting.

The location of the proposed plantation site is enclosed as **Plate No-2**.

Hence, the area of 1.432 ha will be re-stocked by raising plantation @1000 plants per hectare in AR mode. Taking into consideration the site specific soil condition, existing species growing there naturally and the requirement of the local people, the following species are proposed to be planted in the area.

## 11. Species Proposed For Plantation

1. *Syzygium cumini* (Jamu)
2. *Ficus religiosa* (Aswastha)
3. *Azadirachta indica* (Neem)
4. *Aegle marmelos* (Bel)
5. *Shorea robusta* (Sal)
6. *Diospyros melanoxylon* (Kendu)
7. *Schleichera oleosa* (Kusum)
8. *Madhuca indica* (Mahul)

## 12. PROPOSED TECHNIQUE

To achieve the above objectives, it has been proposed to take up Gap plantation @ 1000 plants/ha at a spacing of 2.5m x 2.5m in blank spaces as per the availability in permanent gaps. The said plantation will be taken up as per **AR Mode**, as per items of works prescribed in the cost norm approved by the PCCF, Odisha. The detailed cost norm is enclosed in **Annexure-I**.

The Identified degraded forest lands has been surveyed clearly with reference to the village maps and forest boundary and demarcated by posting of 4 ft high R.C.C. pillars at every corner/turning of boundary line and the Scheme proposes financial implication for the same.

## 13. REGENERATION, CLEANING & TENDING OPERATION

The operation aims at tending (climber cutting, cleaning, double shoot cutting, pruning etc.) of the existing crop for the growth of promising principal species of the locality for ensuring better growth of the plants. It includes removal of inferior, diseased, malformed, dead, drying and defective tree growth and disposal of them by distributing it among the local VSS members. Apart from it, weed eradication is also an integral part as they interfere with the growth of both planted species and natural Regeneration.

The detailed operation to be carried out is as follows-

- i) Cutting of herbs and shrubs interfering with the growth of the promising species.
- ii) Cutting back of individual top broken poles interfering with growth of well-formed pole crops.
- iii) Cutting back of malformed and diseased species.
- iv) Cutting of climbers up to hand reach.
- v) Sharp cutting of high stumps flush to the ground to get a smooth Stoll with least damage to the cortex.
- vi) Singling of coppice shoots coming out from stools and retaining the most promising one.
- vii) Pruning of the branches of the pole crops up to hand reach.

#### 14. PROPOSED METHODOLOGY :

The following methodology will be adopted for the purpose of plantation

##### **Pre-Planting & Post-Planting**

- **Soil and water conservation measures**

This will be done as per the prescription provided in the cost norm approved by PCCF, Odisha for plantation under AR mode.

- **Pitting:**

As mentioned above pits of size 45 cm x 45 cm x 45 cm will be dug during April/May to ensure drying of pits and to increase humus content.

- **Planting:**

Before planting farm yard manure to be added in the pits. Planting will be done with plantable size seedlings of species narrated above during July in pre-dug pits of size 45 cm X 45 cm X 45 cm. A basal dose of N.P.K fertiliser shall be applied at the time of planting, besides mixing with insecticides to prevent termites & insects. Care should be taken to complete the planting during July while rains are still on preferably during first or second week of July.

- **Weeding & Soil working:**

For establishment and better growth of the planted seedlings, weeding, soil working and manuring are bare necessity. It is proposed to carry out two weedings, soil working and manuring during second year and third year of plantation and one weeding and soil working during fourth year. During the second year and third year, first weeding and manuring shall be carried out during August-September, and the second one during October-November. First weeding shall be an area weeding and the second one will be of strip weeding. The weeding of third year will be an area weeding which will be carried out during August. After each weeding, soil working will be done around each plant at a radius of 0.5mtr and manuring of each plant will be done @30gms of NPK per plant.

- **Application of Insecticides :**

The plantation site, after the planting of good healthy seedlings, may cause influx of insects, which usually eat and damage the tender leaves and shoots of the plants. To overcome such insects attack, application of insecticides will be taken up in required doses at intervals. Spraying of insecticides shall be done preferably in a sunny day in the forenoon.

- **Fire Line Tracing And Maintenance :**

Fire causes irreparable damage to the plantation and the forest growth during fire season and to prevent such fire out-breaks in the area, the plantation area shall be divided into suitable blocks by tracing fire lines. Boundaries of the plantation patches and these black lines will be scrapped of forest growth to a width of 3.0 mt. during Feb-March and the cut back materials and the dry leaves stacked along these fire lines shall be burnt under direct supervision. This operation is highly essential and the scheme proposes to carry this operation during the planned period for five years.

- **Fencing:**

To protect the plantation from grazing and other biotic interference, it will be provided with angle iron & chain link fencing as per the norm approved by PCCF, Odisha. The cost estimate is enclosed as **Annexure-2**.

The outer periphery of the planting site is 350 m or 0.35 Km excluding the existing barbed wire fencing in the boundary line of the ML area. Hence length of fencing over 350mtr will be done.

- **SPECIAL SOIL CONSERVATION MEASURES**

To check soil erosion and the rain water draining out of the area, it has been proposed to take up special conservation measures by digging staggered trenches along the contour over the area @ 250 nos per hectare. The size of the trenches will be 2 Mtr x 0.5 Mtr x 0.5mtr. Digging of staggered trenches will be done during September of 1<sup>st</sup> year. Agave planting will also be taken up on the dugout soil of the trench for its stabilisation and to restrict the dugout soil from re-filling into the trench.

The detail of estimate of staggered trench is given in **Annexure-3**.

- **Watering**

Watering of the plantation will be carried out aided by solar system with Borewell (1 system for 5 ha. plantation) fitted with Drip system. The cost norm is furnished as **Annexure-4**.

## **15. INSPECTION, MONITORING & EVALUATION**

For successful implementation of the present Scheme, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/conveyance charges for the executing agency and technical experts shall be provided by the user agency for proper execution of this programme.

## **16. EXECUTING AGENCY**

The works in the present Scheme shall be executed by the User Agency i.e. M/s Tata Steel Ltd. The entire work shall be carried out in coordination with the Forest Department.

## 17. REQUIREMENT OF FUNDS

The total cost of the implementation of proposed scheme will be Rs.20,06,100/- (Rupees Twenty Lakh Six Thousand One Hundred) Only, details are as under-

**TOTAL COST OF GAP PLANTING, SOIL & MOISTURE CONSERVATION WITHIN  
100MTR.FROM OUTER PERIMETER OF MINING LEASE TO RESTOCK AND REJUVENATE  
DEGRADED FOREST**

**Wage Rate Rs.450.00**

1.	AR Plantation with 1000 seedling per Ha. over 1.432 ha. @Rs.2,71,716/- per ha.	3,89,097.00
2.	Cost of Angle Iron & Chain link wire mesh fencing over 0.350 KM (Or, 350 RMT) @₹1,941.72/- per RMT.	6,79,602.00
3.	Excavation of staggered trench over 1.432 ha. @ Rs.88,835/- per Ha.	1,27,212.00
4.	Water provision to plantation: Solar system with Bore well (1 system for 5 Ha. Plantation) fitted with Drip system @₹2,57,751/- X 1 no.	2,57,751.00
	<b>Total :-</b>	<b>14,53,662.00</b>
5.	15% of the total cost for motivation of VSS / People involved.	2,18,049.00
	<b>Total :-</b>	<b>16,71,711.00</b>
6.	Add 20% escalation	3,34,342.00
	<b>Grand Total :-</b>	<b>20,06,053.00</b> <b>Or,</b> <b>20,06,100.00</b>

(RupeesTwenty Lakh SixThousandOne Hundred) only.

**Technically Approved**

Regional Chief Conservator of Forests  
Rourkela Circle

**COUNTERSIGNED**

Divisional Forest Officer  
(19) Bonus Division

General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

## Annexure-1

ANNEXURE-4						
BASE COST NORM FOR COMPLEMENTARY AFFORESTATION (BLOCK PLANTATION) @ 1000 PLANTS PER HECTARE (18 months old seedling)						
WAGE RATE Rs. 211/- PER MAINDAY						
No	Items of work	Probable Period of Execution	No of Mandays	Labour Cost (in Rs.)	Material Cost (in Rs.)	Total cost (in Rs.)
1	2	3	4	5	6	7
<b>0th Year (Advance work) Pre-Planting Operation</b>						
1	Survey, Demarcation and Pillar putting	Nov/Dec	2	622	0	622
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	211	100	311
3	Site preparation (Clearing & removal of debris)	Nov/Dec	12	2532	0	2732
4	Creating of 4.00 m wide inspection path	Jan/Mar	1	211	0	211
5	Alignment and marking of pits	Feb/Mar	1	211	0	211
6	Dugging of pits (45 cm x 45 cm x 45 cm) in hard and gravelly soil	Feb/Mar	40	12440	0	12440
7	Construction of Temporary Labour Shed, Drinking water facility and First Aid etc.	Jan/Mar	0	0	1500	1500
<b>Total</b>			<b>57</b>	<b>17727</b>	<b>1600</b>	<b>21327</b>
<b>1st Year/Planting Year</b>						
1	Refilling of pits by watering the dugout end of the pits, application of organic compounds (FYM/ PVM) & mixing the same properly	Jul/Aug	7.5	2332.50	5000	7233.50
2	Transportation of 10 months old polythene bag seedlings in hired truck/tractor from the Nursery/Mega nursery to planting site including loading & unloading (Average load of 10 Bha) & stacking the seedling @ Rs.4/- per Seedling (1100 nos.)	Jul/Aug	8	0	6000	6000
3	Watering polythene seedlings at plantation	Jul/Aug	2	622	0	622
4	Conveyance of polythene seedlings on hired load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after stamping the soil with either spade or materials & pressing the soil perfectly around the planted seedlings.	Jul/Aug	22.5	6907.50	0	6907.50
5	Cost of Fertilizer & insecticide: (a) NPK/Bio fertilizer @ 50 gram/plant x 1000 plants = 50kg @ Rs.30/- per kg = Rs. 1500.00 (b) Urea/Vermicompost/Mu (Muriate) or other fertilizer to two subsequent doses @ Rs. 750.00 (c) Insecticide @ 50 gram/plant x 5 gram/ha x 1000 plants = 500g @ Rs.150/- per kg = Rs. 750.00	Jul/Aug	0	0	3000	3000
6	Casualty Replacement @ 10% (100 nos.)	Jul/Aug	2.5	527.5	0	527.5
7	1st Weeding & Manuring	Aug/Sept	15	3165	0	3165
8	2nd Weeding, Soil working (1m diameter around the plants) & Manuring	Oct/Nov	15	4665	0	4665
9	Fire line tracing (2 m wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	1	933	0	933
10	Watch & Ward including watering as per requirement	Apr/May	12	2532	0	2532
<b>Total</b>			<b>76.50</b>	<b>23781.50</b>	<b>14600.00</b>	<b>38291.50</b>
<b>2nd Year Maintenance</b>						
1	Transportation of 100 seedlings from Nursery to plantation site including loading, unloading & conveyance by tractor @ Rs.6/- per seedling	Jul	0	0	600	600
2	Casualty replacement- 10%	Jul	2.5	527.5	0	527.5
3	Cost of Fertilizer & insecticide: A) Cost of Insecticide @ 50 gram/plant x 5 gram/ha x 1000 plants = 50kg @ Rs.150/- per kg = Rs.7500/- B) Urea/NPK/Bio-fertilizer/Vermicompost/Mu (Muriate) or other fertilizer @ 50g @ Rs.30/- C) Fertilizer @ 50g @ Rs.30/-	Jul/Aug	0	0	2075	2075
4	Weeding (Complete weeding), Manuring & Soil working (1m diameter around the plants)	Nov/Dec	15	4665	0	4665
5	Fire line tracing (2 m wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	1	933	0	933
6	Watch & Ward including watering as per requirement	Apr/May	10	2598	0	2598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr/May	0	0	1000	1000
<b>Total</b>			<b>28.5</b>	<b>11973.5</b>	<b>4475</b>	<b>16448.5</b>

Sl. No.	Items of work	Preferable Period of Execution	No. of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
<b>3rd Year Maintenance</b>						
1	Cost of Fertiliser (DAP/KPK/Bio-fertiliser/Vermicompost/Mg Khara/any other fertiliser)	Aug/Aug	0	0	2800	2800
2	Weeding (complete weeding, Mowing & Soil working, 4 lit. doses @ 100 m long)	Nov/Oct	15	4650	0	4650
3	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of fireline in path	Feb/Mar	3	933	0	933
4	Watch & Ward including watering as per requirement	Apr/May	10	5590	0	5590
5	Maintenance of Temporary Labour shed, Drinking water facility and First Aid etc.	Apr/May	0	0	1000	1000
<b>Total</b>			<b>28.0</b>	<b>11190</b>	<b>3800</b>	<b>14990</b>
<b>4th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of fireline in path	Feb/Mar	3	933	0	933
2	Watch & Ward including maintenance of vegetation fireline	Apr/May	10	5590	0	5590
<b>Total</b>			<b>23</b>	<b>6523</b>	<b>0</b>	<b>6523</b>
<b>5th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/May	10	5590.00	0	5590
<b>Total</b>			<b>23</b>	<b>6523</b>	<b>0</b>	<b>6523</b>
<b>6th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long)	Feb/Mar	3	933.00	0	933.00
2	Pruning of branches, Singling out in multiple stems	Jan/Mar	3	933.00	0	933.00
3	Watch & Ward	Apr/May	10	5590.00	0	5590.00
<b>Total</b>			<b>24</b>	<b>7464</b>	<b>0</b>	<b>7464.00</b>
<b>7th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/May	10	5590.00	0	5590
<b>Total</b>			<b>23</b>	<b>6523</b>	<b>0</b>	<b>6523</b>
<b>8th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/May	10	5590.00	0	5590
<b>Total</b>			<b>23</b>	<b>6523</b>	<b>0</b>	<b>6523</b>
<b>9th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/May	10	5590.00	0	5590
<b>Total</b>			<b>23</b>	<b>6523</b>	<b>0</b>	<b>6523</b>
<b>10th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long)	Feb/Mar	3	933	0	933
2	Watch & Ward	Apr/May	10	5590.00	0	5590
<b>Total</b>			<b>23</b>	<b>6523</b>	<b>0</b>	<b>6523</b>

Year wise Abstract of Cost Item (showing seedling cost separately)

Sl. No.	Items of work	Preferable Period of Execution	No. of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total Cost (In Rs.)	
1	2	3	4	5	6	7	
SL No.	Year	No. of Mandays	Labour cost (In Rs.)	Material cost (In Rs.)	Monitoring, Evaluation, Learning, Documentation and Other Contingency (5% of 4+5)	Cost of Seedlings @Rs.50.31 per seedlings	TOTAL COST (In Rs.)
1	2	3	4	5	6	7	8
1	0th year	17.0	6772.0	5600.0	873.60	0.00	22205.60
2	1st year	26.5	6374.5	7400.0	3918.50	55341.00	95654.00
3	2nd year	30.5	7703.5	4475.0	821.50	5031.00	22301.00
4	3rd year	26.0	11126.0	2000.0	741.00	0.00	13745.00
5	4th year	19.0	6531.0	0.0	326.00	0.00	6857.00
6	5th year	21.0	6531.0	0.0	326.00	0.00	6857.00
7	6th year	24.0	7304.0	0.0	373.00	0.00	7677.00
8	7th year	21.0	6531.0	0.0	326.00	0.00	6857.00
9	8th year	21.0	6531.0	0.0	326.00	0.00	6857.00
10	9th year	21.0	6531.0	0.0	326.00	0.00	6857.00
11	10th year	21.0	6531.0	0.0	326.00	0.00	6857.00
	Total	358.0	121338.0	26475.0	6791.0	60372.0	204976.0

**Note:**

1. Priority must be given to the indigenous local species available nearby to the site of plantation.
2. 10-15 indigenous fruit bearing trees must be preferred to Plantation.
3. Site specific soil conservation work like LBCD, Gully Plugging, Staggered Trench, Contour Trench, Graded Bank, etc. may be taken up.
4. Chain link fencing can be adopted in the EA plantation (link up outside the forest area and Bamboo twigs fencing may be preferred).
5. Watering facilities for procurement of water & watering may be adapted as per the availability of water.
6. The Cost Norms of various items can be changed with the approval of the concerned WCCP keeping the overall cost norm fixed for each Phased Year.

  
A.P.C.C.F. (Forest Deversion & NO, FC Act)

Matrix for Model 1: A Conventional CA Planting (AR) 1000 plants per ha

Countdown No	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	Total [10 years]
Base Year	22200	20100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100	22100
1	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100
2	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100
3	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100
4	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100
5	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100
6	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100
7	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100
8	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100
9	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100
10	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100
11	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100
12	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100	20100

APCC (Forest Division & HQ, FC Act)

## Angle Iron and chain link wire mesh fencing

Fencing Model F-II						
Fencing for Compensatory Plantation raised outside the Forest Areas using Angle iron & Chain Link wire mesh (250 Rmt / Ha.)						
WAGE RATE Rs. 311/- PER DAY						
Sl. No	Items of work	Preferable Period of Execution	Man days	Wages	Material cost (Rs)	Total Cost (Rs. per Ha.)
0th Year (PPD)						
1	Barb wire (Excavation of 600g) in Ha. 1 unit at a distance 4 mt. 0.40m x 0.40m x 0.40m = 0.064 x 84 = 5.376 cum @ Rs. 140/ cum = Rs. 752.62		2.42	752.62	0.0	752.6
2	Concrete (1:1.5:3) using 40 mm. H/B. metal 84 x 0.40m x 0.40m x 0.10m = 1.344 @ 3755.94/cum		0	0	5,047.4	5,047.4
3	Angle iron pole of size 50 mm X 50 mm X 6 mm of height 2.40 mt. 84 x 2.40 = 201.60 Sqmt. @ 4.50/kg/ Sqmt. = 907.20 kg @ 60.50 per kg				60,050.0	60,050.0
4	Support concrete (1:1.5:3) for fixing the iron angle pole using 12mm H/B. Claps 84 x 0.40m x 0.40m x 0.10m = 1.344 cum @ 5496.77/cum				22,123.0	22,123.0
5	Cost of Chain link mesh using 6 mm Dia GI wire having gap size 50 mm X 50 mm 250 Rmt X 2.10 mt. = 525 Sqmt @ 331/Sqmt = Rs. 1,73,775				1,73,775.0	1,73,775.0
6	Double coat painting of iron angle pole over a coat of primer using good quality enamel paint 84 x 2.10 x 0.20 = 35.28 sqmt. @ Rs. 108.00/Sqmt.				3,808.0	3,808.0
7	Painting of chain link mesh 250 x 2.10 x 2 = 1050/10 = 105 Sqmt. @ Rs. 108.00 Sqmt.				11,424.0	11,424.0
8	Transportation of Chain link mesh, iron angle, Straightening & firing of chain link mesh etc. @ 2% of the total cost.				5,600.0	5,600.0
	<b>TOTAL</b>		<b>2.42</b>	<b>752.62</b>	<b>2,84,857.4</b>	<b>2,85,610.0</b>
Rate per running mt. 2,85,610/250 = Rs. 1142/Rmt						
1st Year Maintenance						
1	No Maintenance is required.	Sept./Oct	0	0	0	0
2nd Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
3rd Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
4th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
5th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
6th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
7th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
8th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
9th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
10th Year Maintenance						

Sl. No	Items of work	Preferable Period of Execution	Man days	Wages	Material cost (Rs)	Total Cost (Rs. per Ha.)
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. $1147 \times 1\% = 11.47$ say Rs. 11	Sept./Oct.	0	0	11000	11000

Abstract					
Sl. No	Year	No. persons days	Labour cost @ Rs. 311/- per day	Material Cost	Total cost (Rs.)
1	5th year	2.42	752.6	204857.4	205610.0
2	1st year	0.0	0.0	0.0	0.0
3	2nd year	0.0	0.0	11000.0	11000.0
4	3rd year	0.0	0.0	11000.0	11000.0
5	4th year	0.0	0.0	11000.0	11000.0
6	5th year	0.0	0.0	11000.0	11000.0
7	6th year	0.0	0.0	11000.0	11000.0
8	7th year	0.0	0.0	11000.0	11000.0
9	8th year	0.0	0.0	11000.0	11000.0
10	9th year	0.0	0.0	11000.0	11000.0
11	10th year	0.0	0.0	11000.0	11000.0
Total:		2.42	752.62	203857.4	204610.0

  
APCEF (Forest Diversion & NO, FC Act)

Matrix for Fencing Model-F- II (Iron angle with Chainlink wire mesh)

Sl. NO.	Contract Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	Total Cost
	Base Rate	20610	0	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	
1	2011-12	285610	0	12138	12734	13379	14025	14740	15478	16252	17064	17918	18813	19754	20743	21780	22868	24012	25213	26474	27798	429311
2	2012-13		279891	0	22712	13371	14034	14741	15477	16252	17064	17917	18814									440259
3	2013-14			314886	0	13389	14042	14745	15478	16251	17063	17918	18813	19758								481216
4	2014-15				350630	0	14037	14742	15478	16252	17064	17918	18814	19754	20743							495432
5	2015-16					14742	0	14739	15479	16252	17065	17919	18814	19755	20742	21780						509705
6	2016-17						14739	0	15476	16253	17065	17918	18815	19755	20743	21780	22868					535181
7	2017-18							362746	0	16250	17065	17918	18814	19754	20743	21780	22868	24012				561951
8	2018-19								401883	0	17063	17919	18814	19755	20742	21780	22868	24012	25213			590048
9	2019-20									421877	0	17919	18815	19755	20743	21780	22868	24012	25213	26474		615552
10	2020-21										440310	0	18812	19756	20743	21780	22868	24012	25213	26473	27798	650523

10 Rupees

AFCOF (Forest Division & NO, FC Act)

**Annexure-3**

**Estimate for digging of one no. of staggered trench of size 2 mt x 0.5 mt x 0.5 mt along with Agave plantation on the dug out soil.**

**Wage rate Rs.450.00**

i)	Earth work in excavation of staggered trench in hard soil including rough dressing and leveling the beds and heaping the dug out soil at the down hill side of the trench and leveling the same too.		
	Size of a trench = 2.0 mt x 0.5 mt x 0.5 mt = 0.5 cum		
	@ 888.72 per 2.83 cum	Rs.	157.01
ii)	Cost for Agave planting on the dugout soil and its maintenance including weeding, soil working, manuring, cost of fertilizer etc. for three years		
	3 nos. of Agave plants per trench @ Rs.66.11/- per plants on LS	Rs.	198.33
	<b>Total :-</b>	<b>Rs.</b>	<b>355.34</b>

**Cost of 250 nos. of staggered trenches covering one Ha. = 250 x 355.34 =  
Rs.88,835.00**

  
General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

Watering Made-Water				
Watering provision in CA Plantation				
Solar system with Bore well (1 system for 5 Ha Plantation) fitted with Drip system, Wage rate @ Rs.111/-				
Year of Installation (0th Year)				
1	Cost of Borewell		1,10,000	
2	Installation of Solar panel & other system		1,00,000	
3	Cost of 0.5 HP submersible motor with accessories		50,000	
4	Water Storage Tanks/ Flexible pipes		15,000	
5	Cost of laying Drip system including all accessories, fittings etc. with 1% GST		1,02,431	
<b>Total</b>			<b>3,77,431</b>	
6	Cost of Water & watering per Ha (Rs.17,531/5) = Rs.2,63,906/-			1,63,906
<b>1st Year Watering</b>				
7	No maintenance required			0
			<b>Total</b>	<b>0</b>
<b>2nd Year Watering</b>				
8	Maintenance of system @ 1% of initial cost of installation			8,174
			<b>Total</b>	<b>8,174</b>
<b>3rd Year Watering</b>				
9	Maintenance of system @ 1% of initial cost of installation			8,174
			<b>Total</b>	<b>8,174</b>
<b>4th Year Watering</b>				
10	Maintenance of system @ 1% of initial cost of installation			8,174
			<b>Total</b>	<b>8,174</b>
<b>5th Year Watering</b>				
11	Maintenance of system @ 1% of initial cost of installation			8,174
			<b>Total</b>	<b>8,174</b>
<b>Abstract</b>				
Sr. No.	Year	No. person days	Labour cost @ Rs. 111/- per day	Material Cost
1	0th year	0	0	1,63,906.0
2	1st year	0	0	0.0
3	2nd year	0	0	8,174.0
4	3rd year	0	0	8,174.0
5	4th year	0	0	8,174.0
6	5th year	0	0	8,174.0
<b>Total</b>		<b>0</b>	<b>0</b>	<b>1,96,192</b>

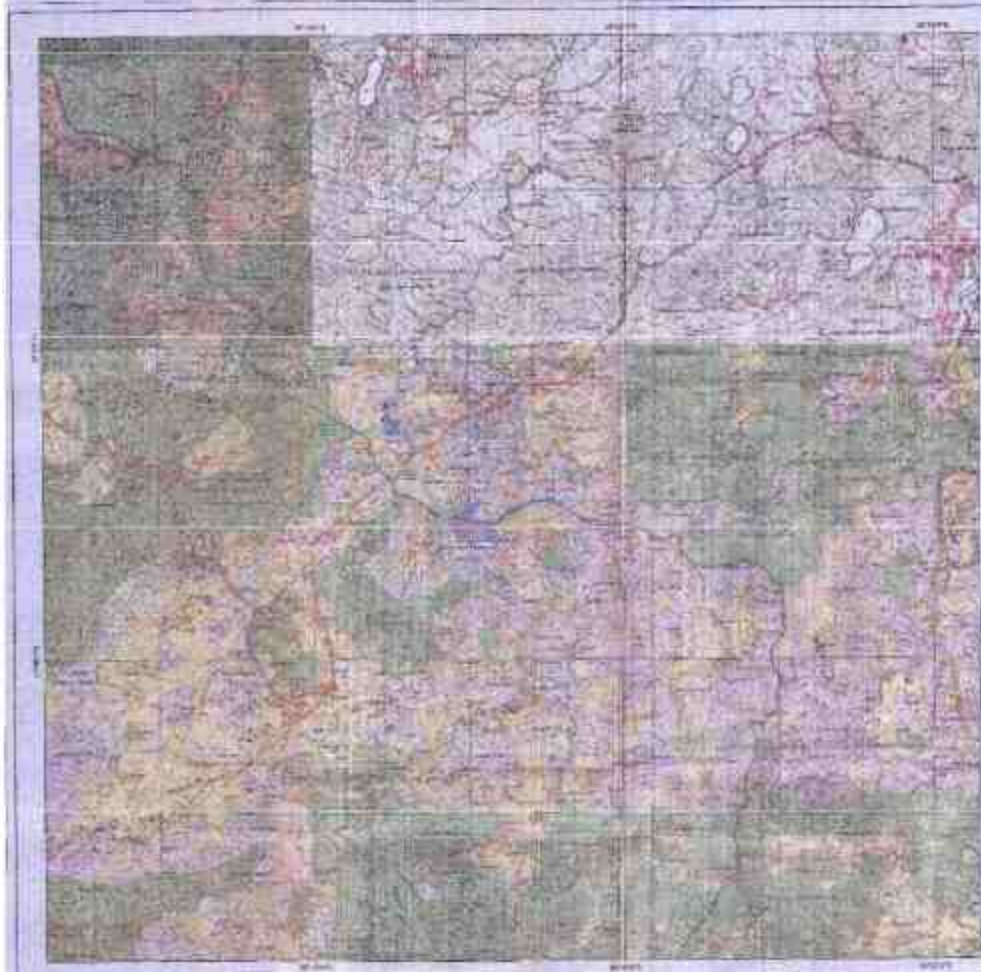
APCC (Forest Division &amp; NC, FC Act)

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Matrix for Watering W1 (Solar Borewell) fitted with Drip System (per Ha)

Sl. No.	Commence ment Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
	Base Norm	163486	0	8174	8174	8174	8174	0	0	0	0	0	0	0	0	0	0	0
1	2021-22	163486	0	8011	8463	8935	9398	0	0	0	0	0	0	0	0	0	0	222633
2	2022-23	0	0	0	8062	8536	9012	9486	0	0	0	0	0	0	0	0	0	233766
3	2023-24	0	0	0	8123	8603	9083	9564	0	0	0	0	0	0	0	0	0	245476
4	2024-25	0	0	0	8185	8665	9145	9626	0	0	0	0	0	0	0	0	0	257731
5	2025-26	0	0	0	8247	8727	9207	9688	0	0	0	0	0	0	0	0	0	270639
6	2026-27	0	0	0	8309	8789	9269	9750	0	0	0	0	0	0	0	0	0	284171
7	2027-28	0	0	0	8371	8851	9331	9812	0	0	0	0	0	0	0	0	0	298380
8	2028-29	0	0	0	8433	8913	9393	9874	0	0	0	0	0	0	0	0	0	313299
9	2029-30	0	0	0	8495	8975	9455	9936	0	0	0	0	0	0	0	0	0	328964
10	2030-31	0	0	0	8557	9037	9517	10000	0	0	0	0	0	0	0	0	0	345412

APCC (Forest Division &amp; NO, FC Act)



**MAP SHOWING THE DIVISION BOUNDARY OF ALLOUEZ MINES WITH RAILROAD WEST (NORTHERN PART) BLOCK**

Scale: 1 inch = 1 mile

**LEGEND**

**LEGEND SYMBOLS:**

- ALL LOU BOUNDARY
- SUBDIVISION BOUNDARY
- RAILROAD RIGHT-OF-WAY

**EXPLANATION:**

The map shows the division boundary of Allouez Mines with Railroad West (Northern Part) Block. The map is divided into sections by a grid system. The map shows a complex network of roads, rivers, and land parcels, with some areas shaded in green, yellow, and purple.

**INDEX**

The index shows the location of the map within the larger area. The index is a small map showing the location of the map within the larger area.

**REMARKS:**

The map was prepared by the Surveyor General of the State of Wisconsin, and is a true and correct copy of the original map.

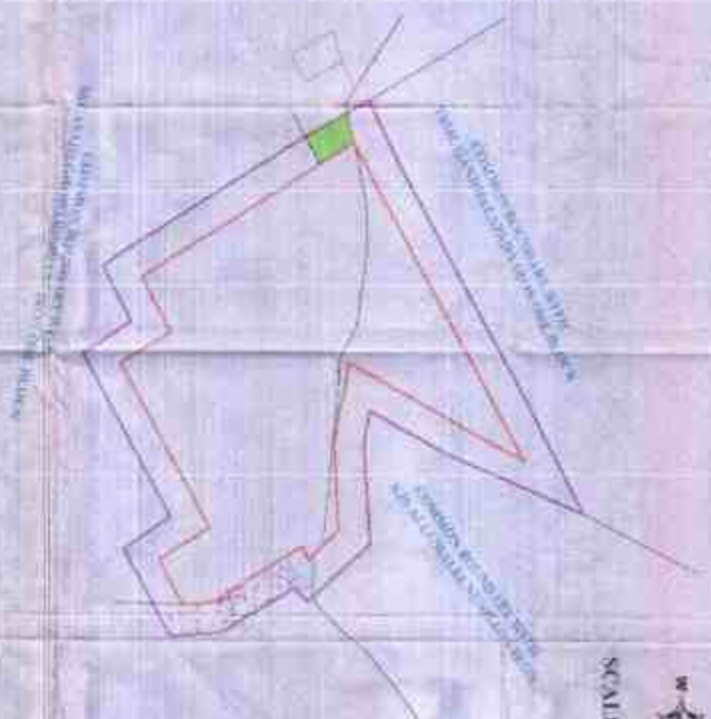
**APPROVED:**

*[Signature]*  
Surveyor General of the State of Wisconsin

**PLAN SHOWING GAP PLANTATION, SOIL AND MOISTURE CONSERVATION ACTIVITIES  
TO RESTOCK AND REGENERATE THE DEGRADED OPEN FOREST  
(HAVING CROWN DENSITY LESS THAN 6.0 WITHIN 100 METRS.  
FROM OUTER PERIMETER OF THE MINING LEASE  
OF M/S TATA STEEL LIMITED**



SCALE: 1:4,000



- Legend**
- Mining Lease Boundary
  - 100 Metre Outer Boundary
  - 200 Metre Outer Boundary
  - 300 Metre Outer Boundary
  - 400 Metre Outer Boundary
  - 500 Metre Outer Boundary
  - 600 Metre Outer Boundary
  - 700 Metre Outer Boundary
  - 800 Metre Outer Boundary
  - 900 Metre Outer Boundary
  - 1000 Metre Outer Boundary
  - 1100 Metre Outer Boundary
  - 1200 Metre Outer Boundary
  - 1300 Metre Outer Boundary
  - 1400 Metre Outer Boundary
  - 1500 Metre Outer Boundary
  - 1600 Metre Outer Boundary
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  - 2100 Metre Outer Boundary
  - 2200 Metre Outer Boundary
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  - 8000 Metre Outer Boundary
  - 8100 Metre Outer Boundary
  - 8200 Metre Outer Boundary
  - 8300 Metre Outer Boundary
  - 8400 Metre Outer Boundary
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  - 8600 Metre Outer Boundary
  - 8700 Metre Outer Boundary
  - 8800 Metre Outer Boundary
  - 8900 Metre Outer Boundary
  - 9000 Metre Outer Boundary
  - 9100 Metre Outer Boundary
  - 9200 Metre Outer Boundary
  - 9300 Metre Outer Boundary
  - 9400 Metre Outer Boundary
  - 9500 Metre Outer Boundary
  - 9600 Metre Outer Boundary
  - 9700 Metre Outer Boundary
  - 9800 Metre Outer Boundary
  - 9900 Metre Outer Boundary
  - 10000 Metre Outer Boundary

Sl. No.	Area (Hectares)	Area (Acres)	Area (Square Feet)
1	1.00	2.47	270,725
2	1.00	2.47	270,725
3	1.00	2.47	270,725
4	1.00	2.47	270,725
5	1.00	2.47	270,725
6	1.00	2.47	270,725
7	1.00	2.47	270,725
8	1.00	2.47	270,725
9	1.00	2.47	270,725
10	1.00	2.47	270,725
11	1.00	2.47	270,725
12	1.00	2.47	270,725
13	1.00	2.47	270,725
14	1.00	2.47	270,725
15	1.00	2.47	270,725
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94	1.00	2.47	270,725
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96	1.00	2.47	270,725
97	1.00	2.47	270,725
98	1.00	2.47	270,725
99	1.00	2.47	270,725
100	1.00	2.47	270,725

0 100 200 300 400 500 600 700 800 900 1000  
METERS

0 100 200 300 400 500 600 700 800 900 1000  
METERS



By E-mail

## ବନଖଣ୍ଡ ଅଧିକାରୀଙ୍କ କାର୍ଯ୍ୟାଳୟ : ବଣାଇ ବନଖଣ୍ଡ

OFFICE OF THE DIVISIONAL FOREST OFFICER: BONAI FOREST DIVISION

Phone 06626-244454; E-mail- dfo.bonai@odisha.gov.in

No. 2466 /6F-(Mg.) Dt. 07.03.2024

To

The General Manager,  
OMQ, Tata Steel Ltd., Mines Division,  
Noamundi-733217.

Sub: -

Proposal for seeking prior approval of the Central Government under Section 2 (ii) of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha. forest land (16.658 ha. in Keonjhar Forest Division and 25.950 ha. in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd.) (Online Proposal No.FP/OR/ MIN/49169 /2020)-Stage-I approval regarding.

X-Sub:-

Stage-I approval accorded vide Letter No.8-13/2022-FC  
dt.22.12.2023 of the MoEF & CC, Gol.

Ref:-

1. Letter No.8-13/2022-FC dt.22.12.2023 of the MoEF & CC, Gol.
2. Memo No.25384 dt.28.12.2023 of the Conservator of Forests (Nodal), Bhubaneswar.
3. This Office Letter No. 152 dt.4.1.2024.
4. Memo No.1746 dt.25.02.2024 of the DFO, Keonjhar Division.

Sir,

With reference to above, it is to inform you that earlier the Compensatory Afforestation Scheme and Addl. Compensatory Afforestation Scheme have been approved vide Letter No.25384 dt.23.12.2023 of the PCCF (FD & NO FC Act), Bhubaneswar for ₹ 4,78,41,500/- & ₹ 3,46,51,400/- respectively.

Further, the Divisional Forest Officer, Keonjhar Division has revised the above Compensatory Afforestation & Addl. Compensatory Afforestation Scheme vide his Memo No.58 dt.25.02.2024 for ₹3,92,64,000/- & ₹3,69,34,500/- respectively and accordingly demand has been raised to the User Agency for payment above amount vide his Letter No.1743 dt.25.02.2024.

Hence, you are requested to deposit ₹ 98,16,000/- (Rupees Ninety Eight Lakh Sixteen Thousand) only towards 25% of the C.A. cost as per Condition No.2 (g) of the Stage-I approval order through e-portal of MoEF & CC as provided in the <http://parivesh.nic.in> and submit the original proof with seal and signature of the issuing Bank to this office for needful.

Encl :- As above.


Yours faithfully,

Divisional Forest Officer,  
Bonai Division.

Contd 2...


Memo No. 2467 /6F-Dt: 07.03.2024

Copy forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, F.C. Act' O/O the P.C.C.F., Odisha Bhubaneswar for favour of kind information with reference to his Memo No.25384 dt.28.12.2023.

  
Divisional Forest Officer,  
Bonai Division.

Memo No. 2468 /6F-Dt: 07.03.2024

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela for favour of kind information with reference to Memo No.25386 dt.28.12.2023 of the CF (Nodal), Bhubaneswar.

  
Divisional Forest Officer,  
Bonai Division.

Memo No. 2469 /6F-Dt: 07.03.2024

Copy forwarded to the Divisional Forest Officer, Keonjhar Forest Division for information and necessary action with reference to Memo No.25384 dt.28.12.2023 of the Conservator of Forest (Nodal), Bhubaneswar & his Memo No.1746 dt.25.02.2024.

  
Divisional Forest Officer,  
Bonai Division.

Regional Wildlife Manage-  
ment plan + 25% of CA

**AGENCY COPY**

**यूनियन बैंक Union Bank**

**NEFT / RTGS CHALLAN for CAMPA Funds**  
Date : 18-03-2024

Agency Name.	M/s. Tata Steel Limited, Kharipoli
Application No.	SBAR18867
NEFT/RTGS File No.	8-13/2023-FC
Location.	ORRISA
Address.	Narendrapur, Po-Kusumpanga, Via-Maramandal, Dist-Dhenkanal/Dhenkanal
Amount(in Rs)	19391413/-

Amount in Words: One Crore Ninety-Three Lakh Ninety-One Thousand Four Hundred and Thirteen Rupees. Only

NEFT/RTGS to be made as per following details:

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN088335
Pay to Account No.	150825849169967 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCB Centre, 21/1, II Floor, Jodha Towers, Mission Road, Bengaluru-560027

\* This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

**BANK COPY**

**यूनियन बैंक Union Bank**

**NEFT / RTGS CHALLAN for CAMPA Funds**  
Date : 18-03-2024

Agency Name.	M/s. Tata Steel Limited, Kharipoli
Application No.	SBAR18867
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IFSC Code:	UBIN088335
Pay to Account No.	150825849169967 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCB Centre, 21/1, II Floor, Jodha Towers, Mission Road, Bengaluru-560027

\* This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

Customer Name - ORRISA CAMPA  
Beneficiary Account - 150825849169967  
IFSC code - UBIN088335  
UTK NO - HDFCR520240320904933858  
Amount - 1,93,91,413.00/-  
Payment Date - 20.03.2024





We understand your world

HDFC Bank Ltd,  
105, SNP Area,  
Sakchi  
Jamshedpur -831 001.

Date :22.03.2024

To Whom so ever It May Concern

This is to certify that an amount of 1,93,91,413 (Rupees One Crore Ninety Three Lacs Ninety One Thousand Four Hundred Thirteen Only ) RTGS vide UTR No. HDFCR52024032090433858 dated 20.03.2024 has been debited from A/c number 00870310000884 of TATA STEEL LTD to the below mentioned account .

Beneficiary Name	Orissa Campa
Beneficiary A/c no.	150825849169967
IFSC Code	UBIN0996335
UTR No.	HDFCR52024032090433858
Amount	1,93,91,413.00
Payment date	20.03.2024



[www.hdfcbank.com](http://www.hdfcbank.com)

Regd. Office: HDFC Bank Ltd., HDFC Bank House, Senapati Bapat Marg, Lower Parel (West), Mumbai - 400 013  
Corporate Identity No.: L65920MH1994PLC080618



To  
The Divisional Forest Officer  
Bonai Forest Division, Bonai.

Ref: GM/OMQ/2 / 11-G/FY'23  
Date: 13<sup>th</sup> April' 2022

**Sub: Permission under Section 2(iii) of Forest (Conservation) Act, 1980 for grant of forest land on lease over 42.608 ha (16.658 ha in Keonjhar Division and 25.950 ha in Bonai Division) within Kalamang West (Northern Part) Block for iron ore mines allotted to M/s Tata Steel BSL Limited now amalgamated into and with M/s Tata Steel Limited.**

X- Sub: Demand of NPV over 25.950 ha.

Ref: 1. Approval under Sec 2(iii) vide F. No. 8-32/2021-FC, dated 31.01.2022 of MoEF&CC, Govt. of India.  
2. Memo no. 207, dated 03.02.2022 of PCCT & HoFE, Odisha, Bhubaneswar  
3. Your Demand letter vide no. 1195/6F(Mg.), dated 10.02.2022.  
4. Reasoned Order of F&E Department, Govt. of Odisha vide letter no. 4993/F&E, dated 09.03.2022.

Dear Sir,

With reference to above letters on above captioned subject, we would like to bring to your kind notice that we have made the payment of Rs 6,12,13,636/- (Rupee Six Crore Twelve Lakh Thirteen Thousand Six Hundred Thirty-Six Only) towards Net Present Value (NPV) over entire 42.608 ha of forest land involved in respect of Kalamang West (Northern Part) Block for iron ore mines allotted to M/s Tata Steel BSL Limited now amalgamated into and with M/s Tata Steel Limited.

The details of Division wise forest land involved, demand reference, NPV payable and reference of payment made is shown in the table given below.

Sl. No.	Forest Division	Forest Land (Ha)	NPV Rate (Rs/ Ha)	NPV Value (Rs)	Demand Reference	Payment Reference.
1.	Keonjhar	16.658	14,36,670	2,39,32,049	1040/6F- Mining-195/2017, dated 09.02.2022	UTR no. HDFC/R520220412606 57683
2.	Bonai	25.950	14,36,670	3,72,81,587	1195/6F(Mg.), dated 10.02.2022	Transaction Ref No. R102220157802307, Dated 12.04.2022 From HDFC Bank
Total		42.608	14,36,670	6,12,13,636		

**TATA STEEL LIMITED**

Mines Division Noamundi 833 217 India

Tel 91 9234301340 Fax 91 6596 290737

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India

Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com



The above said total NPV amount of Rs 6,12,13,636/- (inclusive of Rs 3,72,81,587/- towards NPV of 25.950 ha of forest land involved in Bonai Forest Division) has been made and deposited through e-portal of MoEF&CC, Govt. of India as provided in the <http://parivesh.nic.in> after receipt of the Reasoned Order from F&E Department, Govt. of Odisha vide letter no. 4993/F&E, dated 09.03.2022 and now we are submitting herewith the proof of payment received from HDFC Bank with UTR Reference No. HDFCR52022041260657683, dated 12.04.2022 (Annexure-1) to your good office for doing the needful.

Thanking You

Yours Faithfully,

For: Tata Steel Limited

(Atul Kumar Bhatnagar)  
General Manager (OMQ)

Encl: As above

Copy to:

1. Principal Chief Conservator of Forests & HoFF, Odisha, Bhubaneswar
2. Regional Chief Conservator of Forests, Rourkela Circle, Rourkela

**TATA STEEL LIMITED**

Mines Division Noamundi 833 217 India

Tel 91 9234301340 Fax 91 6596 290737

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India

Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website [www.tatasteel.com](http://www.tatasteel.com)

**AGENCY COPY**





**NEFT / RTGS CHALLAN for CAMPA Funds**

Date : 06-04-2022

Agency Name.	TATA STEEL BSL LIMITED
Application No.	58146348387
MoEF/SG File No.	8-32/2021-FC
Location.	ORRISA
Address.	Narendrapur, Po- Kusupanga, Via- Meramandali, Dist- Dhenkanal Dhenkanal
Amount (in Rs)	61213636/-

Amount in Words : Six Crore Twelve Lakh Thirteen Thousand Six Hundred and Thirty-Six Rupees Only

**NEFT/RTGS to be made as per following details;**

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0903710
Pay to Account No.	1508258146348387 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India Lodhi Complex Branch, Block 11, CGO Complex, Phase I, Lodhi Road, New Delhi -110003

• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

**BANK COPY**





**NEFT / RTGS CHALLAN for CAMPA Funds**

Date : 06-04-2022

Agency Name.	TATA STEEL BSL LIMITED
Application No.	58146348387
MoEF/SG File No.	8-32/2021-FC
Location.	ORRISA
Address:	Narendrapur, Po- Kusupanga, Via- Meramandali, Dist- Dhenkanal Dhenkanal
Amount (in Rs)	61213636/-

Amount in Words : Six Crore Twelve Lakh Thirteen Thousand Six Hundred and Thirty-Six Rupees Only

**NEFT/RTGS to be made as per following details;**

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0903710
Pay to Account No.	1508258146348387 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India Lodhi Complex Branch, Block 11, CGO Complex, Phase I, Lodhi Road, New Delhi -110003

• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

After making successful payment, User Agencies may send a line of confirmation through  
Email: [helpdeskcampa@corpbank.co.in](mailto:helpdeskcampa@corpbank.co.in)

**Note:** After making the required payment through challan, if the payment status has not been updated even after 7 working days, then kindly mail a copy of your challan with transaction date to  
Email: [cb0371@unionbankofindia.com](mailto:cb0371@unionbankofindia.com)



We Understand Your World

HDFC Bank Limited  
1<sup>st</sup> Floor, Clearing Department,  
105, SNP Area, Sakchi,  
Jamsbedpur - 831 001,  
Tel.No. 0657 - 2234432  
Fax No. 0657 - 2235396

Date: - 12/04/2022

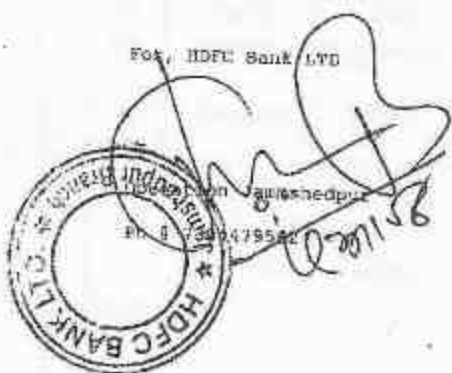
HDFC/CN/TS/2022 -21/225

To whom it may Concern

This is to certify that an amount of Rs.6,12,13,636.00 (Rupees Six Crore Twelve Lakh Thirteen Thousand Six Hundred and Thirty Six Only) of RGS processed vide UTR NO HDFCR52022041260657683 DATED 12/04/2022 has been debited from A/c number 00870310000884 of TATA STEEL LIMITED and Current transaction status shows as complete.

Bene Customer	ORRISACAMPA
Bene Customer A/c no	1508258146348387
IFSC code	UBIN0903710
UTR NO	HDFCR52022041260657683
Transaction ref no	R102220157802307

For, HDFC Bank LTD





To

The Divisional Forest Officer  
Keonjhar Forest Division, Keonjhar

Ref: GM/ OMQ/20 /11-G  
Date: 13<sup>th</sup> April 2022

Sub: Permission under Section 2(iii) of Forest (Conservation) Act, 1980 for grant of forest land on lease over 42.608 ha (16.658 ha in Keonjhar Division and 25.950 ha in Bonai Division) within Kalamang West (Northern Part) Block for Iron ore mines allotted to M/s Tata Steel BSL Limited now amalgamated into and with M/s Tata Steel Limited.

X- Sub: Demand of NPV over 16.658 ha.

- Ref: 1. Approval under Sec 2(iii) vide F. No. 8-32/2021-FC, dated 31.01.2022 of MoEF&CC, Govt. of India.  
2. Memo no. 207, dated 03.02.2022 of PCCF & HoFF, Odisha, Bhubaneswar  
3. Your Demand letter vide no. 1040/6F-Mining-195/2017, dated 09.02.2022  
4. Reasoned Order of F&E Department, Govt. of Odisha vide letter no. 4993/F&E, dated 09.03.2022.

Dear Sir,

With reference to above letters on above captioned subject, we would like to bring to your kind notice that we have made the payment of Rs. 6,12,13,636/- (Rupee Six Crore Twelve Lakh Thirteen Thousand Six Hundred Thirty-Six Only) towards Net Present Value (NPV) over entire 42.608 ha of forest land involved in respect of Kalamang West (Northern Part) Block for Iron ore mines allotted to M/s Tata Steel BSL Limited now amalgamated into and with M/s Tata Steel Limited.

The details of Division wise forest land involved, demand reference, NPV payable and reference of payment made is shown in the table given below.

Sl. No.	Forest Division	Forest Land (Ha)	NPV Rate (Rs/ Ha)	NPV Value (Rs)	Demand Reference	Payment Reference.
1.	Keonjhar	16.658	14,36,670	2,39,32,049	1040/6F- Mining-195/2017, dated 09.02.2022	UTR no. HDFCR52022041260 657683 Transaction Ref No. R102220157802307, Dated 12.04.2022 From HDFC Bank
2.	Bonai	25.950	14,36,670	3,72,81,587	1195/6F(Mg.), dated 10.02.2022	
Total		42.608	14,36,670	6,12,13,636		

**TATA STEEL LIMITED**

Mines Division Noamundi 833 217 India  
Tel 91 9234301340 Fax 91 6596 290737  
Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India  
Tel 91 22 66658282 Fax 91 22 66657724  
Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com



The above said total NPV amount of Rs 6,12,13,636/- (inclusive of Rs 2,39,32,049/- towards NPV of 16.658 ha of forest land involved in Keonjhar Forest Division) has been made and deposited through e-portal of MoEF&CC, Govt. of India as provided in the <http://parivesh.nic.in> after receipt of the Reasoned Order from F&E Department, Govt. of Odisha vide letter no. 4993/F&E, dated 09.03.2022 and now we are submitting herewith the proof of payment received from HDFC Bank with UTR Reference No. HDFCR52022041260657683, dated 12.04.2022 (**Annexure-1**) to your good office for doing the needful.

Thanking You,

Yours Faithfully,

For: Tata Steel Limited

(Atul Kumar Bhatnagar)

General Manager (OMQ)

Encl: As above

Copy to:

1. Principal Chief Conservator of Forests & HoFF, Odisha, Bhubaneswar
2. Regional Chief Conservator of Forests, Rourkela Circle, Rourkela

**TATA STEEL LIMITED**

Mines Division Noamundi 833 217 India

Tel 91 9234301340 Fax 91 6596 290737

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India

Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website [www.tatasteel.com](http://www.tatasteel.com)

**AGENCY COPY**


**NEFT / RTGS CHALLAN for CAMPA Funds**

Date : 06-04-2022

Agency Name.	TATA STEEL BSL LIMITED
Application No.	58146348387
MoEF/SG File No.	0-32/2021-FC
Location.	ORRISA
Address.	Narendrapur, Po- Kusupanga, Via- Meramandali, Dist- DhenkanalDhenkanal
Amount(in Rs)	61213636/-

Amount in Words :Six Crore Twelve Lakh Thirteen Thousand Six Hundred and Thirty-Six Rupees Only

**NEFT/RTGS to be made as per following details;**

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0903710
Pay to Account No.	1508258146348387 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India Lodhi Complex Branch, Block 11,CGO Complex, Phase I, Lodhi Road, New Delhi -110003

• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

**BANK COPY**


**NEFT / RTGS CHALLAN for CAMPA Funds**

Date : 06-04-2022

Agency Name.	TATA STEEL BSL LIMITED
Application No.	58146348387
MoEF/SG File No.	0-32/2021-FC
Location.	ORRISA
Address:	Narendrapur, Po- Kusupanga, Via- Meramandali, Dist- DhenkanalDhenkanal
Amount(in Rs)	61213636/-

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Pay to Account No.	1508258146348387 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India Lodhi Complex Branch, Block 11,CGO Complex, Phase I, Lodhi Road, New Delhi -110003

• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

After making successful payment, User Agencies may send a line of confirmation through  
Email: [helpdeskcampa@corpbank.co.in](mailto:helpdeskcampa@corpbank.co.in)

**Note:** After making the required payment through challan, if the payment status has not been updated even after 7 working days, then kindly mail a copy of your challan with transaction date to  
Email: [cb0371@unionbankofindia.com](mailto:cb0371@unionbankofindia.com)



We Understand Your World

HDFC Bank Limited  
1<sup>st</sup> Floor, Clearing Department,  
105, SNP Area, Sakchi,  
Jamshedpur - 831 001.  
Tel.No. 0657 - 2234433  
Fax No. 0657 - 2235396

Date: - 12/04/2022

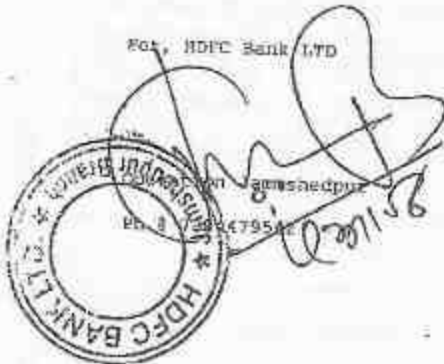
HDFC/CH/76/2022 -21/225

To whom it may Concern

This is to certify that an amount of Rs.6,12,13,636.00 (Rupees Six Crore Twelve Lakh Thirteen Thousand Six Hundred and Thirty Six Only) of RTGS processed vide UTR NO HDFCR52022041260657683 DATED 12/04/2022 has been debited from A/c number 00870310000884 of TATA STEEL LIMITED And Current transaction status shows as complete.

Bene Customer	ORRISACAMPA
Bene Customer A/c no	1508258146348387
IFSC code	UBIN0903710
UTR NO	HDFCR52022041260657683
Transaction ref no	R102220157802307

For, HDFC Bank LTD





By E-mail

## ବନଖଣ୍ଡ ଅଧିକାରୀଙ୍କ କାର୍ଯ୍ୟାଳୟ : ବଣାଇ ବନଖଣ୍ଡ

OFFICE OF THE DIVISIONAL FOREST OFFICER: BONAI FOREST DIVISION

Phone 06626-244454; E-mail- [dfo.bonai@odisha.gov.in](mailto:dfo.bonai@odisha.gov.in)

No. 2560 /6F-(Mg.) Dt. 11-03-2024

To

The General Manager,  
OMQ, Tata Steel Ltd., Mines Division,  
Noamundi-733217.

Sub: -

Proposal for seeking prior approval of the Central Government under Section 2 (ii) of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha. forest land (16.658 ha. in Keonjhar Forest Division and 25.950 ha. in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd.) (Online Proposal No.FP/OR/ MIN/49169 /2020)-Stage-I approval regarding.

X-Sub:-

Submission of demand of Regional Wildlife Management Plan fund.

Ref:-

1. Letter No.8-13/2022-FC dt.22.12.2023 of the MoEF & CC, Gol.
2. Memo No.25384 dt.28.12.2023 of the Conservator of Forests (Nodal), Bhubaneswar.
3. Memo No.1479 dt.25.1.2024 of the CCF (Nodal), Bhubaneswar.
4. Memo No.1183/FE&CC dt.19.01.2024 of the FE&CC Deptt. Govt. of Odisha.


Sir,

With reference to above, it is to inform that the Regional Wildlife Management Plan fund has been enhance to ₹1,03,100/- per ha. vide Letter No.FE-DIV-MISC-0036-2021-1183/FE&CC dt.19.1.2024 of the FE & CC Department, Govt. of Odisha.

Hence, you are requested to deposit ₹ 78,57,973/- (Rupees Seventy Eight Lakhs Fifty Seven Thousand Nine Hundred Seventy Three) only (76.217 ha. X ₹1,03,100/-) towards Regional Wildlife Management Plan Fund through e-portal of MoEF & CC as provided in the <http://parivesh.nic.in>, and submit the original proof with seal and signature of the issuing Bank to this office for needful.

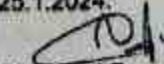
It is further requested that an undertaking shall be submitted to bear the cost of the additional proposed Integrated Regional Wildlife Conservation Plan fund in addition to this demand under Condition No.7 of the Forest Clearance Stage-I approval order.

Yours faithfully,

  
Divisional Forest Officer,  
Bonai Division.

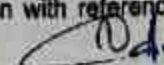
Memo No. 2561 /6F-Dt: 11-03-2024

Copy forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, F.C. Act' O/O the P.C.C.F., Odisha Bhubaneswar for favour of kind information with reference to his Memo No.1479 dt.25.1.2024.

  
Divisional Forest Officer,  
Bonai Division.

Memo No. 2562 /6F-Dt: 11-03-2024

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela for favour of kind information with reference to Memo No.1481 dt.25.01.2024 of the CCF (Nodal), Bhubaneswar.

  
Divisional Forest Officer,  
Bonai Division.



**OFFICE OF THE DIVISIONAL FOREST OFFICER, KEONJHAR DIVISION**

Phone No- 06766-254315, email ID- [dfc.keonjhar@odisha.gov.in](mailto:dfc.keonjhar@odisha.gov.in)

No. 2302 /Mining- 195/ 2024  
Dated, Keonjhar the 14-03-2024

To

The Authorised Signatory,  
M/s. Tata Steel Limited, Khopoli  
Narendrapur, Po- Kusupanga,  
Via- Meramandali, Dist- Dhenkanal.

Sub:

Proposal for seeking prior approval of the Central Government under Section 2 (ii) of the Forest (Conservation) Act, 1980 for non-forestry use of 42,608 ha of forest land (16,658 ha in Keonjhar Forest Division and 25,950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd) (Online proposal no. FP/OR/MIN/49169/2020).

X-Sub:

**Demand of funds for Regional Wildlife Management Plan over 16,658 ha coming under Keonjhar Forest Division.**

Ref:

F. No. 8-13/2022-FC dated 22.12.2023 of MoEF&CC, Govt. of India and letter No. 1183/FE&CC dated 19.01.2024 of OSD-Cum-Special Secretary, Forest, Environment & Climate Change Department Govt. of Odisha.

Sir,

You are requested to deposit the amount of Rs. 17,17,439.80 or say Rs.17,17,440/- (Rupees seventeen lakh seventeen thousand four hundred forty) only towards the Regional Wild Life Management plan as per condition No. 7 of Stage- I approval dt. 22.12.2023 of MoEF&CC, Govt. of India. The demanded amount has to be deposited in Orissa CAMPA Account only through e-portal (<https://parivesh.nic.in/>) and the proof/evidence of the deposit of fund be submitted to this office for further necessary action at this end.

Regional Wild Life Management plan of  
Keonjhar-Bonai over-16,658 ha.@ Rs. 1,03,100/ha.

= 17,17,439.80

or say

= 17,17,440.00

(Rupees seventeen lakh seventeen thousand four hundred forty) only

Yours faithfully,

  
Divisional Forest Officer,  
Keonjhar Division.

Memo No. 2303 /Dated 14-03-2024 13/3

Copy forwarded to the Divisional Forest Officer, Bonai Division for information and necessary action.

  
Divisional Forest Officer,  
Keonjhar Division.

Memo No. 2304 /Dated. 14-03-2024 13/3

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela/ Principal Chief Conservator of Forests, Forest Diversion and Nodal Officer, FC Act, O/o the Principal Chief Conservator of Forests, Odisha, Bhubaneswar for favour of kind information and necessary action.

  
Divisional Forest Officer,  
Keonjhar Division.

13/3

Regional Wildlife Conservation plan + 25.7.24

**AGENCY COPY**

**यूनियन बैंक Union Bank**

**NEFT / RTGS CHALLAN for CAMPA Funds**

Date : 18-03-2024

Agency Name.	M/s. Tata Steel Limited, Khopoli
Application No.	5542158967
NEFT/RTGS File No.	5-137833-FC
Location.	ORRISA
Address.	Narendrapur, Po- Kusumpalga, Via- Narendrapur, Dist- Dhenkanal/Dhenkanal
Amount(In Rs)	19395413/-

Amount in Words: One Crore Ninety Three Lakh Ninety One Thousand Four Hundred and Thirteen Rupees Only

NEFT/RTGS to be made as per following details:

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825849169967 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCB Centre, 21/1, II Floor, Jyoti Towers, Mission Road, Bengaluru-560027

\* This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

**BANK COPY**

**यूनियन बैंक Union Bank**

**NEFT / RTGS CHALLAN for CAMPA Funds**

Date : 18-03-2024

Agency Name.	M/s. Tata Steel Limited, Khopoli
Application No.	5542158967
NEFT/RTGS File No.	5-137833-FC
Location.	ORRISA
Address:	Narendrapur, Po- Kusumpalga, Via- Narendrapur, Dist- Dhenkanal/Dhenkanal
Amount(In Rs)	19395413/-

Amount in Words: One Crore Ninety Three Lakh Ninety One Thousand Four Hundred and Thirteen Rupees Only

NEFT/RTGS to be made as per following details:

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825849169967 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCB Centre, 21/1, II Floor, Jyoti Towers, Mission Road, Bengaluru-560027

\* This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

Customer Name - ORRISA CAMPA  
Beneficiary Account - 150825849169967  
IFSC Code - UBIN0996335  
UTK NO - HDFCR52024032090433858  
Amount - 1,93,91,413.00/-  
Payment Date - 20.03.2024



Date : 22.03.2024

To Whom so ever It May Concern

This is to certify that an amount of 1,93,91,413 (Rupees One Crore Ninety Three Lacs Ninety One Thousand Four Hundred Thirteen Only) RTGS vide UTR No. HDFCR52024032090433858 dated 20.03.2024 has been debited from A/c number 00870310000884 of TATA STEEL LTD to the below mentioned account.

Beneficiary Name	Orissa Campa
Beneficiary A/c no.	150825849169967
IFSC Code	UBIN0996335
UTR No.	HDFCR52024032090433858
Amount	1,93,91,413.00
Payment date	20.03.2024





**OFFICE OF THE DIVISIONAL FOREST OFFICER, KEONJHAR DIVISION**

Phone No- 06766-254315, email ID- dfo.keonjhar@odisha.gov.in

Letter No. 3792 /6F-Mining-  
Dated, Keonjhar the 8<sup>th</sup> May, 2024

To

The Authorised Signatory,  
Netrabandha Pahar Iron Ore Block of M/s Bhusan Power & Steel Ltd./

Guali Iron Ore Mines of M/s OMC Ltd. /

Laserda Pacheri Manganese & Iron Ore block of M/s Thriveni  
Earthmovers Pvt. Ltd. /

Kalmang West (Northern Part) Iron Ore Mines of M/s Tata Steel BSL Ltd. /

Netrabandh Pahar (Weast) Iron Ore Block of M/s Raga Tradecon  
Pvt. Ltd.

Sub:- Submission of proposal on "Preparation of Biodiversity  
Conservation Plan for the entire landscape of Netrabandh  
Pahar" in respect of 5 (five) nos. of mines as per the common  
conditions envisaged in the Stage-I / In-Principle approval order  
of Govt. of India, MoEF&CC (FC Division), New Delhi-regarding.

Ref:- Memo No.9239 dated 02.05.2024 of the Chief Conservator of  
Forests (Nodal), O/o- the PCCF&HoFF, Odisha, Bhubaneswar.

Letter No.IIFM/DIR/Aca-012024/74 dated 10.04.2024 of the  
Director, IIFM, Bhopal addressed to the PCCF&HoFF, Odisha  
(copy enclosed).

Madam/ Sir,

This is to inform you that, the Govt. of India MoEF&CC (FC  
Division), New Delhi have accorded Stage-I / In-principle approval in respect  
of your above mentioned mining leases by imposing a common condition i.e.  
**"Preparation of Biodiversity Conservation Plan for the entire  
landscape of Netrabandha Pahar"** in respect of your mining leases.

In this connection the IIFM, Bhopal has submitted the aforesaid  
Scheme with a total budgetary of Rs 57,18,924/- (Rupees fifty seven lakhs  
eighteen thousand and nine hundred twenty four) only which shall be borne  
proportionately among the above mentioned 5(five) leases. The said scheme  
has been approved by the PCCF&HoFF, Odisha, Bhubaneswar. The duration  
of the study period is 6 (six) months. The 50% of the total consultancy  
amount should be released along with the offer for consultancy & balance  
50% of the total consultancy should be released on submission of the final

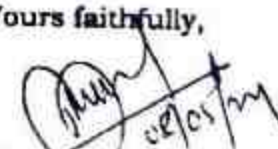
report. The payment of 50% is to be made within 15 days as per term and conditions for enabling IIFM, Bhopal to take up the work at the earliest.

In view of the above, you are requested to deposit the proportionate amount of 50% of the total consultancy as mentioned below through Demand Draft in favour of Director, Indian Institute of Forest Management Payable at Bhopal or can also be transferred through RTGS in the IIFM's account.

Sl No.	Nam of the Project / Lessee	Area of forest land involved (in Ha)	Amount of Consultancy per Ha	Total amount of Consultancy to be borne by the Lessee (in Rs)	50% of the total consultancy to be deposited by the lessee (in Rs.)
1	Netrabandha Pahar Iron Ore Block of M/s Bhusan Power & Steel Ltd	112.621	11203/-	12,61,693.00	6,30,847.00
2	Guali Iron Ore Mines of M/s OMC Ltd.	194.683	-do-	21,81,033.00	10,90,517.00
3	Laserda Pacheri Manganese & Iron Ore block of M/s Thriveni Earthmovers Pvt. Ltd.	94.351	-do-	10,57,014.00	5,28,507.00
4	Kalmang West (Northern Part) Iron Ore Mines of M/s Tata Steel BSL Ltd	42.608	-do-	4,77,337.00	2,38,668.00
5	Netrabandh Pahar (West) Iron Ore Block of M/s Raga Tradecon Pvt. Ltd.	66.242	-do-	7,41,847.00	3,70,923.00
<b>Total</b>		<b>510.505</b>		<b>57,18,924.00</b>	<b>28,59,462.00</b>

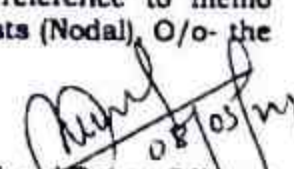
Encl: As above.

Yours faithfully,

  
Divisional Forest Officer,  
Keonjhar Forest Division

Memo No 3793 /Date 08.05.24


Copy forwarded to the Divisional Forest Officer, Bonai Forest Division for information and necessary action with reference to memo No.9236 dated 02.05.2024 of Chief Conservator of Forests (Nodal), O/o- the PCCF&HoFF, Odisha, Bhubaneswar.

  
Divisional Forest Officer,  
Keonjhar Forest Division

PTO


Memo No 3794 /Date 08.05.23

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela for favour of kind information and necessary action with reference to memo No. 9237 dated 02.05.2024 of Chief Conservator of Forests (Nodal), O/o- the PCCF&HoFF, Odisha, Bhubaneswar.

