



Rungta Mines Limited

MAIN ROAD, BARBIL - 758 035, DIST : KENDUJHAR, ODISHA, INDIA
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Ref: RML/BBL/GEO/2024-25/ 57

Date: 11.05.2024

To,
The Divisional Forest Officer,
Bonai Forest Division,
Bonai,
Dist: Sundargarh, Odisha.

Sub: Submission of compliance of conditions stipulated in Stage-I approval letter of MoEF&CC, Govt. of India vide F. No.8-08/2023-FC dt.28.11.2023 for diversion of 156.978 ha. of forest land (147.803 ha in Bonai Division and 9.175 ha in Keonjhar Division) in Jumka-Pathiriposhi Pahar Iron Ore Block of M/s.Rungta Mines Ltd. in Sundargarh & Keonjhar district, Odisha.

Sir,

With reference to the subject cited above, we are submitting herewith the compliance report in respect of conditions stipulated in Stage-I approval letter of MoEF&CC, Govt. of India vide F. No.8-08/2023-FC dt.28.11.2023 for diversion of 156.978 ha. of forest land (147.803 ha in Bonai Division and 9.175 ha in Keonjhar Division) in Jumka-Pathiriposhi Pahar Iron Ore Block of M/s.Rungta Mines Ltd. in Sundargarh & Keonjhar district, Odisha, in Five (5) sets.

We request your good self to kindly take necessary action for Stage-II (Final) forest clearance of our aforesaid project.

An early action in the matter is highly solicited.

Thanking you,

Yours faithfully,

For Rungta Mines Ltd.

Director

Encl: As above.

Copy forwarded to The Divisional Forest Officer, Keonjhar Forest Division for kind information and necessary action.

Compliance to the Conditions stipulated in Stage-I approval letter of Ministry of Environment, Forest & Climate Change, (Forest Conservation Division), Government of India, New Delhi vide F. No 8-08/2023-FC dated 28.11.2023 for diversion of 156.978 Ha forest land (147.803 Ha in Bonai Division & 9.175 Ha in Keonjhar Division) in Jumka Pathiriposhi Pahar Iron Ore Block of M/s Rungta Mines Limited under Bonai & Keonjhar Forest Division of Sundargarh District, Odisha.

Sl. No.	Conditions	Compliance
1.	Legal status of the diverted forest land shall remain unchanged	Legal status of the diverted forest land shall remain unchanged. An undertaking to this effect is enclosed as Annexure-1 .
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;	Non-forest land for Compensatory afforestation has been identified in village Deri (156.978 ha.) under Banspal Tahasil of Keonjhar Forest Division of Keonjhar district and for Additional Compensatory Afforestation Degraded Forest land has been identified in Jadipada RF (189.722Ha) under Keonjhar & Patna Range. As per the demand raised by the DFO, Keonjhar on dated 08.12.2023, the User Agency has deposited an amount of Rs.8,73,80,700/- towards cost of compensatory afforestation and additional compensatory afforestation through RTGS (UTR No.CNRBR52023123070695506) dated 30.12.2023 in State CAMPA fund. Copy of the RTGS slips is enclosed as Annexure-2 .
b.	The Govt. non-forest 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;	The Govt. Non-forest land over 156.978 Ha identified for compensatory afforestation in village Deri under Banspal Tahasil of Keonjhar District has already been mutated and transferred in favour of the Forest Dept. Copy of RoR is enclosed as Annexure-3 . PF notification has been done by Forest Environment & Climate Change Department (FE&CC), Govt. of Odisha vide letter no FE-DIV-FLD-0017-2017-2023-{10F-Cons}-12/2023}-5563 dated 15.03.2024 as "Deri-A Protected Forest". (Copy enclosed as Annexure-4).

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c.	<p>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>	<p>The Govt. Non-forest land for Compensatory afforestation has been identified in village Deri (156.978 ha.) under Banspal Tahasil of Keonjhar Forest Division of Keonjhar district and for Additional Compensatory Afforestation Degraded Forest land has been identified in Jadipada RF (189.722Ha) under Keonjhar & Patna Range. The said land has been demarcated and RCC pillars have been posted.</p> <p>As per the demand raised by the DFO, Keonjhar on dated 08.12.2023, the User Agency has deposited an amount of Rs.8,73,80,700/- towards cost of compensatory afforestation and additional compensatory afforestation through RTGS (UTR No.CNRBR52023123070695506) dated 30.12.2023 in State CAMPA fund. Copy of the RTGS slips is enclosed as Annexure-5. The CA scheme has been approved for 10 years and includes afforestation of indigenous species like; Jamun (Syzigium cumini), Kuruma (Adinacordifolia), Dhaura (Anogeissus latifolia), Sisoo (Dalbergia latifolia), Gamhari (Gmelina arborea), Amla (Embllica officinalis), Karanja (Pongamia pinnata), Neem (Azadirachta indica), Panasa (Artocarpus intigrifolia) etc.</p>
d.	<p>The compensatory afforestation over non-forest land, equal in extent to the forest land being diverted i.e. 156.978 ha and over 183.722 Ha degraded forest land for balance seedlings shall be raised by the State Forest Department at the project cost within three years from the date of grant of Stage - II approval;</p>	<p>The user agency has deposited an amount of Rs.8,73,80,700/- for compensatory afforestation over 156.978 ha and degraded forest land over 189.722ha. as per the approved scheme in the CAMPA Fund as mentioned above for implementation by the State Forest Department.</p>
e.	<p>User agency either himself or through the State Forest Department shall undertake gap planting and soil and 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 100 meter from outer perimeter of the mining lease. The plan for</p>	<p>A scheme for gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.4), located in the area within 100 meter from outer perimeter of the mining lease has been technically approved by the RCCF, Rourkela with financial outlay</p>

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	plantation and SMC activities will be prepared and submitted to MoEF&CC before Stage-II Clearance;	of Rs.2,64,48,000/-. The scheme will be implemented by the User Agency at the project cost in a phased manner. An undertaking to this effect is enclosed as Annexure-1 . Copy of the approved scheme is enclosed as Annexure-6 .
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;	As per the demand raised by the Divisional Forest Officer, Bonai Forest Division vide his letter dated 11.12.2023 & Divisional Forest Officer, Keonjhar Forest Division vide his letter dated 08.12.2023, the user agency has deposited an amount of Rs.22,55,25,583/- (Rs.21,23,44,136/- for Bonai Forest Division + Rs.1,31,81,447/- for Keonjhar Division) towards cost of Net Present Value (NPV) over 156.978 ha. of forest land through RTGS (UTR No.CNRBR52023121469610872) dated 14.12.2023 in State CAMPA fund. Copy of the RTGS slips is enclosed as Annexure-7 .
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;	The user agency will abide by the condition. An undertaking to this effect is enclosed as Annexure-1 .
4.	<i>Since a holistic proposal indicating the ancillary facilities i.e; road and transmission line was not submitted by the State Government and the proposal for the road and transmission are applied for by the User Agency and under process, the same can be processed by the Regional Office but final approval will be given after grant of final approval in the instant case. Further, the State government shall submit only holistic proposals in future including all linear and ancillary proposals w.r.t main proposal in future.</i>	The Proposals for 11 KV transmission line and the approach road to Jumka Pathiriposhi Pahar Iron ore Block are ancillary proposals and were granted Stage-I approvals on dt. 22.12.2023 & dt. 25.01.2024 respectively by the Regional Office, Bhubaneswar after grant of Stage-I approval of the main proposal of Jumka Pathiriposhi Pahar Iron Ore Block by MoEF&CC, New Delhi on dt. 28.11.2023. Further the user agency abide to adhere the condition. An undertaking to this effect is enclosed as Annexure-1 .
5.	<i>Total no of the trees affected will be enumerated and report will be submitted at the time of the compliance. With regard to the illegal felling and shifting cultivation observed</i>	The total no of trees as per the sample plot enumeration over (147.803 ha. in Bonai Forest Division and total tree enumeration over 9.175 ha. in Keonjhar Forest Division) for

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	<p>at the project site, committee shall be constituted by the State Government under an officer not below the rank of APCCF level to enquire the matter and take appropriate action. A report shall be submitted to the Ministry in this regard.</p>	<p>the entire forest area of 156.978 ha is 10718 nos. above 30cm girth and the pole size is 6460 nos. in respect of Jumka -Pathiriposhi Pahar Iron Ore Block. The trees will be felled in a phase wise manner as per the approved mining plan with prior permission of concerned Divisional Forest office . A committee was constituted by the PCCF, Forest Diversion & Nodal Officer, FC Act the team Headed by Sri Aswini Kumar Kar, IFS, CCF (Nodal) and Smt. Pabitra Das, OFS-I (SB), Dy. CF (Nodal-I) in the presence of RCCF, Rourkela, D.F.O Bonai and D.F.O Keonjhar has inspected the mines on dated 04.04.2024 related to the subject matter .</p>
<p>6.</p>	<p>As per the recommendation of the NEERI report the State Government shall explore the possibility for transportation of iron ore through conveyor belt and take a reasoned decision.</p>	<p>The user agency will abide by the condition as would be decided and recommended by the Govt. of Odisha. An undertaking to this effect is enclosed as Annexure-1.</p>
<p>7.</p>	<p>The State Government shall ensure that the rate of RWLMP/SSWCP which was revised by the State Govt. vide letter dated 05.12.2018, will be further revised in view of the factors such as wage rates and inflation etc. and accordingly the revised Wildlife Management Plans having long term mitigation strategy, plan and monitoring mechanism with respect to Human-elephant conflict in the landscape, duly approved by the CWLW will be submitted at the time of compliance.</p>	<p>As per the demand raised by the Divisional Forest Officer, Bonai Forest Division vide his letter dated 11.12.2023 & Divisional Forest Officer, Keonjhar Forest Division vide his letter dated 19.12.2023, the user agency has deposited an amount of Rs.1,21,19,846/- towards cost of Regional Wildlife Management Plan (RWLMP) through RTGS (UTR No.CNRBR52023122170107374) dated 21.12.2023 & Rs.8,77,892/- through RTGS (UTR No-CNRBR52023122770446315) dated 27.12.2023 in State CAMPA fund. Copy of the RTGS slips is enclosed as Annexure-8. The Govt. of Odisha ,Forest & Environment Department vide letter no. FE-DIV-MISC-0036-2021-1183/FE&CC dt.19.01.2024 has revised the rate of RWLMP from the prevailing rate of Rs.82000/- per ha. to Rs. 103100/- per ha. (copy of the letter is enclosed as Annexure-8/1) Further, the composite Site specific Wild life conservation plan addressing the long term mitigating strategy plan</p>

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		and monitoring mechanism with respect to wild animals and specially Human-Elephant conflict (HEC) in the region has been approved by the PCCF (Wildlife) and CWLW in respect of Jumka-Pathiriposhi Pahar Iron Ore Block including the proposals of 11KV transmission line and approach road for ore transportation for a financial outlay of Rs.9,04,44,000/- (Rupees Nine Crore Four lakh Forty Four Thousand only) for implementation of activities in the Zone of influence (ZOI). The user agency as per the demand received from the DFO, Bonai vide his letter no.4364 dated 03.05.2024 has deposited an amount of Rs.9,04,44,000/- through RTGS (UTR. NO.CNRBR52024050879953412) dated 08.05.2024 in the state CAMPA Fund. Copy of the RTGS slip and the approved SSWLCP is enclosed as Annexure-8A & 17.
8.	A green strip of 100 meters including safety zone of the approximately five hectares on the southern tip of the mining lease area will be kept intact as green belt for shelter, cover and movement of the wild life.	A green strip of 100 meters including safety zone of the approximately five hectares on the southern tip of the mining lease area will be kept intact & maintained as green belt for shelter, cover and movement of the wild life. An undertaking to this effect is enclosed as Annexure-1. Copy of the map showing said green strip of 5.0 Ha. area along with its co-ordinates and Land schedule is enclosed as Annexure-9.
9.	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/);	As per the demand raised by the DFO, Keonjhar on dated 08.12.2023, the User Agency has deposited an amount of Rs.8,73,80,700/- towards cost of compensatory afforestation and additional compensatory afforestation through RTGS (UTR No.CNRBR52023123070695506) dated 30.12.2023 in State CAMPA fund. As per the demand raised by the Divisional Forest Officer, Bonai Forest Division vide his letter dated 11.12.2023 & Divisional Forest Officer, Keonjhar Forest Division vide his letter dated 08.12.2023, the user agency has deposited an amount of Rs.22,55,25,583/- (Rs.21,23,44,136

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		<p>for Bonai Forest Division + Rs.1,31,81,447 for Keonjhar Division) towards cost of Net Present Value (NPV) over 156.978 ha. of forest land through RTGS (UTR No.CNRBR52023121469610872) dated 14.12.2023 in State CAMPA fund.</p> <p>As per the demand raised by the Divisional Forest Officer, Bonai Forest Division vide his letter dated 11.12.2023 & Divisional Forest Officer, Keonjhar Forest Division vide his letter dated 19.12.2023, the user agency has deposited an amount of Rs.1,21,19,846/- towards cost of Regional Wildlife Management Plan (RWMP) through RTGS (UTR No.CNRBR52023122170107374) dated 21.12.2023 & Rs.8,77,892/- through RTGS (UTR No-CNRBR52023122770446315) dated 27.12.2023 in State CAMPA fund.</p> <p>In addition to the above the user agency abide to adhere for the payment of the composite site specific wildlife conservation plan duly approved by PCCF wild life which includes both 11 KV transmission line and approach road to the project. An undertaking to this effect is enclosed as Annexure-1.</p>
10.	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 along with GPS Ids and all other requisite details prior to Stage II approval;	The KML files of the area to be diverted, the CA areas, the proposed SMC treatment area and the WLMP area provided.
11.	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	A scheme containing appropriate mitigative measures to minimize soil erosion and choking of streams has been technically approved by the

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	Stage-II clearance in accordance with the approved Plan in consultation with the State Forest Department;	RCCF, Rourkela with financial outlay of Rs.2,47,67,600/-. The scheme will be implemented by the User Agency at the project cost within a period of 03 years. An undertaking to this effect is enclosed as Annexure-1 . Copy of the approved scheme is enclosed as Annexure-10 .
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;	A scheme, regarding planting drought hardy plant species and sowing of seeds in the appropriate area within the mining lease has been technically approved by the RCCF, Rourkela with financial outlay of Rs.14,97,100/-. The scheme will be implemented by the User Agency at the project cost in phased manner. An undertaking to this effect is enclosed as Annexure-1 . Copy of the approved scheme is enclosed as Annexure-11 .
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;	A scheme for Construction of check dams, retention/toe walls to arrest sliding down of the excavated material along the contour has been technically approved by the RCCF, Rourkela with no budgetary provision as it remains included in the schemes prepared in compliance with condition No-11 (a) & (b). The scheme will be implemented by the User Agency at the project cost in a phased manner. An undertaking to this effect is enclosed as Annexure-1 . Copy of the approved scheme is enclosed as Annexure-12 .
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°.	A scheme to Stabilize the overburden dumps by appropriate grading/benching so as to ensure that the angles of repose at any given place is less than 28° has been technically approved by the RCCF, Rourkela with no budgetary provision as it remains included in the schemes prepared in compliance with condition No.11 (a) & (b). The scheme will be implemented by the User Agency at the project cost in a phased manner. An undertaking to this effect is enclosed as Annexure-1 . Copy of the approved scheme is enclosed as Annexure-13 .

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12.	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;	We 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. An undertaking to this effect is enclosed as Annexure-1 .
b.	Boundary of the safety zone of the mining lease, adjacent to habitation/roads, should be properly fenced by the user agency;	The user agency will abide by the condition. An undertaking to this effect is enclosed as Annexure-1 .
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;	A scheme for fencing, protection and regeneration of safety zone over 5.746 Ha (Forest-5.478 Ha + Non forest-0.268 Ha) has been technically approved by RCCF, Rourkela with financial outlay of Rs.2,24,82,500/-. The scheme will be implemented by the user Agency at the project cost in a phased manner. An undertaking to this effect is enclosed as Annexure-1 . Copy of the approved scheme is enclosed as Annexure-14 .
d.	The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms;	The user agency will abide by the condition. An undertaking to this effect is enclosed as Annexure-1 .
13.	No damage shall be caused to the top-soil and the user agency will follow the top soil management plan;	A scheme for top soil management has been technically approved by the RCCF, Rourkela with financial outlay of Rs.8,02,500/-. The scheme will be implemented by the User Agency at the project cost in a phased manner. An undertaking to this effect is enclosed as Annexure-1 . Copy of the approved scheme is enclosed as Annexure-15 .
14.	The User Agency shall prepare a list of	A scheme for de-silting of village

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	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 de-silting 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 de-silting 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;	tanks & other water bodies located within 5km from the mine lease boundary so as to mitigate the impact of siltation of such tanks/water bodies, whenever required has been prepared by the DFO, Bonai and the same has been technically approved by the RCCF, Rourkela with financial outlay of Rs.2,03,20,700/-. The scheme will be implemented by the user Agency at the project cost in a phased manner. An undertaking to this effect is enclosed as Annexure-1 . Copy of the approved scheme is enclosed as Annexure-16 .
15.	The cost of felling of trees shall be deposited by the User Agency with the State Forest Department;	The user agency will abide by the condition. An undertaking to this effect is enclosed as Annexure-1 .
16.	Trees should be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO;	Trees shall be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO. An undertaking to this effect is enclosed as Annexure-1 .
17.	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.	The user agency will abide by the condition. An undertaking to this effect is enclosed as Annexure-1 .
18.	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;	The composite Site Specific Wildlife Conservation Plan for Jumka-Pathiriposhi Iron Ore Block including the approach road from the project site to Belkudar chawk and construction of 11 KV transmission line from Jaldihi village to Project site has been approved by the P.C.C.F (Wildlife) and Chief Wildlife Warden, Odisha with financial outlay of Rs.9,04,44,000/- (Rs.744.84 Lakh for Bonai Division & Rs.159.60 Lakh for Keonjhar Division) for implementation of activities in the ZOI (Buffer zone). The user agency has deposited an amount of Rs.9,04,44,000/-(through RTGS (UTR. NO.CNRBR52024050879953412) dated 08.05.2024 in the state CAMPA Fund.

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		<p>Copy of the RTGS slip enclosed as Annexure-8A.</p> <p>Further, regarding implementation of activities in the core zone, the User agency will implement the same in a phase wise manner under the guidance of the DFO Bonai Division/Keonjhar Division. An undertaking to this effect is enclosed as Annexure-1.</p> <p>Copy of the approved Site Specific Wildlife Conservation Plan is enclosed as Annexure-17.</p>
19.	<p>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;</p>	<p>FRA certificate over an area of 9.175 ha. has been issued by the District Collector, Keonjhar vide letter no. 26/Rev on dated 10.01.2023 & FRA certificate over an area of 147.803 ha has been issued by Collector, Sundargarh vide letter no. 3798/ITDA(FRA) on dated 22.11.2022. Thus, the FRA certificate is issued for the total area of 156.978 ha. Copy of FRA certificates is enclosed as Annexure-18.</p>
20.	<p>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;</p>	<p>The user agency will abide by the condition and take due care for reclamation of the mined out area in a phased manner as per the approved mining plan. Further, the User Agency agrees to submit an annual report on status of reclamation to the concerned Dept. An undertaking to this effect is enclosed as Annexure-1.</p>

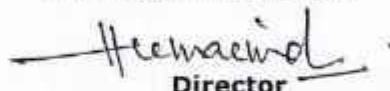
Annexure-1

21.	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;	The user agency will abide by the condition. An undertaking to this effect is enclosed as Annexure-1 .
22.	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 time to time and the Rules framed there-under;	The period of diversion of forest land under this proposal will be co-terminus with the period of the mining lease as amended vide the Mines & Minerals (Development & Regulation) Amendment Act, 2015 and the Rules framed thereunder i.e 50 years from the date of execution of mining lease.
23.	The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;	The Environmental clearance has been granted by SEIAA, Odisha vide File No. EC23B0010OR118212 dated.02.12.2023 Copy enclosed as Annexure-19 .
24.	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;	The user agency will abide by the condition. An undertaking to this effect is enclosed as Annexure-1 .
25.	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 diverted forest land, mining lease and safety zone has already been demarcated on the ground at the project cost by erecting 4 feet high RCC pillars. Each pillar is inscribed with serial number, DGPS co-ordinates, and distance from pillar to pillar. Photographs are attached. <i>Annexure - 20</i>
26.	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;	The user agency will abide by the condition. An undertaking to this effect is enclosed as Annexure-1 .
27.	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;	The user agency will abide by the condition. An undertaking to this effect is enclosed as Annexure-1 .
28.	No damage to the flora and fauna of	The user agency will abide by the

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	the adjoining area shall be caused;	condition. An undertaking to this effect is enclosed as Annexure-1.
29.	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;	The user agency will abide by the condition and will submit the annual self compliance report in respect of the above stated conditions to the State Govt., Concern Regional office and the MOEF&CC by the end of march every year. An undertaking to this effect is enclosed as Annexure-1.
30.	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	The user agency will abide by any other condition that the Regional Office of the Ministry may stipulate in the interest of conservation, protection & development of forests and wildlife. An undertaking to this effect is enclosed as Annexure-1.
31.	The user agency shall comply 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.	The user agency will abide by the condition. An undertaking to this effect is enclosed as Annexure-1.
32.	Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para1.21 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.	Agreed. An undertaking to this effect is enclosed as Annexure-1.
33.	The compliance report shall be uploaded on e-portal (https://parivesh.nic.in/).	The user agency will abide by the condition. An undertaking to this effect is enclosed as Annexure-1.

For Rungta Mines Ltd.


Director



Rungta Mines Limited

MAIN ROAD, BARBIL - 758 035, DIST. - KENDUJHAR, ODISHA, INDIA

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ANNEXURE - 1

UNDERTAKING

Condition No.1

We do hereby undertake that the legal status of the diverted forest land shall remain unchanged.

Condition No.2 (e)

We do hereby undertake gap planting and soil and moisture conservation activities to restock and rejuvenate the degraded forest open forest (having crown density less than 0.40), if any, locate in the area within 100 meter from outer perimeter of the mining lease, as per the approved scheme, in a phased manner at the project cost.

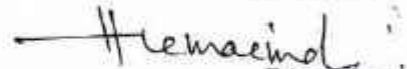
Condition No.3 (b)

We do hereby undertake to pay the additional amount of the NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India.

Condition No.4

We do hereby undertake to apply the holistic proposal in future including all linear and ancillary proposals with respect to main proposal.

FOR RUNGTA MINES LIMITED


Director



Rungta Mines Limited

MAIN ROAD, BARBIL - 758 035, DIST : KENDUJHAR, ODISHA, INDIA
Telefax: 06767 - 276651, E-mail : bbloffice@rungtamines.com

ANNEXURE-1

UNDERTAKING

Condition No.6

We do hereby undertake to explore the possibility for implementation of transportation of Iron ore as per recommendation of the NEERI report.

Condition No.8

We do hereby undertake to maintain a green strip of 100 metres including safety zone of approximately five hectares on the southern tip of the Mining lease area will kept intact as green belt for shelter, cover and movement of the wildlife.

Condition No.9

We do hereby undertake to deposit all the compensatory levies as per the demand raised by DFO, Bonai and DFO, Keonjhar in State CAMPA Fund only through e-portal.

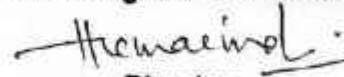
Condition No.11(a):

We do hereby undertake to implement mitigative measures to minimize soil erosion and choking of stream within a period of three years with effect from the date of grant of Stage-II forest clearance as per the approved plan/scheme in consultation with the State Forest Department, in a phased manner, at the project cost.

Condition No.11(b):

We do hereby undertake to take adequate measures for planting of drought hardy plant species and sowing of seeds in the appropriate areas within the mining lease as per the approved scheme, in a phased manner at the project cost.

For Rungta Mines Limited


Director



Rungta Mines Limited

MAIN ROAD, BARBIL - 758 035, DIST : KENDUJHAR, ODISHA, INDIA
Telefax : 06767 - 276651, E-mail : bbloffice@runtamines.com

ANNEXURE-1

UNDERTAKING

Condition No.11(c) :

We do hereby undertake to construct check dams, retention/toe walls to arrest sliding down of the excavated materials along the contour as per the approved scheme, in a phased manner at the project cost.

Condition No.11(d) :

We do hereby undertake to stabilize the overburden dumps in a phased manner at the project cost by appropriate grading/benching to ensure that the angles of repose at any given place is less than 28 degree and will be as per the approved scheme.

Condition No.12(a) :

We do hereby undertake to demarcate boundary of safety zone (7.5 meter strip all along outer boundary of the mining lease) and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed fencing and deploying adequate number of watchers under the supervision of State Forest Department.

Condition No.12(b) :

We do hereby undertake that the boundary of the safety zone of the lease adjacent to the habitation/road will be properly fenced at the project cost to protect the vegetation/regeneration activities in the safety zone.

For Rungta Mines Limited


Director



Rungta Mines Limited

MAIN ROAD, BARBIL - 758 035, DIST. KENDUJHAR, ODISHA, INDIA
Telefax: 06767 - 276651, E-mail: bbloffice@rungtamines.com

ANNEXURE- 1

UNDERTAKING

Condition No.12(c):

We do hereby undertake that safety zone shall be maintained as green belt to ensure dense canopy cover in the area and regeneration shall be taken in this area as per the approved scheme, in a phased manner at the project cost.

Condition No.12(d):

We do hereby undertake to maintain the safety zone as per the prescribed Norm, under the supervision of State Forest Department.

Condition No.13:

We do hereby undertake to strictly adhere to the prescribed top soil management as per the approved scheme for implementation in a phased manner at the project cost.

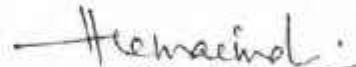
Condition No.14:

We do hereby undertake for de-silting of the village tanks and other water bodies located within five km from the mining lease boundary so as to mitigate the impact of siltation of such tanks/water as per the approved scheme, in a phased manner at the project cost.

Condition No.15:

We do hereby undertake to deposit the cost of felling of trees to the forest department before felling.

For Rungta Mines Limited


Director



Rungta Mines Limited

MAIN ROAD, BARBIL - 758 035, DIST : KENDUJHAR, ODISHA, INDIA

Telefax : 06767 - 276651, E-mail : bbloffice@rungtamines.com

ANNEXURE- 1

UNDERTAKING

Condition No. 16:

We do hereby undertake to fell minimum no. of trees in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO.

Condition No.17:

We do hereby undertake to 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.

Condition No.18:

We do hereby undertake to implement the interventions as mentioned in the approved Site Specific wildlife Conservation plan for the core zone under the guidance of DFO, Bonai and Keonjhar Division.

Condition No. 20:

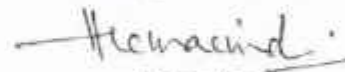
We do hereby undertake to carry out mining in a phased manner, and will take due care for reclamation of the mined out area as per the approved Mining Plan.

We also undertake to submit an annual report on reclamation status of the mine to the concerned Govt. Departments/Authorities.

Condition No. 21:

We do hereby undertake to comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other area 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.

For Rungta Mines Limited


Director



Rungta Mines Limited

MAIN ROAD, BARBIL - 758 035, DIST : KENDUJHAR, ODISHA, INDIA
Telefax : 06767 - 276651, E-mail : bbloffice@rungtamines.com

ANNEXURE- 1

UNDERTAKING

Condition No. 24:

We do hereby undertake that, no labour camp will be established in the forest area and we will provide alternate fuels to the labourers and the staff working at the site to avoid any damage and pressure on the nearby forest areas.

Condition No. 26:

We do hereby undertake that, the layout plan of the mining plan/proposal shall not be changed without the prior approval of Ministry of Environment, Forest & Climate Change and the forest land shall not be used for any purpose other than that specified in the proposal.

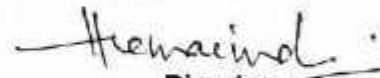
Condition No. 27:

We do hereby undertake that, the forest land will not be transferred to any other agency, department or person without prior approval of the Ministry of Environment, Forest & Climate Change.

Condition No. 28:

We do hereby undertake that, no damage to the flora and fauna of the adjoining area shall be caused by us and that we will take all protective measures as would be required in consultation with the concerned Divisional Forest office.

For Rungta Mines Limited


Director



Rungta Mines Limited

MAIN ROAD, BARBIL - 758 035, DIST : KENDUJHAR, ODISHA , INDIA
Telefax : 06767 - 276651, E-mail : bboffice@rungtamines.com

ANNEXURE- 1

UNDERTAKING

Condition No. 29:

We do hereby undertake to submit annual self-monitoring report on compliance of stipulated conditions to the State Government ,concerned Regional Office and to the Ministry by the end of March every year.

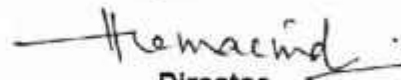
Condition No. 30:

We do hereby undertake that any other conditions 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; shall be complied by the User Agency.

Condition No. 31:

We do hereby undertake to comply all the provisions of all the 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 would be applicable to the project.

For Rungta Mines Limited


Director



Rungta Mines Limited

MAIN ROAD, BARBIL - 758 035, DIST : KENDUJHAR, ODISHA , INDIA
Telefax : 06767 - 276651, E-mail : bbloffice@rungtamines.com

ANNEXURE- 1

UNDERTAKING

Condition No. 32:

We do hereby undertake that, we shall ensure compliance to provisions of all Acts, Rules and Regulations as prescribed in Para 1.21 of Chapter-1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act, 1980 as issued by the Ministry's letter No. 5-2/2017-FC dated 28.03.2019.

Condition No.33:

We do hereby undertake that the stage-I compliance report will be uploaded on e-portal (<https://parivesh.nic.in>) of MoEF & CC, Govt. of India.

For Rungta Mines Limited


Director



Rungta Mines Limited

MAIN ROAD, BARBIL - 758 035, DIST: KENDUJHAR, ODISHA, INDIA
Telefax: 06767-276651, E-mail: bbloffice@rungtamines.com

Ref: RML/BBL/GEO/2024-25/ 56

Date: 11.05.2024

To,
The Divisional Forest Officer,
Keonjhar Forest Division,
Dist: Keonjhar, Odisha.

Sub: Submission of compliance of conditions stipulated in Stage-I approval letter of MoEF&CC, Govt. of India vide F. No.8-08/2023-FC dt.28.11.2023 for diversion of 156.978 ha. of forest land (147.803 ha in Bonai Division and 9.175 ha in Keonjhar Division) in Jumka-Pathiriposhi Pahar Iron Ore Block of M/s.Rungta Mines Ltd. in Sundargarh & Keonjhar district, Odisha.

Sir,

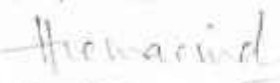
With reference to the subject cited above, we are submitting herewith the compliance report in respect of conditions stipulated in Stage-I approval letter of MoEF&CC, Govt. of India vide F. No.8-08/2023-FC dt.28.11.2023 for diversion of 156.978 ha. of forest land (147.803 ha in Bonai Division and 9.175 ha in Keonjhar Division) in Jumka-Pathiriposhi Pahar Iron Ore Block of M/s.Rungta Mines Ltd. in Sundargarh & Keonjhar district, Odisha, in Five (5) sets.

We request your good self to kindly take necessary action for Stage-II (Final) forest clearance of our aforesaid project.

An early action in the matter is highly solicited.

Thanking you,

Yours faithfully,
For Rungta Mines Ltd.


Director

Encl: As above.

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



Rungta Mines Limited

MAIN ROAD, BARBIL - 758 035, DIST : KENDUJHAR, ODISHA , INDIA
Telefax : 06767 - 276651, E-mail : bbloffice@runtamines.com

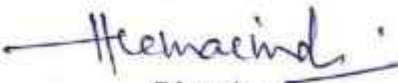
UNDERTAKING

ANNEXURE- 1

I Sri Hirak Mazumder, Director, Authorised Signatory of M/s Rungta Mines Ltd. do hereby declare on behalf of M/s Rungta Mines Ltd. that:-

- Sl. No.-1:** We will undertake to kept the legal status of the diverted forest land shall remain unchanged.
- Sl. No.-2:** We will do the 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, as per the approved scheme, in a phased manner at the project cost.
- Sl. No.-3:** We will pay the additional amount of the NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India.
- Sl. No.-4:** We will implement the activities in the core zone as per approved site specific wild life conservation plan under the guidance of DFO Bonai and DFO Keonjhar division, in a phase wise manner.
- Sl. No.-5:** We will explore the possibility for implementation of transportation of Iron ore as per recommendation of the NEERI report.
- Sl. No.-6:** We will maintain a green strip of 100 meters including safety zone of approximately five hectares on the southern tip of the Mining lease area will kept intact as green belt for shelter, cover and movement of the wildlife.
- Sl. No.-7:** We will implement mitigative measures to minimize soil erosion and choking of stream within a period of three years with effect from the date of grant of Stage-II forest clearance as per the approved plan/scheme in consultation with the State Forest Department, in a phased manner, at the project cost.
- Sl. No.-8:** We will implement the adequate measures for planting of drought hardy plant species and sowing of seeds in the appropriate areas within the mining lease as per the approved scheme, in a phased manner at the project cost.
- Sl. No.-9:** We will construct check dams, retention/toe walls to arrest sliding down of the excavated materials along the contour as per the approved scheme, in a phased manner at the project cost.
- Sl. No.-10:** We will stabilize the overburden dumps in a phased manner at the project cost by appropriate grading/benching to ensure that the angles of repose at any given place is less than 28 degree and will be as per the approved scheme.

For Rungta Mines Limited


Director



Rungta Mines Limited

MAIN ROAD, BARBIL - 758 035, DIST : KENDUJHAR, ODISHA, INDIA
Telefax : 06767 - 276651, E-mail : bbloffice@rungtamines.com

ANNEXURE- 1

UNDERTAKING

- Sl. No.-11:** We will demarcate boundary of safety zone (7.5 meter strip all along outer boundary of the mining lease) and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed fencing and deploying adequate number of watchers under the supervision of State Forest Department.
- Sl. No.-12:** We will maintain the boundary of the safety zone of the lease adjacent to the habitation/road will be properly fenced at the project cost to protect the vegetation/regeneration activities in the safety zone.
- Sl. No.-13:** We will maintain the Safety zone as green belt around mining lease at our project cost under the supervision of the State Forest Department.
- Sl. No.-14:** We will maintain the safety zone as per the prescribed Norm, under the supervision of State Forest Department.
- Sl. No.-15:** We will strictly follow to the prescribed top soil management as per the approved scheme for implementation in a phased manner at the project cost.
- Sl. No.-16:** We will de-silt the village tanks and other water bodies located within five km from the mining lease boundary so as to mitigate the impact of siltation of such tanks/water as per the approved scheme, in a phased manner at the project cost.
- Sl. No.-17:** We will deposit the cost of felling of trees to the forest department before felling.
- Sl. No.-18:** We will undertake to fell minimum no. of trees in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO.
- Sl. No.-19:** We will 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.
- Sl. No.-20:** We will implement the interventions as mentioned in the approved Site Specific wildlife Conservation plan for the core zone under the guidance of DFO, Bonai and Keonjhar Division.

For Rungta Mines Limited

Director



Rungta Mines Limited


MAIN ROAD, BARBIL - 758 035, DIST : KENDUJHAR, ODISHA, INDIA
Telefax : 06767 - 276651, E-mail : bbloffice@rungtamines.com

ANNEXURE- 1

UNDERTAKING

- Sl. No.-21:** We will carry out mining in a phased manner, and will take due care for reclamation of the mined out area as per the approved Mining Plan. We also undertake to submit an annual report on reclamation status of the mine to the concerned Govt. Departments/Authorities.
- Sl. No.-22:** We will comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other area 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.
- Sl. No.-23:** We will undertake that, no labour camp will be established in the forest area and we will provide alternate fuels to the labourers and the staff working at the site to avoid any damage and pressure on the nearby forest areas.
- Sl. No.-24:** We will abide by the layout plan of the mining plan/proposal shall not be changed without the prior approval of Ministry of Environment, Forest & Climate Change and the forest land shall not be used for any purpose other than that specified in the proposal.
- Sl. No.-25:** We will undertake that, the forest land will not be transferred to any other agency, department or person without prior approval of the Ministry of Environment, Forest & Climate Change.
- Sl. No.-26:** We do hereby undertake that, no damage to the flora and fauna of the adjoining area shall be caused by us and that we will take all protective measures as would be required in consultation with the concerned Divisional Forest office.
- Sl. No.-27:** We will submit the annual self-monitoring report on compliance of stipulated conditions to the State Government, concerned Regional Office and to the Ministry by the end of March every year.
- Sl. No.-28:** We will undertake that any other conditions 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; shall be complied by the User Agency.
- Sl. No.-29:** We will undertake to comply all the provisions of all the 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 would be applicable to the project.

For Rungta Mines Limited


Director



Rungta Mines Limited

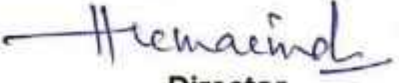
MAIN ROAD, BARBIL - 758 035, DIST : KENDUJHAR, ODISHA , INDIA
Telefax : 06767 - 276651, E-mail : bbloffice@rungtamines.com

ANNEXURE- 1

UNDERTAKING

- Sl. No.-30:** We will undertake that, we shall ensure compliance to provisions of all Acts, Rules and Regulations as prescribed in Para 1.21 of Chapter-1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act, 1980 as issued by the Ministry's letter No. 5-2/2017-FC dated 28.03.2019.
- Sl. No.-31:** We will upload the stage-I compliance report on e-portal (<https://parivesh.nic.in>) of MoEF & CC, Govt. of India.

For Rungta Mines Limited


Director

AGENCY COPY

यूनियन बैंक  **Union Bank**
of India

NEFT / RTGS CHALLAN for CAMPA Funds

Date : 29-12-2023

Agency Name.	RUNGTA MINES LTD
Application No.	58150048243
MoEF/SG File No.	8-08/2023-FC
Location.	ORRISA
Address.	Rungta Office, Main Road, At/PO: Barbil, OdishaKeonjhar
Amount(in Rs)	87380700/-

Amount in Words :Eight Crore Seventy-Three Lakh Eighty Thousand Seven Hundred Rupees Only


NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	1508258150048243 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 : 29-12-2023

Agency Name.	RUNGTA MINES LTD
Application No.	58150048243
MoEF/SG File No.	8-08/2023-FC
Location.	ORRISA
Address:	Rungta Office, Main Road, At/PO: Barbil, Odisha Keonjhar
Amount(in Rs)	87380700/-

Amount in Words :Eight Crore Seventy-Three Lakh Eighty Thousand Seven Hundred Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	1508258150048243 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: fcsblr@unionbankofindia.bank, epurse@unionbankofindia.bank, ubin0903710@unionbankofindia.bank


Signature


(Authorized Signatory)

UTR - CNRB R 5 2023 123070695506



30/12/23

Schedule I Form No.39-A

ଖଟିୟାନ

ମୌଜା : ବେରି
 ଥାନା : ନୟାଗୋଟ
 ଥାନା ନମ୍ବର : 7
 ଖଟିୟାନର କ୍ରମିକ ନଂ : 53/1

ଚହସିଲ : ବାଂଶପାଳ
 ଚହସିଲ ନମ୍ବର : 05
 ଜିଲ୍ଲା : ବେଲୁଙ୍ଗର

ଜମିଦାରଙ୍କ ନାମ ଓ ଖେତର ବା ଖଟିୟାନର କ୍ରମିକ ନମ୍ବର	ଓଡ଼ିଶା ସରକାର ପ୍ରଥମ ଭାଗ ଖେତର ନମ୍ବର ।
୧) ଖଟିୟାନର କ୍ରମିକ ନଂ	53/1
୨) ପ୍ରଭାବ ଚାମ, ପିତା ଚାମ, ଜାତି ଓ ବାସସ୍ଥାନ	ରାଜ୍ୟ ଜଙ୍ଗଲ, ପରିବେଶ ଏବଂ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ବିଭାଗ, ଓଡ଼ିଶା ।

କ୍ର.ସଂ	ଜଳକର	ଖଜଣା	ସେସ	ନିସ୍ତାର ସେସ ଓ ଅନ୍ୟାନ୍ୟ ସେସ ଯଦି କିଛି ଥାଏ	ମୋଟ	୩) କ୍ରମବର୍ତ୍ତନଶୀଳ ଖାତାଗାର ବିବରଣୀ
୪) ୧୧୧		0.00	0.00	0.00	0.00	

୨) ବିଶେଷ ଅନୁସୂଚୀ ପରି କିଛି ଥାଏ
 Alienation Case No. 16/2023 (ବା.ଖା କେଶ ନଂ 2196/2023) ହୁ ମୁ ପୁଟ ନଂ 4/546 ରଜବା ହେ 0.7000, ପୁଟ ନଂ 4/527/547 ରଜବା ହେ 3.5310, ପୁଟ ନଂ 4/528/548 ରଜବା ହେ 5.1220, ପୁଟ ନଂ 4/529/549 ରଜବା ହେ 4.6460, ପୁଟ ନଂ 4/530/550 ରଜବା ହେ 4.4530, ପୁଟ ନଂ 4/531/551 ରଜବା ହେ 8.9120, ପୁଟ ନଂ 4/532/552 ରଜବା ହେ 0.1240, ପୁଟ ନଂ 4/529/553 ରଜବା ହେ 2.1530 ଖା.ଖା. 53 ରୁ ।
 Alienation Case No. 27/2023 (ବା.ଖା କେଶ ନଂ 30/2024) ହୁ ମୁ ପୁଟ ନଂ 17 ରୁ ରଜବା ହେ 1.4820, ପୁଟ ନଂ 441 ରଜବା ହେ 8.0000, ପୁଟ ନଂ 442 ରଜବା ହେ 16.0000, ପୁଟ ନଂ 443 ରଜବା ହେ 16.0000, ପୁଟ ନଂ 444 ରୁ ରଜବା ହେ 5.3120, ପୁଟ ନଂ 445 ରୁ ରଜବା ହେ 5.3020, ପୁଟ ନଂ 446 ରଜବା ହେ 16.0000, ପୁଟ ନଂ 447 ରୁ ରଜବା ହେ 0.9160, ପୁଟ ନଂ 458 ରୁ ରଜବା ହେ 0.5740, ପୁଟ ନଂ 459 ରୁ ରଜବା ହେ 5.8180, ପୁଟ ନଂ 460 ରୁ ରଜବା ହେ 5.4630, ପୁଟ ନଂ 461 ରୁ ରଜବା ହେ 5.6410, ପୁଟ ନଂ 488 ରୁ ରଜବା ହେ 5.6290, ପୁଟ ନଂ 489 ରୁ ରଜବା ହେ 4.6990, ପୁଟ ନଂ 17/533 ରୁ ରଜବା ହେ 4.4430, ପୁଟ ନଂ 17/534 ରୁ ରଜବା ହେ 4.4590, ପୁଟ ନଂ 17/535 ରଜବା ହେ 16.0000, ପୁଟ ନଂ 17/536 ରଜବା ହେ 16.0000, ପୁଟ ନଂ 17/537 ରୁ ରଜବା ହେ 10.0650 ଖା.ଖା 53 ରୁ । Alienation Case No. 26/2023 (ବା ଖା କେଶ ନଂ 29/2024) ହୁ ମୁ ପୁଟ ନଂ 459 ରୁ ରଜବା ହେ 4.6330, ପୁଟ ନଂ 460 ରୁ ରଜବା ହେ 4.5420 ଖା.ଖା 53 ରୁ ।

BLANK SPACE FOR STAMPING

ଅତିରିକ୍ତ ସୁକାଶନ ତାରିଖ : 25/09/1981

<https://imcodisha.nic.in/Bhujekiv/Report/5RorFrontpage.aspx>



Ben
 29/02/2024
 ADDL. TAHASILDAR
 BANSPAL

ଖଣ୍ଡପତ୍ର ନଂ 53/1		ବୃତ୍ତି ନଂ	କର୍ମ			କ୍ଷେତ୍ର : ବେଢ଼ା
ପୁରାଣ ଓ ପ୍ରକାର	କ୍ଷେତ୍ର ଓ ପ୍ରକାର	କ୍ଷେତ୍ର ନଂ	କର୍ମ			ମିଟର
			ଫୁଟ	ଫୁଟ	ଫୁଟ	
୨	୮	୯	୧୦	୧୧	୧୨	
4/546	୧୦୦		17297	0.7000		
4/527/547	୧୦୦		87253	3.5310		
4/528/548	୧୦୦		12656	5.1220		
4/529/549	୧୦୦		114805	4.6460		
4/529/553	୧୦୦		53202	2.1530		
4/530/550	୧୦୦		11003	4.4530		
4/531/551	୧୦୦		22022	8.9120		
4/532/552	୧୦୦		03064	0.1240		
17/556	୧୦୦		36621	1.4820		
441	୧୦୦		19768	8.0000		
442	୧୦୦		39536	16.0000		
443	୧୦୦		39536	16.0000		
444/557	୧୦୦		13126	5.3120		
445/558	୧୦୦		13101	5.3020		
446	୧୦୦		39536	16.0000		
447/559	୧୦୦		22635	0.9160		
458/560	୧୦୦		14184	0.5740		
459/561	୧୦୦		14376	5.8180		
460/562	୧୦୦		13499	5.4630		
461/563	୧୦୦		13939	5.6410		
488/564	୧୦୦		13909	5.6290		
489/565	୧୦୦		11611	4.6990		
17/533/566	୧୦୦		10978	4.4430		
17/534/567	୧୦୦		11018	4.4590		
17/535	୧୦୦		39536	16.0000		
17/536	୧୦୦		39536	16.0000		
17/537/568	୧୦୦		24871	10.0650		
459/554	୧୦୦		11448	4.6330		
460/555	୧୦୦		11223	4.5420		
29 ଘଟ			4611341	186.6190		

ADDL. TAHASILDAR
BANSIPAL

ଉପାଧିକାରୀଙ୍କ ଦ୍ଵାରା (ସ୍ଵାକ୍ଷର)

Annexure-4

GOVERNMENT OF ODISHA
FOREST, ENVIRONMENT & CLIMATE CHANGE DEPARTMENT

NOTIFICATION

Bhubaneswar, dated the 15.03.24

No.FE-DIV-FLD-0017-2023-{10F-(Cons)-12/2023}-5563/FE&CC, In exercise of the powers conferred under Section-33 of the Odisha Forest Act, 1972 (Odisha Act 14 of 1972), the State Government do hereby declare that the following land situated in Village-**Deri** under Banspal Tahasil of Keonjhar District mutated and transferred in favour of Forest, Environment & Climate Change Department for raising Compensatory Afforestation thereon against the proposed diversion for non-forestry use of 156.978 ha of forest land (147.803 ha in Bonai Forest Division & 9.175 ha in Keonjhar Forest Division) for Iron Ore Mining and ancillary activities within Jumka Pathiriposhi Pahar Iron Ore Block under Bonai and Keonjhar Forest Division of Sundargarh & Keonjhar District, Odisha vide 'in-principle' approval of Government of India, MoEF&CC, New Delhi communicated in letter No.8-08/2023-FC dt.28.11.2023 under Section-2 of the Forest (Conservation) Act, 1980, the limits of which are specified below and the area of which is 156.978 Ha (387.921 Ac) shall be Protected Forest with effect from the date of issue of the Notification and shall be known as "**Deri-A Protected Forest**".