  
Divisional Forest Officer,  
Keonjhar Forest Division

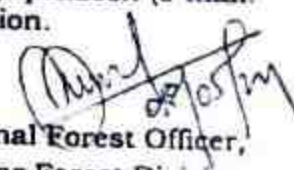
Memo No 3795 /Date 08.05.23

Copy forwarded to the Chief Conservator of Forests (Nodal), O/o- the PCCF&HoFF, Odisha, Bhubaneswar for favour of kind information and necessary action with reference to his memo No.9236 dated 02.05.2024.

  
Divisional Forest Officer,  
Keonjhar Forest Division

Memo No 3796 /Date 08.05.23

Copy forwarded to the Director, Indian Institute of Forest Management(IIFM), Nehuru Nagar, Bhupal-762003, Madhyapradesh (e-mail: director@iifm.ac.in) for kind information and necessary action.

  
Divisional Forest Officer,  
Keonjhar Forest Division



Account Name : DIRECTOR, INDIAN INSTITUTE OF FOREST MANAGEMENT

Address : INDIAN INSTITUTE OF FOREST MANAGEMENT  
POST BOX NO 357 IIFM CAMPUS  
NEHRU NAGAR BHOPAL-462003  
INDIAN INSTITUTE OF FOREST MANAGEMENT

Date : 17 May 2024

Account Number : 00000030662291254

Account Description : CA-SURABHI-PUB OTH-ALL-INR

Drawing Power : 0.00

Interest Rate(% p.a.) : 0.0000

MOD Balance : 0.00

CIF No. : 85435531729

IFS Code : SBIN0012194

MICR Code : 462002060

Nomination Registered : No

Balance as on 17 May 2024 : 41,50,708.99

Account Statement from 17 May 2024 to 17 May 2024

Txn Date	Value Date	Description	Ref No./Cheque No.	Debit	Credit	Balance
17 May 2024	17 May 2024	TO DEBIT THROUGH CHEQUE-SBI 29085 REIMB TA LIST-832105	832105	49,385.00		41,01,323.99
17 May 2024	17 May 2024	CASH DEPOSIT-CASH DEPOSIT ARUSHI BHARGAVA-			1,00,000.00	42,01,323.99
17 May 2024	17 May 2024	BY TRANSFER-NEFT*BARB0SATTEN*BARBU 24138768552*KARETI VIJAYA SA-	TRANSFER FROM 4698166044309		1,00,000.00	43,01,323.99
17 May 2024	17 May 2024	TO DEBIT THROUGH CHEQUE-SBI 29086 LIST OF TEMP ADV & TOUR ADV- 832109	832109	33,000.00		42,68,323.99
17 May 2024	17 May 2024	CHQ TRANSFER-NEFT UTR NO: SBIN524138005462- 832107 MS SHWETA SONI	832107 MS SHWETA SONI	11,680.00		42,56,643.99
17 May 2024	17 May 2024	CHQ TRANSFER-NEFT UTR NO: SBIN524138007795- 832106 RISHIYANT BALISA	832106 RISHIYANT BALISA	12,843.00		42,43,800.99
17 May 2024	17 May 2024	CHQ TRANSFER-NEFT UTR NO: SBIN524138009611- 832108 ADARSH PARASHAR	832108 ADARSH PARASHAR	12,605.00		42,31,195.99
17 May 2024	17 May 2024	BY TRANSFER-RTGS UTR NO: IBKLR92024051700084364- LOKESH KUMAR	TRANSFER FROM 3199855044301 / LOKESH KUMAR		6,23,000.00	48,54,195.99
17 May 2024	17 May 2024	BY TRANSFER-RTGS UTR NO: UTIBR72024051700050489- RAZORPAY SOFTWARE PRIVATE LIMITED -	TRANSFER FROM 3199860044304 / RAZORPAY SOFTWARE PRIVATE LIMITED -		2,00,000.00	50,54,195.99
17 May 2024	17 May 2024	CHQ TRANSFER-NEFT UTR NO: SBIN524138180112- 832104 MS BHOPAL PRINTERS AND PUBLISHER	832104 MS BHOPAL PRINTERS AND PUBLISHER	32,760.00		50,21,435.99

Tran Date	Value Date	Description	Ref No./Cheque No.	Debit	Credit	Balance
17 May 2024	17 May 2024	BY TRANSFER-bta Meek-	TRANSFER FROM 40280025794		2,38,668.00	52,60,103.99

Please do not share your ATM, Debit/Credit card number, PIN and OTP with anyone over mail, SMS, phone call or any other media. Bank never asks for such information.

\*\*This is a computer generated statement and does not require a signature.



**Rishabh Gupta**

**From:** S.S Mishra  
**Sent:** Tuesday, June 18, 2024 6:45 PM  
**To:** Rishabh Gupta  
**Subject:** FW: Account detail for making payment towards preparation of Biodiversity Management Plan  
**Attachments:** Payment receipt Biodiversity-1.pdf; Payment receipt Biodiversity-2.pdf; Biodiversity demand\_from DFO KJR.pdf

**From:** Finance Officer <financeofficer@iifm.ac.in>  
**Sent:** Monday, May 20, 2024 11:38 AM  
**To:** S.S Mishra <subhra@tatasteel.com>  
**cc:** DIRECTOR DIRECTOR <director@iifm.ac.in>  
**Subject:** Re: Account detail for making payment towards preparation of Biodiversity Management Plan

⚠ "External email: Do not click on links if sender is unknown"

Dear Sir,

Received Rs.2,38,668 on 17th May 2024.

Finance Officer  
IIFM Bhopal

---

**From:** [subhra@tatasteel.com](mailto:subhra@tatasteel.com)  
**To:** "Finance Officer" <financeofficer@iifm.ac.in>  
**Sent:** Monday, May 20, 2024 10:51:10 AM  
**Subject:** FW: Account detail for making payment towards preparation of Biodiversity Management Plan

Dear Sir

We have paid Rs 2,38,668/- in the account of Director Indian Institute of Forest Management from Tata Steel Ltd for Kalamang West (Northern Part) Iron Ore Mine as per demand letter of DFO, Keonjhar for Preparation of Biodiversity Management Plan. We are enclosing details of bank statement.

**Kindly confirm receipt of the same.**

Subhransu S Mishra  
Head( Kalamang)

**Tata Steel Limited**  
Kalamang Iron Mine | Joda | Odisha 758034  
Mobile +91-7752004329  
[subhra@tatasteel.com](mailto:subhra@tatasteel.com) | <http://www.tatasteel.com>

**From:** S.S Mishra

**Sent:** Wednesday, May 15, 2024 4:52 PM

**To:** Finance Officer <[financeofficer@iifm.ac.in](mailto:financeofficer@iifm.ac.in)>

**Subject:** RE: Account detail for making payment towards preparation of Biodiversity Management Plan

Sir

Please find details of communication on the subject.

We are paying 50% payment which is Rs2,38,688/- as communicated to us.

We will share payment details as soon as done.

**From:** Finance Officer <[financeofficer@iifm.ac.in](mailto:financeofficer@iifm.ac.in)>

**Sent:** Wednesday, May 15, 2024 4:47 PM

**To:** S.S Mishra <[subhra@tatasteel.com](mailto:subhra@tatasteel.com)>

**Subject:** Fwd: Account detail for making payment towards preparation of Biodiversity Management Plan

External email: Do not click on links if sender is unknown

Sir

Kindly sent the details of proposal, as the same was not attached with trailing mail

Regards

Finance Officer

**From:** "Finance Officer" <[financeofficer@iifm.ac.in](mailto:financeofficer@iifm.ac.in)>

**To:** [subhra@tatasteel.com](mailto:subhra@tatasteel.com)

**Cc:** "DIRECTOR DIRECTOR" <[director@iifm.ac.in](mailto:director@iifm.ac.in)>, "CAO CAO" <[cao@iifm.ac.in](mailto:cao@iifm.ac.in)>

**Sent:** Wednesday, May 15, 2024 2:02:38 PM

**Subject:** Re: Account detail for making payment towards preparation of Biodiversity Management Plan

Sir,

Bank details of IIFM is as under :-

State Bank of India, IIFM Branch Nehru Nagar, Bhopal

A/c No.30662291254

IFSC No.SBIN0012194

It is requested to kindly share the UTR no and details, after depositing the money.

Regards

Finance Officer

From: "DIRECTOR DIRECTOR" <[director@iifm.ac.in](mailto:director@iifm.ac.in)>  
To: "Finance Officer" <[financeofficer@iifm.ac.in](mailto:financeofficer@iifm.ac.in)>, "CAO CAO" <[cao@iifm.ac.in](mailto:cao@iifm.ac.in)>  
Sent: Wednesday, May 15, 2024 10:59:07 AM  
Subject: Fwd: Account detail for making payment towards preparation of Biodiversity Management Plan

**Dr. K. Ravichandran, IFS**

**Director**

**Indian Institute of Forest Management**

Nehru Nagar

Bhopal - 462003 (M.P.), India

Phone: 0755-2775998; Fax: 0755-2772878

From: [subhra@tatasteel.com](mailto:subhra@tatasteel.com)  
To: "DIRECTOR DIRECTOR" <[director@iifm.ac.in](mailto:director@iifm.ac.in)>  
Sent: Wednesday, May 15, 2024 10:29:39 AM  
Subject: Account detail for making payment towards preparation of Biodiversity Management Plan

Sir

As per letter of DFO, Keonjhar for preparation of Biodiversity management Plan as per our Stage-1 Forest clearance condition.

Correspondence related to the subject are enclosed.

Request you to kindly provide the Account detail and IFSC code for making the payment.

Subhransu S Mishra  
Head( Kalamang)

Tata Steel Limited  
Kalamang Iron Mine | Joda | Odisha 758034  
Mobile +91-7752004329  
[subhra@tatasteel.com](mailto:subhra@tatasteel.com) | <http://www.tatasteel.com>

**TATA STEEL**

 We Also Make Tomorrow

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**SCHEME FOR  
SOIL AND MOISTURE CONSERVATION  
MEASURES IN AND AROUND 10 KM  
RADIUS  
OF  
KALMANG (WEST) NORTHERN PART  
IRON ORE BLOCK  
OF  
M/S TATA STEEL LIMITED  
IN  
BONAI & KEONJHAR FOREST  
DIVISION  
OF SUNDARGARH & KEONJHAR  
DISTRICT, ODISHA.**

**SCHEME FOR SOIL AND MOISTURE CONSERVATION MEASURES IN AND  
AROUND 10 KM RADIUS OF KALMANG (WEST) NORTHERN PART IRON ORE  
BLOCK OF M/S TATA STEEL LIMITED IN BONAI & KEONJHAR FOREST DIVISION  
OF SUNDARGARH & KEONJHAR DISTRICT, ODISHA.**

**1. INTRODUCTION**

The Govt. of Odisha vide Letter No.5285/DM dt.24.06.2017, read with Letter No.6287/SM dt.27.07.2017, issued Letter of Intent (LoI) for grant of Mining Lease of Kalmang West (Northern Part) Iron Ore Block in favour of M/s Bhushan Steel Limited over an area of 92.875 hectare in village Kalmang and Ghodabudhani, of Sundargarh District and Gandhalpada village of Keonjhar District for a period of 50 years. The Letter of Intent was transferred in favour of M/s Tata Steel BSL Limited on taking over of Bhushan Steel Limited basing on the Order of NCLT vide Steel & Mines Dept. Letter No: 4261/SM dated 27.05.2021. Govt. of Odisha Steel & Mines Dept. have further approved the amalgamation of M/s Tata Steel BSL Limited into & with M/s Tata Steel Limited vide letter no: 541/SM dated 21.01.2022 which makes M/s Tata Steel Limited, eligible LOI holder of Kalmang West (Northern Part) Iron Ore Block.

As per the Terms & Conditions of LOI the Applicant shall fulfil the provisions of all Acts and Rules applicable to the Project. Accordingly, M/s Tata Steel Bhushan Limited has submitted the proposal to obtain approval of the Central Govt. over 42.608 hectare of forest land including Safety Zone 2.382 Ha U/s-2 (ii). of the Forest (Conservation) Act'1980 within the above Mining Lease area.

Further, Stage-I approval over 42.608 ha. of Forest Land U/s-2 (ii) (Including 2.382 ha. of Safety Zone) has been granted by MoEF & CC vide their Letter No. 8-13/2022-FC, dated 22.12.2023 wherein it has been stipulated as per **Condition No.9 for Soil and moisture conservation measures shall be undertaken in and around 10 KM radius of the mining lease areas at project cost.**

**2. LOCATION**

The mining lease area finds place in the Survey of India Topo sheet No.F45N5 (73 G/5) and situated between the latitude 21° 56' 47.75784" to 21° 57' 32.34779" N and longitude 85° 17' 06.65892" to 85° 17' 57.53148" E. The above ML area covering villages such as Kalmang, and Ghodabudhani in Koiria Range, Bonai Forest Division, Sundargarh District and Gandhalpada village of Barbil Range, Keonjhar Forest Division, Dist-Keonjhar, Odisha.

### **3. TOPOGRAPHY**

The above allotted block under study is a highly rugged terrain, with elongated hills trending ENE-WSW direction, low mounds and narrow valleys. The highest elevation of ridges in the area is 690 m above MSL forming the ridge. Lowest elevation is 585 m above MSL which forms the valley floor in this block.

### **4. SOIL TYPE**

The low-lying areas are filled up with alluvial soil which is ferruginous in nature and reddish brown in colour. In most of the area the soil is moderately coarse in nature whereas it is loamy in the cultivated land. Since the area is devoid of any perennial nala or river, the soil has been deposited in the valley area mostly from the low order nala or from the slope wash of the nearby hillock occupied by the iron ore group of rocks.

### **5. CLIMATE**

The lease area lies in tropical region where climate is characterized by an oppressively hot summer and cool winter. Summer is typically from April to July when monthly temperature ranges from a maximum of 42 °C during daytime to a minimum of 15° C at night time. Winter is from November to February when the maximum temperature during daytime goes to 37°C and minimum temperature at night- becomes as low as 8°C. The average annual rainfall as recorded at IMD observatory at Keonjhar is 1269.1 mm.

### **6. DRAINAGE**

The dendritic type of drainage pattern is generally displayed by the area. Because of the hilly topography, there is only one seasonal drainage found in the western part of the area. Suna nadi is a perennial river flowing from south to north outside the area at 2 km towards south-east and it becomes west-east from Malda and debouch into river Baitarani. The drainage channel originating in the western part of the area traverses through the area towards N-E.

### **7. EXISTING VEGETATION**

The forest growth available in the area resembles Northern Tropical Dry Deciduous Forest. Sal (*Shorea robusta*) is the most dominant tree with Mahul (*Madhuca indica*), Asan (*Terminalia tomentosa*), Char (*Buchanania lanjan*), Kendu (*Diospyros melanoxylon*), Barkoli, Kusum (*Schleichera oleosa*), Dimiri as common associates.

The vegetation of the applied area is composed of Sal (*Shorea robusta*), Saguán (*Tectona grandis*), Sidha (*Lagerstroemia parviflora*), Bandhan (*Ougeinia obovata*), Char (*Buchanania lanzan*), Dhaura (*Anogeissus latifolia*), Asan (*Terminalia tomentosa*), Mango (*Mangifera indica*), Kendu (*Diospyros melanoxylon*), Bahada (*Terminalia belerica*), Jamu (*Syzygium cumini*), Kusum (*Schleichera oleosa*), Mahul (*Madhuca indica*) etc. Sal (*Shorea robusta*) is the pre-dominant species.

#### 8. LAND USE PATTERN

During the life of the mine, about 92.875 hectares will be utilized for mining, Minerals processing, Road, and green belt plantation in Safety Zone area etc. The details of land use pattern will be as follows:

District wise break up of total land

Sl.No	District Name	Forest land in Ha	Non forest land in Ha	Total land in Ha
1	Keonjhar	16.658	0	16.658
2	Sundargarh	25.95	50.267	76.217
<b>Total in Ha</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

#### Item wise Proposed Land Use Pattern in Forest and Non-Forest Land of Total Lease Hold Area

Sl. No	Type of Land Use	Forest Land in Ha.	Non- Forest Land in Ha.	Grand Total in Ha.
1	Area under excavation including the backfilled area	36.458	38.919	75.377
2	Overburden/Waste Dumping	2.109	4.962	7.071
3	Topsoil Stacking	0.228	0.615	0.843
4	Mineral Reject stack	0.032	1.410	1.442
5	Green Belt in the south beyond the UPL	1.399	2.771	4.170
6	7.5 meter along the inner side of ML boundary	2.382	1.590	3.972
<b>Total</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

## 9. OBJECTIVE OF THE SCHEME

1. To compliance the stipulated condition of Stage-I approval.
2. To protect the embankment of the streams in such a way that, soil erosion is restricted.
3. To increase the depth of ground water, which will be available for wildlife during peak summer.
4. To increase the ground water table through Soil & Moisture Conservation.
5. To construct graded bund to safe disposal of runoff water.
6. To construct LBCD across the existing Nala within the RF and PRF area.

### A. Following proposed SMC work within 10 km radius of M.L area is as follows.

- a) Construction of Check Dam.
- b) Construction of LBCD
- c) Construction of new water body
- d) Construction of Graded Bund Line

#### a) Construction of water body

It is proposed to construct one no. of water body inside Medhamaruni RF of size 40m x 30m x 3 m. The location of the same with respect to latitude and longitude is as follows.

Once the water body of above dimensions is constructed sufficient water can be available during rainy season. This water body will also have the scope of accumulated rain water flowing from upper region (upper contour to lower contour). The water collected therein will be highly useful to the animals and preferably the flag ship animal 'elephant'. During summer season there is scarcity of water and animals move to nearby habitation for search of water and in different occasions human wild life conflict are encountered with lot of displeasure by the local people. This water body created will help a lot to provide water facility to the wild animal and reduce human wild life conflict to some extent along with purpose of the scheme. The cost estimate of construction of water body has been provided in **Annexure-6**.

Sl. No	Forest Division	R.F Name	Dimension	Latitude	Longitude
1	Bonal	Medhamaruni RF	40m x 30m x 3 m	21° 55' 50.6"	85° 16' 57"

**b) Construction of check dam**

It is proposed to construct 1 no. of check dam within Mendhamaruni RF & near village Tehrai located within the 10 km radius area of M.L. Care has been taken to locate the same corresponding to drainage pattern of the 10 km radius of the M.L. area. The locations & size of the check dam are furnished below. The cost estimate of construction of Check dam has been provided in **Annexure-1**.

Sl. No	Forest Division	Name	Size	Latitude	Longitude
1	Bonai	Mendhamaruni RF	Length=4.00 mtr, Ht=1.30 mtr, Slope U/S=1:1.5	21° 55' 39"	85° 15' 54"

**c) Plan for Construction of Loose Boulder Structure**

After studying the topography and the drainage pattern it has been found that there are 65 spots where the LB CD required and accordingly it is proposed to construct **20** nos. of loose boulder structure of 4m span, **25** nos. of loose boulder structure of 3m span and **20** nos. of loose boulder structure of 2m span across the existing nala within the Mendhamaruni RF and PRF area. The cost norm of LB CD has been provided in **Annexure-2,3 & 4**.

**d) Plan for Construction of Graded Bund Line**

After studying the topography and the drainage pattern it has been found that there are 6000 mtr. required to be construction graded bund to safe disposal of runoff water and also erected along the boundary of RF to guide the runoff along a longer path to increase time of concentration and promote infiltration within the Mendhamaruni RF and PRF boundary line. The starting Point of the graded bund of Mendhamaruni RF is N21° 57' 34.19" E85° 16' 31.48" and Ending Point is N21° 56' 40.63" E85° 16' 0.47" (2 Km) and starting Point of the graded bund of Mendhamaruni PRF is N21° 57' 14.13" E85° 15' 45.83" and Ending Point is N21° 55' 46.93" E85° 15' 17.41" (4 Km). The cost norm of Graded Bund line has been provided in **Annexure -5**.

The location of lease area, 10 km radius of buffer zone and interventions under a, b, c, & d above are shown in Map (**Plate-1**).

**10. EXECUTING AGENCY.**

The User Agency shall execute the work under the supervision of the State Forest Department.

## 11. INSPECTION, MONITORING AND EVALUATION.

## Annexure- 1

Wage Rate- Rs.450.00

## Detail Estimate of Concrete Structure of Check Dam

Sl No	Description of Items	No	Length	Width	Height	Qty	Rate	Amount in Rs.
1	2	3	4	5	6	7	8	9
1	Earthwork in hard soil in embankment roads with in 50 mtr initial lead & 1.50 mtr initial lift including rough dressing & breaking clods to Maximum 5.00 c.m. to 7.00 c.m. & laying layers not exceeding 0.30 mtr depth as per specification approved by department along with proper compaction with H.R.R. Excavation							
	Base	1	5.00	5.50	0.50	13.75		
	Wing Wall	4	2.00	0.50	0.50	2.00		
	Apron	2	3.00	5.00	0.20	6.00		
	Cut of wall	2	5.00	0.45	0.50	2.25		
						24.00	338.83	8131.90
2	Plain cement concrete (1:4:8)							
	Base	1	4.00	5.50	0.075	1.65		
	Wing Wall	4	2.00	0.50	0.08	0.30		
	Apron	2	3.00	5.00	0.08	2.25		
	Cut of wall	2	4.00	0.45	0.08	0.27		
						4.47	9842.83	43997.44
3	Cement concrete (1:2:4)							
	Below Ground Level							
	Base	1	4.00	5.50	0.40	8.80		
	Wing Wall	4	2.00	0.50	0.40	1.60		
	Apron	2	3.00	5.00	0.10	3.00		
	Cut of wall	2	4.00	0.45	0.50	1.80		
						15.20		
	Above Ground Level							
	Base	1	4.00	(2.00+5.00)/2	1.00	14.00		
	Wing Wall	4	2.00	0.40	1.00	3.20		
					Total	17.20		
					Grand Total	32.40	13619.67	441277.36
	Rate per one No Check Dam. Length=4.00 mtr Ht=1.30 mtr Slope U/S=1:1.5 D/S=1:2					Total		493406.70 Or, 493407.00

  
 Divisional Forest Officer  
 Bonai Division

**Annexure -2**

**LBCD UNDER BONAI FOREST DIVISION**  
**Span- 2 mtr, Ht- 0.60 mtr, U/S- 1:1.5, D/S- 1:2**

- 1 Earth work in Stony earth and gravels mixed with stone and boulder not exceeding 0.014 cum in volume within 50m initial lead and 1.5m initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layer not exceeding 0.3m in depth and as per specification approved by the department.

Base	1	x	3.00	x	3.75	x	0.30	=	3.38
Wing wall	4	x	0.50	x	0.50	x	0.30	=	0.30
									3.68 Cum

@ Rs. 304.80 /cum 1121.66

- 2 Rough stone dry packing in apron and revetment including cost, conveyance, royalty & taxes of all materials to complete work.

Crest Wall	1	x	3.00	x	$\frac{3.75 + 0.60}{2}$	x	0.90	=	5.87
Wing wall	4	x	0.50	x	0.50	x	1.00	=	1.00
Side wall	2	x	3.45	x	0.50	x	1.00	=	3.45
									10.32 Cum

@ Rs. 1356.90 /cum 14003.21

15124.87

**Say 15125.00**

**(Rupees Fifteen Thousand One Hundred Twenty Five) only**

  
 Divisional Forest Officer  
 Bonai Division

**Annexure -3**

**LBCD UNDER BONAI FOREST DIVISION**  
**Span- 3 mtr, Ht- 1.0 mtr, U/S- 1:1.5, D/S- 1:2**

1. Earth work in Stony earth and gravels mixed with stone and boulder not exceeding 0.014 cum in volume within 50m initial lead and 1.5m initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layer not exceeding 0.3m in depth and as per specification approved by the department.

Base  $1 \times 4.00 \times 5.15 \times 0.30 = 6.18$

Wing wall  $4 \times 0.50 \times 0.50 \times 0.30 = 0.30$

6.48 Cum

@ Rs. 304.80 /cum 1975.10

2. Rough stone dry packing in apron and revetment including cost, conveyance, royalty & taxes of all materials to complete work.

Crest Wall  $1 \times 4.00 \times \frac{5.15 + 0.60}{2} \times 1.30 = 14.95$

Wing wall  $4 \times 0.50 \times 0.50 \times 1.40 = 1.40$

Side wall  $2 \times 5.15 \times 0.50 \times 1.40 = 7.21$

23.56 Cum

@ Rs. 1356.90 /cum 31968.56

33943.66

Say 33944.00

**(Rupees Thirty Three Thousand Nine hundred Forty Four) only**

  
**Divisional Forest Officer**  
**Bonai Division**

# Annexure-4

## LBCD UNDER BONAI FOREST DIVISION

mtr, Ht- 1.3 mtr, U/S- 1:1.5, D/S- 1:2

Span- 4

- 1 Earth work in Stony earth and gravels mixed with stone and boulder not exceeding 0.014 cum in volume within 50m initial lead and 1.5m initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layer not exceeding 0.3m in depth and as per specification approved by the department.

$$\text{Base} \quad 1 \times 5.00 \times 6.20 \times 0.30 = 9.30$$

$$\text{Wing wall} \quad 4 \times 0.50 \times 0.50 \times 0.30 = 0.30$$

9.60 Cum

@ Rs. 304.80 /cum 2926.08

- 2 Rough stone dry packing in apron and revetment including cost, conveyance, royalty & taxes of all materials to complete work.

$$\text{Crest Wall} \quad 1 \times 5.00 \times \frac{6.20 + 0.60}{2} \times 1.60 = 27.20$$

$$\text{Wing wall} \quad 4 \times 0.50 \times 0.50 \times 1.70 = 1.70$$

$$\text{Side wall} \quad 2 \times 6.20 \times 0.50 \times 1.70 = 10.54$$

39.44 Cum

@ Rs. 1356.90 /cum 53516.14

56442.22

Say 56442.00

(Rupees Fifty Six Thousand Four Hundred Forty Two) only.

  
Divisional Forest Officer  
Bonai Division

## Annexure-5

**GRADED BUND UNDER BONAI FOREST DIVISION**  
**Base- 4.2 mtr, Ht- 1.5 mtr, Top- 1.2 mtr**

1	Triangular or Square section of 0.15m trench cutting for alignment and demarcation purpose of dug belling 10cm to 15cm.								
	2 x 1.00	=	2.00	Rm					
		@	Rs.	7.50	/Rm	15.00			
2	Clearing grass and removal of rubbish up to a distance of 50 meters outside the periphery of the area.								
	1 x 1.00 x 4.20	=	4.20	Sqm					
		@	Rs.	2.00	/Sqm	10.08			
3	Earth work in stony earth and gravels mixed with stone and boulder not exceeding 0.014cum in volume within 50m. Initial lead and 1.5m initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layer not exceeding 0.3m in depth and as per specification approved by the department								
	1 x 1.00 x $\frac{4.20 + 1.20}{2}$ x 1.50	=	4.05	Cum					
	Add 10% extra for Undulation & gully filling	=	0.41						
		Total	=	4.46	Cum				
		@	Rs.	304.80	/Cum	1359.41			
4	Excavation in all kinds of soil including moorum, stony earth, gravel etc. excepting all kinds of rock and boulders exceeding 0.014cum in volume etc. complete.								
	1 x 1.00 x 0.30 x 0.30	=	0.09	Cum					
		@	Rs.	234.50	/Cum	21.11			
5	Fine dressing earth work in ordinary or hard soil in embankment formation according to the direction of Engineer in charge incl. Cutting or filling earth up to 0.15m depth of Surface.								
	Top surface 1 x 1.00 x 1.20	=	1.20						
	Side surface 2 x 1.00 x 2.12	=	4.24						
			5.44	Sqm					
		@	Rs.	4.50	/Sqm	24.48			
6	Rough stone dry packing in apron and revetment including cost, conveyance, royalty & taxes of all materials to complete work.								
	1 x 1.00 x 0.30 x 0.30	=	0.09						
	1 x 1.00 x 0.30 x 1.41	=	0.42						
			0.51	Cum					
		@	Rs.	1442.40	/Cum	735.62			
						2165.70			
					Say	2166.00	/Mtr		

  
 Divisional Forest Officer  
 Bonai Division

COST ESTIMATE FOR CONSTRUCTION OF WATER BODY**WATER BODY UNDER BONAI FOREST DIVISION  
(40M X 30M X 3M)**

- 1 Earth work in Stony earth and gravels mixed with stone and boulder not exceeding 0.014 cum in volume within 50m initial lead and 1.5m initial lift including rough dressing and break ink clods to maximum 5cm to 7cm and laying in layer not exceeding 0.3m in depth and as per specification approved by the department.

$$\text{1st Lift } 1 \times 40.00 \times 30.00 \times 1.00 = 1200.00$$

$$\text{2nd Lift } 1 \times 38.00 \times 28.00 \times 1.00 = 1064.00$$

$$\text{3rd Lift } 1 \times 36.00 \times 26.00 \times 1.00 = 936.00$$

3200.00 Cum

@ Rs. 304.80 /cum 975360.00

- 2 Extra lift of 1.5m or part there of over the initial lift of 1.5m in all kinds of embankments and road works and ordinary earth work in general.

$$\text{1st Lift } 1 \times 40.00 \times 30.00 \times 1.00 = 1200.00$$

$$\text{2nd Lift } 1 \times 38.00 \times 28.00 \times 1.00 = 1064.00$$

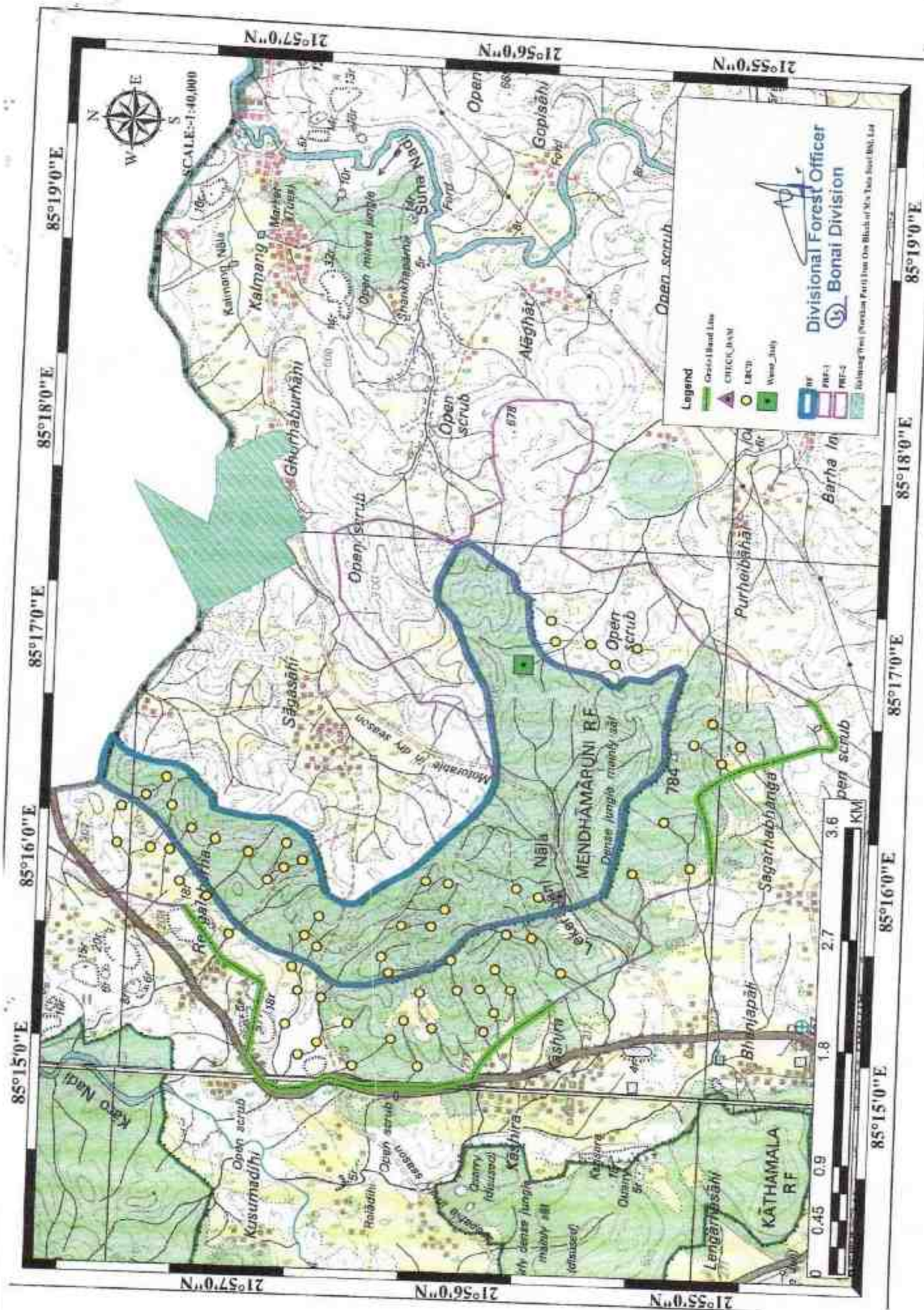
$$\text{3rd Lift } 1 \times 36.00 \times 26.00 \times 1.00 = 936.00$$

3200.00 Cum

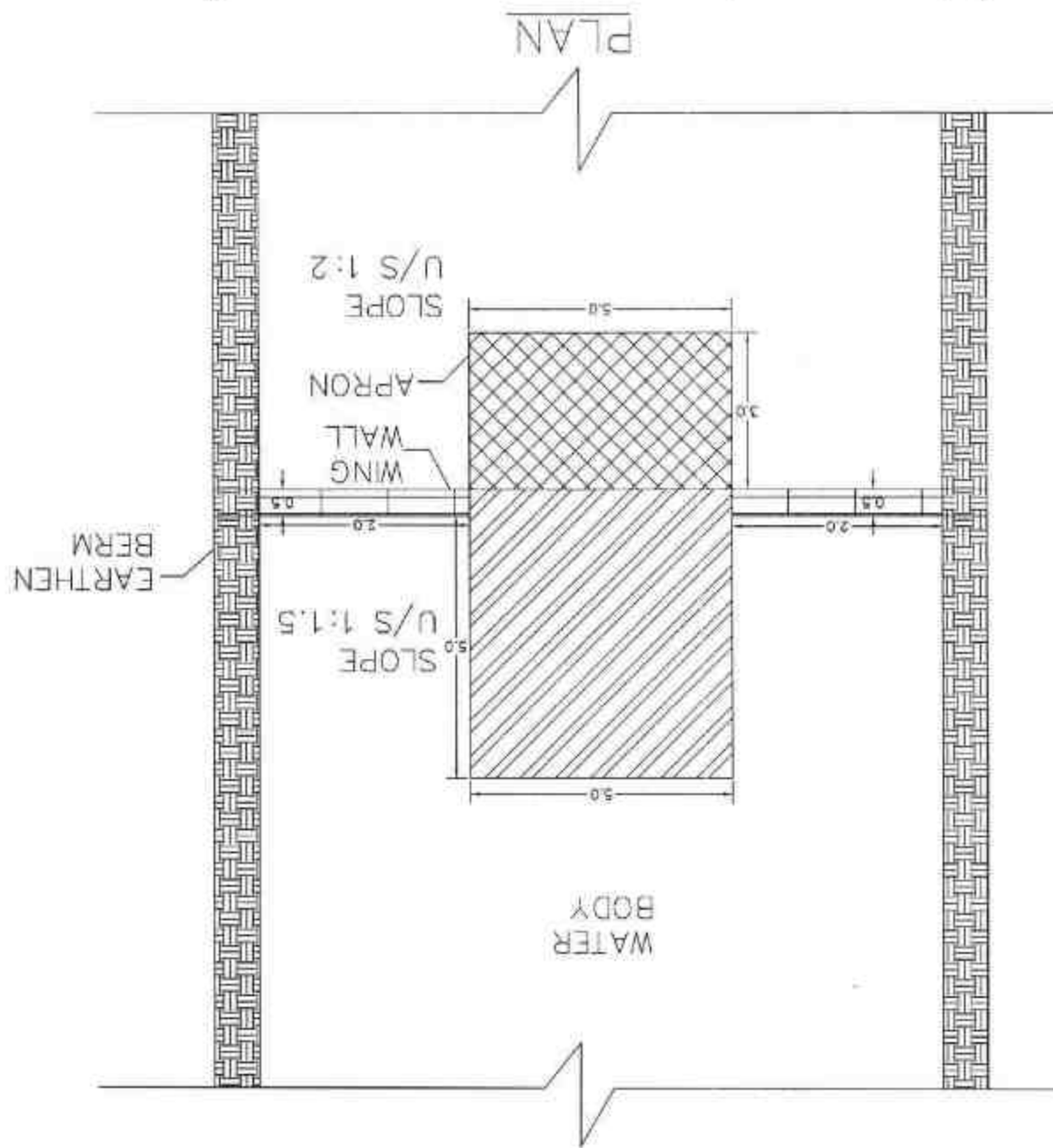
@ Rs. 14.30 /cum 45760.00

**1021120.00**

  
Divisional Forest Officer  
Bonai Division

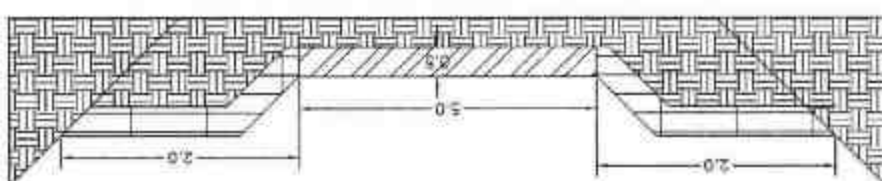


# CHECK DAM PLAN & CROSS SECTION

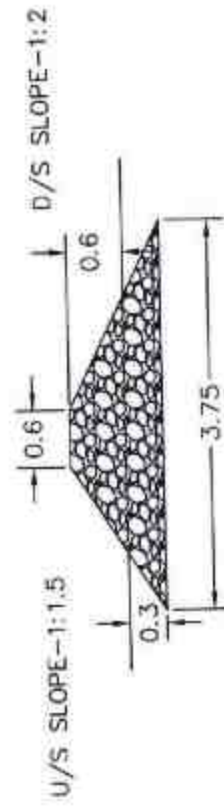
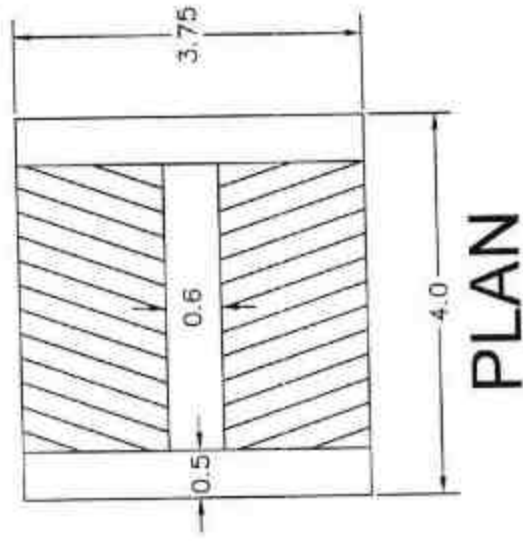


## PLAN

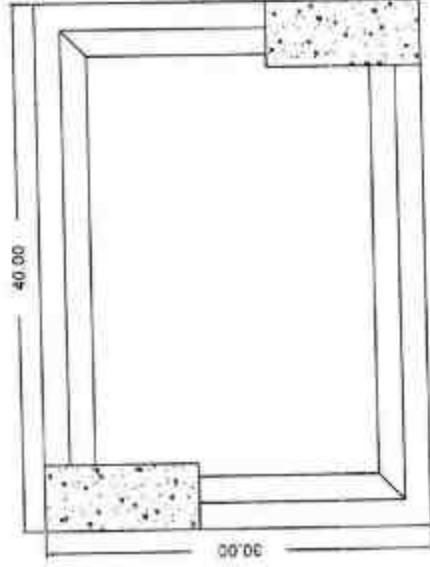
## CROSS SECTION



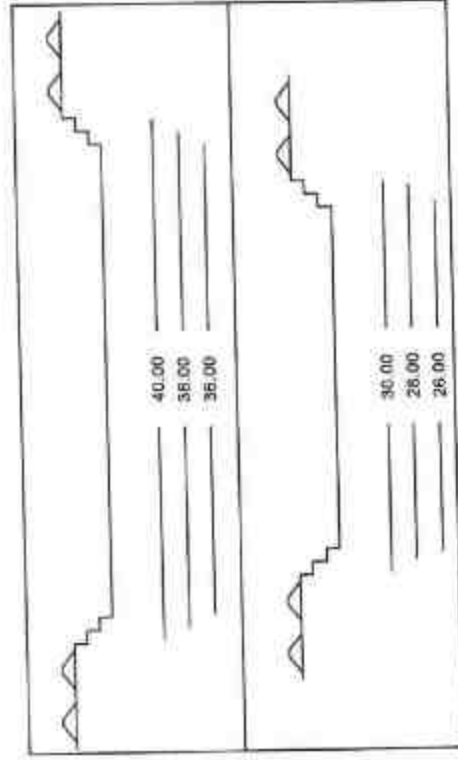
## SCHEMATIC VIEW & CROSS SECTION OF LBCD



# SCHEMATIC VIEW & CROSS SECTION OF WATER BODY

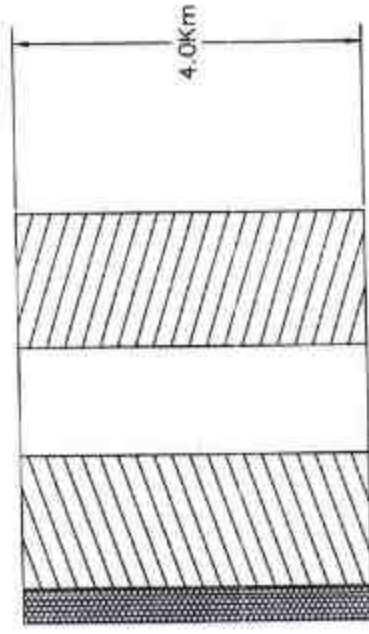


PLAN

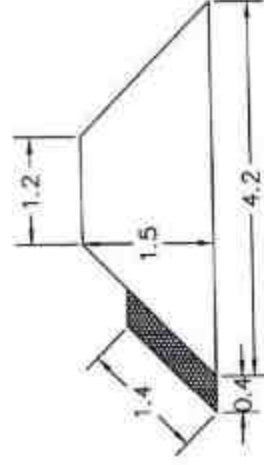


CROSS SECTION

## SCHEMATIC VIEW & CROSS SECTION OF GRADED BUND



PLAN



CROSS SECTION

**PROFORMA FOR VERIFICATION OF DEPOSITS IN COMPENSATORY AFFORESTATION FUND**

1.	Name of Office	Bhubaneswar
2.	State/District/Forest Division to which the proposal relates	Odisha/ Sundergarh & Keonjhar/ Bonai & Keonjhar Forest Division
3.	Name of User Agency, nature of proposal	Kalamang West (Northern Part) Iron Ore Mine of M/s Tata Steel Ltd
4.	Nature and category of proposal	Mining of Iron Ore
5.	Proposal number	FP/OR/MIN/49169/2020
6.	Extent of forest area involved	42.608 ha
7.	Whether original or extension	Original
8.	If extension of lease, please clarify if proposal involves additional forest area and if so, specify	NA
9.	Date of 1 <sup>st</sup> Stage clearance	22.12.2023 vide letter F. No. No.8-13/2022-FC of MoEF&CC, Govt. of India
10.	<b>Extent of CAMPA charges, head wise viz.:</b>	
	(a) Compensatory Afforestation	Rs. 3,92,64,000/-
	(b) Additional Compensatory Afforestation	Rs. 3,69,34,500/-
	(c) Dwarf species plantation in right of way under transmission line	Nil
	(d) Penal Compensatory Afforestation	Nil
	(e) Catchment Area Treatment	Nil
	(f) Wildlife Management Plan	
	i) Site Specific Wildlife Conservation Plan	Rs. 8,34,16,800/-
	ii) Regional Wildlife Management Plan	Rs. 95,75,413/-
	(g) Additional charges for diversion of area falling under notified/protected areas	Nil
	(h) Net Present Value	Rs. 6,12,13,636/-
	(i) Any other charges/levies (Please specify)	
	i) 25% of Compensatory Afforestation	Rs. 98,16,000/-
	ii) Safety Zone	Nil
	iii) 1.5 times Safety Zone	Rs. 52,87,500/-
	iv) Creation and Maintenance of alternative habitat for Avifauna	Rs. 4,68,000/-

	v	Interest on belated payment of NPV	Nil				
	Total						
11.	Whether payment made through challan or otherwise. In case of online payment, details of challan.		All cost towards NPV, CA, Addl.CA Schemes, Site Specific Wild Life Conservation Plan, Regional Wild Life Management, 1.5 times safety zone and Avifauna scheme has been paid through RTGS vide Challan generated through online portal.				
12.	Details of deposits						
Sl No.	Type of deposit {NPV/CA/ IWMP/ Others (specify)}	Whether by RTGS/DD/ NEFT (Specify)	UTR/ DD No.	Amount deposited (Rs.)	Date of deposit	Name of Bank from which amount transferred to account of CAF	Bank Account of CAF managed by CAMPA in which fund deposited
I)	Net Present Value (NPV)	NEFT/ RTGS	HDFCR5202204 1260657683	Rs. 6,12,13,636/-	12.04.2022	HDFC	A/c No-1508258146348387 IFSC Code: UBIN0903710
II)	Compensatory Afforestation Scheme	NEFT/ RTGS	HDFCR5202403 0686033141	Rs. 3,92,64,000/-	06.03.2024	HDFC	A/c No-150825849169311 IFSC Code: UBIN0996335
	Additional Compensatory Afforestation	NEFT/ RTGS	HDFCR5202403 0686033141	Rs. 3,69,34,500/-	06.03.2024	HDFC	A/c No-150825849169311 IFSC Code: UBIN0996335
	25% of the Compensatory Afforestation Scheme	NEFT/ RTGS	HDFCR5202403 2090433858	Rs. 98,16,000/-	20.03.2024	HDFC	A/c No-150825849169967 IFSC Code: UBIN0996335
III)	Fund towards Implementation of Site-Specific Wildlife Conservation Plan	NEFT/ RTGS	HDFCR5202403 0686033141	Rs. 8,34,16,800/-	06.03.2024	HDFC	A/c No-150825849169311 IFSC Code: UBIN0996335
IV)	Fund towards Implementation of Regional Wildlife Management Plan	NEFT/ RTGS	HDFCR5202403 2090433858	Rs. 95,75,413/-	20.03.2024	HDFC	A/c No-150825849169967 IFSC Code: UBIN0996335
V)	1.5 Times Safety zone Afforestation	NEFT/ RTGS	HDFCR5202405 0755078512	Rs. 52,87,500/-	07.05.2024	HDFC	A/c No-150825849169401 IFSC Code: UBIN0996335
VI)	Scheme of Alternate habitat for Avifauna	NEFT/ RTGS	HDFCR5202405 0755078512	Rs. 4,68,000/-	07.05.2024	HDFC	A/c No-150825849169401 IFSC Code: UBIN0996335

**Date:**  
**Place:**

**Divisional Forest Officer**  
**Keonjhar Forest Division**

**Addl. Principal Chief Conservator of Forests (Nodal)**  
**Odisha**



Scheme

For

**MITIGATIVE MEASURES TO MINIMIZE SOIL  
EROSION AND CHOKING OF STREAMS**

in compliance

with

Condition No.13 (a) of

Stage-I approval granted vide

Letter No.8-13/2022-FC, Dated.22.12.2023

of Govt. of India, Ministry of Environment, Forests

& Climate Change,

New Delhi.

for

Diversion of 42.608 Hects of Forest Land for U/s-2 (ii) (including 2.382  
ha. of Safety Zone) OF FC Act-1980

within 92.875 Ha. Iron Ore Mining Lease

of

M/S Tata Steel BSL Limited (now amalgamated into & with Tata Steel  
Limited).

in village Kalamang and Ghodabudhani of Koira tahsil, Sundargarh  
District and Gandhalpada village in Barbil Tahsil, Keonjhar District

Odisha.

## **1. INTRODUCTION**

The Govt. of Odisha vide Letter No.5285/DM dt.24.06.2017, read with Letter No.6287/SM dt.27.07.2017, issued Letter of Intent (LoI) for grant of Mining Lease of Kalmang West (Northern Part) Iron Ore Block in favour of M/s Bhushan Steel Limited over an area of 92.875 hectare in village Kalmang and Ghodabudhani, of Sundargarh District and Gandhalpada village of Keonjhar District for a period of 50 years. The Letter of Intent was transferred in favour of M/s Tata Steel BSL Limited on taking over of Bhushan Steel Limited basing on the Order of NCLT vide Steel & Mines Dept. Letter No: 4261/SM dated 27.05.2021. Govt. of Odisha Steel & Mines Dept. have further approved the amalgamation of M/s Tata Steel BSL Limited into & with M/s Tata Steel Limited vide letter no: 541/SM dated 21.01.2022 which makes M/s Tata Steel Limited, eligible LOI holder of Kalmang West (Northern Part) Iron Ore Block.

As per the Terms & Conditions of LOI the Applicant shall fulfill the provisions of all Acts and Rules applicable to the Project. Accordingly, M/s Tata Steel Bhushan Limited has submitted the proposal to obtain approval of the Central Govt. over 42.608 hectare of forest land including Safety Zone 2.382 Ha U/s-2 (ii), of the Forest (Conservation) Act'1980 within the above Mining Lease area.

Further, Stage-I approval over 42.608 ha. of Forest Land U/s-2 (ii) (including 2.382 ha. of Safety Zone) has been granted by MoEF& CC vide their Letter No. 8-13/2022-FC, dated 22.12.2023 where in it has been stipulated as per **Condition No. 13 (a) for undertaking mitigative measures to minimize soil erosion and chocking of streams which will be implemented in accordance with the approved plan in consultation with the State Forest Department.**

## **2. LOCATION**

The mining lease area finds place in the Survey of India Topo sheet No.F45N5 (73 G/5) and situated between the latitude 21° 56' 47.75784" to 21° 57' 32.34779" N and longitude 85° 17' 06.65892" to 85° 17' 57.53148" E. The above ML area covering villages such as Kalmang, and Ghodabudhani in Kaira Range, Bonai Forest Division, Sundargarh District and Gandhalpada village of Barbil Range, Keonjhar Forest Division, Dist-Keonjhar, Odisha.

## **3. TOPOGRAPHY**

The above allotted block under study is a highly rugged terrain, with elongated hills trending ENE-WSW direction, low mounds and narrow valleys. The highest elevation of ridges in the area is 690 m above MSL forming the ridge. Lowest elevation is 585 m above MSL which forms the valley floor in this block.

#### **4. SOIL TYPE**

The low-lying areas are filled up with alluvial soil which is ferruginous in nature and reddish brown in colour. In most of the area the soil is moderately coarse in nature whereas it is loamy in the cultivated land. Since the area is devoid of any perennial nala or river, the soil has been deposited in the valley area mostly from the low order nala or from the slope wash of the nearby hillock occupied by the iron ore group of rocks.

#### **5. CLIMATE**

The lease area lies in tropical region where climate is characterized by an oppressively hot summer and cool winter. Summer is typically from April to July when monthly temperature ranges from a maximum of 42 degree centigrade during day time to a minimum of 15 Degree-Centigrade at night time. Winter is from November to February when the maximum temperature during daytime goes to 37 Degree Centigrade and minimum temperature at night- becomes as low as 8 Degree Centigrade. The average annual rainfall as recorded at IMD observatory at Keonjhar is 1269.1 mm

#### **6. DRAINAGE**

The dendritic type of drainage pattern is generally displayed by the area. Because of the hilly topography, there is only one seasonal drainage found in the western part of the area. Sunanadi is a perennial river flowing from south to north outside the area at a distance of 2kmtowards south-east and it becomes west-east from Malda and debouch into river Baitarani. The drainage channel originating in the western part of the area traverses through the area towards N-E.

- a) The condition stipulated gives emphasis in respect of mitigative measures to minimize soil erosion chocking of stream. Accordingly, it is primarily essential to know the drainage system existing within the M.L area of the instant project along with drainage pattern so as to incorporate require measures.
- b) The order of the said stream is very important for suggestion of mitigative measures. In the instant case some streams comes under different order.

#### **7. LAND USE PATTERN**

During the life of the mine, about 92.875 hectares will be utilized for mining, Minerals processing, Road, and green belt plantation in Safety Zone area etc. The details of land use pattern will be as follows:

Village wise break up of total land

Sl.No	District Name	Forest land in Ha	Non forest land in Ha	Total land in Ha
1	Keonjhar	16.658	0	16.658
2	Sundargarh	25.95	50.267	76.217
<b>Total in Ha</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

**Item wise Proposed Land Use Pattern in Forest and Non-Forest Land of Total Lease  
Hold Area**

Sl. No	Type of Land Use	Forest Land in Ha.	Non- Forest Land in Ha.	Grand Total in Ha.
1	Area under excavation including the backfilled area	36.458	38.919	75.377
2	Overburden/Waste Dumping	2.109	4.962	7.071
3	Topsoil Stacking	0.228	0.615	0.843
4	Mineral Reject stack	0.032	1.410	1.442
5	Green Belt in the south beyond the UPL	1.399	2.771	4.170
6	7.5 meter along the inner side of ML boundary	2.382	1.590	3.972
<b>Total</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

#### **8. EXISTING VEGETATION**

The forest growth available in the area resembles Northern Tropical Dry Deciduous Forest. Sal (*Shorea robusta*) is the most dominant tree with Mahul (*Madhuca indica*) Asan (*Terminalia tomentosa*), Char (*Buchanania lanjan*), Kendu (*Diospyros melanoxylon*), Barkali, Kusum (*Schleichera oleosa*), Dimiri as common associates.

The vegetation of the applied area is composed of Sal (*Shorea robusta*), Saguan (*Tectona grandis*), Sidha (*Lagerstroemia parviflora*), Bandhan (*Ougeinia ojeinensis*), Char (*Buchanania lanjan*), Dhaura (*Anageissus latifolia*), Asan (*Terminalia tomentosa*), Mango (*Mangifera indica*), Kendu (*Diospyros melanoxylon*), Bahada (*Terminalia belerica*), Jamu (*Syzygium cumini*), Kusum (*Schleichera oleosa*), Mahul (*Madhuca indica*) etc. Sal (*Shorea robusta*) is the pre-dominant species.

#### **9. FACTORS RESPONSIBLE FOR SOIL EROSION & CHOKING OF STREAMS**

In mining activities the following factors are responsible for soil erosion and choking of streams.

- Sub-grade and overburden dumps are major contributions for soil erosion and choking of streams inside the ML area.
- Normally gully erosion, rill erosion occur due to storm water runoff from mine faces. In sub-grade dump and OB dump slope areas due to carriage of substantial amount of solids in the lower order streamlets which cause in choking of the higher order streams.
- The lower order streamlets and gullies have high erosion capacity due to steep gradients and transportation of rock fragments with higher velocity of the stream resulting in deposition of the same in the connecting high order streams.

- Erosion is also caused by streams due to under cutting of banks and this results formation of slumps or slides.

But in the instant case the project is a green field mine area and not an ongoing mine in this case the general erosion is considered with respect to its topographical, geographical and edaphic factors for which require mitigative measures have been kept.

## **10. OBJECTIVES OF THE SCHEME**

The objectives of the proposed scheme are as follows:

To meet the requirement of condition No. 3 (i) (a) of the Stage – II approval of Govt, MoEF& CC, the following areas need to be attended to.

1. Prevention of erosion of loose materials from Sub grade dump, OB dump.
2. Prevention of obstruction of natural water courses.
3. Proper Management of overburden materials so as to prevent siltation in the streams.
4. Prevention of overflow of eroded soils from the mining lease area if any to the cultivable lands, natural streams and inhabitations.

It is worth mentioning here about the mine drainage of the lease area as per approved mining plan.

## **11. PROPOSED METHODOLOGY**

To achieve the above objectives, it has been proposed to take up both biological and structural works for soil and water conservation. The vegetative measures are to be adopted mostly in the upper reaches & around O.B dumping sites whereas the structural works are suggested in the lower reaches such as in the garland drain & critical points around O.B. dumps. 4 nos check dams have been proposed across the contour to arrest the sediment load arising from up-slopes of seasonal streams, and to prevent choking of streams followed by de-silting before onset of monsoon. The following activities are proposed to be taken up to mitigate soil erosion and choking of streams:

- a. During monsoon, surface runoff is expected to carry silts and sediments. To reduce the flow velocity of water flown from overburden dump, mining pits, stock piles, haul roads as well as areas clear of vegetation, 4 nos of check dam have been proposed, which have been demarcated at suitable location of the project area.
- b. Periodic Sediment/ silt removal/ De-silting etc will also be undertaken in those proposed check dams as well as from garland drains and subsequently biological reclamation will be made (as per the approved mining plan).
- c. Along with the above sedimentation control measures, erosion from OB dump slopes areas will be controlled by additional garland drain, loose boulder structures, settling tanks etc. The main purpose is to control soil erosion from OB dump and mineral stock piles.

## **12. MEASURES ALREADY ADOPTED**

There is no biological and Structural measures existing. It is a fresh mining lease and no mining activities have taken place so far. However as per the approved mining plan for this period from 2023-24 to 2026-27, the following measures are proposed.

## **13. MEASURES PROPOSED**

The details of proposed mitigative measures to minimize soil erosion and choking of streams in Mining Lease of Kalmang West (Northern Part) Iron Ore Block in favour of M/s Tata Steel BSL (M/s Tata Steel Limited) over an area of 92.875 hectare in village Kalmang and Ghodabudani, of Sundargarh District and Gandhaipada village of Keonjhar District are given below:

### **a. Structural Measures**

Vegetative means of erosion control are the most feasible and economic measures. However, as the pressure on land is increasing, it is necessary to bring even highly eroded land underutilization. In these lands, vegetative measures are not adequate to keep down the erosion. Some structural measures are required to be taken before vegetative measures are adopted. Structural measures, therefore, serve as supplementary to vegetative measures. The objective behind building mechanical structures is to reduce the degree and length of the slope, reducing run-off and consequently, reducing soil erosion.

#### **i) Plan for Construction of Loose Boulder Structure**

After studying the topography and the drainage pattern it has been found that there are 10 spots where the LBCD required and accordingly it is proposed to construct 6 nos. of loose boulder structure of 4m span across the existing & proposed garland drain along the dumps & in phase-2, settling pit will help in stabilization of silt & sediment as well as prevention of soil erosion & enrichment of vegetation & greenery development. The cost norm of LBCD has been provided in **Annexure -I**.

#### **ii) Plan for Construction of Garland drain**

A shallow trench (3mx 2m) will be dug for storage of runoff accumulated for draining surface water before it is released to the agriculture land or natural water course. Details of proposed Garland drain **2095 mtr** shall be constructed during the ensuing plan period with location shown in the map (Ref Plate No.-1). The cost norm of Garland drain has been provided in **Annexure -II**.

*Details of Garland drain along dump slope.*

Sl.No	Year	Dump ID	Length of Garland drain(m)
1	1 <sup>st</sup> year	Temporary waste dump B	215
2	2 <sup>nd</sup> year	Temporary waste dump C	380
3	1 <sup>st</sup> year (No additional area required further)	Temporary mineral reject stack 1	1500
		<b>Total</b>	<b>2095</b>

NB: Apart from the above temporary dumps and temporary mineral reject stack, it is to mention that excavation has been proposed in north side of the leased area and benches will proceed towards extreme north east direction of the ML area from the next plan period. The waste accommodated in designated waste dump-A will be utilized for backfilling purpose after exhaustion of the ore. Hence no retaining wall / toe wall etc. are proposed in this scheme.

### iii) Plan for Construction of Settling Pit

It is a process that involves separation of solid material from slurry. Sometimes, this process is called sedimentation. When waste water is treated, a large quantum of materials is filtered out of the liquid by physical barriers. Even then, the water will contain some solids which need to be removed. A settling tank is proposed to be used to protect the surface water. It has been proposed to construct **3 nos** of settling pits. Details of proposed 3 nos of settling Tanks are shown in the map. The cost norm of Settling Tank has been provided in **Annexure -III**.

### iv) Desilting

The de-silting works of the Check dam, settling tank & garland drain will be taken up at regular intervals to prevent sedimentation and choking of streams. This de-silting of settling tank will provide space and base to hold the sediment laden runoff thereby allowing settling and clear water to flow down. This de-silting work will be preferably undertaken once in a year before & after monsoon. The implementation of the plans will be site specific in nature depending upon the severity of the sedimentation and choking of stream.

### v) Coir Matting

For the purpose of coir matting cost of the same per sq. mtr has been taken as Rs.150/- (as per present market rate) including labour cost. The detail financial forecast is given below.

Sl.No	Dump Name	Area to be treated for coir matting [in Ha]	Rate of Coir matting per Ha	Total cost in Rs.	Remarks
1	Dump A,B& C	5.00 (Appx)	1500000.00	7500000.00	Unit cost is 150/- per m <sup>2</sup> including labour cost

## 14. INSPECTION, MONITORING AND EVALUATION

For successful implementation of the above mitigative measures, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/ conveyance charges for technical experts shall be provided by the user agency for proper execution of these programmes.

## 15. EXECUTING AGENCY

The works in the present Scheme shall be executed by the User Agency having specialized departments headed by qualified persons with outsourced man and machinery. To facilitate this, the user agency shall establish its own executing and supervision cells along with required infrastructural facilities. In order to maintain the

quality of work, in-house supervision through competent personnel shall be provided. The entire work shall be carried out in co-ordination with the Forest Department.

#### **16. FINANCIAL FORECAST**

The total cost of implementation of mitigative measures will be **Rs.1,34,28,300.00 (Rupees one crore thirty four lakh twenty eight thousand three hundred) only**. The expenditure will be made during the next plan period. This budget will be subject to increase in amount considering the increase in cost of materials and labour charges. The tentative annual expenditure planned for next plan period for the implementation of the mitigative measures is given in the following tables:

#### **FINANCIAL FORECAST OF THE PROJECT (ML AREA=92.875 HA.)**

**Wage Rate Rs.450.00**

Sl.No.	Description of the Work	Fund Required in Rs.
A.	06 nos. of Loose Boulder Structure of 4mt span @ Rs.56,838/- per each	3,41,028.00
B.	Construction of Garland drain over a length of 2095 m @ Rs.636/- per RMT	13,32,420.00
C.	Construction of 3 nos. of settling tank @ Rs.19,059/- per each	57,177.00
D.	De-siltation work for Garland drain, settling pond and check dam twice in a year on LS	5,00,000.00
E.	Coir matting along dump slope area over 5.00 Ha @ 1500000.00/ha	75,00,000.00
<b>Sub Total</b>		<b>97,30,625.00</b>
<b>15 % of the total cost for motivation of VSS/ People involved</b>		<b>14,59,594.00</b>
<b>Sub Total</b>		<b>1,11,90,219.00</b>
<b>Price escalation @ 20%</b>		<b>22,38,044.00</b>
<b>GRAND TOTAL</b>		<b>1,34,28,263.00</b>
		<b>or</b>
		<b>1,34,28,300.00</b>

(Rupees one crore thirty four lakh twenty eight thousand three hundred only)

\*\*\*\*\*

  
General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

**COUNTERSIGNED**

  
Divisional Forest Officer  
Bhilai Division

**Technically Approved**

  
Regional Chief Conservator of Forests  
Rourkela Circle

## Detail Estimate of Loose Boulder Structure (S.M.C)

Wage Rate- Rs.450/-

Span - 4 mtr. Ht. = 1.3 mtr  
 Slope- U/S :- 1:1.5 D/S slope :- 1:2.0

1.	Leveling the unshape surface of the selected site & layout the structure foundation LS, 1 MD.			450.00
2.	Excavation of foundation in hard soil within initial lead of 50 mtr. including rough dressing and breaking of clods to maximum size 5 cm. to 7 cm. laying in layer not exceeding 0.3 in depth to strengthening both side U/S approx. bund of loose boulder structure.			
	Base with apron- $1 \times 6.15 \times 5.00 \times 0.30 =$	9.225		
	Wing wall- $4 \times 0.50 \times 0.50 \times 0.30 =$	0.30	9.525	
	@ 19741.02 per 100 cum.			1880.33
3.	<b>Rough stone dry packing</b>			
	up to GL			
	Base with apron- $1 \times 6.15 \times 5.00 \times 0.30 =$	9.225		
	Wing wall- $4 \times 0.50 \times 0.50 \times 0.30 =$	0.30		
	Above GL			
	Super structure $1 \times \frac{5.15 + 0.60}{2} \times 1.30 \times 4.0 =$	14.95		
	Wing wall- $4 \times 0.50 \times 0.50 \times 0.50 =$	0.50		
	Side wall-			
i.	$2 \times \frac{0.50 + 1.80}{2} \times 1.95 \times 0.5 =$	2.24		
ii.	$2 \times \frac{0.5 + 1.80}{2} \times 2.6 \times 0.5 =$	2.99		
iii.	$2 \times 0.6 \times 1.8 \times 0.5 =$	1.08		
iv.	$2 \times 1.0 \times 0.5 \times 0.5 =$	0.50		
	@ 1714.90 per cum		31.785	54508.09
				56838.42
			G.Total:-	Or
				56838.00

(Rupees Fifty Six Thousand Eight Hundred Thirty Eight) only

  
 General Manager  
 Ore Mines & Quarries  
 TATA STEEL LIMITED

**Annexure-II****Wage Rate- Rs.450****Detail Estimate of construction of Garland Drain**

Sl No	Description of Items	No	Length	Width	Height	Qty	Unit	Rate	Amount
1	Cleaning of Jungles & bushes	1	200.00	7.00		1400.00	Sqm	12.15	17006.42
2	Earth work in hard soil in embankment roads with in 50 mtrtrial lead & 1.50 mtrtrial lift including rough dressing & breaking clods to Maximum 5.00c.m. to 7.00 c.m. & laying layers not exceeding 0.30 mtr depth as per specification approved by department along with proper compaction with H.R.R Excavation	1	200.00	2.00	0.75	300.00	Cum	338.84	101652.69
3	Rough Stone Dry Packing with local boulder only labour charges (Local boulder will be Supplied by the Company through contractual manner)	2	3.00	2.00	0.30	3.60	Cum	2399.83	8639.38
									127298.49 Or, 127298.00

**Rate/Running metre length – Rs.636.49 or 636/-**


General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

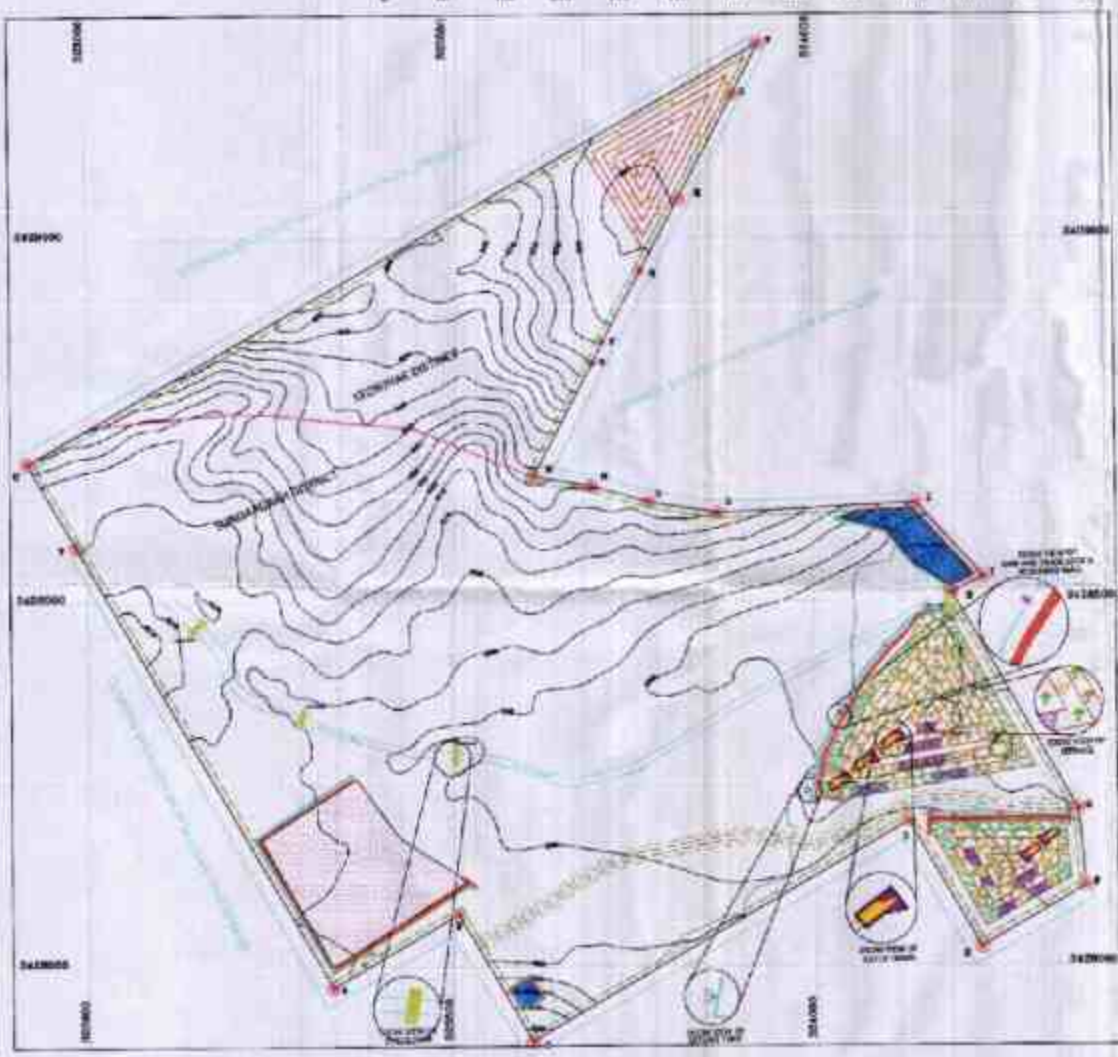
Annexure-III

Wage Rate- Rs.450.00

**ESTIMATE FOR PER RMT CONSTRUCTION OF SETTLING TANK**  
(Length: 1m., width: 3.0m. height: 1.5m.)

Sl No	Description of Items	No	Length	Width	Height	Qty	Unit	Rate	Amount
1.	Earth work in hard soil in embankment roads within 50 mt initial lead & 1.50 mt initial lift including rough dressing & breaking clods to Maximum 5.00 c.m. to 7.00 c.m. & laying layers not exceeding 0.30 mtr depth as per specification approved by department along with proper compaction with H.R.R Excavation	1	4.00	3.00	1.50	18.00	Cum	338.83	6098.93
2.	Rough Stone Dry Packing with local boulder only labour charges (Local boulder will be Supplied by our Company)	1	4.00	6.00	0.20	4.80	Cum	2399.83	11519.18
3	Transportation charges for 5.00 K.M. lead by truck load from quarry to work site with all cost of labour, T. & P. etc. all complete in all respect as per specification and direction of	As same as Item No-2				4.80	Cum	300.12	1440.57
Rate per one No Settling tank									19058.68 Or, 19059.00

  
General Manager  
Ore Mines & Concentration  
TATA STEEL LIMITED



- LEGEND**
- BOUNDARY OF ML AREA
  - SAFETY ZONE
  - CONTOUR
  - DISTRICT BOUNDARY
  - VILLAGE BOUNDARY
  - ROAD
  - TOP SOIL STOCK
  - MINERAL REJECT STOCK
  - OVERBURDEN DUMP
  - FENCE
  - VL PILLARS
  - RETAINING WALL
  - GUARD RAIL DRAIN WITH LEDGE
  - SETTLING TANK
  - CATCH DRAIN
  - CHECK DAM
  - MUGAV PLANTATION
  - PLANTATION
  - COKE SMELTING
  - COMMON BOUNDARY

**SCHEMATIC CROSS SECTIONAL VIEW**



PLAN NO. 1

PLAN SHOWING THE MITIGATIVE MEASURES TO MINIMIZE SOIL EROSION AND CHOKING OF STREAM

**SALANANG WEST (NORTHERN PART) SLOCE IRON ORE MINES OF MYS DATA STEEL LTD.**

VL AREA-52.675 Ha. SCALE-1:4000



**Scheme  
For**

**PLANTING OF ADEQUATE DROUGHT HARDY PLANT SPECIES  
AND SOWING OF SEEDS IN THE APPROPRIATE AREA WITHIN  
MINING LEASE TO ARREST SOIL EROSION.**

**in compliance  
with  
Condition No.13 (b) of  
Stage-I approval granted vide  
Letter No.8-13/2022-FC, Dated.22.12.2023  
of Govt. of India, Ministry of Environment, Forests  
& Climate Change,  
New Delhi.  
For**

**Diversion of 42.608 Hects of Forest Land for U/s-2 (ii) (Including 2.382  
ha. of Safety Zone) OF FC Act-1980  
within 92.875 Ha. Iron Ore Mining Lease  
of**

**M/S Tata Steel BSL Limited (now amalgamated into & with Tata Steel  
Limited).**

**in village Kalamang and Ghodabudhani of Koira tahsil, Sundargarh  
District and Gandhalpada village in Barbil Tahsil, Keonjhar District  
Odisha.**

## **1. INTRODUCTION**

The Govt. of Odisha vide Letter No.5285/DM dt.24.06.2017, read with Letter No.6287/SM dt.27.07.2017, issued Letter of Intent (LoI) for grant of Mining Lease of Kalamang West (Northern Part) Iron Ore Block in favour of M/s Bhushan Steel Limited over an area of 92.875 hectare in village Kalamang and Ghodabudhani, of Sundargarh District and Gandhalpada village of Keonjhar District for a period of 50 years. The Letter of Intent was transferred in favour of M/s Tata Steel BSL Limited on taking over of Bhushan Steel Limited basing on the Order of NCLT vide Steel & Mines Dept. Letter No: 4261/SM dated 27.05.2021. Govt. of Odisha Steel & Mines Dept. have further approved the amalgamation of M/s Tata Steel BSL Limited into & with M/s Tata Steel Limited vide letter no: 541/SM dated 21.01.2022 which makes M/s Tata Steel Limited, eligible LOI holder of Kalamang West (Northern Part) Iron Ore Block.

As per the Terms & Conditions of LOI the Applicant shall fulfil the provisions of all Acts and Rules applicable to the Project. Accordingly, M/s Tata Steel Bhushan Limited has submitted the proposal to obtain approval of the Central Govt. over 42.608 hectare of forest land including Safety Zone 2.382 Ha U/s-2 (ii), of the Forest (Conservation) Act 1980 within the above Mining Lease area.

Further, Stage-I approval over 42.608 ha. of Forest Land U/s-2 (ii) (including 2.382 ha. of Safety Zone) has been granted by MoEF & CC vide their Letter No. 8-13/2022-FC, dated 22.12.2023 wherein it has been stipulated as per **Condition No. 13 (b) for planting adequate drought hardy plant species and sowing of seeds in the appropriate area within in the mining lease to arrest soil erosion.**

## **2. LOCATION**

The mining lease area finds place in the Survey of India Topo sheet No.F45N5 (73 G/5) and situated between the latitude 21° 56' 47.75784" to 21° 57' 32.34779" N and longitude 85° 17' 06.65892" to 85° 17' 57.53148" E. The above ML area covering villages such as Kalamang, and Ghodabudhani in Kaira Range, Bonai Forest Division, Sundargarh District and Gandhalpada village of Barbil Range, Keonjhar Forest Division, Dist-Keonjhar, Odisha.

## **3. TOPOGRAPHY**

The above allotted block under study is a highly rugged terrain, with elongated hills trending ENE-WSW direction, low mounds and narrow valleys. The highest elevation of ridges in the area is 690 m above MSL forming the ridge. Lowest elevation is 585 m above MSL which forms the valley floor in this block.

## **4. SOIL TYPE**

The low-lying areas are filled up with alluvial soil which is ferruginous in nature and reddish brown in colour. In most of the area the soil is moderately coarse in nature whereas it is loamy in the cultivated land. Since the area is devoid of any perennial nala or river, the soil has been deposited in the valley area mostly from the low order nala or from the slope wash of the nearby hillock occupied by the iron ore group of rocks

## 5. CLIMATE

The lease area lies in tropical region where climate is characterized by an oppressively hot summer and cool winter. Summer is typically from April to July when monthly temperature ranges from a maximum of 42 °C during daytime to a minimum of 15° C at night time. Winter is from November to February when the maximum temperature during daytime goes to 37°C and minimum temperature at night becomes as low as 8°C. The average annual rainfall as recorded at IMD observatory at Keonjhar is 1269.1 mm

## 6. DRAINAGE

The dendritic type of drainage pattern is generally displayed by the area. Because of the hilly topography, there is only one seasonal drainage found in the western part of the area. Sunanadi is a perennial river flowing from south to north outside the area at 2 km towards south-east and it becomes west-east from Malda and debouch into river Baitarani. The drainage channel originating in the western part of the area traverses through the area towards N-E.

## 7. EXISTING VEGETATION

The forest growth available in the area resembles Northern Tropical Dry Deciduous Forest. Sal (*Shorea robusta*) is the most dominant tree with Mahul (*Madhuca indica*), Asan (*Terminalia tomentosa*), Char (*Buchanania lanjan*), Kendu (*Diospyros melanoxylon*), Barkoli, Kusum (*Schleichera oleosa*), Dimiri as common associates.

The vegetation of the applied area is composed of Sal (*Shorea robusta*), Saguan (*Tectona grandis*), Sidha (*Lagerstroemia parviflora*), Bandhan (*Ougeinia ojeinensis*), Char (*Buchanania lanjan*), Dhaura (*Anogeissus latifolia*), Asan (*Terminalia tomentosa*), Mango (*Mangifera indica*), Kendu (*Diospyros melanoxylon*), Bahada (*Terminalia bellerica*), Jamu (*Syzygium cumini*), Kusum (*Schleichera oleosa*), Mahul (*Madhuca indica*) etc. Sal (*Shorea robusta*) is the pre-dominant species.

## 8. LAND USE PATTERN

During the life of the mine, about 92.875 hectares will be utilized for mining, Minerals processing, Road, and green belt plantation in Safety Zone area etc. The details of land use pattern will be as follows:

Village wise break up of total land

Sl.No.	District Name	Forest land in Ha	Non forest land in Ha	Total land in Ha
1	Keonjhar	16.658	0	16.658
2	Sundargarh	25.95	50.267	76.217
Total in Ha		42.608	50.267	92.875

**Item wise Proposed Land Use Pattern in Forest and Non-Forest Land of Total Lease Hold**

<b>Area</b>				
Sl. No	Type of Land Use	Forest Land in Ha.	Non- Forest Land in Ha.	Grand Total in Ha.
1	Area under excavation including the backfilled area	36,458	38,919	75,377
2	Overburden/Waste Dumping	2,109	4,962	7,071
3	Topsoil Stacking	0,228	0,615	0,843
4	Mineral Reject stack	0,032	1,410	1,442
5	Green Belt in the south beyond the UPL	1,399	2,771	4,170
6	7.5 meter along the inner side of ML boundary	2,382	1,590	3,972
<b>Total</b>		<b>42,608</b>	<b>50,267</b>	<b>92,875</b>

**1. FACTORS RESPONSIBLE**

In mining activities the following factors are responsible for soil erosion in the mining lease area.

- The mining activities and overburden dumps are the major sources of drainage of soil and other substances in different places within the ML area.
- The instant mining lease area comprises of undulating plains, hilly slopes and drainage and through them causes soil erosion from the top side and get accumulated in the bottom sides/ lower areas.
- The forms of erosion observed in this region include mainly rill and gully erosion. The storm water runoffs from the hills, mine faces and OB dump slope areas also carry substantial amounts of solids in the lower order streamlets and choke the higher order streams.
- These lower order streamlets have high erosion capacity due to steep gradient and transportation of rock fragments with high velocity of the stream and deposition of same in the connecting high order streams due to velocity drop.
- Streams can also erode by undercutting their banks resulting in mass-wasting processes like slumps or slides. When the undercut material falls into the stream, the fragments are transported and deposited in the stream bed.

## 2. OBJECTIVE OF THE SCHEME:

The objectives of the proposed scheme are as follows:

- To minimize the soil erosion by planting drought hardy species over the degraded land.
- Sowing of seeds in the appropriate area within the Mining Lease to ensure vegetation from the sown seeds to arrest soil erosion.
- To provide a green cover under the implementation of above objectives to meet the requirement of the above condition of MoEF & CC.

## 3. MEASURES PROPOSED TO BE CARRIED OUT

### a. PLANTATION

Soil erosion is moderate since the forest canopy is having density of more than 0.5, and hence it needs protection from soil getting further eroded by drips and the natural binding of the soil due to the root system. Hence, it is proposed to undertake plantation of drought hardy species over 5.00 ha in dump area. (Ref Plate No-1)

Accordingly it is proposed to plant 18 months old seedlings of the following species which are indigenous to the locality.

#### Species to be planted:-

1. *Syzygium cumini* (Jamu)
2. *Adina cordifolia* (Kuruma)
3. *Ficus religiosa* (Aswastha)
4. *Azadirachta indica* (Neem)
5. *Pongamia pinnata* (Karanja)
6. *Emblica officinalis* (Anla)
7. *Aegle marmelos* (Bel)
8. *Tamarindus indica* (Tentuli)

### b. SOWING OF SEEDS

It is proposed to take up sowing of grass seeds (*Vetiveria zizanioides*) the entire dump area over 7.071 Ha to arrest soil erosion in the area within the mining lease. The cost estimate of the Grass seeding has been enclosed as **Annexure-2**.

## DETAILED WORK SCHEDULE

### a) PLANTING PLAN

Planting Plan reflects the species specific treatment of the identified site. Choice of species is based on the geo-morphology of the site, soil-texture, structure, fertility and depth, proneness of the site to water logging etc.

### b) PRE-PLANTING OPERATION

#### (i) RAISING OF PLANTATION STOCK- NURSERY

Nursery to be raised 1 year prior to year of plantation keeping in view the target proposed for the said year. All pre-planting operation will be completed by March of the plantation year and to be followed by various operations as per approved cost norm of PCCF (O) (Ref. Annexure-1). Care should be taken to locate nursery

in suitable site with adequate provision of water so as to ensure promising seedlings for the purpose of plantation, 10% excess of seedlings per hectare to be raised excluding nos. of seedlings required for a particular year to meet the anticipated causality replacement.

**c) PLANTING OPERATION**

Planting of seedlings will be taken up in the month of July. The polythene covering of the balls of earth will be carefully removed before planting. Care will be taken to see that the ball of earth is not broken while doing so. The seedling with the ball of earth will then be placed firmly in the pit and buried at such a depth that the root collar is well below the surface of the soil. The soil around the plant will be well compacted with the heel as a final step so that there is a proper bond between the ball and the surrounding soil. The earth close to the collar will be slightly elevated so that rain water does not accumulate very close to the plant.

**d) POST PLANTING OPERATION**

**(i) CASUALTY REPLACEMENT**

The entire area will be gone over in the same order as plantation was carried out and casualties, if any, will be replaced as soon as the main plantation operation is over preferably in the 2<sup>nd</sup> year plantation.

**(ii) WEEDING AND SOIL WORKING**

Regular and efficient weeding will start immediately after sprouting of the stumps is complete or after the seedlings have started throwing up new buds.

**(iii) MANURING AND INSECTICIDE APPLICATION**

On degraded sites urban compost or farmyard manure, wherever available, will be added to the soil while refilling the pits. As regards artificial fertilizers, the minerals required and dosage @ 50 grammes of patent mixtures like 'Gromor' or N.P.K. (2:2:1) will be applied in two split doses one in August and the other in September.

**(iv) PROTECTION AGAINST FIRE AND GRAZING**

Fire line tracing will be ensured to protect the plantation from fire and watch & ward will be provided as per the approved norm for protecting the plantation from grazing.

**4. INSPECTION, MONITORING & EVALUATION**

For successful implementation of the proposed measures under this Scheme, intensive inspection and technical guidance from concerned technical wing is required. Sufficient resources (i.e. budgetary approvals, technical guidance, man power etc.) shall be provided by User Agency for effective implementation of the proposals.

**5. EXECUTING AGENCY.**

The implementation of the scheme will be done by M/s Tata Steel Ltd. in consultation with Forest Department.

#### 6. REQUIREMENT OF FUNDS

The total following cost of the implementation of will be **₹34,12,000.00**  
(Rupees Thirty FourLakh Twelve Thousand) Only.

#### TOTAL COST OF THE PROJECT

Wage Rate Rs.450/-

Sl. No.	Description of the work	Funds Required (InRs.)
1	Block Plantation <b>5.00</b> ha. @ Rs.358998/-	17,94,990.00
2.	Cost for sowing of grass seeds over 7.071 ha @ ₹59350.00/ha.	4,19,664.00
3.	Water provision to plantation: Solar system with Bore well (1 system for 5 Ha. Plantation) fitted with Drip system @ ₹2,57,751/- X 1 no.	2,57,751.00
	<b>Total :-</b>	<b>24,72,405.00</b>
4.	15% of the total cost for motivation of VSS / People involved	3,70,861.00
	<b>Sub Total</b>	<b>28,43,266.00</b>
5.	Price escalation @ 20%	5,68,653.00
	<b>Grand Total</b>	<b>34,11,919.00</b> <b>OR</b> <b>34,12,000.00</b>

(Rupees Thirty FourLakh Twelve Thousand) only

  
Divisional Forest Officer  
Bonai Division

  
General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

**Technically Approved**  
  
Regional Chief Conservator of Forests  
Rourkela Circle

## Base Cost Norm for Compensatory Afforestation (Block Plantation)

@ 1600 Plants Per Hectare (18 months old seedlings)

BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1600 PLANTS PER HECTARE (18 months old seedling)						
WAGE RATE Rs- 311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
<b>0th Year (Advance work) Pre-Planting Operation</b>						
1	Survey, Demarcation and Pillar posting	Nov/Dec	2	622	0	622
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311	100	411
3	Site preparation (Clearing & removal of debris)	Nov/Dec	12	3732	0	3732
4	Creation of 4.00 mt wide Inspection Path	Feb/Mar	1	311	0	311
5	Alignment and stacking	Feb/Mar	2	622	0	622
6	Digging of pits (45 cm x 45 cm x 45 cm) in hard and gravelly soil	Feb/Mar	64	19904	0	19904
7	Construction of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Jan/Mar	0	0	3500	3500
	<b>Total</b>		<b>82</b>	<b>25502</b>	<b>3600</b>	<b>29102</b>
<b>1st Year /Planting Year</b>						
1	Refilling of pits by altering the dug-out soil of the pits, application of Organic compounds/ CDM/ FYM & mixing the same properly.	Jun/Jul	12	3732	8000	11732
2	Transportation of 18 months old poly pot seedlings in hired truck /tractor from the permanent/Mega nursery to planting site including Loading & unloading. (Average load of 10 Blm) & Stacking the seedling @ Rs.6/- per Seedling. (1760 nos.)	Jul/Aug	0	0	10560	10560
3	Watering the poly pot seedlings at planting site	Jul/Aug	3	933	0	933
4	Conveyance of poly pot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after scooping the soil with other applied materials & pressing the soil properly around the planted seedlings.	Jul/Aug	36	11196	0	11196
5	<b>Cost of Fertilizer &amp; Insecticide</b> (a) NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 80kg @ Rs.30/- per kg = Rs. 2400.00 (b) Urea/Vermicompost/Mo Khata/any other fertilizer in two subsequent doses @ Rs. 1,200.00 (c) Insecticide/ Bio-pesticide @ 5 gms/plant= 8 kg @ Rs.150/- per kg = Rs. 1200.00	Jul/Aug	0	0	4800	4800

BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1600 PLANTS PER HECTARE (18 months old seedling)						
WAGE RATE Rs- 311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
6	Casualty Replacement @ 10% (160 nos.)	Jul/Aug	4	1244	0	1244
7	1st weeding & Manuring	Aug/Sept	15	4665		4665
8	2nd Weeding, Soil working (1mt. diameter around the plants) and Manuring	Oct/Nov	20	6220	0	6220
9	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
10	Watch & Ward including watering as per requirement	Aug-Mar	12	3732	0	3732
	<b>Total</b>		<b>105</b>	<b>32655</b>	<b>23360</b>	<b>56015</b>
2nd Year Maintenance						
1	Transportation of 160 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedlings	Jul	0	0	960	960
2	Casualty replacement- 10%	Jul	4	1244	0	1244
3	Cost of Fertilizer & Insecticide- A) Cost of Insecticide/ Bio-pesticide @ 5 gms/plant = 0.8 Kg @ Rs.150/- per kg = Rs.120/- B) Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @Rs. 4400/-	Aug/Sept	0	0	4606	4606
4	Weeding (Complete weeding), Manuring & Soil working (1mt. diameter around the plants)	Sep/Oct	20	6220	0	6220
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr-Mar	18	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First-Aid etc.				1000	1000
	<b>Total</b>		<b>45</b>	<b>13995</b>	<b>6566</b>	<b>20561</b>

BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1600 PLANTS PER HECTARE (18 months old seedling)						
WAGE RATE Rs- 311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
<b>3rd Year Maintenance</b>						
3	Cost of Fertilizer/Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer	Sept/Oct	0	0	4486	4486
4	Weeding, Manuring & Soil working (1 mt. diameter around the plants)	Sep/Oct	20	6220	0	6220
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr/Mar	18	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Apr/Mar			1000	1000
<b>Total</b>			<b>41</b>	<b>12751</b>	<b>5486</b>	<b>18237</b>
<b>4th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
2	Watch & Ward	Apr/Mar	18	5598	0	5598
<b>Total</b>			<b>21</b>	<b>6531</b>	<b>0</b>	<b>6531</b>
<b>5th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
<b>Total</b>			<b>21</b>	<b>6531</b>	<b>0</b>	<b>6531</b>
<b>6th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933.0
2	Pruning of branches, singling out of multiple shoots	Jan/Mar	5	1555.00	0	1555.0
3	Watch & Ward	Apr/Mar	18	5598.00	0	5598.0
<b>Total</b>			<b>26</b>	<b>8086</b>	<b>0</b>	<b>8086.0</b>
<b>7th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
<b>Total</b>			<b>21</b>	<b>6531</b>	<b>0</b>	<b>6531</b>
<b>8th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
<b>Total</b>			<b>21</b>	<b>6531</b>	<b>0</b>	<b>6531</b>
<b>9th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598

BASE COST NORM FOR COMPENSATORY AFForestation (BLOCK PLANTATION) @ 1600 PLANTS PER HECTARE (10 months old seedling)							
WAGE RATE Rs- 311/- PER MANDAY							
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)	
1	2	3	4	5	6	7	
	Total		21	6531	0	6531	
10th Year Maintenance							
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	2	622	0	622	
3	Watch & Ward	Apr/May	10	3110.00	0	3398	
	Total		21	6533	0	6533	
Year wise Abstract of Cost Norms (showing seedling cost separately)							
Sl. No	Year	No. person days	Labour cost @ Rs. 311/- per day (Rs)	Material Cost	Monitoring, Evaluation, Learning, Documentation and Other Contingency (5%) of (4+5)	Cost of Seedlings @Rs.50.31 per seedlings	TOTAL COST
1	2	3	4	5	6	7	8
1	0th year	80	24880	3600	1398.00	0	30508.00
2	1st year	105	32655	23300	2000.00	80546	147561.00
3	2nd year	85	26435	6500	1028.00	0	29093.00
4	3rd year	41	12751	5400	911.00	0	19162.00
5	4th year	21	6531	0	326.00	0	6857.00
6	5th year	21	6531	0	326.00	0	6857.00
7	6th year	21	6531	0	326.00	0	6857.00
8	7th year	21	6531	0	326.00	0	6857.00
9	8th year	21	6531	0	326.00	0	6857.00
10	9th year	21	6531	0	326.00	0	6857.00
11	10th year	21	6531	0	326.00	0	6857.00
	Total	425	132175	39612	8497	96596	276280

**Note:-**

1. Priority must be given to the indigenous local species available nearby to the site of plantation.
2. 10% indigenous fruit bearing trees must be preferred in Plantation.
3. Site specific Soil conservation work like (B.C.D) Gully Plugging, Staggered Trench, Contour Trench, Gradient Bund, etc. may be.
4. Chain link fencing can be adopted in the CA plantation taken up outside the forest area and Bamboo fence fencing may be.
5. Watering facilities for procurement of water & watering may be adopted as per the availability of water.
6. The Cost Norm of various items can be changed with the approval of the concerned BCCFs keeping the overall cost norm fixed for each Financial Year.

  
 APCCF (Forest Division & NO, EC Act)

Matrix for Model-I B Conventional CA Plantation (AR) 1500 plants per ha

Sl. NO.	Commencement Month Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	XXVII	XXVIII	XXIX	XXX	Total Cost (10 years)	In Budget		
1	2021-22	82500	147961	29639	15148	6837	8377	8490	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	6837	110117	
2	2022-23		81723	161045	31428	22228	8765	9189	11396	25140	10439	31169	11777																					125623	
3	2023-24			31673	172088	36029	21038	8190	9648	17543	19837	21190	11727	22918																				141003	
4	2024-25				19367	179113	37624	21660	9662	10159	11770	11465	11278	12918	12829																			156398	
5	2025-26				23627	186079	38711	18842	10842	11143	13642	13829	12027	17218	12826	13389																		171793	
6	2026-27					18826	18317	18317	61721	28229	12640	11168	11022	12918	12821	12573	14016																	187188	
7	2027-28						40232	40232	102261	43786	28220	11572	11777	11096	13629	13078	14126	16887																202583	
8	2028-29								62918	317719	22979	11160	12391	13113	14008	13833	14767	15967	15713															217978	
9	2029-30									43066	118895	98774	17760	17719	12829	14808	14714	14920	14771	14001														233373	
10	2030-31										42323	240231	30268	94288	12991	13373	17618	17618	17618	17618	17618	17618	17618	17618	17618	17618	17618	17618	17618	17618	17618	17618	17618	248005	

APCD Forest Division & NQ, FC Act

Annexure- 2

COST OF GRASS SEED SOWING

Wage Rate Rs.450.00

Sl No	Purpose	No of Labour / Quantity of materials	Rate (Rs.)	Amount (Rs.)
1	Spreading of good top soil	03 Nos	450 / labour	1350.00
2	Adding FYM and good earth	2 TL FYM	1499.82 /TL FYM	5999.28
		2TL good earth	1499.82 /TL Good earth	
3	Cost of grass seed 500Kg/ per ha.		95/kg	47,500.00
4	Broadcasting	10 nos.	450.00/ labour	4,500.00
Total				59,349.28
				Or, 59,350.00

  
General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

Watering Model-W-1					
Watering provision to CA Plantation					
Solar system with Bore well (1 system for 5 Ha Plantation) fitted with Drip system, Wage rate @ Rs.111/-					
Year of Installation (0th Year)					
1	Cost of Borewell		1,50,000		
2	Installation of Solar panel & other System		3,00,000		
3	Cost of 0.3 HP submersible motor with accessories		50,000		
4	Water Storage Tanks/ Flexible pipes		15,000		
5	Cost of laying Drip system including all accessories, fittings etc. with 12% CAY		1,02,431		
<b>Total</b>			<b>6,17,431</b>		
6	Cost of Water & watering per Ha. (0.17/0.1/5) - Rs. 1,67,480/-		1,67,480		
1st Year Watering					
7	No maintenance required		0		
<b>Total</b>			<b>0</b>		
2nd Year Watering					
8	Maintenance of system @ 5% of initial cost of installation		0,174		
<b>Total</b>			<b>0,174</b>		
3rd Year Watering					
9	Maintenance of system @ 5% of initial cost of installation		0,174		
<b>Total</b>			<b>0,174</b>		
4th Year Watering					
10	Maintenance of system @ 5% of initial cost of installation		0,174		
<b>Total</b>			<b>0,174</b>		
5th Year Watering					
11	Maintenance of system @ 5% of initial cost of installation		0,174		
<b>Total</b>			<b>0,174</b>		
Abstract					
Sl. No	Year	No. person days	Labour cost @ Rs. 111/- per day	Material Cost	Total cost (Rs.)
1	0th year	0	0.0	1,62,480.0	1,62,480.0
2	1st year	0	0.0	0.0	0.0
3	2nd year	0	0.0	8,740.0	8,740.0
4	3rd year	0	0.0	8,740.0	8,740.0
5	4th year	0	0.0	8,740.0	8,740.0
6	5th year	0	0.0	8,740.0	8,740.0
<b>Total</b>		<b>0</b>	<b>0</b>	<b>1,96,180.0</b>	<b>1,96,180.0</b>

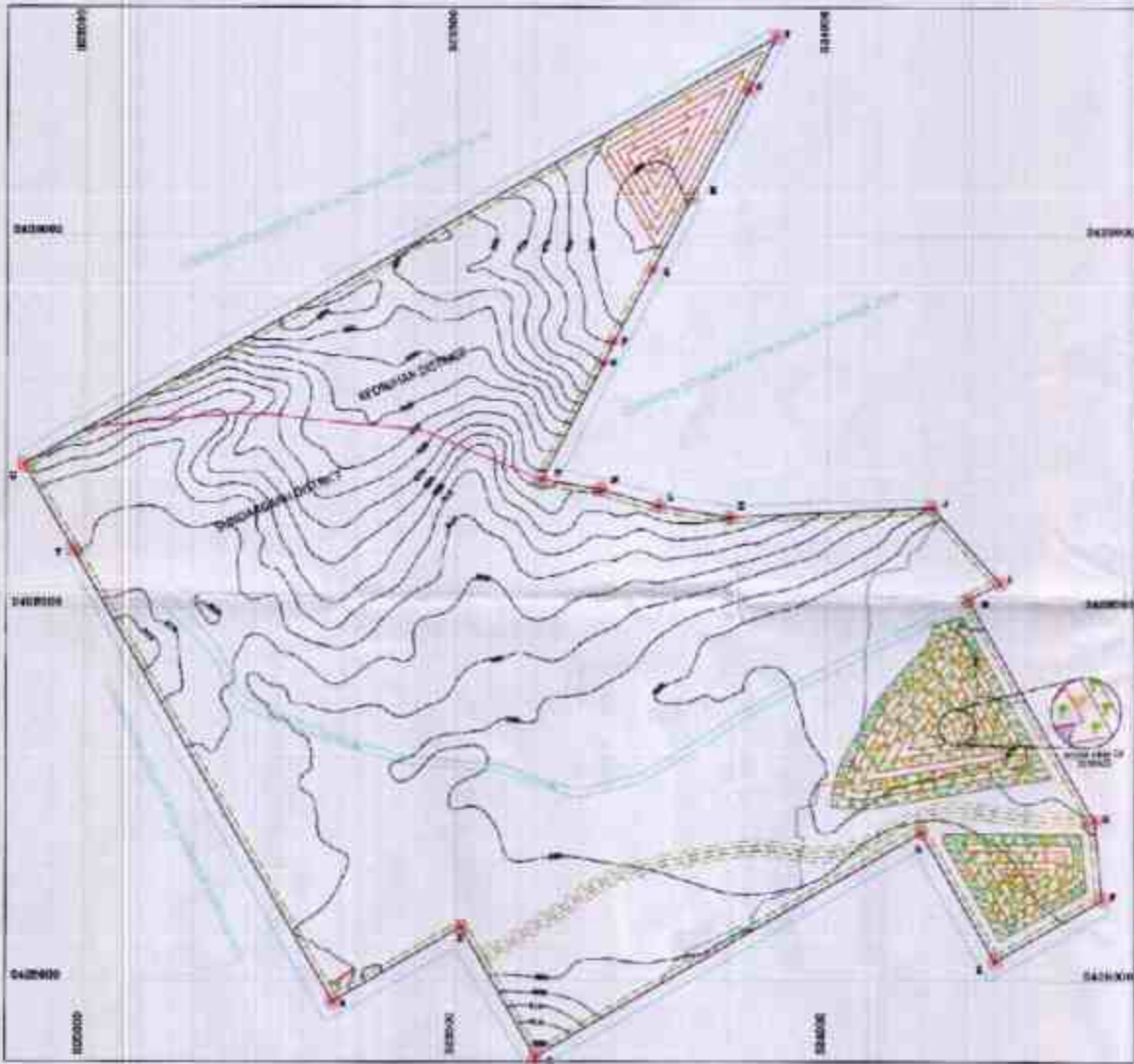
APCCF (Forest Division &amp; NO, FC Act)

13

Matrix for Watering W1 (Solar Borewell) fitted with Drip System (per Ha)

		In Rupees																
Sl. No.	Commence ment Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
	Base Norm	153485	0	8174	8174	8174	8174											
1	2021-22	163486	0	8011	8463	8935	10758											322653
2	2022-23		171660	0	8462	8956	10432	32388										233780
3	2023-24			180743	0	8976	10413	10264	33311									245476
4	2024-25				188775	0	10412	10535	31550	35627								253751
5	2025-26					198718	0	10564	11523	13077	37587							270639
6	2026-27						208554	0	11520	13078	13681	39256						284371
7	2027-28							219427	0	13077	13682	13315	40719					298380
8	2028-29								230241	0	13681	13316	13951	42780				313290
9	2029-30									341543	0	13315	13952	14680	45444			328004
10	2030-31										355670	0	13951	14681	15014	47718		345412

APCC (Forest Division &amp; NO, FC Act)



- LEGEND**
- BOUNDARY OF FALL AREA
  - SAFETY ZONE
  - GPS CONTOUR
  - DISTRICT BOUNDARY
  - VILLAGE BOUNDARY
  - ROAD
  - OVERBURDEN DUMP
  - TERRACE
  - SIL PILLARS
  - NATIVE PLANTATION
  - PLANTATION
  - SOWING OF SEEDS
  - COMMON BOUNDARY

**SCHEMATIC CROSS SECTIONAL VIEW**



*Dr. S. S. Srinivasan*  
The Director, Geological Survey of India  
New Delhi

*Dr. S. S. Srinivasan*  
The Director, Geological Survey of India  
New Delhi

PLATE NO. 1	
PLAN SHOWING THE PLANTING OF ADEQUATE DROUGHT HARDY PLANT SPECIES AND SOWING OF SEEDS, IN THE APPROPRIATE AREA WITHIN THE MINING I-FASE TO ARREST SOIL EROSION	
KALAMANG WEST (NORTHERN PART) BLOCK IRON ORE MINES OF M/S TATA STEEL LTD.	
IN AREA-SZ.ATS No.	SCALE-1:4000



Scheme  
For

CONSTRUCTION OF CHECK DAMS, RETENTION/TOE WALLS TO  
ARREST SLIDING DOWN OF THE EXCAVATED MATERIAL ALONG  
THE CONTOUR IN ACCORDANCE WITH THE APPROVED SCHEME

in compliance  
with  
Condition No.13 (c) of  
Stage-I approval granted vide  
Letter No.8-13/2022-FC, Dated.22.12.2023  
of Govt. of India, Ministry of Environment, Forests  
& Climate Change,  
New Delhi.  
For

Diversion of 42.608 Hects of Forest Land for U/s-2 (ii) (including 2.382  
ha. of Safety Zone) OF FC Act-1980

within 92.875 Ha. Iron Ore Mining Lease

of

M/S Tata Steel BSL Limited (now amalgamated into & with Tata Steel  
Limited).

in village Kalamang and Ghodabudhani of Koira tahsil, Sundargarh  
District and Gandhalpada village in Barbil Tahsil, Keonjhar District  
Odisha.

## **INTRODUCTION**

The Govt. of Odisha vide Letter No.5285/DM dt.24.06.2017, read with Letter No.6287/SM dt.27.07.2017, issued Letter of Intent (LoI) for grant of Mining Lease of Kalamang West (Northern Part) Iron Ore Block in favour of M/s Bhushan Steel Limited over an area of 92.875 hectare in village Kalamang and Ghodabudhani, of Sundargarh District and Gandhalpada village of Keonjhar District for a period of 50 years. The Letter of Intent was transferred in favour of M/s Tata Steel BSL Limited on taking over of Bhushan Steel Limited basing on the Order of NCLT vide Steel & Mines Dept. Letter No: 4261/SM dated 27.05.2021. Govt. of Odisha Steel & Mines Dept. has further approved the amalgamation of M/s Tata Steel BSL Limited into & with M/s Tata Steel Limited vide letter no: 541/SM dated 21.01.2022 which makes M/s Tata Steel Limited, eligible LOI holder of Kalamang West (Northern Part) Iron Ore Block.

As per the Terms & Conditions of LOI the Applicant shall fulfill the provisions of all Acts and Rules applicable to the Project. Accordingly, M/s Tata Steel Bhushan Limited has submitted the proposal to obtain approval of the Central Govt. over 42.608 hectare of forest land including Safety Zone 2.382 Ha U/s-2 (ii), of the Forest (Conservation) Act'1980 within the above Mining Lease area.

Further, Stage-I approval over 42.608 ha. of Forest Land U/s-2 (ii) (including 2.382 ha. of Safety Zone) has been granted by MoEF & CC vide their Letter No. B-13/2022-FC, dated 22.12.2023 where in it has been stipulated as per **Condition No. 13 (c) for construction of check dams, retention/toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme.**

### **1. LOCATION**

The mining lease area finds place in the Survey of India Topo sheet No.F45N5 (73 G/5) and situated between the latitude 21° 56' 47.75784" to 21° 57' 32.34779" N and longitude 85° 17' 06.65892" to 85° 17' 57.53148" E. The above ML area covering villages such as Kalamang, and Ghodabudhani in Koira Range, Bonai Forest Division, Sundargarh District and Gandhalpada village of Barbil Range, Keonjhar Forest Division, Dist-Keonjhar, Odisha.

### **2. TOPOGRAPHY**

The above allotted block under study is a highly rugged terrain, with elongated hills trending ENE-WSW direction, low mounds and narrow valleys. The highest elevation of ridges in the area is 690 m above MSL forming the ridge. Lowest elevation is 585 m above MSL which forms the valley floor in this block.

### **3. SOIL TYPE**

The low-lying areas are filled up with alluvial soil which is ferruginous in nature and reddish brown in colour. In most of the area the soil is moderately coarse in nature.

whereas it is loamy in the cultivated land. Since the area is devoid of any perennial nala or river, the soil has been deposited in the valley area mostly from the low order nala or from the slope wash of the nearby hillock occupied by the iron ore group of rocks.

#### 4. CLIMATE

The lease area lies in tropical region where climate is characterized by an oppressively hot summer and cool winter. Summer is typically from April to July when monthly temperature ranges from a maximum of 42 degree centigrade during day time to a minimum of 15 Degree Centigrade at night time. Winter is from November to February when the maximum temperature during daytime goes to 37 Degree Centigrade and minimum temperature at night- becomes as low as 8 Degree Centigrade. The average annual rainfall as recorded at IMD observatory at Keonjhar is 1269.1 mm

#### 5. DRAINAGE

The dendritic type of drainage pattern is generally displayed by the area. Because of the hilly topography, there is only one seasonal drainage found in the western part of the area. Sunanadi is a perennial river flowing from south to north outside the area at a distance of 2 km towards south-east and it becomes west-east from Malda and debouch into river Baitarani. The drainage channel originating in the western part of the area traverses through the area towards N-E.

#### 6. LAND USE PATTERN

During the life of the mine, about 92.875 hectares will be utilized for mining, Minerals processing, Road, and green belt plantation in Safety Zone area etc. The details of land use pattern will be as follows:

Village wise break up of total land

Sl.No	District Name	Forest land in Ha	Non forest land in Ha	Total land in Ha
1	Keonjhar	16.658	0	16.658
2	Sundargarh	25.95	50.267	76.217
<b>Total in Ha</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

#### Item wise Proposed Land Use Pattern in Forest and Non-Forest Land of Total Lease Hold Area

Sl. No	Type of Land Use	Forest Land in Ha.	Non-Forest Land in Ha.	Grand Total in Ha.
1	Area under excavation including the backfilled area	36.458	38.919	75.377
2	Overburden/Waste Dumping	2.109	4.962	7.071
3	Topsoil Stacking	0.228	0.615	0.843
4	Mineral Reject stack	0.032	1.410	1.442
5	Green Belt in the south	1.399	2.771	4.170

	beyond the UPL			
6	7.5 meter along the inner side of ML boundary	2.382	1.590	3.972
<b>Total</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

## 7. EXISTING VEGETATION

The forest growth available in the area resembles Northern Tropical Dry Deciduous Forest. Sal (*Shorea robusta*) is the most dominant tree with Mahul (*Madhuca indica*) Asan (*Terminalia tomentosa*), Char (*Buchanania lanjan*), Kendu (*Diospyros melanoxylon*), Barkoli, Kusum (*Schleichera oleosa*), Dimiri as common associates.

The vegetation of the applied area is composed of Sal (*Shorea robusta*), Saguani (*Tectona grandis*), Sidha (*Lagerstroemia parviflora*), Bandhan (*Ougeinia ojeinensis*), Char (*Buchanania lanjan*), Dhaura (*Anogeissus latifolia*), Asan (*Terminalia tomentosa*), Mango (*Mangifera indica*), Kendu (*Diospyros melanoxylon*), Bahada (*Terminalia bellerica*) Jamu (*Syzygium cumini*), Kusum (*Schleichera oleosa*), Mahul (*Madhuca indica*) etc. Sal (*Shorea robusta*) is the pre-dominant species.

## 8. FACTORS RESPONSIBLE

In mining activities, the following factors are responsible for sliding down of the excavated material along the contour which needs to be checked to prevent soil erosion and choking of streams.

- Stability of slope,
- Curvature of slope,
- Slope angle
- Rill & gully erosion due to steep gradient

## 9. OBJECTIVE OF THE SCHEME:

The objectives of the proposed scheme are as follows:

- ❖ To comply the condition No. 13(C) of the Stage-I approval granted by MoEF& CC, Govt. of India.
- ❖ To arrest sliding down of the excavated material along the contour.
- ❖ To prevent obstruction to natural water source.
- ❖ To prevent flow of eroded soil from the mining areas to the cultivable lands, natural streams and habitations.
- ❖ To achieve the objectives, it is required to provide check dam, retention/toe walls so that sliding down of excavated materials can be prevented.

## 10. PROPOSED METHODOLOGY:

- (a) To construct check dams, Retaining / toe wall and garland drain around the waste dumping site and mineral rejected dump site with respect to drainage pattern of the project area.
- (b) To develop the dump by terracing method. The height of all the terraces will be 10 m.
- (c) To control soil erosion and to confine the dumped material for which check dams, toe wall and garland drains will be constructed.
- (d) Propose to develop garland drains with settling tanks at the toe of the dumps to allow the settling of silt.

All the dead slopes of the dumps are proposed to be covered with coir matting/vertiver grass seeding.

**The Salient features of the drainage management plan are as follows:**

1. The overall drainage planning has been done in such a manner which follows the existing pre-mining drainage routing to the extent possible, maintaining the overall slope in the direction of pre-mining flow direction so that run off distribution is not affected.
2. Garland drains have been planned on the sides of Sub-grade and temporary waste dumps (depending on contours).  
The garland drains shall be routed through catch drain and settling tanks to settle out suspended solids in the storm water. The purified water will be discharged to natural water sources.
3. Grass and bushes in drains hold back solid particles during the flow of water in the drain. Small stone barriers constructed across the drain will check water flow and arrest solids.
4. Stone pitching will be made at suitable places to regulate the slope and hence water flow will not be obstructed.
5. Settling pits and drains shall be cleaned intermittently, especially during monsoon.
6. Outside of the cross-check dams on the drainage lines shall be reinforced with green cover of non-browsable species like *Jatropha*, *Vitex negundo*, *Gliricidia*, *maculate* etc.

**11. MEASURES ALREADY ADOPTED**

There is no biological and Structural measures exist. It is a fresh mining lease and no mining activities have been taken place so far. However as per the approved mining plan for this period from 2023-24 to 2026-27, the following measures are proposed.

**12. MEASURES TO BE ADOPTED**

Following measures are proposed to arrest sliding of excavated material:

**i) Plan for Construction of Check Dams**

After studying the drainage pattern it has been found total number of check dam required is 4 and accordingly 4 nos. of Check Dam will be constructed. During monsoon there is heavy on-rush of water as a runoff arising from up slope/higher elevation to lower elevation. Hence, attention is to be paid to reduce the flow velocity of runoff & settle the silts/sediments flown through drainage systems, haul roads inside the mine and areas cleared of vegetation. The check dam will be constructed over the drainage systems and near proposed dump area. Details of proposed Check Dams are furnished below and location of the said check dam is shown in the map. The cost norm of the above is enclosed as **Annexure-I**.

Dimensions of check dams:-

CD-1 =16mx5mx2m

CD-2 =20mx6mx3m

CD-3= 12mx4mx2m

CD-4= 6mx2mx1m

The map of the above structures is shown in Plate no.- 1.

## ii) Plan for Construction of Retaining wall

A retaining wall is a structure designed and constructed to resist the lateral pressure of soil when there is a change in ground elevation that exceeds the angle of repose of the soil. The Retaining walls are proposed for construction over 1770 mtr. Also, there is a provision for maintenance of the retaining wall for the next 4 years. The cost norm of the above is enclosed as **Annexure-II**.

**Details of Retaining wall as per approved mining plan.**

Sl.No	Year	Dump ID	Size of Retaining wall (m) L x W x H in m
1	1 <sup>st</sup> year	Temporary waste dump B	200X2X3
3	2 <sup>nd</sup> year	Temporary waste dump C	370X2X3
2	1 <sup>st</sup> year (No additional area required further)	Temporary mineral reject stack I	1200X2X3

The proposed measures narrated above are shown the **Plate no.-1**.

**NB;** Apart from the above temporary dumps and temporary mineral reject stack, it is to mention that excavation has been proposed in north side of the leased area and benches will proceed towards extreme north east direction of the ML area from the next plan period. The waste accommodated in designated waste dump-A will be utilized for backfilling purpose after exhaustion of the ore. Hence no retaining wall / toe wall etc. are propped in this scheme.

## 13.INSPECTION, MONITORING AND EVALUATION

Intensive inspection and technical guidance from concerned technical wing is required for successful implementation of the above measures. Sufficient fuel/ conveyance charges for technical experts shall be provided by the user agency for proper execution of these programmes.

## 14.EXECUTING AGENCY

The works in the present Scheme shall be executed by the User Agency i.e. M/s Tata Steel Ltd. The entire work shall be carried out in coordination with the Forest Department.

### 15.FINANCIAL FORECAST

The financial forecast of **Rs.93,60,200.00 (Rupees Ninety Three Lakhs Sixty Thousand Two Hundred) Only** for construction of Check Dam and retaining wall etc.

#### FINANCIAL FORECAST OF THE PROJECT (ML AREA=92.875 HA.)

Wage Rate Rs.450.00

Sl. No.	Description of the Work	Fund Required (in Rs.)
A.	Construction of retaining wall over 1770 m @ Rs.2491per RMT	44,09,070.00
B.	Construction of 4 nos. of check dam@ Rs.4,93,407.00/- per each	19,73,628.00
C.	De-siltation work for check dam twice in a year on LS	2,00,000.00
D.	Maintenance of retaining walls	2,00,000.00
<b>Total</b>		<b>67,82,698.00</b>
E.	15% of the total cost for motivation of VSS / People involved	10,17,405.00
	<b>Sub Total :-</b>	<b>78,00,103.00</b>
	<b>Price escalation @ 20%</b>	15,60,021.00
	<b>GRAND TOTAL</b>	<b>93,60,124.00</b> or <b>93,60,200.00</b>

**(RupeesNinety ThreeLakhs Sixty Thousand Two Hundred) only**

Countersigned.

Divisional Forest Officer  
Bonai Division

**Technically Approved**

Regional Chief Conservator of Forests  
Rourkela Circle

General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

## Annexure- I

Wage Rate- Rs.450.00

## Detail Estimate of Concrete Structure of Check Dam

Sl No	Description of Items	No	Length	Width	Height	Qty	Rate	Amount in Rs.
1	2	3	4	5	6	7	8	9
1	Earthwork in hard soil in embankment roads with in 50 mtr initial lead & 1.50 mtr initial lift including rough dressing & breaking clods to Maximum 5.00 c.m. to 7.00 c.m. & laying layers not exceeding 0.30 mtr depth as per specification approved by department along with proper compaction with H.R.R Excavation							
	Base	1	5.00	5.50	0.50	13.75		
	Wing Wall	4	2.00	0.50	0.50	2.00		
	Apron	2	3.00	5.00	0.20	6.00		
	Cut of wall	2	5.00	0.45	0.50	2.25		
						24.00	338.83	8131.90
2	Plain cement concrete (1:4:8)							
	Base	1	4.00	5.50	0.075	1.65		
	Wing Wall	4	2.00	0.50	0.08	0.30		
	Apron	2	3.00	5.00	0.08	2.25		
	Cut of wall	2	4.00	0.45	0.08	0.27		
						4.47	9842.83	43997.44
3	Cement concrete (1:2:4)							
	Below Ground Level							
	Base	1	4.00	5.50	0.40	8.80		
	Wing Wall	4	2.00	0.50	0.40	1.60		
	Apron	2	3.00	5.00	0.10	3.00		
	Cut of wall	2	4.00	0.45	0.50	1.80		
						15.20		
	Above Ground Level							
	Base	1	4.00	(2.00+5.00)/2	1.00	14.00		
	Wing Wall	4	2.00	0.40	1.00	3.20		
					Total	17.20		
				Grand Total		32.40	13619.67	441277.36
	Rate per one No Check Dam. Length=4.00 mtr Ht=1.30 mtr Slope U/S=1:1.5 D/S=1:2					Total		493406.70 Or, 493407.00

  
 General Manager  
 Ore Mines & Quarries  
 TATA STEEL LIMITED

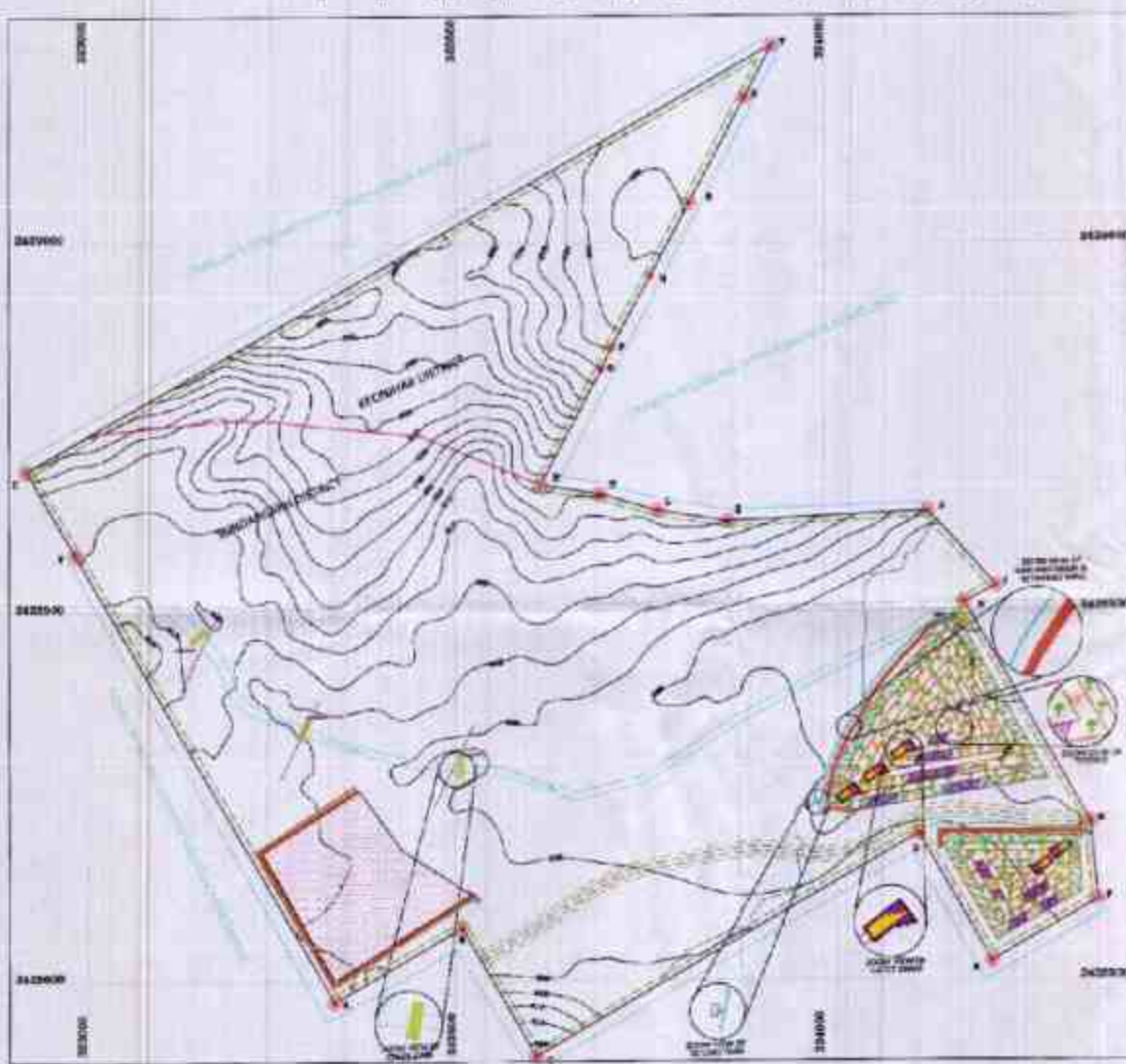
**Annexure-II****Wage Rate- Rs.450.00**

**Detail Estimate of Retaining wall of loose local Boulder with cement-Sand Patching over the surface of Boulder wall.**

Sl. No.	Description of Items	No	Length	Width	Height	Qty	Unit	Rate	Amount
1	2	3	4	5	6	7	8	9	10
For one K.M.Length									
1	Rough Stone Dry Packing with local boulder only labourcharges (Local boulder will be Supplied by our Company)	1	1000.00	(1.00+1.50)/2	1.20	1500.00	Cum		
		1	1000.00	1.50	0.30	450.00	Cum		
						1950.00	Cum	885.14	1726023.0
2	Irregular cement sand patches on the both side of the wall with 2" thick cement sand mortar(1:6) on top	1	1000.00	1.00		1000.00	Sqm		
		2	1000.00	1.20		2400.00	Sqm		
						3400.00	Sqm	225.00	765000.00
		Rate per one K.M. Length				Total			2491023.00 Or 2491023.00

**Cost for Running Meter length****2491.00**

  
 General Manager  
 Ore Mines & Quarries  
 TATA STEEL LIMITED



- KEY**
- BOUNDARY OF M.I. AREA
  - SAFETY ZONE
  - CONTOUR
  - DISTRICT BOUNDARY
  - VILLAGE BOUNDARY
  - ROAD
  - MINERAL REJECT STACK
  - OVERFLOW DUMP
  - TERRACE
  - ME PILLARS
  - REFLECTION WALL
  - GALLIUM DRAIN
  - SETTLING TANK
  - CATCH DRAIN
  - CHECK DAM
  - AGRIE PLANTATION
  - PLANTATION
  - COIR MATTING
  - COMMON BOUNDARY

**SCHEMATIC CROSS SECTIONAL VIEW**



*Handwritten signature*  
 Engineer  
 Civil & Structural  
 No. 10/10/10/10/10

PLATE NO-1  
 PLAN SHOWING THE CONSTRUCTION OF CHECK DAM,  
 RECONSTRUCTION / TAIL RAMP WALLS TO ARREST SLIDING DOWN  
 OF THE EXCAVATED MATERIAL ALONG THE CONTOUR  
 SALAMANG WEST (NORTHERN PART) BLOCK  
 WON ONE MINES OF M/S TATA STEEL LTD.  
 AREA: 42.875 Hl. SCALE: 1:4000



*Scheme  
For*

**STABILIZING THE OVERBURDEN DUMPS BY  
APPROPRIATE GRADING/BENCHING SO AS  
TO ENSURE THAT ANGLES OF REPOSE  
AT ANY GIVEN PLACE IS LESS THAN 28<sup>0</sup>**

*in compliance*

*with*

*Condition No.13 (d) of*

*Stage-I approval granted vide*

*Letter No.8-13/2022-FC, Dated.22.12.2023*

*of Govt. of India, Ministry of Environment, Forests*

*& Climate Change,*

*New Delhi,*

*for*

*Diversion of 42.608 Hects of Forest Land for U/s-2 (ii) (including 2.382  
ha. of Safety Zone) OF FC Act-1980*

*within 92.875 Ha. Iron Ore Mining Lease*

*of*

**M/S Tata Steel BSL Limited (now amalgamated into & with Tata Steel  
Limited).**

**in village Kalamang and Ghodabudhani of Koira tahsil, Sundargarh  
District and Gandhalpada village in Barbil Tahsil, Keonjhar District**

**Odisha.**

## 1. INTRODUCTION

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As per the Terms & Conditions of LOI the Applicant shall fulfil the provisions of all Acts and Rules applicable to the Project. Accordingly, M/s Tata Steel Bhushan Limited has submitted the proposal to obtain approval of the Central Govt. over 42.608 hectare of forest land including Safety Zone 2.382 Ha U/s-2 (ii), of the Forest [Conservation] Act'1980 within the above Mining Lease area.

Further, Stage-I approval over 42.608 ha of Forest Land U/s-2 (ii) (including 2.382 ha. of Safety Zone) has been granted by MoEF& CC vide their Letter No. 8-13/2022-FC, dated 22<sup>nd</sup> December 2023, wherein it has been stipulated as per **Condition No. 13 (d) for stabilization of Over burden dumps by appropriate grading/benching so as to ensure that the angle of repose at any given place is less than 28°.**

## 2. LOCATION

The mining lease area finds place in the Survey of India Topo sheet No.F45N5 (73 G/5) and situated between the latitude 21° 56' 47.75784" to 21° 57' 32.34779" N and longitude 85° 17' 06.65892" to 85° 17' 57.53148" E. The above ML area covering villages such as Kalamang, and Ghodabudhani in Koiria Range, Bonai Forest Division, Sundargarh District and Gandhalpada village of Barbil Range, Keonjhar Forest Division, Dist-Keonjhar, Odisha.

## 3. TOPOGRAPHY

The above allotted block under study is a highly rugged terrain, with elongated hills trending ENE-WSW direction, low mounds and narrow valleys. The highest elevation of ridges in the area is 690 m above MSL forming the ridge. Lowest elevation is 585 m above MSL which forms the valley floor in this block.

## 4. SOIL TYPE

The low-lying areas are filled up with alluvial soil which is ferruginous in nature and reddish brown in colour. In most of the area the soil is moderately coarse in nature whereas it is loomy in the cultivated land. Since the area is devoid of any perennial nala or river, the soil has been deposited in the valley area mostly from the low order nala or from the slope wash of the nearby hillock occupied by the iron ore group of rocks.

## 5. CLIMATE

The lease area lies in tropical region where climate is characterized by an oppressively hot summer and cool winter. Summer is typically from April to July when monthly temperature ranges from a maximum of 42 degree centigrade during day time to a minimum of 15 Degree Centigrade at night time. Winter is from November to February when the maximum temperature during daytime goes to 37 Degree Centigrade and minimum temperature at night- becomes as low as 8 Degree Centigrade. The average annual rainfall as recorded at IMD observatory at Keonjhar is 1269.1 mm

## 6. DRAINAGE

The dendritic type of drainage pattern is generally displayed by the area. Because of the hilly topography, there is only one seasonal drainage found in the western part of the area. Sunanadi is a perennial river flowing from south to north outside the area at a distance of 2 km towards south-east and it becomes west-east from Malda and debouch into river Baitarani. The drainage channel originating in the western part of the area traverses through the area towards N-E.

## 7. EXISTING VEGETATION

The forest growth available in the area resembles Northern Tropical Dry Deciduous Forest. Sal (*Shorea robusta*) is the most dominant tree with Mahul (*Madhuca indica*) Asan (*Terminalia tomentosa*), Char (*Buchanania lanjan*), Kendu (*Diospyros melanoxylon*), Barkoli, Kusum (*Schleichera oleosa*), Dimiri as common associates.

The vegetation of the applied area is composed of Sal (*Shorea robusta*), Saguam (*Tectona grandis*), Sidha (*Lagerstroemia parviflora*), Bandhan (*Ougeinia ojeinensis*), Char (*Buchanania lanjan*), Dhaura (*Anogeissus latifolia*), Asan (*Terminalia tomentosa*), Mango (*Mangifera indica*), Kendu (*Diospyros melanoxylon*), Bahada (*Terminalia bellerica*) Jamu (*Syzygium cumini*), Kusum (*Schleichera oleosa*), Mahul (*Madhuca indica*) etc. Sal (*Shorea robusta*) is the pre-dominant species.

## 8. LAND USE PATTERN

During the life of the mine, about 92.875 hectares will be utilized for mining, Minerals processing, Road, and green belt plantation in Safety Zone area etc. The details of land use pattern will be as follows:

Sl.No	District Name	Forest land in Ha	Non forest land in Ha	Total land in Ha
1	Keonjhar	16.658	0	16.658
2	Sundargarh	25.95	50.267	76.217
Total in Ha		42.608	50.267	92.875

**Item wise Proposed Land Use Pattern in Forest and Non-Forest Land of Total Lease**  
**FDP Area**

Sl. No	Type of Land Use	Forest Land in Ha.	Non- Forest Land in Ha.	Grand Total in Ha.
1	Area under excavation including the backfilled area	36.458	38.919	75.377
2	Overburden/Waste Dumping	2.109	4.962	7.071
3	Topsoil Stacking	0.228	0.615	0.843
4	Mineral Reject stack	0.032	1.410	1.442
5	Green Belt in the south beyond the UPL	1.399	2.771	4.170
6	7.5 meter along the inner side of ML boundary	2.382	1.590	3.972
<b>Total</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

**9. REASONS FOR FAILURE OF DUMPS**

- Slope failure
- Toe failure
- Base failure

Hence the above aspects need to be addressed so as to ensure stabilization of over burden dumps.

**10. OBJECTIVE OF THE SCHEME:**

The objectives of the proposed scheme are as follows:

- To propose measures for stabilization of OB dumps by way of grading/benching as prescribed in the approved mining plan.
- To ensure that angle of repose at any place is less than 28°.
- The prescription in the mining plan for terracing and benching are to be adhered to.

**11. BRIEF DESCRIPTION ON OB DUMP/WASTE DUMP ETC.**

As per the approved mining plan there is no existing dump in the lease area as this is a fresh mining lease. However, it has been estimated that 1458980 CuM waste will be generated during current 5 year plan. Out of total generated waste a volume of 112241 CuM will be utilised for road making, 675824 CuM will be used for backfilling. Remaining waste i.e. 670915 CuM will be accommodate over the Proposed Temporary Dump A, B & C over an area of 7.971ha within the grid location 2428054 N to 2429248 N, 324006 E to 324343 E. The details of the waste dump are as follows.

Sl. No	Year	Dump ID	Proposed area in ha	Total dump quantity in m <sup>3</sup>	Location	
1	1 <sup>st</sup> Year	Temporary Waste dump A & B	Dump A - 0.9674 Dump B - 1.8260	330412	2428982N to 2429248N 323687E to 323910	2428229N to 2428488N 324006E to 324303E
2	2 <sup>nd</sup> Year	Temporary Waste dump A & C	Dump A - 1.1077 Dump C - 5.0377	203246	2428982N to 2429248N 323687E to 323910	2428054N to 2428197N 324158E to 324343E
3	3 <sup>rd</sup> year	Temporary Waste dump C	0	137257	2428054N to 2428197N 324158E to 324343E	
Total			7.971			

Area of Dump-A-1.1077 Ha., Dump-B-1.8260 Ha. & Dump-C-5.0377 Ha.

**N.B.**-However, in the conceptual period the waste will be accommodate over an area of 7.071 ha. As per the approved mining plan.

## 12. PHASE WISE MINING ACTIVITY AND MANAGEMENT OF OVERBURDEN DUMP

Taking into consideration the topography of the deposit, estimated reserve and grade, disposition of ore body, nature of intercalated waste, incidence of iron ore, capital available and production requirement, the deposits will be mined by fully mechanized method with the deployment of major earth moving machines like blast hole drill, hydraulic shovel, dumpers, dozers etc on three shift basis.

### a. Waste Generation

In the approved mining plan period 1458980 Cum. waste will be generated. These waste will be accommodated over new temporary proposed waste dumps and also used for backfilling. In the first year of the plan period, part of the waste will be used for making of roads and part of it will be accommodated in the proposed waste dump A & B. In the second year, part of the waste is proposed to be accommodated in waste dump A & C while part of it will be used for backfilling. In the third year of the plan period, part of the waste will be utilized for backfilling and part of it will be dumped on Dump C. In fourth and fifth year of the plan period, the total waste generated will be used for backfilling. However, in the conceptual period all the generated waste will be utilised for backfilling purpose.