Forest Block:

Name of the Protected Forest : Deri
Area in Ha : 156.978
Area in Acres : 387.921
Name of the Village : Deri
Name of the Police Station : Nayakote
Name of the Tahasil : Banspal
Name of the Sub-Division : Keonjhar
Name of the District : Keonjhar

Land Schedule:

Village	Khata No.	Plot No.	Kisam	Area in Ha.	Boundary description			
					North	South	East	West
Deri	53/1	17/556	Hudi	1.4820	Plot No. 17 (P)	Plot No. 17/533/566	Plot No. 17 (P)	Plot No. 17 (P)
		441		8.0000	Plot No. 440	Plot No. 442	Plot No. 17/535	Plot No. 444/557
		442		16.0000	Plot No. 441	Plot No. 461/563	Plot No. 17/538	Plot No. 443
		443		16.0000	Plot No. 444/557 & 445/558	Plot No. 460/562	Plot No. 442	Plot No. 446
		444/557		5.3120	Plot No. 439, 444	Plot No. 443	Plot No. 441	Plot No. 445/558
		445/558		5.3020	Plot No. 445 (P)	Plot No. 446, 447/559, 443	Plot No. 444/557	Plot No. 445 (P)
		446		16.0000	Plot No. 445/558	Plot No. 459/561	Plot No. 443	Plot No. 447/559
		447/559		0.9160	Plot No. 445/558	Plot No. 458/560	Plot No. 446	Plot No. 447 (P)
		458/560		0.5740	Plot No. 447/559	Plot No. 458 (P)	Plot No. 459/554, 459/561	Plot No. 458 (P)
		459/561		5.8180	Plot No. 446	Plot No. 459/554	Plot No. 460/562	Plot No. 458/560
		460/		5.4630	Plot No.	Plot No. 460/	Plot No.	Plot No.



	562		443	555	461/563	459/561
	461/563		5.6410	Plot No. 442	Plot No. 461 (P)	Plot No. 448/564
	488/564		5.6290	Plot No. 17/536	Plot No. 448 (P)	Plot No. 489/565
	489/565		4.6990	Plot No. 17/537/568	Plot No. 489 (P)	Plot No. 488/564
	17/533/566		4.4430	Plot No. 17/556	Plot No. 17/534/567	Plot No. 533 (P)
	17/534/567		4.4590	Plot No. 17/533/566	Plot No. 17/537/568	Plot No. 534 (P), 533 (P)
	17/535		16.0000	Plot No. 17 (P)	Plot No. 17/538	Plot No. 17/533/566, 17/534/567
	17/536		16.0000	Plot No. 17/535	Plot No. 488/564	Plot No. 17/537/568
	17/537/568		10.0650	Plot No. 17/534/567	Plot No. 489/565	Plot No. 537 (P)
	459/554		4.6330	Plot No. 459/561	Plot No. 459 (P)	Plot No. 460/555
	460/555		4.5420	Plot No. 460/562	Plot No. 460 (P)	Plot No. 461 (P)
Total		156.987 ha or 387.721 Ac				

By Order of the Governor

(Satyabrata Sahu)

Additional Chief Secretary to Government

By e-Mail: deputydirectorpp@rediffmail.com

Memo No. 5564 /FE&CC, Date 15.03.24

Copy with soft 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 copies of printed notification each to Forest, Environment & Climate Change Department/ Director of Land Records and Surveys, Odisha, Cuttack/ Collector, Keonjhar/ Divisional Forest Officer, Keonjhar Forest Division/ Tahasildar, Banspal Tahasil, Dist.-Keonjhar.

2. The Notification is statutory and may be assigned SRO number.

OSD-cum-Special Secretary to Government

Memo No. 5565 /FE&CC, Date 15.03.24

Copy forwarded to the Assistant Inspector General of Forests, Govt. of India, Ministry of Environment, Forest and Climate Change, (F.C. Division), Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi-110003/ Deputy Director General of Forests (Central), Govt. of India, MoEF&CC, Regional Office, A/3, Chandrasekharpur, Bhubaneswar-23 for information and necessary action.

OSD-cum-Special Secretary to Government

Memo No. 5566 /FE&CC, Date 15.03.24

Copy forwarded to the Steel & Mines Department/ Revenue & Disaster Management Department/ Director, Environment-cum-Special Secretary to Government, FE&CC Department/

Member Secretary, SPCB, Odisha/ Director of Land Records and Surveys, Odisha, Cuttack/ RDC (ND) Sambalpur/ Collector, Keonjhar/ Tahasildar, Banspal Tahasil, Dist.-Keonjhar for information and necessary action.

d. 15/3/2024

OSD-cum-Special Secretary to Government

Memo No. 5567 /FE&CC, Date 15.03.24

Copy forwarded to the Principal Chief Conservator of Forests & HoFF, Odisha/ Principal Chief Conservator of Forests (WL) & CWLW, Odisha/ Principal Chief Conservator of Forests (FD&NO, FC Act), O/o the PCCF & HoFF, Odisha w.r.t. his letter No.5926, dt.12.03.2024/ Regional Chief Conservator of Forests, Rourkela Circle/ Divisional Forest Officer, Keonjhar Forest Division/ Divisional Forest Officer, Bonai Forest Division for information and necessary action.

d. 15/3/2024

OSD-cum-Special Secretary to Government

Memo No. 5568 /FE&CC, Date 15.03.24

Copy forwarded to the Head State Portal, IT Centre, Odisha Secretariat, Bhubaneswar/ OE (IT) Section, FE&CC Department w.r.t. this Department letter No.21646/F&E dtd.22.11.2016/ 5 spare copies for G.F. for information and necessary action.

d. 15/3/2024

OSD-cum-Special Secretary to Government

Memo No. 5569 /FE&CC, Date 15.03.24

Copy forwarded to the Director, Rungta Mines Ltd., At/PO-Barbil, Keonjhar, Odisha, Pin-758035 for information and necessary action.

d. 15/3/2024

OSD-cum-Special Secretary to Government

AGENCY COPY

यूनियन बँक Union Bank

NEFT / RTGS CHALLAN for CAMPA Funds

Date : 29-12-2023

Agency Name.	RUNGTA MINES LTD
Application No.	58150048243
MoEF/SG File No.	8-08/2023-FC
Location.	ORRISA
Address.	Rungta Office, Main Road, At/PO: Barbil, OdishaKeonjhar
Amount(in Rs)	87380700/-

Amount in Words :Eight Crore Seventy-Three Lakh Eighty Thousand Seven Hundred Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	1508268150048243 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 बँक Union Bank

NEFT / RTGS CHALLAN for CAMPA Funds

Date : 29-12-2023

Agency Name.	RUNGTA MINES LTD
Application No.	58150048243
MoEF/SG File No.	8-08/2023-FC
Location.	ORRISA
Address:	Rungta Office, Main Road, At/PO: Barbil, Odisha Keonjhar
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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: fcsblr@unionbankofindia.bank , epurse@unionbankofindia.bank, ubin0903710@unionbankofindia.bank

UTR - CNRB R 5 2023 12 30 70695506



30/12/23



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 AREA.

in compliance

with

Condition No.2 (e) of

Stage-I approval granted vide

Letter No.8-08/2023-FC dt.28.11.2023 of

Government of India, Ministry of Environment,

Forest & Climate Change

for

Diversion of 156.978 Hects of Forest Land

(147.803 ha. in Bonai Division & 9.175 ha. in Keonjhar Division)

U/s-2 (ii) of F.C. Act'1980

within 158.509 Ha. Jumka Pathiriposhi Pahar Iron Ore Block

of

M/s Rungta Mines Ltd.

**in village Batagaon and Kensara in Lahunipara Tahsil, Bonai Forest
Division and village Kadakala of Keonjhar Forest Division**

Dist.Sundargarh and Keonjhar

Odisha.

SCHEME FOR GAP PLANTING, SOIL & MOISTURE CONSERVATION TO RESTOCK AND REJUVENATE DEGRADED OPEN FORESTS WITHIN 100M FROM OUTER PERIMETER OF IRON ORE MINING LEASE OF M/S ESSAR STEEL INDIA LTD. IN SUNDARGARH DISTRICT OF ODISHA.

1. INTRODUCTION

Government of Odisha, pursuant to the Mines and Minerals (Development and Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 as amended from time to time, issued the notice inviting tender dated 07.07.2021 to commence the auction process for grant of mining lease for Jumka Pathiriposhi Pahar Iron Ore Block over an area of 158.509 Ha. for Iron Ore located in Koira Mining Circle, District-Sundargarh, Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block on 24.09.2021 and Rungta Mines Ltd. was declared as the 'Preferred Bidder' under Rule 9(9)(iii) or Rule 10 (1A) of Auction Rules, having quoted highest Final Price Offer vide letter No.MXIII(b) 46/2021/7738/DM Dated 05.10.2021 issued by Director of Mines, Government of Odisha.

Accordingly, pursuant to Rule 10(2) of the Auction Rules and the terms of the Tender Document, the Government of Odisha was pleased to issue Letter of Intent (LOI) bearing No.IV(B)SM-49/2021/8716/SM, Bhubaneswar dated 28.10.2021 for grant of Mining Lease for Jumka Pathiriposhi Pahar Iron Ore Block for Iron ore located at a distance of 20 km south of Koira Town in Batagaon & Kensara village of Lahunipara Tahasil Sundargarh District and Kadakala village of Keonjhar District on 158.509 Ha. area to Rungta Mines Ltd. for a period of 50 (Fifty) years. Accordingly, M/s Rungta Mines Ltd. had submitted the proposal to obtain approval of the Central Govt. over 156.978 hectare of forest land included within the mining lease U/s-2 (ii) of the Forest (Conservation) Act'1980.

Now, the Stage-I approval over 156.978 ha. of Forest Land for U/s-2 (ii) of F.C. Act'1980 has been granted by MoEF&CC, Govt. of India vide their Letter No.8-08/2023-FC dt.28.11.2023, wherein it has been stipulated as per Condition No.2 (e) for preparation and implementation of a Scheme containing for 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.

2. LOCATION

Jumka Pathiriposhi Pahar Iron ore Block of M/s Rungta Mines Ltd. is located in Sundargarh & Keonjhar District of Odisha and can be approached throughout the year by road. It falls within the survey of India Topo sheet No.73 G/1. The total mining lease hold area is 158.509 Ha. The area is located between the Latitudes $21^{\circ}48'54.81396''\text{N}$ to $21^{\circ}47'32.62280''\text{N}$ and Longitude $85^{\circ}13'25.32167''\text{E}$ to $85^{\circ}12'13.87352''\text{E}$.

3. TOPOGRAPHY

The area is represented by sloppy area with gentle undulation, resembling a relict type of topography. The highest contour is 1037 mts and the lowest is 926 mts. Nagaria PRF and Sarkunda PRF of Bonai forest division comes within the the ML area.

4. SOIL TYPE

Soil type in the study area varies widely from hard rock to lateritic soil & Shale. Areas at higher elevations are usually hard rock consisting of Iron pebbles & laterite. The top soil is scanty in the area. Whatever top soil is available is thinly spread over all Soil profile in nature. The pH of the soil is slightly acidic in nature.

5. CLIMATE

The study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March. Temperature rises rapidly attaining a maximum in the month of May. During the summer maximum temperature can go up to 47.7°C . The weather becomes pleasant with onset of monsoon in June and remains as such upto end of October. The temperature in the month of December is lowest, i.e., 7°C . The average annual rainfall as recorded at IMD observatory is 1325.16 mm. Predominant wind direction is South-West. Area remains calm for nearly 50% of the year.

6. DRAINAGE

There are a number of streams flowing to Phulamanali nala which serve the purpose of drainage. There is one seasonal nala namely Barapokhari outside the mining lease which finally join with Phulamanali nala that flows from South-West to South-East. The general elevation difference in the area is 70m. The proposed working area lies at the hill & is well above the water table.

7. OBJECTIVES OF THE SCHEME

The main objective of the present scheme is to fulfil the condition No.2 (e) *which envisages to undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.4) if any, located in the area within 100m from outer perimeter of the mining lease.*

- 1) To afforest the degraded forest land and to restore the degraded forest lands by RDF plantation within 100m from the outer perimeter of the lease area.
- 2) Clearly demarcating and fencing the area in ground to dispense with the biotic interferences.
- 3) To improve the micro edaphic conditions by undertaking suitable soil and moisture conservation measures
- 4) To create awareness among the local villagers for protection and maintenance of this plantation in particular and the adjoining forest for ensuring enrichment of the ecosystem.

8. PROPOSED TECHNIQUE

To achieve the above objectives, it has been proposed to take up ANR plantation @ 500 plants/ha. at a spacing of 2.5 mt X 2.5 mt. in identified permanent gaps. The following items of works prescribed in the scheme will be taken up, the detailed expenditure statement of which is enclosed in **Annexure-I**.

To achieve the above objectives, the following items of work are mainly prescribed to be taken up:

9. SURVEY AND DEMARCATION OF BOUNDARY

The identified degraded forest lands will be surveyed clearly with reference to the village maps and reserve forest boundary and demarcated by posting R.C.C. pillars at every corner/turning point of boundary line and the Scheme proposes financial implication for the same.

10. REGENERATION CLEANING AND 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 (Sal with associates) for ensuring better growth of the plants. It includes removal of inferior, diseased, malformed, dead, dying 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 top broken pole crops interfering with growth of well-formed pole crops.
- iii) Cutting back of malformed and diseased species.
- iv) Cutting of climbers up to hand's reach.
- v) Sharp cutting of high stumps at a height of 0.5 mtr above the ground level to get a smooth stool with least damage to the cortex layer .This will promote growth of new stool shoots as well as root collar shoots of species having coppicing vigor.
- vi) Singling out the coppice shoots coming out from stools and retaining two to three most promising ones.
- vii) Pruning of the branches of the pole crops up to hand's reach.

During the 1st year, climber cutting, and cutting of high stumps, weeds and malformed and diseased species will be done. In the next two years, cutting back of malformed individuals and singling of coppice shoots in case of desired species will be done in the subsidiary silvicultural activities.

11. PLANTING & POST-PLANTING

The area will be re-stocked by raising plantation @ 500 plants per hectare in ANR (Assisted Natural regeneration) model. Taking into consideration, the site specific soil condition, existing indigenous species growing there and the bonafied requirement of the local people, the species have been proposed to be planted in the area as mentioned in Point No.8 below.

The main objective of the present scheme is to raise gap plantation in degraded forest as well as to apply soil & moisture conservation measures, restock & rejuvenate degrade forest within 100 m. in the outer perimeter of Mining lease of Rungta Mines Ltd. Such Plantations will act as a Transition Crop to support the main crop of the lease area.

Hence, the main objective of the present scheme is as follows:-

- i) To afforest the degraded forest land and to restore the degraded forest lands by ANR model.
- ii) Clearly demarcating and fencing with brush wood the area to dispense with the biotic interferences.
- iii) To improve the micro edaphic conditions by undertaking suitable soil and moisture conservation measures.
- iv) To protect the area against encroachment, illicit felling, fire incidences, grazing and all other forms of biotic interference.
- v) To create awareness among the local villagers for protection and maintenance of plantation for ensuring enrichment of the ecosystem and replacement of the degraded areas with natural green cover.

12. LAND SCHEDULE

LAND SCHEDULE OF 100 METER OUTER PERIFERI OF MINING LEASE OF JUMKA PATHIRIPOSHI PAHAR IRON ORE BLOCK

SL. NO	VILLAGE	PLOT NO.	KHATA NO.	TENANT NAME	KISSAM	AREA (IN Ha.)	CATEGORY OF LAND	REMARKS
1	KENSARA	94	10	A.A.A	PAHAD	0.77	NAGARIA PRF	DISTRICT-SUNDARGARH
2	KENSARA	95	10	A.A.A	PAHAD	2.90	NAGARIA PRF/SARKUN DA PRF	DISTRICT-SUNDARGARH
3	KENSARA	97	10	A.A.A	PAHAD	4.55	SARKUNDA PRF	DISTRICT-SUNDARGARH
4	KENSARA	98	10	A.A.A	PAHAD	2.56	NAGARIA PRF/SARKUN DA PRF	DISTRICT-SUNDARGARH
5	KENSARA	99	10	A.A.A	PAHAD	2.82	NAGARIA PRF	DISTRICT-SUNDARGARH
6	KENSARA	100	10	A.A.A	PAHAD	1.80	NAGARIA PRF/SARKUN DA PRF	DISTRICT-SUNDARGARH
7	KENSARA	101	10	A.A.A	PAHAD	5.32	NAGARIA PRF/SARKUN DA PRF	DISTRICT-SUNDARGARH
8	KENSARA	102	10	A.A.A	PAHAD	2.92	NAGARIA PRF	DISTRICT-SUNDARGARH
9	KENSARA	45	10	A.A.A	PAHAD	2.61	NAGARIA PRF	DISTRICT-SUNDARGARH
10	BATAGAO N	19	11	A.A.A	PAHAD	0.31	NAGARIA PRF	DISTRICT-SUNDARGARH
11	BATAGAO N	20	11	A.A.A	PAHAD	5.88	NAGARIA PRF	DISTRICT-SUNDARGARH

SL. NO	VILLAGE	PLOT NO.	KHATA NO.	TENANT NAME	KISSAM	AREA (IN Ha.)	CATEGORY OF LAND	REMARKS
12	BATAGAON	21	11	A.A.A	PAHAD	0.43	NAGARIA PRF	DISTRICT-SUNDARGARH
13	BATAGAON	18	11	A.A.A	PAHAD	2.92	NAGARIA PRF	DISTRICT-SUNDARGARH
14	BATAGAON	17	11	A.A.A	PAHAD	3.09	NAGARIA PRF	DISTRICT-SUNDARGARH
15	BATAGAON	23	11	A.A.A	PAHAD	3.46	NAGARIA PRF	DISTRICT-SUNDARGARH
16	BATAGAON	13	11	A.A.A	PAHAD	1.18	NAGARIA PRF	DISTRICT-SUNDARGARH
17	BATAGAON	24	11	A.A.A	PAHAD	0.30	NAGARIA PRF	DISTRICT-SUNDARGARH
18	BATAGAON	35	11	A.A.A	PAHAD	1.95	NAGARIA PRF	DISTRICT-SUNDARGARH
19	BATAGAON	36	11	A.A.A	PAHAD	4.29	NAGARIA PRF	DISTRICT-SUNDARGARH
20	BATAGAON	50	11	A.A.A	PAHAD	4.49	NAGARIA PRF	DISTRICT-SUNDARGARH
21	KADAKALA	3	42	RAKHIT	GRAMY A JUNGL E	1.46	REV.FOREST	DISTRICT-KEONJHAR

22	KADAKALA	46	42	RAKHIT	GRAMY A JUNGL E	3.50	REV.FOREST	DISTRICT- KEONJHAR
23	KADAKALA	45	42	RAKHIT	GRAMY A JUNGL E	5.99	REV.FOREST	DISTRICT- KEONJHAR
24	KADAKALA	44	42	RAKHIT	GRAMY A JUNGL E	0.15	REV.FOREST	DISTRICT- KEONJHAR
25	KADAKALA	29	42	RAKHIT	GRAMY A JUNGL E	7.00	REV.FOREST	DISTRICT- KEONJHAR
26	KADAKALA	71	45	A.A.A	HUDI	0.73	NON- FOREST	DISTRICT- KEONJHAR
27	KADAKALA	27	45	A.A.A	HUDI	4.41	NON- FOREST	DISTRICT- KEONJHAR
28	KADAKALA	72	45	A.A.A	HUDI	2.72	NON- FOREST	DISTRICT- KEONJHAR
					TOTAL	80.51		

Forest plots and Non-forest Government lands of Kensara, Batagaon village in Sundargarh District and Kadakala village of Keonjhar District have been selected for gap plantation (canopy density is < 0.4). Location of the plots is shown in the map annexed to this scheme.

13. SELECTION OF SITE FOR GAP PLANTING

The above degraded land is situated in the outer perimeter of the mining lease of Jumka Pathriposhi Pahar Iron Ore Block in Sundargarh & Keonjhar District of Orissa by M/s Rungta Mines Ltd., under Bonai and Keonjhar Forest division. The proposed sites measure 80.51 ha. in Kensara, Batagaon and Kadakala village. The topography of the site is sloppy in nature. The soil is mostly sandy loam at patches and depth of the soil is of limited extent. Location of the plots is shown in the map annexed to this scheme.

14. DESCRIPTION OF THE EXISTING VEGETATION

The proposed site for gap plantation has dense growth of weeds like Eupatorium & Lantana etc. The available growth is degraded due to biotic pressure like loping, grazing and fire wood collection.

Choice of species:

As far as possible, care shall be taken to select indigenous species for plantation which are associates of local species.

The list of species to be adopted for the plantation is as follows:

1	Amla	<i>Emblica officinalis</i>
2	Bamboo	<i>Dendrocalamus strictus</i>
3	Karanja	<i>Pongamia pinnata</i>
4	Asan	<i>Terminalia tomentosa</i>
5	Sisoo	<i>Dalbergia sisoo</i>
6	Gambhar	<i>Gmelina arborea</i>
7	Neem	<i>Azadirachta indica</i>
8	Harida	<i>Terminalia chebula</i>
9	Bahada	<i>Terminalia bellerica</i>
10	Kasi	<i>Bridelia retusa</i>

15. RAISING OF NURSERY

Seedlings required for the plantation shall be raised in the nursery of Jumka Pathriposhi Pahar Iron ore Block. The Nursery should have a capacity of raising adequate seedlings. Nursery works will be undertaken in consultation with D.F.O., Bonai & Keonjhar Division. All the infrastructures shall be provided by M/s Rungta Mines Ltd. Work will be started one year before the year of plantation so that two year old seedlings will be available for plantation. 20% extra seedlings shall be raised to compensate and mitigate the eventuality of seedling casualty in the nursery. Standard nursery practices shall be followed for raising of seedlings in polythene bags.

16. ALIGNMENT AND STACKING

Alignment, stacking 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 2.5 mt x 2.5 mt @ 500 plants per hectare.

17. PLANTING

The seedlings will be planted in dug out pits of 30 cm³ maintaining a spacing of 2.5 mt between the pits @ 500 seedlings per hectare. Plantation should be taken up after first regular shower of monsoon and should be completed by end of August. NPK/DAP fertilizer @ 50 gms per plant should be given as basal dose. Anti- termite and insecticide like @ 5 gms. per plant should be applied per pit. Foreign earth shall be provided in each pit to enrich the growth of seedlings within a marked period. Casualty replacement when required during the planting year and in the second year should be undertaken for which the seedlings shall be raised.

18. **WEEDING, SOIL WORKING AND MANURING**

For establishment and better growth of the planted seedlings, weeding, soil working and manuring are necessary. It is proposed to carry out two weeding, soil working and manuring added with vermin compost @ 200 gm/plant during the first year and second year of plantation. Weeding and manuring for the first and second year shall be carried out during September – October Urea 70 gm & NPK 50 gm and the second one during September-October along with soil working during which 70gms of vermi compost shall be added to the soil per plant. First weeding shall be for entire area weeding and the second weeding should be strip weeding. The weeding and of third year will be for entire area weeding which shall be carried out during August.

19. **APPLICATION OF INSECTICIDES**

The plantation site after planting with good seedlings may in course of time get infested with diseases owing to influx of insects and pests into the area which usually cause heavy damage to the soft, tender and avidly growing parts of the plant that affects the rate of growth and sometimes causes wide spread casualty of the seedlings. To avoid such incidences, foliar spray and ground application of insecticides at regular intervals usually on a sunny day in the fore noon shall be done.

20. **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 block 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 for the first three years.

The detailed cost estimate of various operations to be taken up in ANR plantation has been furnished in Annexure-I.

21. **POINTS OF IMPORTANCE**

While taking up plantation, the following vital points shall be taken up for consideration:

- All care will be taken to raise healthy seedlings of minimum 2' height and 20% extra of the required stock shall be raised. 1 year old seedlings shall be used in case of Asan, Arjun, Phasi, Neem, Harida, Bahada, Kasi etc. However, in case of Sisoo, Gambhar, Chakunda etc 18 months old seedlings can be used. Pitting shall be invariably done during February – April, i.e before onset of monsoon. In hilly areas, pits shall be dug along the contours. Planting shall be done on the onset of monsoon and should not be delayed. The gradient of the site is 1:10 which is considered as level ground with slight undulating at places.

- Basal dose of 30 grams of NPK and 5 grams of Aldrin be applied at the time of planting. Casualty replacement, weeding and soil working, application of fertilizer and insecticides shall be taken up as per the provisions in the cost- norm at the proper time. Watchers shall be engaged who shall also take up tracing of inspection path and fire line and maintenance of fence in addition watch and ward duty.
- All out efforts shall be taken to keep the plantation free from grazing, fire and other biotic interference.

22. SOIL CONSERVATION MEASURES

The sites selected for restocking and rejuvenation by afforestation are degraded forest lands and the slope of the identified area varies from steep to moderate with undulating topography and gullies are formed due to heavy erosion. Therefore, soil conservation measure is indispensable and is to be appropriately designed. Taking into consideration the degradation of the area due to soil erosion, it has been proposed to take up Soil Conservation Measures by construction of **Loose Boulder Check Dam (LBCD)** such as contour bunds, check dams over the area 35 nos. 2mt span 40 nos. 3mt span.

The details of estimate of different size of Loose Boulder Structure are given in **Annexure-II& III.**

23. 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 1st 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-IV.**

24. WATCH AND WARD

To protect the area against grazing, fire accident and other biotic interference it is proposed in the cost estimate for ANR Plantation to engage watchers for ten years from the year of plantation.

25. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e. Batagaon and Kensarain of Bonai Division and village Kadakala of Keonjhar 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, 15% of the plantation cost has been earmarked for expenditure on this score.

26. EXECUTING AGENCY

All the works under this 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 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.

SPECIALISED CELL

Sl. No.	Name	Educational Qualification	Designation	Expertise
1	Shri D.K. Parida	Mining Engineer	CGM (Mining)	20 Years experience in Mining operation projects
2	ShriJayanta Das	Surveyor	A.V.P (Survey)	30 Year's experience in mining Survey
3	ShriG.K.Pujari	M.Sc.,M.Phil.	G.M (Env.)	23 Years experience with Pollution control & Environmental Management
4	Shri Soujatya Sarangi	M.Sc Applied Geology	Manager (Geology)	14 Years' experience in Mining Geology and Exploration field.

27. INSPECTION, MONITORING AND 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.

28. REQUIREMENT OF FUNDS

The total cost of the implementation of proposed scheme will be Rs.2,64,48,000/- (Rupees Two Crore Sixty Four Lakh Forty Eight Thousand) 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.352.00

1.	ANR Plantation with 500 seedling per Ha. over 80.51 ha. @Rs.1,50,051/- per ha.	1,20,80,606.00
2.	Soil Conservation measures a) Loose boulder structure 2 mt. size 35 nos. @ Rs.12527/- b) Loose boulder structure 3mt. size 40 nos. @ Rs.26275/-	4,38,445.00 10,51,000.00
3.	Excavation of staggered trench over 80.51 ha. @ Rs.69,495/- per Ha.	55,95,042.00
	Total :-	1,91,65,093.00
4.	15% of the total cost for motivation of VSS / People involved.	28,74,764.00
	Total :-	2,20,39,857.00
5.	Add 20% escalation	44,07,971.00
	Grand Total :-	2,64,47,828.00
		Or, 2,64,48,000.00

(Rs. Two Crore Sixty Four Lakh Forty Eight Thousand) only

M/s Rungta Mines Ltd. do hereby undertake to execute the item of works mentioned in this scheme in a phased manner at the project cost.

Rungta Mines Ltd.

Hemachand
Director

Technically Approved
[Signature]

Regional Chief Conservator of Forests
Rourkela Circle

Countersigned

COUNTERSIGNED

[Signature]
Divisional Forest Officer
Divisional Forest Officer
Bonai Division

ANNEXURE-7

Base Cost Norms for Compensatory Afforestation through Aided Natural Regeneration (ANR) @ 500 Seedlings/Ha.

WAGE RATE Rs- 311/- PER MANDAY

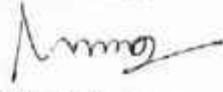
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
0th Year (Advance work) Pre-Planting Operation						
1	Survey, Demarcation and Pillar posting	Nov/Dec	2	622	0	622
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311	100	411
3	Site preparation	Nov/Dec	2	622	0	622
4	Agricultural operations including clearance of weed, cutting of climber, High stump cutting, singling of shoots & removal of cut out after drying from the field to clear space.	Jan/Feb	18	5665	0	5665
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
1st Year/Planting Year						
1	Refilling of pits by altering the deposit soil of the pits, applications of organic manure/compost/ CIM/ FYM & mixing the same perfectly.	June/Jul	4	1244	2500	3744
2	Transportation of 18 months old polythene bag seedlings in hired truck/tractor from the permanent/Mega nursery to planting site including Loading & unloading. [Average load of 20 bags] & Stacking the seedling @ 100/seedling. (250 nos.)	Jul/Aug	8	0	3300	3300
3	Watering polythene bag seedlings at stacking site of plantation.	Jul/Aug	1	311	0	311
4	Conveyance of polythene bag seedlings on hired load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer & planting after raking the soil with other applied material and pressing the soil perfectly around the planted seedling.	Jul/Aug	11	3421	0	3421
5	Cost of Fertilizer & Insecticide (a) NPK/ Bio-fertilizer @ 50 gms/plant as hired load @ 20kg @ Rs.20/- per kg = Rs. 750/- (b) Urea/Verdecompost/Mo-Chat+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	Canally Replacement @ 10% (50 nos.)	Jul/Aug	1.5	466.5	0.0	466.5
7	1st weeding & Mounding	Aug/Sept	5	1555	0	1555

Sl. No.	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
8	2nd Weeding, Soil working (1st. diam. around the plants) & Manuring	Oct/Nov	0	2400	0	2400
9	Fire line tracing & inspection path	Feb/Mar	3	933	0	933
10	Watch & Ward including watering as per requirement	Apr/May	0	2400	0	2400
Total			41.5	12906.5	7300.0	20216.5
2nd Year Maintenance						
1	Transportation of 50 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling	Jul	0.0	0.0	300.0	300.0
2	Causality replacement	Jul	1.5	465.0	0.0	465.0
3	Cost of Fertilizer & Insecticide: A) Cost of Insecticide/ Bio-pesticide (Thimotho/ Forato) @ 5 gms/plant = 25 Kg @ Rs. 150/- per kg = Rs.37.50 B) Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizers Rs. 1400/-	July/Aug	0	0	1437.5	1437.5
4	Weeding (Complete weeding), Manuring & Soil working (1st. diameter around the plants)	Sept/Oct	0	2400	0	2400
5	Fire line tracing (2 m. wide fire line) & inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr/May	12	3732	0	3732
Total			24.5	7619.5	1737.5	9357
3rd Year Maintenance						
3	Cost of Fertilizer Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizers Rs. 1400/-	July/Aug	0	0	1400.0	1400.0
4	Weeding (Complete weeding), Manuring & Soil working (1st. diameter around the plants)	Sept/Oct	0	2400	0	2400
5	Fire line tracing (2 m. wide fire line) & inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr/May	12	3732	0	3732
Total			23.0	7153.0	1400.0	8553.0
4th Year Maintenance						
1	Fire line tracing (2 m. wide fire line) & inspection path	Feb/Mar	3	933	0	933
2	Watch & Ward including watering as per requirement	Apr/May	12	3732	0	3732
Total			15.0	4665.0	0	4665
5th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3.0	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/May	12	3732.00	0	3732
Total			15.0	4665.0	0	4665
6th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/May	12	3732.00	0	3732
Total			15.0	4665.0	0.0	4665.0
7th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/May	12	3732.00	0	3732
Total			15.0	4665.0	0.0	4665.0
8th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length) & cultural operation	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/May	12	3732.00	0	3732
Total			15.0	4665.0	0.0	4665.0
9th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/May	12	3732.00	0	3732
Total			15.0	4665.0	0.0	4665.0
10th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/May	12	3732.00	0	3732
Total			15.0	4665.0	0.0	4665.0
Year wise Abstract of Cost Norm (showing seedling cost separately)						

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Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)	
Sl. No	Year	No. person days	Labour cost at Rs. 211/- per day (Rs)	Material Cost	Monitoring, Evaluation, Learning, Documentation and Other Contingency (5% of 4,5)	Cost of Seedlings @Rs. 20.22 per seedling	TOTAL COST
1	2	3	4	5	6	7	8
1	0th year						
2	1st year	41	12251.0	100.0	509.00	0.00	13400.00
3	2nd year	41.5	12706.5	200.0	993.50	27671.00	40801.00
4	3rd year	24.5	7610.5	1237.5	443.00	2616.00	12316.00
5	4th year	23.0	7153.0	1400.0	347.00	0.00	8900.00
6	5th year	15	4665.0	0.0	145.00	0.00	4810.00
7	6th year	15	4665.0	0.0	125.00	0.00	4790.00
8	7th year	15	4665.0	0.0	135.00	0.00	4800.00
9	8th year	15	4665.0	0.0	125.00	0.00	4790.00
10	9th year	15	4665.0	0.0	125.00	0.00	4790.00
11	10th year	15	4665.0	0.0	125.00	0.00	4790.00
		13	4080.0	0.0	125.00	0.00	4205.00
	Total:	235.0	73085.0	10547.5	3277.5	30107	117007.00

- Notes:
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 protected in plantation.
 3. Site specific soil conservation work like LDC, Gully Plugging, Moppered French, Gabion French, Graded Bank etc. may be taken up.
 4. Chain link fencing can be adopted in the CA plantation taken up outside the forest area and Bandha range fencing may be preferred in CA plantations.
 5. Watering facilities for preservation of water & watering to be adopted as per the availability of water.
 6. The Cost Norm of various items can be changed with the approval of the concerned BEES keeping the overall cost norm fixed for each financial year.


 APCCF (Forest Division & NO, FC Act)

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

Wage rate @ Rs.352.00

Ht. = 0.6 mtr

Slope- U/S :- 1:1.5

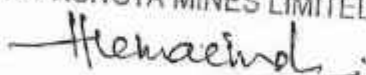
D/S slope :- 1:2

Span - 2 mtr.

Leveling the un-shape surface of the selected site & layout the structure foundation L.S. 1 MD.			352.00
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- $1 \times 3.70 \times 3.00 \times 0.30 =$	3.33		
Wing wall- $4 \times 0.50 \times 0.50 \times 0.30 =$	0.30	3.63cum	
@ Rs.15745.64 per 100 cum.			571.56
Rough stone dry packing			
up to GL			
Base with apron- $1 \times 3.70 \times 3.00 \times 0.30 =$	3.33		
Wing wall- $4 \times 0.50 \times 0.50 \times 0.30 =$	0.30		
Above GL			
Super structure $1 \times 2.00 \times 2.70 + 0.60 \times 0.60 =$	1.980		
-----2			
Wing wall- $4 \times 0.50 \times 0.50 \times 0.50 =$	0.50		
Side wall-			
i. $2 \times 0.50 + 1.10 \times 0.9 \times 0.5 =$	0.72		
-----2			
ii. $2 \times 0.5 + 1.10 \times 1.2 \times 0.5 =$	0.96		
-----2			
iii. $2 \times 0.6 \times 0.6 \times 0.5 =$	0.36		
iv. $2 \times 1.0 \times 0.5 \times 0.5 =$	0.50		
@ Rs.1341.44 per cum		8.65 cum	11603.45
			12527.01
			Or
			12527.00
			G. Total:-

(Rupees Twelve Thousand Five hundred Twenty Seven) only

For RUNGTA MINES LIMITED



Director

Annexure -III

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

Wage rate @ Rs.352.00

Ht. = 1.0 mtr

Slope- U/S :- 1:1.5

D/S slope :- 1:2.0

Span - 3 mtr.

Leveling the unshaped surface of the selected site & layout the structure foundation L.S. 1 MD.				352.00
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- $1 \times 5.10 \times 4.00 \times 0.30 =$	6.12			
Wing wall- $4 \times 0.50 \times 0.50 \times 0.30 =$	0.30	6.42 cum		
@ Rs.15769.92 per 100 cum.				
Rough stone dry packing				1012.42
up to GL				
Base with apron- $1 \times 5.10 \times 4.00 \times 0.30 =$	6.12			
Wing wall- $4 \times 0.50 \times 0.50 \times 0.30 =$	0.30			
Above GL				
Super structure - $1 \times \frac{4.10 + 0.60}{2} \times 1.00 \times 3.0 =$	7.05			
Wing wall- $4 \times 0.50 \times 0.50 \times 0.50 =$	0.50			
Side wall-				
i. $2 \times \frac{0.50 + 1.50}{2} \times 1.5 \times 0.5 =$	1.50			
ii. $2 \times \frac{0.5 + 1.50}{2} \times 2.0 \times 0.5 =$	2.0			
iii. $2 \times 0.6 \times 1.0 \times 0.5 =$	0.60			
iv. $2 \times 1.0 \times 0.5 \times 0.5 =$	0.50			
@ Rs.1341.44per cum		18.57 cum		
				24910.54
G.Total:-				26274.96 or, 26275.00

(Rupees Twenty Six thousand Two hundred Seventy Five) only

For RUNGTA MINES LIMITED

Hemachand
Director

Annexure-IV

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.352.00

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		
	@ 695.18 per 2.83 cum		
		Rs.	122.82
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.51.72/- per plants on LS		
		Rs.	155.16
	Total :-	Rs.	277.98

Cost of 250 nos. of staggered trenches covering one Ha. = 250 x 277.98 = Rs.69,495.00

For RUNGTA MINES LIMITED

Hemaendra
Director

14/12/23

AGENCY COPY

यूनियन बैंक Union Bank
of India

NEFT / RTGS CHALLAN for CAMPA Funds
Date : 13-12-2023

Agency Name.	RUNGTA MINES LTD
Application No.	58150048663
MoEF/SG File No.	8-08/2023-FC
Location.	ORRISA
Address.	Rungta Office, Main Road, At/PO: Barbil, Odisha/Keonjhar
Amount(in Rs)	225525583/-

Amount in Words : Twenty-Two Crore Fifty-Five Lakh Twenty-Five Thousand Five Hundred and Eighty-Three Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0986335
Pay to Account No.	1508258150048663 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

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of India

NEFT / RTGS CHALLAN for CAMPA Funds
Date : 13-12-2023

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For RUNGTA MINES LIMITED



(Authorized Signatory)

UTR - CNRBS2023121469610872



DOH - 21/12/23

AGENCY COPY

यूनियन बैंक Union Bank of India

NEFT / RTGS CHALLAN for CAMPA Funds
Date : 19-12-2023

Agency Name.	RUNGTA MINES LTD
Application No.	58150048503
MoEF/SG File No.	8-08/2023-FC
Location.	ORRISA
Address.	Rungta Office, Main Road, A/PO: Barbil, OdishaKeonjhar
Amount(in Ra)	12119846/-

Amount in Words :One Crore Twenty-One Lakh Nineteen Thousand Eight Hundred and Forty-Six Rupees Only.