### **The salient features of OB / waste dump management practices**

Retaining wall and garland drain would be provided around the proposed dumps. Precautionary measures to be adopted during waste disposal are as follows: -

- i) The ultimate dump slope to be maintained around  $26^{\circ}$  with individual terraces slope not exceeding  $37^{\circ}$
- ii) Individual terrace height will be maintained at 10 m
- iii) Each terrace will have inward slope with catch drains at the inwards side of the terrace.
- iv) The catch drains of the individual terrace will be connected to the garland drain outside the periphery of the dump.
- v) These catch drains will have half concrete open pipes followed by 2 nos of settling tanks to avoid wash offs.
- vi) Each terrace will have a provision of berms at the outer end to reduce gully formation due to rain water wash offs.
- vii) The retaining wall will be made to arrest the waste dump materials for consolidation. The retaining wall constructed during the plan period will cater to the requirement of the entire plan period
- viii) Planting of vetiver grass/lemon grass with provision of coir matting will be provided in the dump slopes, which will hold the materials in its fibrous and spread over roots to protect wash off in the rainy seasons.
- ix)

### **13. THE OBJECTIVES OF THE PROPOSED PLAN / SCHEME**

The objectives of the proposed Schemes are as follows:

- i) To fulfil the stipulation, i.e., Condition No. 13 (d) imposed in the Stage-I approval granted vide Letter No. 8-13/2022-FC, Dated. 22.12.2023 of MoEF&CC to prepare plan for **Stabilization of Over burden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that the angle of repose at any given place is less than  $28^{\circ}$**
- ii) To adopt proper Management and scheduling of overburden materials so as to minimize external dumping.
- iii) To provide methodologies and implement the proposed works in time bound manner to prevent slope failures thereby providing stable OB dump slopes.
- iv) To stabilize the over burden dumps by plantation.
- v) To prevent overflow of eroded soil from the fines, OB dump areas which lead to siltation in the streams.

### **14. MEASURES ALREADY ADOPTED**

There is no biological and Structural measures existing. It is a fresh mining lease and no mining activities have been taken place so far.

### **15. PROPOSED METHODOLOGY**

Due to the geological feature of the mining lease area, the dumps would be higher than the adjoining ground level. Top soils from the slopes of the dump are likely to flow during heavy rains and disturb the topography of its adjoining land, till the dump surface is completely stabilized by biological means. In order to curb this situation, retaining walls of three meter height (1770 mtr length as per approved mining plan) have been planned along the peripheral contour of the dumps to arrest the possible

material running down on the slopes. Waste dumping has been planned in such a manner that backfilling can be done with a view to reclaim the degraded land.

The methods to be adopted for stabilization of OB dumps are as follows:

**a. Structural measures**

- Terracing of slopes, plugging of gullies by construction of catch drain.
- Construction of Garland drains, Catch drains, retaining walls, Check Dam, Settling tank, loose boulder structure etc. at appropriate places.

To give an ideal shape to the dump, appropriate slope has to be maintained for which terraces to be made in dumps to maintain the slope. The angle of repose of the terrace would be around 28°. Backfilled areas would be biologically reclaimed. Terraces would be developed having maximum height of 10m in dumps keeping in view the gradual progress of dump and area available for minimum utilisation of virgin land.

Details of Dumps given below.

Dump ID	Av. Height (m)	Terrace height in Mtr	Av. slope of terrace	Overall slope angle
Dump A	30	10	37 degrees	26 degrees
Dump B	30	10	37 degrees	
Dump C	40	10	37 edegrees	

**b. Biological Measures**

**i) Plantation on OB dumps**

Soil erosion is moderate since the forest canopy is having density of more than 0.5, and hence it needs protection from soil getting further eroded by drips and the natural binding of the soil due to the root system.

It is also proposed to plant Agave Plants in degraded and poor soils along the slope & toe of plantations over a length of 1000 running meter for controlling soil erosion. Details of proposed plantation & Agave plantation is provided in the map.

The cost norm of Agave Plantation has been provided in **Annexure -I**

**ii) Terracing of OB Dump Slope**

It is proposed to construct berm & terraces over a length of **1876 m** (Appx). on the proposed Dumps considering the volume of OB materials & the area earmarked for dumping. The slope of individual terrace should be within the permissible range considering the angle of repose of the soil and space available, thereby maintaining the angle of repose at less than 28°. The terracing will be done through the internal resources by deploying the operating mining equipment. All these operations will be carried out after sufficient deposition of OB. When OB dump will partially mature, the work will be executed. The cost norm of Terrace Development has been provided in **Annexure-II**.

### **iii) Plan for Construction of catch drain**

A pyramid structure catch drain has been proposed to stream-line the flow of surface runoff from the dump to the foot of the dump, and stair of the catch drain will be placed inward to restrict flow of water. Catch drain is preferably made up of half concrete with number of stairs to reduce gully formation due to rain water wash off, so that runoff water will flow through each terrace of the dump & connect to the catch drain, the water of which goes through catch drain via settling pit to the garland drain. The catch drain will be constructed after the proposed dump height exceeds 26 m. 2nos of catch drain have been proposed. The cost norm of Catch Drain has been provided in **Annexure –III**.

The details of the above are shown in Plate No. I

## **16. INSPECTION, MONITORING AND EVALUATION**

For successful implementation of the above works under the present Scheme, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/ conveyance charges for technical experts shall be provided by the user agency for proper execution of these programmes.

## **17. EXECUTING AGENCY**

The works in the present Scheme shall be executed by the User Agency having specialized departments headed by qualified persons with outsourced man and machinery. To facilitate this, the user agency shall establish its own executing and supervision cells along with required infrastructural facilities. In order to maintain the quality of work, in-house supervision through competent personnel shall be provided. The entire work shall be carried out in co-ordination with the Forest Department.

## 18. FINANCIAL FORECAST

The financial forecast of **Rs.48,70,100.00 (Rupees Forty Eight Lakh Seventy Thousand One Hundred) Only** for Stabilization of over burden Dumps to arrest sliding down of the excavated material along the contour by means of, Plantation, Construction of Catch Drain, Terracing etc.

### FINANCIAL FORECAST OF THE PROJECT (ML AREA=92.875 HA.)

**Wage Rate Rs.450.00**

Sl. No.	Description of the Work	Fund Required (in Rs.)
<b>1.</b>	<b>Biological Measures</b>	
A.	Agave Plantation at the toe of dump over a length of 1000m. @ Rs.7,61,126.00/- for 1000 RMT	7,61,126.00
	<b>Total (1)</b>	<b>7,61,126.00</b>
<b>2.</b>	<b>Structural Measures</b>	
C.	Terracing of OB dump over a length of 1876 mtr (Appx) @ Rs.1065/- per RMT	19,97,940.00
D.	Construction of 2 nos. of catch drain (26 m. at dump slope) @ Rs.3,84,977.00/- per each	7,69,954.00
	<b>Total (2)</b>	<b>27,67,894.00</b>
	<b>Total (1+2)</b>	<b>35,29,020.00</b>
E.	15% of the total cost for motivation of VSS / People involved	5,29,353.00
	<b>Sub Total :-</b>	<b>40,58,373.00</b>
	<b>Price escalation @ 20%</b>	<b>8,11,675.00</b>
	<b>GRAND TOTAL</b>	<b>48,70,048.00</b>
		<b>or</b>
		<b>48,70,100.00</b>

**N.B: Water provision ensured by User Agency.**

**(Rupees Forty Eight Lakh Seventy Thousand One Hundred) only**

**COUNTERSIGNED**

Divisional Forest Officer  
Borabari Division

General Manager  
Ore Mines & Quaternary  
TATA STEEL LIMITED

**Technically Approved**


Regional Chief Conservator of Forests  
Rourkela Circle

**ANNEXURE-II**

**COST NORM FOR AGAVE PLANTATION (FOR 5 ROWS & 40 MTRS)**

**Wage Rate : ₹450/day.**

Sl. No.	Name of the work	Man-day	Labour cost (₹)	Material	Total
<b>FIRST YEAR OPERATION</b>					
1	Site clearance alignment and stocking	2	900.00	-	900.00
2	Cost of lime materials including transportation	0	-	494.00	494.00
3	Digging pits and application of lime	6	2700	-	2700.00
4	Cost of 200 Ac. (sucker) including transportation	-	-	2,483.00	2,483.00
5	Carriage and planting	2	900.00	-	900.00
6	Soil working and application of fertilizers (twice) and lime	8	3600.00	-	3600.00
7	Cost of fertilizer	-	-	554.00	554.00
8	Contingency	-	-	554.00	554.00
	<b>Total:-</b>	<b>18</b>	<b>8100.00</b>	<b>4085.00</b>	<b>12180.00</b>
<b>SECOND YEAR OPERATION</b>					
1	Casualty replacement (30%) including cost of suckers and pitting	2	900.00	494.00	1394.00
2	Weeding and application of fertilizer and lime	6	2700.00	-	2700.00
3	Cost of fertilizer insecticides & lime	-	-	374.00	374.00
	<b>Total:-</b>	<b>8</b>	<b>3600.00</b>	<b>868.00</b>	<b>4468.00</b>
<b>THIRD YEAR OPERATION</b>					
1	Weeding, soil working and application of fertilizers	6	2700.00	-	2700.00
2	Cost of fertilizer and insecticides	-	-	374.00	374.00
3	Plant protection measures including material cost	-	-	374.00	374.00
	<b>Total:-</b>	<b>6</b>	<b>2700.00</b>	<b>748</b>	<b>3448.00</b>
<b>FORTH YEAR OPERATION</b>					
1	Weeding, cleaning, soil working and application of fertilizers	6	2700.00	-	2700.00
2	Cost of fertilizer and insecticides	-	-	374.00	374.00
3	Plant protection measures including material cost	-	-	374.00	374.00
	<b>Total:-</b>	<b>6</b>	<b>2700.00</b>	<b>748</b>	<b>3448.00</b>
<b>FIFTH YEAR OPERATION</b>					
1	Weeding, cleaning, soil working and application of fertilizers	6	2700.00	-	2700.00
2	Cost of fertilizer and insecticides	-	-	374.00	374.00
3	Plant protection measures including material cost	-	-	374.00	374.00
	<b>Total:-</b>	<b>6</b>	<b>2700.00</b>	<b>748</b>	<b>3448.00</b>
<b>SIXTH YEAR OPERATION</b>					
1	Weeding, cleaning, soil working and application of fertilizers	6	2700.00	-	2700.00
2	Cost of fertilizer and insecticides	-	-	374.00	374.00
3	Plant protection measures including material cost	-	-	374.00	374.00
	<b>Total:-</b>	<b>6</b>	<b>2700.00</b>	<b>748</b>	<b>3448.00</b>
	<b>G.Total</b>	<b>50</b>	<b>22500.00</b>	<b>7945.00</b>	<b>30445.00</b>
Cost norm for Agave fencing with five rows 01 km for 6 year:		<b>30445</b> <b>40</b>	<b>x 1000 =</b>	<b>7,61,126.00</b>	

  
 General Manager  
 Ore Mines & Quarries  
 TATA STEEL LIMITED

Annexure-II

Wage Rate-Rs.450.00

TERRACING OF THE DUMP SLOPE

**Engagement of HEMM on the O/B dump slope for terracing**

Location – Over Burden Dump

Work efficiency per hour – 3.38 running metre on the dump.

Width & height of the terrace – 5 m. & 5 m.

Rate for engagement of HEMM – Rs.3600.00/hr. i.e. Rs.3600.00/3.38 running meter i.e.

Rate X running metre = Rs.1065.08/-

Therefore, terracing to be done over a length of RM is Rs.1065/-

  
General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

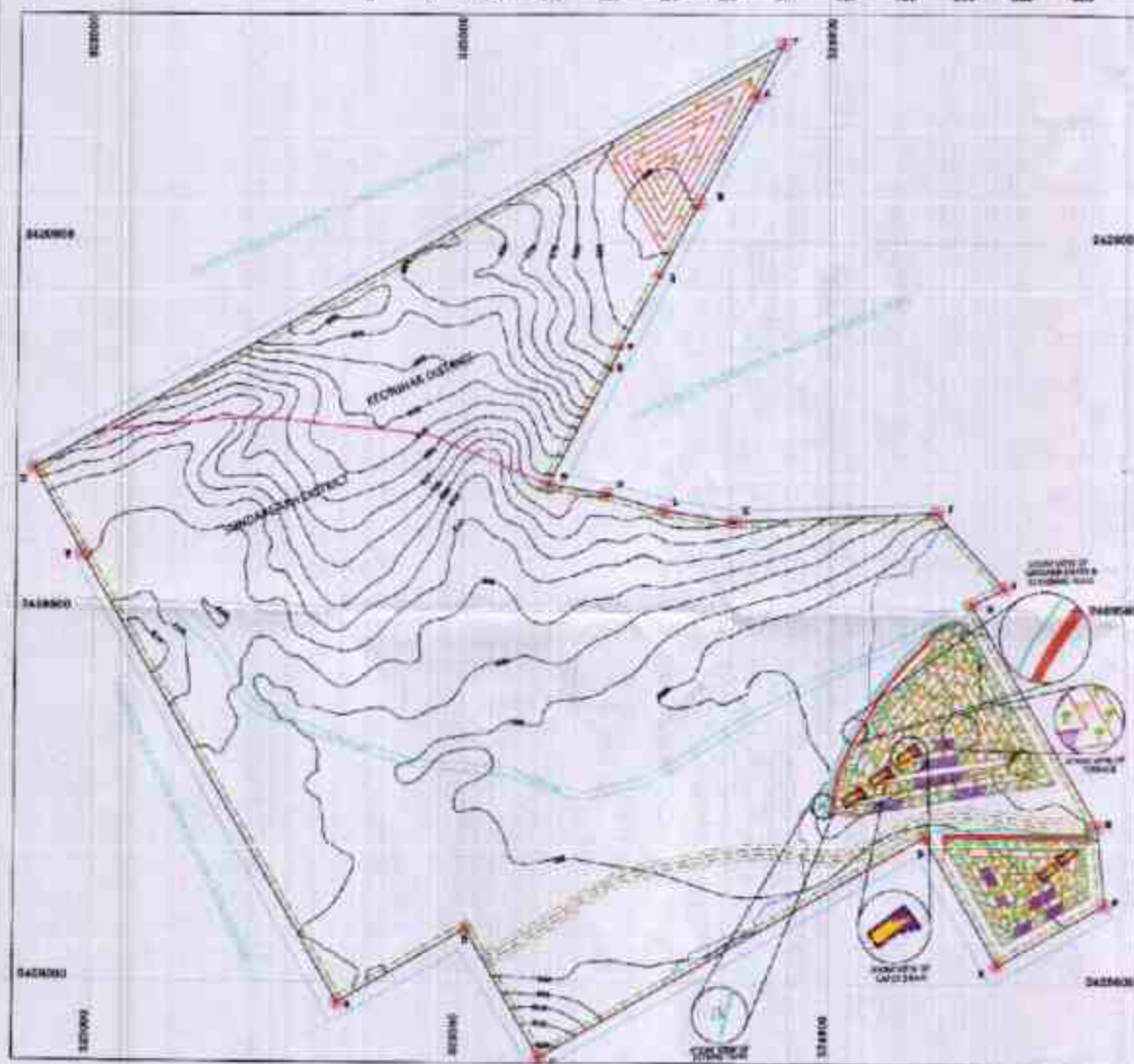
Annexure -III

Wage Rate-Rs.450.00

Details & Estimate for Construction of Catch Drain (26.00 Mtr.) at Dump Slope

Sl. No	Description of Items	No.	Length	Width	Height	Qty	Unit	Rate	Amount
1	Earth work excavation in F&P								
	Foundation								
	Side wall both sides	2	29.000	0.400	0.400	9.280	Cum		
	Between wall	1	29.000	3.000	0.300	26.100	Cum		
	<b>Total</b>					<b>35.380</b>	<b>Cum</b>	338.83	11987.78
2	Sand Filling	1.00	29.00	3.80	0.05	5.510	Cum	2205.00	12149.55
3	R R Stone Masonry with Local Boulder								
	Foundation								
	Side wall both sides	2	29.000	0.400	0.60	13.920	Cum	5031.42	70037.39
4	Rough stone Dry packing with top layer grouting								
	Floor	1	29.000	3.000		87.000	Sqm	611.99	53243.74
	<b>Total=</b>					<b>100.920</b>	<b>Cum</b>		
5	Earth Filling								
	Back filling (1/3rd of earth work)					11.793	Cum		
	<b>Total=</b>					<b>11.793</b>	<b>Cum</b>	143.99	1698.04
6	20mm thick plastering in C.M (1:6)								
	Both sides wall	4	29.000	0.600		69.600	Sqm		
	Top	2	29.000	0.400		23.200	Sqm		
	<b>Plastering work Total</b>					<b>92.800</b>	<b>Sqm</b>	408.12	37873.47
7	C.C.work(1:2:4)								
	Wall	2.00	29.00	0.40	0.10	2.320	Cum		
	Floor	1	29.000	3.000	0.100	8.700	Cum		
	<b>Total</b>					<b>11.02</b>	<b>Cum</b>	13409.53	147772.98
	<b>Total</b>								334762.95
	<b>Add 15% for Critical Area</b>								50214.44
	<b>Grand Total</b>								<b>384977.39</b>
									Or
									<b>384977.00</b>

  
 General Manager  
 Ore Mines & Quarries  
 TATA STEEL LIMITED



- KEY**
- BOUNDARY OF M.L. AREA
  - SAFETY ZONE
  - 475' CONTOUR
  - DISTRICT BOUNDARY
  - VILLAGE BOUNDARY
  - ROAD
  - OVERBURDEN DUMP
  - TERRACE
  - M.L. PILLARS
  - RETAINING WALL
  - CANAL DRAIN
  - SITING TANK
  - CATCH DRAIN
  - AGAVE PLANTATION
  - PLANTATION
  - COIR MATTING
  - SOWING OF SEEDS
  - COMMON BOUNDARY

**SCHEMATIC CROSS SECTIONAL VIEW**



Dr. J. S. Srinivasan  
Dr. J. S. Srinivasan  
Dr. J. S. Srinivasan

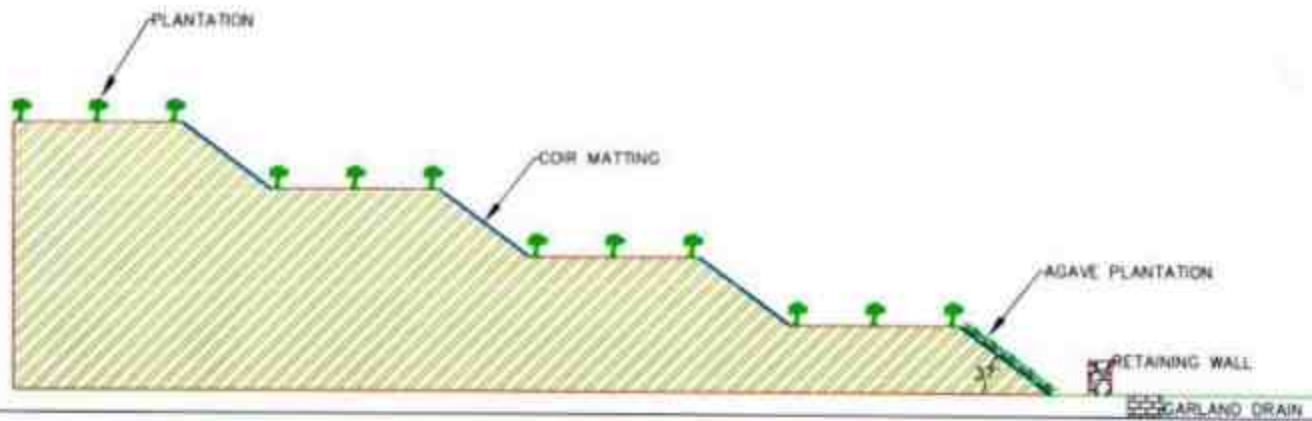
PLAN SHOWING TO STABILIZE THE OVERBURDEN DUMPS BY APPROPRIATE GRADING/ BENCHING, SO AS TO ENSURE THE ANGLES OF REPOSE AT ANY GIVEN PLACE IS LESS THAN 28°

KOLAMANG WEST (NORTHERN PART) BLOCK  
IRON ORE MINES OF M/S TATA STEEL LTD.

M.L. AREA-92.873 Ha.

SCALE-1:1000

# SECTIONAL VIEW OF OB DUMP



  
General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

COUNTERSIGNED

  
Divisional Forest Officer  
Bhilai Division

# **SCHEME FOR**

**FENCING, PROTECTION AND REGENERATION**

**OF THE SAFETY ZONE OVER 3.972 HA.**

**(FOREST-2.382 HA. (+) NON-FOREST-1.59 HA.)**

**ALL ALONG THE INNER BOUNDARY OF THE**

**ML AREA OF 92.875 HA.**

**FOR KALMANG WEST (NORTHERN PART) IRON**

**ORE BLOCK**

**OF**

**M/S TATA STEEL LTD.**

**COMING UNDER**

**BONAI & KEONJHAR FOREST DIVISION**

**SCHEME FOR FENCING, PROTECTION AND REGENERATION OF THE  
SAFETY ZONE OVER 3.792 HA. (FOREST-2.382 HA. (+) NON-FOREST-1.590  
HA.) ALL ALONG THE INNER BOUNDARY OF THE ML AREA OF 92.875 HA.  
FOR KALMANG WEST (NORTHERN PART) IRON ORE BLOCK OF  
M/S TATA STEEL LTD.**

**COMING UNDER BONAI & KEONJHAR FOREST DIVISION**

**1. INTRODUCTION:**

Ministry of Environment, Forest and Climate Change, Govt. of India granted Stage-I approval vide Letter No.8-13/2022-FC dt.22.12.2023 for diversion of 42.608 ha. of forest land (25.950 ha. in Bonai Forest Division & 16.658 ha. in Keonjhar Forest Division) including 2.382 ha. of Safety Zone forest area in favour of M/s TATA Steel Ltd. within Kalmang West (Northern Part) Iron Ore Block area in Bonai & Keonjhar Forest Division, subject to some conditions. As per condition No.14 of the Stage-I approval order, the fencing, protection and regeneration of the Safety Zone area shall be done at the project cost. The total Safety zone area with a width of 7.5 mtrs along ML boundary comes to 3.792 ha. (Forest-2.382 ha. (+) Non-forest-1.590 ha.). The location of the Safety zone area has shown in the map enclosed as **Annexure-V**.

**2. LOCATION :**

The mining lease area is covered in the Survey of India Toposheet No.F45N5 (73 G/5) and situated between the latitude 21° 56' 50.083" to 21° 57' 09.619" N, and longitude 85° 17' 21.453" to 85° 17' 09.019" E.

**3. TOPOGRAPHY AND SOIL:**

The above allotted block under study is a highly rugged terrain, with elongated hills trending ENE-WSW direction, low mounds and narrow valleys. The highest elevation of ridges in the area is 690 m above MSL forming the ridge. Lowest elevation is 585 m above MSL which forms the valley floor in this block

**4. CLIMATE**

The area experiences Sub-tropical climate. It is characterized by very hot summer and cool winter. Maximum temperature during summer rises upto 44° Celsius and the minimum goes down to 8° Celsius. The area gets rain from South-East Monsoon, which breaks during second fortnight of June and continues upto last week of September. The annual rainfall varies from 780 to 1880mm. The annual average rainfall is 1500mm. The bulk of precipitation occurs during July-August. During April-May, occasional rainfall occurs along with thunder storm.

**5. EXISTING VEGETATION.**

The crop composition of the Safety Zone area is Sal, Kendu, Mahul, Char, Asan, Karanja and Misc. etc.

## **6.OBJECTIVES OF THE SCHEME:**

The objectives of the proposed scheme are as mentioned under :-

- i) To restock the degraded forest land within the Safety Zone by planting suitable species.
- ii) To improve the micro-edaphic conditions by undertaking suitable soil and moisture conservation measures.
- iv) To protect the area against encroachment, illicit felling, fire occurrence, grazing etc., so as to check further degradation of the area.

## **7. PROPOSED TECHNIQUE:**

To achieve the above aims and objectives, basing on field survey it has been proposed to take up AR plantation over 3.972 ha. @ 1600 / ha. at a spacing of 2.5 mtr X 2.5 mtr., in the safety zone of the lease hold area of M/s TATA Steel Ltd. under Bonai & Keonjhar Forest Division. The Plantation work will be done in the 1<sup>st</sup> year followed by maintenance during 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> year. The detailed expenditure statement of AR Plantation is enclosed as **Annexure-I.**

### **(A) Survey & Demarcation.**

The M.L. area has been surveyed and demarcated in the field by the User Agency at their cost by erecting 4 feet high reinforced cement concrete pillars inscribed with its serial number, forward and back bearing and distance from pillar to pillar after due consultation with the concerned Range Officers. The length of outer periphery of Safety Zone area is 5199.706 mt. The inner perimeter comes to 5115.026 mt. The total perimeter, i.e., outer perimeter and inner perimeter comes to 10314.732 MT (5199.706 mt. + 5115.026 mt.).

### **(B). REGENERATION, CLEANING AND TENDING OPERATION:**

The operation aims at tending the existing crop silviculturally for better growth. It involves removal of inferior and diseased tree growth. During this operation, weeds, climber and other unwanted & species which interferes with the growth of the existing crop are to be cut. This operation helps saplings to grow better and faster. The site clearance is to be done by cutting and removing of Eupatorium and all other unwanted growth.

Detailed activities to be taken up are as discussed below.

- i) Cutting back of individual inferior poles interfering with the growth of better ones.
- ii) Cutting back of malformed and diseased individuals.
- iii) Singling of coppice shoots & retaining healthier ones.
- iv) Cutting of climbers.
- v) Cutting back of high live stumps flush to the ground.
- vi) Pruning the branches of the promising poles up to hand reach height.

During 0<sup>th</sup> year operation, climber cutting, high stump cutting and cutting back of malformed and diseased plants will be done. Followed by next three years, i.e., (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> year), cutting back of unwanted individuals and singling of economically important species will be done.

**(C) Plantation.**

The safety zone area will be planted with the species mentioned below over 3.972 ha. by AR Plantation @ 1600 seedlings per ha. at a spacing of 2.5 mtr X 2.5 mtr. has been proposed. So, 6355 nos. of seedlings will be required for AR plantation @ 1600 plants per hectare. As far as possible, species suitable for the site shall be planted as detailed below:

1. *Pongamia pinnata* (Karanja).
  2. *Ficus religiosa* (Jari)
  3. *Psidium guajava* (Guava).
  4. *Azadirachta indica* (Neem).
  5. *Syzizium cumuni* (Jamun).
  6. *Mangifera indica* (Mango).
  7. *Artocarpus heterophyllus* (Panas).
  8. *Ficus bengalensis* (Bara).
  9. *Aegle marmelos* (Bela).
- and other indigenous species.

The following items of work will be taken up for planting the area.

**(i) Raising of Nursery :-**

Seedlings required for plantation shall be raised in a temporary nursery nearer to the planting site and water sources. Nursery work will be started 18 months prior to the year of plantation so that quality seedling stock will be available for plantation. The seedlings shall be raised 10% extra besides the actual requirement to compensate the casualties. Seedlings will be raised in polythene bags of 9" x 5" size following standard nursery practice.

**(ii) Site Clearance:**

The miscellaneous unwanted growth in the Safety Zone area will be cleared before taking up pitting work.

**iii) Alignment and pitting.**

Alignment and pitting will be taken up in March-April. Pits of size 45 cm x 45 cm x 45 cm will be dug, maintaining a spacing of 2.5 mtr. X 2.5 mtr. in the safety zone area.

**iv) Actual planting.**

The seedlings will be planted @ 1800 seedlings per ha. in the dug out pits of size 45cm x 45cm x 45cm with a spacing of 2.5mtr x 2.5mtr. Plantation shall be taken up after first regular shower of monsoon and completed by the end of July. Species will be planted as per suitability of the soil condition. NPK/ Bio fertilizer @50gms per plant shall be applied as basal dosage. Anti-termite insecticide shall also be applied to each pit while planting. Casualties if any noticed shall be replaced with the excess seedlings raised for the purpose. During second year also, casualty replacement will be done for which seedlings shall be raised.

**v) Weeding, Soil working and Manuring.**

For establishment and better growth of the planted seedlings, timely weeding, soil working and manuring are necessary. It is proposed to carry out two weeding, soil working and manuring during the first year and second year of plantation and one weeding and soil working during third year. During first year and second year, first weeding and manuring shall be carried out during August-September and the second one during October-November along with soil working. First weeding shall be around the plants and the second will be of strip weeding. The weeding of third year will be around the plants, which will be carried out during August.

After each weeding, soil working will be done around each plant at a radius of 0.5mtr, and manuring of each plant will be done @50grms of NPK/ Bio fertilizer per plant in ring form.

**(vi) Application of Insecticides.**

After planting of good healthy seedlings, the plantation site may cause influx of insects, which usually eat and damage the tender leaves and shoots of the plants. To get rid of such insect attack, application of insecticides will be taken up in required doses at desired intervals. Spraying of insecticides shall be done preferably in a sunny day in the forenoon as per requirement.

**(vii) Fire line tracing and maintenance.**

Fire causes heavy loss to the forest & plantation during fire season. To prevent incidence of fire, the area shall be divided in to suitable blocks by tracing fire lines. Boundaries of the plantation patches and these block lines will be scrapped of the growth to a width of 2.0mtr during February-March and the cut back materials and the dry leaves stacked along these lines will be burnt under strict supervision. This operation shall be carried out for three years.

**(D) Soil Conservation Measures.**

The site selected for Safety Zone Afforestation is undulating, and gullies have been formed due to erosion. So, Soil Conservation Measures like Staggered Trench, Percolation Pit, Contour Trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub surface Dyke and WHS as per site requirement have been proposed in the area Safety Zone area of 3.972 ha. The cost norm of SMC is enclosed as **Annexure-II**.

**(E) Fencing.**

To protect the AR plantation from biotic interference, Barbed wire fencing is proposed over the Safety Zone area of 3.972 ha. The length of outer periphery of Safety Zone area is 5199.706 mt. The inner perimeter comes to 5115.026 mt. The total perimeter, i.e., outer perimeter and inner perimeter comes to 10314.732 MT (5199.706 mt. + 5115.026 mt.) are required to be fenced with Barbed wire fencing.

The cost norm of Barbed wire fencing is enclosed as **Annexure-IV**

**(F) Protection.**

The Safety Zone area is exposed to biotic interference. The User Agency shall deploy 3 nos. of special watchers for protection of the Plantation under the supervision of the Forest Department.

**(G). WATERING :**

Watering of the plantation will be carried out aided by solar system with Borewell (1 system for 5 ha. plantation) fitted with Drip system. The cost norm is furnished as **Annexure-III**.

**(H) Motivation of People from adjoining villages:**

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e. Kalmang, Ghodabudani of Bonai Forest Division and village Gandhalpada of Keonjhar Forest Division are to be involved in protection and management of plantation. Before execution of the work, a meeting will be conducted in the above villages and resolution regarding support to plantation activities will be made. To motivate the people in this direction, they will be provided with incentives in shape of different community articles, buildings, and different community amenities of fixed and movable type through entry point activities (EPA). Health camps shall also be organized in the villages. Thus, 10% of the plantation cost has been earmarked for expenditure on this score.

**(I) Executing Agency:**

The User Agency shall execute the work under the supervision of the State Forest Department.

**FINANCIAL FORECAST**

For implementation of all the prescriptions outlined above ₹ 1,98,33,600/- (Rupees One Crore Ninety Eight Lakhs Thirty Three Thousand Six Hundred only) will be required as detailed below.

<b><u>Works to be executed by the User Agency.</u></b>			
1.	AR Plantation @1600 plants per hectare over 3.972 ha. @ ₹3,58,998/- per ha.	₹	14,25,940.00
3.	Soil conservation measures structures like staggered trench, percolation pit, contour trench, graded earthen bund, LBCD, wire mesh, LBCD, Sub surface Dyke and Water Harvesting structures = 3.972 ha X ₹41,248/-.	₹	1,63,837.00
4.	Water provision to plantation: Solar system with Bore well (1 system for 5 Ha. Plantation) fitted with Drip system @ ₹2,57,751/- X 1 nos.	₹	2,57,751.00
5.	Special plantation watcher 3 Nos. (3 x 13500 x 12 x 10 years).	₹	48,60,000.00
6.	Cost of Barbed wire Fencing over 10314.732 RMT (Outer periphery-5199.706 Rmt. (+) Inner Periphery-5115.026 Rmt), (Or, 10315 RMT = 10.315 Km) @1073/- per RMT with 3 years maintenance of 3 years (3 <sup>rd</sup> , 6 <sup>th</sup> & 9 <sup>th</sup> ) year.	₹	1,10,67,995.00
7.	3 nos. of fire blower (₹60,000/- x 3 nos.) with POL (₹5,000/- x 5 years x 3 nos.).	₹	2,55,000.00
	<b>Total :-</b>	₹	<b>1,80,30,523.00</b>
8.	Entry Point Activities 10% of the cost	₹	18,03,052.00
	<b>Total :-</b>	₹	<b>1,98,33,575.00</b>
			<b>Or</b>
		₹	<b>1,98,33,600.00</b>

(Rupees One Crore Ninety Eight Lakhs Thirty Three Thousand Six Hundred only).

**Technically Approved**

**Regional Chief Conservator of Forests  
Rourkela Circle**

**Divisional Forest Officer,  
Bonai Division.**

## ANNEXURE-I

## ANNEXURE-5

RATE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1800 PLANTS PER HECTARE (18 months old seedling)						
WAGE RATE Rs. 211/- PER MANDAY						
Sl. No	Items of work	Pre-estable Period of Execution	No of Mandays	Labour Cost (in Rs.)	Material Cost (in Rs.)	Total cost (in Rs.)
1	2	3	4	5	6	7
8th Year (Advance work) Pre-Planting Operation						
1	Survey, Demarcation and Pillar posting	Nov/Dec	2	622	0	622
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311	100	411
3	Site preparation (Clearing & removal of debris)	Nov/Dec	12	2532	0	2532
4	Creation of 4.00 m wide inspection Path	Feb/Mar	3	633	0	633
5	Alignment and staking	Feb/Mar	2	622	0	622
6	Digging of pits (45 cm x 45 cm x 45 cm) in hard and gravelly soil	Feb/Mar	64	19904	0	19904
7	Construction of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Jun/Mar	9	0	2500	2500
Total			92	22509	2600	24109
9th Year/Planting Year						
1	Refilling of pits by altering the dug-out soil of the pits, application of Organic components/COM/ FYM & mixing the same properly.	Jun/Jul	12	2532	0	2532
2	Transportation of 18 months old polyprop seedlings in Road truck/tractor from the nurseries/Mega nurseries to planting site including Loading & unloading. (Average load of 10 Hkm) & Staking the seedling @ Rs.4/- per seedling (1700 nos.)	Jul/Aug	0	0	10500	10500
3	Watering the polyprop seedlings at planting site	Jul/Aug	3	633	0	633
4	Overwatering of polyprop seedlings in a head land from the existing site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after covering the soil with other applied materials & peening the soil properly around the planted seedlings.	Jul/Aug	36	11196	0	11196
5	Cost of Fertilizer & Insecticide (a) NPK/Bio-fertilizer @ 30 gms/plant as basal dose = 80 kg @ Rs.30/- per kg = Rs. 2400.00 (b) Vermicompost/Mo. Khat/any other fertilizer in two subsequent doses @ Rs. 1200.00 (c) Insecticide/ Bio-pesticide @ 5 gms/plant = 10 kg @ Rs.150/- per kg = Rs. 1500.00	Jul/Aug	0	0	4800	4800

BASE COST-NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1600 PLANTS PER HECTARE (10 months old seedling)						
WAGE RATE @ 311/- PER MAN/DAY						
Sl. No	Name of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
6	Casualty replacement @ 10% (160 nos)	Jan/Feb	4	1244	0	1244
7	1st weeding & Manuring	Aug/Sep	15	4665		4665
8	2nd Weeding, Soil working (1m. diameter around the plants) and Manuring	Oct/Nov	20	6220	0	6220
9	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
10	Watch & Ward including watering as per requirement	Aug-Mar	12	3732	0	3732
Total			106	32655	23360	56015
2nd Year Maintenance						
1	Transportation of 160 seedlings from Nursery to plantation site including loading, unloading & coverage by Tractor @ Rs.8/- per seedlings	Jul	8	0	960	960
2	Casualty replacement: 10%	Jul	4	1244	0	1244
3	Cost of Fertilizer & Insecticide: A) Cost of Insecticide/ Bio-pesticide @ 5 gms/plant = 0.2 Kg @ Rs.150/- per kg = Rs.320/- B) Urea/NPK/Dim-Sulfizer/Vermicompost/Min. Rhiza/any other fertilizer @ Rs. 4400/-	Aug/Sep	0	0	4800	4800
4	Weeding (Complete weeding), Manuring & Soil working (1m. diameter around the plants)	Sep/Oct	20	6220	0	6220
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr-May	10	3098	0	3098
7	Maintenance of Temporary Labour Shed, Drilling water facility and First Aid etc.				1000	1000
Total			45	13995	6560	20561

BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) (5-1600 PLANTS PER HECTARE (10 months old seedling))						
WAGE RATES: 311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
<b>3rd Year Maintenance</b>						
3	Cost of Fertilizer/Urea/NPK/Tric-Antilover/Vermicompost/Mn Chata/any other fertilizer	Sept/Oct	0	0	4406	4406
4	Weeding, Mounding & Soil working (1mt. diameter around the plants)	Sept/Oct	16	6320	0	6320
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path.	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement.	Apr/May	10	5598	0	5598
7	Maintenance of Temporary Latrine Shed, Drinking water facility and First-Aid etc.	Apr/May			1000	1000
<b>Total</b>			<b>41</b>	<b>12751</b>	<b>5406</b>	<b>18237</b>
<b>4th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path.	Feb/Mar	3	933	0	933
2	Watch & Ward	Apr-May	10	5598	0	5598
<b>Total</b>			<b>23</b>	<b>6531</b>	<b>0</b>	<b>6531</b>
<b>5th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/May	10	5598.00	0	5598
<b>Total</b>			<b>23</b>	<b>6531</b>	<b>0</b>	<b>6531</b>
<b>6th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933.0
2	Pruning of branches, Singling out of multiple stems	Jan/Mar	5	1555.00	0	1555.6
3	Watch & Ward	Apr/May	10	5598.00	0	5598.6
<b>Total</b>			<b>26</b>	<b>8086</b>	<b>0</b>	<b>8086.6</b>
<b>7th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/May	10	5598.00	0	5598
<b>Total</b>			<b>23</b>	<b>6531</b>	<b>0</b>	<b>6531</b>
<b>8th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/May	10	5598.00	0	5598
<b>Total</b>			<b>23</b>	<b>6531</b>	<b>0</b>	<b>6531</b>
<b>9th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/May	10	5598.00	0	5598

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BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) OF 1600 PLANTS PER HECTARE (18 months old seedling)							
WAGE RATE RS-311/- PER MANDAY							
Sl. No	Items of work:	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)	
1	2	3	4	5	6	7	
	Total		21	6531	0	6531	
1 <sup>st</sup> Year Maintenance							
1.	Pine line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933	0	933	
2.	Watch & Weed	Apr/May	18	5598.00	0	5598	
	Total		21	6531	0	6531	
Year wise Abstract of Cost Norm (showing seedling cost separately)							
Sl. No	Year	No. person days	Labour cost @ Rs.311/- per day (Rs)	Material Cost	Monitoring, Evaluation, Learning, Documentation and Other Contingency (5% of (4+5))	Cost of Seedlings @Rs.50.31 per seedlings	TOTAL COST
1	2	3	4	5	6	7	8
1	0th year	62	25602	3000	1398.00	0	30500.00
2	1st year	105	32655	23300	2890.00	89548	147361.00
3	2nd year	45	13995	6586	1038.00	8090	29639.00
4	3rd year	42	12751	5486	911.00	0	19148.00
5	4th year	21	6531	0	326.00	0	6857.00
6	5th year	21	6531	0	326.00	0	6857.00
7	6th year	21	6531	0	326.00	0	6857.00
8	7th year	21	6531	0	326.00	0	6857.00
9	8th year	21	6531	0	326.00	0	6857.00
10	9th year	21	6531	0	326.00	0	6857.00
11	10th year	21	6531	0	326.00	0	6857.00
	Total	425	132175	39912	8497	96596	276280

## Note:

- 1 Priority must be given to the indigenous local species available nearby to the site of plantation.
- 2 10% indigenous fruit bearing trees must be preferred in Plantation.
- 3 The specific Soil conservation work like L.B.C.D, Gully Plugging, Duggered Trench, Contour Trench, Graded Bund, etc. may be.
- 4 Chain link fencing can be adopted in the CA plantation taken up outside the forest area and Bamboo traps fencing may be.
- 5 Watering facilities for procurement of water & watering may be adopted as per the availability of water.
- 6 The Cost Norm of various items can be changed with the approval of the concerned BCCFs keeping the overall cost norm fixed for each Financial Year.

  
 SACCS (Forest Division, & NO, MC Act)

Sl. No.	Electronics S/N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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WPCU forms polymers in the presence of

## Annexure-II

11c

Annexure-11			
Cost Works for creation of Catchment Area Afforestation with Stabilization of Soil & Conservation of Moisture (1000)			
WAGE RATE Rs. 111/- PER DAY			
Sl.No	Item of Works	Probable Period of Retention	Total Cost
1st Year (Pre-Planting Operation)			
1	Nil		0
1st Year			
2	Soil Conservation measure structures like Stepped Trench, Perforation pit, contour trench, Graded surface bund, LBCU, Wire mesh LBCU, Sub surface dyke & SMS as per the slope & site requirement as LS	Apr/Sept	28,215
2nd Year			
3	Maintenance of SMC structures @ 15 % of initial year cost	Apr/Jul	3,032
3rd Year			
4	Maintenance of SMC structures @ 15 % of initial year cost	Apr/Jul	3,032
4th Year			
5	Maintenance of SMC structures @ 15 % of initial year cost	Apr/Jul	3,032
5th Year			
6	Maintenance of SMC structures @ 15 % of initial year cost	Apr/Jul	3,032
Total			32,343.0

Abstract					
Sl. No	Year	No. person days	Labour cost @ Rs. 111/- per day	Material Cost	Total cost (Rs.)
1	0th year	0.0	0.0	0.0	0.0
2	1st year	0.0	0.0	28,215.00	28,215.00
3	2nd year	0.0	0.0	3,032.00	3,032.00
4	3rd year	0.0	0.0	3,032.00	3,032.00
5	4th year	0.0	0.0	3,032.00	3,032.00
6	5th year	0.0	0.0	3,032.00	3,032.00
Total		0.00	0.00	32,343.0	32,343.0

Different types of SMC structures may be taken up as per the slope & requirements of the plantation site out of the design & specification of different structures annexed along this document.

  
 ARCC/ Forest Division & SO, FC Act

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Matrix for (SMC)

Sl. No.	Continuation Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
1	2021-22	0	20515	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	25033
2	2022-23	0	0	22787	22787	22787	22787	22787	22787	22787	22787	22787	22787	22787	22787	22787	22787	37415
3	2023-24	0	0	0	23401	23401	23401	23401	23401	23401	23401	23401	23401	23401	23401	23401	23401	36284
4	2024-25	0	0	0	0	24071	24071	24071	24071	24071	24071	24071	24071	24071	24071	24071	24071	41845
5	2025-26	0	0	0	0	0	24800	24800	24800	24800	24800	24800	24800	24800	24800	24800	24800	48350
6	2026-27	0	0	0	0	0	0	25590	25590	25590	25590	25590	25590	25590	25590	25590	25590	55475
7	2027-28	0	0	0	0	0	0	0	26440	26440	26440	26440	26440	26440	26440	26440	26440	67749
8	2028-29	0	0	0	0	0	0	0	0	27360	27360	27360	27360	27360	27360	27360	27360	80136
9	2029-30	0	0	0	0	0	0	0	0	0	28350	28350	28350	28350	28350	28350	28350	93842
10	2030-31	0	0	0	0	0	0	0	0	0	0	29400	29400	29400	29400	29400	29400	108716

APCCF (Forest Division & NO, FC Act)

**ANNEXURE-III**

Watering Model-W-1				
Watering provision to CA Plantation				
Solar system with Bore well (1 system for 5-Ha Plantation) fitted with Drip system, Wage rate @ Rs.311/-				
Year of Installation (0th Year)				
1	Cost of Borewell		1,50,000	
2	Installation of Solar panel & other fixtures		3,00,000	
3	Cost of 0.5 HP submersible pump with accessories		50,000	
4	Water Storage Tanks / Flexible pipes		15,000	
5	Cost of laying Drip system including all accessories fittings etc. with 12% cut		5,02,431	
<b>Total</b>			<b>Rs.19,480/-</b>	
6	Cost of Water & watering per Ha. (Rs.12,481/- @ 5%)- Rs. 1,41,486/-			1,41,486
7	No maintenance required	1st Year Watering		
				<b>Total</b> 0
8	Maintenance of system @ 5% of initial cost of installation	2nd Year Watering		
				<b>Total</b> 0,174
9	Maintenance of system @ 5% of initial cost of installation	3rd Year Watering		
				<b>Total</b> 0,174
10	Maintenance of system @ 5% of initial cost of installation	4th Year Watering		
				<b>Total</b> 0,174
11	Maintenance of system @ 5% of initial cost of installation	5th Year Watering		
				<b>Total</b> 0,174
<b>Abstract</b>				
Sl. No.	Year	No. person days	Labour cost @ Rs. 311/- per day	Total cost (Rs.)
1	0th year	0	0.0	16,486.0
2	1st year	0	0.0	0.0
3	2nd year	0	0.0	0,174.0
4	3rd year	0	0.0	0,174.0
5	4th year	0	0.0	0,174.0
6	5th year	0	0.0	0,174.0
<b>Total</b>		<b>0</b>	<b>0</b>	<b>17,834.0</b>

Matrix for Watering Wt (Solar Borewell) fitted with Drip System (per Ha)

Sl. No.	Commence Month Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
1	2021-22	123456	0	8174	8174	8174	8174											223813
2	2022-23		121660	0	9011	9453	9453	9453	9453	10482	10482	10482	10482	10482	10482	10482	10482	233786
3	2023-24			120243	0	9463	9463	9463	9463	10482	10482	10482	10482	10482	10482	10482	10482	245476
4	2024-25				129203	0	10482	10482	10482	10482	10482	10482	10482	10482	10482	10482	10482	257292
5	2025-26					128718	0	10482	10482	10482	10482	10482	10482	10482	10482	10482	10482	270086
6	2026-27						120854	0	10482	10482	10482	10482	10482	10482	10482	10482	10482	284174
7	2027-28							121987	0	10482	10482	10482	10482	10482	10482	10482	10482	298820
8	2028-29								122242	0	10482	10482	10482	10482	10482	10482	10482	312299
9	2029-30									121543	0	10482	10482	10482	10482	10482	10482	322664
10	2030-31										121500	0	10482	10482	10482	10482	10482	345412

In Rupees

APCC (Forest Division &amp; NO, FC Act)

## ANNEXURE-IV

## ESTIMATE FOR BARBED WIRE FENCING

## ANNEXURE-37

## ESTIMATE FOR BARBED WIRE FENCING

01.	02 ply barbed wire (5 Rmt per kg) 7 straight strand x 1000 Mt	=7000Mt	
	2 Diagonal strand = $2 \times \sqrt{(6.5')^2 + (8.2')^2} = 2 \times 10.50 \text{ ft}$ = 21.00 ft x 400 nos = 8400 ft or	=2560Mt	
		=9560Mt	
	Requirement of Barbed wire per Km Cost per KM = 9560/5 = 1912 Kg @ Rs. 80/Kg		Rs. 1,52,960.00
02.	Construction of RCC pillars of size— Length—8ft, Bottom width 6"x6", Top width 4"x4" Reinforced with 6mm rods with proper curing		
	$\left\{ \frac{6'' \times 6'' + 4''}{2} \right\} \times \frac{8}{2} = 6'' \times 4 = 1.34 \text{ cft or } 0.038 \text{ cum}$		
	i) Cost of c.c. work 1.24 = 0.038 cum @ 5262.57/cum	= 199.98	
	ii) Cost of rod including cutting, bending & binding 0.038 x 0.9 qtl = 0.0342 qtl @ Rs. 10,595.80/qtl.	= 362.38	
	iv) Contingency (15%) including Curing, stacking, provision of hooks etc.	= 81.05	
			Rs. 643.41 or Rs. 644/-
	Requirement of pillars per Km— Spacing = 2.5mt x 2.5mt Requirement = 1000mt / 2.5mt = 400 Strut pillar in every 10 <sup>th</sup> pillar = (400/10) x 2 = 80	480 Nos	
	Cost of pillars per Kilometer = 480 @ 644/-		Rs. 3,09,120.00
03.	Fitting & fixing of RCC pillars in position with hbg metal (4cm) in C.M (1:4:8) i) Digging of pits 1.5' x 1.5' x 1.5' = 3.375 cft/pit for 480 pits, 480 x 3.375 = 1620 cft or 45.86 cum @ Rs. 12,040/1000cum = 5521.54 ii) Filling of pillars with 4cm hbg metals in C.M 1:4:8 pit size 1.5' x 1.5' x 1.5' = 3.375 cft Deduct 1/3 <sup>rd</sup> of butt of pillar i.e. 3.375/3 = (-) 1.125 cft Total c.c. work per pillar = 2.25 cft		
	For 480 pillars = 480 x 2.25 = 1080 cft or 30.577 cum @ Rs. 3629.46/cum		Rs. 1,10,978.00
04.	Labour for straightening the barbed wire and fixing & clipping with pillars 70 Mt/d per km @ 280/-		Rs. 19,600.00
05.	Carriage of Barbed wire & pillars to work site @ Rs. 1000/tfd. and cost of loading & unloading within 5 km distance Approximately 10 tfd @ 800/tfd		Rs. 18,000.00
06.	Provision of one Iron Gate of size (4' x 5') on LS		Rs. 7,500.00
	Total		Rs. 6,23,680.00
	Labour Cess 1%		= Rs. 6,237.00
	Expenditure per 1 km of barbed wire fencing		Rs. 6,29,917.00
	Or say, Rs. 629.91/- or Rs. 630/- per meter		

07). Expenditure towards maintenance for 3 years (3<sup>rd</sup>, 6<sup>th</sup> & 9<sup>th</sup> year)

@ 2% of cost per rkm =  $3 \times 2\% \times \text{Rs. } 6,29,917/-$

= Rs.37,795.00

Expenditure per 1 km of barbed wire fencing including maintenance

= Rs.6,67,712.00

So, expenditure per running meter for fencing = Rs.667.71/Mtr. or say Rs.668/-Mtr.  
(Rupees Six hundred sixty eight) only

  
Addl. PCCF (FB&A)

  
Addl. PCCF (Nodal & FG)

  
Addl. PCCF (PP&A)

  
Addl. PCCF (ME & IV)

  
CCF (CAMPA)


  
RCCF, Bhubaneswar

  
Dy. CF (Affn.)

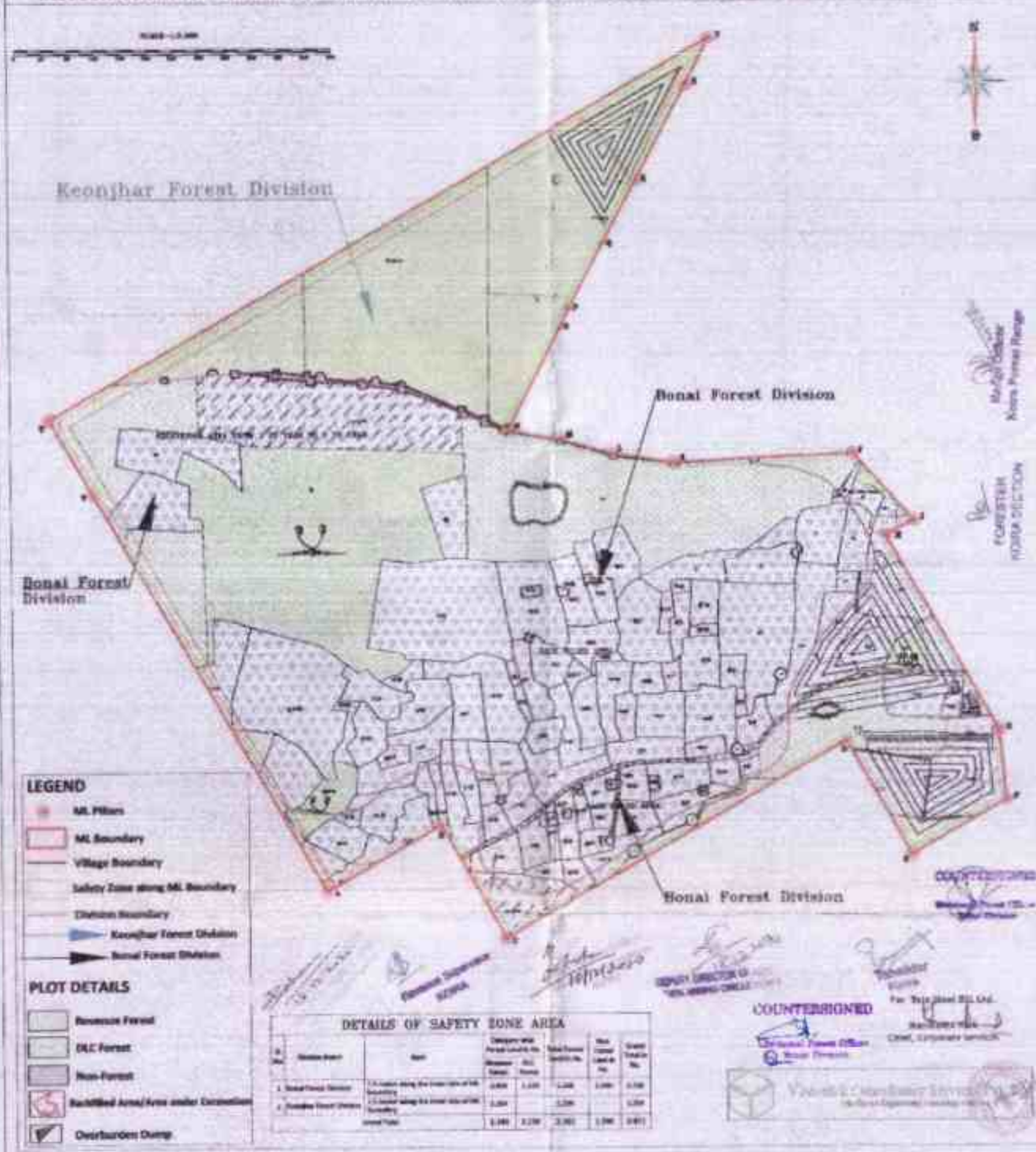
  
Principal CCF, Odisha

@ 280.00 per MD = Rs.667.71 / Mtr.

Now @ 450.00 per MD = Rs.1073.10 (Or, say 1073.00 / Mtr.)

  
Divisional Forest Officer,  
⑫ Bonai Division.

**SAFETY ZONE PLAN OF KALAMANG WEST (NORTHERN PART) IRON ORE MINES OVER AN AREA OF 92.875 HA. [(FOREST 42.608HA.) (16.658HA. IN KEONJHAR FOREST DIVISION +25.950HA. IN BONAI FOREST DIVISION)+50.267HA. NON-FOREST IN BONAI FOREST DIVISION] IN VILLAGE GANDALAPADA UNDER KEONJHAR DISTRICT & VILLAGE KALAMANG AND GHODABUDHANI UNDER SUNDARGARH DISTRICT ALLOTTED TO TATA STEEL BSL LIMITED.**





*Scheme  
For*

**TOP SOIL MANAGEMENT**

*in compliance*

*with*

*Condition No.15 of*

*Stage-I approval granted vide*

*Letter No.8-13/2022-FC, Dated.22.12.2023*

*of Govt. of India, Ministry of Environment, Forests*

*& Climate Change,*

*New Delhi.*

*for*

*Diversion of 42.608 Hects of Forest Land for U/s-2 (ii) (including 2.382  
ha. of Safety Zone) OF FC Act-1980*

*within 92.875 Ha. Iron Ore Mining Lease*

*of*

*M/S Tata Steel BSL Limited (now amalgamated into & with Tata Steel  
Limited).*

*in village Kalamang and Ghodabudhani of Koira tahsil, Sundargarh  
District and Gandhalpada village in Barbil Tahsil, Keonjhar District*

*Odisha.*

## 1. INTRODUCTION

The Govt. of Odisha vide Letter No.5285/DM dt.24.06.2017, read with Letter No.6287/SM dt.27.07.2017, issued Letter of Intent (LoI) for grant of Mining Lease of Kalmang West (Northern Part) Iron Ore Block in favour of M/s Bhushan Steel Limited over an area of 92.875 hectare in village Kalmang and Ghodabudhani, of Sundargarh District and Gandhalpada village of Keonjhar District for a period of 50 years. The Letter of intent was transferred in favour of M/s Tata Steel BSL Limited on taking over of Bhushan Steel Limited basing on the Order of NCLT vide Steel & Mines Dept. Letter No: 4261/SM dated 27.05.2021. Govt. of Odisha Steel & Mines Dept. have further approved the amalgamation of M/s Tata Steel BSL Limited into & with M/s Tata Steel Limited vide letter no: 541/SM dated 21.01.2022 which makes M/s Tata Steel Limited, eligible LOI holder of Kalmang West (Northern Part) Iron Ore Block.

As per the Terms & Conditions of LOI the Applicant shall fulfill the provisions of all Acts and Rules applicable to the Project. Accordingly, M/s Tata Steel Bhushan Limited has submitted the proposal to obtain approval of the Central Govt. over 42,608 hectare of forest land including Safety Zone 2,382 Ha U/s-2 (ii), of the Forest (Conservation) Act 1980 within the above Mining Lease area.

Further, Stage-I approval over 42,608 ha, of Forest Land U/s-2 (ii) (including 2,382 ha, of Safety Zone) has been granted by MoEF& CC vide their Letter No. 8-13/2022-FC, dated 22.12.2023 where in it has been stipulated as per **Condition No. 15 for undertaking top soil management.**

## 2. LOCATION

The mining lease area finds place in the Survey of India Topo sheet No.F45N5 (73 G/5) and situated between the latitude 21° 56' 47.75784" to 21° 57' 32.34779" N and longitude 85° 17' 06.65892" to 85° 17' 57.53148" E. The above ML area covering villages such as Kalmang, and Ghodabudhani in Koira Range, Bonai Forest Division, Sundargarh District and Gandhalpada village of Barbil Range, Keonjhar Forest Division, Dist-Keonjhar, Odisha.

## 3. TOPOGRAPHY

The above allotted block under study is a highly rugged terrain, with elongated hills trending ENE-WSW direction, low mounds and narrow valleys. The highest elevation of ridges in the area is 690 m above MSL forming the ridge. Lowest elevation is 585 m above MSL which forms the valley floor in this block.

## 4. SOIL TYPE

The low-lying areas are filled up with alluvial soil which is ferruginous in nature and reddish brown in colour. In most of the area the soil is moderately coarse in nature whereas it is loamy in the cultivated land. Since the area is devoid of any perennial nala or river, the soil has been deposited in the valley area mostly from the low order nala or from the slope wash of the nearby hillock occupied by the iron ore group of rocks.

## 5. CLIMATE

The lease area lies in tropical region where climate is characterized by an oppressively hot summer and cool winter. Summer is typically from April to July when monthly temperature ranges from a maximum of 42 degree centigrade during day time to a minimum of 15 Degree Centigrade at night time. Winter is from November to February when the maximum temperature during daytime goes to 37 Degree Centigrade and minimum temperature at night- becomes as low as 8 Degree Centigrade. The average annual rainfall as recorded at IMD observatory at Keonjhar is 1269.1 mm

## 6. DRAINAGE

The dendritic type of drainage pattern is generally displayed by the area. Because of the hilly topography, there is only one seasonal drainage found in the western part of the area. Sunanadi is a perennial river flowing from south to north outside the area at a distance of 2 km towards south-east and it becomes west-east from Malda and debouch into river Baitarani. The drainage channel originating in the western part of the area traverses through the area towards south.

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The forest growth available in the area resembles Northern Tropical Dry Deciduous Forest. Sal (*Shorea robusta*) is the most dominant tree with Mahul (*Madhuca indica*) Asan (*Terminalia tomentosa*), Char (*Buchanania lanjan*), Kendu (*Diospyros melanoxylon*), Barkoli, Kusum (*Schleichera oleosa*), Dimiri as common associates.

The vegetation of the applied area is composed of Sal (*Shorea robusta*), Saguán (*Tectona grandis*), Sidha (*Lagerstroemia parviflora*), Bandhan (*Eugenia ojeinensis*), Char (*Buchanania lanjan*), Dhaura (*Anogeissus latifolia*), Asan (*Terminalia tomentosa*), Mango (*Mangifera indica*), Kendu (*Diospyros melanoxylon*), Bahada (*Terminalia bellerica*), Jamu (*Syzygium cumini*), Kusum (*Schleichera oleosa*), Mahul (*Madhuca indica*) etc. Sal (*Shorea robusta*) is the pre-dominant species.

## 8. LAND USE PATTERN

During the life of the mine, about 92.875 hectares will be utilized for mining, Minerals processing, Road, and green belt plantation in Safety Zone area etc. The details of land use pattern will be as follows:

Village wise break up of total land

Sl.No	District Name	Forest land in Ha	Non forest land in Ha	Total land in Ha
1	Keonjhar	16.658	0	16.658
2	Sundargarh	25.95	50.267	76.217
Total in Ha		42.608	50.267	92.875

**Item wise Proposed Land Use Pattern in Forest and Non-Forest Land of Total Lease Hold Area**

Sl. No	Type of Land Use	Forest Land in Ha.	Non- Forest Land in Ha.	Grand Total in Ha.
1	Area under excavation including the backfilled area	36.458	38.919	75.377
2	Overburden/Waste Dumping	2.109	4.962	7.071
3	Topsoil Stacking	0.228	0.615	0.843
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5	Green Belt in the south beyond the UPL	1.399	2.771	4.170
6	7.5 meter along the inner side of ML boundary	2.382	1.590	3.972
<b>Total</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

**9. SOURCES OF GENERATION OF TOP SOIL**

During the first five years of planning there will be no generation of top-soil. The valley portion of the block has a meager thickness of around 0.3 m of top-soil which are covered under agriculture by the local villagers. Total area having top soil is 17.2 Ha. Hence, a total of  $17.2 \text{ Ha} \times 0.3\text{m} = 51,600 \text{ m}^3$  of top-soil will be generated during the conceptual period. This will be temporarily stacked in the Southern part of the ML area and shall be used for different plantation programmes. Retaining wall and garland drain are also to be constructed around the top-soil stack.

**10.OBJECTIVES**

The objectives of Top soil management to be executed are as follows:

- To meet the stipulation No.vi (e) of Stage-I Forest clearance accorded vide letter No. 8-13/2022-FC, dated 22.12.2023 of MoEF& CC, GOI, New Delhi i.e., **"No damage shall be caused to the top soil and the User Agency will follow the Top soil management Plan"**.
- To identify top soil resources, and to follow stripping guidelines for optimum recovery.
- To identify stockpile locations and dimensions.
- To manage and conserve the top soil reserves by implementing biological measures.
- To provide sufficient stable top soil for reclamation work of dumps, back filled areas and degraded lands.

## **11. PLAN FOR MANAGEMENT OF TOP SOIL TO BE GENERATED FROM MINING**

Top soil management is a vital issue in respect of mining projects. This aspect should be carefully handled to utilise the top soil generated from a mining area so as to its proper utilisation inside the mining lease area upto the process of reclamation stage. Hence it is important to keep the top soil generated in specific site, particularly near to mine bench area, haul road area and backfilling area with a view to utilise the top soil more economically and to prevent any wash off of the top soil to other areas of the mining lease area.

## **12. METHODOLOGY**

In accordance with the above objectives of providing sufficient stable soil for reclamation and to optimize soil recovery, the following strategies have to be followed:

- i) Top soil stockpiles are to be identified outside quarry area.
- ii) Stripping off the topsoil by dozer or by small shovel dumper combination rather than scrapers to minimize structural degradation;
- iii) Construction of stockpiles with a "rough" surface condition to reduce erosion hazard.
- iv) Improvement of drainage and promotion of re-vegetation.
- v) Stabilization of Top soil surface by biological measures i.e. by sowing seeds of grass with other leguminosae (Fabaceae) species.
- vi) To utilize stripped top soil as soon as possible for reclamation in a phased manner in accordance with the reclamation plan as prescribed in the approved mining plan.

### **A) Collection:**

Top soil is to be stripped in areas proposed to be broken in future like the proposed mining on forest and non-forest lands. The soil encountered shall be scrapped before the commencement of any mining activity. The scrapped top soil shall be transported to earmarked top soil stack area for storage for future use.

As per approved mining plan the following activity will generate top soil to the extent of 51600 m<sup>3</sup> (17.2 x 0.3m) from an area of 17.2 ha. The dumping of this top soil so generated will be kept at S-W & Eastern part over 0.843 ha (Stack-1 over 0.703 Ha and Stack-2 over 0.140 Ha) area portion within the M.L area as shown in plate no-1. Dumping of Top soil will be kept preserved by providing a wall type structure around the area where top soil will be kept. The said top soil will be utilized and managed for the different plantation programmes.

### **B) Storage:**

The top soil shall be transported to the earmarked places, where it shall be stacked upto a height of 3.5 metres. Around 0.843 ha area (Stack-1 over 0.703 Ha and Stack-2 over 0.140 Ha) shall be used for stacking. The levelling and stacking shall be done manually. The edges shall be ramped down to ensure that there is no erosion. The following vegetation shall be grown for preservation of the top soil.

### **13. GRASS PLANTATION: TO PREVENT THE EROSION OF TOP SOIL.**

As mentioned above care will be taken so that the edges shall be ramped down to ensure that there is no erosion of the top soil stored there. It is proposed to keep the top soil intact by way of grass seeding plantation in each top soil stack and to ensure that the said grass seeding survive and takes growth so that the purpose of prevention of erosion can be ensured. The cost of estimate of Grass seeding is enclosed as **Annexure-1**.

- The top soil generated will be stored in 02 nos of places.
- The dimension of the storage will be 0.843 ha with height upto 3.5 mtr average.

The above work will be taken up in a periodic manner keeping in view the height of storage. This will facilitate covering the sites of top soil storage in time so that there will be no erosion of the same.

The location map of the above structures is furnished in Plate no.- 1.

### **14. CONSTRUCTION OF RETAINING WALL**

A retaining wall is a structure designed and constructed to resist the lateral pressure of soil when there is a change in ground elevation that exceeds the angle of repose of the soil. The Retaining walls are proposed for construction over **550 mtr**. Also, there is a provision for maintenance of the retaining wall for the next 4 years. The cost norm of the above is enclosed as **Annexure-2**.

### **15. CONSTRUCTION OF GARLAND DRAIN**

A shallow trench (3mx 2m) will be dug for storage of runoff accumulated for draining surface water before it is released to the agriculture land or natural water course. Details of proposed Garland drain **550mtr** shall be constructed during the ensuing plan period with location shown in the map (Ref Plate No.-1). The cost norm of Garland drain has been provided in **Annexure -3**.

#### **C) Usage:**

The top soil so generated will be utilised for the following purposes during subsequent mining plan period.

- For Spreading on Back fill area
- For plantation purpose

### **16. EXECUTING AGENCY**

The implementation of the scheme will be done by M/s Tata Steel Ltd. in consultation with Forest Department.