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	1508258150048503 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 : 19-12-2023

Agency Name.	RUNGTA MINES LTD
Application No.	58150048503
MoEF/SG File No.	8-08/2023-FC
Location.	ORRISA
Address:	Rungta Office, Main Road, A/PO: Barbil, Odisha Keonjhar
Amount(in Rs)	12119846/-

Amount in Words :One Crore Twenty-One Lakh Nineteen Thousand Eight Hundred and Forty-Six Rupees Only.

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	1508258150048503 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

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For FUNGTA MINES LIMITED

[Signature]

[Signature]
(Authorized Signatory)

UTR- CNRBR52023122170107374



AGENCY COPY

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of India



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 26-12-2023

Agency Name.	RUNGTA MINES LTD
Application No.	58150048601
MoEF/SG File No.	8-08/2023-FC
Location.	ORRISA
Address.	Rungta Office, Main Road, A/PO: Barbil, OdishaKeonjhar
Amount(in Rs)	877892/-

Amount In Words : Eight Lakh Seventy-Seven Thousand Eight Hundred and Ninety-Two Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	1508258150048601 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

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of India



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 26-12-2023

Agency Name.	RUNGTA MINES LTD
Application No.	58150048601
MoEF/SG File No.	8-08/2023-FC
Location.	ORRISA
Address:	Rungta Office, Main Road, A/PO: Barbil, Odisha Keonjhar
Amount(in Rs)	877892/-

Amount In Words : Eight Lakh Seventy-Seven Thousand Eight Hundred and Ninety-Two Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	1508258150048601 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

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RUNGTA MINES LIMITED

[Signature]
Secretary

[Signature]
(Authorised Signatory)

UTR- CNRBR52023122770446315



GOVERNMENT OF ODISHA
FOREST, ENVIRONMENT & CLIMATE CHANGE DEPARTMENT

No.FE-DIV-MISC-0036-2021- 1183 /FE&CC,

Date 19.01.24

From

Shri Lingaraj Otta

OSD-cum-Special Secretary to Government

To

The Principal Chief Conservator of Forests (Wildlife) & Chief Wildlife Warden,
Odisha, Bhubaneswar.

Sub: Revision of cost norm of Regional Wildlife Management Plan for the entire Mining Lease area for implementation of effective mitigative measures to address adverse impact on wildlife & their habitat as well as Human-Wildlife Interface at regional level-regd.

Sir,

With reference to the proposal submitted vide your File No. CWLW-FDWC-MISC-0030-2021 on the captioned subject, I am directed to intimate that after careful consideration of your proposal, the Government in Forest, Environment & Climate Change Department have been pleased to revise the cost norm of Regional Wildlife Management Plan @ Rs.1,03,100/- per hectare for the entire Mining Lease area for implementation of effective mitigative measures to address adverse impact on wildlife & their habitat as well as Human-Wildlife Interface at regional level.

This is for favour of kind information and necessary action.

Yours faithfully,

19.01.2024

OSD-cum-Special Secretary to Government

Memo No. 1184 /FE&CC, Date 19.01.24

Copy forwarded to the PCCF & HoFF, Odisha, Bhubaneswar for kind information and necessary action.

19.01.2024

OSD-cum-Special Secretary to Government



AGENCY COPY

यूनियन बैंक Union Bank

NEFT / RTGS CHALLAN for CAMPA Funds

Date : 05-05-2024

Agency Name.	RUNGTA MINES LTD
Application No.	58150048639
MoEF/SG File No.	8-08/2023-FC
Location.	ORRISA
Address.	Rungta Office, Main Road, A/PO: Barbil, Odisha/Keonjhar
Amount(in Rs)	90444000/-

Amount in Words: Nine Crore Four Lakh Forty-Four Thousand Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	1508258150048639 <small>Valid only for this challan amount.</small>
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

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NEFT / RTGS CHALLAN for CAMPA Funds

Date : 05-05-2024

Agency Name.	RUNGTA MINES LTD
Application No.	58150048639
MoEF/SG File No.	8-08/2023-FC
Location.	ORRISA
Address:	Rungta Office, Main Road, A/PO: Barbil, Odisha Keonjhar
Amount(in Rs)	90444000/-

Amount in Words: Nine Crore Four Lakh Forty-Four Thousand Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	1508258150048639 <small>Valid only for this challan amount.</small>
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jelita Towers, Mission Road, Bengaluru-560027

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Handwritten signature

1508258150048639

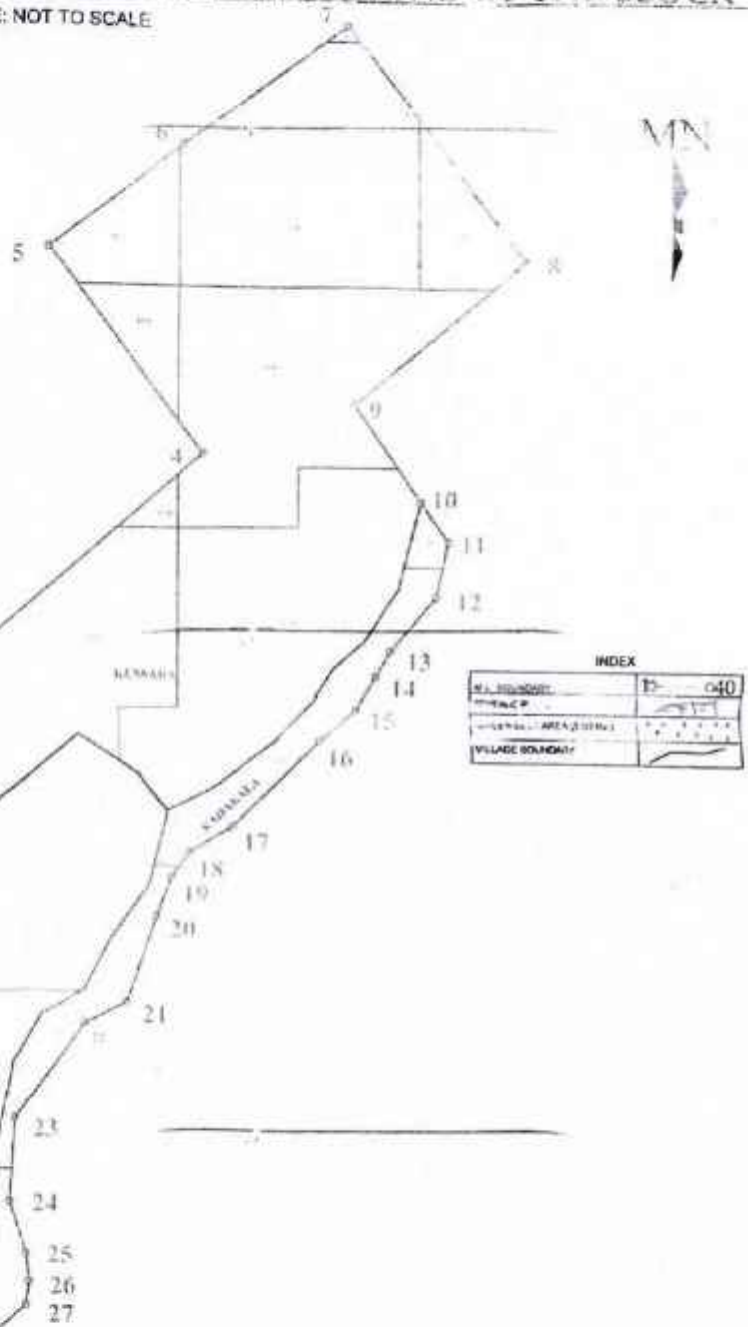


MAP OF JUMKA PATHIRIPOSHI PAHAR IRON ORE BLOCK SHOWING THE PROPOSED 5.00 Ha. AREA FOR GREEN BELT AT THE SOUTH END OF THE BLOCK

SCALE: NOT TO SCALE

PILLAR CO-ORDINATES OF 5.00 Ha. AREA (100 M STRIP) TO BE MAINTAINED AS GREEN BELT FOR SHELTER IN JUMKA-PATHIRIPOSHI PAHAR IRON ORE BLOCK AS PER CONDITION NO. 8 OF STAGE-I FOREST CLEARANCE.

SL NO	Easting	Northing
P-1	314311.837	2411134.329
P-2	314393.500	2411203.000
P-3	314499.249	2411038.373
P-4	314627.915	2411077.782
P-5	314705.542	2411050.993
P-6	314746.000	2411053.500
P-7	314733.031	2410949.459
P-8	314686.302	2410951.846
P-9	314626.252	2410972.570
P-10	314545.985	2410947.680
P-11	314473.643	2410927.178
P-12	314447.320	2410937.432



INDEX

W. BOUNDARY	---
ROAD	---
GENERAL AREA BOUNDARY	---
VILLAGE BOUNDARY	---

LAND SCHEDULE OF THE PROPOSED GREEN BELT OVER 5.00HA. IN JUMKA-PATHIRIPOSHI PAHAR IRON ORE BLOCK OVER AREA OF 158.509 HA. OF M/S RUNGTA MINES LTD.

SL. NO.	DISTRICT	VILLAGE	PLOT NO.	KHATA NO.	NAME OF THE TENANTS	KISSAN IN HAL	AREA UNDER PROPOSED GREEN BELT	REMARKS
1			23/P	11	A.A.A	Pahad	0.900	PRF
2	SUNDARGARH	Gatagon	35/P	11	A.A.A	Pahad	0.421	PRF
3			36/P	11	A.A.A	Pahad	3.679	PRF
TOTAL AREA							5.000	

COUNTERSIGNED

 DIVISIONAL FOREST OFFICER
 RONA DIVISION

For Forest Range Officer
 Barsuan Range

For RUNGTA MINES LIMITED

 Director

BOUNDARY PILLAR CO-ORDINATES & PILLAR TO PILLAR DISTANCE OF THE
JHUMKA-PATRIPOSHI IRON ORE BLOCK OVER 391.685 ACRES OR 158.509 HECTS.
UNDER LAHUNIPARA TAHASIL OF SUNDARGARH DISTRICT.

PILLAR NO	PILLAR TO PILLAR	LONGITUDE	LATITUDE	DISTANCE IN (METERS)
1	ML-1 TO ML-2	85°12'13.87352"	21°47'39.29591"	1322.786
2	ML-2 TO ML-3	85°12'48.88379"	21°48'07.23287"	237.622
3	ML-3 TO ML-4	85°12'43.45020"	21°48'13.05824"	867.921
4	ML-4 TO ML-5	85°13'06.29391"	21°48'31.52860"	433.513
5	ML-5 TO ML-6	85°12'56.91209"	21°48'42.56911"	287.278
6	ML-6 TO ML-7	85°13'04.93242"	21°48'48.14961"	345.372
7	ML-7 TO ML-8	85°13'14.61025"	21°48'54.81396"	491.289
8	ML-8 TO ML-9	85°13'25.32167"	21°48'42.36089"	381.348
9	ML-9 TO ML-10	85°13'15.20689"	21°48'34.32949"	199.064
10	ML-10 TO ML-11	85°13'19.33079"	21°48'29.12803"	80.576
28	ML-28 TO ML-29	85°12'44.94140"	21°47'35.13124"	84.29
29	ML-29 TO ML-30	85°12'42.00714"	21°47'35.12409"	63.903
30	ML-30 TO ML-31	85°12'39.93416"	21°47'34.37028"	111.331
31	ML-31 TO ML-32	85°12'36.08800"	21°47'34.81571"	81.129
32	ML-32 TO ML-33	85°12'33.31259"	21°47'34.32745"	41.205
33	ML-33 TO ML-34	85°12'31.93346"	21°47'33.95911"	53.566
34	ML-34 TO ML-35	85°12'30.12602"	21°47'33.53081"	43.634
35	ML-35 TO ML-36	85°12'28.60983"	21°47'33.44514"	46.79
36	ML-36 TO ML-37	85°12'26.98228"	21°47'33.50511"	63.526
37	ML-37 TO ML-38	85°12'24.88359"	21°47'34.15613"	84.038
38	ML-38 TO ML-39	85°12'22.09962"	21°47'33.31665"	75.191
39	ML-39 TO ML-40	85°12'19.58977"	21°47'32.62280"	28.25
40	ML-40 TO ML-41	85°12'18.66933"	21°47'32.94620"	239.006


 Forest Range Officer
 Barwan Range



Scheme

For

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

in compliance

with

Condition No.11 (a) of

Stage-I approval granted vide

Letter No.8-08/2023-FC dt.28.11.2023 of

Government of India, Ministry of Environment,

Forest & Climate Change

for

Diversion of 156.978 Hects of Forest Land

(147.803 ha. in Bonai Division & 9.175 ha. in Keonjhar Division)

U/s-2 (ii) of F.C. Act'1980

within 158.509 Ha. Jumka Pathiriposhi Pahar Iron Ore Block

of

M/s Rungta Mines Ltd.

**in village Batagaon and Kensara in Lahunipara Tahsil, Bonai Forest
Division and village Kadakala of Keonjhar Forest Division**

Dist.Sundargarh and Keonjhar

Odisha.

MITIGATIVE MEASURES TO MINIMIZE SOIL EROSION AND CHOKING OF STREAMS

1. INTRODUCTION

Government of Odisha, pursuant to the Mines and Minerals (Development and Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 as amended from time to time, issued the notice inviting tender dated 07.07.2021 to commence the auction process for grant of mining lease for Jumka Pathiriposhi Pahar Iron Ore Block over an area of 158.509 Ha. for Iron Ore located in Koira Mining Circle, District-Sundargarh, Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block on 24.09.2021 and Rungta Mines Ltd. was declared as the 'Preferred Bidder' under Rule 9(9)(iii) or Rule 10 (1A) of Auction Rules, having quoted highest Final Price Offer vide letter No.MXIII(b) 46/2021/7738/DM Dated 05.10.2021 issued by Director of Mines, Government of Odisha.

Accordingly, pursuant to Rule 10(2) of the Auction Rules and the terms of the Tender Document, the Government of Odisha was pleased to issue Letter of Intent (LOI) bearing No.IV(B)SM-49/2021/8716/SM, Bhubaneswar dated 28.10.2021 for grant of Mining Lease for Jumka Pathiriposhi Pahar Iron Ore Block for Iron ore located at a distance of 20 km south of Koira Town in Batagaon & Kensara village of Lahunipara Tahasil Sundargarh District and Kadakala village of Keonjhar District for 158.509 Ha. area to Rungta Mines Ltd. for a period of 50 (Fifty) years. Accordingly, M/s Rungta Mines Ltd. had submitted the proposal to obtain approval of the Central Govt. over 156.978 hectare of forest land included within the mining lease U/s-2 (ii) of the Forest (Conservation) Act'1980.

Now, the Stage-I approval over 156.978 ha. of Forest Land U/s-2 (ii) of F.C. Act'1980 has been granted by MoEF&CC, Govt. of India vide Letter No.8-08/2023-FC dt.28.11.2023, wherein it has been stipulated as per **Condition No.11(a) for preparation and implementation of a plan containing appropriate mitigative measures to minimise soil erosion and choking of streams.**

2. LOCATION

Jumka Pathiriposhi Pahar Iron ore Block of M/s Rungta Mines Ltd. is located in Sundargarh & Keonjhar District of Odisha and can be approached throughout the year by road. It falls within the survey of India Topo sheet No.73 G/1. The total mining lease hold area is 158.509 Ha. The area is located between the Latitudes 21°48'54.81396"N to 21°47'32.62280"N and Longitude 85°13'25.32167"E to 85°12'13.87352"E.

3. TOPOGRAPHY

The area is represented by sloppy area with gentle undulation, resembling a relict type of topography. The highest contour is 1037 meters and the lowest one is of 926 meters. Nagaria PRF and Sarkunda PRF of Bonai forest division comes within the the ML area.

4. SOIL TYPE

Soil type in the study area varies widely from hard rock to lateritic soil & Shale. Areas at higher elevations are usually hard rock consisting of Iron pebbles & laterite. The top soil is scanty in the area. Whatever top soil is available is thinly spread over all Soil profile in nature. The pH of the soil is slightly acidic in nature.

5. CLIMATE

The study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March. Temperature rises rapidly attaining a maximum in the month of May. During the summer maximum temperature can go up to 47.7⁰C. The weather becomes pleasant with onset on monsoon in June and remains as such upto end of October. The temperature in the month of December is lowest, i.e., 7⁰ C. The average annual rainfall as recorded at IMD observatory is 1325.16 mm. Predominant wind direction is South-West. Area remains calm for nearly 50% of the year.

6. DRAINAGE

There are a number of streams flowing to Phulamanali nala which serve the purpose of drainage. There is one seasonal nala namely Barapokhari outside the mining lease which finally join with Phulamianali nala that flows from South-West to South-East. The general elevation difference in the area is 70m. The proposed working area lies at the hill & is well above the water table.

7. EXISTING VEGETATION

The vegetation of the applied area is composed of Sal (*Shorea robusta*), Sidha (*Lagerstroemia parviflora*), Kusum (*Schleichera oleosa*), Bara (*Ficus bengalensis*), Harida (*Terminalia chebula*), Bahada (*Terminalia belerica*), Char (*Buchanania lanjan*), Jamu (*Syzygium cumini*), Asan (*Terminalia tomentosa*), Kendu (*Diospyros melanoxylon*), Kumbhi (*Careya arborea*), Mango (*Mangifera indica*) etc. are major species among flora available in the applied area. **Sal (*Shorea robusta*)** is the pre-dominant species.

8. LAND USE PATTERN

During the life of the mine, about 158.509 hectares will be utilized for mining, Minerals processing, Road, Infrastructure, Mineral stock yard, and green belt plantation in Safety Zone area etc. The details of land use pattern will be as follows:

Sl. No.	Item	Revenue Forest (in ha)	PRF (in ha)	Total Forest (in ha)	Total non-forest (in ha)	Grand Total (in ha)
1.	Mining including Mobile Crushing and Screening Unit, Temporary Stack Yard	7.601	113.739	121.340	0.000	121.340
2.	Dumping of Overburden	0.000	7.301	7.301	0.000	7.301
3.	Mine Road	0.320	7.616	7.936	0.076	8.012
4.	Infrastructure (Temporary Office, Rest Shelter, Workshop, Weigh Bridge etc.)	0.000	1.813	1.813	1.187	3.000
5.	Ore Processing Site.	0.000	3.820	3.820	0.000	3.820
6.	Mineral Stack Yard.	0.000	9.290	9.290	0.000	9.290
	Sub-total :-	7.921	143.579	151.500	1.263	152.763
7.	Safety Zone	1.254	4.224	5.478	0.268	5.746
	Grand Total :-	9.175	147.803	156.978	1.531	158.509

9. FACTORS RESPONSIBLE FOR SOIL EROSION & CHOKING OF STREAMS

The mining activities and overburden dumps are the major source of drainage of soil and other substances for choking of any drainage system existing down below. The forms of erosion observed in this region include mainly rill and gully. The storm water runoffs from the uplands, mine faces and OB dump slope areas carry substantial quantity of solids in the lower order streamlets and choke the higher order streams. These lower order streamlets and gullies 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 highorder 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 down below in the stream bed. The other mode of sediment transportation is very negligible.

10. OBJECTIVES OF THE SCHEME

The objectives are as follows:-

- i) To fulfil Condition No.11(a) of the Stage-I approval granted vide No.8-08/2023-FC dt.28.11.2023 of MoEF& CC to undertake **"Mitigative measure to minimize soil erosion & 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 State Forest Department"**.
- ii) To prevent erosion of top soil.
- iii) To prevent obstruction of existing natural water course.
- iv) Proper Management of overburden deposited so as to prevent siltation in the down below streams.
- v) To prevent overflow of eroded soils from the mining areas to the natural streams.

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. 3 check dams and 4 catch drains 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. There exists one seasonal stream inside the lease area. The slope of the North-western part and central part of the lease hold area is steep in nature. one Rain water harvesting pond has been proposed to collect the rain water flow from mining pits, haul roads as well as areas devoid of vegetation. During monsoon heavy runoff carrying silt and sediments will reduce the velocity of water flow from overburden dump. So, four numbers of Catch drains, 3 nos. of check dam have been proposed, demarcated at suitable location and shown in the attached plan.
- 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.
- 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 exist. It is a fresh mining lease and no mining activities have been taken place so far.

13. MEASURES PROPOSED

The details of proposed mitigative measures to minimize soil erosion and choking of streams in Jumka Pathiriposhi Pahar Iron Ore Block of M/s Rungta Mines Ltd. are given below:

a. Biological Measures

i) Plantation

Soil erosion is moderate since the forest canopy is having density of more than 0.4, 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 over **5.770 ha.** on the surface of the dump. It is also proposed to plant Agave Plants in degraded and poor soils along the slope & toe of plantations over a length of **1200** running meter for controlling soil erosion. Details of proposed plantation & Agave plantation is provided in the map.

The cost norm of Block Plantation and Agave Plantation has been provided in **Annexure –I and II.**

The list of species proposed for plantation is as follows:

Sl. No.	Local Name	Botanical Name	Family
1	Gamhar	<i>Gmelina arborea</i>	<i>Verbenaceae</i>
2	Teak	<i>Tectona grandis</i>	<i>Lamiaceae</i>
3	Mahula	<i>Madhuca indica</i>	<i>Sapotaceae</i>
4	Jamun	<i>Syzygium cumini</i>	<i>Myrtaceae</i>
5	Babul	<i>Acacia nilotica</i>	<i>Leguminoceae</i>
6	Neem	<i>Azadirachta indica</i>	<i>Meliaceae</i>
7	Chhatian	<i>Alstonia scholaris</i>	<i>Apocyanaceae</i>
8	Siris	<i>Albizia lebbeck</i>	<i>Leguminoceae</i>
9	Sissoo	<i>Dalbergia latifolia</i>	<i>Fabaceae</i>
10	Sal	<i>Shorea robusta</i>	<i>Dipterocarpaceae</i>
11	Karanja	<i>Pongamia pinnata</i>	<i>Papilionaceae</i>
12	Asan	<i>Terminalia tomentosa</i>	<i>Combretaceae</i>

Planting shall be done 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. Fruit bearing trees and bamboo rhizomes shall not be planted in close proximity. A minimum distance of 2.5 mt X 2.5 mt shall be maintained on every fourth plants in planting either of the species. Care should be taken to complete the planting during July while rains are still on during first or second week of July.

ii) **Weeding**

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.

iii) **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.

b. **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 has proposed to construct 17 nos. of loose boulder structure of 4m span across the proposedgarland 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 -III**.



Loose Boulder Structures

ii) Plan for Construction of Garland drain

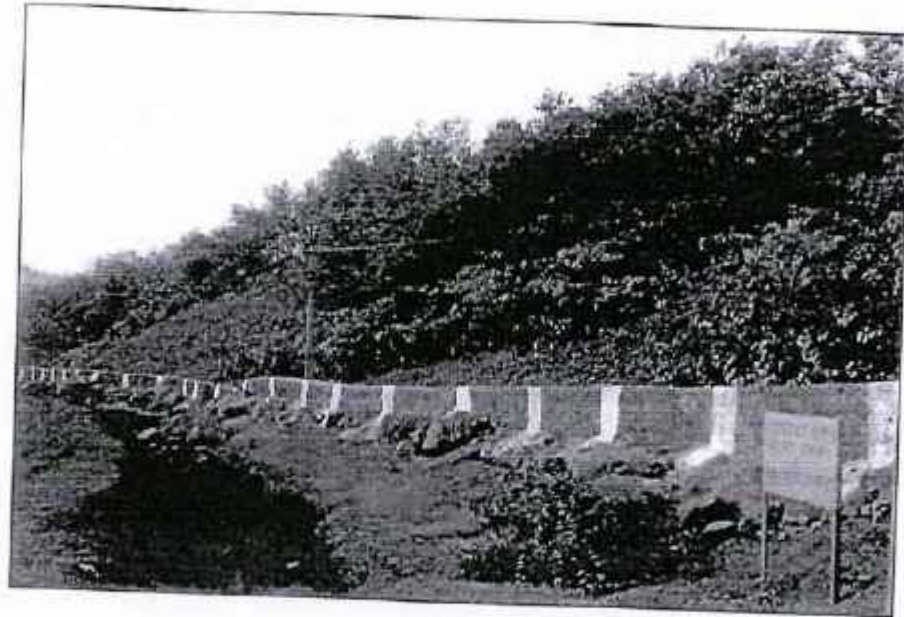
A shallow trench (1.0 m wide x 1.50m deep) will be dug for storage of runoff accumulated for draining surface water before it is released to the agriculture land or natural water course. Details of proposed Garland drain **3427 m** shall be constructed during the ensuing seven years period with location is shown in the map. The cost norm of Garland Drain has been provided in **Annexure –IV**



Garland Drain around Waste Dump

iii) 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 **3427 m**. Also, there is a provision for maintenance of the retaining wall for the next 4 years. The cost norm of Retaining wall has been provided in **Annexure- V**.



Details of Retaining walls

iv) Terracing of OB Dump Slope

It is proposed to construct berm & terraces over a length of **2851 m.** 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-VI**



Terracing of OB Dumps

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

After studying the drainage pattern it has been found total number of check dam required is 3 and accordingly, 3 nos. of Check Dam will be constructed near the rain water harvesting pit. 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 from overburden dumps, haul roads inside the mine and areas cleared of vegetation. The check dam will be constructed near proposed dump area. Details of proposed Check Dams are shown in the map. The cost norm of Check Dam has been provided in **Annexure –VII**



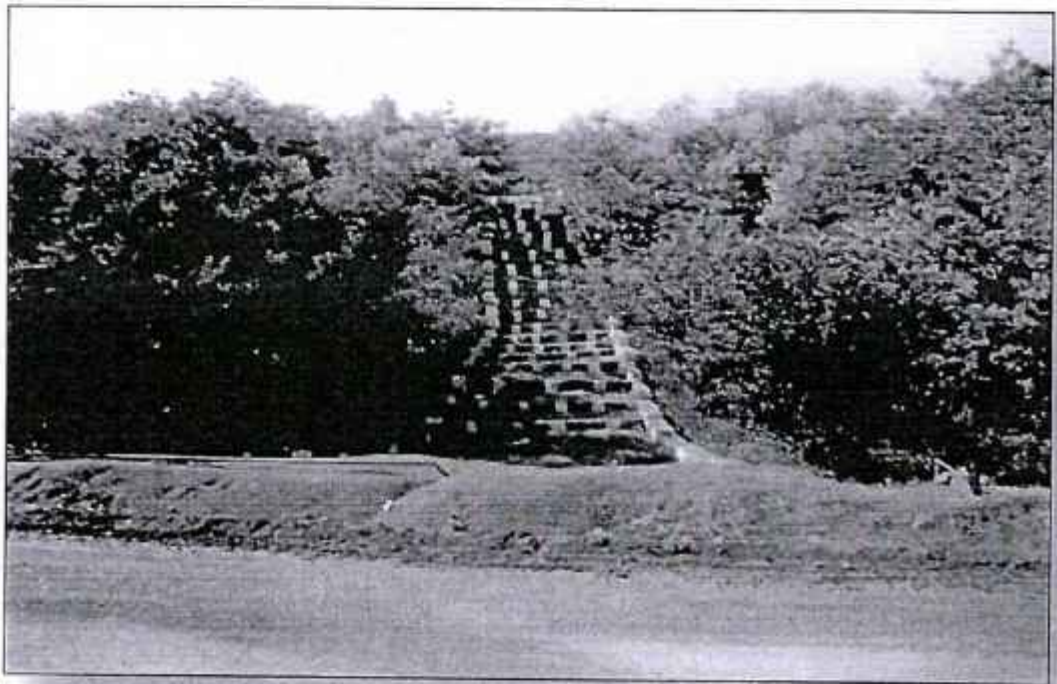
Check Dam to restrict Soil erosion & silt flow

vi) **Plan for Construction of Settling Tanks**

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 **2 nos.** of settling tanks. Details of proposed 2 nos. of settling Tanks are shown in the map. The cost norm of Settling Tank has been provided in **Annexure –VIII.**

vii) 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 26m. 5nos. of catch drain have been proposed. The cost norm of Catch Drain has been provided in **Annexure -IX**.



viii) De-siltation

The de-silting works of the settling tank 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.

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. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e. Batagaon and Kensara village of Bonai Division and village Kadakala of Keonjhar 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, 15% of the plantation cost has been earmarked for expenditure on this score.

16. 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.

SPECIALISED CELL

Sl. No.	Name	Educational Qualification	Designation	Expertise
1	Shri D.K. Parida	Mining Engineer	CGM (Mining)	20 Years experience in Mining operation projects
2	Shri, Jayanta Das	Surveyor	A.V.P (Survey)	30 Year's experience in mining Survey
3	Shri G.K.Pujari	M.Sc.,M.Phil.	G.M (Env.)	23 Years experience with Pollution control & Environmental Management
4	Shri Soujatya Sarangi	M.Sc Applied Geology	Manager (Geology)	14 Years' experience in Mining Geology and Exploration field.

REQUIREMENT OF FUNDS

The total cost of implementation of mitigative measures will be **Rs.2,47,67,600.00 (Rupees Two Crore Forty Seven Lakh Sixty Seven Thousand Six Hundred) Only**. The expenditure will be made during the next seven years 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 seven years for the implementation of the mitigative measures is given in the following tables:

FINANCIAL FORECAST OF THE PROJECT (158.509 HA.)

Sl. No.	Description of the Work	Fund Required (inRs.)
1.	Biological Measures	
A.	Block Plantation (1600 no./ha.) on the dumps and pit to be reclaimed in future over 5.770 ha.@ Rs.3,41,903/- per ha.	19,72,780.00
B.	Agave Plantation at the toe of dump over a length of 1200m. @ Rs.6,38,625/-for 1000 RMT	7,66,350.00
	Total	27,39,130.00

2.	Structural Measures	
A.	17 nos. of Loose Boulder Structure of 4mt span @ Rs.44,461/- per each	7,55,837.00
B.	Construction of Garland drain over a length of 3427 m @ Rs.498/- per RMT	17,06,646.00
C.	Construction of retaining wall over 3427 m @ Rs.1948.54 per RMT	66,77,647.00
D.	Terracing of OB dump over a length of 2851 m. @ Rs.833/- per RMT	23,74,883.00
E.	Construction of 3 no. of check dam @ Rs.3,85,954.00/- per each	11,57,862.00
F.	Construction of 2 no. of settling tank @ Rs.14,908.00/- per each	29,816.00
G.	Construction of 5 nos. of catch drain (26 m. at dump slope) @ Rs.3,01,137.00/- per each	15,05,685.00
	Total	1,42,08,376.00
3.	De-siltation work for Garland drain, settling pond and check dam twice in a year on LS	5,00,000.00
4.	Maintenance of retaining walls	5,00,000.00
	Sub Total	1,79,47,506.00
5.	15% of the total cost for motivation of VSS / People involved	26,92,126.00
	Total	2,06,39,632.00
	Price escalation @ 20%	41,27,927.00
	GRAND TOTAL	2,47,67,559.00
		Or,
		2,47,67,600.00

(Rupees Two Crore Forty Seven Lakh Sixty Seven Thousand Six Hundred) only

M/s Rungta Mines Limited do hereby undertake to execute the item of works mentioned in this scheme in a phased manner at the project cost.

M/s Rungta Mines Ltd.

H. Chandra
Director

Countersigned

COUNTERSIGNED

[Signature]
Divisional Forest Officer
Divisional Forest Officer
Bonai Division

Technically Approved

[Signature]
Regional Chief Conservator of Forests
Rourkela Circle

ANNEXURE-5

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
0th 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 (Cleaning & 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.	Jun/Mar	0	0	3500	3500
Total			82	25502	3600	29102
1st Year/Planting Year						
1	Refilling of pits by altering the dug-out soil of the pits, application of Organic compounds/ CIM/ FYM & mixing the same properly.	Jun/Jul	12	3732	8000	11732
2	Transportation of 10 months old polypot seedlings in hired truck/tractor from the permanent/Mega nursery to planting site including Loading & unloading. (Average load of 10 Blms) & Stacking the seedling @ Rs.6/- per Seedling. (1760 nos.)	Jul/Aug	0	0	10560	10560
3	Watering the polypot seedlings at planting site	Jul/Aug	3	933	0	933
4	Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after sowing the soil with other applied materials & pressing the soil properly around the planted seedlings.	Jul/Aug	36	11196	0	11196
5	Cost of Fertilizer & Insecticide (a)NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 100kg @ Rs.30/- per kg = Rs. 2400.00 (b) Urea/Vermicompost/Mu Khata/any other fertilizer in two subsequent doses @ Rs. 1,200.00 (c) Insecticide/ Bio-pesticide @ 5 gms/plants @ kg @ Rs.150/- per kg = Rs. 1200.00	Jul/Aug	0	0	4800	4800

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(29)

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.)
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
Total			105	32655	23360	56015
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 x 0.8 Kg @ Rs.150/- per kg = Rs.120/- B) Urea/NPK/Bio-fertilizer/Vermi-compost/Mo (Diat)/any other fertilizer @Rs. 40/kg.	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-May	10	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First-Aid etc.				1000	1000
Total			45	13995	6566	20561

BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1000 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
3rd Year Maintenance						
3	Cost of Fertilizer/Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer	Sept/Oct	0	0	4400	4400
4	Weeding, Manuring & Soil working, (1mt. diameter around the plants)	Sept/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	10	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Apr/Mar			1000	1000
Total			41	12751	5400	18237
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	Apr-Mar	10	5598	0	5598
Total			21	6531	0	6531
5th Year Maintenance						
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	10	5598.00	0	5598
Total			21	6531	0	6531
6th Year Maintenance						
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	10	5598.00	0	5598.0
Total			26	8006	0	8006.0
7th Year Maintenance						
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	10	5598.00	0	5598
Total			21	6531	0	6531
8th Year Maintenance						
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	10	5598.00	0	5598
Total			21	6531	0	6531
9th Year Maintenance						
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	10	5598.00	0	5598

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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	
Total			21	6531	0	6531	
10th Year Maintenance							
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933	0	933	
2	Watch & Ward	Apr/Mar	10	5590.00	0	5590	
Total			21	6531	0	6531	
Year wise Abstract of Cost Norm (showing seedling cost separately)							
Sl. No	Year	Nn. 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	02	2502	3600	1398.00	0	30500.00
2	1st year	105	32655	23360	2000.00	88546	147261.00
3	2nd year	45	13995	6866	1020.00	8050	29639.00
4	3rd year	41	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	26	8086	0	404.00	0	8490.00
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
Totals		428	132175	39012	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 L.B.C.I., Gully Plugging, Staggered Trench, Contour Trench, Graded Road, etc. may be
- 4 Chain link fencing can be adopted in the CA plantation taken up outside the forest area and Bamboo twigs 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 RCCP's keeping the overall cost norm fixed for each Financial Year


 APCCF (Forest Division & NO, FC Act)

Matrix for Model-B Conventional CA Plantation (Aq) 1500 plants per Ha

Sl. No.	Conventional Plant Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	Total Cost (10 Years)	In Rupees		
1	2023-24	30500	147981	29610	19148	8833	4813	3400	4487	6937	8937	8837	8837	8837	8837	8837	8837	8837	8837	8837	8837	8837	8837	380137	341900
2	2023-25	30500	154716	30611	21766	9336	5172	3747	4948	7497	9847	11487	11487	11487	11487	11487	11487	11487	11487	11487	11487	11487	11487	425883	341900
3	2023-26	30500	161441	31622	23881	9839	5625	4097	5359	7907	10457	12387	12387	12387	12387	12387	12387	12387	12387	12387	12387	12387	12387	471769	341900
4	2023-27	30500	168166	32633	26151	10342	6074	4507	5870	8417	10967	13187	13187	13187	13187	13187	13187	13187	13187	13187	13187	13187	13187	517655	341900
5	2023-28	30500	174891	33644	28421	10845	6509	4917	6741	8967	11517	13937	13937	13937	13937	13937	13937	13937	13937	13937	13937	13937	13937	563541	341900
6	2023-29	30500	181616	34655	30691	11348	6944	5827	7612	10067	12067	14587	14587	14587	14587	14587	14587	14587	14587	14587	14587	14587	14587	609427	341900
7	2023-30	30500	188341	35666	32941	11851	7379	6740	8473	10567	12567	15087	15087	15087	15087	15087	15087	15087	15087	15087	15087	15087	15087	655313	341900
8	2023-31	30500	195066	36677	35191	12354	7814	7659	9324	11067	13067	15587	15587	15587	15587	15587	15587	15587	15587	15587	15587	15587	15587	701200	341900
9	2023-32	30500	201791	37688	37441	12857	8249	8568	10185	11567	13567	16087	16087	16087	16087	16087	16087	16087	16087	16087	16087	16087	16087	747086	341900
10	2023-33	30500	208516	38699	39691	13360	8684	9477	10806	12067	14067	16587	16587	16587	16587	16587	16587	16587	16587	16587	16587	16587	16587	792972	341900

APCD Forest Division & NO, PC Act

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ANNEXURE-II

COST NORM FOR AGAVE PLANTATION (FOR 5 ROWS & 40 MTRS)

Wage Rate : ₹352/day.

Sl. No.	Name of the work	Man-day	Labour cost (₹)	Material	Total
FIRST YEAR OPERATION.					
1	Site clearance alignment and stacking	2	704.00	-	704.00
2	Cost of lime materials including transportation	0		494.00	494.00
3	Digging pits and application of lime	6	2112.00		2112.00
4	Cost of 200 Ac. (sucker) including transportation			2,483.00	2,483.00
5	Carriage and planting	2	704.00	-	704.00
6	Soil working and application of fertilizers (twice) and lime	8	2816.00		2816.00
7	Cost of fertilizer			554.00	554.00
8	Contingency			554.00	554.00
	Total:-	18	6336.00	4085.00	10421.00
SECOND YEAR OPERATION					
1	Casualty replacement (20%) including cost of suckers and pitting	2	704.00	494.00	1198.00
2	Weeding and application of fertilizer and lime	6	2112.00	-	2112.00
3	Cost of fertilizer insecticides & lime			374.00	374.00
	Total:-	8	2816.00	868.00	3684.00
THIRD YEAR OPERATION					
1	Weeding, soil working and application of fertilizers	6	2112.00		2112.00
2	Cost of fertilizer and insecticides		-	374.00	374.00
3	Plant protection measures including material cost		-	374.00	374.00
	Total:-	6	2112.00	748	2860.00
FORTH YEAR OPERATION					
1	Weeding, cleaning, soil working and application of fertilizers	6	2112.00		2112.00
2	Cost of fertilizer and insecticides		-	374.00	374.00
3	Plant protection measures including material cost		-	374.00	374.00
	Total:-	6	2112.00	748	2860.00
FIFTH YEAR OPERATION					
1	Weeding, cleaning, soil working and application of fertilizers	6	2112.00		2112.00
2	Cost of fertilizer and insecticides		-	374.00	374.00
3	Plant protection measures including material cost		-	374.00	374.00
	Total:-	6	2112.00	748	2860.00
SIXTH YEAR OPERATION					
1	Weeding, cleaning, soil working and application of fertilizers	6	2112.00		2112.00
2	Cost of fertilizer and insecticides		-	374.00	374.00
3	Plant protection measures including material cost		-	374.00	374.00
	Total:-	6	2112.00	748	2860.00
	G.Total	50	17600.00	7945.00	25545.00
Cost norm for Agave fencing with five rows 01 km for 6 year		25545 40	x 1000 =	6,38,625.00	

For RUNGTA MINES LIMITED

Hemrajind
Director

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

Wage Rate- Rs.352/-

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 L.S. 1 MD.			352.00
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	
	@ 15441.87 per 100 cum.			1470.83
3.	Rough stone dry packing			
	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		
	@ 1341.44 per cum		31.785	42637.67
			G.Total:-	44460.50
				Or
				44461.00

(Rupees Forty Four Thousand Four Hundred Sixty One) only

For RUNGTA MINES LIMITED

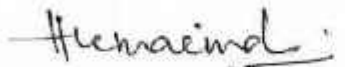
Hemachand
Director

Annexure-IV**Wage Rate- Rs.352****Detail Estimate of construction of Garland Drain**

SI 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	9.502	13302.80
2	Earth work in hard soil in embankment roads with in 50 mtrintial lead &1.50 mtrintial 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	265.06	79615.00
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	1877.20	6757.92
									99575.72 Or, 99576.00

Rate/Running metre length – Rs.497.88 or 498/-

For RUNGTA MINES LIMITED


Director

Annexure-V

Wage Rate- Rs.352.00

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	692.382	1350144.9	
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	176.0	598400.00	
		Rate per one K.M. Length				Total			1948544.90	
									Or	
									1948545.00	

Cost for Running Meter length

1948.54

For RUNGTA MINES LIMITED

Hemachand
Director

Annexure-VI

Wage Rate-Rs.352.00

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.

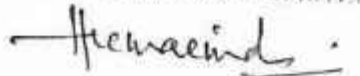
Width & height of the terrace – 5 m. & 5 m.

Rate for engagement of HEMM – Rs.2816.00/hr. i.e. Rs.2816.00/3.38 running meter i.e. Rate

X running metre = Rs.833.12/-

Therefore, terracing to be done over a length of RM is Rs.833/-

For RUNGTA MINES LIMITED


Director

Annexure- VII

Wage Rate- Rs.352.00

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 5.00c.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							
	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	265.04	6360.96
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	7699.28	34415.78
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	10653.61
							Total	345176.9
								385953.64
								Or,
								385954.00

For RUNGTA MINES LIMITED

Hemachand
Director

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

SI No	Description of Items	No	Length	Width	Height	Qty	Unit	Rate	Amount
1	Earth work in hard soil in embankment roads within 50 matintial lead & 1.50 mtrintial 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	4.00	3.00	1.50	18.00	Cum	265.04	4770.72
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	1877.20	9010.56
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	234.76	1126.84
Rate per one No Settling tank									14908.12 Or, 14908.00

For RUNGTA MINES LIMITED

Hemalind
Director

Annexure -IX

Wage Rate-Rs.352.00

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		
						Total	35.380 Cum	265.04	9377.11
2	Sand Filling	1.00	29.00	3.80	0.05	5.510	Cum	1724.80	9503.64
3	R R Stone Masonry with Local Boulder								
	Foundation								
	Side wall both sides	2	29.000	0.400	0.60	13.920	Cum	3935.69	54784.80
4	Rough stone Dry packing with top layer grouting								
	Floor	1	29.000	3.000		87.000	Sqm	478.71	41647.77
						Total=	100.920 Cum		
5	Earth Filling								
	Back filling (1/3 rd of earth work)					11.793	Cum		
						Total=	11.793 Cum	112.63	1328.24
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		
						Plastering work Total	92.800 Sqm	319.24	29625.47
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		
						Total	11.02 Cum	10489.23	115591.31
	Add 15% for Critical Area							Total	261858.34
									39278.75
								Grand Total	301137.09
									Or
									301137.00

For RUNGTA MINES LIMITED

Hemaend
Director



*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.11 (b) of

Stage-I approval granted vide

Letter No.8-08/2023-FC dt.28.11.2023 of

Government of India, Ministry of Environment,

Forest & Climate Change

for

Diversion of 156.978 Hects of Forest Land

(147.803 ha. in Bonai Division & 9.175 ha. in Keonjhar Division)

U/s-2 (ii) of F.C. Act'1980

within 158.509 Ha. Jumka Pathiriposhi Pahar Iron Ore Block

of

M/s Rungta Mines Ltd.

in village Batagaon and Kensara in Lahunipara Tahsil, Bonai Forest
Division and village Kadakala of Keonjhar Forest Division

Dist.Sundargarh and Keonjhar

Odisha.