## 17. REQUIREMENT OF FUNDS

The total cost of implementation of measures for Top Soil Management will be Rs.1,06,03,300/- (Rupees One Crore Six Lakh Three Thousand Three Hundred) only. This budget will be subject to increase in amount considering the increase in material cost and labour charges.

### TOTAL COST OF TOP SOIL MANAGEMENT

Sl. No.	Description of the work	Funds Required (in ₹)
1.	Unbroken / Virgin area from where top soil can be collected =17.20 Ha. A. Stripping cost:-0.5ha./hr. @ ₹ 5310.51 Therefore -17.20 Ha. Cost =35 hrs. + 1 hrs. marching = 36 hrs x Rs.5310.51= ₹ 1,91,178.00 B. Loading &Transportation cost from site to top soil stockpile comes to be= 51600m <sup>3</sup> (tonnage factor 1.6) = 82560mt. @ ₹ 60.75/Mt.=Rs.50,15,520.00. C. Cost of leveling with 1500 manpower @ ₹ 450.00 i.e. ₹ 6,75,000.00 <b>Hence total cost A+B+C = Rs.58,81,698.00</b>	58,81,698.00
2.	Cost for sowing of grass seeds over 0.843 ha @ ₹ 59530.00/ha.	50,184.00
3.	Cost for erection of 550 m dry retaining wall around top soil stock pile @ ₹ 2491 RML	13,70,050.00
4.	Cost for construction of Garland drain of 600 m @ ₹ 636 RML	3,81,600.00
	<b>TOTAL :-</b>	<b>76,83,532.00</b>
5.	Inspection, Monitoring & Evaluation 15% of the total project cost.	11,52,530.00
	<b>TOTAL</b>	<b>88,36,062.00</b>
	Price escalation @ 20%	17,67,212.00
	<b>Grand Total</b>	<b>1,06,03,274.00</b> Or, <b>1,06,03,300.00</b>

(Rupees One Crore Six Lakh Three Thousand Three Hundred) only.

  
General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED  
General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

Countersigned  
**COUNTERSIGNED**  
  
Divisional Forest Officer  
Divisional Forest Officer  
Bonal Division

**Technically Approved**

  
Regional Chief Conservator of Forests  
Rourkela Circle

Annexure- 1

COST OF GRASS SEED SOWING

Wage Rate Rs.450.00

Sl No	Purpose	No of Labour / Quantity of materials	Rate (Rs.)	Amount (Rs.)
1	Spreading of good top soil	03 Nos	450 / labour	1350.00
2	Adding FYM and good earth	2 TL FYM	1499.82 /TL FYM	5999.28
		2TL good earth	1499.82 /TL Good earth	
3	Cost of grass seed 500kg/ per ha.		95/kg	47,500.00
4	Broadcasting	10 nos.	450.00/ labour	4,500.00
Total				59,349.28
				Or, 59,350.00

  
General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

**Annexure-2**

**Wage Rate- Rs.450.00**

**Detail Estimate of Retaining wall of loose local Boulder with cement-Sand Patching over the surface of Boulder wall.**

Sl. No.	Description of Items	No	Length	Width	Height	Qty	Unit	Rate	Amount
1	2	3	4	5	6	7	8	9	10
For one K.M.Length									
1	Rough Stone Dry Packing with local boulder only labour charges (Local boulder will be Supplied by our Company)	1	1000.00	$(1.00+1.50)/2$	1.20	1500.00	Cum		
		1	1000.00	1.50	0.30	450.00	Cum		
						1950.00	Cum	885.14	1726023.0
2	Irregular cement sand patches on the both side of the wall with 2" thick cement sand mortar(1:6) on top	1	1000.00	1.00		1000.00	Sqm		
		2	1000.00	1.20		2400.00	Sqm		
						3400.00	Sqm	225.00	765000.00
		Rate per one K.M. Length				Total			2491023.00
									Or
									2491023.00

**Cost for Running Meter length**

**2491.00**

  
 General Manager  
 Ore Mines & Quarries  
 TATA STEEL LIMITED

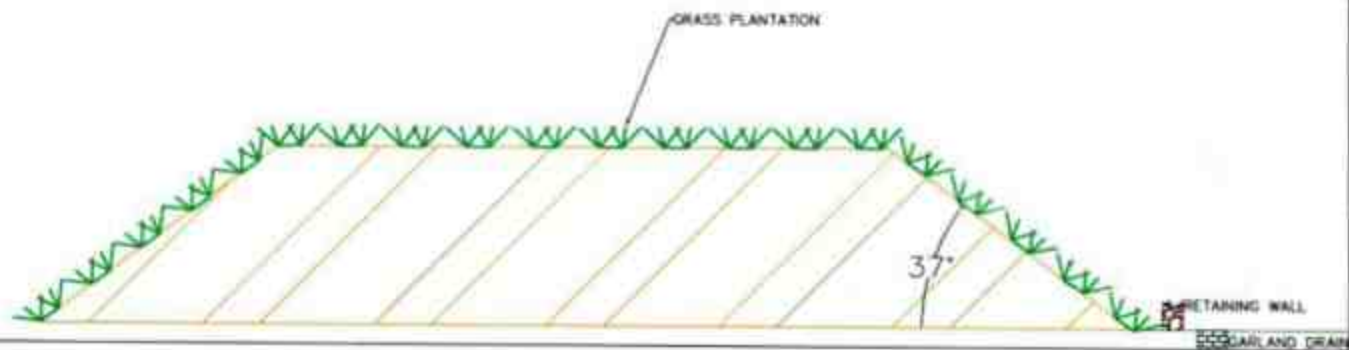
**Annexure-3****Wage Rate- Rs.450****Detail Estimate of construction of Garland Drain**

Sl No	Description of Items	No	Length	Width	Height	Qty	Unit	Rate	Amount
1	Cleaning of Jungles & bushes	1	200.00	7.00		1400.00	Sqm	12.15	17006.42
2	Earth work in hard soil in embankment roads with in 50 mtr initial lead & 1.50 mtr initial lift including rough dressing & breaking clods to Maximum 5.00c.m. to 7.00 c.m. & laying layers not exceeding 0.30 mtr depth as per specification approved by department along with proper compaction with H.R.R Excavation	1	200.00	2.00	0.75	300.00	Cum	338.84	101652.69
3	Rough Stone Dry Packing with local boulder only labour charges (Local boulder will be Supplied by the Company through contractual manner)	2	3.00	2.00	0.30	3.60	Cum	2399.83	8639.38
									<b>127298.49</b> <b>Or,</b> <b>127298.00</b>

**Rate/Running metre length – Rs.636.49 or 636/-**


**General Manager**  
**Ore Mines & Quarries**  
**TATA STEEL LIMITED**

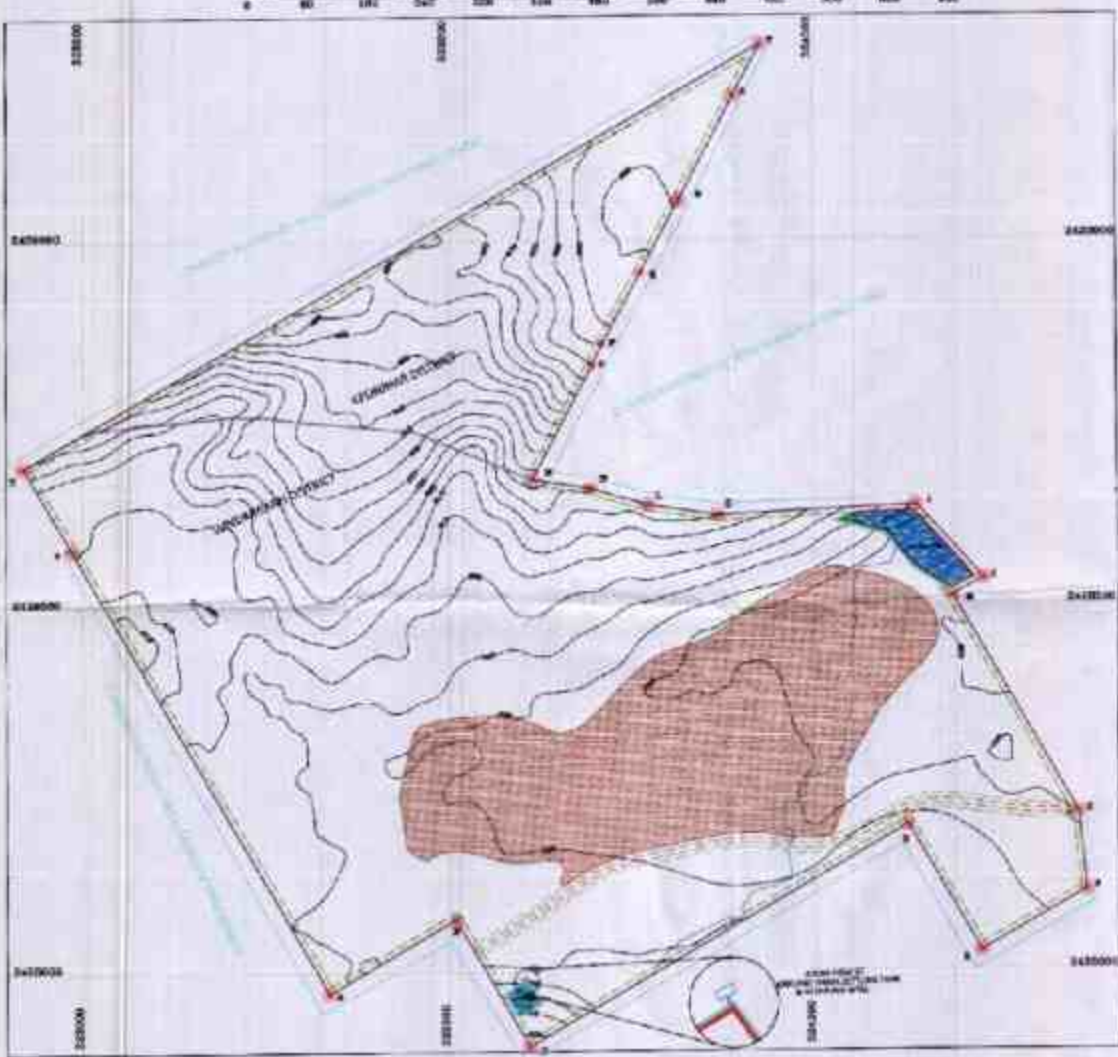
# SECTIONAL VIEW OF SOIL STACK



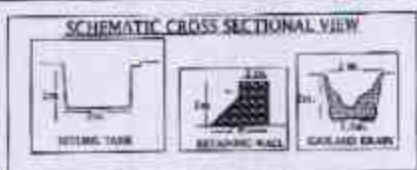
  
General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

COUNTERSIGNED  
  
Divisional Forest Officer  
Bhilai Division

Scale 1:5000



- KEY**
- BOUNDARY OF ML AREA
  - SAFETY ZONE
  - CONTOUR
  - DISTRICT BOUNDARY
  - VILLAGE BOUNDARY
  - ROAD
  - TOP SOIL STAGE
  - TOP SOIL EXCAVATED AREA
  - GRASS PLANTATION
  - WELLS
  - RETAINING WALL
  - CONVEYOR BOUNDARY
  - LANDFILL DRAIN
  - SETTLING TANK



Geotechnical Engineer  
 (Civil Branch & Surveying)  
 No. 10/10/10/10/10/10

MAP SHOWING THE TOP SOIL MANAGEMENT PLAN	
KALAMANG WEST (NORTHERN PART) BLOCK IRON ORE MINES OF SAIL TATA STEEL LTD.	
ML AREA-12.875 HA.	SCALE-1:5000

PLATE NO. 1



*Scheme*

*For*

**DE-SILTING OF VILLAGE TANKS AND OTHER WATER  
BODIES LOCATED WITHIN 05 KM FROM THE MINE  
LEASE BOUNDARY SO AS TO MITIGATE THE IMPACT  
OF SILTATION OF SUCH TANKS/ WATER BODIES**

*in compliance*

*with*

*Condition No.16 of*

*Stage-I approval granted vide*

*Letter No.8-13/2022-FC, Dated.22.12.2023*

*of Govt. of India, Ministry of Environment, Forests*

*&Climate Change,*

*New Delhi.*

*for*

*Diversion of 42.608 ha. of Forest Land for U/s-2 (ii) (including 2.382  
ha. of Safety Zone) OF FC Act-1980*

*within 92.875 ha. Iron Ore Mining Lease*

*of*

**M/S Tata Steel BSL Limited (now amalgamated into & with Tata Steel  
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**In village Kalamang and Ghodabudhani of Koira tahsil, Sundargarh  
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<b>Total</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

### **9. FACTORS RESPONSIBLE FOR SILTATION**

In mining activities the following factors are responsible for soil erosion and causing siltation in village tanks and water bodies existing with 5 km from the mine lease area.

- Siltation is an inherent problem with ponds, lakes and almost all types of water reservoirs world over. Siltation occurs due to deposition or setting of soil eroded from the shore line, decaying fallen leaves, grass and other vegetative materials and decomposed organic materials settled on pond bottoms.
- Soil erosion may be attributed as the primary factor responsible for pond siltation in this area.
- Higher gradient and excess rainfall are the most common reasons of soil erosion.
- Erosion of soil occurs from the waste dumps, excavated areas and naturally denuded ground surface.
- However, looking into the current problem of siltation of the village ponds, the major factor is the erosion of the pond embankments and decomposition of in-situ aquatic weeds like water hyacinth and other air borne vegetative materials falling into the pond.

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- As the age of the ponds increase, new layers of silt accumulate on the older ones and the silt layers become thicker.
- Finally the depth of the pond decreases and it loses its water storage capacity. At this time it needs to be desilted to recover.

The best practice against siltation is to desilt bottom of the pond at regular intervals as well as taking adequate preventive measures.

#### 10. SELECTION OF PONDS

For the purpose as mentioned in Condition No (16) of the Stage-I approval letter, a survey of ponds within the buffer area of 5 Kms from the lease boundary was made. Total 2 numbers of following ponds are identified for desiltation within 5 km vicinity of the lease area in consultation with local people and forest staff.

##### Location of the ponds proposed for desilting

Sl. No.	Forest Division	Name of village	Name of water bodies	District	GPS reading
1.	Bonai	Kalmang	Pond	Sundargarh	N 21°57' 00.92" E 85°18'52.09"
2.	Bonai	Sagasahi	Pond	Sundargarh	N 21°56'29.99" E 85°16'29.73"



Pond at Kalmang village



Pond at Sagasahi village

## **11. OBJECTIVE OF THE SCHEME:**

The objectives of the proposed scheme are as follows:

- De-silting of village tanks and other water bodies including renovation work located within the five kilometres from the mining lease area of Kalamang West (northern Part) Iron Ore Mine so as to mitigate the impact of siltation.
- To ensure availability of water in village tanks and other water bodies to facilitate the villagers for their requirement of water including that of their livestock.
- Hence to ensure a congenial livelihood to the local people.

## **12. PRINCIPLE OF DE-SILTATION:**

To meet the requirement with respect to the condition imposed by MoEF& CC this scheme involves the best way to ensure availability of water in village tanks/ water body by way of de-siltation of the same at regular intervals and to make the embankments soil erosion proof. In addition to strengthening of embankment, planting of tree species is to be provided to prevent soil erosion, flow of garbage of etc. to the ponds and this will ensure of availability of water for the local people for their day to day requirement throughout the year.

## **13. PROPOSED MEASURE AS PER CONDITION STIPULATED BY MoEF& CC.**

After field verification by user agency and staff of forest department within 05 km of the mining lease area, the following sites have been identified in following villages for the purpose of de-siltation. During inspection it is observed that the water depth in the said ponds is about 1.5 mtr to 2.00 mtr. Hence the ponds need to be dug to a depth of further 1 mtr.

Sl No	Name of the village	Status of Ownership	Size of the pond in mtr	Perimeter in Mtr	Surface area in Sq.m	GPS location	
						Latitude	Longitude
1	Kalmang	Govt.	41m x 39m	160	1599m <sup>2</sup>	N 21°57'00.92"	E 85°18' 52.09"
2	Sagasahi	Govt.	45m x 47m	184	2115m <sup>2</sup>	N 21°56'29.99"	E 85°16'29.73"

**Matrix to indicate the benefits to be derived by Villagers from Pond/village tank after desiltation.**

Name of the village with water bodies	Population benefitted	Cattle to Benefitted	Irrigation to be derived	Pisciculture Benefit
Kalmang	***	**	*	*
Sagasahi	***	**	*	*

\*\*\* = Maximum benefit, \*\* = Average benefit, \* = Low benefit

#### **14. METHOD OF DE-SILTATION:**

- De-siltation to be taken up at regular intervals in dry months of the summer season to get best result & depth required to be maintained.
- The dried silts to be removed manually or mechanically depending on the site condition/ quantity of silt accumulated.
- Silt accumulation is mainly found in the base of the pond which is about 40% less than the size of the pond mentioned.
- Silting to a depth of 1m is to be carried out manually. In the 2<sup>nd</sup> round de-silting to a depth of 0.30 m will be taken up.
- De-siltation may be taken up at 3 years cycle.
- The silts so excavated will be placed around the pond in an embankment design at about width of 2.5m and height of 1m simultaneously compacting the soil.
- Grass tufting on both the side of the bund will be done. Water inlet PVC pipe of 6" diameter two numbers are to be provided.
- Similarly to drain out the excess water let PVC pipe of 6" diameter two numbers are also to be fixed.
- A bathing Ghats of 3m wide with steps (Step height of 25cm) to be provided.
- On the embankment of both ponds 60 plants will be planted with gabion facilities. Ficus sp, Aegle marmelos, Amla & Jamun are favoured species.

#### **15. POSSIBILITY OF SILTATION OF THE VILLAGE PONDS/WATER BODIES DUE TO MINING ACTIVITIES**

The sub water shed where the mining lease falls is drained mainly by Sona River which is flowing outside the lease area. The area has a natural slope from NW to SE with well drained topography.

As far as village ponds in the proximity of the lease are concerned, it is observed that the identified village ponds are not affected from the surface runoff carrying any silt from the lease area, as these are located either far away from the working pits.

However, siltation in these identified village tanks may occur due to possible soil erosion outside the lease area beyond the sub watershed boundary. Hence, de-silting of these village ponds may be considered in subsequent phases.

#### **16. METHODOLOGY**

It is proposed to carry out the total de-siltation of the selected ponds as above every five years during summer when the ponds shall dry up exposing the silts. The dried silt shall be removed manually or mechanically based on the ground condition. In case of mechanical removal of silt, small excavators such as back-hoe / small hydraulic shovels or pay loader, depending upon the quantity of silt accumulation shall be used. For the purpose of evaluation of work required for de siltation, an estimate of de siltation in the individual ponds was made, which has been summarized in **Annexure-1**

The work shall comprise:-

- a) Total de-siltation in the five year period.
- b) Implementing preventive measures during the following four years to minimize re-siltation of the ponds.
- c) To prevent or slowdown future siltation, the embankment stabilization by grass turfing /stone pitching , plantation of suitable species and constructing bathing ghat is also included in the de-silting and improvement plan.

It is proposed that the ponds having accumulation of over 1000 m<sup>3</sup> shall be de-silted by mechanical means and the rest shall be handled manually. It is proposed to deploy one 0.9 m<sup>3</sup> back hoe with one 10 tonne tipper for de-silting of the pond in a period of two-three days. The machines shall be deployed in a planned manner to complete the work in a shortest time frame. Necessary advice of BDO, Koira & Panchayat Sarpanch will be taken into account.

In case of smaller ponds, where the accumulation of silt is very small, the de-siltation operation shall be done manually by engaging sufficient manpower.

The ponds shall be allowed to dry up completely during the early summer i.e. during March and April followed by de-siltation in the above described manner.

**a) 1<sup>st</sup> Year Plan & Management:**

The first year work shall also comprise the following preventive measures to minimize siltation.

- Providing embankment to the ponds where ever necessary.
- Strengthening the existing pond embankment to check external flow of surface run-off in to the pond.
- Regular removal of aquatic weeds and polythene bags /bottle thrown by villagers.
- Plantation of trees on the top of the embankment and stone pitching on the slopes to prevent bank erosion.
- Plantation of selected species like Bela, Pipal, Champa, Baula, Mango, Jamunetc. will be taken up.

- b) Subsequent 2 Years Plan and Management:** In the subsequent 2 years, the rate of siltation shall be negligible, which can be dealt by manual methods using the local labourers. This will also otherwise help in employment generation.

- c) **Preventive Measures & Maintenance:** It is essential to take up preventive measures in order to minimize re-siltation of the ponds. Activities like pond bank strengthening and stabilization by way of earth work with stone pitching, grass seeding and plantation of appropriate species shall be taken up in the first year followed by their maintenance in successive four years.
- d) **Dewatering of village pond:** This will be carried out by engaging dewatering pump.
- e) **De-silting:** After pumping out the water from the pond, silts are to be removed either manually by deploying labour or excavator & dumper combination.
- f) **Earthwork Excavation:** Wherever required, soil has to be removed for deepening the pond to increase water holding capacity of the pond.
- g) **Bathing Ghat(separately for men and women):**In the above Ponds, separate arrangement will be made for bathing by male and female of the Villages. Since the villagers are conscious from mythological point of view, a Tulsi (Ocimumsanctum) Chaura (Platform) has also to be provided where the villagers after bath can offer water to Sun God. The Detailed estimate is enclosed as Annexure-2.
- h) **Sitting Platform on the embankment of the Pond(s) –** In each Pond, a masonry platform will be provided where the villagers (age old persons and youth) can sit during summer evening. This platform will also serve the purpose of puja / karma.
- i) **Planting all along the embankment of the Pond –** According to availability of land all along the pond (s), plantation of Bela, Pipal, Champa, Baula, Mango, Jamun etc, will be made to form a Green belt. This Green belt will also give an aesthetic view to the area and villagers can collect leaf, fruit, flower etc, for spiritual purposes. The detailed estimate of plantation programme is enclosed in **Annexure- 3.**

## 17. INSPECTION AND MONITORING

After commencement of mining operation start the scheme will be implemented. For successful implementation of the above mitigative measures, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/ conveyance charges for technical experts shall be provided by the user agency for proper execution of these programmes.

## 18. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e. Ghodabudani, Kaimang & Sagasahi are to be involved in protection and management of plantation. Before execution of the work, a meeting will be conducted in the above villages and resolution regarding support to plantation activities will be made. To motivate the people in this direction, they will be provided with incentives in shape of different community articles, buildings, and different community amenities of fixed and movable type through entry point activities (EPA).

Health camps shall also be organized in the villages. Thus, 15% of the plantation cost has been earmarked for expenditure on this score.

#### 19. EXECUTION OF SCHEME

The plan period of the scheme 10 years i.e from 2024-25 to 2033-34. Desiltation is to be carried out in a five year cycle. All the ponds will be desilted twice in the plan period of 10 years. The year wise execution programme is given the following table. In case of dispute, if any pond could not be taken up during the assigned year, the same will be taken up in the next year in addition to the assigned one.

Name of the village	Sl No	Year of Execution									
		2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34
Kalmang	1										
Sagasahi	2										

#### 20. EXECUTING AGENCY

The works in the present Scheme shall be executed by the User Agency having specialized departments headed by qualified persons with outsourced man and machinery. To facilitate this, the user agency shall establish its own executing and supervision cells along with required infrastructural facilities. In order to maintain the quality of work, in-house supervision through competent personnel shall be provided. The entire work shall be carried out in co-ordination with the Forest Department.

## 21. REQUIREMENT OF FUNDS

The total cost of this Scheme for de-silting and improvement of the selected pond in Kaimang and Segasahi villages is **Rs.80,55,700.00** (Rupees Eighty Lakh Fifty Five Thousand Seven hundred) only.

**TOTAL COST OF THE PROJECT Wage Rate Rs.450.00**

Sl. No	Description of Job	Estimate for Pond of village Kaimang	Estimate for Pond of village Segasahi	Total fund required (Rs.)
1	Excavation, loading, unloading & carriage by mechanical means of all kinds of soil including sticky earth, gravel & murrum etc tiller spread with bulldozers upto 1/2 cum size with all lifts & delfts including trimming of slopes & bed to design section & depositing the excavated materials away from work site as per the specification & directed by E.C. with an initial lead of 1.00 KM from the place of excavation complete. Providing rough stone (15cm-30cm) dry packing in apron & all top four sides berm with but local boulder (boulder supplied by management). Construction of bathing ghut with local boulder floor near bathing ghut for change of clothes by women. Construction of bench on the embankment for sitting			4923782.00
2	Tulsi Chaura	30209.00	30209.00	60,418.00
3	Preparation of ramp on one side of the pond with slope for the village cattle to go near the water body on L.S. @ ₹ 50,000/- per pond	50,000.00	50,000.00	1,00,000.00
4	Provision for plantation on all three sides to control Soil erosion (plant will be supplied by management) and resting place of villagers coming for bathing	50 Plant 2,96,627.00	50 Plant 2,96,627.00	5,93,254.00
5	Provision for annual maintenance of pond for cleaning aquatic weeds from pond & cutting of bushes from apron & berms on L.S.	80,000.00	80,000.00	1,60,000.00
			<b>Total</b>	<b>58,37,454.00</b>
6	15% of the total cost for motivation of VSS / People involved			8,75,618.00
			<b>Total</b>	<b>67,13,072.00</b>
			<b>Escalation 20%</b>	<b>13,42,614.00</b>
				<b>80,55,686.00</b>
			<b>Grand Total</b>	<b>Or, 80,55,700.00</b>

(Rupees Eighty Lakh Fifty Five Thousand Seven hundred) only

General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

COUNTERSIGNED

Divisional Forest Officer  
Boral Division  
Boral Division

Technically Approved

Regional Chief Conservator of Forests  
Bourkela Circle


**Annexure-1**

**De-silting the Pond, Construction of Bathing Ghat & bench at Kalmang and Segasahi Pond by  
TATA Steel Limited @ Rs.450.00 per MD.**

Sl. No.	Items	Location	No	L	B	H	Qty	unit	Rate	Amount
1	Pumping of water by diesel pump incl. supplying diesel & lubricant						15	hours	750.13	11251.98
2	Desilting the pond	Kalmang	1	41.0	39.0	1.0	1599.0	cum		
		Segasahi	1	45.0	47.0	1.0	2115.0	cum		
							3714.0	cum	900.00	3342600.00
3	Removing weeds & bush from the bund of the pond	Kalmang, Segasahi	2	40.00	4.00		320.00	sqm	16.63	5320.64
4	Removing amary from the pond	Kalmang, Segasahi	2	30.00	7.00		420	sqm	46.33	19480.56
5	Rough stone masonry for bathing ghat	Kalmang	4	10.00	0.60	0.45	10.80			
			2	10.00	2.50	0.45	22.50			
		Segasahi	4	10.00	0.60	0.45	10.80			
			2	10.00	2.50	0.45	22.50			
							66.6	cum	6601.42	439654.79
6	20mm c p 1:4	Kalmang	1	10.00	3.20		32.00			
		Segasahi	1	10.00	3.20		32.00			
		step face	80	2.50	0.20		40.00			
		change room floor	4	5.00	2.00		40.00			
							144.00	sqm	301.49	43414.16
7	Neat cement punning	Kalmang	1	10.00	3.20		32.00			
		Segasahi	1	10.00	3.20		32.00			
		step face	80	2.50	0.20		40.00			
		change room floor	4	5.00	2.00		40.00			
							144.00	sqm	37.79	5442.10
8	Earth work in excavation	Change room								
		Kalmang	1	3.00	0.40	0.40	0.48			
			2	1.25	0.40	0.40	0.40			
			1	2.00	0.40	0.40	0.32			
			1	6.00	0.40	0.40	0.96			
		Segasahi	1	3.00	0.40	0.40	0.48			
			2	1.25	0.40	0.40	0.40			
			1	2.00	0.40	0.40	0.32			
			1	6.00	0.40	0.40	0.96			
		Bench	12	2.50	0.40	0.40	4.80			
							9.12	cum	450.00	4104.00
9	C C 1:3:6	Change room								

		Kalmang	1	3.00	0.40	0.10	0.12			
			2	1.25	0.40	0.10	0.10			
			1	2.00	0.40	0.10	0.08			
			1	6.00	0.40	0.10	0.24			
		Segasahi	1	3.00	0.40	0.10	0.12			
			2	1.25	0.40	0.10	0.10			
			1	2.00	0.40	0.10	0.08			
			1	6.00	0.40	0.10	0.24			
		Bench	12	0.50	0.40	0.10	0.24			
		Flooring	2	5.00	2.00	0.10	2.00			
							3.32	cum	9906.25	32888.75
10	CC 1:2:4	Bathing ghat	2	10.00	2.50	0.05	2.50	cum	9600.78	24001.94
11	B W 1:6	Change room								
		Kalmang	1	3.00	0.24	3.20	2.30			
			2	1.25	0.24	3.20	1.92			
			1	2.00	0.24	3.20	1.54			
			1	6.00	0.24	3.20	4.61			
		Segasahi	1	3.00	0.24	3.20	2.30			
			2	1.25	0.24	3.20	1.92			
			1	2.00	0.24	3.20	1.54			
			1	6.00	0.24	3.20	4.61			
		Bench	12	0.50	0.24	0.80	1.15			
							21.89	cum	12600.0	275814.00
12	12mm c p 1:6	Change room								
		Kalmang	1	3.00		3.00	9.00			
			2	1.25		3.00	7.50			
			1	2.00		3.00	6.00			
			1	6.00		3.00	18.00			
		Segasahi	1	3.00		3.00	9.00			
			2	1.25		3.00	7.50			
			1	2.00		3.00	6.00			
			1	6.00		3.00	18.00			
		Bench	12	0.50		0.10	0.60			
							81.6	sqm	255.13	20818.78
13	20mm c p 1:6	Change room								
		Kalmang	1	3.00		3.00	9.00			
			2	1.25		3.00	7.50			
			1	2.00		3.00	6.00			
			1	6.00		3.00	18.00			
		Segasahi	1	3.00		3.00	9.00			
			2	1.25		3.00	7.50			
			1	2.00		3.00	6.00			
			1	6.00		3.00	18.00			
		Bench	12	0.50		0.10	0.60			
							81.6	sqm	270.00	22032.00
14	Lift charge for B W 1:6	Change room								
		Kalmang	1	3.00	0.24	2.40	1.73			
			2	1.25	0.24	2.40	1.44			
			1	2.00	0.24	2.40	1.15			
			1	6.00	0.24	2.40	3.46			

		Segasahi	1	3.00	0.24	2.40	1.73			
			2	1.25	0.24	2.40	1.44			
			1	2.00	0.24	2.40	1.15			
			1	6.00	0.24	2.40	3.46			
							15.56	cum	301.49	4691.14
15	Lift charge for C.p	Change room								
		Kalmang	2	3.00		2.40	14.40			
			4	1.25		2.40	12.00			
			2	2.00		2.40	9.60			
			2	6.00		2.40	28.80			
		Segasahi	2	3.00		2.40	14.40			
			4	1.25		2.40	12.00			
			2	2.00		2.40	9.60			
			2	6.00		2.40	28.80			
							129.6	sqm	16.63	2154.86
16	Roofing with GCI sheet		2	5.00	3.00		30.00	sqm	301.49	9044.62
17	Carrying cutting to size & erecting stl steel		2	3.00	5.00	4.50	135.00	kg		
							0.135	MT	9000.00	1215.00
18	White wash 3 coats on new surface	Change room								
		Kalmang	2	3.00		2.40	14.40			
			4	1.25		2.40	12.00			
			2	2.00		2.40	9.60			
			2	6.00		2.40	28.80			
		Segasahi	2	3.00		2.40	14.40			
			4	1.25		2.40	12.00			
			2	2.00		2.40	9.60			
			2	6.00		2.40	28.80			
							129.6	sqm	36.00	4665.27
									<b>Sub Total</b>	<b>4268574.59</b>
19	Cement						11	MT	17399.24	191391.61
20	Angle						0.135	MT	119996.9	16199.59
									<b>Total</b>	<b>4476165.79</b>
									Contingency @ 10%	447616.57
									<b>Grand Total</b>	<b>4923782.36</b>
									Or,	<b>4923782.00</b>

  
 General Manager  
 Ore Mines & Quarries  
 TATA STEEL LIMITED

**CONSTRUCTION OF TULSICHAURA ON THE BATHING GHAT @ Rs.450.00**

Sl. No.	Description of Items	Unit	Nos	L	B	H	Quantity	Rate	Amount
1	Earthwork in excavation	M3	1	6	0.4	0.3	0.63	319.03	200.99
2	Plain cement concrete 1:3:6	M3	1	6	0.35	0.1	0.21		
							0.21	10342.33	2171.89
3	Brick Work ( 1:6 ) ( Above G.L. in Super Structure)	M3	1	6	0.25	1.5	2.25	10091.22	22705.25
4	12 mm thick plaster	M2	1	6		1.5	9		
							9	234.87	2113.82
5	Applying Lime Wash	M2		Same qty as item no 4			9	23.56	212.04
Sub total									27463.03
Contingency 10 %									2746.30
Total Amount (Rs.)									30209.33 Or, 30209.00

(Rupees Thirty Thousand Two hundred Nine) only.



General Manager  
Ore Mines & Quarries  
TATA STEEL LIMITED

**COST NORM FOR PLANTATION OF FRUIT BEARING SPECIES ALONG THE  
POND EMBANKMENT @ Rs.450.00 per MD  
400 Plants per Km. in 2 rows**

Sl No.	Item of work	Mandays	Labour rate @ 450.00	Material cost in Rs.	Total (Rs.)
<b>0 th year advance work/pre-planting/ 1st Yr. plant.</b>					
1	Site preparation & alignment	2	900.00		900.00
2	Pitting 45 cm cube	25	11250.00		11250.00
3	Cost of 400 nos. of 1 yr. old seedling @ Rs.141/- per seedling	0	0	56400	56400
4	Carriage of plants & planting	6	2700.00		2700.00
5	1st weeding & manuring	2	900.00		900.00
6	Casualty replacement	2	900.00		900.00
7	Soil working, application of insecticides	2	900.00		900.00
8	Cost of FYM& fertilizer including transportation		0	4480	4480.00
9	Cost of Iron gabion 400 Nos. @ 1869/- per gabion on LS		0	747600	747600.00
10	Misc expenditure		0	3734	3734
11	Cost of engaging one watcher for year (9 month)	234	105300.00		105300.00
12	Watering at least 5 days in a month for 4 months (8 person X 6 times in a month X 4 month)	192	86400.00		86400.00
13	Const. of 2 nos. Sign-board on LS. @ Rs 1500/- per signboard		0	3745	3745.00
	<b>Total :-</b>	<b>465</b>	<b>209250.00</b>	<b>815959.00</b>	<b>1025209.00</b>
<b>2nd Year Operation</b>					
14	Weeding, soil working, manuring (twice)	4	1800.00		1800.00
15	Casualty replacement 15% including cost of seedling including cost of seedlings (60 Nos @ 112/-)	2	900.00	8400	9300.00
16	Cost of fertilizer & pesticides		0	2240	2240.00
17	Gabion maintenance including painting	20	9000.00	37333	46333.00
18	Misc expenditure		0	1872	1872.00
19	Watering at least 6 days in a month for 8 months (April to July & November to March) (8 person X 5 times in a month X 8 month)	320	144000.00		144000.00
20	Cost of engaging one watcher for year (12 month)	312	140400.00		140400.00
	<b>Total :-</b>	<b>658</b>	<b>296100.00</b>	<b>49845.00</b>	<b>345945.00</b>

Sl No.	Item of work	Mandays	Labour rate @ 450.00	Material cost in Rs.	Total
<b>3rd Year Operation</b>					
25	Weeding, soil working	3	1350.00		1350.00
26	Gabion maintenance	20	9000.00	37333	46333
27	Cost of engaging one watcher for year (12 month)	312	140400.00		140400.00
28	Unforeseen		0	1872	1872
29	Watering at least 6 days in a month for 8 months (April to July & November to March) (8 person X 5 times in a month X 8 month)	320	144000.00		144000.00
	<b>Total :-</b>	<b>655</b>	<b>294750.00</b>	<b>39205.00</b>	<b>333955.00</b>
<b>4th Year Operation</b>					
25	Weeding and pruning	3	1350.00		1350.00
26	Gabion maintenance	20	9000.00	37333	46333
27	Cost of engaging one watcher for year (12 month)	312	140400.00		140400.00
28	Unforeseen		0	1872	1872
29	Watering at least 6 days in a month for 8 months (April to July & November to March) (8 person X 5 times in a month X 8 month)	320	144000.00		144000.00
	<b>Total :-</b>	<b>655</b>	<b>294750.00</b>	<b>39205.00</b>	<b>333955.00</b>
<b>5th Year Operation</b>					
30	Weeding and pruning	3	1350.00		1350.00
31	Gabion maintenance	20	9000.00	37333	46333
32	Cost of engaging one watcher for year (12 month)	312	140400.00		140400.00
33	Unforeseen		0	1872	1872
34	Watering at least 6 days in a month for 8 months (April to July & November to March) (8 person X 5 times in a month X 8 month)	320	144000.00		144000.00
	<b>Total :-</b>	<b>655</b>	<b>294750.00</b>	<b>39205.00</b>	<b>333955.00</b>
	<b>Grand Total :-</b>	<b>3088.00</b>	<b>1389600.00</b>	<b>983419.00</b>	<b>2373019.00</b>

#### ABSTRACT

Sl No.	Year	Amount (in Rs.)
1	1st year	1025209.00
2	2nd year	345945.00
3	3rd year	333955.00
4	4th year	333955.00
5	5th year	333955.00
	<b>Total :-</b>	<b>2373019.00</b>

Total Expenditure for 400 plants = Rs.23,73,019.00  
Expenditure for 200plant = Rs.11,86,509.5 (Or, 11,86,510.00)

  
General Manager  
Sue Minor & Quinnes  
TATA STEEL LIMITED



**ବନାଞ୍ଚଳ ଅଧିକାରୀଙ୍କ କାର୍ଯ୍ୟାଳୟ: କୋଇରାବନାଞ୍ଚଳ**  
**OFFICE OF THE RANGE FOREST OFFICER, KOIRA RANGE**

E-mail:- [koira.range@gmail.com](mailto:koira.range@gmail.com)

Memo No. 291 Dated 8/4/2024

To,

The Divisional Forest Officer  
Bonai Division, Bonai

Sub: -

Proposal for seeking prior approval of the Central Government under Section 2(ii) of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha. Forest land (16.658 ha. in Keonjhar Forest Division and 29.950 ha. in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly Known as Bhusan Steel Ltd.) (Online Proposal No. FP/OR/MIN/49169/2020) – Stage-I approval regarding.

Ref:-

Your Memo No. 3589/6F( Mg) Dt.06.04.2024

Sir,

With reference to your above cited memo, I verified the field position with user agency within 5 k.m. from mining lease boundary and found the below 2 nos of water bodies are suitable for de-siltation to be renovate & furnished the details work with GPS location.

Sl No.	Name of the Work	GPS Co-Ordinates of the area
1.	Water Body ( Kalmang Village )	N21 57 0.92 E85 18 52.09
2.	Water Body ( Segasahi Village )	N21 56 29.99 E85 16 29.73

This is for your kind information and necessary action.

Encl:- Location map

Yours Faithfully




  
Divisional Forest Officer  
Bonai Division

  
Range Officer  
Koira Forest Range

PLAN SHOWING RESULTING OF VILLAGE TANNED LOCATED WITHIN  
 05 KM FROM THE MINES LEASE BOUNDARY TO MITIGATE THE IMPACT OF  
 SALTATION OF SUCH TANKWATER BODIES OF  
 KALAMANG WEST (NORTHERN PART) BLOCK.



LEGEND

-  LEASE BOUNDARY
-  LOCATION OF POND
-  5 KM BUFFER ZONE

**ENVIRONMENTAL IMPACT**

THE FOLLOWING TABLES SHOW THE ENVIRONMENTAL IMPACT OF THE PROJECT AND THE MEASURES TO BE TAKEN TO MITIGATE THE IMPACT.

IMPACT	MEASURE
1. Soil erosion and sedimentation	1.1. Planting of trees and shrubs to stabilize the soil.
2. Air pollution	2.1. Use of low sulfur fuel.
3. Water pollution	3.1. Installation of a wastewater treatment plant.
4. Noise and vibration	4.1. Use of sound barriers.
5. Land use change	5.1. Reclamation of land.
6. Social and cultural impacts	6.1. Consultation with the community.
7. Health and safety	7.1. Implementation of a safety program.
8. Environmental management	8.1. Implementation of an environmental management plan.

Fig. 1. Tannery, 7.5 km from the mine



Prepared by  
 [Signature]  
 [Name]  
 [Title]

Prepared by  
 [Signature]  
 [Name]  
 [Title]



**OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS (WILDLIFE)  
& CHIEF WILDLIFE WARDEN, ODISHA**

Government of Odisha, Forest, Environment & Climate Change Department

PRAKRUTI BHAWAN, PLOT NO.1459, SAHEED NAGAR, BHUBANESWAR- 751007

Phone: 0674-2602250, Website: www.wildlife.odisha.gov.in, Email: odishawildlife@gmail.com

No. 11536 / CWLW-FDWC-FD-0170-2021

Dated, Bhubaneswar the 30 Oct, 2023

To

The Chief (Kalmong & Gandhalpada Project)  
M/s Tata Steel BSL Ltd. Mines Division  
Joda, Keonjhar

Sub: Approval of Site Specific Wildlife Conservation Plan in respect of Kalmang West (Northern Part) Iron Ore Mines of M/S Tata Steel Ltd. under Bonai & Keonjhar Forest Division in Sundargarh & Keonjhar District

Sir,

I am directed to convey the approval of PCCF (WL) & CWLW, Odisha for the Site Specific Wildlife Conservation Plan at financial outlay of ₹834.168 lakh (Rupees eight crore thirty-four lakh sixteen thousand eight hundred) only as per the details of activities mentioned in Chapter-IV & VI of the Plan in compliance to the condition stipulated in the Environmental Clearance granted by MoEF&CC vide Letter dtd. 18.10.2022.

(i)	In project impact area in Bonai Division:	₹607.200 lakh
(ii)	In project impact area in Keonjhar Division:	₹226.968 lakh
Total:		₹834.168 lakh

A sum of ₹834.168 lakh (Rupees eight crore thirty-four lakh sixteen thousand eight hundred) only shall be deposited in State CAMPA fund only through e-portal (<https://parivesh.nic.in>) for implementation of various activities within the project impact area by the Forest Department through concerned DFOs.

2. Activities in the project area as per Chapter-IV of the Plan will be executed by the project proponent under the guidance of DFO, Bonai/ Keonjhar Forest Division, as the case may be.

3. The Plan period is five years and will be revisited by concerned DFOs at least one year before expiry of its implementation. The User Agency will bear the cost of such Plan on its approval. Further, the User Agency will bear additional cost, if any, towards enhancement of wage rate and escalation of price of materials at the time of implementation of this Plan. In case of any deviation, it will be dealt as per law for violations of Forest (Conservation) Act 1980, Environment (Protection) Act 1986 and Wildlife (Protection) Act 1972.

Encl: Copy of approved SSWLCP

Yours faithfully

Conservator of Forests (ET)

P.T.O.



Memo. No. 11357 dt. 30/10/2023

Copy forwarded for information and necessary action to the: -

1. OSD-cum-Special Secretary to Government of Odisha, FE&CC Department, Bhubaneswar with reference to that Deptt. Memo No.FE-DIV-FLD-0154-2021-20931/FE&CC dt 30.11.2021
2. PCCF (FD & NO, FC Act), O/o PCCF & HoFF, Odisha, Bhubaneswar with reference to FE&CC Deptt. Memo No.20931/FE&CC dt 30.11.2021
3. Regional Chief Conservator of Forests, Rourkela Circle with reference to his office Memo. No.3270 dt. 29.09.2023
4. Divisional Forest Officer, Bonai Division alongwith copy of the approved SSWLCP with reference to Memo. No.3271 dt 29.09.2023 of RCCF, Rourkela Circle
5. Divisional Forest Officer, Keonjhar Division alongwith copy of the approved SSWLCP with reference to Memo. No.3272 dt 29.09.2023 of RCCF, Rourkela Circle

  
Conservator of Forests (ET)

CATACA + SSWLCF

AGENCY COPY

यूनियन बैंक Union Bank of India

NEFT / RTGS CHALLAN for CAMPA Funds

Date : 28-02-2024

Agency Name.	M/s. Tata Steel Limited, Khopoli
Application No.	5849169311
MoEF/SG File No.	8-13/2022-FC
Location.	ORRISA
Address.	Narendrapur, Po-Kusupanga, Via-Meramandali, Dist-DhenkanalDhenkanal
Amount(in Rs)	159615300/-

Amount in Words :Fifteen Crore Ninety-Six Lakh Fifteen Thousand Three Hundred Rupees. Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825849169311 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jelitta Towers, Mission Road, Bengaluru-560027

• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

BANK COPY

यूनियन बैंक Union Bank of India

NEFT / RTGS CHALLAN for CAMPA Funds

Date : 28-02-2024

Agency Name.	M/s. Tata Steel Limited, Khopoli
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Pay to Account No.	150825849169311 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jelitta Towers, Mission Road, Bengaluru-560027

• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

Note: After making the required payment through challan, if the payment status has not been updated even after 7 working days, then kindly mail a copy of your challan with transaction date and reference id to Email: [fcablr@unionbankofindia.bank](mailto:fcablr@unionbankofindia.bank), [epurse@unionbankofindia.bank](mailto:epurse@unionbankofindia.bank), [ubin0903710@unionbankofindia.bank](mailto:ubin0903710@unionbankofindia.bank)

Print

Back

Agency Name - ORRISA CAMPA  
Beneficiary Account - 150825849169311  
IFSC Code - UBIN0996335  
Amount Paid - 15,96,15,300.00/-  
UTR No - HDFCRS2024030686022141  
Payment Date - 06-03-2024



Date 11/03/2024

TO WHOM IT MAY CONCERN

This is to certify that following payments made with Tata Steel account 00870310000884 to following Tata Steel vendor with UTR and other details attached. In case any discrepancy please come back to us within a week.

Customer name : ORRISA CAMPA  
Beneficiary Account : 150825849169311  
IFSC Code : UBIN0996335  
Amount paid : 15,96,15,300.00/  
UTR No : HDFCR52024030686033141  
Payment Date : 06-03-2024

Thanks & Regards

For : HDFC Bank Ltd



**Form-II**

(For projects other than linear projects and Plantations)  
[Rule 6 (3) (e) of Forest (Conservation) Rules 2003 as amended up to date]  
Government of Odisha

**OFFICE OF THE DISTRICT COLLECTOR, SUNDARGARH**

No. 1321 / ITDA(FRA) Dated: 4/9/23

**TO WHOM SOEVER IT MAY CONCERN**

In compliance of the Rule 6 (3) (e) of Forest (Conservation) Rules 2003 [as amended vide the Forest (Conservation) second Amendment Rules 2014, Forest (Conservation) second Amendment Rules 2014; and Forest (Conservation) Amendment Rules 2016] it is certified that **25.95 Hectares** of forest land proposed to be diverted in favour of **M/s TATA Steel BSL Limited** for Mining activities in the district falls within the jurisdiction of village Kalmang & Ghodabudhani under Koira Tahasil. It is further certified that:

(a) (a) the complete process of recognition and vesting of forest rights under the FRA, 2006 has been carried out for the entire **25.95 Hectares** of forest land proposed for diversion. There are 5 Nos. of IFR title holders vested with Forest land of **1.667 Hectares (4.12 Ac.)** out of proposed area of **25.95 Hectares**. A copy of records of all consultations and meetings of the Forest Rights Committee (s), Gram Sabha (s), Sub-Division Level Committee(s), list of IFR title holders and the District Level Committee are enclosed as Annexure-I to Annexure-IV.

(b) the proposal for such diversion (with full details of the project and its implications, vernacular/ local language) have been placed before each concerned Gram Sabha or forest-dwellers, who are eligible under the FRA, 2006.

(c) each of the concerned Gram Sabha (s), has certified that all formalities/ process under the FRA have been carried out and that they have given their consent to the proposed diversion and the compensation and ameliorative measures, if any, having understood the purpose and details of proposed diversion. As regard to the compensation, the user agency **M/s TATA Steel BSL Limited** has given undertaking vide letter No. GM/OMQ/26/11-G dated 24.04.2023 to the effect that "Compensation amount will be given to the affected FRA title holders in Kalamang West (Northern Part) Iron Ore Block as per applicable Laws/Rules of Govt., if the said land is acquired by the user agency, M/s TATA Steel BSL Limited in future". Copies of certificate issued by the Gram Sabha Resolution of Kalmang & Ghodabudhani villages are enclosed as Annexure-I.

(d) the discussion and decisions on such proposals had taken place only when there was a quorum of minimum 50% of the members of Gram Sabhas present;

(e) the diversion of forest land for facilities managed by the Government as required under Section 3 (2) of the FRA have been completed and the Gram Sabhas have given their consent to it;

(f) the rights of Primitive Tribal Groups and Pre-Agricultural Communities, where applicable have been specifically safeguarded as per Section 3 (1) of the FRA, 2006.  
Encl: As above.



(Dr. Gavali Parag Harshad, IAS)  
COLLECTOR,  
SUNDARGARH  
COLLECTOR  
SUNDARGARH

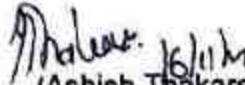
FORM NO.II  
(for projects other than linear projects)  
Government of Odisha  
Office of the District Collector, Keonjhar  
No. 2972 /Rev Dt 28/11/2023  
XIX-101/2023

**TO WHOMSOEVER IT MAY CONCERN**

In compliance of the Ministry of Environment and Forests (MoEF), Government of India's letter No.11-9/98-FC(Pt) dt 3<sup>rd</sup> August, 2009 wherein the MoEF issued guidelines on submission of evidences for having initiated and completed the process of settlement of rights under the Scheduled Tribes and Other Traditional Forest Dwellers( Recognition of Forest Rights Act), 2006 ('FRA' for short) on the forest land proposed to be diverted for non-forest purposes, it is certified that 16.658 Ha. of forest land involved in Kalmang West (Northern Part) Block proposed to be diverted in favour of **M/s. Tata Steel BSL Ltd.** for Iron Ore mining falls the jurisdiction of village – Gandhalpada under **Barbil Tahasil** in Keonjhar District.


It is further certified that,

- (a) The complete process of identification and settlement of rights under the FRA has been carried out for the entire 16.658Ha. of forest land proposed for diversion. A copy of records of all consultations and meetings of Gram Sabha, Sub-Division Level Committee(s) and the District level Committee are enclosed as annexure- 1 to annexure- 8
- (b) The proposal for such diversion (with full details of the project and its implications, in vernacular/local language) have been placed before each concerned Gram Sabha of forest dwellers who are eligible under the FRA.
- (c) The concerned Gram Sabha, has certified that all formalities/processes under the FRA have been carried out, and that they have given their consent to the proposed diversion and the compensation and ameliorative measures, if any, having understood the purpose and the details of proposed diversion. Copy of Gram Sabha Resolution is enclosed as annexure- 7.
- (d) The discussion and decisions on such proposals had taken place only when there was a quorum of minimum 50% of the members of the village present.
- (e) No such facilities managed by Government requiring diversion of forest land u/s 3(2) of the Forest Rights Act, 2006 exist over the forest land proposed for diversion.
- (f) The rights of Primitive Tribal Groups and Pre-Agricultural Communities, where applicable have been specifically safeguarded as per section 3(1)(e) of the FRA.

  
(Ashish Thakare)  
Collector, Keonjhar

Memo No. 2973 /Rev/ Dt 28.11.2023

Copy of Certificate alongwith its enclosures(Annexure-1 to 8 )  
forwarded to the Divisional Forest Officer, Keonjhar Division, Keonjhar for information  
and necessary action

  
Addl. District Magistrate,  
Keonjhar



OFFICE OF THE REGIONAL CHIEF CONSERVATOR OF FORESTS, ROURKELA CIRCLE,  
AT/P.O. PANPOSH, ROURKELA-769 004.

Memo No. 1454 /3F-791/2024 Date: 03.04-2024

To


The Principal Chief Conservator of Forests (Wildlife) &  
Chief Wildlife Warden, Odisha, Bhubaneswar.

Sub:- Proposal for seeking prior approval of the Central Government under Section - 2(ii) of the Forest Conservation Act, 1980 for non-forestry use of 42.608 ha forest land (16.658 ha in Keonjhar Forest Division and 25.950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar & Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Ltd. (Formerly known as M/s Bhusan Steel Ltd) (Online Proposal No.FP/OR/MIN/ 49169/2020)- Stage-I approval regarding.

X-Sub:- Submission of Scheme for Alternate habitat/home for the Avifauna.

The Divisional Forest Officer, Bonai Division vide his Memo No.3339 Dated 28.03.2024 has submitted the scheme for creation and maintenance of alternate habitat / home for the Avifauna, whose nesting trees are to be cleared in this project with provision for bird nests artificially made out of eco-friendly materials to be used in the area, including forest area and human settlements, adjoining the forest area being diverted for the project in compliance with the condition No.23 of the Stage-I approval accorded vide Letter F.No. 8-13/2022-FC dt.22.12.2023 of MoEF & CC, Govt. of India, in respect of the above diversion proposal which is forwarded herewith for favour of your kind information and necessary approved.


Encl.:- As above.

  
Regional Chief Conservator of Forests,  
Rourkela Circle.

Memo No.

Date:


Copy forwarded to the Principal Chief Conservator of Forests (Forest Diversion & Nodal Officer, FC Act), O/o the PCCF & HoFF, Odisha for favour of kind information and necessary action with reference to Memo No.3340 Dtd.28.03.2024 of DFO, Bonai Division.

  
Regional Chief Conservator of Forests,  
Rourkela Circle.

Memo No.

Date:

Copy forwarded to the Divisional Forest Officer, Bonai Division for favour of information and necessary action with reference to his Memo No.3339 Dated 28.03.2024.

  
Regional Chief Conservator of Forests,  
Rourkela Circle

Memo No.

/ Date:

Copy forwarded to the General Manager, OMQ, Tata Steel Ltd., Mines Division, Noamundi-733217 for information and necessary action with reference to Memo No. 3341 Dtd.28.03.2024 of DFO, Bonai Division

  
Regional Chief Conservator of Forests  
Rourkela Circle



OFFICE OF THE REGIONAL CHIEF CONSERVATOR OF FORESTS, ROURKELA CIRCLE,  
AT/P.O. PANPOSH, ROURKELA-769 004.

Memo No. 1454 13F-791/2024 Date: 03.04.2024

To

The Principal Chief Conservator of Forests (Wildlife) &  
Chief Wildlife Warden, Odisha, Bhubaneswar.

Sub:- Proposal for seeking prior approval of the Central Government under Section - 2(ii) of the Forest Conservation Act, 1980 for non-forestry use of 42.608 ha forest land (16.658 ha in Keonjhar Forest Division and 25.950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar & Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Ltd. (Formerly known as M/s Bhusan Steel Ltd) (Online Proposal No.FP/OR/MIN/ 49169/2020)- Stage-I approval regarding.

X-Sub:- Submission of Scheme for Alternate habitat/home for the Avifauna.

The Divisional Forest Officer, Bonai Division vide his Memo No.3339 Dated 28.03.2024 has submitted the scheme for creation and maintenance of alternate habitat / home for the Avifauna, whose nesting trees are to be cleared in this project with provision for bird nests artificially made out of eco-friendly materials to be used in the area, including forest area and human settlements, adjoining the forest area being diverted for the project in compliance with the condition No.23 of the Stage-I approval accorded vide Letter F.No. 8-13/2022-FC dt.22.12.2023 of MoEF & CC, Govt. of India, in respect of the above diversion proposal which is forwarded herewith for favour of your kind information and necessary approved.

Encl:- As above.

Regional Chief Conservator of Forests,  
Rourkela Circle.

Memo No. 1455 Date: 03.04.2024

Copy forwarded to the Principal Chief Conservator of Forests (Forest Diversion & Nodal Officer, FC Act), O/o the PCCF & HoFF, Odisha for favour of kind information and necessary action with reference to Memo No.3340 Dtd.28.03.2024 of DFO, Bonai Division.

Regional Chief Conservator of Forests,  
Rourkela Circle.

Memo No. 1456 Date: 03.04.2024

Copy forwarded to the Divisional Forest Officer, Bonai Division for favour of information and necessary action with reference to his Memo No.3339 Dated 28.03.2024.

Regional Chief Conservator of Forests,  
Rourkela Circle

Memo No. 1457 Date: 03.04.2024

Copy forwarded to the General Manager, OMQ, Tata Steel Ltd., Mines Division, Noamundi-733217 for information and necessary action with reference to Memo No. 3341 Dtd.28.03.2024 of DFO, Bonai Division

Regional Chief Conservator of Forests  
Rourkela Circle



*Scheme*

*For*

CREATION AND MAINTENANCE OF ALTERNATE HABITAT/ HOME  
FOR THE AVIFAUNA, WHOSE NESTING TREES ARE TO BE  
CLEARED IN THIS PROJECT AS PER THE PLAN DULY APPROVED  
BY THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS  
(WILDLIFE) AND THE CHIEF WILDLIFE WARDEN ODISHA.

*in compliance*

*with*

*Condition No.23 of*

*Stage-I approval granted vide*

*Letter No.8-13/2022-FC, Dated.22.12.2023*

*of Govt. of India, Ministry of Environment, Forests*

*& Climate Change,*

*New Delhi.*

*For*

*Diversion of 42.608 Hects of Forest Land for U/s-2 (ii) (including  
2.382 ha. of Safety Zone) OF FC Act-1980*

*within 92.875 Ha. Iron Ore Mining Lease*

*of*

*M/S Tata Steel BSL Limited (now amalgamated into & with Tata Steel  
Limited).*

*in village Kalamang and Ghodabudhani of Koira tahsil, Sundargarh  
District and Gandhalpada village in Barbil Tahsil, Keonjhar District*

*Odisha.*

## **01. INTRODUCTION**

The Govt. of Odisha vide Letter No.5285/DM dt.24.06.2017, read with Letter No.6287/SM dt.27.07.2017, issued Letter of Intent (LoI) for grant of Mining Lease of Kalamang West (Northern Part) Iron Ore Block in favour of M/s Bhushan Steel Limited over an area of 92.875 hectare in village Kalamang and Ghodabudhani, of Sundargarh District and Gandhalpada village of Keonjhar District for a period of 50 years. The Letter of Intent was transferred in favour of M/s Tata Steel BSL Limited on taking over of Bhushan Steel Limited basing on the Order of NCLT vide Steel & Mines Dept. Letter No: 4261/SM dated 27.05.2021. Govt. of Odisha Steel & Mines Dept. have further approved the amalgamation of M/s Tata Steel BSL Limited into & with M/s Tata Steel Limited vide letter no: 541/SM dated 21.01.2022 which makes M/s Tata Steel Limited, eligible LOI holder of Kalamang West (Northern Part) Iron Ore Block.

As per the Terms & Conditions of LOI the Applicant shall fulfill the provisions of all Acts and Rules applicable to the Project. Accordingly, M/s Tata Steel Bhushan Limited has submitted the proposal to obtain approval of the Central Govt. over 42.608 hectare of forest land including Safety Zone 2.382 Ha U/s-2 (ii), of the Forest (Conservation) Act'1980 within the above Mining Lease area.

Further, Stage-I approval over 42.608 ha. of Forest Land U/s-2 (ii) (including 2.382 ha. of Safety Zone) has been granted by MoEF& CC vide their Letter No. 8-13/2022-FC, dated 22.12.2023 where in it has been stipulated as per **Condition No. 23 for creation and maintenance of alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project as per the plan duly approved by the Principal Chief Conservator of Forests (Wildlife) and the Chief Wildlife Warden, Odisha.**

## **2. LOCATION**

The mining lease area finds place in the Survey of India Topo sheet No.F45N5 (73 G/5) and situated between the latitude 21° 56' 47.75784" to 21° 57' 32.34779" N and longitude 85° 17' 06.65892" to 85° 17' 57.53148" E. The above ML area covering villages such as Kalamang, and Ghodabudhani in Koira Range, Bonai Forest Division, Sundargarh District and Gandhalpada village of Barbil Range, Keonjhar Forest Division, Dist-Keonjhar, Odisha.

### **3. TOPOGRAPHY**

The above allotted block under study is a highly rugged terrain, with elongated hills trending ENE-WSW direction, low mounds and narrow valleys. The highest elevation of ridges in the area is 690 m above MSL forming the ridge. Lowest elevation is 585 m above MSL which forms the valley floor in this block.

### **4. LAND USE PATTERN**

During the life of the mine, about 92.875 hectares will be utilized for mining, Minerals processing, Road, and green belt plantation in Safety Zone area etc. The details of land use pattern will be as follows:

#### **Village wise break up of total land**

Sl.No	District Name	Forest land in Ha	Non forest land in Ha	Total land in Ha
1	Keonjhar	16.658	0	16.658
2	Sundargarh	25.95	50.267	76.217
<b>Total in Ha</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

#### **Item wise Proposed Land Use Pattern in Forest and Non-Forest Land of Total Lease Hold Area**

Sl. No	Type of Land Use	Forest Land in Ha.	Non- Forest Land in Ha.	Grand Total in Ha.
1	Area under excavation including the backfilled area	36.458	38.919	75.377
2	Overburden/Waste Dumping	2.109	4.962	7.071
3	Topsoil Stacking	0.228	0.615	0.843
4	Mineral Reject stack	0.032	1.410	1.442
5	Green Belt in the south beyond the UPL	1.399	2.771	4.170
6	7.5 meter along the inner side of ML boundary	2.382	1.590	3.972
<b>Total</b>		<b>42.608</b>	<b>50.267</b>	<b>92.875</b>

### **5. EXISTING VEGETATION**

The existing vegetation of the M.L area comprises of various species such as: Asana, Bahada, Char, Harida, Jamun, Dhaura, Kumbhi, Kendu, Mundi, etc. There are existence of some herbs, climbers, etc. Sal is the main species.

## **6. OBJECTIVE OF THE SCHEME**

The main objective of the present scheme is to fulfill the Condition No 23 of the Stage-I approval granted vide Letter No.8-13/2022-FC, Dated.22.12.2023 of MoEF& CC to undertake "for creation and maintenance of alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project as per the plan duly approved by the Principal Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden, Odisha". Loss of habitats in forest land results with respect to environmental loss, existing bird nests, fragmentation of habitat etc. commonly seen birds are Kajalapati, Koel, Katha hana, Baja chadhei, Ghara chatia, Pecha, Kapota, Crow, Owl, Dove, Sparrow etc.

Accordingly alternative bird nests made out of eco friendly materials as alternative habitat is proposed for shelter, food, water etc. for the birds which will be migrating to the adjoining forest area of the M.L area. Out of 5582 no. Of trees about 5012 no of trees to be felled excluding 570 no of trees in safety zone.

The steps to be followed are as under;

- a) To reequip habitat loss for birds living in the project area due to fragmentation due to felling of trees in M.L area.
- b) Alternate habitats i.e. nests out of eco friendly material to be provided in places in safety zone area in this area 100 nos. of eco-friendly bird nest to be fixed similarly 200 nos of sparrow bird nest to be provided in habitation area including awareness programme of the habitanta for protection and conservation of sparrows.
- c) To maintain the alternate habitat/ home (Bird nests) for their shelter, water facilities (bird birth ditches).

## **7. METHODOLOGY**

- a) Birds like: Kajalapati, koel, kattha hana, baja chadhei, gharra chatia, pecha, kapota, crow, owl, dove, sparrow etc.
- b) Selection of locations of trees in safety zone area to be identified for fixing 100 nos of bird nests similar efforts to be taken for identification of houses in habitation area where 200 nos of nests for sparrow to be distributed among adjoining villagers.

- c) Selection of host trees in the abovementioned areas with due importance to mainly fruit bearing trees like; Kendu, Kusuma, Mango, Jamun etc having girth preferably above 120 cm (approximately) trees in cluster maner have been selected within safety zone area.Design of bird nests having prepare and have been shown to forest authority concern.
- d) As per design agreed to by forest official as prepared to extent of 100 no.
- e) It will be more ideal to keep a provision to demonstrate the interventions after done with the villagers concern, near by school students, villagers and local dignities of panchayat and subdivisonal level in presence of head of the forest division to encourage the local people by briefing the purpose of the nest and their helping hands for protection of birds in said locations in other areas.In awareness programme for the purpose.
- f) Bird birth ditches are to be constructed in appropriate locations in the safety zone area of about 3mx2mx0.5m with provision of supply of water by tanker which is to be ensure by the user agency.Further, in respect of distribution of 200 nos. of nest for sparrows,water facility ensure by user agency after discussion with villagers where such nest will be distributed.
- g) The said bird birth ditches are to be periodically cleaned and disinfected by Potassium permanganate (KMnO<sub>4</sub>).

		
Earthen pot Nest	Nest Box	Nest Box

## **8.EXECUTION**

The scheme will be executed by the project proponent in consultation with local concern forest officer and the cost will be borne by the user agency after approval of the scheme by the Principal Chief Conservator of Forests (Wild life) and Chief Wildlife Warden,Odisha.

## 9.Funding Agencies

The user agency will provide funds for the scheme as approved by the Principal Chief Conservator of Forest (Wild life) and Chief Wildlife Warden, Odisha.

## 10.MONITORING AND EVALUTION.

The implementation of the scheme will be monitor and evaluate the interventions sited above for the scheme are appropriate maintenance measures to be taken by user agency in consultation with forest staff. Observations made during evaluations and monitoring to be recorded separately for other actions as required.

## 11. REQUIREMENT OF FUNDS

Sl. No.	Items of work	Approximate rate per nests (unit cost) (in Rs)	Unit	Total cost (in Rs)	Remark
1.	Cost of 100 no. of bird nests	800	100	80000	
2.	Cost of 200 sparrow bird nest	300	200	60000	
3.	Transportation including loading and unloading upto suitable location			50000	
4.	Fixing of bird nests (100no.)	500 per MD for 5 persons per day for 10 days	20x5x500	50000	
5.	Cost of 5 no. of bird birth ditches with provision of HDPE	20000	5	100000	Size of each bird birth ditch 15 feet x 10 feet x3 feet with gentle slope
6.	Supervision & monitoring			50000 (appx)	By User Agency
Total				390000	
Add 20% escalation				78000	
G. Total				468000	

(Rupees Four lakh sixty eight thousand only).

**COUNTERSIGNED**

  
Divisional Forest Officer  
Banshi Division

  
General Manager  
Ore Mines & Quatrids  
TATA STEEL LIMITED



By E-mail

## ବନଖଣ୍ଡ ଅଧିକାରୀଙ୍କ କାର୍ଯ୍ୟାଳୟ : ବଣାଇ ବନଖଣ୍ଡ

OFFICE OF THE DIVISIONAL FOREST OFFICER: BONAI FOREST DIVISION

Phone 06626-244454 E-mail- dfo.bonai@odisha.gov.in

No. 4346 /BF-(Mg.) Dt. 03.05.2024

To

The General Manager,  
OMQ, Tata Steel Ltd., Mines Division,  
Noamundi-733217.

Sub:-

Proposal for seeking prior approval of the Central Government under Section 2 (ii) of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha. forest land (16.858 ha. in Keonjhar Forest Division and 25.950 ha. in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhushan Steel Ltd.) (Online Proposal No.FP/OR/MIN/49189 /2020)-Stage-I approval regarding.

Ref:-

Memo No.4649 dt.24.04.2024 of the CCF (WL-III), O/o the PCCF (WL) & CWLW, Odisha, Bhubaneswar addressed to this office.

Sir,

With reference to above, it is to inform you that the following scheme has been approved by the Principal Chief Conservator of Forests, (Wildlife) & CWLW, Odisha, Bhubaneswar vide his memo under reference.

1.	Scheme for Creation and maintenance of alternative habitat / home for avifauna	₹ 4,68,000.00
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Hence, you are requested to deposit above amount of ₹4,68,000/- (Rupees four lakhs sixty-eight thousand only) through e-portal of MoEF & CC as provided in the <http://parivesh.nic.in>, and submit the original proof with seal and signature of the issuing Bank to this office for needful.

Yours faithfully,

Divisional Forest Officer,  
Bonai Division.

Memo No. 4347 /BF-Dt: 03.05.2024

Copy forwarded to the Principal Chief Conservator of Forests, (Wildlife) & CWLW, Odisha, Bhubaneswar for favour of kind information and necessary action with reference to his Memo No.4649 dt.24.04.2024.

Divisional Forest Officer,  
Bonai Division.

Memo No. 4348 /BF-Dt: 03.05.2024

Copy forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, F.C. Act' O/O the P.C.C.F., Odisha Bhubaneswar for favour of kind information and necessary action.

Divisional Forest Officer,  
Bonai Division.

Memo No. 4349 /BF-Dt: 03.05.2024

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela for favour of kind information and necessary action with reference to his Memo No.4650 dt.24.4.2024.

Divisional Forest Officer,  
Bonai Division.

**AGENCY COPY**

यूनियन बैंक Union Bank



## NEFT / RTGS CHALLAN for CAMPA Funds

**Date : 07-05-2024**

Agency Name.	M/s. Tata Steel Limited, Khopoli
Application No.	5548169401
MoEF/SG File No.	8-13/2022-FC
Location.	ORRISA
Address.	Narendrapur, Po- Kusupanga, Via- Marmandali, Dist- Dhenkanal,Dhenkanal
Amount(In Rs)	5755500/-

Amount In Words: Fifty-Seven Lakh Fifty-Five Thousand Five Hundred Rupees Only

**NEFT/RTGS to be made as per following details;**

Beneficiary Name:	ORRISA CAMPA	
IFSC Code:	UBIN0806335	
Pay to Account No.	150825849169401 Valid only for this challan amount.	
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jelita Towers, Mission Road, Bengaluru-560027	

\* This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

BANK COPY

**यूनिऑन बैंक**  
Union Bank



## NEFT / RTGS CHALLAN for CAMPA Funds

**Date : 07-05-2024**

Agency Name.	M/s. Tata Steel Limited, Khopoli
Application No.	5843189401
MoEF/SG File No.	8-13/2022-FC
Location.	ORTISA
Address;	Narendrapur, Po- Kusumpanga, Via- Meramandali, Dist- Dhenkanal Dhenkanal
Amount(in Rs)	5755500/-

Amount In Words: Fifty-Seven Lakh Fifty-Five Thousand Five Hundred Rupees Only

**NEFT/RTGS to be made as per following details:**

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0988335
Pay to Account No.	150825649169401 Valid only for this challan amount.
Bank Name & Address:	Union Bank of India FCS Centre, 21/1, III Floor, Jelitta Towers, Mission Road, Bengaluru-560027

• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

1.5-times Safety Zone  
+  
Avifauna

11/28

[illegible]

TO WHOM IT MAY CONCERN

This is to certify that following payments made with Tata Steel account 00870310000884 to following Tata Steel vendor with UTR and other details attached. In case any discrepancy please come back to us within a week.

Customer name : ORISSA CAMPA  
Beneficiary Account : 150825849169401  
IFSC Code : UBIN0996335  
Amount paid : 57,55,500.00  
UTR No : HDFCR52024050755078512  
Payment Date : 07/05/2024

Thanks & Regards



For, HDFC Bank Ltd





**Government of India**  
**Ministry of Environment, Forest and Climate Change**  
**(Issued by the State Environment Impact Assessment**  
**Authority(SEIAA), Orissa)**

To,

The Sr. Manager  
 Tata Steel Limited, Meramandali  
 Registered Office  
 Bombay House,  
 24 Homi Mody Street,  
 Mumbai- 400001,  
 Site: [www.tatasteel.com](http://www.tatasteel.com) Address for communication:  
 M/s Tata Steel Ltd Meramandali  
 At- Narendrapur, P.O.- Kusupanga, Via- Meramandali, Dist.-Dhenkanal,  
 Odisha  
 759121 -759121

**Subject:** Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the SEIAA vide proposal number SIA/OR/MIN/55807/2020 dated 08 Jun 2022. The particulars of the environmental clearance granted to the project are as below

1. EC Identification No.	EC22B001OR117596
2. File No.	55807/89-MINB1/06-2022
3. Project Type	New
4. Category	B1
5. Project/Activity including Schedule No.	1(a) Mining of minerals
6. Name of Project	Kalamang West (Northern Part) Block Iron Ore Mines of Tata Steel BSL Limited.
7. Name of Company/Organization	Tata Steel Limited, Meramandali
8. Location of Project	Orissa
9. TOR Date	15 Jan 2021

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 18/10/2022

(e-signed)  
 Dr. K. Murugesan, IFS  
 Member Secretary  
 SEIAA - (Orissa)

*Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH. Please quote identification number in all future correspondence.*

*This is a computer generated cover page.*



**SEIAA File No. 55807/89-MINB1/06-2022**

**Subject: Proposal for Mining of Iron Ore with production Capacity of 2.95 MTPA (RoM) from Kalamang West (Northern Part) Iron Ore Mines at Village- Kalamang & Ghodabudani, District- Sundergarh & Village - Gandalpada, District - Keonjhar, Odisha(MLA: 92.875 ha) by M/s Tata Steel Limited -Environmental Clearance reg.**

This has reference to your online proposal No. SIA/OR/MIN/55807/2020 dated 08.06.2022, submitted to SEIAA, Odisha for grant of Environmental Clearance(EC) for Mining of Iron Ore with production Capacity of 2.95 MTPA (RoM) from Kalamang West (Northern Part) Iron Ore Mines at Village- Kalamang & Ghodabudani, District- Sundergarh & Village - Gandalpada, District - Keonjhar, Odisha(MLA: 92.875 ha) in terms of the provisions of the Environment Impact Assessment(EIA) Notification, 2006 under the Environment(Protection) Act,1986.

**2. Proposal in Brief:**

Proposal No.	SIA/OR/MIN/55807/2020
File No.	55807/89-MINB1/06-2022
Project Type	Fresh EC
Category	B1
Project/Activity including Schedule No.	1(a) Mining of minerals
Name of the Project	Proposal for grant of EC for Mining of Iron Ore with production Capacity of 2.95 MTPA (RoM) From Kalamang West (Northern Part) Iron Ore Mines at Village- Kalamang&Ghodabudani District- Sundergarh & Village - Gandalpada, District - Keonjhar, Odisha(MLA: 92.875 ha)
Name of the company/Organization	M/s Tata Steel Limited
Location of Project	Odisha
ToR Date	15.01.2021

- This is a proposal for EC for mining of iron ore from Kalamang West (Northern Part) Iron Ore Mines with Production Capacity of 2.95 MTPA (ROM) over M.L. area of 92.875 Ha at Village- Kalamang & Ghodabudani of District- Sundergarh& Village Gandalpada of District- Keonjhar by M/s Tata Steel Limited filed by Sri Santosh Kumar Pattajoshi, Sr.Manager.
- The Kalamang West (Northern Part) Block Iron Ore Mine is proposed over an area of 92.875 hectares (ha) which involves 42.608 ha of forest land (16.658 ha in Keonjhar Forest Division, District Keonjhar and 25.950 ha in Bonai Forest Division, District Sundargarh) and 50.267 ha of non-forest land. The Mining area is situated in three villages namely,

*[Handwritten signature]*  
 15/01/2022



- village-Kalamang & Ghodabudani of Tahasil – Koira, District Sundargarh & village Gandalpada of Tehsil - Barbil, District Keonjhar State Odisha.
5. TOR was issued by SEIAA vide letter reference No.22/SEIAA dated 15.01.2021 to the project for undertaking detailed EIA studies.
  6. The Government of Odisha had issued Letter of Intent (LoI) vide Govt. letter No. IV(MISC) SM-53/2017/5285/SM dt.24.06.2017 as per Rule 10(2) was again modified by Steel and Mines Department, Government of Odisha vide letter no. IV(MISC) SM-53/2017/6287/SM dt.27.07.2017 revising the earlier mentioned area of 92.0 ha to 92.875 ha for grant of Mining Lease for Kalamang West (Northern Part) Iron Ore Block in village Kalamang & Ghodabudhani in District Sundargarh and village Gandalpada in District Keonjhar is in the name of M/s Bhushan Steel Ltd. The change of name from Bhushan Steel Limited to TATA STEEL BSL Limited was approved by the Department of Steel and Mines vide letter No. 1409/SM/dated 27.02.2019 for grant of a Mining Lease. Now, M/s Tata Steel BSL Ltd. has requested to 'The Additional Chief Secretary' of Department of Steel and Mines, Govt. of Odisha for extension of validity of LOI vide letter no TBSL/CS/2020/101 dated 05.03.2020. The LOI has been issued for a period of 50 years.
  7. **Location & Environmental Sensitivity :** The geo-coordinates of the mine lease area is Latitude: 21°56'47.757"N to 21°57'32.347"N and Longitude: 85°17'06.658" E to 85°17'57.531" E. The mine is well connected by NH-215, which is about 1.80 km in NW. Nearest Railway Station is Barbil which is about 17.86 Km in NNE direction. Rourkela Airport at 59 Km NW, Jharsuguda Airport 128 km W and Biju Patnaik International Airport, Bhubaneswar is about 196 Km in SSE direction from the project site. The project proponent has submitted that there is no National Park, wildlife sanctuary, biosphere reserve within 15 km radius of the Mine. However, Karo Karampada Elephant corridor is located at about 8.6 km N of the lease area. There is no perennial surface water body in the applied mine lease area.
  8. A total 42.608 ha. of forest land has been reported to be involved in the project. Approval under Section 2(iii) of the Forest (Conservation) Act, 1980 for diversion of 42.608 ha of forest land for non-forestry purposes has been obtained vide MoEF&CC letter No. 8-32/2021-FC dtd. 31.01.2022. Approval under section 2 (ii) has been recommended by GoO to MoEF&CC vide letter no: FE-DIV-FLD-0048-2022-10644/FE&CC dated 17/06/2022.
  9. Site Specific Wildlife conservation plan for schedule-I species has been submitted to the Divisional Forest Officer of Bonai Forest Division & Keonjhar Forest Division vide ref. no. JCO/13/133/118 dtd. 7th June 2022.
  10. Public Hearing for this project was conducted in two districts i.e Sundargarh and Keonjhar. In respect of Keonjhar district, PH was conducted on 09.03.2022 at 11.00 A.M at Village Gandalpada (GP-Guali) P.S- Rugudihi, Hata No. 48, Plot No. 194 & for Sundargarh district, PH was conducted on 10.11.2021 at 10:30 A.M at Football Play Ground of Kalamang village under Koira Block. The major issues raised in the public hearing were provision of employment to local people, education, medical facilities, infrastructural development and welfare activities, road maintenance, tree plantation etc. Action plan for fulfilling the PH commitments has been made.



11. Baseline monitoring studies has been carried out for the period December 2019 to February 2020 (Winter Season).
12. **Reserves** - Total geological reserves reported in the mine lease area is 929,73,749T (92.97 MT) with 718,86,002 T (71.88 MT) mineable reserve. The mine capacity will be 2.95 MTPA Iron Ore (ROM) corresponding to the production of 2.84 MTPA Saleable Iron Ore with a total Max excavation of 4.54 MTPA. In the lease area, iron ore (ROM) grade varies from 45% to 65% Fe. Iron ore of > 55% Fe is considered as marketable grade. The reserve in between 45-55% Fe has been taken as sub-grade ore (Mineral rejects).
13. **Method of Mining**: Opencast Fully Mechanized Mining method has been proposed. It is proposed to commence mining operation from north eastern part of the lease. In the plan period of about 2.95 MTPA, has been proposed for production. As the mining activities in the lease area is to be commenced, activities connected with development of the mine such as scrapping of weathered zones, cutting of trees/bushes, making of access roads, infrastructure development etc will be given prime preference. After the development of an access road to the targeted area a box cut will be opened and thereafter, it will be expanded both laterally and depth-ward to fulfill the required production target. Life of mine is 25 years.
14. **Production Details**: The annual excavation is targeted at 2.95 MTPA (RoM) Iron Ore with total maximum excavation of 3.92 MTPA. The ROM will be fed to a mobile crushing/ screening plant of 1000 TPH capacity. The lump ore and fines will be segregated in the Crushing /Screening plant.
15. **Drilling & Blasting**: Drilling will be carried out using 110-150 mm dia. Drill with 3.0-4.0m burden & 3.5-4.5 m spacing based on the geological rock characteristics. Taking into account the disposition of the ore body, it has been estimated that about 80 % (approx.) of planned quantity will require drilling & blasting.
16. **Transportation**: Transportation of iron ore has been proposed through 5 railway sidings such as Barbil Rail siding, Nayagarh Rail siding, Jururi Rail siding, Banspani Rail siding & Barsua Rail siding.
17. **Waste Generation & Management**: A total volume of 14,58,980 m<sup>3</sup> insitu waste is to be generated from the lease area. For the purpose a volume 1,12,241 m<sup>3</sup> waste generated in the 1<sup>st</sup> year from the lease area will be used and rest waste of volume 3,30,412 m<sup>3</sup> will be accommodated on the proposed dumps. Dump-A and B have been proposed in the NE side and SE side of the lease area over an area of 0.967 Ha. & 1.826 Ha, respectively. Similarly, the in situ waste to be generated in the 2nd year is 3,87,513 m<sup>3</sup>, out of which of 1,84,267 m<sup>3</sup> will be used for backfilling of the exhausted portion and rest quantity of waste of volume 2,03,246 m<sup>3</sup> shall be accommodated over the proposed dump-A and C. Dump C will be located at the northern part of the Dump-B. In the third year a vol of 1,00,524 m<sup>3</sup> waste will be utilized for backfilling and the rest of 1,37,257 m<sup>3</sup> waste will be dumped on Dump C. The total waste to be generated in the fourth year and fifth year of volume 1,70,254 m<sup>3</sup> and 2,20,779 m<sup>3</sup> respectively will be used for backfilling of the exhausted areas.



18. **Rehabilitation & Resettlement:** The project proponent has submitted that the mine lease area comprises of 20.580 Ha private land. Few habitations of Ghodabudhani village are located in the lease area. The project involves 71 affected families and 54 numbers of displaced families involves. All the affected families shall receive R & R compensation based on their entitlements as prescribed under the Orissa R&R Policy, 2006 and subsequent biennial revisions communicated by Govt. from time to time as well as the best practices recommended by the LARR Act, 2013. Funds allocated for R&R Rs. 39.07 crores.
19. **Green Belt:** Plantation will be carried out in 7.5 m wide safety barrier zone, backfilled area, inactive dump slopes, etc. At conceptual stage, almost 4.17ha. will be under plantation.
20. **Rainwater Harvesting Details:** Rain water harvesting measures will be done by construction of trenched along the green belt, roads and through recharge pits which accounts to a recharge of around 21700 KL /year. Total rainwater harvesting potential in the project area is around 302471.1 KL /year or 0.302471 MCM.
21. **Water Requirement:** The total water requirement is about 235 KLD (For Drinking & Domestic Uses - 65 KLD and for Mining Operations, dust suppression and Plantation - 170 KLD). For Ground water abstraction of 65KLD, application has been submitted vide no. 21-4/3864/OR/MIN/2022 dtd. 28.06.2022. For Surface water withdrawal of 170 KLD from Suna River, application has been submitted vide no. 2021012241000218 dtd. 01.03.2021.
22. **Power Requirement:** Power utilization for this project is 1,800 – 2,000 KW. 3 DG sets of 850 KVA will be used for emergency backup. Power permission will be obtained from Odisha State Electricity Board (OSEB) after EC.
23. **Employment Potential:** The project will generate direct to the tune of about 428 persons as well as indirect employment opportunities for the nearby villages.
24. Total cost of the project is Rs. 216.20 crores. Budgetary allocation towards EMP: Capital cost is Rs. 9.96 Crores & Recurring cost is Rs. 0.865 crores. Budget for PH commitments is Rs. 9.93 crores.
25. The Environment Consultant M/s Visiontek Consultancy Services Pvt. Ltd. Bhubaneswar along with the proponent made a detailed presentation on the proposal before the SEAC on 08.07.2022.
26. The project proponent furnished additional information / documents on the project to SEAC on 22.08.2022.
27. The SEAC have appraised the proposal in its meeting dated 02.09.2022 and have recommended for grant of Environmental Clearance for the project, stipulating various conditions.
28. The matter was further examined in the State Environment Impact Assessment Authority (SEIAA), Odisha in its 93rd meeting held on 15.10.2022 in accordance with the EIA Notification, 2006 and further amendments thereto.



29. As per the recommendations of the SEAC, Environmental Clearance (EC) is granted under the provisions of EIA Notification No. S.O. 1533 (E) dated the 14<sup>th</sup> September, 2006 of the Government of India in the erstwhile Ministry of Environment and Forests, as amended from time to time for "Mining of Iron Ore with production Capacity of 2.95 MTPA (RoM) from Kalamang West (Northern Part) Iron Ore Mines at Village- Kalamang & Ghodabudani, District- Sundergarh & Village-Gandalpada, District-Keonjhar, Odisha(MLA: 92.875 ha)" with the following stipulations, environmental conditions and safeguards.

**Stipulations:**

**A. Specific conditions:**

- (i) The proponent shall implement the Pollution Control Measures and safeguards as proposed in the Environment Management Plan (EMP) of EIA report.
- (ii) The public road passing through the mining lease shall be given access to the public after lease execution in consultation with the villagers.
- (iii) As submitted by project proponent vide letter no.GM/OMQ/70/11-G/FY'23 dated 17.10.2022, an amount of Rs.140 Lakhs shall be spent towards implementation for surface water run-off management, installation of STP & ETP in three years time period.

**B. Standard Conditions -**

**I. Statutory compliance:**

- (i) This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- (ii) The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.
- (iii) The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.
- (iv) This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project,
- (v) This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the project.
- (vi) Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board.



- (vii) The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.
- (viii) The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.
- (ix) The Project Proponent shall follow the mitigation measures provided in MoEF&CC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29<sup>th</sup> October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".
- (x) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of groundwater for the project.
- (xi) A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
- (xii) State Pollution Control Board shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tahasildar's Office for 30 days.
- (xiii) The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board and web site of the Ministry of Environment, Forest and Climate Change ([www.environmentclearance.nic.in](http://www.environmentclearance.nic.in)). A copy of the advertisement may be forwarded to the concerned MoEF&CC Regional Office for compliance and record.
- (xiv) The Project Proponent shall inform the MoEF&CC/SEIAA, Odisha for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

**(I) Air quality monitoring and preservation**

- (i) The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, CO and SO<sub>2</sub> etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/1, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure



characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.

- (ii) Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM<sub>10</sub> and PM<sub>2.5</sub> are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

**(II) Water quality monitoring and preservation**

- (i) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- (ii) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (iii) Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (iv) The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-a-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or



alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC / SEIAA, Odisha. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, SEIAA, Odisha, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

- (v) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1 /2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
  - (vi) The project proponent shall construct retaining wall and settling pond within the lease area. Further, check dams shall be constructed at strategic locations in which rain water passes in rainy season. Finally, the excess supermanted after sedimentation shall be allowed to spill away through stone pitch structure to the nearby valley.
  - (vii) De-silting of agricultural lands in buffer zone and beyond including nearby Nalas/rivers perennially periodically and perpetually caused due to wash up of minerals/OB/dumps shall be done as per SOP submitted. A legal affidavit shall be submitted within 6 months from the date of issue of Environmental Clearance to this effect with periodicity of de-silting.
  - (viii) Detail design of the existing retaining wall and the proposed for the expansion from a chartered Civil Engineer shall be submitted within 6 months from the date of issue of Environmental Clearance to ensure that no silt after wash up is escaped from the core / buffer zone of the mines.
  - (ix) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office, MoEF & CC annually.
  - (x) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated in an ETP as proposed so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
  - (xi) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF & CC and State Pollution Control Board.
- (III) Noise and vibration monitoring and prevention**
- (i) The peak particle velocity at 500m distance or within the nearest habitation, whichever is



- closer shall be monitored periodically as per applicable DGMS guidelines.
- (ii) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
  - (iii) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The worker engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.
- (IV) Mining Plan**
- (i) The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form of Short Term Permit (STP), Query license or any other name.
  - (ii) The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
  - (iii) The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-a-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.
- (V) Land reclamation**
- (i) The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the



stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.

- (ii) The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
- (iii) The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- (iv) The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- (v) The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC, Govt. of India, Bhubaneswar as well as SEIAA, Odisha.
- (vi) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and topsoil / OB / waste dumps to prevent runoff of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
- (vii) Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.
- (viii) The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.
- (ix) The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.



**(VI) Transportation**

- (i) No Transportation of the minerals shall be allowed in case of roads passing through transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- (ii) The Main haulage road within the mine lease should be provided with a permanent water arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipment like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.
- (iii) Traffic management shall be done as per recommendation of Traffic Management Study Report.
- (iv) The Project Proponent shall provide parking plaza for the heavy vehicles within the lease area as recommendation of NEERI.

**(VII) Green Belt**

- (i) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.
- (ii) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.
- (iii) The Project Proponent shall make necessary alternative arrangements for livestock feed



by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.

- (iv) The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt and implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

**(VIII) Public hearing and human health issues**

- (i) The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.
- (ii) A commitment in form of an undertaking for periodical occupational health checkup of the employee and the local people shall be done through an occupational health expert as per the detailed action plan submitted with the proposal within 6 months from the date of issue of Environmental Clearance.
- (iii) The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.
- (iv) The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) estimation in Blood; For Inorganic Chromium-



Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).

- (v) The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.
- (vi) The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- (vii) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- (viii) The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.
- (ix) Issues raised and recorded in proceedings of public hearing w.r.t. environment / pollution / CER shall be complied by the Mining Authority as per OM F. No. 22-65/2017-IA.III, dated 30.09.2020 of MoEF&CC, Govt. of India.
- (IX) Corporate Environment Responsibility (CER)**
  - (i) The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by



SEAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.

- (ii) Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.

**(X) Miscellaneous**

- (i) The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
- (ii) The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (iii) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MoEF&CC & its concerned Regional Office, SEIAA, Odisha, Central Pollution Control Board and State Pollution Control Board.
- (iv) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.
- (v) The proponent shall comply all the specific conditions as recommended by CSIR-NEERI on carrying capacity study (as applicable) in time bound manner as proposed.
- (vi) The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
- (vii) The project proponent shall augment infrastructure on drinking water, health care and education in nearby villages as per time bound action plan submitted.
- (viii) The project proponent shall obtain permission from DGMS under 106(2b) to carry out blasting operation within the lease area.
- (ix) Fe grade - 55 and +45 to be attempted to use by blending with higher grade.
- (x) It shall be mandatory for the project management to submit six (06) monthly compliance reports on post environmental monitoring in respect of the stipulated terms and conditions in this Environmental Clearance to the State Environment Impact Assessment Authority (SEIAA), Odisha, SPCB & Regional Office of the Ministry of Environment & Forest, Odisha in hard and soft copies on 1<sup>st</sup> June and 1<sup>st</sup> December of each calendar year. The proponent shall also upload the compliance report including results of monitored data, as applicable in the website of the Ministry for monitoring of EC Conditions.
- (xi) The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is



mandated to be submitted by the project proponent to the Odisha State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective to the MoEF&CC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.

- (xii) The proponent shall submit/upload six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF&CC, Govt. of India, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely: SPM, RSPM, SO<sub>2</sub>, NO<sub>x</sub> (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
- (xiii) The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.
- (xiv) 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 made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court and any other Court of Law relating to the subject matter.
- (xv) This Environmental Clearance (EC) is subject to orders/judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- (xvi) Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Yours faithfully,

**Member Secretary**

**Copy to:**

1. **Joint Secretary (Environment)**, Ministry of Environment, Forests and Climate Change Govt. of India, Indira Paryavaran Bhavan, Jor Bagh Road, Aliganj, New Delhi-110003 for information.
2. **Additional Chief Secretary**, Forests & Environment Dept., Government of Odisha for information.



3. **Member Secretary**, State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-8, Bhubaneswar for information.
4. **Additional Principal Conservator** of Forests, Regional Office (EZ), Ministry of Environment & Forests, A-31, Chandrasekharpur, Bhubaneswar for information.
5. **Member Secretary**, CGWA, 18/11, Jamnagar House, ManSingh Road, New Delhi-110011 for information.
6. **Collector, District Magistrate**, Sundargarh, for kind information and necessary action.
7. **Collector, District Magistrate**, Keonjhar, for kind information and necessary action.
8. **Secretary**, SEAC, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar for kind information.
9. Guard file for record/Website/Parivesh Portal.



**Member Secretary**



**STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, ODISHA**  
SRF-2/1, Unit-IX, Bhubaneswar-751022, Tel: 0674-3510075, Email: seiaaorissa@gmail.com  
*statutory body constituted by Ministry of Environment, Forest & Climate Change under Environment  
(Protection) Act, 1986)*

**SEIAA File No. 55807/89-MINB1/06-2022**

Dated 15<sup>th</sup> December 2022.

To

The Santosh Kumar Pattajoshi  
Sr. Manager  
Tata Steel BSL Limited Narendrapur,  
Meramandali, Dist Dhenkanal, Odisha

**Subject: Proposal for Mining of Iron Ore with production Capacity of 2.95 MTPA (RoM) from Kalamang West (Northern Part) Iron Ore Mines at Village- Kalamang & Ghodabudani, District-Sundergarh & Village - Gandalpada, District - Keonjhar, Odisha (MLA: 92.875 ha) by M/s Tata Steel Limited- Corrigendum in Environmental Clearance issued reg.**

Ref: This Office EC Order No. EC22B001OR117596 dated 18.10.2022 issued to the above mention project.

Sir,

This has reference to the EC granted by SEIAA vide EC identification no. EC22B001OR117596 dated 18.10.2022. The matter has been reviewed again in the light of OM No.J-11013/41/2006-IA.II(I) dated 09<sup>th</sup> September, 2011 of MoEF&CC and subsequent amendments thereof, and it has been decided that submission of Stage-I Forest Clearance is pre-requisite for issue of formal Environmental Clearance.

Accordingly, in partial modification of the EC order no. EC22B001OR117596 dated 18.10.2022 ~~only~~ approval of the competent authority for grant of EC is conveyed for your project at this stage. The operation of EC is kept in abeyance until submission of requisite Stage-I Forest Clearance from your end.

Yours faithfully,

  
Member Secretary

Copy to:

1. **Joint Secretary (Environment)**, Ministry of Environment, Forests and Climate Change Govt. of India, Indira Paryavaran Bhavan, Jor Bagh Road, Aliganj, New Delhi-110003 for information.



**STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, ODISHA**

SRF-2/1, Unit-IX, Bhubaneswar-751022, Tel: 0674-3510075, Email: seiasorissa@gmail.com

*statutory body constituted by Ministry of Environment, Forest & Climate Change under Environment (Protection) Act, 1986*

2. **Additional Chief Secretary**, Forests & Environment Dept., Government of Odisha for information.
3. **Member Secretary**, State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-8, Bhubaneswar for information.
4. **Additional Principal Conservator** of Forests, Regional Office (EZ), Ministry of Environment & Forests, A-31, Chandrasekharpur, Bhubaneswar for information.
5. **Member Secretary**, CGWA, 18/11, Jamnagar House, ManSingh Road, New Delhi-110011 for information.
6. **Collector, District Magistrate**, Sundargarh, for kind information and necessary action.
7. **Collector, District Magistrate**, Keonjhar, for kind information and necessary action.
8. **Secretary**, SEAC, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar for kind information.
9. Guard file for record/Website/Parivesh Portal.

  
**Member Secretary**



## Images showing Coordinates and Pillar Number for Safety Zone Pillars



FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ATUL KUMAR BHATNAGAR

## Images showing Coordinates and Pillar Number for Safety Zone Pillars



FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY  
  
ATUL KUMAR BHATTACHARYA

# Images showing Coordinates and Pillar Number for Mine Lease Pillars



FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

*[Signature]*

## Images showing Coordinates and Pillar Number for Mine Lease Pillars



FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ATUL KUMAR BHATNAGAR

## Images showing Coordinates and Pillar Number for Forest Pillars



FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

*[Signature]*

# Images showing Coordinates and Pillar Number for Forest Pillars



FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

*[Signature]*

## Images showing Coordinates and Pillar Number for Forest Pillars



FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ARTII KIRAN BATHAGAR

## Images showing Coordinates and Pillar Number for Forest Pillars



FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ATUL KUMAR BHATTAGAR

DISTANCE BETWEEN MINE PILLARS					
SL. NO.	PILLAR	PILLAR COORDINATES		PILLARS	DISTANCE (IN METER)
1	A	323335.025	2427972.333	A-B	200.0
2	B	323508.230	2428072.333	B-C	200.0
3	C	323608.230	2427899.128	C-D	600.0
4	D	324127.845	2428199.128	D-E	200.0
5	E	324227.845	2428025.923	E-F	166.3
6	F	324371.851	2428109.064	F-G	106.0
7	G	324361.311	2428214.562	G-H	343.5
8	H	324189.509	2428511.970	H-I	48.9
9	I	324232.952	2428534.445	I-J	137.3
10	J	324140.489	2428635.980	J-K	272.4
11	K	323668.436	2428622.799	K-L	96.7
12	L	323772.853	2428637.727	L-M	81.2
13	M	323694.725	2428659.923	M-N	81.0
14	N	323614.817	2428673.011	N-O	176.2
15	O	323697.502	2428828.614	O-P	32.6
16	P	323711.256	2428858.187	P-Q	110.2
17	Q	323763.697	2428955.087	Q-R	111.3
18	R	323816.321	2429053.201	R-S	162.4
19	S	323892.112	2429196.785	S-T	79.4
20	T	323928.883	2429267.131	T-U	1162.2
21	U	322918.563	2428692.767	U-V	132.1
22	V	322985.025	2428578.551	V-A	700.0

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

  
ATUL KUMAR BHATTACHARYA

DISTANCE BETWEEN SAFETY ZONE PILLARS					
SL.NO.	PILLAR NO.	PILLAR COORDINATES		PILLAR TO PILLAR NO.	DISTANCE (IN METER)
		LATITUDE	LONGITUDE		
1	AS	21°56'50.43640"N	85°17'21.54072"E	AS-BS	197.363
2	BS	21°56'53.67653"N	85°17'27.47762"E	BS-CS	198.791
3	CS	21°56'48.12465"N	85°17'31.02446"E	CS-DS	590.048
4	DS	21°56'57.95854"N	85°17'48.68068"E	DS-ES	194.944
5	ES	21°56'52.43644"N	85°17'52.01532"E	ES-FS	145.421
6	FS	21°56'54.72325"N	85°17'56.45110"E	FS-GS	105.07
7	GS	21°56'58.13881"N	85°17'56.38822"E	GS-HS	345.575
8	HS	21°57'8.05830"N	85°17'50.73240"E	HS-IS	45.443
9	IS	21°57'8.77775"N	85°17'52.11570"E	IS-JS	125.431
10	JS	21°57'11.80721"N	85°17'49.18925"E	JS-KS	254.638
11	KS	21°57'11.35375"N	85°17'40.32796"E	KS-LS	97.959
12	LS	21°57'11.82756"N	85°17'36.95188"E	LS-MS	83.019
13	MS	21°57'12.61658"N	85°17'34.18489"E	MS-NS	71.57
14	NS	21°57'13.12701"N	85°17'31.75128"E	NS-OS	171.826
15	OS	21°57'18.11104"N	85°17'34.45636"E	OS-PS	32.837
16	PS	21°57'19.06095"N	85°17'34.97871"E	PS-QS	111.618
17	QS	21°57'22.27742"N	85°17'36.78005"E	QS-RS	110.933
18	RS	21°57'25.48442"N	85°17'38.54907"E	RS-SS	162.509
19	SS	21°57'30.18639"N	85°17'41.13236"E	SS-TS	46.316
20	TS	21°57'31.54254"N	85°17'41.83401"E	TS-US	1143.241
21	US	21°57'13.15539"N	85°17'7.20604"E	US-VS	122.237
22	VS	21°57'9.76135"N	85°17'9.42236"E	VS-AS	688.63

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY


  
ATUL KUMAR KHATTAR

# **DISTANCE BETWEEN FOREST PILLARS**

PILLAR NO.	EASTING	NORTHING	LATITUDE	LONGITUDE	PILLAR NO. TO PILLAR NO.	PILLAR TO PILLAR DISTANCE IN Mtr.
<b>PATCH 1</b>						
1	323049.3586	2428638.526	21°57'11.59272"	85°17'11.23836"	1-2	43.942
2	323006.5241	2428648.329	21°57'11.89584"	85°17'09.74164"	2-3	56.481
3	323013.1387	2428704.421	21°57'13.72176"	85°17'09.95028"	3-4	68.923
4	323081.7967	2428698.381	21°57'13.55040"	85°17'12.34536"	4-5	52.704
5	323133.6832	2428689.137	21°57'13.26888"	85°17'14.15724"	5-6	82.404
6	323135.9092	2428771.511	21°57'15.94764"	85°17'14.20260"	6-7	48.359
7	323184.1958	2428774.157	21°57'18.05096"	85°17'15.88452"	7-8	50.932
8	323235.1282	2428774.157	21°57'18.06968"	85°17'17.65932"	8-9	57.659
9	323292.4276	2428767.731	21°57'16.88140"	85°17'19.65876"	9-10	77.921
10	323369.4045	2428755.636	21°57'15.51636"	85°17'22.34616"	10-11	23.161
11	323392.5556	2428754.974	21°57'15.50304"	85°17'23.15328"	11-12	39.227
12	323431.5817	2428751.006	21°57'15.38820"	85°17'24.51480"	12-13	115.667
13	323537.6679	2428704.913	21°57'13.92840"	85°17'28.23000"	13-N	83.485
N	323614.817	2428673.011	21° 57' 12.919"	85° 17' 30.931"	N-O	176.208
O	323697.502	2428828.614	21° 57' 18.008"	85° 17' 33.752"	O-P	32.615
P	323711.256	2428858.187	21° 57' 18.974"	85° 17' 34.220"	P-Q	110.189
Q	323763.697	2428955.097	21° 57' 22.144"	85° 17' 36.010"	Q-R	111.327
R	323816.321	2429053.201	21° 57' 25.352"	85° 17' 37.806"	R-S	162.360
S	323892.112	2429196.785	21° 57' 30.048"	85° 17' 40.391"	S-T	79.377
T	323928.883	2429267.131	21° 57' 32.348"	85° 17' 41.646"	T-U	1162.171
U	322918.563	2428692.767	21° 57' 13.309"	85° 17' 6.659"	U-V	132.146
V	322985.0251	2428578.551	21° 57' 9.620"	85° 17' 9.020"	V-224	87.954

<b>PATCH 2</b>						
13	323537.6679	2428704.913	21°57'13.92840"	85°17'28.23000"	13-14	59.767
14	323540.1815	2428645.199	21°57'11.98800"	85°17'28.34052"	14-15	328.938
15	323212.3399	2428672.03	21°57'12.74112"	85°17'16.90512"	15-16	15.834
16	323196.7883	2428675.009	21°57'12.83256"	85°17'16.36188"	16-17	71.972
17	323199.4057	2428603.085	21°57'10.49508"	85°17'16.48104"	17-18	43.335
18	323171.0952	2428635.894	21°57'11.55132"	85°17'15.48168"	18-19	67.684
19	323110.7701	2428666.586	21°57'12.52728"	85°17'13.36740"	19-20	47.105
20	323097.7526	2428621.315	21°57'11.05092"	85°17'12.93144"	20-21	22.900
21	323119.6601	2428614.648	21°57'10.84212"	85°17'13.69752"	21-22	48.115
22	323118.5489	2428566.546	21°57'09.27792"	85°17'13.67772"	22-23	21.078
23	323139.1864	2428562.26	21°57'09.14616"	85°17'14.39844"	23-24	16.379
24	323139.0488	2428545.882	21°57'08.61336"	85°17'14.39988"	24-25	117.341
25	323021.9103	2428552.769	21°57'08.79480"	85°17'10.31496"	25-26	24.612
26	323021.3811	2428528.163	21°57'07.99452"	85°17'10.30632"	26-27	10.060
27	323012.0076	2428531.816	21°57'08.11008"	85°17'09.97836"	27-28	245.868
28	323134.9411	2428318.888	21°57'01.23228"	85°17'14.34516"	28-29	27.645
29	323145.5766	2428344.405	21°57'02.06568"	85°17'14.70588"	29-29a	13.139
29a	323132.9086	2428340.918	21°57'01.94796"	85°17'14.26596"	29a-30	15.420
30	323147.8242	2428344.831	21°57'02.08044"	85°17'14.78400"	30-31	10.452
31	323157.7476	2428348.113	21°57'02.19096"	85°17'15.12852"	31-32	35.060
32	323158.7654	2428383.159	21°57'03.33036"	85°17'15.15012"	32-33	23.252
33	323160.233	2428406.364	21°57'04.08528"	85°17'15.19260"	33-34	10.058
34	323162.015	2428416.263	21°57'04.40784"	85°17'15.25092"	34-35	37.858
35	323166.7078	2428406.943	21°57'04.11840"	85°17'16.53324"	35-36	11.842
36	323209.526	2428402.126	21°57'03.96540"	85°17'16.91196"	36-37	8.062
37	323217.365	2428400.2	21°57'03.90564"	85°17'17.18556"	37-38	12.726
38	323226.1424	2428395.403	21°57'03.75408"	85°17'17.59848"	38-39	16.620
39	323245.0194	2428390.489	21°57'03.60000"	85°17'18.15360"	39-40	30.702
40	323274.2843	2428381.236	21°57'03.31020"	85°17'19.17744"	40-41	27.037

**FOR AND ON BEHALF OF  
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**ATUL KUMAR BHATTACHARYA**

**DISTANCE BETWEEN FOREST PILLARS**

PILLAR NO.	EASTING	NORTHING	LATITUDE	LONGITUDE	PILLAR NO. TO PILLAR NO.	PILLAR TO PILLAR DISTANCE IN Mtr.
41	323300.2773	2428373.762	21°57'03.07656"	85°17'20.08572"	41-42	21.219
42	323320.5905	2428367.629	21°57'02.88432"	85°17'20.79800"	42-43	9.657
43	323328.4997	2428362.088	21°57'02.70720"	85°17'21.07392"	43-44	14.184
44	323340.2039	2428354.075	21°57'02.45088"	85°17'21.48488"	44-45	5.446
45	323344.58	2428350.834	21°57'02.34720"	85°17'21.53840"	45-46	11.956
46	323353.6671	2428343.064	21°57'02.09772"	85°17'21.95808"	46-47	12.512
47	323363.3863	2428335.185	21°57'01.84500"	85°17'22.30008"	47-48	12.548
48	323372.9684	2428327.084	21°57'01.58544"	85°17'22.63704"	48-49	8.088
49	323379.4138	2428322.198	21°57'01.42854"	85°17'22.86348"	49-50	6.393
50	323385.0152	2428325.279	21°57'01.53108"	85°17'23.06752"	50-51	7.720
51	323392.1617	2428328.2	21°57'01.62864"	85°17'23.30556"	51-52	17.390
52	323403.6537	2428315.148	21°57'01.20852"	85°17'23.71092"	52-53	8.730
53	323410.5141	2428309.749	21°57'01.03536"	85°17'23.95212"	53-54	18.024
54	323427.6089	2428315.481	21°57'01.22724"	85°17'24.54576"	54-55	9.015
55	323436.2292	2428318.099	21°57'01.31616"	85°17'24.84528"	55-56	3.811
56	323439.8152	2428317.675	21°57'01.30356"	85°17'24.97020"	56-57	15.486
57	323452.3365	2428326.787	21°57'01.60452"	85°17'25.40328"	57-58	11.547
58	323460.4568	2428334.986	21°57'01.87416"	85°17'25.68300"	58-59	6.088
59	323463.9882	2428339.967	21°57'02.03724"	85°17'25.80396"	59-60	12.742
60	323451.8057	2428336.231	21°57'01.91124"	85°17'25.38096"	60-61	14.239
61	323442.2807	2428346.815	21°57'02.25180"	85°17'25.04472"	61-62	52.545
62	323390.4222	2428355.281	21°57'02.60848"	85°17'23.23428"	62-63	22.577
63	323394.391	2428377.506	21°57'03.23244"	85°17'23.38388"	63-64	17.908
64	323398.3597	2428394.969	21°57'03.80160"	85°17'23.49564"	64-65	17.513
65	323399.5827	2428412.432	21°57'04.36968"	85°17'23.53488"	65-66	17.488
66	323402.8577	2428429.629	21°57'04.92984"	85°17'23.63892"	66-67	9.529
67	323403.1223	2428439.154	21°57'05.23980"	85°17'23.64432"	67-68	51.373
68	323413.7056	2428489.425	21°57'06.87780"	85°17'23.99352"	68-69	6.668
69	323420.3893	2428489.196	21°57'06.87276"	85°17'24.22608"	69-70	40.703
70	323460.6068	2428483.058	21°57'06.68772"	85°17'25.63044"	70-71	48.652
71	323509.088	2428487.129	21°57'06.83784"	85°17'27.31848"	71-72	4.891
72	323507.9704	2428491.685	21°57'06.98544"	85°17'27.27780"	72-73	20.893
73	323502.9932	2428511.977	21°57'07.64352"	85°17'27.09636"	73-74	6.828
74	323499.0244	2428517.533	21°57'07.82244"	85°17'26.95596"	74-75	17.198
75	323494.7911	2428534.202	21°57'08.36280"	85°17'26.80188"	75-76	29.961
76	323484.6336	2428562.389	21°57'09.27576"	85°17'26.43720"	76-77	34.640
77	323473.889	2428595.321	21°57'10.34244"	85°17'26.04984"	77-78	14.092
78	323487.6415	2428588.397	21°57'10.44720"	85°17'26.52792"	78-79	56.032
79	323542.1659	2428611.309	21°57'10.88676"	85°17'28.42296"	79-80	126.491
80	323543.7375	2428484.828	21°57'06.77556"	85°17'28.52700"	80-81	45.770
81	323589.1946	2428479.486	21°57'06.81824"	85°17'30.11316"	81-82	84.171
82	323673.3323	2428477.105	21°57'06.57144"	85°17'33.04608"	82-83	41.007
83	323713.0199	2428487.423	21°57'06.92136"	85°17'34.42524"	83-84	15.308
84	323709.4149	2428502.3	21°57'07.40340"	85°17'34.28384"	84-85	30.137
85	323738.9425	2428508.332	21°57'07.61040"	85°17'35.32056"	85-86	12.765
86	323743.5462	2428520.238	21°57'07.99920"	85°17'35.47644"	86-87	41.472
87	323784.5038	2428526.747	21°57'08.22564"	85°17'36.90132"	87-88	58.470
88	323812.6026	2428475.471	21°57'06.56856"	85°17'37.90032"	88-89	28.064
89	323812.8392	2428447.408	21°57'05.65632"	85°17'37.91940"	89-90	76.433
90	323883.3014	2428477.024	21°57'06.64488"	85°17'40.36344"	90-91	26.036
91	323909.3364	2428477.238	21°57'06.66108"	85°17'41.27064"	91-92	4.066
92	323911.8765	2428480.411	21°57'06.76512"	85°17'41.35812"	92-93	63.379
93	323975.1649	2428483.798	21°57'06.89832"	85°17'43.56240"	93-94	43.572
94	324011.995	2428507.081	21°57'07.66836"	85°17'44.83680"	94-95	32.693
95	324037.6067	2428527.401	21°57'08.33832"	85°17'45.72132"	95-96	19.132
96	324056.1176	2428522.565	21°57'08.18784"	85°17'46.36860"	96-97	8.422

**FOR AND ON BEHALF OF  
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**DISTANCE BETWEEN FOREST PILLARS**

PILLAR NO.	EASTING	NORTHING	LATITUDE	LONGITUDE	PILLAR NO. TO PILLAR NO.	PILLAR TO PILLAR DISTANCE IN Mtr.
97	324057.5907	2428530.857	21°57'08.45764"	85°17'46.41648"	97-98	8.961
98	324061.9505	2428538.675	21°57'08.71380"	85°17'46.56552"	98-99	9.777
99	324067.1869	2428546.932	21°57'08.98416"	85°17'46.74480"	99-100	22.478
100	324089.5498	2428549.207	21°57'09.06624"	85°17'47.52312"	100-101	14.290
101	324103.5952	2428551.84	21°57'09.15660"	85°17'48.01164"	101-102	7.183
102	324110.6286	2428553.298	21°57'09.20664"	85°17'48.25008"	102-103	19.718
103	324115.851	2428572.312	21°57'09.82656"	85°17'48.43068"	103-104	6.294
104	324121.671	2428574.708	21°57'09.90684"	85°17'48.63264"	104-105	2.901
105	324124.5163	2428575.273	21°57'09.92628"	85°17'48.73164"	105-106	11.145
106	324135.6453	2428575.866	21°57'09.94932"	85°17'49.11936"	106-107	8.383
107	324139.3813	2428583.371	21°57'10.19484"	85°17'49.24644"	107-108	9.057
108	324144.2631	2428591	21°57'10.44468"	85°17'49.41384"	108-108A	28.543
108A	324159.4315	2428615.179	21°57'11.236"	85°17'49.934"	108A-J	28.134
J	324140.489	2428635.98	21°57'11.905"	85°17'49.265"	J-K	272.372
K	323868.436	2428622.799	21°57'11.379"	85°17'39.789"	K-L	96.742
L	323772.853	2428637.727	21°57'11.829"	85°17'36.452"	L-M	81.220
M	323694.725	2428659.923	21°57'12.523"	85°17'33.721"	M-N	80.973
N	323614.817	2428673.011	21°57'12.919"	85°17'30.931"	N-13	83.485

**PATCH 3**

109	324153.5815	2428585.799	21°57'10.27872"	85°17'49.74036"	109-110	17.227
110	324170.3105	2428581.687	21°57'10.15128"	85°17'50.32500"	110-111	6.413
111	324176.4362	2428579.788	21°57'10.09152"	85°17'50.53920"	111-112	8.525
112	324184.4599	2428576.907	21°57'10.00080"	85°17'50.82000"	112-113	4.813
113	324188.4324	2428574.189	21°57'09.81404"	85°17'50.95968"	113-114	3.215
114	324187.7656	2428571.044	21°57'09.81144"	85°17'50.93736"	114-115	14.399
115	324199.8699	2428563.246	21°57'09.56232"	85°17'51.36252"	115-116	5.357
116	324204.2276	2428560.13	21°57'09.46260"	85°17'51.51552"	116-117	12.663
117	324211.8355	2428550.007	21°57'09.28640"	85°17'51.78300"	117-118	8.598
118	324220.2751	2428548.366	21°57'09.08604"	85°17'52.07928"	118-119	83.004
119	324164.3883	2428609.736	21°57'11.06100"	85°17'50.10792"	119-120	18.295
120	324157.3245	2428592.86	21°57'10.50984"	85°17'49.86816"	120-109	7.992

**PATCH 4**

121	324193.8353	2428302.65	21°57'01.08828"	85°17'51.25308"	121-122	16.952
122	324200.9872	2428318.02	21°57'01.59048"	85°17'51.49644"	122-123	30.173
123	324214.5871	2428344.954	21°57'02.47104"	85°17'51.95976"	123-124	12.903
124	324224.8427	2428352.784	21°57'02.72916"	85°17'52.31400"	124-125	19.954
125	324240.906	2428364.621	21°57'03.11976"	85°17'52.86948"	125-126	8.865
126	324247.5139	2428370.53	21°57'03.31416"	85°17'53.09736"	126-127	12.358
127	324252.2277	2428359.106	21°57'02.94480"	85°17'53.26620"	127-128	17.917
128	324258.3326	2428342.261	21°57'02.39904"	85°17'53.48544"	128-129	25.140
129	324261.2185	2428317.287	21°57'01.58832"	85°17'53.59560"	129-130	19.545
130	324263.782	2428297.911	21°57'00.95940"	85°17'53.69244"	130-131	15.646
131	324248.231	2428299.628	21°57'01.00944"	85°17'53.14992"	131-132	34.693
132	324213.5482	2428300.45	21°57'01.02384"	85°17'51.94068"	132-121	19.835

**PATCH 5**

133	324309.9786	2428073.342	21°56'53.67516"	85°17'55.38912"	133-134	31.926
134	324278.0581	2428072.758	21°56'53.84456"	85°17'54.27708"	134-135	18.716
135	324259.376	2428073.891	21°56'53.67480"	85°17'53.62548"	135-136	9.523
136	324251.0591	2428069.253	21°56'53.52108"	85°17'53.33748"	136-137	54.302
137	324197.5363	2428078.42	21°56'53.79972"	85°17'51.46872"	137-E	60.619
E	324227.8454	2428025.923	21°56'52.104"	85°17'52.545"	E-133	94.839

**FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY**

  
**ATUL KUMAR BHATNAGAR**

**DISTANCE BETWEEN FOREST PILLARS**

PILLAR NO.	EASTING	NORTHING	LATITUDE	LONGITUDE	PILLAR NO. TO PILLAR NO.	PILLAR TO PILLAR DISTANCE IN Mtr.
<b>PATCH 5</b>						
138	324139.144	2428181.611	21°56'57.13332"	85°17'49.39404"	138-139	18.738
139	324157.7386	2428179.3	21°56'57.06492"	85°17'50.04278"	139-140	50.220
140	324207.4397	2428172.097	21°56'56.84892"	85°17'51.77790"	140-141	26.040
141	324232.9617	2428166.93	21°56'56.58980"	85°17'52.66898"	141-142	37.419
142	324270.0638	2428162.07	21°56'56.54544"	85°17'53.95388"	142-143	23.714
143	324288.2847	2428177.247	21°56'57.04543"	85°17'54.59316"	143-144	4.011
144	324290.2663	2428180.734	21°56'57.15960"	85°17'54.86084"	144-145	17.500
145	324291.7216	2428198.173	21°56'57.72696"	85°17'54.70478"	145-146	14.666
146	324292.9096	2428212.791	21°56'58.20252"	85°17'54.74040"	146-147	12.521
147	324293.6369	2428225.291	21°56'58.60932"	85°17'54.76092"	147-148	8.575
148	324285.0648	2428225.517	21°56'58.61328"	85°17'54.46212"	148-149	27.295
149	324257.97	2428228.819	21°56'58.71120"	85°17'53.51678"	149-150	38.432
150	324219.6589	2428231.866	21°56'58.79616"	85°17'52.18044"	150-151	15.736
151	324203.9961	2428233.381	21°56'58.83972"	85°17'51.63398"	151-152	42.475
152	324196.1407	2428275.123	21°57'00.19404"	85°17'51.34416"	152-153	18.450
153	324193.1267	2428293.325	21°57'00.78480"	85°17'51.23184"	153-154	10.165
154	324183.0932	2428291.761	21°57'00.73008"	85°17'50.88300"	154-155	13.820
155	324169.404	2428289.862	21°57'00.66348"	85°17'50.40636"	155-156	7.350
156	324162.1797	2428288.511	21°57'00.61704"	85°17'50.15544"	156-157	14.698
157	324148.3317	2428283.584	21°57'00.45180"	85°17'49.67448"	157-158	14.555
158	324134.2169	2428280.031	21°57'00.33120"	85°17'49.18416"	158-159	14.119
159	324120.6643	2428276.073	21°57'00.19764"	85°17'48.71328"	159-160	13.831
160	324107.3945	2428272.172	21°57'00.06588"	85°17'48.25248"	160-161	9.702
161	324098.4852	2428268.33	21°56'59.93808"	85°17'47.94324"	161-162	13.116
162	324087.5183	2428261.135	21°56'59.70012"	85°17'47.56416"	162-163	10.926
163	324078.7417	2428254.628	21°56'59.48520"	85°17'47.26068"	163-164	11.076
164	324069.5821	2428248.4	21°56'59.27964"	85°17'46.94388"	164-165	11.797
165	324061.0665	2428240.236	21°56'59.01108"	85°17'46.65048"	165-166	18.055
166	324047.6817	2428228.119	21°56'58.61220"	85°17'46.18860"	166-167	29.523
167	324025.7057	2428208.404	21°56'57.96348"	85°17'45.43044"	167-168	10.632
168	324018.1995	2428200.875	21°56'57.71580"	85°17'45.17160"	168-169	8.165
169	324014.039	2428193.849	21°56'57.48612"	85°17'45.02940"	169-170	10.417
170	324007.1737	2428186.015	21°56'57.22872"	85°17'44.79324"	170-171	10.651
171	324000.7597	2428177.512	21°56'56.95008"	85°17'44.57292"	171-172	8.768
172	324002.6809	2428168.957	21°56'56.67252"	85°17'44.64312"	172-173	26.677
173	324004.5241	2428142.344	21°56'55.80816"	85°17'44.71764"	173-174	21.447
174	323983.3672	2428138.83	21°56'55.68612"	85°17'43.98180"	174-175	11.659
175	323972.4829	2428134.65	21°56'55.54644"	85°17'43.60418"	175-176	4.749
176	323967.9209	2428135.971	21°56'55.58784"	85°17'43.44468"	176-177	16.197
177	323969.0289	2428119.812	21°56'55.06260"	85°17'43.48968"	177-178	17.465
178	323952.4988	2428114.175	21°56'54.87360"	85°17'42.91584"	178-179	38.846
179	323915.0013	2428104.028	21°56'54.53016"	85°17'41.61300"	179-180	21.587
180	323903.0099	2428086.078	21°56'53.94228"	85°17'41.20188"	180-181	16.312
181	323892.5209	2428073.586	21°56'53.53224"	85°17'40.84116"	181-182	16.485
182	323877.5299	2428066.728	21°56'53.30400"	85°17'40.32168"	182-183	29.909
183	323849.4412	2428056.452	21°56'52.95984"	85°17'39.34680"	183-184	6.847
184	323843.722	2428052.688	21°56'52.83528"	85°17'39.14880"	184-185	32.173
185	323814.6932	2428038.836	21°56'52.37448"	85°17'38.14224"	185-186	14.848
186	323802.9378	2428029.752	21°56'52.07496"	85°17'37.73652"	186-187	20.974
187	323789.0737	2428014.013	21°56'51.55800"	85°17'37.25952"	187-188	23.381
188	323774.9472	2427995.382	21°56'50.94744"	85°17'36.77424"	188-D	407.492
D	324127.8454	2428199.128	21°56'57.699"	85°17'48.993"	D-138	20.845

**FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY**

  
**ATUL KUMAR BHATNAGAR**

DISTANCE BETWEEN FOREST PILLARS

PILLAR NO.	EASTING	NORTHING	LATITUDE	LONGITUDE	PILLAR NO. TO PILLAR NO.	PILLAR TO PILLAR DISTANCE IN Mtr.
PATCH 7						
189	323255.7564	2428115.126	21°56'54.65184"	85°17'18.63492"	189-190	32.805
190	323273.8884	2428087.787	21°56'53.76984"	85°17'19.27752"	190-191	20.081
191	323285.8379	2428071.648	21°56'53.24928"	85°17'19.70016"	191-192	3.920
192	323288.4429	2428074.577	21°56'53.34576"	85°17'19.78980"	192-193	16.680
193	323301.4462	2428085.024	21°56'53.68992"	85°17'20.23872"	193-194	18.453
194	323316.4858	2428095.717	21°56'54.04308"	85°17'20.75892"	194-195	16.624
195	323331.0938	2428103.853	21°56'54.30624"	85°17'21.26472"	195-196	14.336
196	323343.2866	2428111.194	21°56'54.55608"	85°17'21.69664"	196-197	9.185
197	323351.4306	2428115.441	21°56'54.89684"	85°17'21.95888"	197-198	4.087
198	323353.1893	2428119.13	21°56'54.81744"	85°17'22.02864"	198-199	8.024
199	323357.7155	2428125.755	21°56'55.03452"	85°17'22.18380"	199-200	8.221
200	323362.5016	2428132.439	21°56'55.25340"	85°17'22.34796"	200-201	6.685
201	323367.8262	2428136.481	21°56'55.38996"	85°17'22.53192"	201-202	5.744
202	323368.0392	2428142.221	21°56'55.57344"	85°17'22.53732"	202-203	23.185
203	323371.3951	2428165.162	21°56'56.32080"	85°17'22.54532"	203-204	12.872
204	323371.8556	2428178.026	21°56'56.73912"	85°17'22.65812"	204-205	24.119
205	323349.7854	2428187.754	21°56'57.04728"	85°17'21.88356"	205-206	16.002
206	323333.799	2428188.451	21°56'57.06420"	85°17'21.32592"	206-207	27.025
207	323339.7012	2428162.078	21°56'56.20884"	85°17'21.54192"	207-208	14.716
208	323325.3264	2428158.928	21°56'56.10120"	85°17'21.04224"	208-209	6.449
209	323323.6208	2428165.147	21°56'56.30280"	85°17'20.98032"	209-210	4.081
210	323319.5443	2428164.95	21°56'56.29488"	85°17'20.83848"	210-211	14.999
211	323309.0625	2428154.222	21°56'55.94244"	85°17'20.47740"	211-212	12.630
212	323300.5867	2428144.858	21°56'55.63500"	85°17'20.18544"	212-213	6.867
213	323296.0634	2428139.691	21°56'55.46508"	85°17'20.02992"	213-214	8.582
214	323290.7987	2428132.814	21°56'55.24296"	85°17'19.84920"	214-215	10.426
215	323284.557	2428124.563	21°56'54.96936"	85°17'19.63500"	215-189	30.307

PATCH 8

216	323176.482	2428246.937	21°56'58.90848"	85°17'15.82080"	216-217	85.353
217	323219.1588	2428173.019	21°56'56.52096"	85°17'17.33712"	217-218	6.101
218	323221.2963	2428178.733	21°56'56.70744"	85°17'17.40912"	218-219	50.634
219	323240.5905	2428225.547	21°56'58.23636"	85°17'18.06324"	219-220	13.300
220	323245.817	2428237.777	21°56'58.63560"	85°17'18.24072"	220-221	10.614
221	323235.2197	2428238.369	21°56'58.65108"	85°17'17.87136"	221-222	33.299
222	323202.3709	2428243.826	21°56'58.81668"	85°17'16.72440"	222-223	20.901
223	323181.5779	2428245.948	21°56'58.87824"	85°17'15.99900"	223-216	5.191

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ATUL KUMAR BHATNAGAR



To,

Divisional Forest Officer  
Keonjhar Forest Division  
Keonjhar

GM/OMQ/ 88 /11-G  
13<sup>th</sup> Aug'2024

**Sub: Submission of reply to the EDS query raised by Office of the Principle Chief Conservator of Forest & HOFF, Odisha on 23.07.2024 against online proposal no FP/OR/MIN/49169/2020 for grant of final Stage-II approval of Forest Clearance to Kalamang West (Northern Part) Iron Ore Mine of M/s Tata Steel Limited.**

Ref: 1. Proposal no FP/OR/MIN/49169/2020  
2. Memo No. 14479/9F(MG)-66/2021, dated 23.07.2024 from office of PCCF & HoFF, Bhubaneswar

Dear Sir,

With reference to the above captioned subject, we are submitting herewith the pointwise compliance to the EDS raised against the proposal no FP/OR/MIN/49169/2020 vide Memo No. 14482/9F(MG)-66/2021, dated 23.07.2024 from office of PCCF & HoFF, Odisha, Bhubaneswar.

**EDS Condition 2 (a): The DFO, Keonjhar Forest Division has not enclosed the revised Additional CA Scheme with the compliance. He may be requested to submit the same at an early date.**

**Compliance:**

Revised additional CA Scheme has been approved with one time cost norm with amount of Rs. 3,69,34,500/- (Rupees Three crore sixty nine lakh thirty four thousand five hundred only). Approved Additional CA scheme has been enclosed for your reference as **Annexure 1**.

**EDS Condition 2 (b): The Govt. non- forest land identified for CA in village Jaladihi over 42.608 ha has not yet been notified by the Govt. of Odisha, Forest, Environment & Climate Change Department**

**TATA STEEL LIMITED**

Mines Division Noamundi 833 217 India  
Tel 91 9262699402

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India  
Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website [www.tatasteel.com](http://www.tatasteel.com)



**Compliance:**

The non forest Govt. land over 42.608 ha identified for CA in village Jaladihi under Banspal Tehsil of Keonjhar Forest Division is under progress to be notified by the Govt. of Odisha, F&E Dept. Office of PCCF & HoFF, Odisha has submitted the detailed compliances to OSD-cum-Special Secretary to Govt, Forest Environment & Climate Change department, Govt of Odisha, Bhubaneswar regarding declaration of PF notification vide Memo No. 16251/9F(MG)-86/2021, dated 12.08.2024. Copy of the letter is enclosed as **Annexure 2**.

**EDS Condition 7: The Project Proponent has deposited the Regional Wildlife Management plan @ Rs. 1,03,100/- per ha. on dated 20.03.2024. In the meantime, rate has been enhanced by Govt. of Odisha, MOEF&CC Department to Rs. 1,31,800/- per ha. And communicated vide Memo No. 10992 dated 26.06.2024 with effect from 15.03.2024. Hence, the UA has to deposit differential amount of RWLMP.**

**Compliance:**

Regional Wildlife Management Plan comprising Forest Division of Sundargarh, Jharsuguda and Keonjhar has been prepared and submitted. The differential amount for an amount Rs. 26,65,518 (Rupees Twenty Six Lakh Sixty Five Thousand Five Hundred Thirteen) vide UTR number SBIN524213583306, dated 31.07.2024 has been deposited in CAMPA against the demand letter from office of DFO, Bonai, vide Memo no. 6186/6F-(Mg.), dated 23.07.2024 (Amount Rs. 21,87,428/-) and demand letter from office of DFO, Keonjhar vide Memo no. 5858/6F/Mining dated. 25.07.2024 (Amount Rs. 4,78,090/-). payment proof and challan copy enclosed herewith as **Annexure 3**.

**EDS Condition 11: The CAMPA format needs to be revised and re-submitted by the DFO, Keonjhar and Bonai Forest Division respectively.**

**Compliance:**

Revised CAMPA format including the payment made towards the differential amount of RWLMP has been prepared and is enclosed herewith as **Annexure 4** for your necessary authentication and onward transmission.

**EDS Condition 16: The UA has not furnished the list of existing village tanks and other water bodies with the GPS co-ordinates located within 5Km from the mine lease boundary pertaining to Keonjhar Division.**

**TATA STEEL LIMITED**

Mines Division Noamundi 833 217 India  
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Corporate Identity Number L27100MH1907PLC000260 Website [www.tatasteel.com](http://www.tatasteel.com)



**Compliance:**

List of existing village tanks and other water bodies with GPS co-ordinates within 5 Km from the mines lease boundary is submitted in additional scheme pertaining to Keonjhar Division and same has been approved by the RCCF, Rourkela vide Memo No. 3666/3F-791/2024, dated 13.08.2024 with total financial outlay of Rs. 76,12,100/- (Rupees seventy six lakh twelve thousand hundred rupees only). Approved scheme is enclosed herewith as **Annexure 5**.

**EDS Condition 34:** The UA has not submitted the required information regarding demarcation, erecting 4ft height RCC pillars, with its serial numbers and distance from pillar to pillar and GPS co-ordinated pertaining to Keonjhar Forest Division.

**Compliance:**

We are submitting herewith the required information regarding demarcation, erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, and distance from pillar to pillar and GPS co-ordinated pertaining to Keonjhar Forest Division. Some images as a proof enclosed herewith as **Annexure 6**.

**EDS General:** The UA has not submitted the undertakings duly countersigned by the DFO, Keonjhar Forest Division pertaining to following conditions: Condition No. 2(f), 3(b), 5-10, 13 (a) (b) (c) (d), 14 (a) (b) (c) (d), 15-21, 24-30, 33, 35-42.

**Compliance:**

An Undertaking to implement the Condition No. 2(f), 3(b), 5-10, 13 (a) (b) (c) (d), 14 (a) (b) (c) (d), 15-21, 24-30, 33, 35-42 is enclosed herewith as **Annexure 7**.

We trust the above complies satisfactorily to the EDS raised and we request your good office for necessary verification and onward recommendation of the same to RCCF, Rourkela and the office of PCCF & HoFF, Odisha, Bhubaneswar for the grant of final Stage-II approval order in respect of Kalamang West (Northern Part) Iron Ore Mine of M/s Tata Steel Limited at the earliest.

Thanking You

Yours Faithfully,

**(Atul Kumar Bhatnagar)**  
General Manager, OMQ

Encl: as above

**TATA STEEL LIMITED**

Mines Division Noamundi 833 217 India  
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STATE FOREST HEADQUARTERS, ODISHA  
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS & HOFF  
PLOT NO.GD-2/12, ARANYA BHAWAN, CHANDRASEKHARPUR  
BHUBANESWAR-751023

E-mail: [nodal.pccfhoff@odisha.gov.in](mailto:nodal.pccfhoff@odisha.gov.in) / [nodal.pccfodisha@gmail.com](mailto:nodal.pccfodisha@gmail.com)

Memo No. 14479 /9F(MG)-66/2021  
Dated, Bhubaneswar, the 23rd July, 2024

To

The Regional Chief Conservator of Forests,  
Rourkela Circle

**Sub:** Proposal for seeking prior approval of the Central Government under Section-2 (ii) of Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha forest land (16.658 ha in Keonjhar Forest Division and 25.950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar & Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Ltd. (Formerly known as M/s Bhusan Steel Ltd.) (Online Proposal No.FP/OR/MIN/49169/2020):- Stage-I compliance regarding

**Ref:** Your Memo No.2961 dated 11.07.2024

In inviting a reference to the aforesaid subject cited above, it is to inform that while scrutinizing the compliance of Stage-I/ in-principle approval submitted by you, the following shortcomings are noticed.

**Condition No. 2 (a):-** The DFO, Keonjhar Forest Division has not enclosed the revised Additional CA scheme with the compliance. He may be requested to submit the same at an early date.