SCHEME FOR PLANTING OF DROUGHT HARDY PLANT SPECIES AND SOWING OF SEEDS WITHIN MINING LEASE TO ARREST SOIL EROSION

1. INTRODUCTION

Government of Odisha, pursuant to the Mines and Minerals (Development and Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 as amended from time to time, issued the notice inviting tender dated 07.07.2021 to commence the auction process for grant of mining lease for Jumka Pathiriposhi Pahar Iron Ore Block over an area of 158.509 Ha. for Iron Ore located in Koira Mining Circle, District-Sundargarh, Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block on 24.09.2021 and Rungta Mines Ltd. was declared as the 'Preferred Bidder' under Rule 9(9)(iii) or Rule 10 (1A) of Auction Rules, having quoted highest Final Price Offer vide letter No.MXIII(b) 46/2021/7738/DM Dated 05.10.2021 issued by Director of Mines Government of Odisha.

Accordingly, pursuant to Rule 10(2) of the Auction Rules and the terms of the Tender Document, the Government of Odisha was pleased to issue Letter of Intent (LOI) bearing No.IV(B)SM-49/2021/8716/SM, Bhubaneswar dated 28.10.2021 for grant of Mining Lease for Jumka Pathiriposhi Pahar Iron Ore Block for Iron ore located at a distance of 20 km south of Koira Town in Batagaon & Kensara village of Lahunipara Tahasil Sundargarh District and Kadakala village of Keonjhar District on 158.509 Ha. area to Rungta Mines Ltd. for a period of 50 (Fifty) years. Accordingly, M/s Rungta Mines Ltd. was submitted the proposal to obtain approval of the Central Govt. over 156.978 hectare of forest land U/s-2 (ii) of the Forest (Conservation) Act'1980 within the above Mining Lease area.

Now, the Stage-I approval over 156.978 ha. of Forest Land for U/s-2 (ii) of F.C. Act'1980 has been granted by MoEF&CC, Govt. of India vide their Letter No.8-08/2023-FC dt.28.11.2023, wherein it has been stipulated as per **Condition No.11(b)** for **preparation and implementation of a plan for planting of drought hardy plant species and sowing of seeds within mining lease to arrest soil erosion.**

2. LOCATION

Jumka Pathiriposhi Pahar Iron ore Block of M/s Rungta Mines Ltd. is located in Sundargarh & Keonjhar District of Odisha and can be approached throughout the year by road. It falls within the survey of India Topo sheet No.73 G/1. The total mining lease hold area is 158.509 Ha. The area is located between the Latitudes 21°48'54.81396"N to 21°47'32.62280"N and Longitude 85°13'25.32167"E to 85°12'13.87352"E.

3. TOPOGRAPHY

The area is represented by sloppy area with gentle undulation, resembling a relict type of topography. The highest contour is 1037 mts and the lowest is 926 mts. Nagaria PRF and Sarkunda PRF of Bonai forest division comes within the the ML area.

4. SOIL TYPE

Soil type in the study area varies widely from hard rock to lateritic soil & Shale. Areas at higher elevations are usually hard rock consisting of Iron pebbles & laterite. The top soil is scanty in the area. Whatever top soil is available is thinly spread over all Soil profile in nature. The pH of the soil is slightly acidic in nature.

5. CLIMATE

The study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March. Temperature rises rapidly attaining a maximum in the month of May. During the summer maximum temperature can go up to 47.7⁰C. The weather becomes pleasant with onset of monsoon in June and remains as such upto end of October. The temperature in the month of December is lowest, i.e., 7⁰ C. The average annual rainfall as recorded at IMD observatory is 1325.16 mm. Predominant wind direction is South-West. Area remains calm for nearly 50% of the year.

6. DRAINAGE

There are a number of streams flowing to Phulamanali nala which serve the purpose of drainage. There is one seasonal nala namely Barapokhari outside the mining lease which finally join with Phulamanali nala that flows from South-West to South-East. The general elevation difference in the area is 70m. The proposed working area lies at the hill & is well above the water table.

EXISTING VEGETATION

The vegetation of the applied area is composed of Sal (*Shorea robusta*), Sidha (*Lagerstroemia parviflora*), Kusum (*Schleichera oleosa*), Bara (*Ficus bengalensis*), Harida (*Terminalia chebula*), Bahada (*Terminalia bellerica*), Char (*Buchanania lanjan*), Jamu (*Syzygium cumini*), Asan (*Terminalia tomentosa*), Kendu (*Diospyros melanoxylon*), Kumbhi (*Careya arborea*), Mango (*Mangifera indica*) etc. are major species among flora available in the applied area. **Sal (*Shorea robusta*)** is the pre-dominant species.

7. LAND USE PATTERN

During the life of the mine, about 158.509 hectares will be utilized for mining, Minerals processing, Road, Infrastructure, Mineral stock yard, and green belt plantation in Safety Zone area etc. The details of land use pattern will be as follows:

Sl. No.	Item	Revenue Forest (in ha)	PRF (in ha)	Total Forest (In ha)	Total non-forest (in ha)	Grand Total (in ha)
1.	Mining including Mobile Crushing and Screening Unit, Temporary Stack Yard	7.601	113.739	121.340	0.000	121.340
2.	Dumping of Overburden	0.000	7.301	7.301	0.000	7.301
3.	Mine Road	0.320	7.616	7.936	0.076	8.012
4.	Infrastructure (Temporary Office, Rest Shelter, Workshop, Weigh Bridge etc.)	0.000	1.813	1.813	1.187	3.000
5.	Ore Processing Site.	0.000	3.820	3.820	0.000	3.820
6.	Mineral Stack Yard.	0.000	9.290	9.290	0.000	9.290
	Sub-total :-	7.921	143.579	151.500	1.263	152.763
7.	Safety Zone	1.254	4.224	5.478	0.268	5.746
	Grand Total :-	9.175	147.803	156.978	1.531	158.509

8. PLANTATION PLANNING DURING THE LEASE PERIOD

Planning for plantation is done with the following objectives:

- (i) To meet the stipulation No. 11 (b) (b) of stage –I Forest clearance accorded vide letter no.8-08/2023-FC dated 28.11.2023 by MoEF, GOI. One of the condition is "planting of adequate drought hardy plant species & showing of seeds within mining lease to arrest soil erosion."
- (ii) To compensate the loss to vegetation due to operation of the mine.
- (iii) To prevent spread of fugitive dust generated due to mining and allied activities.
- (iv) To attenuate noise generated by the mine.
- (v) To reduce soil erosion.
- (vi) To stabilize the slope of external over-burden dumps.
- (vii) To increase the green cover and to improve aesthetics.
- (viii) To attract the birds, which are addressed as litmus of nature.
- (ix) To provide recreational value to colony inhabitants.
- (x) Attract Animals to re-colonize the area where the Mine is abandoned.

Development of plantation in the available areas would be carried out in a phased manner. Saplings would be planted at the rate of 1600 trees /ha in Block plantation mode. The cost norm of Block Plantation is **enclosed at Annexure-I**. Post planting care would be taken to replace casualties, remove dead, dying, diseased and top broken trees etc.

The details of proposed afforestation programme within M/s Rungta Mines Ltd. are given below:

Proposed Location	Area
Block Plantation	1.007 ha.
Grass seedlings	0.670 ha
Agave plantation	1100 mt

The choice of species is based on the following parameters: (i) Drought hardy and (ii) it should prevent soil erosion. Selection of the plant species is based on the inventory of the local forest species like *Neem (Azadirachta indica)*, *Karanja (Pongamia pinnata)*, *Asan (Terminalia aalata)*, *Kusum (Schleichera oleosa)*, *Amla (Emblica officinalis)*, *Mundi (Mitragyna parviflora)* etc. and some soil binding grasses like *Vetiveriazizanioides* will be introduced. The cost norm of grass seeding is **enclosed at Annexure-II**. The species for green belt development will be selected in consultation with the State Forest Department.

9. METHODOLOGY

It is proposed to plant the Seedlings in pits(30cmx30cmx30cm) at spacing of 2.5 m along contours. The pits shall be filled with a mixture of good quality soil and organic manure (cow dung, agricultural waste, kitchen waste). The saplings shall be planted just after commencement of the monsoon to ensure maximum survival.

10. PLANTATION

Plantation on the large Over Burden dumps cannot be started till dumping activities have ceased at least in a part of the dump and the site is prepared for plantation. Once dumping is completed, a path would be cleared to the particular area so that the basic inputs (water, manure, and seedlings) can be carried to the site. Next, a layer of top soil has to be spread over the area and roughly leveled. Grass seeds would be broad casted on the soil layer to stabilize the dump. Trenches of size 30 cm X 30 cm would be dugout on the flat top of the dumps, and the excavated materials used to form a bund on the deep side of the trenches to trap maximum water in the trenches during rains. 30 cm X 30 cm pits would be dug in the contour trenches at 2.5 m intervals. The pits would be filled with a mixture of top-soil, organic manures and phosphoric fertilizers. Saplings would be planted in these pits after monsoon has commenced in order to ensure optimum survival of the saplings.



PROPOSED PLANTATION OVER DEAD WASTE DUMP.

a. **Pre-Planting and Planting Operation**

Different operations that will be taken up for plantation are as follows:

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 one and half year before the year of plantation so that one and half year old seedlings will be available for plantation. 20% extra seedlings shall be raised besides the actual requirement to compensate the casualties. Seedlings will be raised in polythene bags of 10" x 6" 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.

iii) **Actual Planting**

The seedling would be planted in the dugout pits of size 45cm x 45cm x 45cm with a spacing of 2.5mtr x 2.5mtr. Plantation will be taken up after first regular shower of monsoon and will be completed by the end of July. Species will be planted as per suitability of the soil condition. NPK fertilizer @50gms per plant will be applied as basal dosage 5 gm of anti-termite insecticide will also be applied to each pit while planting. Casualties, if any noticed, shall be replaced with the extra 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 after rains. First weeding shall be around the plants and the second one will be done in strip. In the third year the weeding will be done around the plants, which will be carried out during August.

After each weeding, intensive soil working will be done around each plant at a radius of 0.5mtr, followed by manuring of @50gms NPK per plant in ring form.

v) **Application of insecticides**

The plantation site, after planting with good and healthy seedlings, 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.

b. **Post Plantation Care**

Post Plantation care shall be adopted to ensure maximum survival of the plants. Funds would be provided for maintenance of the plants for ten years (i.e. nine years) after the year of plantation. In the present Scheme, provision of fund would be made immediately after planting the seedlings. Watering would be done at regular interval during the dry spell. In the dry season, watering would be regularly done especially during February to June.

Watering in one year planted saplings would be more frequent (10 days in a month). Manuring would be done by using organic manure (cow dung, agricultural waste, kitchen waste, etc.). Diseased and dead plants would be uprooted, destroyed and replaced by fresh saplings. Growth and survival of saplings would be regularly monitored and remedial actions would be undertaken as required.

Plantation on slope of the dumps would commence as soon as the first terrace is ready. The terraces on the slopes would be sloped inward, 45 cm X 45 cm pits would be dug at 2.5 m intervals and filled with a mixture of top soil and organic manure. Before the commencement of the monsoon, the slopes and terraces would be covered with a layer of soil and sprinkled with water. The norm for Block plantation has been appended as **Annexure-I**

11. INSPECTION, MONITORING AND EVALUATION

For successful implementation of the above measures under the instant 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.

12. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e. Batagaon and Kensara in of Bonai Division and village Kadakaia of Keonjhar 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, 15% of the plantation cost has been earmarked for expenditure on this score.

13. 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.

SPECIALISED CELL

Sl. No.	Name	Educational Qualification	Designation	Expertise
1	Shri D.K. Parida	Mining Engineer	CGM (Mining)	20 Years experience in Mining operation projects
2	Shri, Jayanta Das	Surveyor	A.V.P (Survey)	30 Years of experience in Mining Survey
3	Shri G.K.Pujari	M.Sc., M.Phil.	G.M (Env.)	23 Years experience with Pollution control & Environmental Management
4	Shri Soujatya Sarangi	M.Sc Applied Geology	Manager (Geology)	14 Years' experience in Mining Geology and Exploration field.

14. REQUIREMENT OF FUNDS

The total cost of the implementation of will be **₹14,97,100.00 (Rupees Fourteen Lakh Ninety Seven Thousand One hundred) Only**. The above expenditure would be made over the next seven years period. Therefore, budget provision has been kept by the user agency for implementation of the above plantation program over a period of next ten years. This budget would be subjected to increase in amount considering the increase in material cost and labour charges.

TOTAL COST OF THE PROJECT

Wage Rate Rs.352/-

Sl. No.	Description of the work	Funds Required (in Rs.)
1	Block Plantation 1.007 ha. @ Rs.341903/-	3,44,296.00
2.	Grass seeding over 0.670 ha. @ Rs.56769/- per ha.	38,035.00
3.	Agave Plantation at the toe of dump over a length of 1100 m. @ Rs.6,38,625/- for 1000 RMT	7,02,488.00
	Total :-	10,84,819.00
3.	15% of the total cost for motivation of VSS / People involved	1,62,723.00
	Sub Total	12,47,542.00
4.	Price escalation @ 20%	2,49,508.00
	Grand Total	14,97,050.00 OR 14,97,100.00

(Rupees Fourteen Lakh Ninety Seven Thousand One hundred) only

M/s Rungta Mines Limited do hereby undertake to execute the item of works mentioned in this scheme in a phased manner at the project cost.

Rungta Mines Limited

Hemachand
Director

Technically Approved

16/11/2011
Regional Chief Conservator of Forests
Rourkela Circle

**Countersigned
COUNTERSIGNED**

[Signature]
Divisional Forest Officer
Divisional Forest Officer,
Bonai Division

ANNEXURE-5

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
0th 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 (Cleaning & 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
Total			82	25502	3600	29102
1st Year/Planting Year						
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 polygot seedlings in hired truck /tractor from the permanent/Mega nursery to planting site including Loading & unloading. (Average lead of 10 Rtn) & Stacking the seedling @ Rs.6/- per Seedling. (1750 nos.)	Jul/Aug	0	0	10560	10560
3	Watering the polygot seedlings at planting site	Jul/Aug	3	933	0	933
4	Conveyance of polygot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after scoping the soil with other applied materials & pressing the soil properly around the planted seedlings.	Jul/Aug	36	11196	0	11196
5	Cost of Fertilizer & Insecticide (a) NPX/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

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BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1000 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
Total			105	32655	23360	56015
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	10	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First-Aid etc.				1000	1000
Total			45	13995	6566	20561

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.)	Matrrial Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
3rd Year Maintenance						
3	Cost of Fertilizer/Urea/NPK/Bio-fertilizer/Vermicompost/Mu Khata/any other fertilizer	Sept/Oct	0	0	4486	4486
4	Weeding, Manuring & Soil working. (1 mt. diametre around the plants)	Sept/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
Total			41	12751	5486	18237
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	Apr-Mar	18	5598	0	5598
Total			21	6531	0	6531
5th Year Maintenance						
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
Total			21	6531	0	6531
6th Year Maintenance						
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
Total			26	8086	0	8086.0
7th Year Maintenance						
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
Total			21	6531	0	6531
8th Year Maintenance						
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
Total			21	6531	0	6531
9th Year Maintenance						
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

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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	
	Total		21	6531	0	6531	
10th Year Maintenance							
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933	0	933	
3	Watch & Ward	Apr/Mar	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	82	25502	3600	1398.00	0	30500.00
2	1st year	105	32655	23360	2000.00	88546	147361.00
3	2nd year	45	13995	6566	1028.00	8050	29639.00
4	3rd year	31	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	26	8086	0	404.00	0	8490.00
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	39012	8497	96596	276200

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 to Plantation.
- 3 Site specific Soil conservation work like LBCO, Gully Plugging, Staggered 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 twigs 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 R.C.C's keeping the overall cost norm fixed for each Financial Year.


 APCCF (Forest Diversion & NO. FC Act)

Matrix for Model-I B Conventional CA Fertilizer (No) 1600 plants per Ha

Sl. No.	Companee Name	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	Total Cost (100 Year)	
Base Year																									
1	2001-02	2000	147981	29818	18148	6487	6937	8180	6837	6837	8337	6837	10837	11188											310117
2	2001-03		10025	10025	54128	23774	812	9188	11846	10125	22588	11168	11727												312623
3	2001-04				33625	170288	86023	24438	9150	8438	12543	12637	11770	11777	12313										341903
4	2004-05					15307	17917	37974	26660	6853	26530	13170	11488	13778	12313	17918									388288
5	2005-06					37072	188278	39913	18347	18945	12818	12817	11227	12313	12813	13873									379348
6	2004-07																								395795
7	2007-08																								415007
8	2008-09																								415007
9	2009-10																								437885
10	2009-11																								480056

APCCF (Fertilizer Division & NO. FC ACT)

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Annexure - II

COST OF GRASS SEED SOWING

Wage Rate Rs.352.00

SI No	Purpose	No of Labour / Quantity of materials	Rate (Rs.)	Amount (Rs.)
1	Spreading of good top soil	03 Nos	352/ labour	1056.00
2	Adding FYM and good earth	2 TL FYM	1173.20 /TL FYM	4692.80
		2TL good earth	1173.20 /TL Good earth	
3	Cost of grass seed 500Kg/ per ha.		95/kg	47,500.00
4	Broadcasting	10 nos.	352.00/ labour	3,520.00
Total				56,768.80 Or, 56,769.00

For RUNGTA MINES LIMITED

Hemachand
Director

ANNEXURE-II

COST NORM FOR AGAVE PLANTATION (FOR 5 ROWS & 40 MTRS)

Wage Rate : ₹352/day.

Sl. No.	Name of the work	Man-day	Labour cost (₹)	Material	Total
FIRST YEAR OPERATION.					
1	Site clearance alignment and stacking	2	704.00	-	704.00
2	Cost of lime materials including transportation	0		494.00	494.00
3	Digging pits and application of lime	6	2112.00		2112.00
4	Cost of 200 Ac. (sucker) including transportation			2,483.00	2,483.00
5	Carriage and planting	2	704.00	-	704.00
6	Soil working and application of fertilizers (twice) and lime	8	2816.00		2816.00
7	Cost of fertilizer			554.00	554.00
8	Contingency			554.00	554.00
	Total:-	18	6336.00	4085.00	10421.00
SECOND YEAR OPERATION					
1	Casualty replacement (20%) including cost of suckers and pitting	2	704.00	494.00	1198.00
2	Weeding and application of fertilizer and lime	6	2112.00	-	2112.00
3	Cost of fertilizer insecticides & lime			374.00	374.00
	Total:-	8	2816.00	868.00	3684.00
THIRD YEAR OPERATION					
1	Weeding, soil working and application of fertilizers	6	2112.00		2112.00
2	Cost of fertilizer and insecticides		-	374.00	374.00
3	Plant protection measures including material cost		-	374.00	374.00
	Total:-	6	2112.00	748	2860.00
FORTH YEAR OPERATION					
1	Weeding, cleaning, soil working and application of fertilizers	6	2112.00		2112.00
2	Cost of fertilizer and insecticides		-	374.00	374.00
3	Plant protection measures including material cost		-	374.00	374.00
	Total:-	6	2112.00	748	2860.00
FIFTH YEAR OPERATION					
1	Weeding, cleaning, soil working and application of fertilizers	6	2112.00		2112.00
2	Cost of fertilizer and insecticides		-	374.00	374.00
3	Plant protection measures including material cost		-	374.00	374.00
	Total:-	6	2112.00	748	2860.00
SIXTH YEAR OPERATION					
1	Weeding, cleaning, soil working and application of fertilizers	6	2112.00		2112.00
2	Cost of fertilizer and insecticides		-	374.00	374.00
3	Plant protection measures including material cost		-	374.00	374.00
	Total:-	6	2112.00	748	2860.00
	G.Total	50	17600.00	7945.00	25545.00
Cost norm for Agave fencing with five rows 01 km for 6 year		$\frac{25545}{40}$	x 1000 =	6,38,625.00	

For RUNGTA MINES LIMITED

Hemaend
Director



*Scheme
For*

**CONSTRUCTION OF CHECK DAMS, RETENTION/TOE
WALLS TO ARREST SLIDING DOWN OF THE
EXCAVATED MATERIAL ALONG THE CONTOUR**

in compliance

with

Condition No.11 (c) of

Stage-I approval granted vide

Letter No.8-08/2023-FC dt.28.11.2023 of

Government of India, Ministry of Environment,

Forest & Climate Change

for

Diversion of 156.978 Hects of Forest Land

(147.803 ha. in Bonai Division & 9.175 ha. in Keonjhar Division)

U/s-2 (ii) of F.C. Act'1980

within 158.509 Ha. Jumka Pathiriposhi Pahar Iron Ore Block

of

M/s Rungta Mines Ltd.

**in village Batagaon and Kensara in Lahunipara Tahsil, Bonai Forest
Division and village Kadakala of Keonjhar Forest Division**

Dist.Sundargarh and Keonjhar

Odisha.

SCHEME FOR CONSTRUCTION OF CHECK DAMS, RETENTION/TOE WALLS TO ARREST SLIDING DOWN OF THE EXCAVATED MATERIAL ALONG THE CONTOUR.

1. INTRODUCTION

Government of Odisha, pursuant to the Mines and Minerals (Development and Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 as amended from time to time, issued the notice inviting tender dated 07.07.2021 to commence the auction process for grant of mining lease for Jumka Pathiriposhi Pahar Iron Ore Block over an area of 158.509 Ha. for Iron Ore located in Koira Mining Circle, District-Sundargarh, Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block on 24.09.2021 and Rungta Mines Ltd. was declared as the 'Preferred Bidder' under Rule 9(9)(iii) or Rule 10 (1A) of Auction Rules, having quoted highest Final Price Offer vide letter No.MXIII(b) 46/2021/7738/DM Dated 05.10.2021 issued by Director of Mines Government of Odisha.

Accordingly, pursuant to Rule 10(2) of the Auction Rules and the terms of the Tender Document, the Government of Odisha was pleased to issue Letter of Intent (LOI) bearing No.IV(B)SM-49/2021/8716/SM, Bhubaneswar dated 28.10.2021 for grant of Mining Lease for Jumka Pathiriposhi Pahar Iron Ore Block for Iron ore located at a distance of 20 km south of Koira Town in Batagaon & Kensara village of Lahunipara Tahasil Sundargarh District and Kadakala village of Keonjhar District on 158.509 Ha. area to Rungta Mines Ltd. for a period of 50 (Fifty) years. Accordingly, M/s Rungta Mines Ltd. had submitted the proposal to obtain approval of the Central Govt. over 156.978 hectare of forest land included within the mining lease U/s-2 (ii) of the Forest (Conservation) Act'1980.

Now, the Stage-I approval over 156.978 ha. of Forest Land for U/s-2 (ii) of F.C. Act'1980 has been granted by MoEF&CC, Govt. of India vide their Letter No.8-08/2023-FC dt.28.11.2023, wherein it has been stipulated as per **Condition No.11 (c)** for preparation and implementation of a plan construction of check dams, retention/toe walls to arrest sliding down of the excavated material along the contour.

2. LOCATION

Jumka Pathiriposhi Iron ore Block of M/s Rungta Mines Ltd. is located in Sundargarh & Keonjhar District of Odisha and can be approached throughout the year by road. It falls within the survey of India Topo sheet No.73 G/1. The total mining lease hold area is 158.509 Ha. The area is located between the Latitudes $21^{\circ}48'54.81396''N$ to $21^{\circ}47'32.62280''N$ and Longitude $85^{\circ}13'25.32167''E$ to $85^{\circ}12'13.87352''E$.

3. TOPOGRAPHY

The area is represented by sloppy area with gentle undulation, resembling a relict type of topography. The highest contour is 1037 meters and the lowest one is of 926 meters. Nagarla PRF and Sarkunda PRF of Bonai forest division within the the ML area.

4. SOIL TYPE

Soil type in the study area varies widely from hard rock to lateritic soil. Areas at higher elevations are usually hard rock consisting of laterite. The top soil is scanty in the area. Whatever top soil is available is thinly spread over all Soil profile in nature. The pH of the soil is slightly acidic in nature.

5. CLIMATE

The study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March. Temperature beings to rise rapidly attainting a maximum in the month of May. During the summer maximum temperature can go up to 47.7^oC. The weather becomes pleasant with onset on monsoon in June and remains as such upto end of October. The temperature in the month of December is lowest, i.e., 7^o C. The average annual rainfall as recorded at IMD observatory is 1325.16 mm. Predominant wind direction is South-West. Area remains calm for nearly 50% of the year.

6. DRAINAGE

There are a number of streams flowing to Kundra nala which serve the purpose of drainage. There is one seasonal nalla or rivulets within the mining lease which finally join with Teherei nalla that flows from South-west to North-east. The general elevation difference in the area is 30m. The proposed working area lies at the hill & is well above the water table.

OBJECTIVE OF THE SCHEME

The main objective of the present scheme is to fulfill the **Condition No. 11 (c)** which provides for **preparation of a plan for construction of Check Dams, Retention/Toe walls etc. to arrest sliding down of the excavated material along the contour in accordance with the approved scheme.** The different steps proposed to be adopted are as under:

- a) To prevent erosion of sediment due to surface runoff.
- b) To prevent of obstruction of natural water sources.
- c) To complete construction activities efficiently before surface soil is exposed.
- d) To prevent overflow of eroded soil from the mining areas to the natural streams and habitations.

7. PROPOSED METHODOLOGY

To achieve the above objectives, it has been proposed to take up both biological and structural works for soil and water conservation. In this Scheme, considering the topography and contours of the lease area, emphasis has been given to arrest sliding down of excavated materials along the contour by constructing check dams, retention / toe walls at specified locations within the mining lease. Locations have been properly selected within the leasehold and plans are listed in the following tables & maps.

a) The Salient features of the drainage management plan/scheme

The overall drainage Planning has been made in such a manner which follows the existing drainage pattern the block area in order to prevent silt and sediments, a number of measures have been proposed.

The major part of the mining activities is confined to the North-west and central part of the lease hold area. Runoff water near the dump area will be channelized by garland drain so that solid waste and the force of run-off which will be restricted by a loose boulder structure and settling tank.

b) The drainage pattern of overburden dump

The runoff water will flow through the dump surface along the bund which will be developed as the edge of the dump . The dump surface needs to be terraced so that runoff can flow smoothly to meet the garland drain at the end for proper flow of water. Similarly, runoff from different terrace will be channelized from both sides into the proposed catch drains so that from each terrace of the dump the runoff will flow through the dump surface following the contour and will be deposited in the proposed catch drain shown in enclosed plan. Finally, the water will flow from the catch drain to the settling pit which has been proposed at the foot of the catch drain. After settling down, over flow water will go through weep holes of retaining wall & finally join the garland drain. Loose boulder structures have been proposed in the garland drain of Dumps which will help to arrest the solid waste intermittently. Ultimately, part of runoff water of ore stack yard that will be released, will also be channelized up to the garland drain. The rain water from proposed storing yard and dumps will drain down to the garland drain of proposed dumps which will help to arrest the solid waste by means of boulder structures across the garland drain as well as settling pits. The channelized proposed garland drain, and runoff water will accumulate in the proposed settling tank. The loose boulder structures have been proposed in the garland drain of proposed settling- pit which will help to arrest the solid waste.

c) Slope of the Proposed Dump

Proposal had been given for waste generation from the proposed quarry and subsequent dumping on Dump site during the plan period as per approved scheme of mining as mentioned below.

c) Slope of the Proposed Dump

Proposal had been given for waste generation from the proposed quarry and subsequent dumping on Dump site during the plan period as per approved scheme of mining as mentioned below:

Year	Volume of Waste Generation (m ³) from quarry
	Total (m ³)
2024-2025	NIL
2025-2026	NIL
2026-2027	58364
2027-2028	106402
2028-2029	316307

The proposed generation of waste will be dumped on dump till the end of 2028-2029. Further Dumping of waste material will be done as per approved Mining plan. In the conceptual period the area of the over burden dump will be 6.150 Ha. The slope of the conceptual dump will be maintained at an angle of 28°. The height of terraces of dump will be 10-12 m.

d) Management

Re-treating fashion will be adopted to dump the total waste material generated during planned period. Three (3) terraces will be formed during planned period of 5 years in all the three proposed dump.

Each terrace will have inward slope with catch drain at inward side of the terrace. The catch drain of the individual terrace will be connected to the garland drain outside the periphery of the dump. These catch drain will preferably have half concrete open pipe followed by settling tank to avoid wash offs. Each terrace will have a provision of berms at the outer end to reduce gully formation due to rain water wash offs.

To control erosion in the proposed waste dumps, regular compaction, development of terraces and vegetation are proposed to be done. Also, the retaining wall and garland drain for the proposed waste dump will be constructed to arrest wash-offs from the dump. It is proposed to construct both the retaining wall and garland drain at the end of 5th year plan period. No proposal has been given for the rehabilitation of the dump during planned period of five (5) years.

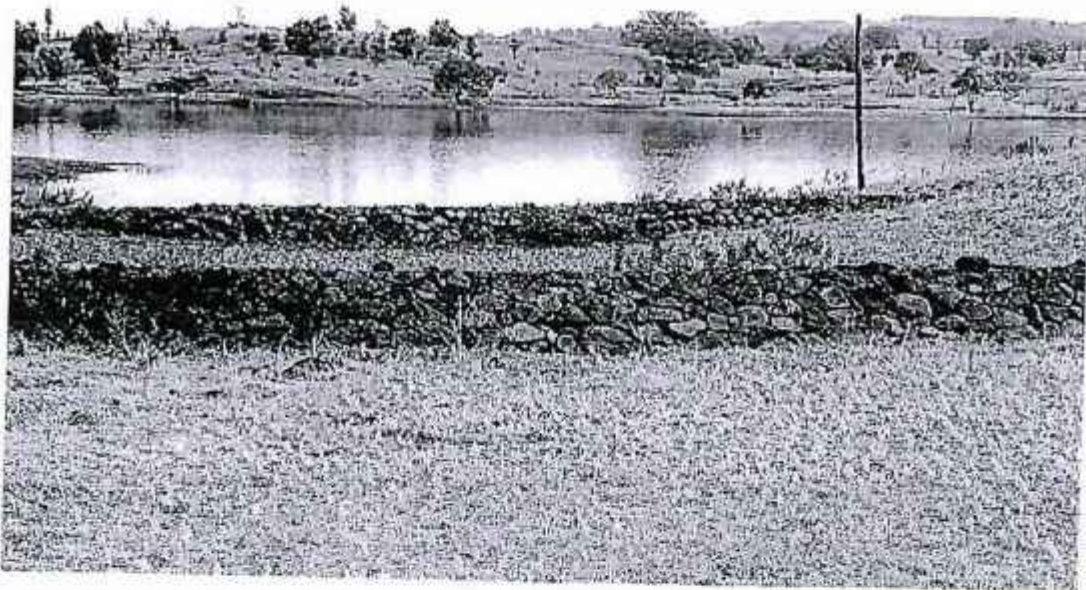
9. MEASURES PROPOSED TO BE ADOPTED

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

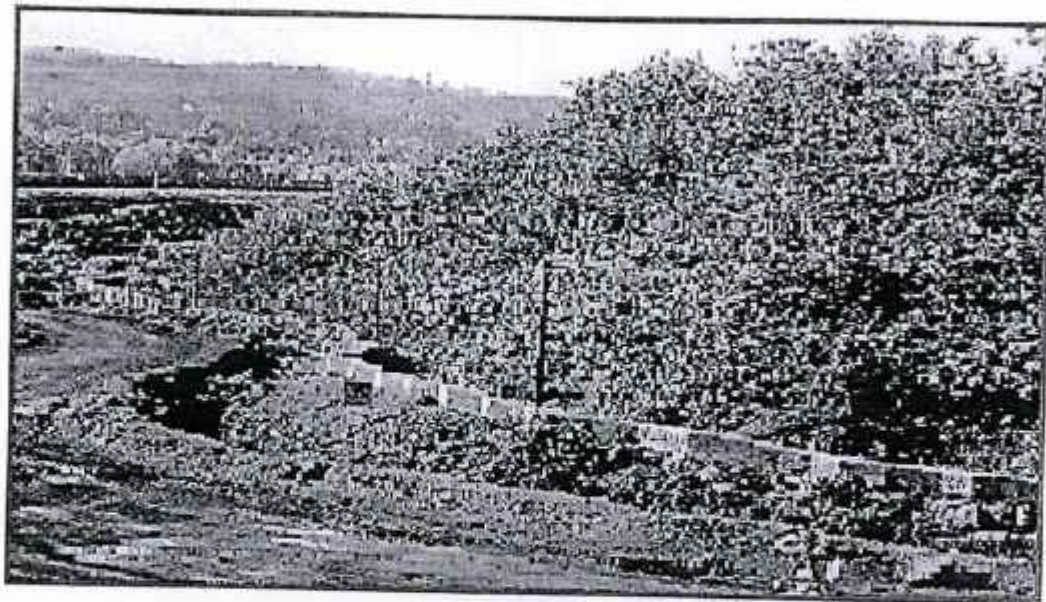
The User Agency has proposed to construct 17 nos. of loose boulder structure of 4m span across the existing & proposed garland drain along the dumps & in phase-2, settling pit will help in stabilization of silt & sediment as well as prevention of soil erosion & enrichment of vegetation & greenery development.



Loose Boulder Structures

ii) Plan for Construction of Garland drain

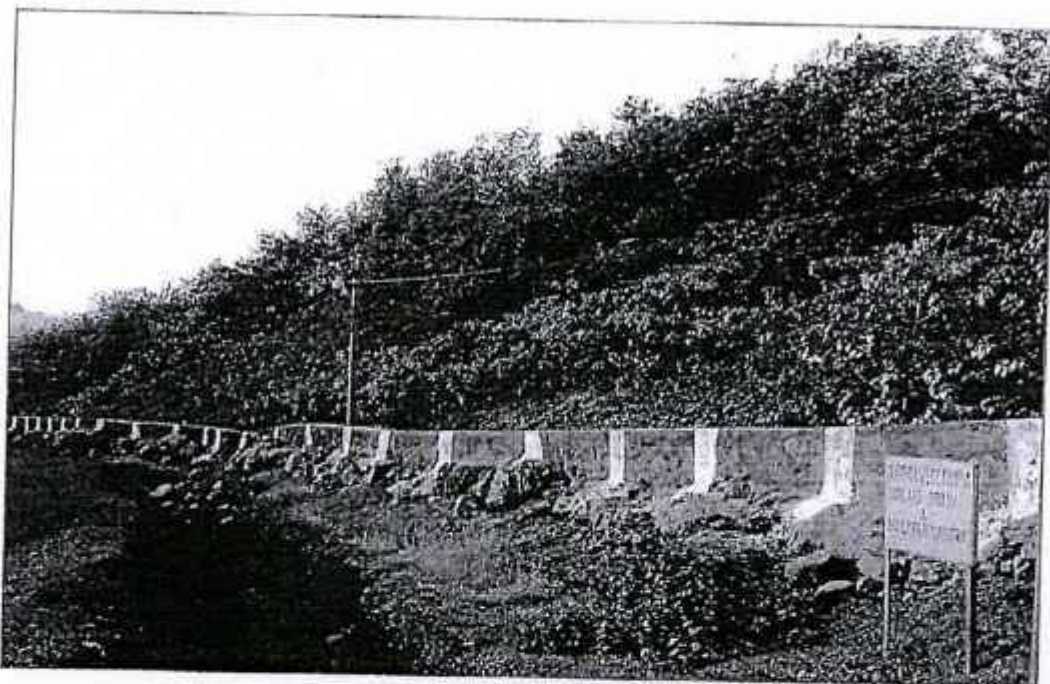
A shallow trench (1.0 m wide x 1.5 m deep) will be dug for storage of runoff accumulated for draining surface water before it is released to the agriculture land or natural water course. Details of proposed Garland drain 3427 mt. shall be constructed during the ensuing seven years period with location is shown in the map.



Garland Drain around Waste Dump

iii) 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 3427 mt. Also, there is a provision for maintenance of the retaining wall for the next 4 years.



Details of Retaining walls

iv) Terracing of OB Dump Slope

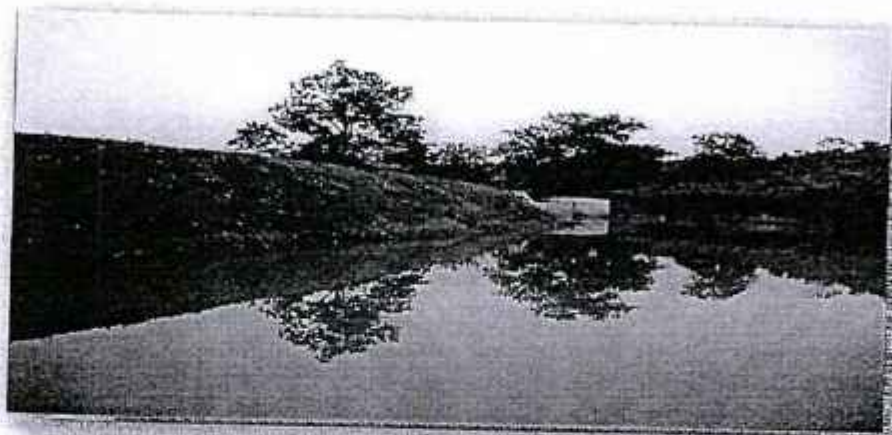
It is proposed to construct berm & terraces over a length of 2851 mt. on the proposed dumps considering the volume of OB materials & the area earmarked for dumping. The slope of individual terrace should be within the permissible range considering the angle of repose of the soil and space available, 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.



Terracing of OB Dumps

v) Plan for Construction of Check Dams

After studying the drainage pattern it has been found total number of check dam required is and accordingly, 3 no. of Check Dam will be constructed near the rain water harvesting pit. 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 from overburden dumps, haul roads inside the mine and areas cleared of vegetation. The check dam will be constructed near proposed dump area. Details of proposed Check Dams are furnished below and location of the said coordinates is shown in the map.



Check Dam to restrict Soil erosion & silt flow

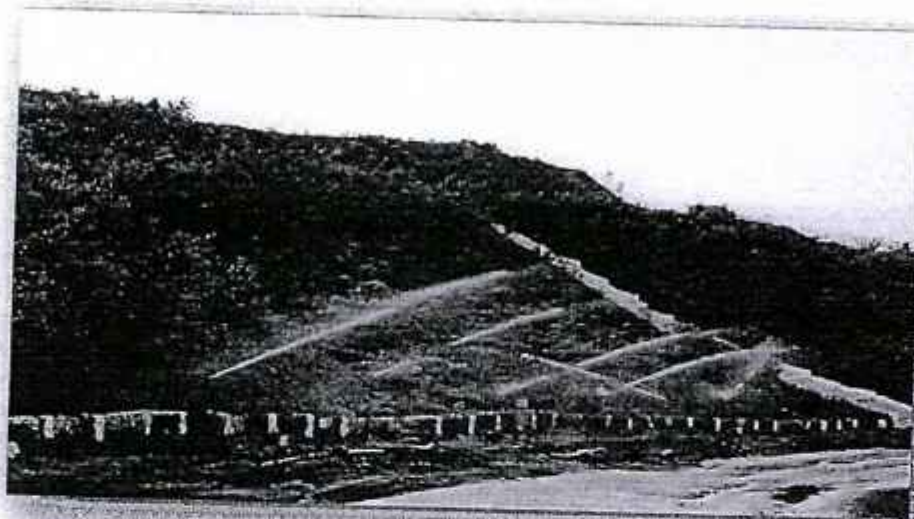
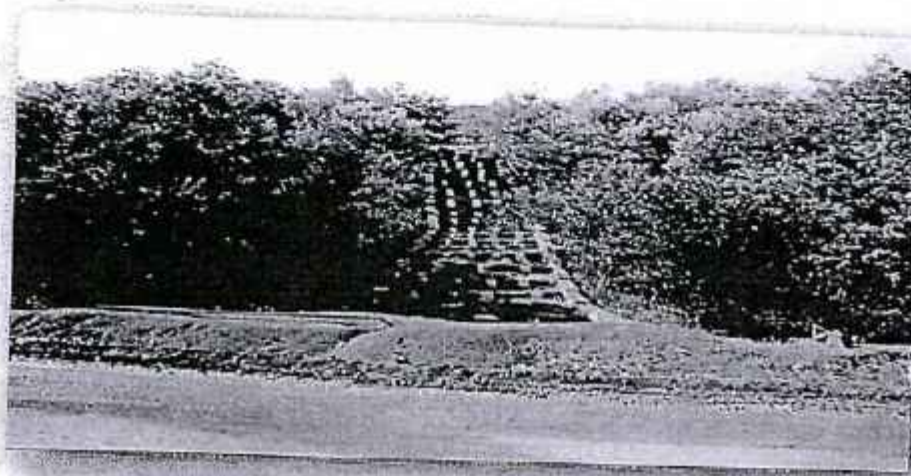
vi) Plan for Construction of Settling Tanks

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. It has been proposed to construct **2 nos.** of settling tanks. Details of proposed 2 nos. of settling Tanks are shown in the map.

vii) 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. **5 nos** of catch drain have been proposed.



Catch Drains

a) Desiltation

The de-silting works of the settling tank will be taken up both manually & mechanically at regular intervals to prevent 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 undertaken once in a year before & after

a) **De-Siltation**

The de-silting works of the settling tank will be taken up both manually & mechanically at regular intervals to prevent 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 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.

10. 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. Budgetary provision of 15% of the total project cost has been earmarked.

11. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e. Batagaon and Kensara in of Bonal Division and village Kadakala of Keonjhar 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, 15% of the plantation cost has been earmarked for expenditure on this score.

12. 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.

SPECIALISED CELL

Sl. No.	Name	Educational Qualification	Designation	Expertise
1	Shri D.K. Parida	Mining Engineer	CGM (Mining)	20 Years' experience in Mining Operation Projects
2	Shri Jayanta Das	Surveyor	A.V.P (Survey)	30 Years' experience in Mining Survey
3	Shri G.K.Pujari	M.Sc., M.Phil.	G.M (Env.)	23 Years' experience with Pollution control & Environmental Management
4	Shri Soujatya Sarangi	M.Sc Applied Geology	Manager (Geology)	14 Years' experience in Mining Geology and Exploration field.

13. REQUIREMENT OF FUNDS:

The financial forecast for construction of Check Dams, Retention/ Toe Walls to arrest sliding down of the excavated material along the contour by Construction of Check Dam, Retaining wall, Catch Drain, Settling Tank and Loose Boulder Structure of 4m span has already been provided in the Scheme for **Mitigative measures to minimize soil erosion and choking of streams** as per Condition No.11 (a) of Stage-I approval granted by MoEF in their letter Dt.28.11.2023. The financial forecast of the project has been furnished in the table below:

FINANCIAL FORECAST OF THE PROJECT (158,509 HA.)

Sl. No.	Description of the Work	Wage Rate Rs.352.00 Fund Required (in Rs.)
1.	Biological Measures	The financial forecast has already been provided in the earlier scheme prepared in compliance with Condition No.11 (a). So, no budgetary provision has been suggested
A.	Block Plantation (1600 no./ha.) on the dumps and pit to be reclaimed in future over 5.770 ha. @ Rs.3,41,903/- per ha.	
B.	Agave Plantation at the toe of dump over a length of 1200 m. @ Rs.6,38,625/- for 1000 RMT	
	Total	
2.	Structural Measures	
A.	25 nos. of Loose Boulder Structure of 4mt span @ Rs.44,461/- per each	
B.	Construction of Garland drain over a length of 3427 m @ Rs.498/- per RMT	
C.	Construction of retaining wall over 3427 m @ Rs.1948.54 per RMT	
D.	Terracing of OB dump over a length of 2851 m. @ Rs.833/- per RMT	
E.	Construction of 03 no. of check dam @ Rs.3,85,954.00/- per each	
F.	Construction of 2 no. of settling tank @ Rs.14,908.00/- per each	
G.	Construction of 5 nos. of catch drain (26 m. at dump slope) @ Rs.3,01,137.00/- per each	
	Total	
3.	De-siltation work for Garland drain, settling pond and check dam twice in a year on LS	
4.	Maintenance of retaining walls	
	Sub Total	
5.	15% of the total cost for motivation of VSS / People involved	
	Total	
	Price escalation @ 20%	
	GRAND TOTAL	

M/s Rungta Mines Limited do hereby undertake to execute the item of works mentioned in this scheme in a phased manner at the project cost.

M/s Rungta Mines Ltd.

A.emaend
Director

Technically Approved

[Signature]
Regional Chief Conservator of Forests
Rourkela Circle

Countersigned

COUNTERSIGNED

[Signature]
Divisional Forest Officer
Bonai Division



*Scheme
For*

**STABILIZE THE OVERBURDENDUMPS BY
APPROPRIATE GRADING/BENCHING SO AS
TO ENSURE THAT THAT ANGLES OF REPOSE
AT ANY GIVEN PLACE IS LESS THAN 28°**

in compliance

with

Condition No.11 (d) of

Stage-I approval granted vide

Letter No.8-08/2023-FC dt.28.11.2023 of

Government of India, Ministry of Environment,

Forest & Climage Change

for

Diversion of 156.978 Hects of Forest Land

(147.803 ha. in Bonai Division & 9.175 ha. in Keonjhar Division)

U/s-2 (ii) of F.C. Act'1980

within 158.509 Ha. Jumka Pathiriposhi Pahar Iron Ore Block

of

M/s Rungta Mines Ltd.

**in village Batagaon and Kensara in Lahunipara Tahsil, Bonai Forest
Division and village Kadakala of Keonjhar Forest Division**

Dist.Sundargarh and Keonjhar

Odisha.

SCHEME FOR STABILIZE THE OVERBURDEN DUMPS BY APPROPRIATE GRADING/BENCHING SO AS TO ENSURE THAT THE ANGLES OF REPOSE AT ANY GIVEN PLACE IS LESS THAN 28°

1. INTRODUCTION

Government of Odisha, pursuant to the Mines and Minerals (Development and Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 as amended from time to time, issued the notice inviting tender dated 07.07.2021 to commence the auction process for grant of mining lease for Jumka Pathiriposhi Pahar Iron Ore Block over an area of 158.509 Ha. for Iron Ore located in Koira Mining Circle, District-Sundargarh, Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block on 24.09.2021 and Rungta Mines Ltd. was declared as the 'Preferred Bidder' under Rule 9(9)(iii) or Rule 10 (1A) of Auction Rules, having quoted highest Final Price Offer vide letter No.MXIII(b) 46/2021/7738/DM Dated 05.10.2021 issued by Director of Mines Government of Odisha.

Accordingly, pursuant to Rule 10(2) of the Auction Rules and the terms of the Tender Document, the Government of Odisha was pleased to issue Letter of Intent (LOI) bearing No.IV(B)SM-49/2021/8716/SM, Bhubaneswar dated 28.10.2021 for grant of Mining Lease for Jumka Pathiriposhi Pahar Iron Ore Block for Iron ore located at a distance of 20 km south of Koira Town in Batagaon & Kensara village of Lahunipara Tahasil Sundargarh District and Kadakala village of Keonjhar District on 158.509 Ha. area to Rungta Mines Ltd. for a period of 50 (Fifty) years. Accordingly, M/s Rungta Mines Ltd. had submitted the proposal to obtain approval of the Central Govt. over 156.978 hectare of forest land included within the mining lease U/s-2 (ii) of the Forest (Conservation) Act'1980.

Now, the Stage-I approval over 156.978 ha. of Forest Land for U/s-2 (ii) of F.C. Act'1980 has been granted by MoEF&CC, Govt. of India vide their Letter No.8-08/2023-FC dt.28.11.2023, wherein it has been stipulated as per **Condition No.11 (d) for preparation and implementation of a plan for stabilize the overburden dumps by appropriate grading/benching so as to ensure that the angles of repose at any given place is less than 28°.**

2. LOCATION

Jumka Pathiriposhi Pahar Iron ore Block of M/s Rungta Mines Ltd. is located in Sundargarh & Keonjhar District of Odisha and can be approached throughout the year by road. It falls within the survey of India Topo sheet No.73 G/1. The total mining lease hold area is 158.509 Ha. The area is located between the Latitudes 21°48'54.81396"N to 21°47'32.62280"N and Longitude 85°13'25.32167"E to 85°12'13.87352"E.

3. TOPOGRAPHY

The area is represented by sloppy area with gentle undulation, resembling a relict type of topography. The highest contour is 1037 mts and the lowest is 926 mts. Nagaria PRF and Sarkunda PRF of Bonai forest division comes within the the ML area.

SOIL TYPE

Soil type in the study area varies widely from hard rock to lateritic soil & Shale. Areas at higher elevations are usually hard rock consisting of Iron pebbles & laterite. The top soil is scanty in the area. Whatever top soil is available is thinly spread over all Soil profile in nature. The pH of the soil is slightly acidic in nature.

4. CLIMATE

The study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March. Temperature rises rapidly attainting a maximum in the month of May. During the summer maximum temperature can go up to 47.7°C. The weather becomes pleasant with onset on monsoon in June and remains as such upto end of October. The temperature in the month of December is lowest, i.e., 7° C. The average annual rainfall as recorded at IMD observatory is 1325.16 mm. Predominant wind direction is South-West. Area remains calm for nearly 50% of the year.

5. DRAINAGE

There are a number of streams flowing to Phulamanali nala which serve the purpose of drainage. There is one seasonal nala namely Barapokhari outside the mining lease which finally join with Phulamanali nala that flows from South-West to South-East. The general elevation difference in the area is 70m. The proposed working area lies at the hill & is well above the water table.

6. EXISTING VEGETATION

The vegetation of the applied area is composed of Sal (*Shorea robusta*), Sidha (*Lagerstroemia parviflora*), Kusum (*Schleicheraoleosa*), Bara (*Ficus bengalensis*), Harida (*Terminaliachebula*), Bahada (*Terminalia belerica*), Char (*Buchananiaalanjan*), Jamu (*Syzygiumcumini*), Asan (*Terminalia tomentosa*), Kendu (*Diospyros melanoxylon*), Kumbhi(*Careya arborea*), Mango (*Mangifera indica*) etc. are major species among flora available in the applied area. **Sal (*Shorearobusta*)** is the pre-dominant species.

7. PHASE WISE MINING ACTIVITY AND MANAGEMENT OF OVERBURDEN DUMP

As per the Geological report provided by the Directorate of Mines, Steel & Mines Department, Government of Odisha, the net in situ iron ore resources of Jumka Pathiriposhi Pahar Iron Ore Block is 140.278 million tonnes (Fe content >55% and Fe content between 55% and 45%). This ore body needs to be judiciously exploited in view of systematic mining with optimum exploitation of ore to meet the growing demand of raw materials for indigenous steel plant, sponge iron plant, pellet plants etc. for ultimate production of Steel and also for export to earn foreign exchange for development of our country.

8. Waste Generation

Proposal had been given for waste generation from the proposed quarry and subsequent dumping on Dump site during the plan period as per approved scheme of mining as mentioned below.

Year	Volume of Waste Generation (m ³) from quarry
	Total (m ³)
2024-2025	NIL
2025-2026	NIL
2026-2027	58364
2027-2028	106402
2028-2029	316307

The proposed generation of waste will be dumped on Dump-D1 till the end of 2028-2029. Further Dumping of waste material will be done as per approved Mining plan. In the conceptual period the area of the over burden dump will be 6.22 Ha.

The salient features of OB/waste dump management practices

1. The total waste generation will be stacked on the proposed dump in dry state.
2. Retaining wall and garland drain will 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 28°.
 - ii) Terrace should have inward slope with a provision of catch drain.

- iii) The dump edge will be covered with bund. A garland drain will be constructed adjacent to proposed dump, following the contour & different terrace will be connected to the catch drain. The drainage pattern should be such that the runoff will be channelized to the catch drain before releasing to the garland drain outside the periphery of dump. Catch drain will be made up of concrete with number of cemented stairs to check the heavy flow of water as well as to reduce gully formation due to constant run off.

9. THE OBJECTIVES OF THE PROPOSED PLAN

The objectives of the proposed plan are as follows:

1. To fulfill the stipulation i.e., Condition No. 11 (d) imposed in the Stage-I approval granted vide Letter No.8-08/2023-FC dated 29.11.2023 to prepare plan for **Stabilization of Over burden dump by appropriate grading/benching so as to ensure that angle of repose at any given place is less than 28°.**
2. To adopt proper Management and scheduling of overburden materials so as to minimize external dumping.
3. To provide methodologies and implement the proposed works in time bound manner to prevent slope failures there by providing stable OB dump slopes.
4. To stabilize the over burden dumps by plantation.
5. To prevent overflow of eroded soils from the fines, OB dump areas leading to siltation in the streams natural streams.

In order to stabilize over burden dump, the user agency will implement some mitigative measures which are given as below:

10. 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.

11. 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 minimum one & half meter height have been planned all along the peripheral contour of the dumps to arrest the possibility 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. **Vegetative methods (Biological Measures)**

- Plantation would be done on the OB dump surface, along with sowing of seeds of *Stylohamata* etc.(broadcast)

b. **Bio-engineering Measures**

- Plantation of *Agavesisilana* or terraces as a soil conservation measure.

c. **Structural measures**

- Terracing of slopes, plugging of gullies by construction of catch drain
- Construction of Garland drains, Check dam, Settling tank, loose boulder structure etc, sub-grade dump meant for dumping sub-grade ore.

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. The details of dumps and terraces to be made have been summarized as follows:

a. **Biological Measures**

i) **Plantation on OB dumps**

It is proposed to undertake plantations over the dump. Green coverage of the dump area will be developed by raising plantation at the rate 1600 plants per hectare through block plantation. Taking into consideration the site specific soil condition, indigenous species growing naturally are proposed to be planted. It is also proposed to plant hardy species such as Agave as it can survive in degraded and poor soils along the slope & toe of O.B. dump and prove to be most useful for controlling soil erosion.

SI.No.	Item	Location	Area
1	Plantation	Dump Slope Plantation	5.770 ha.

The list of species to be adopted for the plantation is as follows:

Sl. No.	Local Name	Scientific Name
1	Amla	<i>Emblica officinalis</i>
2	Karanj	<i>Pongamia glabra</i>
3	Asan	<i>Terminalia alata</i>
4	Pahadisissoo	<i>Dalbergia latifolia</i>
5	Simaruba	<i>Simarubaglauca</i>
7	Siris	<i>Albizzia lebbek</i>

Broadcasting of grass Seeds: It is suggested to broadcast grass seeds on the slope of terrace & at other barren place for preservation of top soil. The grass recommended is as follows:

Name of Species	Usage	Habitat / Soil
<i>Stylohamata</i>	Non- Fodder	Eroded soil

Sl. No.	Item	Location	Area
1	Sowing of Grass seeds	Dump	0.670 ha



Plantation over OB Dumps

ii) Soil Treatment & Planting Activities

The topsoil which is encountered during mining operation would be preserved for utilization during plantation on OB dump areas. Planting shall be done during onset of monsoon in earlier-dugout pits of size 30cmX30cmX30cm. A basal dose of (N.P.K) fertiliser shall be applied at the time of planting, besides mixing with insecticides to prevent termites & insects. A minimum distance of 2.5 mt X 2.5 mt shall be maintained. Care should be taken to complete the planting during July.

The proposed biological measures along with the maintenance works will also be executed with internal resources by the user agency in consultation with local Forest Dept. field executives. Provision of vehicle for technical experts (Internal) for proper supervision of these works by the Executing Agency shall also be made available to them.



Block Planting Activities

b. Structural Measures

i) Plan for Construction of Loose Boulder Structure

The User Agency has proposed to construct 17 nos. of loose boulder structures of 4 m span across the existing & proposed garland drain along proposed dumps & in phase-2, settling pit would help in stabilization of silt & sediment as well as prevention of soil erosion & enrichment of vegetation & greenery development.

ii) Plan for Construction of Garland drain

A shallow trench (2.0 m wide x 1.0 m deep) will be dug for storage of run off accumulated for draining surface water before it is released to the natural water course. Proposed Garland drain to be constructed near proposed dumps over a length of 3427m shall be constructed in the ensuing five years period.

iii) Construction of Retaining wall

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 3427m around proposed dumps during 1st year operation with a provision for maintenance of the retaining wall for the next 4 years.

iv) **Terracing of OB Dump Slope**

It is proposed to construct berm & terraces over a length of 2851m. 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 would be done through the internal resources by deploying the operating mining equipment. All these operations would be carried out after sufficient deposition of OB has been made.

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

After studying the drainage pattern, it has been found total number of check dam required is 3 and accordingly, 03 nos. of Dams will be constructed near the rain water harvesting pit. During monsoon there is heavy flow 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 from overburden dumps, haul roads inside the mine and areas cleared of vegetation.

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12. 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.

13. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e. Batagaon and Kensarain of Bonai Division and village Kadakala of Keonjhar 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, 15% of the plantation cost has been earmarked for expenditure on this score.

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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.

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3	Shri G.K.Pujari	M.Sc., M.Phil.	G.M (Env.)	23 Years' experience with Pollution control & Env. Management
4	Shri Soujatya Sarangi	M.Sc Applied Geology	Manager (Geology)	14 Years' experience in Mining Geology and Exploration field.

15. REQUIREMENT OF FUNDS

The financial forecast for construction of Stabilization of over burden Dumps, Retention/ Toe Walls to arrest sliding down of the excavated material along the contour by means of, Construction of Check Dam, Retaining wall, Catch Drain, Settling Tank and Loose Boulder Structure of 4m span has already been provided in the Scheme for mitigative measures to minimize soil erosion and choking of streams as per condition No.11 (a) of Stage-I approval granted by MoEF&CC in their letter dt.28.11.2023. So, in order to avoid repetition of financial forecast, no budgetary provision has been furnished here.

FINANCIAL FORECAST of the project (158.509 ha.)

Wage Rate Rs.352.00

Sl. No.	Description of the Work	Fund Required (in Rs.)
1.	Biological Measures	The financial forecast has already been provided in the earlier scheme prepared in compliance with Condition No.11 (a)). So, no budgetary provision has been suggested
A.	Block Plantation (1600 no./ha.) on the dumps and pit to be reclaimed in future over 5.770 ha. @ Rs.3,41,903/- per ha.	
B.	Agave Plantation at the toe of dump over a length of 1200 m. @ Rs.6,38,625/- for 1000 RMT	
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4.	Maintenance of retaining walls	
	Sub Total	
5.	15% of the total cost for motivation of VSS / People involved	
	Total	
	Price escalation @ 20%	
	GRAND TOTAL	

M/s Rungta Mines Limited do hereby undertake to execute the item of works mentioned in this scheme in a phased manner at the project cost.

M/s Rungta Mines Ltd.

Hemachand
Director

Technically Approved

16/11/2024
Regional Chief Conservator of Forests
Rourkela Circle

Countersigned
COUNTERSIGNED

[Signature]
Divisional Forest Officer,
Bonai Division



OFFICE OF THE REGIONAL CHIEF CONSERVATOR OF FORESTS, ROURKELA CIRCLE,
AT/P.O. PANPOSH, ROURKELA-769 004.

Memo No. 554 13F-863/2024 Date: 15.02.2024

To
The Divisional Forest Officer,
Bonai Forest Division.

Sub:- Proposal for seeking prior approval of the Central Government under section 2(ii) of the Forest (Conservation) Act, 1980 in favour of M/s Rungta Mines Ltd for non-forestry use of 156.978 ha of forest land (147.803 ha in Bonai Forest Division & 9.175 ha in Keonjhar Forest Division) for Iron Ore Mining and ancillary activities within Jumka Pathriposhi Pahar Iron Ore Block under Bonai and Keonjhar Forest Division & District Sundargarh and Keonjhar District, Odisha- Stage-I approval regarding.

X-Sub:- Approval of Scheme for Safety Zone.

Ref: 1. F.No. 8-08/2023-FC dt.28.11.2023 of MoEF & CC, Govt. of India.
2. Your Memo No. 1077 dt.12.02.2024

The scheme for Safety Zone over 5.746 ha. within the mining Block area with a maintenance period of 10 years prepared at the current rate of Rs.352.00 per man day and as per the onetime cost norm prescribed by the PCCF, Odisha with a total financial outlay of Rs.2,24,82,500/- in compliance with Condition No.12 of the Stage-I approval accorded vide Letter F.No. 8-08/2023-FC dt.28.11.2023 of MoEF & CC, Govt. of India, in respect of the above diversion proposal and submitted vide your Memo under reference is hereby technically approved.

The technically approved schemes are returned herewith in quadruplicate for taking necessary action at your end.

Encl.:- As above.

Memo No. 555 Date: 15.02.2024
Copy forwarded to the Principal Chief Conservator of Forests (Forest Diversion & Nodal Officer, FC Act), O/o the Principal Chief Conservator of Forests, Odisha for favour of kind information and necessary action with reference to Memo No.1078 Dtd.12.02.2024 of DFO, Bonai Division.

Memo No. 556 Date: 15.02.2024
Copy forwarded to the Divisional Forest Officer, Keonjhar Division for information and necessary action with reference to Memo No.1079 Dtd.12.02.2024 of the DFO, Bonai Division.

Memo No. 557 Date: 15.02.2024
Copy forwarded to the M/s Rungta Mines Ltd. At/PO-Barbil, Dist-Keonjhar for information and necessary action with reference to Memo No.1080 Dtd.12.02.2024 of the DFO, Bonai Division.

Regional Chief Conservator of Forests,
Rourkela Circle

SCHEME FOR

**FENCING, PROTECTION AND REGENERATION
OF THE SAFETY ZONE OVER 5.746 HA.**

(FOREST-5.478 HA. (+) NON-FOREST-0.268 HA.)

**ALL ALONG THE INNER BOUNDARY OF THE
ML AREA OF 158.509 HA.**

FOR JUMKA PATHRIPOSHI IRON ORE BLOCK

OF

M/S RUNGTA MINES LTD.

COMING UNDER

BONAI & KEONJHAR FOREST DIVISION

**SCHEME FOR FENCING, PROTECTION AND REGENERATION OF THE
SAFETY ZONE OVER 5.746 HA. (FOREST-5.478 HA. (+) NON-FOREST-0.268
HA.) ALL ALONG THE INNER BOUNDARY OF THE ML AREA OF 158.509 HA.
FOR JUMKA PATHRIPOSHI IRON ORE BLOCK OF M/S RUNGTA MINES 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.8-08/2023-FC dt.28.11.2023 for diversion of 156.978 ha. of forest land (147.803 ha. in Bonai Forest Division & 9.175 ha. in Keonjhar Forest Division) including 5.478 ha. of Safety Zone area in favour of M/s Rungta Mines Ltd. within Jumka Pathriposhi Iron Ore Block area in Bonai & Keonjhar Forest Division, subject to some conditions. As per condition No.12 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 5.746 ha. (Forest-5.478 ha. (+) Non-forest-0.268 ha.). The location of the Safety zone area has shown in the map enclosed as **Annexure-VI.**

2. LOCATION :

The mining lease area is covered in the Survey of India Toposheet (73 G/1) and situated between the latitudes 21° 48' 54.81396" to 21° 47' 32.6228" N North and longitudes 85° 13' 25.32167" to 85° 12' 12.87352 East.

3. TOPOGRAPHY AND SOIL:

The area is represented by sloppy area with gentle undulation, resembling a relict type of topography. The highest contour is 1037 meters and the lowest one is of 926 meters. Nagaria PRF and Sarkunda PRF of Bonai Forest Division comes within the ML area.

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^o Celsius and the minimum goes down to 8^o 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, Kasi, Kusum, Kendu, Mahul, Bara, Jamun, Char, Tentuli, Asan, Bahada, Harida, Sidha, Gambhari, Dhaura, Bhalia, Kumbhi 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 5.00 ha. @ 1000/ ha. and ANR plantation over 0.746 ha. at a spacing of 2.5 mtr X 2.5 mtr., in the safety zone of the lease hold area of M/s Rungta Mines Ltd. under Bonai & Keonjhar Forest Division. The Plantation work will be done in the 1st year followed by maintenance during 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th and 10th year. The detailed expenditure statement of AR & ANR Plantation is enclosed as **Annexure-I & II** respectively.

(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 7688.345 mt. The inner perimeter comes to 7633.714 mt. The total perimeter, i.e., outer perimeter and inner perimeter comes to 15322.059 MT (7688.345 mt. + 7633.714 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 0th 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. (1st, 2nd, 3rd 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 5.00 ha. by AR Plantation @ 1000 seedlings per ha. and 0.746 ha. by ANR Plantation @200 seedlings per ha. at a spacing of 2.5 mtr X 2.5 mtr. has been proposed. So, 5000 nos. of seedlings will be required for AR plantation @1000 plants per hectare and 149 nos. of seedlings will be required for ANR plantation @200 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 @ 1000 & @200 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 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.

(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. The cost norm of SMC is enclosed as **Annexure-III.**

(E) Fencing.

To protect the AR plantation from biotic interference, Barbed wire fencing is proposed over the Safety Zone area of 5.746 ha. The length of outer periphery of Safety Zone area is 7688.345 mt. The inner perimeter comes to 7633.714 mt. The total perimeter, i.e., outer perimeter and inner perimeter comes to 15322.059 MT (7688.345 mt. + 7633.714 mt.) are required to be fenced with Barbed wire fencing.

The cost norm of Barbed wire fencing is enclosed as **Annexure-V**

(F) Protection.

The Safety Zone area is exposed to biotic interference. The User Agency shall deploy 4 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-IV.**

(H) Motivation of People from adjoining villages:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e. Batgaon, Kensara of Bonai Forest Division and village Kadakala 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 ₹ 2,24,82,500/- (Rupees Two Crore Twenty Four Lakh Eighty Two Thousand Five Hundred only) will be required as detailed below.

<u>Works to be executed by the User Agency.</u>		
1.	AR Plantation @1000 plants per hectare over 5.00 ha. @₹ 2,58,777/- per ha.	₹ 12,93,885.00
2.	ANR Plantation @200 plants per hectare over 0.746 ha. @₹ 1,05,986/- per ha.	79,066.00
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 = 5.746 ha X ₹39,284/-.	₹ 2,25,726.00
4.	Water provision to plantation: Solar system with Bore well (1 system for 5 Ha. Plantation) fitted with Drip system @ ₹2,45,476/- X 2 nos.	₹ 4,90,952.00
5.	Special plantation watcher 4 Nos. (4 x 10560 x 12 x 10 years).	₹ 50,68,800.00
6.	Cost of Barbed wire Fencing over 15322 RMT (Outer periphery-7688.345 Rmt. (+) Inner Periphery-7633.714 Rmt), (Or, 15322 RMT = 15.322 Km) @839/- per RMT with 3 years maintenance of 3 years (3 rd , 6 th & 9 th) year.	₹ 1,28,55,158.00
7.	5 nos. of fire blower (₹60,000/- x 5 nos.) with POL (₹5,000/- x 5 years x 5 nos.).	₹ 4,25,000.00
	Total :-	₹ 2,04,38,587.00
8.	Entry Point Activities 10% of the cost	₹ 20,43,859.00
	Total :-	₹ 2,24,82,446.00 Or ₹ 2,24,82,500.00

(Rupees Two Crore Twenty Four Lakh Eighty Two Thousand Five Hundred only).

Technically Approved

[Signature]

**Regional Chief Conservator of Forests
Rourkela Circle**

**Divisional Forest Officer,
Bonai Division.**

[Signature]

ANNEXURE-1

ANNEXURE-4						
BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1000 PLANTS PER HECTARE (10 months old seedling)						
WAGE RATE RS- 33 1/2 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
0th Year (Advance work) Pre-Planting Operation						
1	Survey, Delineation and Pillar posting	Nov/Dec	2	672	0	672
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311	100	411
3	Site preparation (Cleaning & 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 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	48	12440	0	12440
7	Construction of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Jan/Mar	0	0	3500	3500
Total			57	17727	3600	21327
1st Year/Planting Year						
1	Refilling of pits by altering the depth cut of the pits, application of organic compounds/CDM/EVM & mixing the same properly.	Jan/Jul	7.5	2332.50	5000	7332.50
2	Transportation of 10 months old polythene bag seedlings in hired truck/tractor from the Permanent/Mega nursery to planting site including loading & unloading. (Average load of 10 (Ten) & stacking the seedling @ Rs.6/- per seedling. (1100 nos.)	Jul/Aug	0	0	6600	6600
3	Watering polythene seedlings at planting site	Jul/Aug	2	622	0	622
4	Conveyance of polythene 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 & packing the soil perfectly around the planted seedlings.	Jul/Aug	22.5	6997.50	0	6997.50
5	Cost of Fertilizer & Insecticide (a) NPK/Bio-fertilizer @ 30 gms/plant at basal dose = 50kg @ Rs.30/- per kg = Rs. 1500.00 (b) Urea/Vermicompost/Mo. Khata/ory other fertilizer in two subsequent doses @ Rs. 750.00 (c) Insecticide/ Bio-pesticide @ 5 gms/plant @ 5 kg @ Rs.150/- per kg = Rs. 750.00	Jul/Aug	0	0	3000	3000
6	Casualty Replacement @ 10% (100 nos.)	Jul/Aug	2.5	777.5	0	777.5
7	1st weeding & Manuring	Aug/Sept	12	3732	0	3732
8	2nd Weeding, Soil working (1mt. diameter around the plants) & Manuring	Oct/Nov	15	4665	0	4665
9	Fire line tracing (2 mt. 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	Apr-Mar	12	3732	0	3732
Total			76.00	32791.50	14600.00	30391.50
2nd Year Maintenance						
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	777.5	0	777.5
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/Bio-fertilizer/Vermicompost/Mo. Khata/ory other fertilizer @ Rs. 750.00	July/Aug	0	0	2875	2875
4	Weeding (Complete weeding), Manuring & Soil working (1mt. diameter around the plants)	Sept/Oct	15	4665	0	4665
5	Fire line tracing (2 mt. 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	10	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr-Mar	0	0	1000	1000
Total			30.5	11973.5	4475	16448.5

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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
3rd Year Maintenance						
1	Cost of Fertilizer (DAP/D/90/0)-fertilizer/Vermincompost/Mo Khata/any other fertilizer	July/Aug	0	0	2800	2800
2	Weeding (Complete weeding), Mounding & Soil work (Link-Bangari around the plants)	Sept/Oct	15	1665	0	1665
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 requirements	Apr/Mar	18	5598	0	5598
5	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr/Mar	0	0	1000	1000
Total			36.0	11196	3800	14996
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 vegetative forest	Apr/Mar	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/Mar	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 length)	Feb/Mar	3	933.00	0	933.0
2	Pruning of branches, Simulating out of multiple shoots	Jan/Mar	3	933.00	0	933.0
3	Watch & Ward	Apr/Mar	18	5598.00	0	5598.0
Total			24	7464.00	0	7464.0
7th Year Maintenance						
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
Total			21	6531	0	6531
8th Year Maintenance						
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
Total			21	6531	0	6531
9th Year Maintenance						
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
Total			21	6531	0	6531
10th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
Total			21	6531	0	6531

Your wife Abstract (Cost Norm. showing rolling cost separately)

Sl. No	Hours of work	Preferred 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	8	
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	17727.0	3000.0	970.00	0.00	22307.00
2	1st year		765	23791.5	14600.0	1918.50	59341.00	05651.00
3	2nd year		785	11973.5	4475.0	821.50	5031.00	22301.00
4	3rd year		36.0	11396.0	3000.0	749.00	0.00	15215.00
5	4th year		21.0	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	7464.0	0.0	373.00	0.00	7837.00
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	111338.0	26475.0	6721.0	60372.0	704976.0

Notes:

- 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 to plantation.
- 3 Site specific soil conservation works like LBSM, 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 twigs fencing may be preferred.
- 5 Watering facilities for procurement of water & watering may be adopted as per the availability of water.
- 6 The Cost Break of various items can be changed with the approval of the concerned SCCPs keeping the overall cost norm fixed for each financial year.


 A/C CCF (Forest Diversion & NO, FC Act)

Matrix for Model A Conventional CA Plantation (Asst. 1000 plants per Ha.

Sl. No.	Compartment	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	Total Cost (to 1000)	
1	2011-12	22100	25631	29301	15708	8137	8857	7817	8857	6857	8857	8857	20731	8048	20731	8048	20731	8048	20731	8048	20731	8048	20731	8048	224718
2	2012-13		73415	109458	25924	18137	8753	9188	11077	10150	10638	11389	11777												448154
3	2013-14			70559	110779	27105	30091	9180	8648	11878	10807	11770	11727	12815											258177
4	2014-15				25815	318705	26450	21003	3950	10150	12157	17169	17779	13113	13829										277716
5	2015-16					27105	122072	29883	22154	10133	10637	12765	17227	13915	13878	11875									283502
6	2016-17						21461	118287	11877	2138	20520	11169	19403	13313	13811	13875	14254								258577
7	2017-18							28034	154911	13972	14425	11872	19727	14073	13878	14214	14214	15987							314518
8	2018-19								21875	161305	15485	25848	11781	12818	11923	13518	14214	14214	14907	13875					318223
9	2019-20									13047	141307	13023	28808	12318	11923	13518	14214	14214	14907	13875					318223
10	2020-21									34580	138008	38135	28771	11954	13575	14254	14254	14907	13875						351327

APCCF (Forest Division & HQ, FC A-1)

[Signature]

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ANNEXURE-II

ANNEXURE-6						
Base Cost Norms for Compensatory Afforestation through Aided Natural Regeneration (ANR) @ 200						
Seedling/Ma. (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.)
0th 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	Nov/Dec	2	622	0	622
4	Silvicultural operations including clearance of weed, cutting of climber, High stump cutting, singling of shoots & removal of cut out after drying from the field to blank space.	Jan/Feb	15	4665	0	4665
5	Alignment and staking for digging of pits	Feb/Mar	0.5	156	0	156
6	Digging of pits (45 cm x 45 cm X 45 cm) in hard and gravelly soil	Feb/Mar	8	2488	0	2488
Total			28.5	8063.5	100.0	8963.5
1st Year/Planting Year						
1	Refilling of pits by altering the contour soil of the pits, application of organic compounds/ COM/ FYM & mixing the same perfectly.	June/Jul	1.5	466.5	1000	1467
2	Transportation of 10 months old polythene bag seedlings in hired truck /tractor from the permanent/Mega nursery to planting site including Loading & unloading, (Average load of 10 Bins) & Stacking the seedling @ Rs.6/-/ Seedling, (220 nos.)	Jul/Aug	0	0	1320	1320
3	Watering polythene bag seedlings at stacking site of plantation	Jul/Aug	0.5	155.5	0	156
4	Conveyance of polythene bag seedlings on hand load from the stacking site to individual digout pits within the planting site, applying insecticide, fertilizer & planting after scooping the soil with other applied materials and pressing the soil perfectly around the planted seedling.	Jul/Aug	4.5	1399.5	0	1400
5	Cost of Fertilizer & Insecticide (a) NPK/ Bio-fertilizer @ 50 gms/plant as basal dose = 10kg @ Rs.30/- per kg = Rs. 300.0 (b) Urea/Vermicompost/Mo Khada/any other fertilizer @ Rs. 150.00 (c) Insecticide/ Bio-pesticide @ 5nos/plants 1 kg @ Rs.150/- per kg = Rs. 150/-	Jul/Aug	0	0	600	600
6	Casualty Replacement @ 10% (20 nos.)	Jul/Aug	6.5	2036.5	0	2037
7	1st weeding & Manuring	Aug/Sept	2	622	0	622
8	2nd Weeding, Soil working (1m. diameter around the plants) & Manuring	Oct/Nov	3	933	0	933
9	Fire line tracing & inspection path	Feb/Mar	3	933	0	933
10	Watch & Ward including watering as per requirement	Aug-Mar	8	2488	0	2488
Total			23	7153	2920	10073
2nd Year Maintenance						

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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	Transportation of 20 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.5/- per seedling	Jul	0	0	120	120
2	Planting for casualty replacement	Jul	0.5	155.5	0.0	155.5
3	Cost of Fertilizer & Insecticide: A) Cost of Insecticide/ Bio-pesticide (Thimet/ Forate) @ 5 gms./plant = 0.1 Kg @ Rs.150/- per kg = Rs.15/- B) Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizers Rs. 560/-	Jul	0	0	575	575
4	Weeding (Complete weeding), Mounding & Soil working (1 mt. diameter around the plants)	Sep/Oct	4	1244	0.0	1244
5	Fire line tracing (2 m. wide fire line over 400 m long) & inspection path	Feb/Mar	3	933	0.0	933
6	Watch & Ward including watering as per requirement	Apr/Mar	12	3732	0.0	3732
Total			19.5	6064.5	695.0	6759.5
3rd Year Maintenance						
3	Cost of Fertilizer: Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizers= Rs. 560/-	Sep/Oct	0	0	560	560
4	Weeding (Complete weeding), Mounding & Soil working (1 mt. Diameter around the plants)	Aug/Sep	4	1244	0	1244
5	Fire line tracing (2 m. wide fire line over 400 m long) & inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr/Mar	12	3732		3732
Total			19.0	5909.0	560.0	6469.0
4th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & inspection path	Feb/Mar	3	933	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732	0	3732
Total			15	4665	0	4665
5th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length) & inspection path	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
Total			15.0	4665.0	0	4665
6th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length) & inspection path	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
Total			15.0	4665.0	0.0	4665.0
7th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length) & inspection path	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
Total			15.0	4665.0	0.0	4665.0
8th Year Maintenance						

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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	Fire line tracing (2 m. wide fire line over 400 m length) & inspection path	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
	Total		15.0	4665.0	0.0	4665.0
9th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length) & inspection path	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
	Total		15.0	4665.0	0.0	4665.0
10th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length) & inspection path	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
	Total		15.0	4665.0	0.0	4665.0

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 (In Rs.)	Monitoring, Evaluation, Learning, Documentation and Other Contingency (5% of (4+5+6))	Cost of Seedlings @ Rs. 50.31 per seedlings	TOTAL COST
1	2	3	4	5	7	6	8
1	0th year	38.5	11962.5	100	436.50	0.00	9400.0
2	1st year	23.0	7153.0	2020	427.00	11658.00	21568.0
3	2nd year	19.5	6064.5	595	240.50	1806.00	6065.0
4	3rd year	12.0	3732.0	300	231.00	0.00	6700.0
5	4th year	15.0	4665.0	0	135.00	0.00	4800.0
6	5th year	15.0	4665.0	0	135.00	0.00	4800.0
7	6th year	15.0	4665.0	0	135.00	0.00	4800.0
8	7th year	15.0	4665.0	0	135.00	0.00	4800.0
9	8th year	15.0	4665.0	0	135.00	0.00	4800.0
10	9th year	15.0	4665.0	0	135.00	0.00	4800.0
11	10th year	15.0	4665.0	0	135.00	0.00	4800.0
	Total	195.0	60645.0	4275.0	2280.0	12074	79274.0

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 L.B.C.P., Gully Plugging, Staggered Trench, Contour Trench, Graded Bund, etc. may be taken up.
4. Chain link fencing can be adopted in the CA plantation. When up inside the forest area and bamboo twigs fencing may be preferred in CA plantation taken up in degraded forest area.
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 REC/Ps keeping the overall cost norm fixed for each Financial Year.


 A.P. CCF (Forest Division & NG, FC Act)

Matrix for ANR-200 Plants/Ha

Sl. No.	Construction period/Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	Total Cost	
1	2011-12	8100	21616	8126	7705	5031	6126	6432	6754	7022	7345	7839										95131	
2	2012-13	8270	22778	8267	8124	8126	6432	6754	7022	7347	7818	8210										100518	
3	2013-14		10854	24987	2720	8551	8432	6754	7027	7447	7819	8209	8221									105256	
4	2014-15				15812	26215	10217	8279	6754	7022	7447	7818	8210	8209	8202								111205
5	2015-16					11416	27206	10728	8423	7022	7447	7819	8210	8210	8202	8205							116852
6	2016-17						11957	28030	11284	9899	7447	7819	8210	8210	8202	8205	8180						122594
7	2017-18								12657	30841	11827	10284	7819	8210	8202	8205	8176						128613
8	2018-19								13127	31986	12412	10924	8210	8210	8202	8205	8145						135272
9	2019-20								13608	33457	13039	11429	8210	8210	8202	8205	8080						140033
10	2020-21								14078	34927	13579	11929	8210	8210	8202	8080	8070						145024

APDC (Forest Division B, A/D, P.C. A/C)

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Annexure-III

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Annexure-11			
Cost Matrix for Costing of Compensatory Afforestation with Stabilization of Soil & Conservation of Moisture (4000)			
WAGE RATE RS/311/- PER DAY			
Sl.No	Item of Works	Preferable Period of Execution	Total Cost
5th Year (Pre-Planting Operation)			
1	Nil		0
1st Year			
2	Soil Conservation measure structures like Staggered Trench, Percolation pit, Contour trench, Graded earthen bank, LICD, Wire mesh LICD, Sub surface Dyke & WIS as per the slope & site requirement on LS	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	Material Cost	Total cost (Rs.)
1	5th year	0.0	0.0	0.0	0.0
2	1st year	0.0	0.0	20,215.0	20,215.00
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.


 A/CCF (Forest Division & NQ, FC Act)

Matrix for (SMC)

Sl. NO.	Commence ment Year	In Rupees																Total Cost			
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI				
	Barb North	0	20215	3032	3032	3032	3032														
1	2021-22	0	21226	3342	3510	3585	2870													35633	
2	2022-23		0	22287	3509	3586	3869	4664													37415
3	2023-24			0	23401	3594	3570	4662	4207												38284
4	2024-25				0	24571	3588	4064	4263	4480											41248
5	2025-26					0	25300	4061	4287	4478	4704										43310
6	2026-27					0	27080	4254	4480	4700	4939										45475
7	2027-28						0	28065	4477	4708	4937	5156									47749
8	2028-29							0	28837	4701	4939	5184	5405								50136
9	2029-30							0	31380	4936	5186	5449	5717								52642
10	2030-31							0	22928	5183	5445	5713	6003								55274

APCCF (Forest Diversion & NO, FC Act)

ANNEXURE-IV

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Watering Munit/M-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	150,000	
2	Installation of Solar panel in other System	300,000	
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 150/ha	3,02,431	
Total		8,17,431	
6	Cost of Water & watering per Ha. (8,17,431/5) = Rs. 1,63,486/		1,63,486
7	No maintenance required		0
			Total 0
2nd Year Watering			
8	Maintenance of system @ 5% of initial cost of installation		8,174
			Total 8,174
3rd Year Watering			
9	Maintenance of system @ 5% of initial cost of installation		8,174
			Total 8,174
4th Year Watering			
10	Maintenance of system @ 5% of initial cost of installation		8,174
			Total 8,174
5th Year Watering			
11	Maintenance of system @ 5% of initial cost of installation		8,174
			Total 8,174
Total 3,174			

Abstract					
Sl. No.	Year	No. person days	Labour cost @ Rs. 311/-per day	Material Cost	Total cost (Rs.)
1	0th year				
2	1st year	0	0.0	163486.0	163486.0
3	2nd year	0	0.0	0.0	0.0
4	3rd year	0	0.0	8174.0	8174.0
5	4th year	0	0.0	8174.0	8174.0
6	5th year	0	0.0	8174.0	8174.0
		Total	0	196108	1,96,108

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

Sl. No.	Commence ment Year	In Rupees																	
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost	
	Base Num	163485	0	8174	8174	8174	8174												
1	2023-24	163485	0	9011	9463	9935	30758												222653
2	2024-25		171650	0	9462	9935	10432	32295											233785
3	2025-26			180143	0	9935	10432	10954	33911										245476
4	2026-27				10432	0	10954	11502	35607										257751
5	2027-28				10954	0	11502	12077	37387										270639
6	2028-29				208654	0	11502	12077	12681	39156									284171
7	2029-30					313087	0	12077	12682	13325	42219								298380
8	2030-31					230041	0	12681	13316	13981	43380								313299
9	2031-32					241543	0	13315	13982	14680	45442								328954
10	2032-33					233520	0	13981	14691	15414	47716								345412

APCCF (Forest Division & NO, FC Act)

ESTIMATE FOR BARBED WIRE FENCING


ESTIMATE FOR BARBED WIRE FENCING


ANNEXURE-37


01).	02 ply barbed wire (5 Rmt per lg) 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		
	$\left\{ \frac{8' \times 6'' + 4''}{2} \right\} \times \frac{6'' + 4''}{2} = 1.34 \text{ cft or } 0.038 \text{ cum}$		
	i) Cost of c.c work 1:2:4=0.038 cum @5262.57/cum	= 199.98	
	ii) Cost of rod including cutting, bending & binding 0.038x0.9qtl=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/-
	<u>Requirement of pillars per KM-</u> Spacing=2.5mtx2.5mt Requirement=1000mt/2.5mt = 400 Strut pillar in every 10 th pillar=(400/10)x2 = 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'x1.5'x1.5'=3.375cft/pit for 480 pits, 480x3, 375=1620 cft or 45.86 cum @ Rs. 12,040/100cum	= 5521.54	
	ii) Filing of pillars with 4cm hbg metals in C.M 1:4:8 pit size-1.5'x1.5'x1.5' =3.375 cft Deduct 1/3 rd of butt of pillar i.e.3.375/3 =(-) 1.125 cft Total c.c. work per pillar = 2.25cft		
	For 480 pillars=480x2.25=1080cft 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 70M.d per km@280/-	=	Rs.19,600.00
05).	Carriage of Barbed wire & pillars to work site @Rs.1000/tl. and cost of loading & unloading within 5 km distance Approximately 10 tld @ 800/tld	=	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 Or say, Rs.629.91/- or Rs.630/- per meter		Rs.6,29,917.00

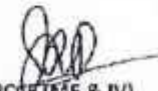
07). Expenditure towards maintenance for 3 years (3rd, 6th & 9th year)
@ 2% of cost per rkm = 3 x 2% x Rs.6,29,917/- = Rs.37,795.00
Expenditure per 1 km of barbed wire fencing including maintenance = Rs.6,57,712.00

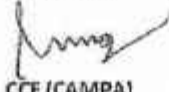
So, expenditure per running meter for fencing = Rs.667.71/Mtr. or say Rs.668/-Mtr.
(Rupees Six hundred sixty eight) only



Addl. PCCF (FB&A)



Addl. PCCF (Nodal & FC)



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 @ 352.00 per MD = Rs.839.40 (Or, say 839.00 / Mtr.)