**Condition No. 2 (b):-** The Govt. non-forest land identified for CA in village Taladihi over 42.608 ha has not yet been notified by the Govt. of Odisha, Forest, Environment & Climate Change Department.

**Condition No. 7:-** The Project Proponent has deposited the Regional Wildlife Management Plan @ Rs.1,03,100/- per ha on dated 20.03.2024. In the meantime, the rate has been enhanced by the Govt. of Odisha, FE&CC Department to Rs.1,31,800/- per ha and communicated vide Memo No.10992 dated 26.06.2024 with effect from 15.03.2024. Hence, the UA has to deposit differential amount of RWLMP.

**Condition No. 11:-** The CAMPA format needs to be revised and re-submitted by the DFO, Keonjhar and Bonai Forest Division respectively.

**Condition No. 16:-** The UA has not furnished the list of existing village tanks and other water bodies with the GPS co-ordinates located within 5 Km from the mine lease boundary pertaining to Keonjhar Division.

**Condition No. 34:-** The UA has not submitted the required information regarding demarcation, erecting 4 ft height RCC pillars, with its serial numbers and distance from pillar to pillar and GPS co-ordinates pertaining to Keonjhar Forest Division.

**General:**

The UA has not submitted the undertakings duly countersigned by the DFO, Keonjhar Forest Division pertaining to following conditions:

Condition No.2 (f), 3 (b), 5-10, 13 (a) (b) (c) (d), 14 (a) (b) (c) (d), 15-21, 24-30, 33, 35-42.

In view of the above, I am directed to request you to furnish the above required documents at earliest for taking necessary action at this end.

  
Chief Conservator of Forests (Nodal)

Memo No. 14480 Dt. 23-07-2024

Copy forwarded to the Divisional Forest Officer, Bonai Forest Division for information and necessary action with reference to Memo No.2962 dated 11.07.2024 of the RCCF, Rourkela Circle to his address.

  
Chief Conservator of Forests (Nodal)

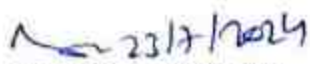
Memo No. 14481 Dt. 23-07-2024

Copy forwarded to the Divisional Forest Officer, Keonjhar Forest Division for information and necessary action with reference to Memo No.2963 dated 11.07.2024 of the RCCF, Rourkela Circle to his address.

  
Chief Conservator of Forests (Nodal)

Memo No. 14482 Dt. 23-07-2024

Copy forwarded to the General Manager, OMQ, Tata Steel Ltd., Mines Division, Noamundi-733217 for information and necessary action with reference to Memo No.2964 dated 11.07.2024 of the RCCF, Rourkela Circle to his address.

  
Chief Conservator of Forests (Nodal)

**REVISED**

**SCHEME FOR ADDITIONAL  
COMPENSATORY AFFORESTATION  
OVER AN AREA OF 44.002 HA DEGRADED  
FOREST LAND IDENTIFIED IN  
BALABHADRAPUR RF UNDER KEONJHAR  
FOREST RANGE OF KEONJHAR FOREST  
DIVISION AGAINST  
KALAMANG WEST (NORTHERN PART)  
BLOCK FOR IRON ORE BLOCK IN  
KEONJHAR AND SUNDARGARH  
DISTRICT ALLOTTED  
TO M/S TATA STEEL BSL LIMITED  
(FORMERLY KNOWN AS M/S BHUSHAN  
STEEL LIMITED)**

**ELEMENTS OF THE SCHEME FOR ADDL. COMPENSATORY AFFORESTATION**

<b>CHAPTER</b>	<b>PARTICULARS</b>	<b>PAGE NUMBER</b>
<b>I</b>	<b>BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL</b>	<b>03-04</b>
<b>II</b>	<b>DETAILS OF LAND IDENTIFIED FOR ADDITIONAL COMPENSATORY AFFORESTATION</b>	<b>05-05</b>
<b>III</b>	<b>DELINEATION OF PROPOSED AREA ON SUITABLE MAP</b>	<b>06-06</b>
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## CHAPTER- I

### **BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL**

As per information submitted by the project proponent, Govt. of Odisha, pursuant to the Mines and Minerals (Development & Regulation) Act, 1957 (the "Act") and the Mineral (Auction) Rules, 2015 (the "Rules"), issued the notice inviting tender dated 07.03.2017 to commence the auction process for grant of mining lease for Kalamang West (Northern Part) Iron Ore Block located in Sundargarh & Keonjhar District of Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block and Bhushan Steel Limited was declared as the "Preferred Bidder" under Rules 9(4)(b)(iii) of the Rules, vide Govt. of Odisha, Dept of Steel & Mines, Letter No. 4571/SM, dated 25th May 2017. Further, as required under Rule 10(1) of the Rules and the tender document for the said mineral block, the Company has made payment of the first installment, being ten percent of the upfront payment of Rs. 4,46,69,460/- (Rupees four crore forty six lakhs sixty nine thousand four hundred and sixty) in shape of e-chalan through Treasury dated 01.06.2017.

Accordingly, on compliance of above, the Government of Odisha has issued Letter of Intent (LOI) vide Govt. Letter No. 5285/SM dated 24.06.2017 in favour of Bhushan Steel Ltd (now known as Tata Steel BSL Ltd) as per Rule 10(2) of the Rules for grant of Mining Lease for Kalamang West (Northern Part) Iron Ore Block in Village Kalamang, Ghodabudani of Sundargarh District and Village Gandalpada of Keonjhar District over an area of 92.00 Ha. This LOI was again modified vide letter no – 6287/SM, dated 27.07.2017 revising the earlier mentioned area of 92.00 Ha to 92.875 Ha

Before change of name from M/s Bhushan Steel Limited to Tata Steel BSL Limited, M/s Bhushan Steel Limited has submitted the Forest Diversion Proposal of above project vide Proposal No-FP/OR/MIN/27286/2017, and State Serial No-OR-031/2017, dated 27.07.2017. After taking over the Project by Tata Steel BSL Limited a fresh Forest Diversion Proposal is submitted vide Proposal No-FP/OR/MIN/49169/2020 for getting Forest Clearance from MoEF & CC, Govt. of India. In the Letter of Intent (LOI) Govt. of Odisha has advised to Bhushan Steel Limited (Now Tata Steel BSL Limited) to obtain all consents, approvals, permits, no-objections and the like as may be required under applicable laws for commencement of mining operation.

During verification of the land schedule allotted for the said mining lease area it is found that total area of 92.875 Ha consists of Revenue and DLC Forest land of 42.608 Ha (Keonjhar Forest Division 16.658 Ha + Bonai Forest Division 25.950 Ha (Revenue Forest Land 10.469 Ha + DLC Forest Land 15.481 Ha)) and 50.267 Ha of Non-forest land (Govt. non-forest land 30.096 Ha + Private non-forest land 20.171 Ha) in Bonai Forest Division, land schedule of Kalamang West (Northern Part) Iron Ore Block over an area of 92.875 Ha has been authenticated by the Tahasildar Koira under Sundargarh District and Tahasildar Barbil under Keonjhar District.

Therefore, this proposal is being submitted for diversion of forest land of 42.608 Ha (Keonjhar Forest Division 16.658 Ha + Bonai Forest Division 25.950 Ha) under section 2(ii) of FC Act, 1980 including 2.382 Ha of forest land abide for Safety Zone along the lease boundary, for a period of 50 years as would be coterminous with the lease period under section 8(A) 2 of MMDR Amendment Act, 2015.

Non forest Govt. land over 42.608 ha has been identified and allotted in village Jaladihi under Bansapal Tahasil in B.J.P. Range of Keonjhar Forest Division, in favour of M/s Bhushan Steel Ltd. vide letter No. 1548/Rev dt. 23.09.2017 of the Collector, Keonjhar for Compensatory Afforestation. The non-forest Govt. land over 42.608 ha has been considered for plantation under ANR model @500 seedlings / ha has been prepared to this effect.

The present scheme aims at preparation of site-specific to additional compensatory afforestation scheme over 44.002 ha of degraded forest land identified in Balabhadrapur RF under Keonjhar Forest Range of Keonjhar Division prepared as per onetime cost norm for the year 2023-24 with a maintenance period of ten years under ANR with Gap plantation model @500 seedlings/ ha

## CHAPTER-II

### **DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION**

#### **IDENTIFICATION OF DEGRADED FOREST LAND**

##### **II(1)- Details of identified Forest land-**

The identified Forest land for Compensatory Afforestation is situated in Balabhadrapur RF in Coupe- NLP-II under Nalapanga (NLP) Rehabilitation Series of Keonjhar Range in Keonjhar Forest Division. This Forest Block is allotted to Improvement Series of the present Working Plan.

##### **II(2)- Character of existing vegetation of the identified site for Compensatory Afforestation-**

The prevailing forest growth has been categorized under forest type- open jungle mainly sal in Sol Topo Sheet No. F45N11. The vegetation consists of Sal and its scattered associates like Jamu, Piasal, Asana, Sisoo, Kuruma, Karada, Dhaura, Khair, Sidha, Harida, Bahada and Ainla.

##### **II(3)- Working Plan prescription for the identified site for Compensatory Afforestation-**

The prescribed objectives of management for the identified forest block is depicted hereunder-

1. Regenerate of the degraded forest blocks including the areas once affected by shifting cultivation, by appropriate silvicultural inputs and protection measures with people's participation.
2. Improvement of the micro-climate and micro-edaphic conditions through soil and moisture conservation measures.
3. Encouragement of natural regeneration for increasing the biodiversity in forest crop.
4. Fulfillment of the bonafide needs of the local inhabitants for fuel wood, small timber, fodder and N.T.F.P. to the extent possible depending upon the productivity of the forests to ensure their participation.

##### **II(4)- Suitability of the identified site for Compensatory Afforestation-**

The identified site in Balabhadrapur RF is a degraded patch with existing vegetation of Sal and Sal associates. Gaps are sporadically spread over the forest block. The topography of the area is mainly undulating hilly having good depth of red boulder mixed soil conducive for plantation under ANR with Gap model @500 seedling per ha. The average maximum temperature is 40<sup>o</sup> to 45<sup>o</sup>C and minimum 5<sup>o</sup> to 10<sup>o</sup> C and annual rainfall varies from 1100 mm to 1800 mm. The maximum rainfall is received during the rainy season from July to September. The site has been demarcated with 4 feet RCC pillars with erection of durable signboard depicting Scheme, Year, User Agency, area etc. on it. Therefore, the CA scheme is envisaged to be executed with involvement of Baziapada VSS.

### CHAPTER-III

#### **DELINEATION OF PROPOSED AREA ON SUITABLE MAP**

##### **III(1)- DGPS COORDINATES AND GPS MAP OF THE COMPENSATORY AFFORESTATION SITE**

The area has been demarcated through DGPS survey and DGPS survey data showing latitude and longitude of each point and their chainage with bearing is also enclosed in the map prepared thereon (Maps enclosed).

##### **III(2) DECISION SUPPORT SYSTEM- ANALYSIS OF FOREST COVER MAP**

The map of the proposed CA land was processed using DSS for analysis of Forest cover over the area. The result obtained are depicted in the Annexure- \_\_\_\_.

##### **Decision Support System of degraded forest land identified in Balabhadrapur RF under Keonjhar Range**

Sl. No	Name of the site	Area identified for plantation (in ha)	Non-Forest	In Sq. Km.
				Open Forest
1	Balabhadrapur RF	44.002	0.22	0.22

### CHAPTER- IV

#### **AGENCY RESPONSIBLE FOR COMPENSATORY AFFORESTATION**

##### **IV(1)- AGENCY RESPONSIBLE FOR PLACEMENT OF FUNDS**

The user agency shall provide funds for raising Compensatory Afforestation as per approved scheme.

##### **IV(2)- AGENCY RESPONSIBLE FOR EXECUTION OF COMPENSATORY AFFORESTATION**

The Territorial Wing of the Forest Department i.e. Divisional Forest Officer, Keonjhar Division will be assigned with the task for execution of the Compensatory Afforestation.

## CHAPTER- V

### **DETAILS OF WORK SCHEDULE PROPOSED FOR COMPENSATORY AFFORESTATION**

#### **A. PLANTING PLAN**

Planting Plan reflects the species specific treatment of the identified site. Choice of species is based on the geo-morphology of the site, soil-texture, structure, fertility and depth, proneness of the site to water logging etc. Specific treatment of the site in terms of soil and moisture conservation intervention will be depicted in the treatment map. A treatment map will invariably be prepared for Species to be planted and treatments to be applied to the different patches shown in the treatment map and planting plan. This plan will be followed when actual planting is carried out.

##### **Species to be planted: -**

1. *Shorea robusta* (Sal)
2. *Styzygium cumini* (Jamun)
3. *Adina cardifolia* (Kuruma)
4. *Anogeissus latifolia* (Dhaura)
5. *Accacia catechu* (Khair)
6. *Dalbergia sissoo* (Sissoo)
7. *Azadirachta indica* (Neem)
8. *Gmelina arborea* (Gambar)
9. *Terminalia belerica* (Bahada)
10. *Terminalia chebula* (Harida)
11. *Pongamia pinnata* (Karanja)
12. *Emblia officinalis* (Amla)

#### **B. PRE-PLANTING OPERATION**

##### **B(I)-RAISING OF PLANTATION STOCK- NURSERY-**

Nursery will be raised @550 seedlings per ha including seedlings for 10% causality replacement.

##### **B(II)- SURVEY, DEMARCATION & PILLAR POSTING, GPS READING WITH MAPPING-**

The planting area has been surveyed and demarcated with four feet height RCC pillars at inter visible distance (as per the direction of the Forest Range Officer, Keonjhar Range) with GPS coordinates, forward and backward bearing, pillar No. and distance between pillars inscribed in it. A DGPS map in the scale of 1:4000 has been prepared along with DGPS co-ordinates, forward & backward bearing, pillar to pillar distance and pillar numbers reflected in the map. A sign board has been erected at a conspicuous location with name of the site, scheme, area etc. depicted on it.

### **B(III)- SITE PREPARATION AND SILVICULTURAL OPERATION INCLUDING CLEARANCE OF WEED, CLIMBER CUTTING, HIGH STUMP CUTTING, SINGLING OF SHOOTS-**

The clearing of the site involving removal of invasive weeds, bushes, climbers, high stumps and singling of shoots will be taken up preferably by the end of February and latest by the end of March. Pits of the dimension 45 cm X 45 cm X 45 cm. will be dug @500 per ha. in the available gaps preferably 2 months before or at least a month before planting of seedlings.

### **C. PLANTING OPERATION**

Planting of seedlings will be taken up in the month of July. The polythene covering of the balls of earth will be carefully removed before planting. Care will be taken to see that the ball of earth is not broken while doing so. The seedling with the ball of earth will then be placed firmly in the pit and buried at such a depth that the root collar is well below the surface of the soil. The soil around the plant will be well compacted with the heel as a final step so that there is a proper bond between the ball and the surrounding soil. The earth close to the collar will be slightly elevated so that rain water does not accumulate very close to the plant.

### **D. POST PLANTING OPERATION**

#### **D(1)-CASUALTY REPLACEMENT**

The entire area will be gone over in the same order as plantation was carried out and casualties, if any, will be replaced as soon as the main plantation operation is over.

#### **D(2)-WEEDING AND SOIL WORKING**

Regular and efficient weeding will start immediately after sprouting of the stumps is complete or after the seedlings have started throwing up new buds.

#### **D(3)-MANURING AND INSECTICIDE APPLICATION**

On degraded sites urban compost or farmyard manure, wherever available, will be added to the soil while refilling the pits. As regards artificial fertilizers, N.P.K. and Urea will be applied in two split doses one in August and the other in September.

#### **D(4)-SOIL MOISTURE CONSERVATION MEASURES**

Special Soil Moisture Conservation Measures will be taken up through construction of wire mesh LBCD structures of dimension 10' x 10' x 5' to the tune of 44 nos. over the entire plantation site and Water Body- 1No.

#### **D(5)-PROTECTION AGAINST FIRE AND BIOTIC INTERFERENCE**

It is proposed to protect the Additional CA plantation from grazing by domestic animals using angle iron & chain link wire mesh. The total length of such fencing comes to 2.92 Km (2920 M). Fire line tracing will be ensured to protect the plantation from fire and watch & ward will be provided as per the approved norm for protecting the plantation from grazing with involvement of Baziapada VSS.

## CHAPTER- VI

### Base Cost Norms for Additional Compensatory Afforestation through Aided Natural Regeneration (ANR) @ 500 Seedlings / Ha.

ANNEXURE-7

Base Cost Norms for Compensatory Afforestation through Aided Natural Regeneration (ANR) @ 500 Seedlings/Ha.

WAGE RATE Rs. 311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
<b>0th Year (Advance work) Pre-Planting Operation</b>						
1	Survey, Demarcation and Pillar posting	Nov/Dec	2	622	0	622
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311	100	411
3	Site preparation	Nov/Dec	2	622	0	622
4	Afforestation operations including clearance of weed, cutting of climber, High stump cutting, stumping of shoots & removal of cut out after drying from the field to blank space.	Jan/Feb	15	4665	0	4665
5	Alignment and stacking for digging of pits	Feb/Mar	1	311	0	311
6	Digging of pits (45 cm x 45 cm x 45 cm) in hard and gravelly soil	Feb/Mar	20	6220	0	6220
Total			41	12751	100	12851
<b>1st Year /Planting Year</b>						
1	Refilling of pits by altering the dugout soil of the pits, application of organic compounds/CDM/ FYM & mixing the same perfectly.	June/Jul	1	311	2500	2811
2	Transportation of 12 months old polythene bag seedlings in hired truck/tractor from the nursery/ Mopri nursery to planting site including loading & unloading. (Average load of 10 Rtn) & Stacking the seedling @ Rs. 6/ seedling, (550 nos.)	Jul/Aug	0	0	3300	3300
3	Watering polythene bag seedlings at stacking site of plantation	Jul/Aug	1	311	0	311
4	Demarcation of polythene bag seedlings on land from the stacking site to individual digout pits within the planting site, applying insecticide, fertilizer & planting after softening the soil with other applied materials and pressing the soil perfectly around the placed seedling.	Jul/Aug	11	3421	0	3421
5	Cost of Fertilizer & Insecticide (a) NPK / Bio fertilizer of 50 gms/plant as basal dose 25kg @ Rs.30/- per kg - Rs. 750.0 (b) Dett/Vermicompost/Mo Khata/any other fertilizer - @ Rs.375.00 (c) Insecticide / Bio pesticide @ 5 gms/plant - 2.5 kg @ Rs.150/- per kg - Rs. 375/-	Jul/Aug	0	0	1500	1500
6	Caulus Replacement @ 10% (50 nos.)	Jul/Aug	1.5	466.5	0.0	466.5
7	Site weeding & Monitoring	Aug/Sept	5	1555	0	1555

[illegible]

No.	Name of work	Period of Execution	No of Handdays	Labour Cost (in Rs.)	Material Cost (in Rs.)	Total cost (in Rs.)	
Sl. No.	Year	No. of work days	Labour cost @ Rs. 25/- per day (Rs.)	Material Cost	Material, Fuel, Lubrication, Transport and other Contingency (Rs. 10% of 4+5)	Cost of Settlement @ Rs. 20.31 per cord ftg.	Total cost
1	2	3	4	5	6	7	8
1	0th year	41	1025.00	1000.00	5490.00	0.00	15490.00
2	1st year	41.5	1037.50	7300.00	994.50	2767.50	48927.00
3	2nd year	24.5	612.50	1727.50	603.00	2410.00	12410.00
4	3rd year	23.0	577.50	1430.00	579.00	0.00	4000.00
5	4th year	18	450.00	0.00	575.00	0.00	4000.00
6	5th year	15	375.00	0.00	575.00	0.00	4000.00
7	6th year	15	375.00	0.00	575.00	0.00	4000.00
8	7th year	15	375.00	0.00	575.00	0.00	4000.00
9	8th year	15	375.00	0.00	575.00	0.00	4000.00
10	9th year	15	375.00	0.00	575.00	0.00	4000.00
11	10th year	15	375.00	0.00	575.00	0.00	4000.00
	Total	235.0	5365.0	16597.5	3277.5	30107	117997.00

**Notes:**

1. Quantity of work to be done in the indigenous local forests available nearby to the site of plantation.
2. 10% indigenous forest diversion is considered for the reference plantation.
3. When specific soil conservation work like (Trench, Gully Plugging, Staggered Bench, Contour Trench, Graded bund, etc.) may be taken up.
4. Quantity of work to be adopted in the CA plantation takes up indigenous forest area and indigenous forest area may be provided in CA plantation.
5. When specific soil conservation work like (Trench, Gully Plugging, Staggered Bench, Contour Trench, Graded bund, etc.) may be taken up.
6. The Cost of work to be done in the indigenous local forests available nearby to the site of plantation.

APCC (Forest Division & NO, FC RD)

**Matrix for ANR-500 Plants / Ha**

Sl. No.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Total Cost
Block North		13400	46871	12316	8900	4800	4800	4800	4800	4800	4800	4800											
1	2021-22	13400	55475	13077	2003	5934	6135	6432	6754	7092	7446	7819											116098
2	2022-23		54071	53881	14256	10816	6226	6432	6754	7052	7447	7818	8210										143904
3	2023-24			14274	56575	14969	11359	6432	6754	7052	7447	7818	8210	8621									150521
4	2024-25				15513	59404	23927	11917	6754	7092	7447	7818	8210	8621	9032								157554
5	2025-26					15289	62274	16503	12523	7077	7447	7819	8210	8621	9032	9405							166433
6	2026-27						7102	65493	12178	13129	7647	7819	8210	8621	9032	9405	9928						172705
7	2027-28							17904	68768	14194	13806	7819	8210	8621	9032	9405	9928	10479					182390
8	2028-29								14858	71116	13124	14056	8210	8621	9032	9405	9928	10479	11023				191510
9	2029-30									15798	75816	7818	8210	8621	9032	9405	9928	10479	11023	11553			201066
10	2030-31										20701	79607	21067	13067	3012	8505	9942	10479	11023	11553	12131		211141

APCCF (Forest Diversion & NO. FC Act)

35. A 2.0 kg object is moving to the right with a velocity of 4.0 m/s. A net force of 10 N is applied to the object for 2.0 s. What is the final velocity of the object?

Account	Debit	Credit
1. Balance forward		100.00
2. Cash	100.00	
3. Cash	100.00	
4. Cash	100.00	
5. Cash	100.00	
6. Cash	100.00	
7. Cash	100.00	
8. Cash	100.00	
9. Cash	100.00	
10. Cash	100.00	
11. Cash	100.00	
12. Cash	100.00	
13. Cash	100.00	
14. Cash	100.00	
15. Cash	100.00	
16. Cash	100.00	
17. Cash	100.00	
18. Cash	100.00	
19. Cash	100.00	
20. Cash	100.00	
21. Cash	100.00	
22. Cash	100.00	
23. Cash	100.00	
24. Cash	100.00	
25. Cash	100.00	
26. Cash	100.00	
27. Cash	100.00	
28. Cash	100.00	
29. Cash	100.00	
30. Cash	100.00	
31. Cash	100.00	
32. Cash	100.00	
33. Cash	100.00	
34. Cash	100.00	
35. Cash	100.00	
36. Cash	100.00	
37. Cash	100.00	
38. Cash	100.00	
39. Cash	100.00	
40. Cash	100.00	
41. Cash	100.00	
42. Cash	100.00	
43. Cash	100.00	
44. Cash	100.00	
45. Cash	100.00	
46. Cash	100.00	
47. Cash	100.00	
48. Cash	100.00	
49. Cash	100.00	
50. Cash	100.00	
51. Cash	100.00	
52. Cash	100.00	
53. Cash	100.00	
54. Cash	100.00	
55. Cash	100.00	
56. Cash	100.00	
57. Cash	100.00	
58. Cash	100.00	
59. Cash	100.00	
60. Cash	100.00	
61. Cash	100.00	
62. Cash	100.00	
63. Cash	100.00	
64. Cash	100.00	
65. Cash	100.00	
66. Cash	100.00	
67. Cash	100.00	
68. Cash	100.00	
69. Cash	100.00	
70. Cash	100.00	
71. Cash	100.00	
72. Cash	100.00	
73. Cash	100.00	
74. Cash	100.00	
75. Cash	100.00	
76. Cash	100.00	
77. Cash	100.00	
78. Cash	100.00	
79. Cash	100.00	
80. Cash	100.00	
81. Cash	100.00	
82. Cash	100.00	
83. Cash	100.00	
84. Cash	100.00	
85. Cash	100.00	
86. Cash	100.00	
87. Cash	100.00	
88. Cash	100.00	
89. Cash	100.00	
90. Cash	100.00	
91. Cash	100.00	
92. Cash	100.00	
93. Cash	100.00	
94. Cash	100.00	
95. Cash	100.00	
96. Cash	100.00	
97. Cash	100.00	
98. Cash	100.00	
99. Cash	100.00	
100. Cash	100.00	
Total	100.00	100.00

Abstract					
Sl. No.	Year	No. papers	Latent cost of the \$117 per day	Material Total	Percentage (%)
1	2011	10	1.10	11.00	11%
2	2012	10	1.10	11.00	11%
3	2013	10	1.10	11.00	11%
4	2014	10	1.10	11.00	11%
5	2015	10	1.10	11.00	11%
6	2016	10	1.10	11.00	11%
7	2017	10	1.10	11.00	11%
8	2018	10	1.10	11.00	11%
9	2019	10	1.10	11.00	11%
10	2020	10	1.10	11.00	11%
11	2021	10	1.10	11.00	11%
12	2022	10	1.10	11.00	11%
13	2023	10	1.10	11.00	11%
14	2024	10	1.10	11.00	11%
15	2025	10	1.10	11.00	11%
16	2026	10	1.10	11.00	11%
17	2027	10	1.10	11.00	11%
18	2028	10	1.10	11.00	11%
19	2029	10	1.10	11.00	11%
20	2030	10	1.10	11.00	11%
21	2031	10	1.10	11.00	11%
22	2032	10	1.10	11.00	11%
23	2033	10	1.10	11.00	11%
24	2034	10	1.10	11.00	11%
25	2035	10	1.10	11.00	11%
26	2036	10	1.10	11.00	11%
27	2037	10	1.10	11.00	11%
28	2038	10	1.10	11.00	11%
29	2039	10	1.10	11.00	11%
30	2040	10	1.10	11.00	11%
31	2041	10	1.10	11.00	11%
32	2042	10	1.10	11.00	11%
33	2043	10	1.10	11.00	11%
34	2044	10	1.10	11.00	11%
35	2045	10	1.10	11.00	11%
36	2046	10	1.10	11.00	11%
37	2047	10	1.10	11.00	11%
38	2048	10	1.10	11.00	11%
39	2049	10	1.10	11.00	11%
40	2050	10	1.10	11.00	11%
41	2051	10	1.10	11.00	11%
42	2052	10	1.10	11.00	11%
43	2053	10	1.10	11.00	11%
44	2054	10	1.10	11.00	11%
45	2055	10	1.10	11.00	11%
46	2056	10	1.10	11.00	11%
47	2057	10	1.10	11.00	11%
48	2058	10	1.10	11.00	11%
49	2059	10	1.10	11.00	11%
50	2060	10	1.10	11.00	11%
51	2061	10	1.10	11.00	11%
52	2062	10	1.10	11.00	11%
53	2063	10	1.10	11.00	11%
54	2064	10	1.10	11.00	11%
55	2065	10	1.10	11.00	11%
56	2066	10	1.10	11.00	11%
57	2067	10	1.10	11.00	11%
58	2068	10	1.10	11.00	11%
59	2069	10	1.10	11.00	11%
60	2070	10	1.10	11.00	11%
61	2071	10	1.10	11.00	11%
62	2072	10	1.10	11.00	11%
63	2073	10	1.10	11.00	11%
64	2074	10	1.10	11.00	11%
65	2075	10	1.10	11.00	11%
66	2076	10	1.10	11.00	11%
67	2077	10	1.10	11.00	11%
68	2078	10	1.10	11.00	11%
69	2079	10	1.10	11.00	11%
70	2080	10	1.10	11.00	11%
71	2081	10	1.10	11.00	11%
72	2082	10	1.10	11.00	11%
73	2083	10	1.10	11.00	11%
74	2084	10	1.10	11.00	11%
75	2085	10	1.10	11.00	11%
76	2086	10	1.10	11.00	11%
77	2087	10	1.10	11.00	11%
78	2088	10	1.10	11.00	11%
79	2089	10	1.10	11.00	11%
80	2090	10	1.10	11.00	11%
81	2091	10	1.10	11.00	11%
82	2092	10	1.10	11.00	11%
83	2093	10	1.10	11.00	11%
84	2094	10	1.10	11.00	11%
85	2095	10	1.10	11.00	11%
86	2096	10	1.10	11.00	11%
87	2097	10	1.10	11.00	11%
88	2098	10	1.10	11.00	11%
89	2099	10	1.10	11.00	11%
90	2100	10	1.10	11.00	11%
91	2101	10	1.10	11.00	11%
92	2102	10	1.10	11.00	11%
93	2103	10	1.10	11.00	11%
94	2104	10	1.10	11.00	11%
95	2105	10	1.10	11.00	11%
96	2106	10	1.10	11.00	11%
97	2107	10	1.10	11.00	11%
98	2108	10	1.10	11.00	11%
99	2109	10	1.10	11.00	11%
100	2110	10	1.10	11.00	11%
101	2111	10	1.10	11.00	11%
102	2112	10	1.10	11.00	11%
103	2113	10	1.10	11.00	11%
104	2114	10	1.10	11.00	11%
105	2115	10	1.10	11.00	11%
106	2116	10	1.10	11.00	11%
107	2117	10	1.10	11.00	11%
108	2118	10	1.10	11.00	11%
109	2119	10	1.10	11.00	11%
110	2120	10	1.10	11.00	11%
111	2121	10	1.10	11.00	11%
112	2122	10	1.10	11.00	11%
113	2123	10	1.10	11.00	11%
114	2124	10	1.10	11.00	11%
115	2125	10	1.10	11.00	11%
116	2126	10	1.10	11.00	11%
117	2127	10	1.10	11.00	11%
118	2128	10	1.10	11.00	11%
119	2129	10	1.10	11.00	11%
120	2130	10	1.10	11.00	11%
121	2131	10	1.10	11.00	11%
122	2132	10	1.10	11.00	11%
123	2133	10	1.10	11.00	11%
124	2134	10	1.10	11.00	11%
125	2135	10	1.10	11.00	11%
126	2136	10	1.10	11.00	11%
127	2137	10	1.10	11.00	11%
128	2138	10	1.10	11.00	11%
129	2139	10	1.10	11.00	11%
130	2140	10	1.10	11.00	11%
131	2141	10	1.10	11.00	11%
132	2142	10	1.10	11.00	11%
133	2143	10	1.10	11.00	11%
134	2144	10	1.10	11.00	11%
135	2145	10	1.10	11.00	11%
136	2146	10	1.10	11.00	11%
137	2147	10	1.10	11.00	11%
138	2148	10	1.10	11.00	11%
139	2149	10	1.10	11.00	11%
140	2150	10	1.10	11.00	11%
141	2151	10	1.10	11.00	11%
142	2152	10	1.10	11.00	11%
143	2153	10	1.10	11.00	11%
144	2154	10	1.10	11.00	11%
145	2155	10	1.10	11.00	11%
146	2156	10	1.10	11.00	11%
147	2157	10	1.10	11.00	11%
148	2158	10	1.10	11.00	11%
149	2159	10	1.10	11.00	11%
150	2160	10	1.10	11.00	11%
151	2161	10	1.10	11.00	11%
152	2162	10	1.10	11.00	11%
153	2163	10	1.10	11.00	11%
154	2164	10	1.10	11.00	11%
155	2165	10	1.10	11.00	11%
156	2166	10	1.10	11.00	11%
157	2167	10	1.10	11.00	11%
158	2168	10	1.10	11.00	11%
159	2169	10	1.10	11.00	11%
160	2170	10	1.10	11.00	11%
161	2171	10	1.10	11.00	11%
162	2172	10	1.10	11.00	11%
163	2173	10	1.10	11.00	11%
164	2174	10	1.10	11.00	11%
165	2175	10	1.10	11.00	11%
166	2176	10	1.10	11.00	11%
167	2177	10	1.10	11.00	11%
168	2178	10	1.10	11.00	11%
169	2179	10	1.10	11.00	11%
170	2180	10	1.10	11.00	11%
171	2181	10	1.10	11.00	11%
172	2182	10	1.10	11.00	11%
173	2183	10	1.10	11.00	11%
174	2184	10	1.10	11.00	11%
175	2185	10	1.10	11.00	11%
176	2186	10	1.10	11.00	11%
177	2187	10	1.10	11.00	11%
178	2188	10	1.10	11.00	11%
179	2189	10	1.10	11.00	11%
180	2190	10	1.10	11.00	11%
181	2191	10	1.10	11.00	11%
182	2192	10	1.10	11.00	11%
183	2193	10	1.10	11.00	11%
184	2194	10	1.10	11.00	11%
185	2195	10	1.10	11.00	11%
186	2196	10	1.10	11.00	11%
187	2197	10	1.10	11.00	11%
188	2198	10	1.10	11.00	11%
189	2199	10	1.10	11.00	11%
190	2200	10	1.10	11.00	11%
191	2201	10	1.10	11.00	11%
192	2202	10	1.10	11.00	11%
193	2203	10	1.10	11.00	11%
194	2204	10	1.10	11.00	11%
195	2205	10	1.10	11.00	11%
196	2206	10	1.10	11.00	11%
197	2207	10	1.10	11.00	11%
198	2208	10	1.10	11.00	11%
199	2209	10	1.10	11.00	11%
200	2210	10	1.10	11.00	11%
201	2211	10	1.10	11.00	11%
202	2212	10	1.10	11.00	11%
203	2213	10	1.10	11.00	11%
204	2214	10	1.10	11.00	11%
205	2215	10	1.10	11.00	11%
206	2216	10	1.10	11.00	11%
207	2217	10	1.10	11.00	11%
208	2218	10	1.10	11.00	11%
209	2219	10	1.10	11.00	11%
210	2220	10	1.10	11.00	11%
211	2221	10	1.10	11.00	11%
212	2222	10	1.10	11.00	11%
213	2223	10	1.10	11.00	11%
214	2224	10	1.10	11.00	11%
215	2225	10	1.10	11.00	11%
216	2226	10	1.10	11.00	11%
217	2227	10	1.10	11.00	11%
218	2228	10	1.10	11.00	11%
219	2229	10	1.10	11.00	11%
220	2230	10	1.10	11.00	11%
221	2231	10	1.10	11.00	11%
222	2232	10	1.10	11.00	11%
223	2233	10	1.10	11.00	11%
224	2234	10	1.10	11.00	11%
225	2235	10	1.10	11.00	11%
226	2236	10	1.10	11.00	11%
227	2237	10	1.10	11.00	11%
228	2238	10	1.10	11.00	11%
229	2239	10	1.10	11.00	11%
230	2240	10	1.10	11.00	11%

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[illegible]

# **Matrix for (SMC)**

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000
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Advisory Board Decision E-2021-0201

**Fencing for Compensatory Plantation raised outside the Forest Areas using Angle Iron & Chain Link wire mesh (250 Rmt / Ha)**

Page 16 of 21



**Matrix for Fencing Model –F-II (Iron angle with Chain-link wire mesh)**

Matrices for Fencing Model 1-1: (Iron angle with Charolais wire mesh)

[illegible]

MCCB (Petersen, Davidson, &amp; Roth, 1997)

### Watering Provision to CA Plantation

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

## Matrix for Watering Model-W-11 (Diesel Pumps/Fitted with Borewell) per Ha

Case No.	II	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	Year
1001	1100	1210	1310	1410	1510	1610	1710	1810	1910	2010	2110	2210	2310	2000
1002	1101	1211	1311	1411	1511	1611	1711	1811	1911	2011	2111	2211	2311	2001
1003	1102	1212	1312	1412	1512	1612	1712	1812	1912	2012	2112	2212	2312	2002
1004	1103	1213	1313	1413	1513	1613	1713	1813	1913	2013	2113	2213	2313	2003
1005	1104	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2004
1006	1105	1215	1315	1415	1515	1615	1715	1815	1915	2015	2115	2215	2315	2005
1007	1106	1216	1316	1416	1516	1616	1716	1816	1916	2016	2116	2216	2316	2006
1008	1107	1217	1317	1417	1517	1617	1717	1817	1917	2017	2117	2217	2317	2007
1009	1108	1218	1318	1418	1518	1618	1718	1818	1918	2018	2118	2218	2318	2008
1010	1109	1219	1319	1419	1519	1619	1719	1819	1919	2019	2119	2219	2319	2009

ATCO (For gas conversion & NO<sub>x</sub> HC Act)

### TOTAL COST OF PROJECT

S. No	Item of Work	Unit price	In Rupees
1	Cost of ANR plantation @500 plants/ ha over 44.002 ha @Rs. 1,50,051/- per ha with 10 years maintenance. (As per base norm of Matrix for the year 2023-24)	1,50,051/- x 44.002 ha	66,02,544.10
2	Cost of Soil Moisture Conservation (SMC) (As per base norm of Matrix for the year 2023-24)	39,284/- x 44.002 ha	17,28,574.56
3	Cost of Angle Iron & Chain Link wire mesh Fencing with 10 years maintenance @4,62,316/- per 250 rmt/ha over 2.92 Km. (As per base norm of Matrix for the year 2023-24)	4,62,316/ 250 RMT x 2920 RMT	53,99,850.88
4	Cost of borewell for watering for 44.002 ha (As per base norm of Matrix for the year 2023-24)	5,27,321/- x 44.002 ha	2,32,03,178.64
	<b>Grand Total</b>		<b>3,69,34,148.18</b> <b>Or say</b> <b>3,69,34,500.00</b>

(Rupees three crore sixty-nine lakh thirty-four thousand five hundred) only

### **PROVISION OF FUNDS AND FUND UTILIZATION**

Rs. **3,69,34,500/-** (Rupees three crore sixty-nine lakh thirty-four thousand five hundred) only shall be deposited by the User Agency M/s Tata Steel BSL Limited (formerly known as Bhushan Steel India Limited) on approval of the scheme to the Ad-hoc CAMPA Account and the funds will be utilized for raising of Additional Compensatory Afforestation by the Divisional Forest Officer, Keonjhar Division on allotment by the Principal Chief Conservator of Forests, Odisha, Bhubaneswar.

  
Divisional Forest Officer,  
Keonjhar Division

## CHAPTER- VII

### **DETAILS OF PROPOSED MONITORING MECHANISM**

Additional Compensatory Afforestation will be taken up in the identified site by the Range Officer, Keonjhar Range of Keonjhar Division. The Range Forest Officer, Keonjhar Range will undertake field checks of the works undertaken at the identified site and will be cross checked by the Asst. Conservator of Forests, (Affn.) and Divisional Forest Officer, Keonjhar Division. GPS co-ordinates along with other required informations of Compensatory Afforestation will be uploaded in the e-Green watch Portal of NIC, MoEF&CC, Govt. of India for the purpose of online monitoring. Annual progress of plantation involving growth of planted seedlings, survival percentage etc. will be monitored and recorded in the plantation journal by the field staffs of Keonjhar Range and reported to the Divisional Forest Officer for necessary action. The same thing will be reported to the Regional Chief Conservator of Forests, Rourkela Circle and Chief Conservator of Forests (PP&A), O/o the Pr. Chief Conservator of Forests, Odisha, Bhubaneswar and necessary corrective measures will be followed if required so.

  
Divisional Forest Officer,  
Keonjhar Division

The land schedule of non-forest land along with boundary description of plot as per corrected RoR issued in favour of FE&CC Department Govt. of Odisha by the Tahasildar, Banspal.

Village	Khata No.	Plot No.	Kissam	Total Area (Ha.)	Boundary Description (Plot nos. existing)			
Jaladihi	70/1				North	South	East	West
		01	Parbat-I	11.5520	Podadihi village Boundary	Plot No. 258	Plot No. 2	Podadihi village Boundary
		02	Parbat-I	15.1360	Podadihi village Boundary	Plot No.258, 240,239 & 233	Plot No.3	Plot No.1
		03	Parbat-II	11.7840	Podadihi village Boundary	Plot No.230 (Jaladihi Sheet-4 Vill Boundary)	Plot No.4/911 & 850	Plot No.2
		04/911	Parbat-II	4.1360	Podadihi village Boundary	Plot No.850	Plot No.4	Plot No.3
Total				42.608				

  
**Divisional Forest Officer,**  
**Keonjhar Division**

The Collector and District Magistrate,  
Keonjhar.

Sub: Identification/ allotment of non-forest Govt. land measuring for raising compensatory afforestation in lieu of forest land to be diverted for Kalaranga West (Northern Part) Iron Ore Mines in Keonjhar and Sundergarh District allotted to M/S- Bhusan Steel Ltd.

Ref: Your kind letter No.1253/Rev. dt.22.07.2017 and Letter No.1384/Rev. dt.01.09.2017.

Sir,

With reference to above cited letter on the subject, I am to report that, a joint verification was undertaken with the forest officials on the selected non-forest Govt. land at vill- Jaladihi and Podadihi on dt.04.08.2017. The joint verification report along with land plan and land schedule duly signed, letter of consent obtained from the user agency and certified copy of R.O.R in respect of vill- Jaladihi and Podadihi are sent here with for kind information and taking further action. The identified lands found suitable for raising plantation having adequate soil depth. The land is free from encroachment and all encumbrances.

Yours faithfully

Enclosed: - As above.

Tahasildar, Banspal

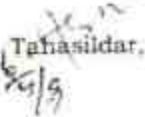
Memo No. 1522 / dt. 4/9/2017

Copy forwarded to the Assistant Vice President, M/S- Bhusan Steel Ltd. 41 HIG- BDA, Jayadev Vihar, Bhubaneswar- 751013 for information with reference to Memo No.2255/Rev. dt.22.07.2017 and memo No.1386/Rev. dt.01.09.2017 of Addl. District Magistrate, Keonjhar.

For Tata Steel BSL Ltd.

  
Manikanta Nalk

Chief, Corporate Services

  
Tahasildar, Banspal

**JOINT VERIFICATION OF NON-FOREST GOVT. LAND FOR COMPENSATORY AFForestation FOR NON-FOREST LAND OF BHUSHAN STEEL LTD**

Range:- B.J.P		Tahasil:- Banspal			Date:-	
S. No.	Name of the village	Khasra No.	Plot No.	Khasra	Total Area in Ha.	Area found suitable
1	1	3	1	5	6	7
2	2	70	2	PARBATA-1	11.552	8
3	3		3	PARBATA-1	15.136	9
4	4		4	PARBATA-1	11.784	
5	5		4(9)	PARBATA-1	6.384	
					44.856	42.608

1. Certified that the above non-forest Government land is not covered in column No. 7, 8 & 9 is in compact patches.

2. Certified that the above Government land is not covered in column No. 7, 8 & 9 is in compact patches.

3. Certified that the above Government land is not covered in column No. 7, 8 & 9 is in compact patches.

4. Certified that the above Government land is not covered in column No. 7, 8 & 9 is in compact patches.

5. Certified that the above Government land is not covered in column No. 7, 8 & 9 is in compact patches.

6. Certified that the above Government land is not covered in column No. 7, 8 & 9 is in compact patches.

7. Certified that the above Government land is not covered in column No. 7, 8 & 9 is in compact patches.

8. Status of non-forest Govt. land identified for C.A. is not forest as per B&D M. department.

9. Certified that the above plots are not covered under any proposed reserved forest.

For Tata Steel BSL Ltd.

Signature & Seal of  
Manikanta Naik

Signature & Seal of  
Chief, Corporate Services

Signature & Seal of  
B.J.P. Range

Signature & Seal of  
Forest Station Officer

Signature & Seal of  
Tahasil Officer

Signature & Seal of  
BANSPAL

Signature & Seal of  
BANSPAL

Signature & Seal of  
BANSPAL

Divisional Forest Officer  
Keonjhar Division

Keonjhar Division

26/07/2017

Schedule I Form No. 30/A

ପ୍ରତିଭାଗ

ନାମ : ଶ୍ରୀମତୀ

ଠିକା : ପ୍ରଧାନମନ୍ତ୍ରୀ

ପିନ୍ କୋଡ୍ : 50

ପଞ୍ଜୀକରଣ ନମ୍ବର : 10

ପଞ୍ଜୀକରଣ ତାରିଖ : 10

ବିଭାଗ : ପ୍ରଶାସନ

କର୍ମଚାରୀଙ୍କ ନାମ ଓ ପଦବୀ ଏବଂ ଉପସ୍ଥାପନା କାର୍ଯ୍ୟ				ପଦବୀ : ପ୍ରଶାସନିକ ସହାୟକ ସ୍ୱରୂପେ ।		
1) ପ୍ରତିଭାଗର ପ୍ରକାର				70		
2) ପ୍ରକାର ସହାୟକ, ପ୍ରଶାସନିକ, ଶ୍ରମିକ କର୍ମଚାରୀ				ଆବଦ୍ଧ ହେବା ପରେ ଆବଦ୍ଧ		
3) ସ୍ୱରୂପ						
4) ଚାର୍ଜ :	ପ୍ରଶାସନ	ଉପସ୍ଥାପନା	ସହାୟକ	କର୍ମଚାରୀଙ୍କ ନାମ ଓ ପଦବୀ	ସହାୟକ	5) ପ୍ରକାରଣର ପ୍ରକାର ଓ ପ୍ରକାର
6) ବିଶେଷ ଚାର୍ଜର ନାମ ଓ ପଦବୀ						
BLANK SPACE FOR STAMPING						
ପଞ୍ଜୀକରଣ ତାରିଖ - 10/09/1980						
ପଦବୀ ଉପରେ ଉପସ୍ଥାପନା						

ଉପସ୍ଥାପନା କାର୍ଯ୍ୟର ତାରିଖ 26/07/2017 11:37:59 IP: 10.172.0.71

For Tata Steel BSL Ltd.

  
Manikanta Naik

Chief, Corporate Services

  
TAHASILDAR  
BARSPAL

2017

ଉତ୍ତରୀୟ ଶ୍ରମିକଙ୍କ ଦ୍ଵାରା		କମ୍ପାନୀର ନାମ			କାର୍ଯ୍ୟକାରୀ
କ୍ରମ ସଂଖ୍ୟା	କାର୍ଯ୍ୟକାରୀ	କମ୍ପାନୀର ନାମ	କାର୍ଯ୍ୟକାରୀ	କାର୍ଯ୍ୟକାରୀ	କାର୍ଯ୍ୟକାରୀ
1	2	3	4	5	6
1	କାର୍ଯ୍ୟକାରୀ			11.5520	କାର୍ଯ୍ୟକାରୀ
2	କାର୍ଯ୍ୟକାରୀ			15.1360	କାର୍ଯ୍ୟକାରୀ
3	କାର୍ଯ୍ୟକାରୀ			11.7840	କାର୍ଯ୍ୟକାରୀ
4	କାର୍ଯ୍ୟକାରୀ			6.3840	କାର୍ଯ୍ୟକାରୀ
5	କାର୍ଯ୍ୟକାରୀ			15.6800	କାର୍ଯ୍ୟକାରୀ
41	କାର୍ଯ୍ୟକାରୀ			0.6240	କାର୍ଯ୍ୟକାରୀ
51	କାର୍ଯ୍ୟକାରୀ			0.1360	କାର୍ଯ୍ୟକାରୀ
96	କାର୍ଯ୍ୟକାରୀ			0.1200	କାର୍ଯ୍ୟକାରୀ
152	କାର୍ଯ୍ୟକାରୀ			0.0300	କାର୍ଯ୍ୟକାରୀ
174	କାର୍ଯ୍ୟକାରୀ			0.4500	କାର୍ଯ୍ୟକାରୀ
182	କାର୍ଯ୍ୟକାରୀ			0.3200	କାର୍ଯ୍ୟକାରୀ
196	କାର୍ଯ୍ୟକାରୀ			0.0000	କାର୍ଯ୍ୟକାରୀ
220	କାର୍ଯ୍ୟକାରୀ			0.4700	କାର୍ଯ୍ୟକାରୀ
253	କାର୍ଯ୍ୟକାରୀ			0.2600	କାର୍ଯ୍ୟକାରୀ
254	କାର୍ଯ୍ୟକାରୀ			0.9400	କାର୍ଯ୍ୟକାରୀ
255	କାର୍ଯ୍ୟକାରୀ			0.9400	କାର୍ଯ୍ୟକାରୀ
256	କାର୍ଯ୍ୟକାରୀ			0.2100	କାର୍ଯ୍ୟକାରୀ
257	କାର୍ଯ୍ୟକାରୀ			0.4700	କାର୍ଯ୍ୟକାରୀ
258	କାର୍ଯ୍ୟକାରୀ			11.9520	କାର୍ଯ୍ୟକାରୀ
360	କାର୍ଯ୍ୟକାରୀ			8.2880	କାର୍ଯ୍ୟକାରୀ
361	କାର୍ଯ୍ୟକାରୀ			13.8000	କାର୍ଯ୍ୟକାରୀ

For Tata Steel BSL Ltd.

  
Manikanta Naik

**Chief, Corporate Services**

26/07/2017

263	ପର୍ବତ ପୁର			11.3040	ବରାହ
264	ପର୍ବତ ପୁର			8.4160	ବରାହ
265	ପର୍ବତ ପୁର			11.8240	ବରାହ
266	ପର୍ବତ ପୁର			8.9600	ବରାହ
267	ପର୍ବତ ପୁର			11.5440	ବରାହ
268	ପର୍ବତ ପୁର			5.4240	ବରାହ
269	ପର୍ବତ ପୁର			8.7200	ବରାହ
270	ପର୍ବତ ପୁର			15.8800	ବରାହ
271	ପର୍ବତ ପୁର			11.7440	ବରାହ
272	ପର୍ବତ ପୁର			14.5120	ବରାହ
273	ପର୍ବତ ପୁର			0.3000	ବରାହ
298	ପର୍ବତ ପୁର			0.1100	ବରାହ
308	ପର୍ବତ ପୁର			0.1500	ବରାହ
314	ପର୍ବତ ପୁର			0.1200	ବରାହ
318	ପର୍ବତ ପୁର			0.9000	ବରାହ
376	ପର୍ବତ ପୁର			0.1000	ବରାହ
387	ପର୍ବତ ପୁର			0.0200	ବରାହ
397	ପର୍ବତ ପୁର			0.1300	ବରାହ
409	ପର୍ବତ ପୁର			0.0400	ବରାହ
411	ପର୍ବତ ପୁର			0.0450	ବରାହ
413	ପର୍ବତ ପୁର			0.0900	ବରାହ
415	ପର୍ବତ ପୁର			0.0300	ବରାହ
441	ପର୍ବତ ପୁର			0.4500	ବରାହ
460	ପର୍ବତ ପୁର			0.2050	ବରାହ
472	ପର୍ବତ ପୁର			0.1100	ବରାହ

For Tata Steel BSL Ltd.


  
Manikanta Nalk

Chief, Corporate Services

271

87

2457-1258 XZ

520	6670			0.5300	
531	6670			0.1500	
614	ପ୍ରତିଶ ବର୍ଗ			0.1800	ମୁଣ୍ଡିଆ
622	ପ୍ରତିଶ ବର୍ଗ			0.5600	ମୁଣ୍ଡିଆ
629	୨୮୦			1.0400	ପାଟିକାଓ
793	୨୮୦			2.8480	ମୁଣ୍ଡି ନୀଳ, ବର୍ଷ ପ୍ରକାଶ ଅନୁବନ୍ଧ ଉପର ଖଣି ମିଷ୍ଟ, ଅନୁବନ୍ଧ ଉପର ଖଣି, ଉପର, ଓଡ଼ିଶା ଉପର, ଉପର 1, 25, 1585 ବର୍ଷ ପାଟିକା ଖଣି
52 plots				217.9420	

ଅନୁଷ୍ଠାନ ସମ୍ପର୍କୀତ ସୂଚକ 26/07/2017 11:38:29 IP: 10.172.0.71

TAHASILDAR  
BARSPAL

For Tata Steel BSL Ltd.  
Manikanta Nalk  
Chief, Corporate Services



By E-mail

## ବନଖଣ୍ଡ ଅଧିକାରୀଙ୍କ କାର୍ଯ୍ୟାଳୟ : ବଣାଇ ବନଖଣ୍ଡ

OFFICE OF THE DIVISIONAL FOREST OFFICER: BONAI FOREST DIVISION

Phone 06626-244454; E-mail- [dfo.bonai@odisha.gov.in](mailto:dfo.bonai@odisha.gov.in)

No. 6186 /6F-(Mg.) Dt: 23.7 2024

To

The General Manager,  
OMQ, Tata Steel Ltd., Mines Division,  
Noamundi-733217.

Sub: -

Proposal for seeking prior approval of the Central Government under Section 2 (ii) of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha. forest land (16.658 ha. in Keonjhar Forest Division and 25.950 ha. in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd.) (Online Proposal No.FP/OR/MIN/49169 /2020)-Stage-I approval regarding.

X-Sub:-

Revised demand of Regional Wildlife Management Plan fund.

Ref:-

1. Memo No.14145 dt.20.7.2024 of the CCF (Nodal), Bhubaneswar.
2. Letter No.FE-DIV-MISC-0036-2021-10992/FE&CC dt.26.6.2024 of FE&CC Department, Govt. of Odisha.
3. Your Memo No.29 dt.21.3.2024


Sir,

With reference to above, it is to inform that you were demanded vide this office Letter No.2560 dt.11.3.2024 to deposit ₹ 78,57,973/- (76.217 ha. X ₹1,03,100/-) towards Regional Wildlife Management Plan fund pertaining to area coming under Bonai Forest Division. Accordingly, you have deposited the said amount on 20.3.2024.

Further, the rate of Regional Wildlife Management Plan fund has been enhanced to ₹1,31,800/- per ha. w.e.f. 15.3.2024 vide Letter No.FE-DIV-MISC-0036-2021-10992/FE&CC dt.26.6.2024 of the FE & CC Department, Govt. of Odisha.

Hence, you are requested to deposit the differential amount of ₹21,87,428/- (₹1,00,45,401/-) ₹78,57,973/-/- towards Regional Wildlife Management Plan Fund immediately.

Yours faithfully,

  
Divisional Forest Officer,  
Bonai Division. *A.Sal*

Memo No. 6187 /6F-Dt: 23.7 2024

Copy forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, F.C. Act' O/O the P.C.C.F., Odisha Bhubaneswar for favour of kind information with reference to his Memo No.14145 dt.20.7.2024.

  
Divisional Forest Officer,  
Bonai Division. *A.Sal*

Memo No. 6188 /6F-Dt: 23.7 2024

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle, Rourkela for favour of kind information with reference to Memo No.14147 dt.20.07.2024 of the CCF (Nodal), Bhubaneswar.

  
Divisional Forest Officer,  
Bonai Division. *A.Sal*



**OFFICE OF THE DIVISIONAL FOREST OFFICER, KEONJHAR DIVISION**

Phone No- 06766-254315, email ID- [dfo.keonjhar@odisha.gov.in](mailto:dfo.keonjhar@odisha.gov.in)

Letter No. 5858

6F/Mining-38/2024

Dated, Keonjhar the

25<sup>th</sup> July, 2024

To

The General Manager, (OMQ),  
M/s Tata Steel Ltd, Mines Division,  
Nuamundi-733217.

Sub:

Proposal for seeking prior approval of the Central Government under Section 2 (ii) of the Forest (Conservation) Act, 1980 for non-forestry use of 42.608 ha of forest land (16.658 ha in Keonjhar Forest Division and 25.950 ha in Bonai Forest Division) within Kalmang West (Northern Part) Block for Iron Ore Mines in Keonjhar and Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (Formerly known as Bhusan Steel Ltd) (Online proposal no. FP/OR/MIN/49169/2020).

X-Sub:

**Demand of differential funds towards Regional Wildlife Management Plan over 16.658 ha coming under Keonjhar Forest Division.**

Ref:

1. F. No. 5-ORB522/2023-BHU dated 08.11.2023 of MoEF&CC, Govt. of India, IRO, Bhubaneswar.
2. Memo No.14481 dated 23.07.2024 of the Chief Conservator of Forests, Forest Diversion and Nodal Officer, FC Act, O/o the PCCF & HoFF, Odisha, Bhubaneswar.

Sir

With reference to the aforesaid memo on the captioned subject, this is to intimate that in compliance to the observation raised by the Chief Conservator of Forests, Forest Diversion and Nodal Officer, FC Act, O/o the PCCF & HoFF, Odisha, Bhubaneswar dated 23.07.2024, you are requested to deposit an amount of **Rs. 4,78,090/-** (Rupees four lakh seventy-eight thousand ninety) only towards differential Regional Wildlife Management Plan over 16.658 ha Forest land as per condition No. 7 of Stage- I approval dated 22.12.2023 of MoEF&CC, Govt. of India. The demanded amount has to be deposited in Orissa CAMPA Account only through e-portal (<https://parivesh.nic.in/>) and the proof/evidence of the deposit of fund be submitted to this office for further necessary action at this end.

Particulars	Amount due in Rs.	Amount deposited in Rs.	Balance to be deposited in Rs.
Differential payment of Regional Wildlife Management Plan over 16.658 ha @ Rs.1,31,800.00/-	21,95,524.40	17,17,440.00	4,78,084.40
<b>Total</b>			<b>4,78,084.40</b> <b>Or Say</b> <b>4,78,090.00</b>

(Rupees four lakh seventy-eight thousand ninety) only

Yours faithfully,

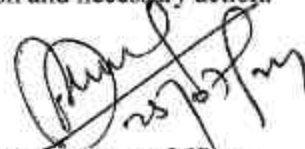
Divisional Forest Officer,  
Keonjhar Division.

24/7


PTO

Memo No. 5859 / Dated. 25.07.2024

Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle/  
Principal Chief Conservator of Forests, Forest Diversion and Nodal Officer, FC Act, O/o the  
PCCF & HoFF, Odisha, Bhubaneswar for favour of kind information and necessary action.



Divisional Forest Officer,  
Keonjhar Division



24/7



To,

Divisional Forest Officer  
Bonai Forest Division  
Bonai

GM/OMQ/80/11-G  
1<sup>st</sup> Aug'2024

**Sub:** Proposal for seeking prior approval of the Central Government under Sec-2(II) of the Forest (Conservation) Act-1980 for non-forestry use of 42.608 Ha forest land (16.658 Ha in Keonjhar Forest Division and 25.950 Ha in Bonai Forest Division) within Kalamang West (Northern Part) Block of Iron Ore Mines in Keonjhar & Sundargarh District of Odisha, allotted to M/s Tata Steel BSL Limited (now amalgamated into and with M/s Tata Steel Limited)(Online proposal No: FP/OR/MIN/49169/2020).

**X-Sub:** Compliance of Stage-I approval accorded vide Letter No.8-13/2022-FC, dated 22.12.2023 of MoEF&CC, Govt. of India

**Ref:** 1. Letter No. 25384, dated 28.12.2023 of Conservator of Forest (Nodal), Odisha  
2. Memo No.14145, dated 20.7.2024 of the CCF (Nodal), Bhubaneswar  
3. DFO, Bonai Memo No. 6186/6F-(Mg), dated 23.07.2024  
4. DFO, Keonjhar Memo No. 5858/6F/Mining, dated 25.07.2024.

Dear Sir,

With reference to the subject cited above and letter under refence, we would like to inform that we have now made the payment of Total Rs 26,65,518/- (Rupees Twenty Six Lakh Sixty Five Thousand Five Hundred Eighteen only) towards the differential amount of Regional Wild Life Manage Plan payable as per the Cost norms revised vide Letter No.FE-DIV-IMISC-0036-2021-10992/FE&CC, dated 26.06.2024 of the FE & CC Department, Govt of Odisha.

The above is sum of the Demand of Rs 21,87,428/- (Rupees Twenty-One Lakh Eighty Seven Thousand Four Hundred Twenty Eight only) received from DFO, Bonai Office vide Memo No. 6186/6F-(Mg), dated 23.07.2024 and demand of Rs 4,78,090/- (Rupees Four Lakh Eight Thousand Ninety only) received from DFO, Keonjhar Office vide Memo No. 5858/6F/Mining, dated 25.07.2024. The details of demand head, demand reference, amount payable and reference of payment made is shown in the table given below.

Sl No.	Particulars	Demand Reference	Demand Amount (Rs)	Paid Amount (Rs)	Reference
1.	Differential Cost towards implementation of Regional Wildlife Management Plan	DFO, Bonai Memo No. 6186/6F-(Mg), dated 23.07.2024	21,87,428/-	21,87,428/-	Deposited vide State Bank of India with UTR no. SBIN524213583309, dated 31.07.2024
		DFO, Keonjhar Memo No. 5858/6F/Mining, dated 25.07.2024	4,78,090/-	4,78,090/-	
Total (Rs)			26,65,518/-	26,65,518/-	

**TATA STEEL LIMITED**

Mines Division Noamundi 833 217 India  
Tel 91 9262699402

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India  
Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com



The above said amount of total Rs 26,65,518/- (Rupees Twenty Six Lakh Sixty Five Thousand Five Hundred Eighteen only) towards the differential amount of Regional Wild Life Manage Plan as per the revised Cost norms communicated vide Letter No. FE-DIV-MISC-0036-2021-10992/FE&CC, dated 26.06.2024 of the FE & CC Department, Govt of Odisha has already been deposited through e-portal of MoEF&CC, Govt. of India and the proof of payment received from State Bank of India with UTR No. SBIN514213583306, dated 31.07.2024 is enclosed as **Annexure-I**.

We request your good office for doing the needful for compliance of Stage-I approval order.

Thanking You,

Yours's faithfully,

(Atul Kumar Bhatnagar)  
General Manager, OMQ

Encl: As above

Copy to:

1. Principal Chief Conservator of Forests & HoFF, Odisha, Bhubaneswar
2. Regional Chief Conservator of Forests, Rourkela Circle, Rourkela
3. Divisional Forest Officer, Keonjhar Forest Division, Keonjhar

**TATA STEEL LIMITED**

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NEFT: Message Details		
UTR Number	SBIN524213583306	
Transaction Branch	12635	
Value Date	31/07/2024	
Amount	2665518	INR
Commission	0	
Beneficiary Details		
Beneficiary Account	150825849169580	
Beneficiary Name	ORRISA CAMPA	
Beneficiary Address	UNION BANK OF INDIA FCS BANGALORE UBIN0996335	
IFSC Code	UBIN0996335	
Remitting Customer Details		
Account Number	00000040080025794	
Remitter's Name	TATA STEEL LIMITED	
Remitter's Address	NOAMUNDI WEST SINGHBHUM	
Sender's To Receiver Information		
TR		
Details of Payment		
Error Code		
Fund Status		



Close

## AGENCY COPY



## NEFT / RTGS CHALLAN for CAMPA Funds

Date : 30-07-2024

Agency Name.	M/s. Tata Steel Limited, Khopoli
Application No.	5849169580
MoEF/SG File No.	8-13/2022-FC
Location.	ORRISA
Address.	Narendrapur, Po-Kusupanga, Via-Meramandali, Dist-DhenkanalDhenkanal
Amount(in Rs)	2665518/-

Amount in Words :Twenty-Six Lakh Sixty-Five Thousand Five Hundred and Eighteen Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825849169580 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCS Centre,21/1, III Floor, Jelitta Towers, Mission Road, Bengaluru-560027

This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

Note:After making the required payment through chal even after 7 working days, then kindly mail a copy of y ld to Email: fcsblr@unionbankofindia.bank , epurse@ubin0903710@unionbankofindia.bank

UTR- SBIN 52421358330 6

**PROFORMA FOR VERIFICATION OF DEPOSITS IN COMPENSATORY AFORESTATION FUND**

1.	Name of Office	Regional Office, MoEF & CC, Bhubaneswar
2.	State/District/Forest Division to which the proposal relates	Odisha/ Sundergarh & Keonjhar/ Bonai & Keonjhar Forest Division
3.	Name of User Agency, nature of proposal	Kalamang West (Northern Part) Iron Ore Mine of M/s Tata Steel Ltd
4.	Nature and category of proposal	Mining of Iron Ore
5.	Proposal number	FP/OR/MIN/49169/2020
6.	Extent of forest area involved	42.608 ha (16.658 ha. In Keonjhar Forest Division + 25.950 ha. In Bonai Forest Division)
7.	Whether original or extension	Original
8.	If extension of lease, please clarify if proposal involves additional forest area and if so, specify	NA
9.	Date of 1 <sup>st</sup> Stage clearance	Stage-I granted on 22.12.2023.
10.	Extent of CAMPA charges, head wise viz.:	
	(a) Compensatory Afforestation	Rs. 3,92,64,000/-
	(b) Additional Compensatory Afforestation	Rs. 3,69,34,500/-
	(c) Dwarf species plantation in right of way under transmission line	Nil
	(d) Penal Compensatory Afforestation	Nil
	(e) Catchment Area Treatment	Nil
	(f) Wildlife Management Plan	
	i) Site Specific Wildlife Conservation Plan	Rs. 8,34,16,800/-
	ii) Regional Wildlife Management Plan	Rs. 95,75,413/-
	iii) Differential cost towards Regional Wildlife Management Plan	Rs. 26,65,518/-
	(g) Additional charges for diversion of area falling under notified/protected areas	Nil
	(h) Net Present Value	Rs. 6,12,13,636/-
	(i) Any other charges/levies (Please specify)	
	i) 25% of Compensatory Afforestation	Rs. 98,16,000/-
	ii) Safety Zone	Nil
	iii) 1.5 times Safety Zone	Rs. 52,87,500/-
	iv) Creation and Maintenance of alternative habitat for Avifauna	Rs. 4,68,000/-
	v) Interest on belated payment of NPV	Nil
	<b>Total</b>	<b>Rs. 24,86,41,367/-</b>
11.	Whether payment made through challan or otherwise. In case of online payment, details of challan.	