Divisional Forest Officer,
Bonai Division.



Scheme

For

TOP SOIL MANAGEMENT

in compliance

with

Condition No.13 of

Stage-I approval granted vide

Letter No.8-08/2023-FC dt.28.11.2023 of

Government of India, Ministry of Environment,

Forest & Climate Change

for

Diversion of 156.978 Hects of Forest Land

(147.803 ha. in Bonai Division & 9.175 ha. in Keonjhar Division) for U/s-

2 (ii) of F.C. Act'1980

within 158.509 Ha. Jumka Pathiriposhi Pahar Iron Ore Block

of

M/s Rungta Mines Ltd.

in village Batagaon and Kensara in Lahunipara Tahsil, Bonai Forest

Division and village Kadakala of Keonjhar Forest Division

Dist.Sundargarh and Keonjhar

Odisha.

SCHEME FOR TOP SOIL MANAGEMENT

1. INTRODUCTION

Government of Odisha, pursuant to the Mines and Minerals (Development and Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 as amended from time to time, issued the notice inviting tender dated 07.07.2021 to commence the auction process for grant of mining lease for Jumka Pathiriposhi Pahar Iron Ore Block over an area of 158.509 Ha. for Iron Ore located in Koira Mining Circle, District-Sundargarh, Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block on 24.09.2021 and Rungta Mines Ltd. was declared as the 'Preferred Bidder' under Rule 9(9)(iii) or Rule 10 (1A) of Auction Rules, having quoted highest Final Price Offer vide letter No.MXIII(b) 46/2021/7738/DM Dated 05.10.2021 issued by Director of Mines Government of Odisha.

Accordingly, pursuant to Rule 10(2) of the Auction Rules and the terms of the Tender Document, the Government of Odisha was pleased to issue Letter of Intent (LOI) bearing No.IV(B)SM-49/2021/8716/SM, Bhubaneswar dated 28.10.2021 for grant of Mining Lease for Jumka Pathiriposhi Pahar Iron Ore Block for Iron ore located at a distance of 20 km south of Koira Town in Batagaon & Kensara village of Lahunipara Tahasil Sundargarh District and Kadakala village of Keonjhar District on 158.509 Ha. area to Rungta Mines Ltd. for a period of 50 (Fifty) years. Accordingly, M/s Rungta Mines Ltd. was submitted the proposal to obtain approval of the Central Govt. over 156.978 hectare of forest land U/s-2 (ii) of the Forest (Conservation) Act'1980 within the above Mining Lease area.

Further, Stage-I approval over 156.978 ha. of Forest Land for U/s-2 (ii) of F.C. Act'1980 has been granted by MoEF&CC, Govt. of India vide their Letter No.8-08/2023-FC dt.28.11.2023, wherein it has been stipulated as per **Condition No.13 for preparation and implementation of a plan containing for Top Soil Management.**

2. LOCATION

Jumka Pathiriposhi Pahar Iron ore Block of M/s Rungta Mines Ltd. is located in Sundargarh & Keonjhar District of Odisha and can be approached throughout the year by road. It falls within the survey of India Topo sheet No.73 G/1. The total mining lease hold area is 158.509 Ha. The area is located between the Latitudes $21^{\circ}48'54.81396''N$ to $21^{\circ}47'32.62280''N$ and Longitude $85^{\circ}13'25.32167''E$ to $85^{\circ}12'13.87352''E$.

3. TOPOGRAPHY

The area is represented by sloppy area with gentle undulation, resembling a relict type of topography. The highest contour is 1037 mts and the lowest is 926 mts. Nagaria PRF and Sarkunda PRF of Bonai forest division comes within the the ML area.

4. SOIL TYPE

Soil type in the study area varies widely from hard rock to lateritic soil & Shale. Areas at higher elevations are usually hard rock consisting of Iron pebbles & laterite. The top soil is scanty in the area. Whatever top soil is available is thinly spread over all Soil profile in nature. The pH of the soil is slightly acidic in nature.

5. CLIMATE

The study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March. Temperature rises rapidly attainting a maximum in the month of May. During the summer maximum temperature can go up to 47.7°C. The weather becomes pleasant with onset on monsoon in June and remains as such upto end of October. The temperature in the month of December is lowest, i.e., 7° C. The average annual rainfall as recorded at IMD observatory is 1325.16 mm. Predominant wind direction is South-West. Area remains calm for nearly 50% of the year.

6. DRAINAGE

There are a number of streams flowing to Phulamanali nala which serve the purpose of drainage. There is one seasonal nala namely Barapokhari outside the mining lease which finally join with Phulamanali nala that flows from South-West to South-East. The general elevation difference in the area is 70m. The proposed working area lies at the hill & is well above the water table.

7. PLAN FOR TOP SOIL MANAGEMENT

This Topsoil Management Plan provides description of the soil stripping and stockpiling procedures to minimize top soil degradation and maximum availability of suitable soil for future rehabilitation within the 158.509 hectares mining lease of Jumka Pathiriposhi Pahar Iron Ore block in Sundargarh & Keonjhar District of Odisha by M/s Rungta Mines Ltd. Topsoil is to be stripped in areas proposed to be disturbed, i.e., 0.24 Hect. of virgin forest land Non forest land for mining operation. A comprehensive top soil management plan has been prepared keeping in view of the conservation, regeneration and afforestation in and around the site where top soil will be stored.

In non-mineralized area also, there is existence of very thin layers of top soil say 5 to 10 cm varying from site to site, which is very difficult to slice down and is stored separately for use during future reclamation. However, grass seed will be broadcasted over this area to prevent erosion of the top soil.

8. OBJECTIVES

The objectives of Top soil management to be executed are as follows:

- To fulfill the stipulation (Condition no. 13 i.e strict adherence to the top soil management imposed by the Ministry of Environment & Forests, GOI vide their letter No.8-08/2023-FC dated 28.11.2023 during approval of Stage-I forest clearance.
- To identify top soil resources, and to follow stripping guidelines for optimum recovery.
- To identify stockpile locations and dimensions.
- To identify surface areas suitable for stripping (to minimize over clearing).
- To manage and conserve the top soil reserves.
- To provide sufficient stable topsoil material for rehabilitation work of dumps, back filled areas and degraded lands.

9. PLAN FOR MANAGEMENT OF TOP SOIL TO BE GENERATED FROM MINING

The top soil inside 158.509 hectares of ML area is scanty and present in extremely thin layer. Whatever top soil is available will be excavated during the development of unbroken patch with in the mining lease. Precautionary measures will be taken so that this valuable resource is not wasted. This excavated top-soil will be utilized for concurrent plantation works in the mine as per this plan. Some of the top soil will be stored temporarily until it can be used for plantation works / dump reclamation. The details of collection of Top soil are given below.

Name of the proposed quarry	Total surface Area(Sq.m)	Average thickness(m)	Volume of top Soil(Cu.m.)
	2400	0.3	720

This Topsoil Management Plan has provision for soil stripping and stockpiling procedures to minimize top soil degradation and maximize availability of suitable soil for future rehabilitation.

10. FUTURE TOP SOIL GENERATION FROM MINING ACTIVITIES

Soil studies have shown that the average thickness of topsoil in the unbroken areas will be around 5 cm - 10 cm. The quantity of topsoil to be stripped in a phased manner from the site will be used during first 5 years to rehabilitate the existing OB dumps, areas.

Prior to stripping, the area will be cleared by removing the unwanted growth. The proposed procedure for soil handling is given below which includes soil handling measures in order to optimize retention of soil characteristics (in terms of nutrients and micro-organisms) conducive to growth of plant.

11. METHODOLOGY

In accordance with the above objective of providing sufficient stable soil material for rehabilitation and to optimize soil recovery, the following strategies have to be followed:

- Topsoil stockpiles are to be identified outside quarry area.
- Stripping off the topsoil by dozers rather than scrappers to minimize structural degradation;
- Construction of stockpiles with a "rough" surface condition to reduce erosion hazard.
- Improvement of drainage and promotion of revegetation.
- Revegetation of stockpiles with appropriate fertilizer etc, to maintain soil organic matter levels, soil structure and microbial activity and maximize the vegetative cover of the stockpile, and
- To utilize stripped top soil as soon as possible for rehabilitation in a phased manner in accordance with the rehabilitation plan as prescribed in Mining Plan.

12. PLAN FOR MANAGEMENT OF EXCAVATED TOPSOIL

To minimize the detrimental effects of long-term storage of topsoil in stockpiles, the following procedures will be ensured prior to stripping activities.

Appropriate delineation of areas for storage of top soil: A small area has been planned & accordingly the area is demarcated for storage of top soil within Jumka Pathiriposhi Pahar Iron ore Block of M/s Rungta Mines Limited (**Copy of the Plan enclosed**). Though in the land use pattern, no area has been earmarked for storage of top soil, as per the stipulation of the Stage-I approval order the storage area has been earmarked within the lease area.

- Dry stone wall to a length of 250mt. will be constructed around the stockpile followed by grass seeding on the inner side. The cost norm of Toe wall construction has been provided in **Annexure-2**.
- The topsoil stripping will be completed using bulldozers and tippers of smaller capacity in case of good quantum. In areas where the topsoil is relatively thin, the topsoil will be removed in such a way to prevent mixing of topsoil and sub soils.
- Stockpiles will have erosion control measures by constructing loose boulder wall with cement sand patching.
- Permanent measures include establishment of vegetation (bushes & shrubs) and broadcasting of seeds of local shrubs / grasses will mitigate soil erosion and dust emissions. The total area for sowing of grass seeds comes to 0.24 ha. The cost norm of Grass seedling has been provided in **Annexure-1**.
- Prior to use of the topsoil for reclamation, sample of the topsoil will be collected and chemical analysis including nitrogen, organic content and pH value will be done.
- Re-spreading of topsoil will be undertaken in the areas requiring reclamation, so as to approximate pre-plantation thickness of 2 -3 cm by manual means.

13. PLAN FOR CONSERVATION OF TOP SOIL IN BARREN LANDS

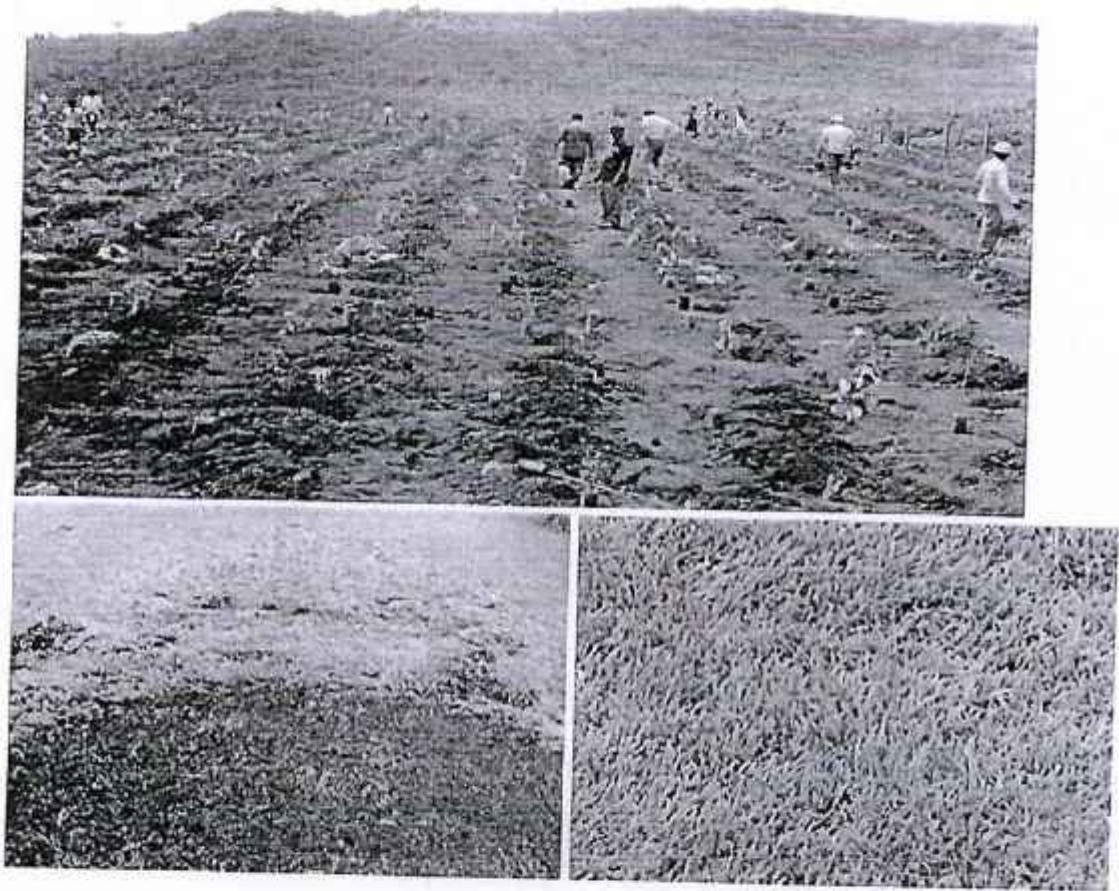
The forest land of the region is prone to soil erosion as the entire landscape is affected due to mining activity in the vicinity. Soil erosion problem varies from area to area within the lease, depending on the topography, soil types, vegetation, and management interactions of the catchment. Hence, it is very important to control erosion of top soil from the area, which will result in enhancement of in-situ moisture conservation by enrichment of water table profile for more availability of water so that the top soil is conserved for supporting the growth of trees.

14. TOP SOIL CONSERVATION PLAN

The Top soil will be collected and stored preferably at one place and the top surface will be broadcasted with grass seeds so that a mat of grass turf is made over the surface of the top soil and this will prevent erosion of the top soil by rain water and/or weathering conditions like blow of wind.

TOP SOIL CONSERVATION PLAN

Area from which top soil will be collected	Topsoil Spreading on Green Belt/Gap plantation area	Top soil spreading on OB Dump
0.24 Ha.	5.746 Ha.	-



CONSERVATION OF TOP SOIL THROUGH SOWING OF GRASS SEEDS.

15. 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.

16. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e. Batagaon and Kensara village of Bonai Division and village Kadakala village of Keonjhar 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, 15% of the plantation cost has been earmarked for expenditure on this score.

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.

SPECIALISED CELL

Sl. No.	Name	Educational Qualification	Designation	Expertise
1	Shri D.K. Parida	Mining Engineer	CGM (Mining)	20 Years' experience in Mining operation projects
2	Shri Jayanta Das	Surveyor	A.V.P (Survey)	30 Years' experience in mining Survey
3	Shri G.K.Pujari	M.Sc.,M.Phil.	G.M (Env.)	23 Years' experience with Pollution control & Environmental Management
4	Shri Soujatya Sarangi	M.Sc Applied Geology	Manager (Geology)	14 Years' experience in Mining Geology and Exploration field.

18. REQUIREMENT OF FUNDS

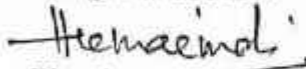
The total cost of implementation of measures for Top Soil Management will be Rs.8,02,500/- (Rupees Eight Lakh Two Thousand Five Hundred) only. This budget will be subject to increase in amount considering the increase in material cost and labour charges.


TOTAL COST OF TOP SOIL MANAGEMENT

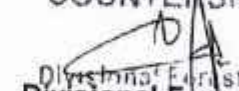
Sl. No.	Description of the work	Funds Required (in ₹)
1.	Unbroken / Virgin area from where top soil can be collected =0.24 Ha. Stripping cost:-0.5ha./hr. @ ₹ 4154.00 Therefore -20.534 Ha. Cost =1 hrs. + 1 hrs. marching =2 hrs x Rs.4154.00= ₹ 8,308.00 Loading &Transportation cost from site to top soil stockpile comes to be= 720m ³ (tonnage factor 1.6)= 1152mt. @ ₹ 47.52/Mt.=Rs.54,743.00. C. Cost of leveling with 50 manpower @ ₹ 352.00 i.e. ₹ 17,600.00 Hence total cost A+B+C = Rs.80,651.00	80,651.00
2.	Cost for sowing of grassseeds over 0.24 ha @ ₹ 56769.00/ha.	13,625.00
3.	Cost for erection of 250 m dry toe wall around top soil stock pile @ ₹ 1948.54 RML	4,87,135.00
	TOTAL :-	5,81,411.00
4.	Inspection, Monitoring & Evaluation 15% of the total project cost.	87,212.00
	TOTAL	6,68,623.00
	Price escalation @ 20%	1,33,725.00
	Grand Total	8,02,348.00 Or, 8,02,500.00

(Rupees Eight Lakh Two Thousand Five Hundred) only

M/s Rungta Mines Ltd. do hereby undertake to execute the item of works mentioned in this scheme in a phased manner at the project cost.

Rungta Mines Ltd.

Director

Technically Approved

Regional Chief Conservator of Forests
Rourkela Circle

Countersigned
COUNTERSIGNED

Divisional Forest Officer.
Bonai Division

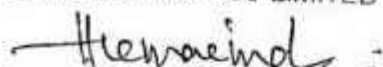
Annexure- 1

COST OF GRASS SEED SOWING

Wage Rate Rs.352.00

SI No	Purpose	No of Labour / Quantity of materials	Rate (Rs.)	Amount (Rs.)
1	Spreading of good top soil	03 Nos	352 / labour	1056.00
2	Adding FYM and good earth	2 TL FYM	1173.20 /TL FYM	4692.80
		2TL good earth	1173.20 /TL Good earth	
3	Cost of grass seed 500Kg/ per ha.		95/kg	47,500.00
4	Broadcasting	10 nos.	352.00/ labour	3,520.00
Total				56,768.80 Or, 56,769.00

For RUNGTA MINES LIMITED


Director

Annexure-2

Wage Rate- Rs.352.00

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	692.382	1350144.9
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	176.0	598400.00
		Rate per one K.M. Length				Total			1948544.90 Or 1948545.00

Cost for Running Meter length

1948.54

For RUNGTA MINES LIMITED

Hemaendra
Director



*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.14 of

Stage-I approval granted vide

Letter No.8-08/2023-FC dt.28.11.2023 of

Government of India, Ministry of Environment,

Forest & Climate Change

for

Diversion of 156.978 Hects of Forest Land

(147.803 ha. in Bonai Division & 9.175 ha. in Keonjhar Division)

U/s-2 (ii) of F.C. Act'1980

within 158.509 Ha. Jumka Pathiriposhi Pahar Iron Ore Block

of

M/s Rungta Mines Ltd.

**in village Batagaon and Kensara in Lahunipara Tahsil, Bonai Forest
Division and village Kadakala of Keonjhar Forest Division**

Dist.Sundargarh and Keonjhar

Odisha.

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

1. INTRODUCTION

Government of Odisha, pursuant to the Mines and Minerals (Development and Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 as amended from time to time, issued the notice inviting tender dated 07.07.2021 to commence the auction process for grant of mining lease for Jumka Pathiriposhi Pahar Iron Ore Block over an area of 158.509 Ha. for Iron Ore located in Koira Mining Circle, District-Sundargarh, Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block on 24.09.2021 and Rungta Mines Ltd. was declared as the 'Preferred Bidder' under Rule 9(9)(iii) or Rule 10 (1A) of Auction Rules, having quoted highest Final Price Offer vide letter No.MXIII(b) 46/2021/7738/DM Dated 05.10.2021 issued by Director of Mines Government of Odisha.

Accordingly, pursuant to Rule 10(2) of the Auction Rules and the terms of the Tender Document, the Government of Odisha was pleased to issue Letter of Intent (LOI) bearing No.IV(B)SM-49/2021/8716/SM, Bhubaneswar dated 28.10.2021 for grant of Mining Lease for Jumka Pathiriposhi Pahar Iron Ore Block for Iron ore located at a distance of 20 km south of Koira Town in Batagaon & Kensara village of Lahunipara Tahasil Sundargarh District and Kadakala village of Keonjhar District on 158.509 Ha. area to Rungta Mines Ltd. for a period of 50 (Fifty) years. Accordingly, M/s Rungta Mines Ltd. was submitted the proposal to obtain approval of the Central Govt. over 156.978 hectare of forest land U/s-2 (ii) of the Forest (Conservation) Act'1980 within the above Mining Lease area.

Now, the Stage-I approval over 156.978 ha. of Forest Land for U/s-2 (ii) of F.C. Act'1980 has been granted by MoEF&CC, Govt. of India vide their Letter No.8-08/2023-FC dt.28.11.2023, wherein it has been stipulated as per **Condition No.14** to undertake **desilting 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

Jumka Pathiriposhi Pahar Iron ore Block of M/s Rungta Mines Ltd. is located in Sundargarh & Keonjhar District of Odisha and can be approached throughout the year by road. It falls within the survey of India Topo sheet No.73 G/1. The total mining lease hold area is 158.509 Ha. The area is located between the Latitudes 21⁰48'54.81396"N to 21⁰47'32.62280"N and Longitude 85⁰13'25.32167"E to 85⁰12'13.87352"E.

3. TOPOGRAPHY

The area is represented by sloppy area with gentle undulation, resembling a relict type of topography. The highest contour is 1037 mts and the lowest is 926 mts. Nagaria PRF and Sarkunda PRF of Bonai forest division comes within the the ML area.

4. SOIL TYPE

Soil type in the study area varies widely from hard rock to lateritic soil & Shale. Areas at higher elevations are usually hard rock consisting of Iron pebbles & laterite. The top soil is scanty in the area. Whatever top soil is available is thinly spread over all Soil profile in nature. The pH of the soil is slightly acidic in nature.

5. CLIMATE

The study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March. Temperature rises rapidly attaining a maximum in the month of May. During the summer maximum temperature can go up to 47.7°C. The weather becomes pleasant with onset on monsoon in June and remains as such upto end of October. The temperature in the month of December is lowest, i.e., 7° C. The average annual rainfall as recorded at IMD observatory is 1325.16 mm. Predominant wind direction is South-West. Area remains calm for nearly 50% of the year.

6. DRAINAGE

There are a number of streams flowing to Phulamanali nala which serve the purpose of drainage. There is one seasonal nala namely Barapokhari outside the mining lease which finally join with Phulamanali nala that flows from South-West to South-East. The general elevation difference in the area is 70m. The proposed working area lies at the hill & is well above the water table.

7. RAINFALL

There is a wide variation of rainfall in the catchment area and around 10 kms radius of buffer zone of this mine. The average annual rainfall of this mine area is affected by steep hills, forest cover etc. The average annual rainfall of last 10 years comes to 1216.405 mm.

Table 1: Monthly Rainfall Data of Koira Block (in mm)
Average Rainfall = 1216.405 mm

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
2009	0.00	0.00	0.00	0.00	84.30	75.70	317.20	100.80	103.00	41.30	40.00	0.00	762.30
2010	11.00	3.00	0.00	0.00	14.00	95.00	134.50	159.50	111.50	18.30	0.00	25.50	572.30
2011	47.00	11.00	17.00	113.50	88.00	247.60	146.30	335.00	460.00	57.00	0.00	0.00	1542.40
2012	21.00	9.00	0.00	60.00	0.00	68.00	303.00	397.50	223.00	35.00	14.00	1.00	1131.50
2013	3.00	0.00	5.00	60.50	46.00	192.00	436.10	288.00	212.00	351.00	0.00	0.00	1593.60
2014	0.00	40.00	78.00	0.00	29.00	141.00	464.00	488.00	166.00	62.00	0.00	0.00	1488.00
2015	2.00	0.00	0.00	51.00	5.00	347.00	448.00	154.00	113.00	0.00	0.00	16.00	1137.00
2016	0.00	27.00	4.00	0.00	70.00	76.10	267.70	383.40	267.40	35.40	0.00	0.00	1131.00
2017	0.00	0.00	0.00	0.00	56.00	201.25	546.00	132.00	90.00	107.00	9.00	0.00	1141.25
2018	0.00	0.00	1.00	44.00	152.00	106.40	482.00	379.30	334.00	53.00	0.00	113.0	1664.7
Average	8.4	9	10.5	32.9	54.43	155.005	356.58	281.75	209.99	76	6.3	15.55	1216.405

8. FACTORS RESPONSIBLE FOR SILTATION

Siltation is an inherent problem with ponds, lakes and almost all types of water reservoirs world over. Siltation occurs due to deposition or settling of soil eroded from the land mass, 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 factors are the surface runoff containing silt particles entering into the pond. As the age of the ponds increases, 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 de-silted to recover. The best practice against siltation is to de-silt the bottom of the pond at regular intervals as well as taking adequate preventive measures.

9. SELECTION OF PONDS

For the purpose as mentioned in Condition No.14 of the Stage-I approval letter, a survey of ponds within the buffer area of 5 Kms from the lease boundary was made. Topomap showing the location of ponds is enclosed as Plate No-1. *After discussion with the Block Development Officer Koira and Sarpanch of Dengula, Gram panchayet, total 1 numbers of following government ponds were selection in Bonal Division and also after discussion of BDO, Banspal and Sarpanch of Kadakala G.P. total 3 nos. of following ponds were selected in Keonjhar Division for de-siltation within 5 km vicinity of the lease area.*

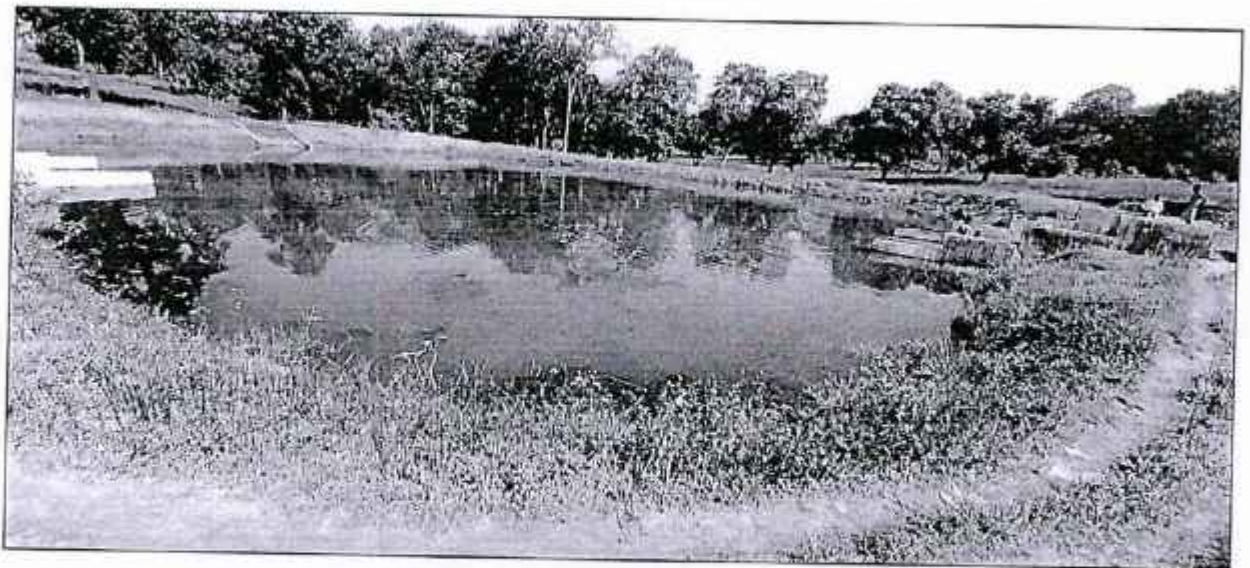
Information about the ponds proposed for desilting

Sl. No.	Name of village / Forest Division	Name of water bodies	GPS reading	Dimension of the pond
1.	Jaldihi / Bonal Forest Division	Pond	21°50' 23.84" 85°14' 17.01"	Length=70.0 Mt Width= 60.0 Mt Siltation depth= 1.00 Mt
2.	Sudang / Keonjhar Forest Division	Pond	21°47' 05.28" 85°13' 17.49"	Length=30.0 Mt Width= 25.0 Mt Siltation depth= 1.00 Mt
3.	Tirba / Keonjhar Forest Division	Pond	21°46' 55.55" 85°15' 29.65"	Length=60.0 Mt Width= 55.0 Mt Siltation depth= 1.00 Mt
4.	Kodakala / Keonjhar Forest Division	Pond	21°45' 40.35" 85°13' 54.55"	Length=50.0 Mt Width= 45.0 Mt Siltation depth= 1.00 Mt

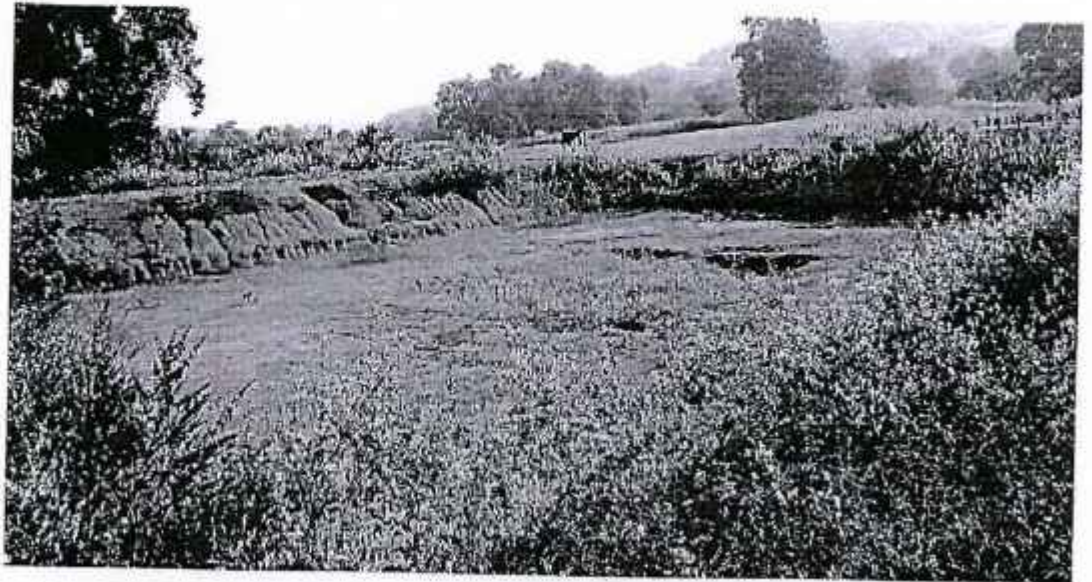
Matrix to indicate the benefits to be derived by individual Villagers from Pond renovation.

Name of the village with water bodies	Population benefited	Cattle to benefited	Irrigation to be derived	Pisciculture benefit
Jaldihi	***	**	*	*
Sudang	***	**	*	*
Tirba	***	**	*	*
Kodakala	***	**	*	*

*** = Maximum benefit, **= Average benefit, *= Low benefit



JALDIHI WATER BODY (POND) PROPOSED FOR DE-SILTATION



SUDANG WATER BODY (POND) PROPOSED FOR DE-SILTATION



TIRBA WATER BODY (POND) PROPOSED FOR DE-SILTATION



KADAKALA WATER BODY (POND) PROPOSED FOR DE-SILTATION

10.POSSIBILITY OF SILTATION OF THE VILLAGE PONDS/WATER BODIES DUE TO MINING ACTIVITIES

The 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 water carrying any silt from the lease area as these are located either beyond the nalla or at higher altitude from the ground RL of the Lease.

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.

11.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 m³ shall be de-silted by mechanical means and the rest shall be handled manually. It is proposed to deploy one 0.9 m³ 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, BDO, Banspal & Panchayat Sarpanch will be taken into account.

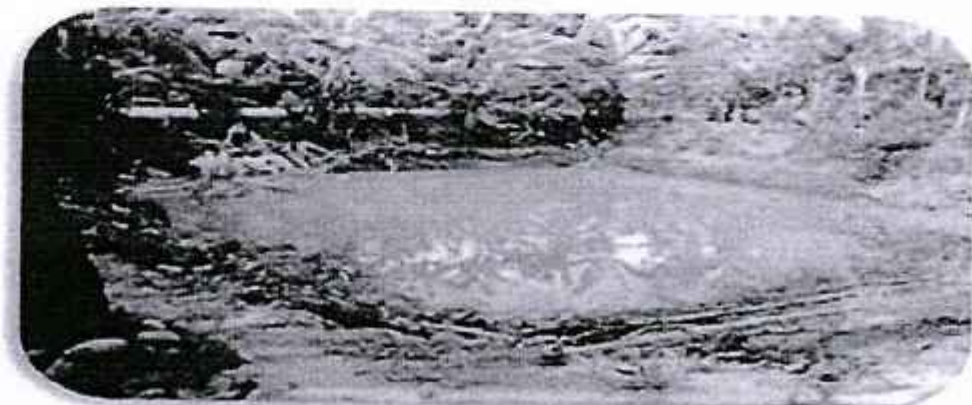
In case of smaller ponds, where the accumulation of silt is very small, the de-siltation operation shall be done manually by engaging sufficient manpower.

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) 1st 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 Bara, Aswatha, Lemon, Custard Apple, Guava, Papaya, Mango will be taken up.





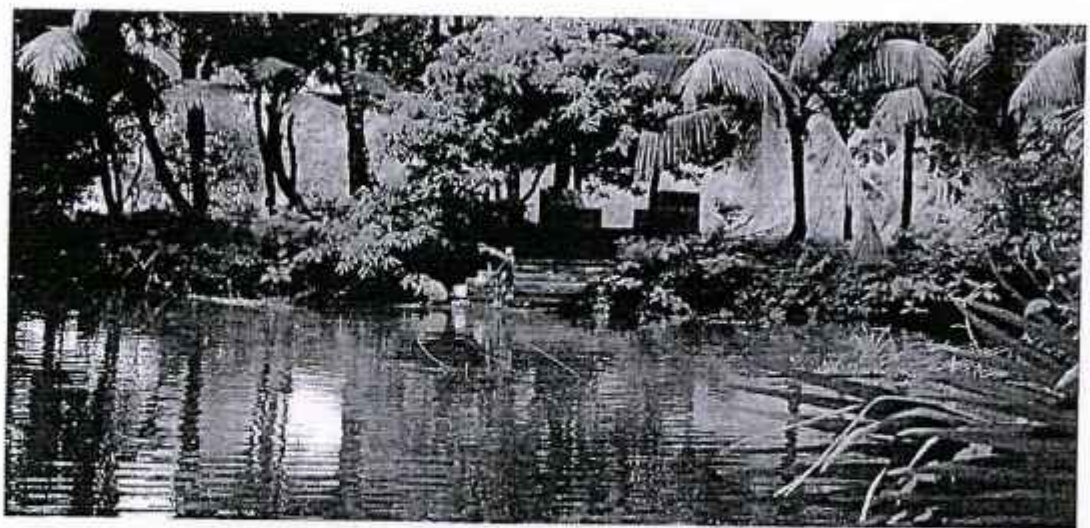
Plantation of trees on the top of the embankment

- 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 patching, 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 (*Ocimum sanctum*) 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**.



Bathing Ghats

- 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 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**.



Plantation along the Ponds

12. INSPECTION AND MONITORING

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.

13. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e. Batagaon and Kensara village of Bonai Division and village Kadakala village of Keonjhar 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, 15% of the plantation cost has been earmarked for expenditure on this score.

14. 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.

SPECIALISED CELL

Sl. No.	Name	Educational Qualification	Designation	Expertise
1	Shri D.K. Parida	Mining Engineer	CGM (Mining)	20 Years experience in Mining operation projects
2	Shri, Jayanta Das	Surveyor	A.V.P (Survey)	30 Year's experience in mining Survey
3	Shri G.K. Pujari	M.Sc., M.Phil.	G.M (Env.)	23 Years experience with Pollution control & Environmental Management
4	Shri Soujatya Sarangi	M.Sc Applied Geology	Manager (Geology)	14 Years' experience in Mining Geology and Exploration field.

15. REQUIREMENT OF FUNDS

The total cost of this Scheme for de-silting and improvement of the selected pond in Jaldih, Sudang, Tirba and Kadakala villages is **Rs.2,03,20,700.00 (Rupees Two Crore Three Lakh Twenty Thousand Seven hundred) only**

TOTAL COST OF THE PROJECT

Sl. No	Description of Job	Wage Rate Rs.352.00				Total fund required (Rs.)
		Estimate for Pond of village Jaldih	Estimate for Pond of village Sudang	Estimate for Pond of village Tirba	Estimate for Pond of village Kadakala	
1	Excavation, loading, unloading & carriage by mechanical means of all kinds of soil including stoneyearth, gravel&mortumetic inter spread with boulders upto 1/2 cum size with all lifts &deifts including trimming of slopes & bed to design section &depositing the excavated materials away from work site as per the specification & directed by EIC with an initial lead of 1.00 KM from the place of excavation complete. Providing rough stone (15cm-30cm) dry packing in appment& all top four sides berm with our local boulder (boulder supplied by management). Construction of bathing ghat with local boulder Room near bathing ghat for change of clothes by women. Construction of Bench on the embankment for sitting		1,00,49,800.00			1,00,49,800.00
2	TulsiChaura	23630.00	23630.00	23630.00	23630.00	94,520.00
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. @ ₹ 30,000/- per pond	30,000.00	30,000.00	30,000.00	30,000.00	1,20,000.00
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	200 Plant 10,35,198.00	200 Plant 10,35,198.00	200 Plant 10,35,198.00	200 Plant 10,35,198.00	41,40,792.00
5	Provision for annual maintenance of pond for cleaning aquatic weeds from pond & cutting, of bushes from apron & berms on LS.	80,000.00	80,000.00	80,000.00	80,000.00	3,20,000.00
6	15% of the total cost for motivation of VSS / People involved		Total			1,47,25,112.00
			Total			22,08,767.00
			Escalation 20%			1,69,33,879.00
			Grand Total			33,86,776.00
						2,03,20,655.00
						Or, 2,03,20,700.00

M/s Rungta Mines Limited do hereby undertake to execute the item of works mentioned in this scheme in a phased manner at the project cost.

M/s Rungta Mines Ltd.

Hemaendri
Director

Technically Approved

T. B. 11/11/11

Regional Chief Conservator of Forests
Raunkasia Circle

Countersigned

COUNTERSIGNED

[Signature]
Divisional Forest Officer
Divisional Forest Officer
Bonai Division

Annexure-1

De-silting the Pond, Construction of Bathing Ghat & bench at Jaldihi, Sudang, Tirba and Kadakala Pond by M/s Rungta Mines Ltd. @ Rs.352.00 per MD.

Sl. No.	Items	Location	No	L	B	H	Qty	unit	Rate	Amount
1	Pumping of water by diesel pump incl. splying diesel & lubricant						15	hours	586.77	8801.68
2	Desilting the pond	Jaldihi	1	70.0	60.0	1.0	4200.0	cum		
		Sudang	1	30.0	25.0	1.0	750.0	cum		
		Tirba	1	60.0	55.0	1.0	3300.0	Cum		
		Kadakala	1	50.0	45	1.0	2250.0	Cum		
							10500.0	cum	704.0	7392000.0
3	Removing weeds & bush from the bund of the pond	Jaldihi, Sudang, Tirba, Kadakala	4	40.00	4.00		640.00	sqm	13.006	8323.61
4	Removing amary from the pond	Jaldihi, Sudang, Tirba, Kadakala	4	30.00	7.00		840.00	sqm	36.244	30444.76
5	Rough stone masonry for bathing ghat	Jaldihi	4	10.00	0.60	0.45	10.80			
			2	10.00	2.50	0.45	22.50			
		Sudang	4	10.00	0.60	0.45	10.80			
			2	10.00	2.50	0.45	22.50			
		Tirba	4	10.00	0.60	0.45	10.80			
			2	10.00	2.50	0.45	22.50			
		Kadakala	4	10.00	0.60	0.45	10.80			
			2	10.00	2.50	0.45	22.50			
							133.2	cum	5163.78	687816.69
6	20mm c p 1:4	Jaldihi	1	10.00	3.20		32.00			
		Sudang	1	10.00	3.20		32.00			
		Tirba	1	10.00	3.20		32.00			
		Kadakala	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			
							208.00	sqm	235.83	49052.60
7	Neat cement punning	Jaldihi	1	10.00	3.20		32.00			
		Sudang	1	10.00	3.20		32.00			
		Tirba	1	10.00	3.20		32.00			
		Kadakala	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			
							208.00	sqm	29.562	6148.87
8	Earth work in excavation	Change room								
		Jaldihi	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			

		Sudang	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			
		Tirba	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			
		Kadakala	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	24	2.50	0.40	0.40	9.60			
							18.24	cum	352.00	6420.48
9	C C 1:3:6	Change room								
		Jaldihi	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			
		Sudang	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			
		Tirba	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			
		Kadakala	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	24	0.50	0.40	0.10	0.48			
		Flooring	4	5.00	2.00	0.10	4.00			
							6.64	cum	7748.89	51452.68
10	C C 1:2:4	Bathing ghat	4	10.00	2.50	0.05	5.00	cum	7509.94	37549.73
11	B W 1:6	Change room								
		Jaldihi	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			
		Sudang	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			
		Tirba	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			
		Kadakala	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	24	0.50	0.24	0.80	2.30			
							43.78	cum	9856.0	431495.65
12	12mm c p 1:6	Change room								
		Jaldihi	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			
		Sudang	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			
		Tirba	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			
		Kadakala	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	24	0.50		0.10	1.20			
							163.2	sqm	199.57	32571.28
13	20mm c p 1:6	Change room								
		Jaldihi	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			
		Sudang	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			
		Tirba	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			
		Kadakala	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	24	0.50		0.10	1.20			
							163.2	sqm	211.2	34467.84
14	Lift charge for B W 1:6	Change room								
		Jaldihi	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			
		Sudang	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			
		Tirba	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			
		Kadakala	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	Lift charge for Cp	Change room					31.12	cum	235.83	7339.02
		Jaldihi	2	3.00		2.40	14.40			
			4	1.25		2.40	12.00			
			2	2.00		2.40	9.60			
		Sudang	2	6.00		2.40	28.80			
			2	3.00		2.40	14.40			
			4	1.25		2.40	12.00			
			2	2.00		2.40	9.60			
		Tirba	2	6.00		2.40	28.80			
			2	3.00		2.40	14.40			
			4	1.25		2.40	12.00			
			2	2.00		2.40	9.60			
		Kadakala	2	6.00		2.40	28.80			
			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			
16	Roofing with GCI sheet		4	5.00	3.00		259.2	sqm	13.006	3371.06
							60.00	sqm	235.83	14149.79
17	Carrying cutting to size & erecting strl steel		4	3.00	5.00	4.50	270.00	kg		
18	White wash 3 coats on new surface	Change room					0.270	MT	7040.0	1900.80
		Jaldihi	2	3.00		2.40	14.40			
			4	1.25		2.40	12.00			
			2	2.00		2.40	9.60			
		Sudang	2	6.00		2.40	28.80			
			2	3.00		2.40	14.40			
			4	1.25		2.40	12.00			
			2	2.00		2.40	9.60			
		Tirba	2	6.00		2.40	28.80			
			2	3.00		2.40	14.40			
			4	1.25		2.40	12.00			
			2	2.00		2.40	9.60			
		Kadakala	2	6.00		2.40	28.80			
			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			
							259.2	sqm	28.158	7298.54
									Sub Total	8810605.10
19	Cement						22	MT	13610.07	299421.54
20	Angle						0.270	MT	93864.30	26153.36
									Total	9136180.00
									Contingency @ 10%	913618.00
									Grand Total	10049795.0
									Or,	10049800.0

For RUNGTA MINES LIMITED

Hemachind
Director

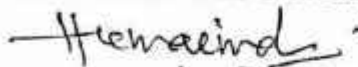
Annexure-2

CONSTRUCTION OF TULSICHAURA ON THE BATHING GHAT @ Rs.352.00

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	249.55	157.216
2	Plain cement concrete 1:3:6	M3	1	6	0.35	0.1	0.21		
							0.21	8090.00	1698.90
3	Brick Work (1:6) (Above G.LIn Super Structure)	M3	1	6	0.25	1.5	2.25	7893.58	17760.55
4	12 mm thick plaster	M2	1	6		1.5	9		
							9	183.72	1653.48
5	Applying Lime Wash	M2				Same qty as item no 4	9	23.56	212.04
Sub total									21482.18
Contingency 10 %									2148.21
Total Amount (Rs.)									23630.39 Or, 23630.00

(Rupees Twenty Three Thousand Six hundred Thirty only)

For RUNGTA MINES LIMITED


Director

**COST NORM FOR PLANTATION OF FRUIT BEARING SPECIES ALONG THE
POND EMBANKMENT @ Rs.352.00 per MD
400 Plants per Km. in 2 rows**

SI No.	Item of work	Mandays	Labour rate @ 352.00	Material cost in Rs.	Total (Rs.)
0 th year advance work/pre-planting/ 1st Yr. plant.					
1	Site preparation & alignment	2	704.00		704.00
2	Pitting 45 cm cube	25	8800.00		8800.00
3	Cost of 400 nos. of 1 yr. old seedling @ Rs.141/- per seedling	0	0	56400	56400
4	Carriage of plants & planting	6	2112.00	0	2112.00
5	1st weeding & manuring	2	704.00		704.00
6	Casualty replacement	2	704.00		704.00
7	Soil working, application of insecticides	2	704.00		704.00
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	82368.00		82368.00
12	Watering at least 5 days in a month for 4 months (8 person X 6 times in a month X 4 month)	192	67584.00		67584.00
13	Const. of 2 nos. Sign-board on LS. @ Rs 1500/- per signboard		0	3745	3745.00
	Total :-	465	163680.00	815959	979639.00
2nd Year Operation					
14	Weeding, soil working, manuring (twice)	4	1408.00		1408.00
15	Casualty replacement 15% including cost of seedling including cost of seedlings (60 Nos. @ 112/-)	2	704.00	8400	9104.00
16	Cost of fertilizer & pesticides		0	2240	2240.00
17	Gabion maintenance including painting	20	6040.00	37333	44372.00
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	112640.00		112640.00
20	Cost of engaging one watcher for year (12 month)	312	109824.00		109824.00
	Total :-	658	231616.00	49845	281461.00

SI No.	Item of work	Mandays	Labour rate @ 352.00	Material cost in Rs.	Total
3rd Year Operation					
25	Weeding, soil working	3	1056.00		1056.00
26	Gabion maintenance	20	7040.00	37333	44373.00
27	Cost of engaging one watcher for year (12 month)	312	109824.00		109824.00
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	112640.00		112640.00
	Total :-	655	230560.00	39205	269765.00
4th Year Operation					
25	Weeding and pruning	3	1056.00		1056.00
26	Gabion maintenance	20	7040.00	37333	44373.00
27	Cost of engaging one watcher for year (12 month)	312	109824.00		109824.00
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	112640.00		112640.00
	Total :-	655	230560.00	39205	269765.00
5th Year Operation					
30	Weeding and pruning	3	1056.00		1056.00
31	Gabion maintenance	20	7040.00	37333	44373.00
32	Cost of engaging one watcher for year (12 month)	312	109824.00		109824.00
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	112640.00		112640.00
	Total :-	655	230560.00	39205	269765.00
	Grand Total :-	3088.00	1086976.00	983419.00	2070395.00

ABSTRACT

SI No.	Year	Amount (inRs.)
1	1st year	979639.00
2	2nd year	281461.00
3	3rd year	269765.00
4	4th year	269765.00
5	5th year	269765.00
	Total :-	2070395.00

Total Expenditure for 400 plants = Rs.20,70,395.00
 Expenditure for 200plant = Rs.10,35,197.5 (Or, 10,35,198.00)

For RUNGTA MINES LIMITED

Hemachand
 Director



STATE WILDLIFE HEADQUARTERS

OFFICE OF THE PRINCIPAL CCF (WILDLIFE) & CHIEF WILDLIFE WARDEN, ODISHA
PRAKRUTI BHAWAN, PLOT NO.1459, SAHEED NAGAR, BHUBANESWAR- 751007
Website: www.wildlife.odisha.gov.in, Email: odishawildlife@gmail.com

Memo No. 4707 /CWLW-FDWC-MISC-0027-2023
Dated, Bhubaneswar, the 05 April 2024

To

The Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

- Sub:**
1. **Proposal for seeking prior approval under Section 2 (ii) of the Forest (Conservation) Act, 1980 in favour of M/s Rungta Mines Ltd. for non-forestry use of 156.978 ha of forest land (147.803 ha in Bonai Forest Division & 9.175 ha in Keonjhar Forest Division) for Iron Ore Mining and ancillary activities within Jumka Pathiriposhi Pahar Iron Ore Block under Bonai and Keonjhar Forest Division of Sundargarh & Keonjhar District, Odisha - (Online Proposal No.FP/OR/MIN/150048/2021) reg.**
 2. **Diversion of 3.104 ha of forest land of construction of 11 KV over head Transmission line from Jaldihi village of Jumka-Pathiriposhi Pahar Iron Block of M/s Rungta Mines Ltd. in Sundargarh District, Odisha.**
 3. **Diversion of 13.077 ha of forest land for construction of approach road from Jumka-Pathiriposi Pahar Iron Ore Block of M/s Rungta Mines Ltd. to existing Koira-Belkudar Patamunda Road in Sundargarh District, Odisha.**

- Ref:
- (i) This office Memo. No.4752 dated 15th April, 2023
 - (ii) Your office Memo. No.1374 dated 27th March 2024

With reference to the above cited correspondences on the captioned subject, I am directed to convey approval of the Principal Chief Conservator of Forests (Wildlife) & Chief Wildlife Warden, Odisha of the revisited Site Specific Wildlife Conservation Plan as detailed below:

- (1) The Site Specific Wildlife Conservation Plan in respect of diversion of 156.978 ha of forest land has been approved and communicated to you vide this office Memo. No.4752

dated 15th April 2023 with financial outlay of ₹875.40 lakh (Bonai Forest Division – ₹715.80 lakh and Keonjhar Forest Division – ₹159.60 lakhs), besides, activities to be carried out by the Project Proponent (**Annexure-I**).

- (2) Additional approved interventions to be carried out by the project proponent and DFOs, Bonai and Keonjhar Forest Divisions after revisiting of the aforesaid Plan as per the stipulated condition of the diversion proposals mentioned at Sl. No.2 & 3 on the captioned subject along with financial outlay of ₹29.04 lakh in Bonai Forest Division is at **Annexure-II**.
- (3) Thus, the revised financial outlay of the Plan is ₹904.44 lakh (Bonai Forest Division – ₹744.84 lakh and Keonjhar Forest Division – ₹159.60 lakhs).
- (4) The Project Proponent may please be informed to deposit the additional amount of ₹29.04 lakh in the 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 DFO.
- (5) Activities in the project area as per Chapter-4 & 5 of the Plan already approved (Annexure-I & Annexure-II) will be executed by the project proponent under the guidance of DFO, Bonai and Keonjhar Forest Divisions.
- (6) 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: As above.


Chief Conservator of Forests (WL-III)

Memo. No. 4708 /Dt. 25 April 2024

Copy forwarded for information & necessary action to the: -

1. OSD-cum-Special Secretary to Government of Odisha, forest, Environment & Climate Change Department, Bhubaneswar with reference to this office Memo No.4752 dated 15th April 2023.
2. Principal CCF (FD&NO, FC Act), Aranya Bhawan, Bhubaneswar.
3. Deputy Conservator of Forests (CAMPA), O/o PCCF (WL) & CWLW, Odisha, Bhubaneswar along with enclosures (**Annexure-I & II**).
4. Divisional Forest Officers, Bonal Forest Division/ Keonjhar Forest Division along with enclosures (**Annexure-I & II**).
5. Director, M/s Rungta Mines Ltd. At/ Po: Barbil, Keonjhar - 758035, Odisha along with enclosures (**Annexure-I & II**).


Chief Conservator of Forests (WL-III)

Annexure 1



**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. 975 / CWLW-FDWC-FD-0055-2022

Bhubaneswar, Dated the 15 April, 2023

To

M/s Rungta Mines Ltd.

At/PO- Barbil

Dist.- Keonjhar

Sub: Proposal for diversion of 156.978 ha of forest land (147.803 ha in Bonai Forest Division & 9.175 ha in Keonjhar Forest Division) in respect of Jumka Pathiriposhi Pahar Iron Ore Block of M/s Rungta Mines Ltd. of Bonai Forest Division & Keonjhar forest Division under Sundargarh & Keonjhar District - Approval of Site Specific Wildlife Conservation Plan

Sir,

I am directed to convey the approval of PCCF (WL) & CWLW, Odisha for the Site Specific Wildlife Conservation Plan at financial outlay of ₹875.40 lakh (Rupees eight crore seventy-five lakh forty thousand) only as per the details of activities mentioned in Chapter-4 and 5 of the Plan in compliance to the ToR under Environmental Clearance and conditional recommendation by State Government under Forest Clearance.

(a)	In project impact area in Bonai Division	₹715.80 lakh
(b)	In project impact area in Keonjhar Division	₹159.60 lakh
Total:		₹875.40 lakh

A sum of ₹875.40 lakh (Rupees eight crore seventy-five lakh forty thousand) 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-4 & 5 of the Plan will be executed by the project proponent under the guidance of DFO, Bonai Division.

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

15/04/2023
Conservator of Forests (ET)

P.T.O.



198

Memo No. 6752 /dt 15/04/2023

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 Memo No.4134/FE&CC dt 03.03.2023
2. PCCF (FD & NO, FC Act), O/o PCCF & HoFF, Odisha, Bhubaneswar
3. Regional Chief Conservator of Forests, Rourkela Circle alongwith copy of the approved SSWLCP with reference to his office Memo No.637 dt 23.02.2023 and Memo No.1039 dt 28.03.2023
4. Divisional Forest Officer, Bonai/ Keonjhar Division alongwith copy of the approved SSWLCP

(Signature)

Conservator of Forests (ET)

Annexure – II

Interventions to be implemented by the Project Proponent in consultation with concerned DFOs

(For construction of approach road for Jhumka-Pathiriposhi Pahar Iron Ore Block and 11kv over head transmission line from Jaldihi village to Jhumka-Pathiriposhi Pahar Iron Ore Block)

Sl. No.	Management Interventions	Area in ha./Unit in No./ RKM	Remarks
1	Provision of reptile underpass at appropriate locations in the proposed road	10 Nos.	Bonai & Keonjhar Forest Divisions
2	Provision of safe elephant passes at the appropriate location	04 Nos.	
3	Promotion of awareness regarding protection as well as safe passage of wildlife through digital signage on both side of road and along transmission line and barricades to control the traffic as well as movement of vehicles.	10 Nos.	
4	The user agency will ensure use of insulated conductors in the Transmission line passing through the entire stretch of the same to prevent illegal hooking causing death of wild animal.	Entire length	
5	Provision of anti-climbing device and barricading in and around all the towers and poles in the transmission line.	All towers and Poles	
6	Provision of Bird deflectors/marker to increase the vision of birds to avoid bird collision in the portions of the span of the all the towers/poles	All towers and Poles	
7	Provision of Distance protection system and regular cleaning of the under growth in the RoW of the transmission line under supervision of Forest staff.	Entire length	
8	An Integrated Unit (Office cum-residential Building) for Rapid Response Team (RRT), WTI Veterinary Unit, Wildlife Biologist and Sociologist, MTS of RRT Team, Strong Room for Ammunition & equipments at Division Head Quarter, Keonjhar.		Keonjhar Forest Division

Approved


PCCF (WL) & CWLW, Odisha

**Interventions in Zone of Influence to be implemented by
Bonai Forest Division**

Sl. No.	Management Interventions	Area in ha./Unit in No./ RKM	Unit cost (Rs. in Lakh)	Total Amount (Rs. in Lakh)
1	Wildlife Habitat Management			
	Eradication of invasive weeds	20 ha.	0.11	2.20
2	Wildlife Monitoring			
	(a) Procurement of Anti depredation-cum-wildlife monitoring Kits (Binoculars, Compass, Range Finders, Tents, sleeping bag, water bottle, all terrain shoes, carry bag, torch, uniforms for rapid response team etc.)	20 Nos.	0.60	12.00
	(b) Survey, inventory, documentation and mapping of flora & fauna in respect of Bonai Forest Division by engagement of a Research Scholar/ Wildlife Biologist			10.00
	Total			24.20
	20% Escalation			04.84
	Grand Total			29.04

Approved



PCCF (WL) & CWLW, Odisha



**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. 975 / CWLW-FDWC-FD-0055-2022
Bhubaneswar, Dated the 15 April, 2023

To

M/s Rungta Mines Ltd.
At/PO- Barbil
Dist.- Keonjhar

Sub: Proposal for diversion of 156.978 ha of forest land (147.803 ha in Bonai Forest Division & 9.175 ha in Keonjhar Forest Division) in respect of Jumka Pathiriposhi Pahar Iron Ore Block of M/s Rungta Mines Ltd. of Bonai Forest Division & Keonjhar forest Division under Sundargarh & Keonjhar District - Approval of Site Specific Wildlife Conservation Plan

Sir,

I am directed to convey the approval of PCCF (WL) & CWLW, Odisha for the Site Specific Wildlife Conservation Plan at financial outlay of ₹875.40 lakh (Rupees eight crore seventy-five lakh forty thousand) only as per the details of activities mentioned in Chapter-4 and 5 of the Plan in compliance to the ToR under Environmental Clearance and conditional recommendation by State Government under Forest Clearance.

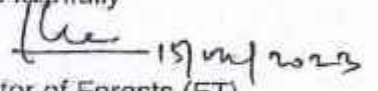
(a)	In project impact area in Bonai Division	₹715.80 lakh
(b)	In project impact area in Keonjhar Division	₹159.60 lakh
Total:		₹875.40 lakh

A sum of ₹875.40 lakh (Rupees eight crore seventy-five lakh forty thousand) 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.

- Activities in the project area as per Chapter-4 & 5 of the Plan will be executed by the project proponent under the guidance of DFO, Bonai Division.
- 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. 6752 /dt 15/04/2023

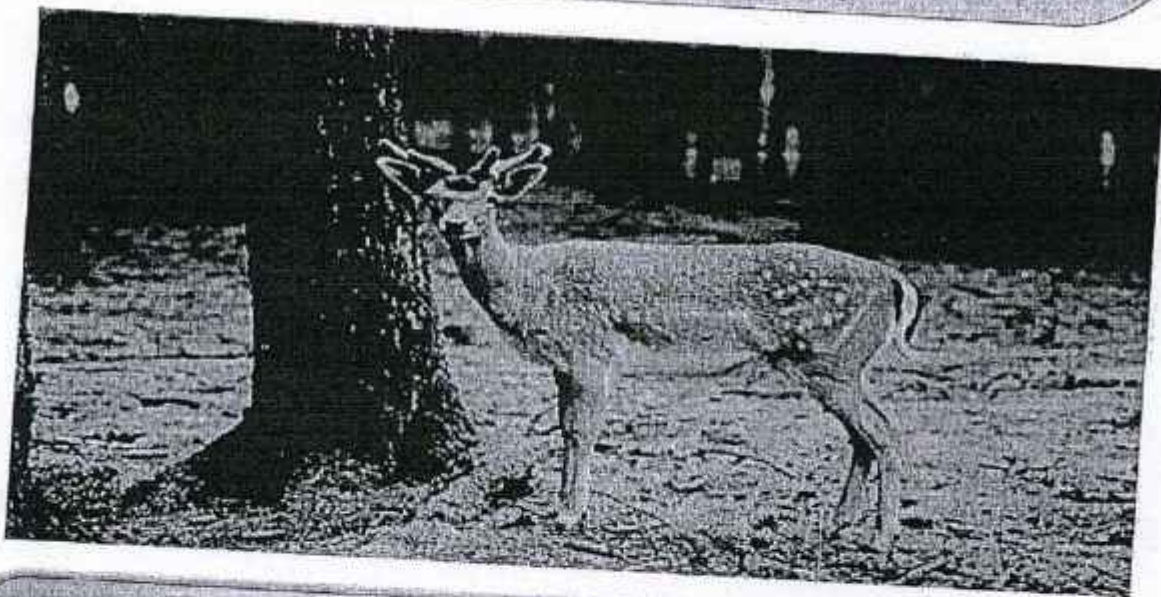
Copy forwarded for information and necessary action to the -

1. OSD-cum-Special Secretary to Government of Odisha, FE&CC Department, Bhubaneswar with reference to Memo No.4134/FE&CC dt 03.03.2023
2. PCCF (FD & NO, FC Act), O/o PCCF & HoFF, Odisha, Bhubaneswar
3. Regional Chief Conservator of Forests, Rourkela Circle alongwith copy of the approved SSWLCP with reference to his office Memo No.637 dt 23.02.2023 and Memo No.1039 dt 28.03.2023
4. Divisional Forest Officer, Bonai/ Keonjhar Division alongwith copy of the approved SSWLCP

[Signature]
Conservator of Forests (ET)

**JUMKA PATHIRIPOSHI PAHAR
IRON ORE BLOCK**

**SITE SPECIFIC
WILDLIFE CONSERVATION PLAN
FOR
JUMKA PATHIRIPOSHI PAHAR
IRON ORE BLOCK
OF
M/S RUNGTA MINES LIMITED
IN
BONAI AND KEONJHAR FOREST
DIVISION**



Prepared By
DIVISIONAL FOREST OFFICE, BONAI FOREST DIVISION
&
DIVISIONAL FOREST OFFICE, KEONJHAR FOREST
DIVISION

PREFACE

Jumka Pathiriposhi Pahar Iron Ore Block of M/s Rungta Mines Limited is one of the Mining Project for production of Iron ore in Koira Tahasil of Sundergarh District in Odisha. Government of Odisha in pursuant to Rule 10(2) of the Auction Rules and the terms of the Tender Document, issued Letter of Intent (LOI) bearing no. IV(B)SM-49/2021/8716/SM, Bhubaneswar dated 28.10.21 for grant of Mining Lease for Jumka Pathiriposhi Pahar Iron Ore Block for Iron Ore located in 20 Km south of Koira town in Kedeshala village, on 158.509 Ha. area to Rungta Mines Ltd. for a period of 50 years. Out of 158.509 Ha. 147.803 Ha is in Sundargarh district and 10.706 Ha is in Keonjhar district. The total forest land included is 156.978 Ha. out of which 147.803 Ha is PRF in Sundargarh district and 9.175 Ha is Revenue Forest in Keonjhar district. Remaining 1.531 Ha is non-Forest Govt. land in Keonjhar district.

As required under Rule 10(1) of the Auction Rules and the tender document for the said mineral block, Rungta Mines Ltd. has made payment of the first installment, being 20% (twenty percent) of the upfront payment of Rs. 49,21,44,251/-/(Forty-Nine Crore Twenty-One Lakh Forty-Four Thousand Two Hundred Fifty-One) only through Treasury Challan vide e-Challan no. 0853/1886 dated 08.10.21 at Cyber Treasury, Dist.-Sundergarh.

As per the Geological report provided by the Directorate of Mines, Steel & Mines Department, Government of Odisha, the net insitu iron ore resources of Jumka Pathiriposhi Pahar Iron ore block is 140.277 million tonnes (Fe content is >55% and Fe content varies between 55% and 45%). This ore body needs to be judiciously exploited in view of systematic mining with optimum exploitation of ore to meet the growing demand of raw materials for indigenous steel plant, sponge iron plant, pellet plants etc for ultimate production of Steel and also for export to earn foreign exchange for development of our country. Further Mining plan has been approved by Indian Bureau of Mines, Bhubaneswar vide letter No MP/A/18-ORI/BHU/2021-22 dated 24.11. 2021. Grant of Mining lease of Jumka Pathiriposhi Pahar Iron Ore Block and use of 156.978 Ha. of forest land for the mining and ancillary purpose, it is needed to apply for diversion of the forest land under section 2(ii) of the Forest Conservation Act, 1980, for approval of the Central Government.

The area proposed to be diverted under the project and neighbouring forest areas are characterized by variety of flora and fauna. Hence, impact of this project on wildlife and wildlife habitat need to be studied and properly addressed. Protection and monitoring of

**SITE SPECIFIC WILDLIFE CONSERVATION PLAN FOR JUMKA PATHIRIPOSHI
IRON ORE BLOCK OF M/S RUNGTA MINES LTD.**

wildlife, wildlife habitat management, support to local forest dependent communities through proper eco-development measures etc. are some areas which need specific attention. Since the area is characterized by the movement of elephants measures need to be adopted for its protection, monitoring, habitat management and mitigation of HEC issues. Surrounding Forest areas are vulnerable to fire and hence fire protection activities also need to be ensured. In the above said context a Site Specific Wildlife Conservation plan is suggested to be prepared and implemented.

Further In Condition No. B (16), (17), (18) & C (26) of ToR, the MoEF&CC has imposed that, (i) A study has to be done to ascertain the impact of mining project on wildlife of the study area with surrounding area should be furnished. Accordingly detailed mitigative measures required should be work out with cost implications. (ii) A detailed biological study with core zone and 10km buffer zone should be done. Details of flora and fauna in the core zone and buffer zone should be submitted along with the list of Schedule -I fauna. Necessary plan for schedule-I fauna along with budgetary provisions for their conservation should be prepared in consultation with State forest department. Necessary allocation of the funds for implementing the same should be made as part of the project cost. (iii) during mining operation precautionary measures shall be taken for conservation and protection of endangered fauna noticed in the ZoI like elephant and Sloth Bear etc. (iv) afforestation has to be done by using Indigenous species outside the M.L. area .

We are thankful to the management of M/s Rungta Mines Ltd., Barbil, Keonjhar for providing us documents relating to this mine and approval orders issued by various quarters and accompanying during field visit which has given fruitful inputs to this Plan.

EXECUTIVE SUMMARY

1. Jumka Pathriposhi Pahar Iron Ore Block is located in village Batagaon, Kensara in Sundergarh & Kadakala in Keonjhar district. It is 20.00 km south of Koira town in Kedeshala village of Koira Tahasil.
2. The said mining block is coming within under Koira Range of Bonai Forest Division.
3. Government of Odisha, pursuant to the Mines and Minerals (Development and Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015, issued the notice inviting tender dated 07.07.2021 to commence the auction process for grant of mining lease for Jumka Pathriposhi Pahar Iron Ore Block over an area of 158.509 Ha. for Iron Ore located in Koira Mining circle, district Sundergarh, Odisha.
4. The e-auction process was conducted on 24.09.2021 and Rungta Mines Ltd. was declared as the 'Preferred Bidder' under Rule 9(9)(III) or Rule 10 (1A) of Auction Rules, having quoted highest Final Price Offer vide letter No. MXIII(b)46/2021/7738/DM Dated 05.10.2021 issued by Director of Mines Government of Odisha.
5. As required under Rule 10(1) of the Auction Rules and the tender document for the said mineral block, Rungta Mines Ltd. has made payment of the first installment, being 20% (twenty percent) of the upfront payment of Rs.49,21,44,251/- (Forty-Nine Crore Twenty-One Lakh Forty-Four Thousand Two Hundred Fifty-One) only through Treasury Challan vide e- Challan no. 0853/1886 dated 08.10.2021 at Cyber Treasury, Dist.- Sundergarh.
6. In pursuant to Rule 10(2) of the Auction Rules and the terms of the Tender Document, the Government of Odisha issued Letter of Intent (LOI) bearing no. IV(B)SM-49/2021/8716/SM, Bhubaneswar dated 28.10.2021 for grant of Mining Lease for Jumka Pathriposhi Pahar Iron Ore Block. The Validity of LOI is for a period of 3 (three) years from the date of its issuance on 158.509 Ha. area to Rungta Mines Ltd. for a period of 50 (fifty) years.
7. Out of 158.509 Ha. DGPS surveyed lease area, 147.803 Ha. PRF area is in Sundergarh district and 10.706 Ha. is in Keonjhar district. The total forest land included is 156.978 Ha., out of which 147.803 Ha. is PRF in Sundergarh district and 9.175 Ha. is Revenue Forest in Keonjhar district. Remaining 1.531 Ha. is non- forest govt. land in Keonjhar district.

**SITE SPECIFIC WILDLIFE CONSERVATION PLAN FOR JIJIKA PATHIRIPOSHI
IRON ORE BLOCK OF M/S RUNGTA MINES LTD.**

8. Mining plan has been approved by Indian Bureau of Mines, Bhubaneswar vide letter No MP/A/18-ORI/BHU/2021-22 dated 24.11.2021.
9. During proposed period of mining operation, the mining operation will be fully mechanized opencast with development of benches of height upto 10m and width upto 20m. The conventional opencast method with utilization of excavator of capacity upto 4.5m³, dumpers of capacity upto 50 MT, rock-breakers, deep-hole drilling blasting will be adopted.
10. During mining operation period from 2026-27(27.10.2026 to 31.03.2027) to 2028-29, mining operation will be done in only one quarry. The proposed mining area and other area of the lease is already proved mineralized at G₂ level by 85 no. of boreholes completed by GSI, MECL as per G.R. provided with the Tender Document.
11. The cost of the project is Rs.38000 Lakhs.
12. Forests in the study area comprise of tropical dry deciduous mixed type, moist peninsular high-level Sal with several plant associations, prominent being Sal associated with *Anogeissus latifolia* and *Terminalia-Lagerstroemia-Anogeissus* formations of varying density and openness.
13. The fauna in the M.L area is confined to small animals like squirrels, lizards, crows and common myna. Endangered fauna, viz., elephant, (which generally migrates through the region) sloth bear, python, etc. are noticed in the buffer zone of the project. There is no endemic flora or fauna noticed.
14. The M.L. area or study area does not form a part of Sanctuary, National Park, Conservation or Community reserve, tiger or elephant reserve or biosphere reserve. The known elephant corridor is outside the study area.
15. The Forest Blocks located within the 10KM ZoI are Khajurdihi R.F., Sarekanda R.F., Khandadhar R.F. & Torha R.F. of Bonai Forest Division. Also, Kathmal R.F. & Mendhamaruni R.F. is present within 15 KM extended ZoI.
16. 56 (Fifty Six) number of villages are coming within the 10 km buffer zone area.
17. The Impacts within M.L. area include habitat loss due to clearance of vegetation, honey combing, soil erosion, lack of water, noise, dust and light pollution, forest fire, vulnerability of wild animals falling in mine pits, generation of garbage etc.

18. The impacts within the ZoI include habitat loss fragmentation of habitat, loss of biodiversity, forest fire, poaching, heavy traffic, depredation by wild animals, disturbance due to noise and light, vulnerability of elephants to electrocution etc.
19. Schedule-I species like Elephant (*Elephas maximus*), Sloth Bear (*Melursus ursinus*) & Common Indian Monitor (*Varanus bengalensis*) are noticed in ZoI and rest flora & fauna list is enclosed as Annexure-I.
20. In this plan protection and management of Schedule-I species have given sufficient importance. The anticipated degradation due to this project are habitat degradation, habitat fragmentation, Air pollution, Noise pollution, and related impact on wildlife & its habitat and also on local forest dependent community.
21. Mitigative measures have provided both in Core Zone and Zone of Impact.
This Management Plan has addressed all the above threats with remedial measures to minimize the adversities as detailed below: -

FOR BONAI DIVISION

Within the Project area by the User Agency:

- Employment of Fire Watcher
- Fire Fighting equipment
- Awareness Promotion
- Bird baths
- Bird nests
- One four wheeler + POL + Driver remuneration
- Remuneration to GIS assistant.
- Distribution of grain bins
- High powered torches
- Provision of MTS at Division office
- Jan Surakhya Gaja Rakhya

Within the Impact Area/Buffer zone by Forest Division:

(I) Protection & Enforcement Activities

- Establishment of Intra Divisional watch tower
- Engagement of Squad members
- Hired vehicle + POL
- Camping equipments

(ii) Wildlife Habitat Management

- Habitat enrichment
- De-silting, Renovation & maintenance of existing water bodies
- Construction of Check dam

(iii) Wildlife Monitoring

- Procurement of Camera Trap
- Procurement of Monitoring Kits
- Construction of anti-poaching barrack

(iv) Human Elephant Conflict Mitigation

- Installation of Solar Street lamp/light
- Provision of Tranquillizing Kit
- Provision of barricading open wells
- Provision of Elephant Proof Trench
- Deployment of Gaja Saathi (5 nos.)

(v) Public Awareness

(vi) Engagement of five Data Entry Operator cum MTS

FOR KEONJHAR DIVISION

Within the Project area by the User Agency:

- Strengthening Office of RCCF Rourkela,
- Fire watchers
- High powered torches
- Study of orchid in Nayakore beat range
- Hired vehicle for elephant squad.

Within the Impact Area/Buffer zone by Forest Division:

(i) Wildlife Habitat Improvement

- Check dams

(ii) Protection & Surveillance

- Distribution of grain bins
- High mask solar light
- Elephant squad
- Cattle immunization
- Salt licks



22. The plan is for 5 years. A monitoring committee has been suggested in this plan under the Chairmanship of the DFO, Bonai & Keonjhar with mine representative and others as members for smooth execution and transparency.
23. The total cost of the conservation plan is Rs. 1194.24 Lakhs (Rs. 987.24 Lakhs for Bonai Forest Division and Rs. 207.60 Lakhs for Keonjhar Forest Division) including cost escalation @ 20%. The entire amount will be deposited by the User Agency in CAMPA.

Divisional Forest Officer
Keonjhar Division

Divisional Forest Officer,
Bonai Division

CHAPTER-1

INTRODUCTION

1. i) BRIEF DESCRIPTION OF THE PROJECT

Jumka Pathiriposhi Pahar Iron Ore Block of M/s Rungta Mines Limited is one of the Mining Project for production of Iron ore in Kolra Tehsil of Sundergarh District in Odisha. Government of Odisha in pursuant to Rule 10(2) of the Auction Rules and the terms of the Tender Document, Issued Letter of Intent (LOI) bearing no.t IV(B)SM-49/2021/8716/SM, Bhubaneswar dated 28.10.2021 for grant of Mining Lease for Jumka Pathiriposhi Pahar Iron Ore Block for Iron Ore located in 20 Km south of Koira town in Kedshala village, Koira Tahasil, on 158.509 Ha. area to Rungta Mines Ltd. for a period of 50 years. Out of 158.509 Ha. DGPS surveyed lease area, 147.803 Ha. area is in Sundergarh district and 10.706 Ha. is in Keonjhar district. The total forest land included is 156.978 Ha., out of which 147.803 Ha. is PRF in Sundergarh district and 9.175 Ha. is Revenue Forest in Keonjhar district. Remaining 1.531 Ha. is non- forest govt. land in Keonjhar district.

Jumka Pathiriposhi Pahar Iron Ore Block is located in village Batagaon, Kensara in Sundergarh & Kadakala in Keonjhar district. The said mining block is coming within under Kolra Range of Bonal Forest Division.

Mining plan has been approved by Indian Bureau of Mines, Bhubaneswar vide letter No MP/A/18-ORI/BHU/2021-22 dated 24.11.2021. During proposed period of mining operation, the mining operation will be fully mechanized opencast with development of benches of height upto 10m and width upto 20m. The conventional opencast method with utilization of excavator of capacity upto 4.5m³, dumpers of capacity upto 50 MT, rock-breakers, deep-hole drilling blasting will be adopted.

1. ii) PROJECT COST

The cost of the project is Rs. 38000 Lakhs.

1. iii) LOCATION

The Mining Block is located in village Batagaon, Kensara in Sundergarh & Kadakala in Keonjhar district and is coming within under Koira Range of Bonai Forest Division. This Mining Block is shown in SoI Topo Sheet No. F45N1, F45N2, F45N5 & F45N6. This is bounded by the boundary pillars having GPS locations as given below in Table-1:

TABLE 1: GPS locations of Boundary Pillars

Pillar No.	Pillar Latitude	Pillar Longitude
1	21°47'39.29591"	85°12'13.87352"
2	21°48'07.23287"	85°12'48.88379"
3	21°48'13.05824"	85°12'43.45020"
4	21°48'31.52860"	85°13'06.29391"
5	21°48'42.56911"	85°12'56.91209"
6	21°48'48.14961"	85°13'04.93242"
7	21°48'54.81396"	85°13'14.61025"
8	21°48'42.36089"	85°13'25.32167"
9	21°48'34.32949"	85°13'15.20689"
10	21°48'29.12803"	85°13'19.33079"
11	21°48'27.03441"	85°13'21.01698"
12	21°48'24.00203"	85°13'20.34026"
13	21°48'20.99534"	85°13'17.62482"
14	21°48'19.55624"	85°12'13.87352"
15	21°48'17.67171"	85°13'15.61180"
16	21°48'15.61567"	85°13'13.50455"
17	21°48'11.09231"	85°13'08.34305"
18	21°48'09.65388"	85°13'05.80366"
19	21°48'08.24905"	85°13'04.72433"
20	21°48'06.10753"	85°13'03.84203"
21	21°48'01.42190"	85°13'02.10312"
22	21°48'00.23978"	85°12'59.63609"
23	21°47'54.80890"	85°12'55.49869"

**SITE SPECIFIC WILDLIFE CONSERVATION PLAN FOR JUMKA PATHIRIPOSHI
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24	21°47'50.31172"	85°12'55.25884"
25	21°47'47.54488"	85°12'56.26107"
26	21°47'46.06295"	85°12'56.46665"
27	21°47'44.77618"	85°12'56.28536"
28	21°47'35.13124"	85°12'44.94140"
29	21°47'35.12409"	85°12'42.00714"
30	21°47'34.37028"	85°12'39.93416"
31	21°47'34.81571"	85°12'36.08800"
32	21°47'34.32745"	85°12'33.31259"
33	21°47'33.95911"	85°12'31.93346"
34	21°47'33.53081"	85°12'30.12602"
35	21°47'33.44514"	85°12'28.60983"
36	21°47'33.50511"	85°12'26.98228"
37	21°47'34.15613"	85°12'24.88359"
38	21°47'33.31665"	85°12'22.09962"
39	21°47'32.62280"	85°12'19.59877"
40	21°47'32.94620"	85°12'18.66933"

The Forest Blocks located within the 10 KM ZoI are Khajurdihi R.F., Sarakanda R.F., Khandadhar R.F. & Torha R.F. of Bonai Forest Division.

1. iv) NATURE & EXTENT OF LAND REQUIRED

The total area of the mining block is 158.509 Ha, out of which 156.978 Ha. area is forest land (PRF-147.803 Ha. In Sundergarh District + Revenue forest- 9.175 Ha. In Keonjhar District) and remaining 1.531 Ha. is non- forest govt. land in Keonjhar district. The breakup of land use is furnished below in Table-2.

TABLE2: The Breakup of The Land Use

SL NO	ITEM	REVENUE FOREST (IN HA)	PRF (IN HA)	TOTAL FOREST (IN HA)	TOTAL NON FOREST (IN HA)	GRAND TOTAL (IN HA)
1	Mining including Mobile Crushing and Screening Unit, Temporary Stack Yard	7.601	113.739	121.340	0.000	121.340
2	Dumping of Overburden	0.000	7.301	7.301	0.000	7.301
3	Mine Road	0.320	7.616	7.936	0.076	8.012
4	Infrastructure (Temporary Office, Rest Shelter, Workshop, Weigh Bridge etc.)	0.000	1.813	1.813	1.187	3.000
5	Ore Processing Site	0.000	3.820	3.820	0.000	3.820
6	Mineral Stack Yard	0.000	9.290	9.290	0.000	9.290
	Sub-total	7.921	143.579	151.500	1.263	152.763
7	Safety Zone	1.254	4.224	5.478	0.268	5.746
	Grand Total	9.175	147.803	156.978	1.531	158.509

CHAPTER-2

PROJECT AND IMPACT AREA

2.1) DESCRIPTION OF THE PROJECT AREA

Jumka Pathiriposhi Pahar Iron Ore Block of M/s Rungta Mines Limited is one of the Mining Project for production of Iron ore in Koira Tehsil of Sundergarh District in Odisha. Government of Odisha in pursuant to Rule 10(2) of the Auction Rules and the terms of the Tender Document, issued Letter of Intent (LOI) bearing no. IV(B)SM-49/2021/8716/SM, Bhubaneswar dated 28.10.21 for grant of Mining Lease for Jumka Pathiriposhi Pahar Iron Ore Block for Iron Ore located in 20 Km south of Koira town in Kedshala village, Koira Tahasil, on 158.509 Ha. area to Rungta Mines Ltd. for a period of 50 years. Out of 158.509 Ha. DGPS surveyed lease area 156.978 Ha. area is forest land {PRF-147.803 Ha. (Sundergarh District) + Revenue forest- 9.175 Ha.(Keonjhar District)} and remaining 1.531 Ha. is non- forest govt. land in Keonjhar district.

Jumka Pathiriposhi Pahar Iron Ore Block is located in village Batagaon, Kensara in Sundergarh & Kadakala in Keonjhar district. The said mining block is coming within under Koira Range of Bonal Forest Division.

Mining plan has been approved by Indian Bureau of Mines, Bhubaneswar vide letter No MP/A/18-ORI/BHU/2021-22 dated 24.11.2021. During proposed period of mining operation, the mining operation will be fully mechanized opencast with development of benches of height upto 10m and width upto 20m. The conventional opencast method with utilization of excavator of capacity upto 4.5m³, dumpers of capacity upto 50 MT, rock-breakers, deep-hole drilling blasting will be adopted.

Topography:

The area of this mining block and the surrounding area forms one of the prominent high iron ore ridges in the Bonal Iron Ore Range lying to the southwest of Mankadanachha hill, whereas rest of the mapped area forms narrow spurs, hills and valleys. The entire area falls in the elevation ranging from 488m and 1037m. The eastern boundary of the Jumka-Pathiriposhi ridge is bounded to the north by a cliff with a straight fall of about 100m., which marks the district boundary between Keonjhar and Sundargarh. The area has a gentle slope to the west and further down marked by rigged topography. The B.H.J. ridges are dotted with springs at an altitude range of 800-900m, all of them join to form perennial nalas and

streams. The details of physiographic features and infrastructures available in and around the lease/block area is furnished below (Table-3):

Climate:

Climate and meteorology of a place play an important role in the implementation of any developmental Project. Meteorology is also the key to understand local air quality as there is essential relationship between meteorology and atmospheric dispersion involving the wind in the broad sense of them.

Temperature

The climate of the study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March and continue till end of June. Temperature begins to rise rapidly attaining the maximum in the month of May (47.4°) Celsius. No doubt the weather becomes pleasant on the onset of monsoon in 2nd week of June and continues upto end of October. The temperature in the month of December cools down to 07° Celsius.

Relative Humidity

The air is dry excepting during the South-West monsoon season. The maximum humidity ranges from 55% to 76% with annual average of 64.83% while the minimum humidity range from 26% to 43% with an annual average of 34%.

Rainfall

There is variation of rainfall in the catchment area and around 10 Kms radius of buffer zone of this mine. The average annual rainfall of Bonal sub-division is 1364.66mm as computed from last 10 years data out of which a major portion i.e., 92% occurs from July to September.

Pre-dominant wind direction

This is south-west area which remains calm for nearly 50% of the year.

2. II) DESCRIPTION OF FLORA AND FAUNA:

The authenticated list of Flora and Fauna for both the Project area (Core Zone) and the buffer zone has been furnished in Annexure-I.

Details of Endemic, threatened and Scheduled Species:

So far, according to our study and from the available literature, there is no endemic plant or animal species present in this area. As far as, threatened fauna are concerned all Schedule - I species like is **Elephant**(*Elephas maximus*), **Sloth Bear** (*Melursus ursinus*)&**Monitor Lizard**(*Varanusmonitor*)are present in the ZoI.

2. iii) DESCRIPTION OF FOREST AND OTHER HABITATS:

Forest Type:

This proposal includes Revenue Forest and DLC Forest. However, Torha R.F., Khandadhar R.F., Mendhamaruni R.F., Karo R.F., Kathamal R.F., Khajurdhi R.F. & Sarakanda R.F. exist in the ZoI which are being included in the forest type-3c/C2e (I) Moist Peninsular High-Level Sal. The quality of Sal is usually IV but the crop is somewhat open. In these areas, the patches of mixed forests with predominance of *Anogeissus latifolia* are also found within the Sal belts. Regeneration of Sal is fairly good but there is risk of repeated annual fire. The area is however free from frost. The common associates of Sal in the top canopy are *Terminalia alata* (Asan), *Anogeissus latifolia* (Dhaura), *Syzigiumcumini*(Jamun), *Lagerstroemia parviflora* (Patuli) and *Pterocarpus marsupium* (Bija). The middle storey contains *Careya arborea* (Kumbhi), *Bauhinia purpurea* (Kanchan), *Bridella retusa* (Kasi), *Ougeiniaogenesis* (Bandhan), *Helectorisora* (Modaphal) and *Indigofera pulcheia* (Butterfly Flower) are commonly found as undergrowth. The common species of climbers available are *Bauhinia vahlii* (Siali) and *Smylax macrophylla* (Muturi). *Themida* and *Imperata* are the common grasses.