12. Details of deposits								
Sl No.	Type of deposit {NPV/CA/ IWMP/ Others (specify)}	Whether by RTGS/DD/ NEFT (Specify)	UTR/ DD No.	Amount deposited (Rs.)	Date of deposit	Name of Bank from which amount transferred to account of CAF	Bank Account of CAF managed by CAMPA in which fund deposited	
I)	Net Present Value (NPV)	Online	HDFCR52022041260657683	6,12,13,636/-	Challan dated 06.04.2022 & payment dated 12.04.2022	HDFC Bank, Jamshedpur Branch	A/c No-1508258146348387 Union Bank of India Lodhi Complex Branch, Block 11, CGO Complex, Phase I, Lodhi Road, New Delhi-110003	
II)	Compensatory Afforestation Scheme	Online	HDFCR52024030686033141	15,96,15,300/- (Which Includes ₹3,92,64,000/- towards CA) + ₹3,69,34,500/- towards ACA + ₹8,34,16,800/- towards SSWLCP)	Challan dated 28.02.2024 & payment dated 06.03.2024	HDFC Bank, Jamshedpur Branch	A/c No-150825849169311. Union Bank of India FCS Centre, 21/1, III Floor, Jelita Towers, Mission Road, Bengaluru-560027	
	Additional Compensatory Afforestation							
	Site-Specific Wildlife Conservation Plan							
III)	25% of the Compensatory Afforestation Scheme	Online	HDFCR52024032090433858	1,93,91,413/- (Which Includes ₹98,16,000/- towards 25 % of CA cost + ₹95,75,413/- towards RWMP)	Challan dated 18.03.2024 & payment dated 20.03.2024	HDFC Bank, Jamshedpur Branch	A/c No-150825849169967 Union Bank of India FCS Centre, 21/1, III Floor, Jelita Towers, Mission Road, Bengaluru-560027	
iv)	Regional Wildlife Management Plan							
v)	1.5 Times Safety zone Afforestation	Online	HDFCR52024050755078512	57,55,500/- (Which Includes ₹52,87,500/- towards 1.5 Times Safety zone Afforestation cost +	Challan dated 07.05.2024	HDFC Bank, Jamshedpur Branch	A/c No-150825849169401 Union Bank of India FCS Centre, 21/1, III Floor, Jelita Towers, Mission Road, Bengaluru-560027	
vi)	Scheme of							

	Alternate habitat for Avifauna			₹4,68,000/- towards cost of Alternate habitat for Avifauna)			
vii)	Differential cost towards Regional Wildlife Management Plan	Online	SBIN524213583306	26,65,518/-	Challan dated 30.07.2024 payment dated 31.07.2024	SBI Bank, Noamundi Branch	A/c No-150825849169580, Union Bank of India PCS Centre, 21/1, III Floor, Jellita Towers, Mission Road, Bengaluru-560027

Date:  
Place:

  
Divisional Forest Officer,  
Keonjhar Division

Addl. Principal Chief Conservator of Forests (Nodal)  
Odisha.



*Additional Scheme pertaining to Keonjhar District only.*

*For*

**DE-SILTING OF VILLAGE TANKS AND OTHER WATER  
BODIES LOCATED WITHIN 05 KM FROM THE MINE  
LEASE BOUNDARY SO AS TO MITIGATE THE IMPACT  
OF SILTATION OF SUCH TANKS/ WATER BODIES**

**in compliance**

**with**

**Condition No.16 of**

**Stage-I approval granted vide**

**Letter No.8-13/2022-FC, Dated.22.12.2023**

**of Govt. of India, Ministry of Environment, Forests**

**&Climate Change,**

**New Delhi.**

**for**

**Diversion of 42.608 ha. of Forest Land for U/s-2 (II) (Including 2.382  
ha. of Safety Zone) OF FC Act-1980**

**within 92.875 ha. Iron Ore Mining Lease**

**of**

**M/S Tata Steel BSL Limited**

**(Now amalgamated into & with Tata Steel Limited).**

**In village Kalamang and Ghodabudhani of Kolra tahsil, Sundargarh District and  
Gandhalpada village in Barbil Tahsil, Keonjhar District, Odisha.**

## **1. INTRODUCTION**

The Govt. of Odisha vide Letter No.5285/DM dt.24.06.2017, read with Letter No.6287/SM dt.27.07.2017, issued Letter of Intent (LoI) for grant of Mining Lease of Kalamang West (Northern Part) Iron Ore Block in favour of M/s Bhushan Steel Limited over an area of 92.875 hectare in village Kalamang and Ghodabudhani, of Sundargarh District and Gandhalpada village of Keonjhar District for a period of 50 years. The Letter of Intent was transferred in favour of M/s Tata Steel BSL Limited on taking over of Bhushan Steel Limited basing on the Order of NCLT vide Steel & Mines Dept. Letter No: 4261/SM dated 27.05.2021. Govt. of Odisha Steel & Mines Dept. have further approved the amalgamation of M/s Tata Steel BSL Limited into & with M/s Tata Steel Limited vide letter no: 541/SM dated 21.01.2022 which makes M/s Tata Steel Limited, eligible LOI holder of Kalamang West (Northern Part) Iron Ore Block.

As per the Terms & Conditions of LOI the Applicant shall fulfill the provisions of all Acts and Rules applicable to the Project. Accordingly, M/s Tata Steel BSL Limited has submitted the proposal to obtain approval of the Central Govt. over 42.608 hectare of forest land including Safety Zone 2.382 Ha U/s-2 (ii), of the Forest (Conservation) Act'1980 within the above Mining Lease area.

Further, "in principle approval" Stage-I approval over 42.608 ha. of Forest Land U/s-2 (ii) (including 2.382 ha. of Safety Zone) has been granted by MoEF& CC vide their Letter No. 8-13/2022-FC, dated 22.12.2023 where in it has been stipulated as per **Condition No. 16 for de-silting of village tanks and other water bodies located within 05 km from the mine lease boundary so as to mitigate the impact of siltation of such tanks/ water bodies.**

## **2. LOCATION**

The mining lease area finds place in the Survey of India Topo sheet No.F45N5 (73 G/5) and situated between the latitude 21° 56' 47.75784" to 21° 57' 32.34779" N and longitude 85° 17' 06.65892" to 85° 17' 57.53148" E. The above ML area covering villages such as Kalamang, and Ghodabudhani in Koira Range, Bonal Forest Division, Sundargarh District and Gandhalpada village of Barbil Range, Keonjhar Forest Division, Dist-Keonjhar, Odisha.

## **3. TOPOGRAPHY**

The above allotted block under study is a highly rugged terrain, with elongated hills trending ENE-WSW direction, low mounds and narrow valleys. The highest elevation of ridges in the area is 690 m above MSL forming the ridge. Lowest elevation is 585 m above MSL which forms the valley floor in this block.

#### 4. SOIL TYPE

The low-lying areas are filled up with alluvial soil which is ferrugineous in nature and reddish brown in colour. In most of the area the soil is moderately coarse in nature whereas it is loamy in the cultivated land. Since the area is devoid of any perennial nala or river, the soil has been deposited in the valley area mostly from the low order nala or from the slope wash of the nearby hillock occupied by the iron ore group of rocks.

#### 5. CLIMATE

The lease area lies in tropical region where climate is characterized by an oppressively hot summer and cool winter. Summer is typically from April to July when monthly temperature ranges with a maximum of 42 degree centigrade during day time to a minimum of 15 Degree Centigrade at night time. Winter is from November to February when the maximum temperature during daytime goes to 37 Degree Centigrade and minimum temperature at night becomes as low as 8 Degree Centigrade. The average annual rainfall as recorded at IMD observatory at Keonjhar is 1269.1 mm.

#### 6. SELECTION OF PONDS

For the purpose as mentioned in Condition No (16) of the Stage-I approval letter a survey of ponds within the buffer area of 5 Kms from the lease boundary was made. Total 17 numbers of following ponds pertaining to Keonjhar District Only are identified for desiltation within 5 km vicinity of the lease area in consultation with local people and forest staff. 3 ponds/tanks namely in Topadihi and Guali villages will maintain as per approved scheme of OMC, Guali Iron Ore Mines. Rest 17 ponds need desilting which is given in below table.

Location of the village tanks

WATER BODY NO.	NAME OF THE VILLAGE	LATITUDE	LONGITUDE	LENGTH IN MTR.	WIDTH IN MTR.	Remarks
1	TOPADIHI	21° 59' 13.964"	85° 18' 23.859"	72	62	Adherence as per Approved scheme of OMC, Guali Iron Ore Mines
2	TOPADIHI	21° 58' 45.408"	85° 18' 31.952"	65	35	
3	GUALI	21° 59' 7.897"	85° 17' 22.321"	73	66	
4	NUAGAON	21° 58' 55.62"	85° 16' 42.63"	24	37	Scope for Desiltation
5	NUAGAON	21° 58' 21.26"	85° 16' 30.26"	25	25	
6	NUAGAON	21° 58' 21.0216"	85° 16' 29.8812"	15	15	
7	NUAGAON	21° 58' 55.4232"	85° 16' 45.7896"	32	38	
8	NUAGAON	21° 58' 22.8072"	85° 16' 50.9772"	15	15	
9	NUAGAON	21° 58' 28.1712"	85° 16' 52.428"	25	25	
10	GANDHALPADA	21° 58' 18.5772"	85° 17' 1.8024"	27	36	
11	GANDHALPADA	21° 58' 16.6188"	85° 17' 0.2364"	25	25	
12	GANDHALPADA	21° 58' 18.5844"	85° 17' 0.2724"	26	33	
13	GANDHALPADA	21° 58' 21.198"	85° 16' 57.4932"	25	25	
14	GANDHALPADA	21° 58' 20.5392"	85° 16' 57.2196"	30	30	
15	GANDHALPADA	21° 58' 12.16"	85° 17' 6.40"	15	15	

WATER BODY NO.	NAME OF THE VILLAGE	LATITUDE	LONGITUDE	LENGTH IN MTR.	WIDTH IN MTR.	Remarks
16	GANDHALPADA	21°58'8.76"	85°17'7.05"	24	26	
17	GANDHALPADA	21°58'4.85"	85°16'57.89"	25	25	
18	PADULIPOS!	21°59'34.16"	85°16'58.41"	30	30	
19	PADULIPOS!	21° 59' 37.2408"	85° 17' 0.9528"	25	25	
20	PADULIPOS!	21°59'41.23"	85°17'2.02"	25	25	

## 7. METHODOLOGY

It is proposed to carry out the total de-siltation of the selected ponds as above every five years during summer when the ponds shall dry up exposing the silts. The dried silt shall be removed manually or mechanically based on the ground condition. In case of mechanical removal of silt, small excavators such as back-hoe / small hydraulic shovels or pay loader, depending upon the quantity of silt accumulation shall be used. For the purpose of evaluation of work required for de siltation, an estimate of de siltation in the individual ponds was made, which has been summarized in **Annexure-1**. Keeping in view the site condition it is proposed to take up de-siltation on a cycle of five-year basis (i.e. each pond will be de-silted twice within the plan period over 10 years) particularly during summer months when the tank/water bodies are dried up with exposed silts. Silt accumulation occurs in the basal area of the tank which is roughly estimated to be 30% less of the aerial area.

## 8. COST ESTIMATE:

De-silting of Pond/ village tanks will be done at Panduliposi, Gandhalpada and Nuagaon villages by TATA Steel Limited @ Rs.450.00 per MD. Where 1 Cubic meter desiltation of pond in a day incur Rs. 450. In addition cost of inlet/outlet pipes, at each pond an additional cost of Rs 10000/- per tank to be added. Cost estimate has been done on the same as per pond/tank constructed in villages with their volume capacity.

Sl No	Village	Length in mtr.	Width in mtr.	Area in Sq. M.	Volume in cu.m taking the height as 1 mtr and area as 70 % of the total area	Expenditure		
						Desilting the pond @ Rs 450 per cum in Rs	Inlet & outlet pipes in Rs	Total Expenditure in Rs
1	NUAGAON	24	37	888	622	279720	10000	289720
2	NUAGAON	25	25	625	438	196875	10000	206875
3	NUAGAON	15	15	225	158	70875	10000	80875
4	NUAGAON	32	38	1216	851	383040	10000	393040
5	NUAGAON	15	15	225	158	70875	10000	80875
6	NUAGAON	25	25	625	438	196875	10000	206875
7	GANDHALPADA	27	36	972	680	306180	10000	316180
8	GANDHALPADA	25	25	625	438	196875	10000	206875
9	GANDHALPADA	26	33	858	601	270270	10000	280270
10	GANDHALPADA	25	25	625	438	196875	10000	206875
11	GANDHALPADA	30	30	900	630	283500	10000	293500

Sr. No	Village	Length in mtr.	Width in mtr.	Area in Sq. ft.	Volume in cu.m taking the height as 1 mtr and area as 70 % of the total area	Desilting the pond @ Rs 450 per cum in Rs	Inlet & outlet pipes in Rs	Total Expenditure in Rs
12	GANDHALPADA	15	15	225	158	70875	10000	80875
13	GANDHALPADA	24	26	624	437	196560	10000	206560
14	GANDHALPADA	25	25	625	438	196875	10000	206875
15	PADULIPOSI	30	30	900	630	283500	10000	293500
16	PADULIPOSI	25	25	625	438	196875	10000	206875
17	PADULIPOSI	25	25	625	438	196875	10000	206875
<b>TOTAL</b>						<b>35,93,520</b>	<b>1,70,000</b>	<b>37,63,520</b>

For de silting twice, the estimated cost will be Rs. 37,63,520 X 2 = Rs 75,27,040

Construction of one signage each in pond @ Rs 5000/- for Seventeen pond = Rs 85,000.00

Total cost = Rs 76,12,040 (Rs 75,27,040.00 + Rs 85,000.00) or say


Rs 76,12,100 (Rupees seventy six lakh twelve thousand one hundred) only for 10 years of Plan Period

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

  
ATUL KUMAR BHATTACHARYA  
(Authorised Signatory)

General Manager, OMQ  
TATA STEEL LIMITED

COUNTERSIGNED

  
Divisional Forest Officer  
Keonjhar Division

  
Forest Range Officer  
Barbil

Technically Approved

  
Regional Chief Conservator of Forests  
Rourkela Circle

As indicated, above de-siltation will be carried out in a two year cycle. All the ponds will be de-silted twice in the plan period once in 2029-30 and then in 2031-32.

**10. EXECUTING AGENCY**

The user agency shall take up the project of De-siltation of Village tank/Water bodies out of project head.

**11. INSPECTION AND MONITORING.**

The manner of execution & periodical monitoring will be made by Tata Steel Limited. The Execution and achievements may be reviewed by the Divisional Forest Officer, Keonjhar Forest Division from time to time as possible. In case of some dispute if the earmarked tank could not be de-silted in assigned year it may be executed in the next year along with the next year's programme.

  
**Forest Range Officer  
Barbil**

  
**Divisional Forest Officer  
Keonjhar Division**

**CERTIFICATE**

Certified that the village tanks/water bodies available within 5.0 km from the ML boundary of Kalamang West (Northern Part) Iron Ore Mines as per the GPS co-ordinates of the tanks/water bodies included in the scheme for de-silting is duly verified by the undersigned.

Place: Keonjhar

Date:

  
**Forest Range Officer  
Barbil**

**COUNTERSIGNED**  
  
**Divisional Forest Officer  
Keonjhar Division**

Desilting the Pond in village Paduliposi, Gandhalpada and Nuagaon by TATA  
Steel Limited @ Rs.450.00 per MD.

Total: 35,93,520 per m3.											
Sl. No	Items	Location	L	B	Area	70% Area	H	Qty	unit	Rate	Amount
1	Desilting the pond	NUAGAON	24	47	888	622	1	622	Cum		
		NUAGAON	25	25	625	438	1	438	Cum		
		NUAGAON	15	3	225	158	1	158	Cum		
		NUAGAON	32	38	1216	851	1	851	Cum		
		NUAGAON	15	15	225	158	1	158	Cum		
		NUAGAON	25	25	625	438	1	438	Cum		
		GANDHALPADA	27	36	972	680	1	680	Cum		
		GANDHALPADA	25	25	625	438	1	438	Cum		
		GANDHALPADA	25	33	858	601	1	601	Cum		
		GANDHALPADA	25	25	625	438	1	438	Cum		
		GANDHALPADA	30	30	900	630	1	630	Cum		
		GANDHALPADA	15	15	225	158	1	158	Cum		
		GANDHALPADA	24	26	624	437	1	437	Cum		
		GANDHALPADA	25	25	625	438	1	438	Cum		
		PADULIPOSI	30	30	900	630	1	630	Cum		
		PADULIPOSI	25	25	625	438	1	438	Cum		
		PADULIPOSI	25	25	625	438	1	438	Cum		
			Total							7985.6	Cum
Grand Total											Rs. 35,93,520

  
Forest Range Officer  
Barhil

COUNTERSIGNED  
  
Divisional Forest Officer  
Kendhar Division

TOPO MAP SHOWING THE LOCATION OF PONDS/ WATER BODIES WITHIN 05 KM RADIUS FROM THE LEASE BOUNDARY OF KALMANG WEST (NORTHERN PART) IRON ORE BLOCK OF M/S TATA STEEL BSL LTD UNDER KEONJHAR FOREST DIVISION

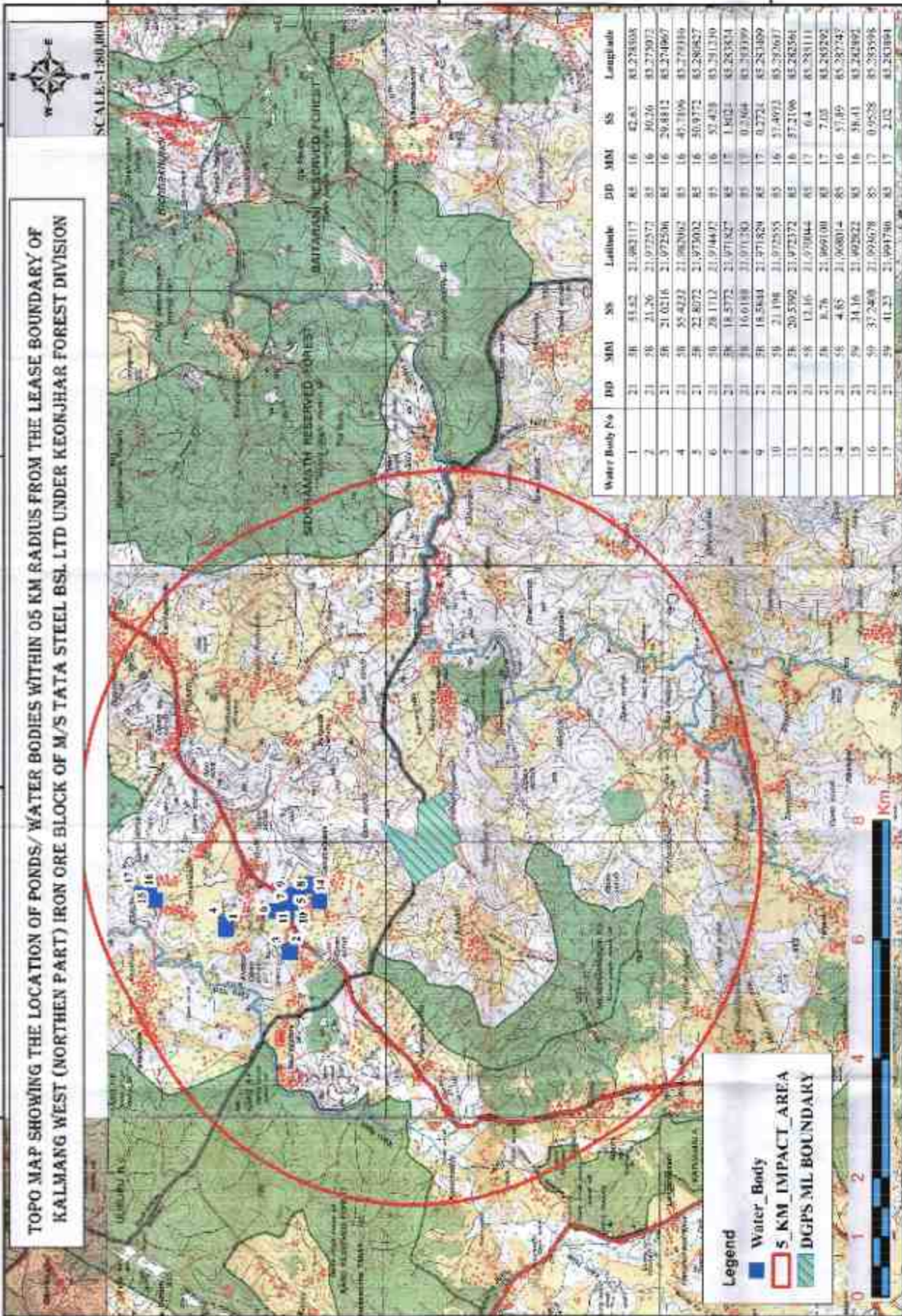
N.0.0.22  
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85°24'0"E

85°21'0"E

85°18'0"E

85°15'0"E



Water Body No	DID	MBL	SS	Latitude	DID	MBL	SS	Longitude
1	21	58	51.52	21.082117	85	16	42.43	83.278308
2	21	58	21.26	21.072571	85	16	30.26	83.275072
3	21	58	21.0216	21.072596	85	16	20.4812	83.274867
4	21	58	58.4222	21.082002	85	16	45.1896	83.279386
5	21	58	22.8072	21.073002	85	16	30.972	83.280527
6	21	58	28.1112	21.074497	85	16	31.438	83.281390
7	21	58	18.5772	21.071827	85	17	1.8024	83.283534
8	21	58	16.0188	21.071380	85	17	0.2664	83.283399
9	21	58	14.5844	21.071829	85	17	0.7724	83.283899
10	21	58	21.198	21.072555	85	16	37.4973	83.282607
11	21	58	20.5592	21.072372	85	16	37.2106	83.282561
12	21	58	12.16	21.070044	85	17	0.4	83.283111
13	21	58	8.76	21.069100	85	17	7.03	83.282592
14	21	58	4.65	21.068014	85	16	57.89	83.287547
15	21	58	34.16	21.092822	85	16	38.41	83.282892
16	21	58	37.2408	21.094678	85	17	0.9528	83.283598
17	21	58	41.23	21.094790	85	17	2.02	83.283894

85°24'0"E

85°21'0"E

85°18'0"E

85°15'0"E

# Images showing Coordinates and Pillar Number for Safety Zone Pillars



*[Signature]*  
Forest Section Officer  
Gual

*[Signature]*  
Forest Range Officer  
Barbil Range  
adugj ilqueg  
gajjo adugj tsardj

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY  
*[Signature]*  
ATUL KUMAR BHATNAGAR



# Images showing Coordinates and Pillar Number for Mine Lease Pillars



*Alu*  
Forest Section  
Guali  
Forest Range Officer  
Barbil Range

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

*Alu*

# Images showing Coordinates and Pillar Number for Mine Lease Pillars

Forest Section Officer  
Gualti

Forest Range Officer  
Barbil Range



FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ATUL KISHAN BHATNAGAR

# Images showing Coordinates and Pillar Number for Forest Pillars



*Handwritten signature*  
**Forest Section Officer**  
**Guail**

*Handwritten signature*  
**Forest Range Officer**  
**Barbil Range**

**FOR AND ON BEHALF OF**  
**TATA STEEL LIMITED**  
**BY THEIR CONSTITUTED ATTORNEY**

*Handwritten signature*  
**ADVAT WISHAK BHATNAGAR**

# Images showing Coordinates and Pillar Number for Forest Pillars



Forest Section  
Guail

Forest Range Officer  
Barbil Range

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

# Images showing Coordinates and Pillar Number for Forest Pillars



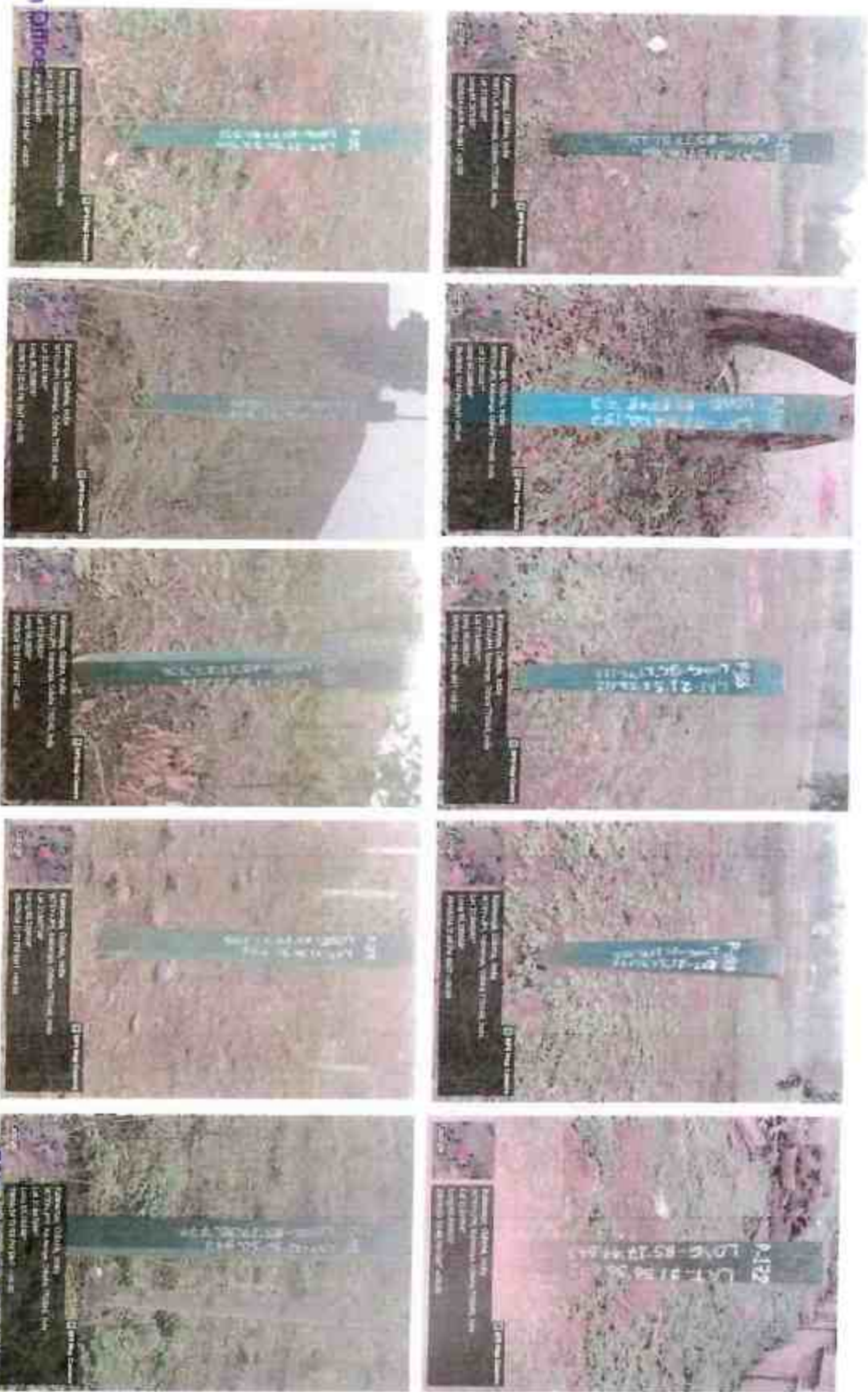
*Handwritten signature*  
**Forest Section Officer**  
**Gualti**

*Handwritten signature*  
**Forest Range Officer**  
**Barbil Range**

**FOR AND ON BEHALF OF**  
**TATA STEEL LIMITED**  
**BY THEIR CONSTITUTED ATTORNEY**

*Handwritten signature*  
**ATUL KUMAR BHATTACHAR**

# Images showing Coordinates and Pillar Number for Forest Pillars



*[Signature]*  
Forest Section  
Gualti

*[Signature]*  
Forest Range Office  
Barbil Range

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

*[Signature]*  
ATUL KUMAR BHATNAGAR

# Images showing Coordinates and Pillar Number for Mine Lease Pillars



COUNTERSIGNED

DIVISIONAL FOREST OFFICER

90001 DIVISION

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ATRII KIRIMABHAWAN

Signature  
Range Officer  
K. N. R. Forest Range

# Images showing Coordinates and Pillar Number for Mine Lease Pillars



*Signature*  
*Rajendra Kumar*  
 R. Kumar  
 R. Kumar

**COUNTERSIGNED**  
*Signature*  
 DIVISIONAL FOREST OFFICER  
 RONAI DIVISION

FOR AND ON BEHALF OF  
 TATA STEEL LIMITED  
 BY THEIR CONSTITUTED ATTORNEY

*Signature*  
 ATUL KUMAR BHATNAGAR

# Images showing Coordinates and Pillar Number for Safety Zone Pillars



COUNTERSIGNED

DIVISIONAL FOREST OFFICER

BONAI DIVISION

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ATUL KUMAR BHATNAGAR

Range Officer  
Kriha Forest Range

# Images showing Coordinates and Pillar Number for Safety Zone Pillars



*Signature*  
 Jointly Certified  
 Forest Range



COUNTERSIGNED  
 DIVISIONAL FOREST OFFICER  
 BONAI DIVISION

FOR AND ON BEHALF OF  
 TATA STEEL LIMITED  
 BY THEIR CONSTITUTED ATTORNEY  
 ATUL KUMAR BHATNAGAR

# Images showing Coordinates and Pillar Number for Forest Pillars



COUNTERSIGNED

DIVISIONAL FOREST OFFICER

BONAI DIVISION

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ATUL KUMAR BHATTANAGAR

Range Officer  
Katra Forest Range

# Images showing Coordinates and Pillar Number for Forest Pillars



COUNTERSIGNED

DIVISIONAL FOREST OFFICER  
SONAI DIVISION

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY  
ATUL KUMAR BHATNAGAR

Signature  
Divisional Officer  
Sonai Forest Range

# Images showing Coordinates and Pillar Number for Forest Pillars



*Speller*  
Range Officer  
Knriz Forest Range

**COUNTERSIGNED**  
DIVISIONAL FOREST OFFICER  
BONAI DIVISION

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY  
*Atul*  
ATUL KUMAR BHATTACHAR

# Images showing Coordinates and Pillar Number for Forest Pillars



COUNTERSIGNED

DIVISIONAL FOREST OFFICER

BONAI DIVISION

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ATUL KUMAR BHATHNAGAR

*Pradip Das*  
Range Officer  
Katra Forest Range

DISTANCE BETWEEN MINE PILLARS					
SL. NO.	PILLAR	PILLAR COORDINATES		PILLARS	DISTANCE (IN METER)
1	A	323335.025	2427972.333	A-B	200.0
2	B	323508.230	2428072.333	B-C	200.0
3	C	323608.230	2427899.128	C-D	600.0
4	D	324127.845	2428199.128	D-E	200.0
5	E	324227.845	2428025.923	E-F	166.3
6	F	324371.851	2428109.064	F-G	106.0
7	G	324361.311	2428214.562	G-H	343.5
8	H	324189.509	2428511.970	H-I	48.9
9	I	324232.952	2428534.445	I-J	137.3
10	J	324140.489	2428635.980	J-K	272.4
11	K	323868.436	2428622.799	K-L	96.7
12	L	323772.853	2428637.727	L-M	81.2
13	M	323694.725	2428659.923	M-N	81.0
14	N	323614.817	2428673.011	N-O	176.2
15	O	323697.502	2428828.614	O-P	32.6
16	P	323711.256	2428858.187	P-Q	110.2
17	Q	323763.697	2428955.097	Q-R	111.3
18	R	323816.321	2429053.201	R-S	162.4
19	S	323892.112	2429196.785	S-T	79.4
20	T	323928.883	2429267.131	T-U	1162.2
21	U	322918.563	2428692.767	U-V	132.1
22	V	322985.025	2428578.551	V-A	700.0

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

AYUL KUMAR BHATNAGAR

Forest Range Officer  
Barbil Range

Range Officer  
Koirā Forest Range

Forest Section Officer  
Guall

Countersigned

Divisional Forest Officer  
Bonai Division

DISTANCE BETWEEN SAFETY ZONE PILLARS					
SL.NO.	PILLAR NO.	PILLAR COORDINATES		PILLAR TO PILLAR NO.	DISTANCE (IN METER)
		LATITUDE	LONGITUDE		
1	AS	21°56'50.43640"N	85°17'21.54072"E	AS-BS	197.363
2	BS	21°56'53.67653"N	85°17'27.47762"E	BS-CS	198.791
3	CS	21°56'48.12465"N	85°17'31.02446"E	CS-DS	590.048
4	DS	21°56'57.95854"N	85°17'48.68068"E	DS-ES	194.944
5	ES	21°56'52.43644"N	85°17'52.01532"E	ES-FS	145.421
6	FS	21°56'54.72325"N	85°17'56.45110"E	FS-GS	105.07
7	GS	21°56'58.13881"N	85°17'56.38822"E	GS-HS	345.575
8	HS	21°57'8.05830"N	85°17'50.73240"E	HS-IS	45.443
9	IS	21°57'8.77775"N	85°17'52.11570"E	IS-JS	125.431
10	JS	21°57'11.80721"N	85°17'49.18925"E	JS-KS	254.638
11	KS	21°57'11.35375"N	85°17'40.32796"E	KS-LS	97.959
12	LS	21°57'11.82756"N	85°17'36.95188"E	LS-MS	83.019
13	MS	21°57'12.61658"N	85°17'34.18489"E	MS-NS	71.57
14	NS	21°57'13.12701"N	85°17'31.75128"E	NS-OS	171.826
15	OS	21°57'18.11104"N	85°17'34.45636"E	OS-PS	32.837
16	PS	21°57'19.06095"N	85°17'34.97871"E	PS-QS	111.618
17	QS	21°57'22.27742"N	85°17'36.78005"E	QS-RS	110.933
18	RS	21°57'25.48442"N	85°17'38.54907"E	RS-SS	162.509
19	SS	21°57'30.18639"N	85°17'41.13236"E	SS-TS	46.316
20	TS	21°57'31.54254"N	85°17'41.83401"E	TS-US	1143.241
21	US	21°57'13.15539"N	85°17'7.20604"E	US-VS	122.237
22	VS	21°57'9.76135"N	85°17'9.42236"E	VS-AS	688.63

  
**Forest Range Officer**  
**Barbil Range**

  
**Range Officer**  
**Kabra Forest Range**

  
**Forest Section Officer**  
**Gusti**

**Countersigned**  
  
**Divisional Forest Officer**  
**Bonai Division**

**FOR AND ON BEHALF OF**  
**TATA STEEL LIMITED**  
**BY THEIR CONSTITUTED ATTORNEY**

  
**ATTY. KUMAR BHATNAGAR**

DISTANCE BETWEEN FOREST PILLARS						
PILLAR NO.	EASTING	NORTHING	LATITUDE	LONGITUDE	PILLAR NO. TO PILLAR NO.	PILLAR TO PILLAR DISTANCE IN Mtr.
PATCH 1						
1	323049.3586	2428638.526	21°57'11.59272"	85°17'11.23836"	1-2	43.942
2	323008.5241	2428648.329	21°57'11.89584"	85°17'09.74184"	2-3	56.481
3	323013.1387	2428704.421	21°57'13.72176"	85°17'09.95026"	3-4	68.923
4	323081.7967	2428698.381	21°57'13.55040"	85°17'12.34536"	4-5	52.704
5	323133.6832	2428689.137	21°57'13.26888"	85°17'14.15724"	5-6	82.404
6	323135.9092	2428771.511	21°57'15.94764"	85°17'14.20260"	6-7	48.359
7	323184.1958	2428774.157	21°57'16.05096"	85°17'15.88452"	7-8	50.932
8	323235.1282	2428774.157	21°57'16.08968"	85°17'17.65832"	8-9	57.659
9	323292.4276	2428767.731	21°57'15.88140"	85°17'19.65876"	9-10	77.921
10	323369.4045	2428755.836	21°57'15.61636"	85°17'22.34616"	10-11	23.161
11	323392.5556	2428754.974	21°57'15.50304"	85°17'23.15328"	11-12	39.227
12	323431.5817	2428751.006	21°57'15.38820"	85°17'24.51460"	12-13	115.667
13	323537.6679	2428704.913	21°57'13.92840"	85°17'28.23000"	13-N	83.485
N	323614.817	2428673.011	21°57'12.916"	85°17'30.931"	N-O	176.208
O	323697.502	2428828.614	21°57'18.008"	85°17'33.752"	O-P	32.615
P	323711.256	2428858.187	21°57'18.974"	85°17'34.220"	P-Q	110.189
Q	323763.697	2428955.097	21°57'22.144"	85°17'36.010"	Q-R	111.327
R	323816.321	2429053.201	21°57'25.352"	85°17'37.806"	R-S	162.380
S	323892.112	2429196.785	21°57'30.048"	85°17'40.391"	S-T	79.377
T	323928.883	2429267.131	21°57'32.348"	85°17'41.646"	T-U	1162.171
U	322918.563	2428692.767	21°57'13.309"	85°17'6.659"	U-V	132.146
V	322985.0251	2428578.551	21°57'9.620"	85°17'9.020"	V-224	87.954

PATCH 2						
13	323537.6679	2428704.913	21°57'13.92840"	85°17'28.23000"	13-14	59.767
14	323540.1815	2428645.199	21°57'11.98800"	85°17'28.34052"	14-15	328.938
15	323212.3399	2428672.03	21°57'12.74112"	85°17'16.90512"	15-16	15.834
16	323196.7883	2428675.009	21°57'12.83256"	85°17'16.36188"	16-17	71.972
17	323199.4057	2428603.085	21°57'10.49508"	85°17'16.48104"	17-18	43.335
18	323171.0952	2428635.894	21°57'11.55132"	85°17'15.48168"	18-19	67.684
19	323110.7701	2428666.586	21°57'12.62728"	85°17'13.36740"	19-20	47.105
20	323097.7526	2428621.315	21°57'11.05092"	85°17'12.83144"	20-21	22.900
21	323119.6601	2428614.648	21°57'10.84212"	85°17'13.69752"	21-22	48.115
22	323118.5489	2428586.546	21°57'09.27792"	85°17'13.67772"	22-23	21.078
23	323139.1864	2428582.26	21°57'09.14616"	85°17'14.39844"	23-24	16.379
24	323139.0488	2428545.882	21°57'08.61336"	85°17'14.39988"	24-25	117.341
25	323021.9103	2428552.769	21°57'06.79480"	85°17'10.31496"	25-26	24.612
26	323021.3811	2428528.163	21°57'07.99452"	85°17'10.30632"	26-27	10.060
27	323012.0076	2428531.816	21°57'08.11008"	85°17'09.97836"	27-28	245.868
28	323134.9411	2428318.886	21°57'01.23228"	85°17'14.34516"	28-29	27.645
29	323145.5766	2428344.405	21°57'02.06568"	85°17'14.70588"	29-29a	13.139
29a	323132.6088	2428340.918	21°57'01.94796"	85°17'14.26596"	29a-30	15.420
30	323147.8242	2428344.831	21°57'02.08044"	85°17'14.78400"	30-31	10.452
31	323157.7476	2428348.113	21°57'02.19096"	85°17'15.12852"	31-32	35.060
32	323158.7554	2428383.159	21°57'03.33036"	85°17'15.15012"	32-33	23.252
33	323160.233	2428406.364	21°57'04.08528"	85°17'15.19260"	33-34	10.058
34	323162.015	2428416.263	21°57'04.40784"	85°17'15.25092"	34-35	37.858
35	323198.7078	2428406.943	21°57'04.11840"	85°17'16.53324"	35-36	11.842
36	323209.526	2428402.126	21°57'03.96540"	85°17'16.91196"	36-37	8.062
37	323217.355	2428400.2	21°57'03.90564"	85°17'17.18556"	37-38	12.726
38	323229.1424	2428395.403	21°57'03.75408"	85°17'17.59848"	38-39	16.620
39	323245.0194	2428390.489	21°57'03.60000"	85°17'18.15360"	39-40	30.702
40	323274.2943	2428381.238	21°57'03.31020"	85°17'19.17744"	40-41	27.037

Forest Section Officer  
Guaji

Range Officer  
Kaira Forest Range

Countersigned

Divisional Forest Officer  
Bonal Division

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ATUL KUMAR BHATNAGAR

DISTANCE BETWEEN FOREST PILLARS						
PILLAR NO.	EASTING	NORTHING	LATITUDE	LONGITUDE	PILLAR NO. TO PILLAR NO.	PILLAR TO PILLAR DISTANCE IN Mtr.
41	323300.2773	2428373.762	21°57'03.07658"	85°17'20.06572"	41-42	21.219
42	323320.5905	2428367.629	21°57'02.88432"	85°17'20.79600"	42-43	9.657
43	323328.4997	2428362.088	21°57'02.70720"	85°17'21.07392"	43-44	14.184
44	323340.2039	2428354.075	21°57'02.45088"	85°17'21.48468"	44-45	5.446
45	323344.58	2428350.834	21°57'02.34720"	85°17'21.63840"	45-46	11.966
46	323353.6671	2428343.064	21°57'02.09772"	85°17'21.95808"	46-47	12.512
47	323363.3863	2428336.185	21°57'01.84500"	85°17'22.30008"	47-48	12.548
48	323372.9684	2428327.084	21°57'01.58544"	85°17'22.63704"	48-49	8.088
49	323379.4136	2428322.198	21°57'01.42884"	85°17'22.86348"	49-50	6.393
50	323385.0152	2428325.279	21°57'01.53108"	85°17'23.05752"	50-51	7.720
51	323392.1617	2428328.2	21°57'01.62864"	85°17'23.30556"	51-52	17.390
52	323403.6537	2428315.148	21°57'01.20852"	85°17'23.71092"	52-53	8.730
53	323410.5141	2428309.749	21°57'01.03536"	85°17'23.95212"	53-54	18.024
54	323427.6089	2428315.461	21°57'01.22724"	85°17'24.54578"	54-55	9.015
55	323436.2292	2428318.099	21°57'01.31818"	85°17'24.84528"	55-56	3.611
56	323439.6152	2428317.675	21°57'01.30356"	85°17'24.97020"	56-57	15.486
57	323452.3365	2428326.787	21°57'01.60452"	85°17'25.40328"	57-58	11.547
58	323460.4568	2428334.996	21°57'01.87416"	85°17'25.68300"	58-59	6.098
59	323463.9862	2428339.967	21°57'02.03724"	85°17'25.80396"	59-60	12.742
60	323451.8057	2428336.231	21°57'01.91124"	85°17'25.38086"	60-61	14.239
61	323442.2807	2428346.815	21°57'02.25180"	85°17'25.04472"	61-62	52.545
62	323390.4222	2428355.281	21°57'02.50848"	85°17'23.23428"	62-63	22.577
63	323394.391	2428377.506	21°57'03.23244"	85°17'23.36388"	63-64	17.908
64	323398.3597	2428394.969	21°57'03.80160"	85°17'23.49564"	64-65	17.513
65	323399.6827	2428412.432	21°57'04.36968"	85°17'23.53488"	65-66	17.488
66	323402.8577	2428429.629	21°57'04.92984"	85°17'23.63892"	66-67	9.529
67	323403.1223	2428439.154	21°57'05.23980"	85°17'23.64432"	67-68	51.373
68	323413.7056	2428489.425	21°57'06.87780"	85°17'23.99352"	68-69	8.668
69	323420.3693	2428489.196	21°57'06.87278"	85°17'24.22608"	69-70	40.703
70	323460.6068	2428483.058	21°57'06.68772"	85°17'25.63044"	70-71	48.652
71	323509.088	2428487.129	21°57'06.83784"	85°17'27.31848"	71-72	4.691
72	323507.9704	2428491.685	21°57'06.88544"	85°17'27.27780"	72-73	20.893
73	323502.9932	2428511.977	21°57'07.64352"	85°17'27.09636"	73-74	6.828
74	323499.0244	2428517.533	21°57'07.82244"	85°17'26.95596"	74-75	17.198
75	323494.7911	2428534.202	21°57'08.36280"	85°17'26.80188"	75-76	29.961
76	323484.6336	2428562.389	21°57'09.27576"	85°17'26.43720"	76-77	34.640
77	323473.889	2428595.321	21°57'10.34244"	85°17'26.04984"	77-78	14.092
78	323487.6415	2428598.397	21°57'10.44720"	85°17'26.52792"	78-79	56.032
79	323542.1659	2428611.309	21°57'10.88676"	85°17'28.42296"	79-80	126.491
80	323543.7376	2428484.828	21°57'06.77556"	85°17'28.52700"	80-81	45.770
81	323589.1946	2428479.486	21°57'06.61824"	85°17'30.11316"	81-82	84.171
82	323673.3323	2428477.105	21°57'06.57144"	85°17'33.04608"	82-83	41.007
83	323713.0199	2428487.423	21°57'06.92136"	85°17'34.42524"	83-84	15.308
84	323709.4149	2428502.3	21°57'07.40340"	85°17'34.29384"	84-85	30.137
85	323738.9425	2428508.332	21°57'07.61040"	85°17'35.32056"	85-86	12.766
86	323743.5462	2428520.238	21°57'07.99920"	85°17'35.47644"	86-87	41.472
87	323784.5038	2428526.747	21°57'08.22564"	85°17'36.90132"	87-88	58.470
88	323812.6026	2428475.471	21°57'06.56856"	85°17'37.90032"	88-89	28.064
89	323812.8392	2428447.408	21°57'05.85832"	85°17'37.91940"	89-90	76.433
90	323883.3014	2428477.024	21°57'06.64488"	85°17'40.36344"	90-91	26.036
91	323909.3364	2428477.236	21°57'06.68108"	85°17'41.27064"	91-92	4.066
92	323911.8765	2428480.411	21°57'06.76512"	85°17'41.35812"	92-93	63.379
93	323975.1649	2428483.798	21°57'06.89832"	85°17'43.56240"	93-94	43.572
94	324011.995	2428507.081	21°57'07.66836"	85°17'44.83680"	94-95	32.693
95	324037.6067	2428527.401	21°57'08.33832"	85°17'45.72132"	95-96	19.132
96	324058.1176	2428522.565	21°57'08.16784"	85°17'46.36860"	96-97	8.422

Forest Section Officer  
Guali

Range Officer  
Barbil Forest Range

Forest Range Officer  
Barbil Range

Countersigned

Divisional Forest Officer  
Zonal Division

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ATUL KUMAR BHATNAGAR

DISTANCE BETWEEN FOREST PILLARS						
PILLAR NO.	EASTING	NORTHING	LATITUDE	LONGITUDE	PILLAR NO. TO PILLAR NO.	PILLAR TO PILLAR DISTANCE IN Mtr.
97	324057.5907	2428530.857	21°57'08.45784"	85°17'46.41648"	97-98	8.951
98	324061.9505	2428538.675	21°57'08.71380"	85°17'46.56552"	98-99	9.777
99	324067.1869	2428546.932	21°57'08.98416"	85°17'46.74480"	99-100	22.478
100	324089.5498	2428549.207	21°57'09.06624"	85°17'47.52312"	100-101	14.290
101	324103.5952	2428551.84	21°57'09.15660"	85°17'48.01164"	101-102	7.183
102	324110.6286	2428553.298	21°57'09.20664"	85°17'48.25608"	102-103	19.718
103	324115.851	2428572.312	21°57'09.82856"	85°17'48.43068"	103-104	6.294
104	324121.671	2428574.708	21°57'09.90884"	85°17'48.63264"	104-105	2.901
105	324124.5163	2428575.273	21°57'09.92628"	85°17'48.73164"	105-106	11.145
106	324135.6453	2428575.866	21°57'09.94932"	85°17'48.11936"	106-107	8.383
107	324139.3813	2428583.371	21°57'10.19484"	85°17'48.24644"	107-108	9.057
108	324144.2631	2428591	21°57'10.44468"	85°17'49.41384"	108-108A	28.543
108A	324159.4315	2428615.179	21°57'11.236"	85°17'49.934"	108A-J	28.134
J	324140.489	2428635.98	21°57'11.905"	85°17'49.265"	J-K	272.372
K	323868.436	2428622.799	21°57'11.379"	85°17'39.789"	K-L	96.742
L	323772.853	2428637.727	21°57'11.829"	85°17'36.452"	L-M	81.220
M	323694.725	2428659.923	21°57'12.523"	85°17'33.721"	M-N	80.973
N	323614.817	2428673.011	21°57'12.918"	85°17'30.931"	N-13	83.485

PATCH 3						
109	324153.5815	2428585.799	21°57'10.27872"	85°17'49.74036"	109-110	17.227
110	324170.3105	2428581.687	21°57'10.15128"	85°17'50.32500"	110-111	6.413
111	324176.4362	2428579.788	21°57'10.09152"	85°17'50.53920"	111-112	8.525
112	324184.4599	2428576.907	21°57'10.00080"	85°17'50.82000"	112-113	4.813
113	324188.4324	2428574.189	21°57'09.91404"	85°17'50.95968"	113-114	3.215
114	324187.7656	2428571.044	21°57'09.81144"	85°17'50.93736"	114-115	14.399
115	324199.8699	2428563.246	21°57'09.56232"	85°17'51.36252"	115-116	5.357
116	324204.2276	2428560.13	21°57'09.46260"	85°17'51.51552"	116-117	12.663
117	324211.8355	2428550.007	21°57'09.26640"	85°17'51.78300"	117-118	8.598
118	324220.2751	2428548.366	21°57'09.08804"	85°17'52.07928"	118-119	83.004
119	324184.3883	2428609.736	21°57'11.06100"	85°17'50.10792"	119-120	18.295
120	324157.3245	2428592.86	21°57'10.50984"	85°17'49.86816"	120-109	7.992

PATCH 4						
121	324193.8353	2428302.65	21°57'01.08828"	85°17'51.25308"	121-122	16.952
122	324200.9872	2428318.02	21°57'01.59048"	85°17'51.49644"	122-123	30.173
123	324214.5871	2428344.954	21°57'02.47104"	85°17'51.95976"	123-124	12.803
124	324224.8427	2428352.784	21°57'02.72916"	85°17'52.31400"	124-125	19.954
125	324240.906	2428364.621	21°57'03.11976"	85°17'52.86948"	125-126	8.865
126	324247.5139	2428370.53	21°57'03.31416"	85°17'53.09736"	126-127	12.358
127	324252.2277	2428359.106	21°57'02.94480"	85°17'53.26620"	127-128	17.917
128	324258.3326	2428342.261	21°57'02.39904"	85°17'53.48544"	128-129	25.140
129	324261.2185	2428317.287	21°57'01.58832"	85°17'53.59560"	129-130	19.545
130	324263.782	2428297.911	21°57'00.95940"	85°17'53.69244"	130-131	15.646
131	324248.231	2428299.628	21°57'01.00944"	85°17'53.14992"	131-132	34.693
132	324213.5482	2428300.45	21°57'01.02384"	85°17'51.94068"	132-121	19.835

PATCH 5						
133	324309.9786	2428073.342	21°56'53.67516"	85°17'55.38912"	133-134	31.926
134	324278.0581	2428072.758	21°56'53.64466"	85°17'54.27708"	134-135	18.718
135	324259.376	2428073.891	21°56'53.67480"	85°17'53.62548"	135-136	9.523
136	324251.0591	2428069.253	21°56'53.52108"	85°17'53.33748"	136-137	54.302
137	324197.5363	2428078.42	21°56'53.79972"	85°17'51.46872"	137-E	60.619
E	324227.8454	2428025.923	21°56'52.104"	85°17'52.545"	E-133	94.839

Forest Section Officer  
Guali

Range Officer  
Koira Forest Range

Forest Range Officer  
Barbil Range

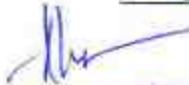
Countersigned

Divisional Forest Officer  
Bonai Division

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

ATUL KUMAR BHATNAGAR

DISTANCE BETWEEN FOREST PILLARS						
PILLAR NO.	EASTING	NORTHING	LATITUDE	LONGITUDE	PILLAR NO. TO PILLAR NO.	PILLAR TO PILLAR DISTANCE IN Mtr.
PATCH 8						
138	324139.144	2428181.611	21°56'57.13332"	85°17'49.39404"	138-139	18.738
139	324157.7386	2428179.3	21°56'57.06492"	85°17'50.04276"	139-140	50.220
140	324207.4397	2428172.097	21°56'56.84892"	85°17'51.77760"	140-141	26.040
141	324232.9617	2428166.93	21°56'56.88980"	85°17'52.68896"	141-142	37.419
142	324270.0638	2428162.07	21°56'56.54544"	85°17'53.96388"	142-143	23.714
143	324288.2647	2428177.247	21°56'57.04543"	85°17'54.59318"	143-144	4.011
144	324290.2663	2428180.734	21°56'57.15960"	85°17'54.86084"	144-145	17.500
145	324291.7216	2428198.173	21°56'57.72696"	85°17'54.70476"	145-146	14.666
146	324292.9096	2428212.791	21°56'58.20252"	85°17'54.74040"	146-147	12.521
147	324293.6369	2428225.291	21°56'58.80932"	85°17'54.76092"	147-148	8.575
148	324285.0648	2428225.517	21°56'58.61328"	85°17'54.48212"	148-149	27.295
149	324257.97	2428228.819	21°56'58.71120"	85°17'53.51676"	149-150	38.432
150	324219.6589	2428231.866	21°56'58.79616"	85°17'52.18044"	150-151	15.736
151	324203.9961	2428233.381	21°56'58.83972"	85°17'51.83396"	151-152	42.475
152	324196.1407	2428275.123	21°57'00.19404"	85°17'51.34416"	152-153	18.450
153	324193.1267	2428293.325	21°57'00.78480"	85°17'51.23184"	153-154	10.155
154	324183.0932	2428291.761	21°57'00.73008"	85°17'50.88300"	154-155	13.820
155	324169.404	2428289.862	21°57'00.86348"	85°17'50.40636"	155-156	7.350
156	324162.1797	2428288.511	21°57'00.61704"	85°17'50.15544"	156-157	14.698
157	324148.3317	2428283.584	21°57'00.45180"	85°17'49.67448"	157-158	14.555
158	324134.2189	2428280.031	21°57'00.33120"	85°17'49.18416"	158-159	14.119
159	324120.6643	2428276.073	21°57'00.19764"	85°17'48.71328"	159-160	13.831
160	324107.3845	2428272.172	21°57'00.06568"	85°17'48.25248"	160-161	9.702
161	324098.4852	2428268.33	21°56'59.93808"	85°17'47.94324"	161-162	13.116
162	324087.5183	2428261.135	21°56'59.70012"	85°17'47.56416"	162-163	10.926
163	324078.7417	2428254.628	21°56'59.48520"	85°17'47.26068"	163-164	11.076
164	324069.5821	2428248.4	21°56'59.27964"	85°17'46.94388"	164-165	11.797
165	324061.0665	2428240.236	21°56'59.01108"	85°17'46.65048"	165-166	18.055
166	324047.6817	2428228.119	21°56'58.61220"	85°17'46.18860"	166-167	29.523
167	324025.7057	2428208.404	21°56'57.96348"	85°17'45.43044"	167-168	10.632
168	324018.1995	2428200.875	21°56'57.71580"	85°17'45.17160"	168-169	8.165
169	324014.039	2428193.849	21°56'57.48612"	85°17'45.02940"	169-170	10.417
170	324007.1737	2428186.015	21°56'57.22872"	85°17'44.79324"	170-171	10.651
171	324000.7597	2428177.512	21°56'56.95008"	85°17'44.57292"	171-172	8.768
172	324002.6809	2428168.957	21°56'56.67252"	85°17'44.84312"	172-173	26.677
173	324004.5241	2428142.344	21°56'55.80816"	85°17'44.71764"	173-174	21.447
174	323983.3672	2428138.83	21°56'55.68612"	85°17'43.98180"	174-175	11.659
175	323972.4829	2428134.65	21°56'55.54644"	85°17'43.60416"	175-176	4.749
176	323967.9209	2428135.971	21°56'55.58784"	85°17'43.44468"	176-177	16.197
177	323969.0289	2428119.812	21°56'55.06260"	85°17'43.48968"	177-178	17.465
178	323962.4988	2428114.175	21°56'54.87360"	85°17'42.91584"	178-179	38.846
179	323915.0013	2428104.028	21°56'54.53016"	85°17'41.61300"	179-180	21.587
180	323903.0099	2428086.078	21°56'53.94228"	85°17'41.20188"	180-181	16.312
181	323892.5209	2428073.586	21°56'53.53224"	85°17'40.84116"	181-182	16.485
182	323877.5299	2428066.728	21°56'53.30400"	85°17'40.32168"	182-183	29.909
183	323849.4412	2428056.452	21°56'52.95984"	85°17'39.34680"	183-184	6.847
184	323843.722	2428052.688	21°56'52.83528"	85°17'39.14880"	184-185	32.173
185	323814.6832	2428038.836	21°56'52.37448"	85°17'38.14224"	185-186	14.848
186	323802.9378	2428029.752	21°56'52.07496"	85°17'37.73652"	186-187	20.974
187	323789.0737	2428014.013	21°56'51.55800"	85°17'37.25952"	187-188	23.381
188	323774.9472	2427995.382	21°56'50.94744"	85°17'36.77424"	188-D	407.492
D	324127.8454	2428199.128	21°56'57.699"	85°17'48.993"	D-138	20.845

  
Forest Section Officer  
Guali

  
Range Officer  
Barbil Range

  
Forest Range Officer  
Barbil Range

Countersigned

  
Divisional Forest Officer  
Barail Division

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

  
ATTY. KUMAR BHATNAGAR

DISTANCE BETWEEN FOREST PILLARS						
PILLAR NO.	EASTING	NORTHING	LATITUDE	LONGITUDE	PILLAR NO. TO PILLAR NO.	PILLAR TO PILLAR DISTANCE IN Mtr.
PATCH 7						
189	323255.7564	2428115.128	21°56'54.65184"	85°17'18.83492"	189-190	32.805
190	323273.8884	2428087.787	21°56'53.76984"	85°17'19.27752"	190-191	20.081
191	323285.8379	2428071.648	21°56'53.24928"	85°17'19.70016"	191-192	3.920
192	323288.4429	2428074.577	21°56'53.34576"	85°17'19.78980"	192-193	16.680
193	323301.4462	2428085.024	21°56'53.68992"	85°17'20.23872"	193-194	18.453
194	323316.4858	2428095.717	21°56'54.04308"	85°17'20.75892"	194-195	16.624
195	323331.0938	2428103.653	21°56'54.30624"	85°17'21.26472"	195-196	14.336
196	323343.2866	2428111.194	21°56'54.55608"	85°17'21.88664"	196-197	8.185
197	323351.4308	2428115.441	21°56'54.69684"	85°17'21.96888"	197-198	4.087
198	323353.1893	2428119.13	21°56'54.81744"	85°17'22.02864"	198-199	8.024
199	323357.7155	2428125.755	21°56'55.03452"	85°17'22.18380"	199-200	8.221
200	323362.5018	2428132.439	21°56'55.25340"	85°17'22.34796"	200-201	6.685
201	323367.8262	2428136.481	21°56'55.38696"	85°17'22.53192"	201-202	5.744
202	323368.0392	2428142.221	21°56'55.57344"	85°17'22.53732"	202-203	23.185
203	323371.3951	2428165.162	21°56'56.32080"	85°17'22.64532"	203-204	12.672
204	323371.8558	2428178.026	21°56'56.73912"	85°17'22.65612"	204-205	24.119
205	323349.7854	2428187.754	21°56'57.04728"	85°17'21.88356"	205-206	18.002
206	323333.799	2428188.451	21°56'57.06420"	85°17'21.32592"	206-207	27.025
207	323339.7012	2428182.078	21°56'56.20884"	85°17'21.54192"	207-208	14.716
208	323325.3264	2428158.928	21°56'56.10120"	85°17'21.04224"	208-209	6.449
209	323323.6208	2428165.147	21°56'56.30280"	85°17'20.98032"	209-210	4.081
210	323319.5443	2428164.95	21°56'56.29488"	85°17'20.83648"	210-211	14.999
211	323309.0825	2428154.222	21°56'55.94244"	85°17'20.47740"	211-212	12.630
212	323300.5867	2428144.858	21°56'55.63500"	85°17'20.18544"	212-213	6.867
213	323296.0634	2428139.691	21°56'55.46508"	85°17'20.02992"	213-214	8.682
214	323290.7987	2428132.914	21°56'55.24296"	85°17'19.84920"	214-215	10.426
215	323284.557	2428124.563	21°56'54.96936"	85°17'19.63500"	215-189	30.307

PATCH 8						
216	323176.482	2428246.937	21°56'58.90848"	85°17'15.82080"	216-217	85.353
217	323219.1588	2428173.019	21°56'56.52096"	85°17'17.33712"	217-218	6.101
218	323221.2963	2428178.733	21°56'56.70744"	85°17'17.40912"	218-219	50.634
219	323240.5905	2428225.547	21°56'58.23636"	85°17'18.06324"	219-220	13.300
220	323245.817	2428237.777	21°56'58.63580"	85°17'18.24072"	220-221	10.614
221	323235.2197	2428238.369	21°56'58.65108"	85°17'17.87136"	221-222	33.299
222	323202.3709	2428243.826	21°56'58.81688"	85°17'16.72440"	222-223	20.901
223	323181.5779	2428245.948	21°56'58.87824"	85°17'15.99900"	223-216	5.191

  
Forest Section Officer  
Guali

Countersigned

  
Divisional Forest Officer  
(K) Bonal Division

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

  
ATTY. KUMAR BHATTNAGAR

  
Range Officer  
Kaira Forest Range

  
Forest Range Officer  
Barbil Range

## UNDERTAKING

1. We hereby, undertake that we will implement Gap plantation and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40), if any, located in the area within 100 meter from outer perimeter of the mining lease as per approved scheme and **Condition 2 (f)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
2. We hereby, undertake to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India as per **Condition 3 (b)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
3. We hereby, undertake transportation of ore should be as far as possible through common conveyor belt, slurry pipeline, railways, etc. Transportation of ore through road should be minimized in a time bound manner as per **Condition 5** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
4. We hereby, undertake to comply all the recommendations given as per Oversight Committee constituted under the Chairmanship of the DDGF (Central) RO Bhubaneswar as per **Condition 6** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
5. We have made the payment towards preparation of cost of Regional Wildlife Conservation Plan and undertake to implement recommendations pertaining to User Agency as per **Condition 7** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
6. We have paid 50% cost for preparation of Bio-diversity Conservation Plan for this entire landscape as per direction of State Forest Department. We hereby, undertake to pay balance amount as per advice of State Forest Department in compliance with **Condition 8** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
7. We hereby, undertake to comply all the measures given in approved scheme of Soil and moisture conservation in and around 10 KM radius of the mining lease areas as per **Condition 9** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.

Signature of User Agency  
(Authorized Signatory)

**FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY**

  
**ATUL KUMAR BHATNAGAR**

## UNDERTAKING

8. We hereby, undertake to monitor and strict implementation of the conditions stipulated in EC as per **Condition 10** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
9. We hereby, undertake to implement the Mitigative measures as per approved scheme to minimize soil erosion and choking of stream within a period of three years with effect from the issue of Stage-II clearance as per **Condition 13 (a)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
10. We hereby, undertake to Planting of adequate drought hardy plant species and sowing of seeds as per approved scheme, in the appropriate area within the mining lease to arrest soil erosion as per **Condition 13 (b)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
11. We hereby, undertake to the Construction of check dams, retention /toe walls as per approved scheme to arrest sliding down of the excavated material along the contour as per **Condition 13 (c)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
12. We hereby, undertake to Stabilize the overburden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than  $28^{\circ}$  as per **Condition 13 (d)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
13. We hereby, undertake to demarcation, fencing, protection and regeneration of safety zone (7.5-meter strip all along the inner boundary of the mining lease area) as per approved scheme by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers as per **Condition 14 (a)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
14. We hereby, undertake to fencing of boundary of the safety zone of the mining lease, adjacent to habitation/roads as per approved scheme and **Condition 14 (b)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
15. We hereby, undertake Safety zone shall be maintained and regenerate as green belt around mining lease as per approved scheme to ensure dense canopy in the area, as per **Condition 14 (c)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.

Signature of User Agency  
(Authorized Signatory)

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEYS



ATUL KUMAR BHATNAGAR

## UNDERTAKING

16. We hereby, undertake Safety zone will be maintained as per the prescribed norms and given **Condition 14 (d)** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
17. We hereby, undertake no damage shall be caused to the topsoil and will follow the top soil management plan as per approved scheme and in given **Condition 15** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
18. We hereby, undertake Desilting of village tanks and other water bodies as per approved scheme so as to mitigate the impact of siltation of such tanks/water bodies as per **Condition 16** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
19. We hereby, undertake that the cost of felling of trees shall be deposited with the State Forest Department as per **Condition 17** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
20. We hereby, undertake that trees will be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO as per **Condition 18** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
21. We hereby, undertake that Afforestation of the non-mineralized virgin forest land within the mining area shall be taken up as per **Condition 19** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
22. We hereby, undertake to explore possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department as per **Condition 20** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
23. We hereby, undertake to protect and conservation of wildlife of the area as per approved Site-Specific Wildlife Management Plan as per **Condition 21** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.

Signature of User Agency  
(Authorized Signatory)  
FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY:  
  
ATUL KUMAR BHATTACHARYA

## UNDERTAKING

24. We hereby, undertake to works for construction and cleaning of garland drains, stabilizing retaining walls, proper terracing of OB dumps and checking gully formation as per approved scheme and as per **Condition 24** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
25. We hereby, undertake That plants which are having lowest translocation factor can be preferred under afforestation as per approved scheme on the OB dumps and fruit trees to be avoided in planting during biological stabilization of OB dumps as per **Condition 25** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
26. We hereby, undertake Prevention of fall of wild animals into mining pit by fencing the open pit area as per **Condition 26** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
27. We hereby, undertake Angle of repose in OB dumps to be maintained less than 28° by appropriate benching as per approved scheme to ensure stability and safety as per **Condition 27** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
28. We hereby, undertake Vetiver grass can be planted at the lower reaches of the dump as per approved scheme to bind the soil and prevent soil erosion giving better stability to the dump as per **Condition 28** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
29. We hereby, undertake that Mining in a phased manner after taking due care for reclamation in a phased manner as per the approved mining plan. Annual report on implementation there of shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry as per **Condition 29** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
30. We hereby, undertake to comply with the Hon'ble Supreme Court order on regrassing, and re-grass the mining area and any other areas which may have been disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. In a timely manner as per **Condition 30** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.

Signature of User Agency  
(Authorized Signatory)

**FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY**

  
**ATUL KUMAR BHATNAGAR**

## UNDERTAKING

31. We hereby, undertake No labour camp shall be established on the forest land and shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas as per **Condition 33** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
32. We hereby, undertake Layout plan of the Mining plan/ proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal as per **Condition 35** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
33. We hereby, undertake Forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government as per **Condition 36** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
34. We hereby, undertake No damage to the flora and fauna of the adjoining area shall be caused as per **Condition 37** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
35. We hereby, undertake to implement any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection, and development of forests & wildlife as per **Condition 38** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
36. We hereby, undertake to comply all the provisions of all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project as per **Condition 39** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
37. We hereby, undertake that Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act, 1980 as issued by this Ministry's letter No. 5-2/2017-FC dated 28.03.2019 as per **Condition 40** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.

Signature of User Agency  
(Authorized Signatory)

FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY

  
ATUL KUMAR BHATNAGAR

## UNDERTAKING

38. We hereby, undertake to submit the annual self -compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly as per **Condition 41** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.
39. We hereby, undertake to upload all the compliance report on e-portal (<https://parivesh.nic.in/>), as per **Condition 42** of the Stage-I approval under Section-2 of the Forest (Conservation) Act, 1980 in respect of Kalamang West (Northern Part) Iron Ore Mines.

Signature of User Agency  
(Authorized Signatory)

**FOR AND ON BEHALF OF  
TATA STEEL LIMITED  
BY THEIR CONSTITUTED ATTORNEY**



**ATUL KUMAR BHATTACHARYA**