Forest Condition According to the FSI Report:

As per FSI Report 2021, Sundergarh Dist. has a Geographical area over 9712 Sq.Km. Total Forest Area is 4268.17Sq.Km.(43.95%of Geographical area) which include 1020.73Sq.Km. of Very Dense Forest (Canopy Density above 70%), 1856.46Sq.Km. of Moderate Dense Forest (Canopy density 40% to 70%), Open Forest 1309.98Sq.Km. (Canopy Density 10 to 40%).

Working Plan Prescription:

The special objects of management of this working circle as per the approved Working Plan of Bonal Division are: -

**SITE SPECIFIC WILDLIFE CONSERVATION PLAN FOR JUMKA PATHIRIPOSHI
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- a) To tend and improve the existing growing stock through suitable silvicultural measures.
- b) To regenerate the barren and blank patches by planting suitable site exacting hardy species.
- c) To rehabilitate and improve the productivity of the depleted and degraded forest through enrichment plantation and other suitable measures.
- d) To tend the existing plantation so as to get maximum annual increment.
- e) To raise block plantation preferably of economically important species in the large gaps having extent of more than 4 Ha.
- f) To improve micro-edaphic conditions, especially in dry and open patches by taking suitable soil and water conservation measures.
- g) To provide effective protection against illicit felling, encroachment, shifting cultivation, over grazing and fire hazards so as to check further retrogression of site.
- h) To meet the bonafied needs and requirements of local inhabitants in regards of fire wood, small timber and fodder etc.

2. iv) WILDLIFE HABITAT AND PREVAILING WILDLIFE SCENARIO:

From the primary data collected from the field and executives of Forest Dept. it appears that there is presence of Schedule-I species i.e., Elephants, Sloth bears & Monitor lizard in the area. Presence of other wildlife is mentioned in the list of fauna. The habit and habitats of the aforesaid Schedule-I species are narrated below-

Elephant (*Elephas maximus*):

Habit: Elephants are social animals and live-in herds, which vary between 3-6. The Elephants are matriarchal and the herd is led by the oldest female. Herd usually breaks into clans and rejoins again. For long-distance movement some time a few herd mixes and form a big group which is coordinated by the oldest female for



searching for better habitat – food and water. Several herds maintain contact through sub-sonic vocalization according to findings on work with African Elephants. Adult males remain away from the herd and occasionally join with the herd when females are in oestrous. They are polygamous. Only dominant males have the chance to mate with females. Old males usually lead a solitary life, while sub-adult males some time form an unstable group of 2 to 7 animals. Such a group is known as *Muljuria* group. Elephants are very sensitive to hot and prefer shady moist areas during noontime. The matriarch herds, as well as males, are long-ranging. Their home Range varies between 150 and 1200 sq. km., depending on the habitat condition. An Elephant may run at a speed of 45 km per hour for a short distance for two to five minutes. Their average life span is the same as human beings, and around 70 years. In Elephant there is no seasonality in oestrous cycle, and the interbirth interval varies from 3 to 5 years, depending on the habitat quality. The gestation period is 18 to 22 months and the suckling period is around one and a half years. Young calves start taking grass from 6 months onwards. Mother continues to bestow maternal care to their offspring for several years after weaning. The sense of touch and hearing is well developed in Elephant but its eyesight is poor. Most males have prominent tusks, while some time females have tushes which are hardly visible from outside. Male Elephants sometime have only one tusk (known as *Ganesh*), or even without tusk (known as *Makhna*). They have 6 sets of molar teeth, of which only one set is in use at a given time. With the loss of the last set of molar teeth they are deprived of taking any food and eventually do not survive. The unique identity of Elephant is his trunk with a single finger-like tip at the end and it has versatile utility, used in eating, drinking, smelling, breathing, touching, washing & dusting of the body, fighting, and vocalizing. Mud wallowing is fun for the Elephants, though it protects them from insects and sun.

Habitat: The body size and food requirement of this non-ruminant "mega-herbivore" have made the Elephant a generalist vegetarian to feed on a variety of plant species. Even within one region, they feed on well over a hundred species of plants. They not only depend on leaves, fruits & twigs but also consume barks, roots, stem pith, flowers, grasses and salt with soil. Though, depending on seasons they select distinctly different plant parts depending on their availability. In the dry deciduous Forest region, their dietary habit usually alternates between predominantly grazing during the wet season and browsing during the dry season. In quantitative terms, they prefer grasses, reeds, and sedges (*Poaceae* and *Cyperaceae*). Their preferred tree families are *Combretaceae*, *Euphorbiaceae*, *Moraceae*, *Malvaceae*, and *Legumes*. They cannot survive entirely as grazers. Thus, browse

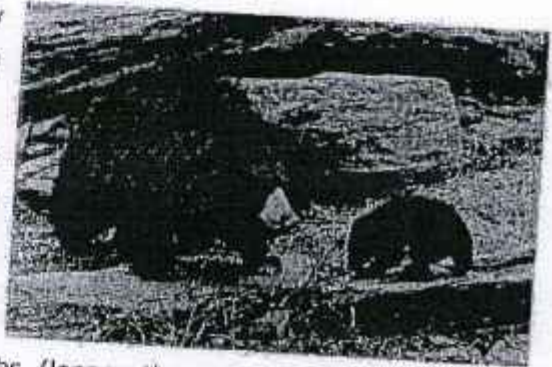
species are extremely important in the nutrition of Elephant. On average, take 150 kg of vegetation and 100 litres of water per day. The efficiency of digestion is poor (40 to 45%) with the symbiotic bacteria in the stomach. They are in constant motion while feeding and generally cover 15 to 20 km in a day. Elephants are well established in dry deciduous Forests to moist evergreen Forest.

Human activities like agriculture (cultivation of crop, irrigation system); development works (Roads, Railways, Townships, Dams, Industries, and Mines etc.) are fragmenting their habitat and creating obstructions to their movement which they traditionally follow. They are in conflict with human when they move through that fragmented area and also damage various cultivated crops like paddy, ragi, banana, sugar cane etc.

Sloth Bear (*Melursus ursinus*):

Distributed throughout the Odisha, except a few areas of the coastal Districts and is an endangered species.

Habit: Sloth Bear has a long snout and lips are detached from the gum and are well adapted to the forceful intake and expulsion of air. The absence of a middle pair of incisors in the upper jaw permits the passage of air freely. The tongue is large protractible. Long claws of the forelimbs (longer than hind limbs) are good instruments of digging. The animal produces enough suction force to suck out termites from mounds.



Bears are nocturnal in habit, their sense of smell is well developed than their sight and hearing. During an accidental encounter with a human being, they cause severe damage to the human or even death. When they have cubs, they move with them, otherwise, they are solitary or are in pair with the opposite sex. They have a specific breeding season. Mating takes place in June or July and they give birth to cubs in caves during December and January. Litter varies between 1 and 3 cubs. Parental care lies with mother only. Their average life span is around 40 years.

Habitat: They are in good number in drier and secondary Forests are also found in dense forests. They are omnivorous in nature. They feed on tubers, roots, grubs, various fruits, various insects, honey, termites, flowers (mahua, simul, etc.). It also damages sugar cane crop, maize, etc. Their home Range is limited and restricted. In the quest of food, they may

travel several kilometres. It is believed that their gall bladder and bile have medicinal properties and hence they are exposed to poaching, particularly due to the demand of these parts in China and other southeast Asian countries.

Common Indian Monitor (*Varanus bengalensis*):

Distinctive Character: The monitor has a compressed tail and nostril is nearer to the eye than the tip of the snout. The adult is olive, grey or brownish above with sparse black spots, yellowish below, uniform or flecked with black. It is widely distributed and can be found from evergreen forests to the fringes of the deserts.



Habitat: It is a diurnal lizard, though more active in the morning and evening. It is also said to occupy the space between the roof and ceiling of the less frequented forest rest house. Normally, it is a burrow-dweller, often going headfirst into its bolt holes and remains in that position till it needs to come out again.

Habit: When out in foraging, it moves slowly along the forest floor with the tongue flickering in and out of the mouth like a snake's tongue. When necessary, they can run at a good speed and they are also agile climbers. They can swim well and can remain submerged for a considerable time. A concerned monitor will demonstrate by raising on its forelegs, hissing and lashing its tail. A captive if handled carelessly can inflict a painful bite with recurved teeth which are difficult to dislodge.

2. v) WILDLIFE CORRIDORS:

No notified Elephant Corridor is within 10 Km aerial distance from the Project site. However, the nearest Karo-Karampada Elephant Corridor is at a distance of 20.95 Km from the project site.

2. vi) HUMAN WILDLIFE CONFLICT:

As per the record available in Bonai Forest Division 33 house damage cases have yet been recorded, 12 in 2016-17, 15 in 2017-18 and 06 in 2018-19.

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So far human kill is concerned, 01 case have been reported in 2017-18 and 01 case in 2018-19. So far human injury is concerned, no case has been reported.

From 2016-17 to 2018-19, 01 elephant and 01 wild boar have died due to Human-Animal conflict i.e., 01 in 2016-17 and 01 in 2018-19.

As per the Divisional record found 68.62 acre of crops were damaged by the elephant have yet been recorded, 40.30 acre in 2016-17, followed by 5.44 acre in 2017-18 and 22.88 acre in 2018-19. In all the cases compensation has been paid to the victims.

House damage by Elephants

Year	No. of Houses damaged
2016-17	12
2017-18	15
2018-19	06

Human Death by Wild Animal

Year	Human Death	Animal causing human death
2016-17	Nil	-
2017-18	One	Elephant
2018-19	One	Elephant

Human Injury by Wild Animal

Year	No. of Human involved	Animal causing injury
2016-17	Nil	-
2017-18	Nil	-

**SITE SPECIFIC WILDLIFE CONSERVATION PLAN FOR JUMKA PATHRIPOSHI
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2018-19	NIL	
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Details of death of wild animals

Year	Date	Animal killed	Location	Cause of death
2016-17	12.05.2016	Female Elephant-1	Tehrai Khesra Forest, Tehrai Beat. 21°54'33.5" N & 85°17'0.7" E	Natural
2017-18	-	NIL	-	-
2018-19	11.10.2018	Wild Boar - 1	Podadihi Khajuridihi Beat	Poaching

Crop damage by Elephants

Year	Crop area damaged in Ac.	Compensation paid in Rs.
2016-17	40.30	4,03,000
2017-18	5.44	54,400
2018-19	22.88	2,28,800

Cattle kill by Wild Animal

Year	Name of Human Kill	Date & place of occurrence	Location
2016-17		- NIL -	
2017-18		- NIL -	
2018-19		- NIL -	

CHAPTER-3

THE PROBABLE IMPACTS OF THE PROJECT ON FLORA & FAUNA

A. IMPACT OF THE PROJECT ON THE ENVIRONMENT IN GENERAL:

Any project has its impacts on the biotic, physical and socio-economic environment. Some are beneficial to the society and some are not. After evaluating these impacts, all projects are implemented. This project is not left untouched in these aspects. When certain impacts are disasters, it necessitates to mitigate such problems with established technology and scientific study. Such negative impacts are discussed here to help in implementing the mitigative measures.

Before any attempt is made to reduce various stresses and to avoid/minimize or mitigate their adverse impacts, it is necessary to identify various factors that have negative influence on the biodiversity. These are specified below considering the terms of reference for the preparation of Site-Specific Wildlife Management Plan.

i) Impact on soil

It is anticipated that the effect on soil quality may arise during construction and operation. During Operation due to open yard storage of raw materials like Iron ore, coal and limestone the run-off goes down stream polluting the natural drainage. As the project area has vegetation at sparse, some amount of soil erosion is inevitable from surface run-off, which will increase the sediment load of the streams. The earthwork and storage of constructions material may temporarily affect the topsoil in terms of erosion. Transport of construction material would lead to an increase in traffic flux. Further, dumping of solid wastes like charcoal dust, ESP dust, sludge from DRI/blast furnace, FES dust, BF slag, fly ash, etc. on land would also deteriorate soil quality, if appropriate control and mitigation measures will not be implemented. The top soil and other stored material may erode and thereby affect the soil of the periphery and introduce toxic materials to the soil. If not properly stored and will affect to the wild lives like rodents and other burrowing animals present in that area.

ii) Geomorphic changes:

No major geomorphic changes will occur due to execution of this project except for minor levelling and little rise in the plinth area. Raw materials will temporarily increase elevation in

storage area. The natural sheet flow will be obstructed due to the buildings but that shall be taken care by the provision of storm water drains.

iii) Moisture loss

Moisture loss will be occurred in both the core and the ZoI of the project due to release of various gas with a very high temperature from the boiler of the block if adequate measures will not be taken. Operation of heavy vehicle for transportation and loss of vegetation due to the project are also cause moisture loss. Under such circumstances, re-establishment of vegetation is delayed and difficult but constant input of imported materials like fertilizers, organic manure, water and regular attention can escalates the cost of reforestation in such refractory area.

iv) Loss of Vegetation

Deforestation without proper reclamation will have an ecological / biodiversity loss at the conceptual stage, if not followed up by a proper conservation management plan. Apart from the loss of forest in the mining, there is infrastructure development for mining, establishment of hutments, Kiosks and the subsequent population pressure certainly put a huge anthropogenic pressure on the flora on the locality directly and indirectly.

v) Habitat loss

Habitat destruction, is a process, which alters or eliminates conditions needed for animals and plants to survive. Rendered functionally weak by mining activities, the ecosystems' ability to support species is reduced. Reduced carrying capacity of the habitat means decline in populations and sudden disappearance of species. Habitat loss is manifested in loss of food plants and failure of the plant in regenerating itself. So is the case with horizontal cover (loss of undergrowth) and vertical cover (canopy contiguity). Habitat loss impacts nitrogen, phosphorous, sulphur, carbon and hydrological cycles, which affects ecosystem values adversely and culminates in either emigration of species or outright extinction.

vi) Impact on Air:

The mining area and as well as surroundings is affected by the following ways:

Dust pollution

Mining activity particularly blasting, transport mechanism and dumping generate considerable dust, which will settle on nearby vegetation or on the ground. While the former component will affect the net production of organic matter, the latter will be awaiting to be washed away during rains. Blow of dust, will definitely settle on the smaller animal fur, affects its respiration and push the animal to a zone of stress. The broad impacts of dust pollution are:

- Reduced photosynthesis leading to reduced growth rates of plants.
- Increased incidences of plant pests and diseases from both fungi and insecticides.
- Reduced seeding, less viable seeds and hence, lowered or absence of regeneration.

Noise pollution

Drilling - blasting, loading, dumping, transportation and working activities all will produce noise. One can well imagine the nature of stress from the fact that a mere whisper in tranquil forest is enough to alarm the approaching animal to water hole, who takes to flight at once. Small reptiles manage to adapt in such a noisy environment because their facility of escape by such noise is limited. This is one of the factors contributing to displacement of species, even large ones like deer and elephants. Adverse effects are.

- Hearing impairment.
- Signal masking i.e., inability to hear important environmental clues and alarm.
- Increased heart rate, respiration and stress reaction.
- Loss of fecundity or inability to litter or increase in abortion.
- Decline in bird population due to muffling of mating calls.

Light pollution

The animals are adapted to natural light. Depending on the intensity of light in which an animal is most active, it is either classified as diurnal, crepuscular or nocturnal. Animals are not accustomed and adapted to artificial light, which usually prevail in mining area in the night shift, from the tippers carrying ore after evening and other fixed lights. All animals in the forest area of either the lease or ZoI area will be affected by the incidence of light as artificial lights are very sensitive to the cornea. So, it causes flight of animal from the ZoI of the mining area. Animals are adapted to constant phase of light, when changes happen,

they move to area of their choice. Sudden lighting, off and on after dusk by the moving vehicles is harmful. At times, animals will face accidental death, unable to escape and get distracted from their natural path will lead to depredation to the nearby villages or accidental fall in the deep mining pit. The above activities will increase the stress condition. Animals exposed to light exhibit erratic behaviour pattern (mauling by bear, causing injury by elephant), expressed in their deflected movement and aggressive behaviour.

B. QUANTUM OF POLLUTANTS THAT MAY BE PRODUCED BY THE PROJECT AND EFFECT ON SOIL, WATER, AIR, VEGETATION AND ANIMALS.

Two types of generation and discharge of pollutants, viz., fugitive emissions and stack emissions, have been considered. The stack emissions comprise of the hot gases from the kilns, which contain particulate matters, SO₂ and NO_x in significant quantities having ground level concentration of SPM, SO₂ and NO_x. Whereas Fugitive emissions comprise mostly of raw material/ product dust generated from different material handling operations, e.g., transport, storage, processing, loading, unloading, etc. Appropriate measures have taken by the Project Proponent to minimize the effect of these pollutants to the environment and the wildlife. Similarly, as such the plant working has been planned on zero discharge basis therefore no pollution of any form is expected on account of industrial activity. If some impact on drainage is envisaged during construction and operation phase and appropriate measures are to be taken. The core area slopes towards northeast. A pond will be constructed to keep water within the plant. The same pond shall serve as the collection point for the rainwater falling over the project area. Thus, the water collected in the pond will be used for operation of the plant and facilities. This can be considered as a minor positive impact on the drainage system, as the mechanism executed for water harvesting would restrict soil erosion due to restricted flow. Hence it may not affect significantly to the soil, water, air, vegetation or animals of the surrounding.

C. DEGRADATION ANTICIPATED ON ACCOUNT OF THE PROJECT IMPLEMENTATION IN QUANTIFIED TERMS ON APPROPRIATE MODELS TO BE EXPLAINED. QUALITATIVE CHANGE IN THE WILDLIFE HABITAT PATTERN IN THE STUDY AREA DUE TO PROJECT IMPLEMENTATION SHOULD ALSO BE DETAILED IN THE PLAN.

Direct degradation is observed in the form of loss of forest growth in area of mining. This complete removal of forest growth displaced the wildlife existing in that area due to loss of abode, food, water and tranquillity. The mine workers will collect fuel wood for their

bonafied use from the ZoI which will cause degradation. The consequence of these stress on forest are discussed below:

1)Habitat fragmentation:

This is the result of clearance of native vegetation by any developmental related activities in the midst of hilly forested area. Habitats, once contiguous, become divided into separate fragments. After clearance, separate fragments tend to be small units or is-lands isolated spatially. Habitat fragmentation involves some habitat impairment of the Island units as well. Fragmentation involves increase in edge habitats and decrease in interior habitats. Biodiversity of each of the fragments get reduced for the above reason. Habitat fragmentation are rarely representative samples of the Initial landscape. Species like elephants, deer, move between the fragments and make use of both. Small species having no ability to move between fragments must make do with what is available in the single isolated habitat.

Habitat fragmentation leads to edge effect. Microclimate changes alter ecology of interior and exterior habitats. Species adapted to interior habitats are less likely to survive in an edge habitat of smaller units. Smaller units support smaller population with reduced carrying capacity. Small population face decreased heterozygosis, increase in inbreeding and possibly inbreeding depression. If there is no migration between populations and genetic exchange, genetic drift sets in. This means, directional selection for advantageous alleles can cause certain alleles to become fixed in a population, thereby decreasing variation. Such loss of diversity, however, will not affect elephants, as movement path of elephant changes with available alternatives. But, species with low cruising radius will be affected. But, species with low cruising radius will be affected. However, alternate corridors exist for elephants although it is difficult to conclusively say whether this is traditional or deflected route. Another dimension to fragmentation is the propensity of depredation.

Loss of biodiversity

Biodiversity is an important component for maintaining natural balance and sustainable ecosystems. Clearly, biodiversity loss is critical for survival of human and wildlife in many ways. Development activities such as industries can significantly alter the biodiversity of an area. Its biggest impact is due to felling of trees for industry purposes.

The forests are home to huge number of organisms. Felling of trees for industry purpose leads to loss of habitat of wildlife. This puts the survival of animal species at stake. The

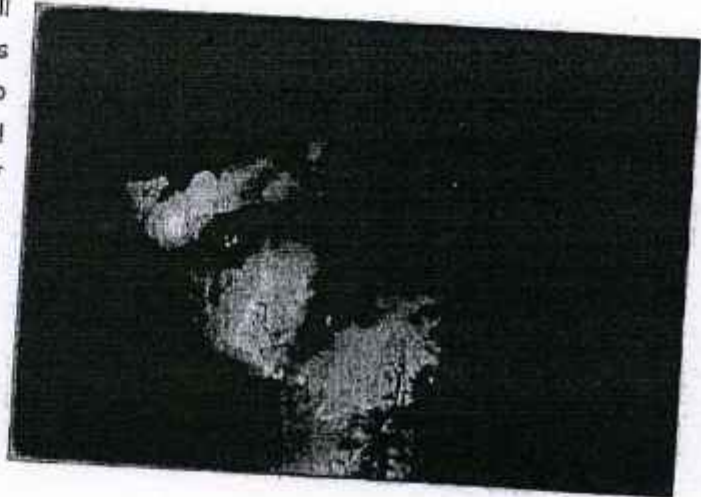
cutting down of trees itself is a bigger threat to number of plants, birds and animals living in the forests. Any change in the biodiversity will have an adverse impact on the ecology of the area leading to many changes in the habitat as in this case. However, the adjoining habitat is also having forest growth to which the wildlife living in this Project area can shift at their own accord and suitability.

iii) Habitat destruction by illicit felling:

The workers involved during construction phase are skilled and highly organized. They may not depend for fuel wood for their bonafied rather prefer to use cooking gas.

Forest fire:

Forest fire is very common to all the forests exist in ZoI. It affects both vegetation and soil. It is also helpful in maintaining diversity and stability of ecosystems. Effect of forest fire and prescribed fire on forest soil is very complex. With increase in industrial and human activities due to setting up of new units and movement of labour force, contractors, transporters and others near to forest areas may induce forest fire.



D. NATURE OF THREATS TO THE FLORA AND FAUNA:

Besides, habitat loss, habitat fragmentation, fire etc., as narrated above, there are other threats also emerges due to degradation of forests and are mentioned below.

i) Encroachment:

Increase in human population occur due to implementation of development projects. This also results in development of town and human habitation near the Industrial area. This plant does not involve any forest land and the workers are mostly recruited from local villages dominated with ST Population unless skilled labourers are required.

ii) Litter generation:

Workers engaged in various operations of the Steel Plant, generate much litter in shape of polythene wrappers, carry bags, paper wrappers, leaf plates and left-over food. This is not only obtrusive to sight but can attract animals like Wild Pigs, Hyena, Wolf and Jackals due to different attracting smell of the leftover food particles in Polythene bags. Ingestion of indigestible polythene can lead to blockade of gut and eventual death of these animals. The workshop will produce mobile cans, plastic jars, spent mobile and grease. The canteen and office will also produce various wastes. Litters thrown all over not only destroy aesthetic view but are injurious to plant and animal life in many other aspects.

E. Probable increase in the vehicular traffic and its impact

About 2500-3000 vehicles move in and out of the mining belt, creating traffic jams. This happens due to poor road surface, narrow mine roads, breakdown of vehicles and both to and for traffic of loaded vehicles going out and empty vehicles coming in. This, for sure, can prevent wild animals from their natural movement, confining them to small unfavourable patches of habitat. Such artificial confinement usually manifests in aggressiveness and deflected movement apart from physiological stress.

F. Noise Pollution, Air and underground pollutions etc. and it's probable impact on flora and fauna:

Noise pollution:

The sources of noise generation during operation phase are as follows: -

- > Operation of the Kilns and furnaces,
- > Material handling operations, crushers
- > ID Fans, motors, pumps
- > Trucks, dumpers, loaders, scrappers and earth-movers
- > Operation of turbines, etc.

Operation of these equipments will continuously generate noise, which will have adverse impact on the ambient noise levels. This is one of the factors contributing to displacement of species, even large ones like Deer and elephant if sufficient safety measures will not be taken. Adverse effects of noise are.

i) Hearing impairment:

- > Signal masking i.e., inability to hear important environmental cues and alarm, distress and mating calls of con specifics for survival.

- Increased heart beat respiration and stress reaction.
- Loss of fecundity or inability to litter or increase in abortion.
- Erosion of faculty to suckle young and successful rearing of the brood.
- Decline in bird population due to muffling of mating calls.

II) Light Pollution:

All animals are adapted to rhythm of solar light and darkness and accordingly remain passive or active depending on their nature (diurnal, crepuscular or nocturnal). During construction phase, a number of lights will be illuminated in the Project area for the purpose of visibility and safety/ security of the work force especially during night hours. Besides frequent plying of trucks/ trailers and large number of vehicles, movements of supervising personnel will add up illumination in the area. Since birds and animals are sensitive to light in night time, the illumination due to above factors may affect their biological cycle. All animals present within the ZoI will be affected by the incidence of light as artificial lights are very sensitive to their cornea. Animals are adapted to constant phase of light, when changes happen, they move to area of their choice. Sudden lighting, off and on after dusk by the moving vehicles is harmful. At times, animals will face accidental death, unable to escape and get distracted from their natural path which will lead to depredation to the nearby villages. The above activities will increase the stress condition. Animals exposed to light exhibit erratic behaviour pattern, expressed in their deflected movement and aggressive behaviour.

CHAPTER-4

OBJECTIVE OF MANAGEMENT AND MITIGATION STRATEGIES

OBJECTIVE OF MANAGEMENT:

The main objective of this plan is to reduce various stresses occurring due to implementation of this project in this particular locality having wildlife importance. The site-specific Wildlife Conservation Plan will suggest measures to mitigate such stress and if possible, how to avoid certain activities which could reduce the negative influence. Wildlife management consists of promoting welfare factors, arresting or reducing the impacts of decimating factors and neutralizing harmful effects of limiting factors that keep the animal population lower than the carrying capacity of the area. It also aims at management of human dimensions relating to regulation of habitat use, sufferance from animal damages, livelihood issues and taking people as partners in conservation management. Such concerns are reflected in the prescriptions. The management of the project's core area will aim for maintenance of habitat for smaller animals that used to live and share habitat with Project area. The management of ZoI will target optimization and maintenance of wildlife habitat and biodiversity, involving local people as far as practicable and aim to avoid / minimize or mitigate the adverse impacts of the project activity. Small animals & larger ones like deer and elephants make use of the area regularly, as the area is undisturbed. Large animals will be disturbed from the area once the Plant commences with full expansion. The displaced animals should not be left as refugee. Their rehabilitation would be the major objective of the plan. To fulfill all these requirements, the plan focused on improving forage and browse volume by increasing food plant diversity with vertical and horizontal cover. These will arrest habitat destruction and fragmentations and also prevent soil erosion and loss of biodiversity. Keeping natural water resource free from negative impact of the project activity will also be targeted.

Objective of management to mitigate the threats to the wildlife is covering the following aspects:

1. To conserve a viable population of Wildlife in general and the Pachyderm in particular in their natural habitat.

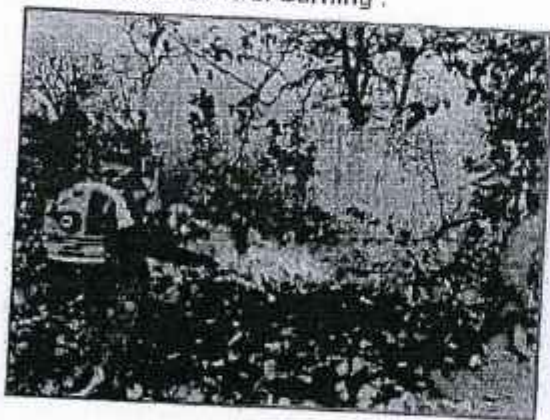
2. Conservation, Protection and Improvement of the flora and fauna in and around the Project area in a sustainable basis despite production of Steel and other ancillary activities.
3. To conserve the natural biodiversity, aesthetic and geo-morphological value of the area through appropriate management of site, habitat and landscape.
4. To reduce the dependency of local people on the forest resources of the ZoI through culturally, socially, economically acceptable and ecologically sustainable and viable alternatives by undertaking eco-development programmes.
5. To reduce man-animal conflict by ensuring contiguity of habitat in the buffer zone by improving forest cover in long term basis.

B. STRATEGIES TO MITIGATE AND MINIMIZE ADVERSE IMPACTS:

1) Strategies for Core Zone:

1.1) Fire Watchers

Fire is one major threat to wild life habitat in the area. 10 nos. of villagers preferably youth will be engaged selected from local villages on the suggestion of VSS for a period of 6 months (January to June) annually. They will be termed as Fire Watchers. It will be better that the fire watchers should either be linked earlier with poaching / illegal collection of forest produce with working knowledge of forest tracts, path and routes followed by villagers as well as wildlife, willingness to work in forest, ability to move on foot / cycle. Fire watchers should be well trained by the local forest Staff the way how to douse fire (ground fire, crown fire etc.) using bunch of green branches of locally available plants. They should possess the local Fire Brigade station telephone number and in case of exigencies when the occurrence of fire goes beyond their control can call the fire brigade Executives to lit off the fire before it aggravates. They will also be supplied Fire Blowers to cut weeds, heap them and practise Control Burning'.



I.2) Provision of Fire fighting equipment:

In order to mitigate immediate impact of fire hazards around the core zone and its fringe areas, it is proposed to have sufficient no. of fire fighting kits (fire blowers, safety equipment, helmet, fire beater, fire scrapper, gloves, fire proof shoes, medicines, ORS packets etc.) with the fire fighting squads.

I.3) Awareness Promotion

- (i) The User Agency will create awareness among the Plant Executive/staff/workers and villagers of adjoining areas regarding wildlife protection, wildlife conservation, forest protection & forest conservation sensitize them to maintain the proper balance of biodiversity in the surrounding areas.
- (ii) Plant Executive/staff/workers should aware about cleanness of the project premises. They will also be aware to protect any type of wildlife including snakes if noticed in the project area. In such an event instead of killing it being afraid, they should intimate the nearest Forest staff or snake charmer available in every Division Office now-a-days for rescue of the wildlife and safe release in the nearby forest. They should also be aware not to domesticate any wildlife as it goes against the Wildlife (Protection) Act, 1972.
- (iii) The Drivers of heavy earth moving vehicles will be told to keep the noise levels to the barest minimum, take all precaution against fire, damage to trees etc. Drivers will be told to control speed so as not to run over slow-moving wildlife like snakes, lizards, mongoose, civets etc. Behavioural change will be expected from each worker on the above points and use of garbage bins. Any sick and injured animal will have to be rescued and given first aid and water. Such animal is to be subsequently handed over to the nearest forest official and released after healing the wound. No worker shall get involved in crime against animals & forests.
- (iv) There should be enough provision and facility for creating awareness through media, announcements, awareness meetings, brochures, documents etc. in the surrounding fringe villages towards community mobilisation for protection of wildlife and forest.

I.4) Provision for bird bath within the project area:

A bird bath is an artificial puddle or small shallow pond, created with a water-filled basin, in which birds may drink, bathe, and cool themselves. A bird bath can be a garden ornament, small reflecting pool, outdoor sculpture, and also can be a part of creating a vital wildlife garden. A bird bath is an attraction for many different species of birds to visit, especially during the summer and drought periods. Bird baths that provide a reliable source of water year round add to the popularity and "micro-habitat" support. Bird baths can be pre-made

basins on pedestals and columns or hang from leaves and trees, or be carved out depressions in rocks and boulders. Requirements for a bird bath should include the following; a shallow gradually deepening basin; clean and renewed-refilled water; and cleaning to avoid contamination and mosquitoes. Two inches of water in the center is sufficient for most backyard birds, because they do not submerge their bodies, only dipping their wings to splash water on their backs. Deeper or wide basins can have "perch islands" in the water, which can also help discourage feline predators. Elevation on a pedestal is a common safety measure, providing a clear area around the bird bath that is free of hiding locations for predators. The bath should also be shallow enough to avoid the risk of birds drowning. A depth of 2" is right for most species. This requirement may be fulfilled by making the bowl shallow enough to allow birds to perch in the water. A bird feeder can complement a bird bath to encourage birds to linger and return.

1.5) Provision for Eco-friendly bird nests on trees within the project area and fringe villages:

A bird nest is the spot in which a bird lays and incubates its eggs and raises its young. Although the term popularly refers to a specific structure made by the bird itself—such as the grassy cup nest or the elaborately woven hanging nest. For some species, a nest is simply a shallow depression made in sand; for others, it is the knot-hole left by a broken branch, a burrow dug into the ground, a chamber drilled into a tree, an enormous rotting pile of vegetation and earth, a shelf made of dried saliva or a mud dome with an entrance tunnel. Grass, moss, feathers, flowers, mud, dung etc may be used to construct these eco friendly bird nests within the project area and adjoining fringe villages. Few examples could be taken for consideration such as:

- a) A cup / Saucer shaped nest: This type of nest will be prepared from weeds and small climbers or of bamboo splits by local artisans. If necessary some adhesives can be used to keep the twigs together in that case some free twigs will be spread inside the nest to keep the birds free from contamination if any. The nests will be 6" to 12" diameter will be ideal. These nests will be placed on tree branches, house parapets. It may be replaced mostly annually
- b) Nest on three holes: Half opened box shaped prepared from the Bamboo strips covered with Palm leaves and Earthen pots with opening can also be prepared and fixed on tree trunk/ branches with or without camouflage may help in improving habitation of birds. The models are given below. The local Bamboo artisans/ earthen pot makers can prepare the materials after short demonstration.

1.6) Provision of four wheeler vehicle along with its POL as well as maintenance costs and remuneration (as per Government approved high skilled labour rate for the concerned financial year) of driver at Division Level, Bonai Forest Division for monitoring as well as implementation of protection activities:

Most of the times it is not possible to reach on an immediate basis to the sensitive points, where any conflict issues/depredation issues is going to happen. To minimize the time lapses, there is a provision to engage one four wheeler vehicle along with its POL as well as maintenance costs and remuneration (as per Government approved high skilled labour rate for the concerned financial year) of driver at Divisional Level in order to meet with immediate response.

1.7) Provision of remuneration to GIS Assistant at GIS Cell of Division Office, Bonai Forest Division @ Rs. 40000 per month :

The Gis cell of Bonai Forest Division is continuously monitoring the regular movement of elephant as well as various authentication/ground truthing in respect of Forest Jurisdiction of Bonai Forest Division. All these monitoring including human-elephant conflict issues, inter Divisional & Intra Divisional movement of elephants, ground truthing of forest boundaries, and authentication of forest boundaries etc. has been compiled through only one GIS assistant at the Divisional level. Therefore it is proposed to have a remuneration @ Rs. 40000/month in favor of one Gis assistant at Division level for the entire project period.

1.8) Provision of distribution of Grain Bins to the house-hold of surrounding villages of project area for storage of food materials in order to mitigate the Human-Elephant Conflict:

The surrounding livelihood of the project area mostly comprises of lower middle class people and low economic class people. They are mostly fond of their social custom such as to consume desi liquor and to store the same in to their houses along with other food grains. Normally they don't have any luxurious houses, infact small kuccha houses are mostly prevalent there where they use to live. Being fond of these desi liquor and food grains, elephants mostly come nearer to these fringe village areas in a frequent manner. Subsequently there is always a chance of Human-Elephant Conflict, by which lots of mishap/destruction will going to be observed. In order to mitigate these issues, there is a proposal for distribution of eco friendly grain bins to the surrounding fringe villages/house holds so that with a proper storage facility the attraction of elephant may be avoided in some extent. The food grains could be stored safely as well as their social customs too. On

the other hand we can motivate/aware them towards avoiding the storage of desi liquor to some extent also.

I.9) Provision of high powered torches at Division Office, Bonai Forest Division

In the wee hours the elephants mostly come out of the habitat and depredate the paddy area as well as storage place in villages. To trace out their presence in each village, it is proposed have sufficient number of high powered torches, so that it will be delivered to the villagers as well as forest staffs in order to get proper coordination amongst themselves during tracing the elephant movement.

I.10) Provision of MTS at Division Office, Bonai Forest Division

It is proposed to have MTS at Division Office, Bonai Forest Division (as per Government approved high skilled labour rate for the concerned financial year) in order to provide sufficient support to day to day monitoring status of elephant, fire, Mo sarkar cell, awareness campaigning, Divisional level compilation of data and other necessary activities.

II.11) Jana Surakhya Gaja Rakhya:

In order to mitigate Human Elephant Conflict in surrounding villages of the project area such as Kulla, Kamanda, Bhutuda, Kemsila, Tensa, Dengula, Jaldihi, Segsahi, Teherai, Badindupur etc., it is proposed to implement Solar Fencing as a barrier through Jana Surakhya Gaja Rakhya scheme by community/vss/private persons through PPP mode (100% cost to be borne by user agency including beneficiaries contribution). As these fringe villages are situated in a contiguous manner to forest areas such as Gonua PRF, Mendhamruni RF, Khajurdihi PRF, Sarkunda RF, Sarkunda PRF, Khandadhar RF, Khandadhar PRF etc. there is always a high chance of regular elephant movement to above said fringe villages which ultimately leads to Human Elephant Conflict. In this context, it has been proposed to implement Solar Fencing in the above proposed fringe villages. However the exact location of construction should be decided at the suitable site condition as concerned with local staffs and villagers with their need of the hour.

II) Strategies to mitigate and minimize the adverse impact so observed in the Zone of Influence (ZoI):

FOR BONAI DIVISION

Protection & Enforcement Activities

II.1) Establishment of Intra Divisional Watchtower cum Anti-Poaching Unit at Koira-Barsuan Boundary to support protection activities and elephant monitoring activities (including water supply, solar light system, boundary facility etc.):

In suitable location at Koira-Barsuan Border one Intra Divisional Watchtower cum Anti-Poaching Unit need to be constructed, which will be a 3 storied structure. In the ground storey vehicle of the squad can be stationed but the staffs will remain in the 3rd storey to locate the movement of elephants and fire hazard during fire season. Also, this unit will provide accommodation to the anti-depredation squad or fire squad in need of the hour. This will also help in monitoring the protection activities by proper coordination amongst staffs of both Barsun and Koira Range of Bonai Forest Division at the sensitive areas.

II.2) Anti-depredation/ Protection Squad:

They will be engaged throughout the year to minimize depredation activities from wild animals especially from elephants. The trackers will be selected from local villages throughout the area well conversant with animal behaviours, particularly, elephants. The job of the trackers will be primarily to gather data on number of elephants, their location, their line of movement and the quantum and nature of depredation being done. Such data can be collected by pursuing elephants in morning hours along their spoor, when animals are on retreat to secluded spots (deep valleys, close to water or dense woods). Information obtained can be soon relayed to the Range officer, area Forester and concerned villagers.. Regular tracking will help to map movement routes, identify intensity of depredation from which the nature of movement, whether benign or deliberate can be inferred. If the depredation is repetitive, a drive will be organized. This squad may also be engaged in the protection activities in order to assist the ground staffs. The overall aspect of protection from poaching, illegal conversion of woods, encroachments, wildlife trafficking etc. could be monitored on a regular basis. The safety of people and animals are prime concern of this squad. They will be provided with hired vehicle, fuel, mobile recharge facilities, medical expenses, uniform etc.

II.3) Procurement of camping equipments (Tents, sleeping bag, water bottle, all terrain shoes, haversack, torch etc.):

Squad members will be provided with tents, sleeping bag, haversack, water bottle, notebook, pencil, Khukri, measuring tape etc. to support their day to day activities during patrolling time. Provision of such type of incentives will definitely encourage the squad teams towards delivering their overall duty with a proper dedication.

Wildlife Habitat Management

II.4) Habitat enrichment with plantation of Bamboo (preferably through bamboo seed balls)/Fruit bearing species/ Fodder Plantation:

Most of the forest patches are now devoid of continuous bamboo patches, for which preferred food species by Elephants is in a scarce condition inside the forest areas. Similarly due to absence of sufficient food sources, movement of elephant is diverted towards fringe village areas which in turns lead to Human-Elephant Conflicts. Therefore it is proposed to improve their natural habitats by providing sufficient Bamboo Patches/Fruit Bearing Species/Fodder Plantation and subsequently improving the palatability of other wildlife also. Initiative should be taken through thronging of Seed balls of bamboo and other fodder species inside the forest areas. Area near to habitation is required to be avoided. The seeds are to be collected and broadcasted in appropriate ratio. Palatability of species by animals especially liked by elephant is to be given due importance. Most importantly priority should be given towards recent trend of movement in Goua PRF, Mendhamruni RF, Khajurdihi PRF, Sarkunda RF, Sarkunda PRF, Khandadhar RF, Khandadhar PRF areas.

II.5) Desilting, Renovation & maintenance of existing water bodies:

During summer most of the streams except some major water sources remain dry for which the wild animals often face difficulty to get water deep inside the forest. During this time the wild animal come close to the human habitation in search of water and as a result, the chance of human-wildlife conflict gets increased. Hence, to resolve the water scarcity inside the forest area during the pinch period, artificial water bodies inside the adjacent forest patches have already created in previous years. In course of time they need regular maintenance and sanitation towards maintaining the health status of wildlife. In continuous rainy season the siltation is also more in these water bodies which is need to be removed on a regular basis for smooth availability of water sources to wildlife. Therefore it is proposed to regular renovation and maintenance to these structures at Goua PRF, Mendhamruni

RF, Khajurdihi PRF, Sarkunda RF, Sarkunda PRF, Khandadhar RF, Khandadhar PRF etc. in order to monitor the regular behavior as well as health status of wildlife inside a particular forest.

II.6) Construction of Check dam along the nallah:

In order to mitigate water crisis for the wild animals particularly in summer season, there is provision for construction of 5 nos. of RCC check dam, under Barsuan, Koira and Kuliposh Range as it is coming in the buffer zone area of the project. It is useful to check the runoff water at this location for improvement of flora and fauna of the forest area. Several wildlife movements have been noticed in the above proposed check dam areas which will be helpful to cater to the improvement of flora and fauna in those areas. The final location of the construction site will be decided at the suitable location of the entire nallah considering flow of water at a particular feasible time.

Wildlife Monitoring

II.7) Procurement of Camera Trap:

It is proposed to establish the trap cameras at sensitive locations of Bhabanipahar RF, Khajurdihi RF, Sarkunda RF and Khandadhar RF in order to monitor the wildlife movement and their behavioural aspects towards the climate change on a regular basis. This will provide a foundation to observe their need and demand from the nature.

II.8) Procurement of Monitoring Kits (including Binoculars, Compass, Range Finders, cameras etc.):

These monitoring kits including Binoculars, Compass, Range Finders, cameras etc. will improve the quality of a ground level staff towards identification of wildlife species and their regular approach towards the wildlife species. They could gather better faunal and floral diversity of their respective jurisdictional areas. The knowledge of indigenous species will be beneficial towards conservation of the particular species in future.

II.9) Establishment of Anti-Poaching Barrack to support protection activities and elephant monitoring activities (including water supply, solar light system, boundary facility, other logistic support etc.):

In suitable sensitive location of Bonai Forest Division, one anti poaching barrack need to be constructed, which will be a 2 storied structure. In the ground storey vehicle of the squad

can be stationed but the staffs will remain in the 2nd storey to locate the movement of elephants and fire hazard during fire season. Also, this unit will provide accommodation to the anti-depredation squad or fire squad in need of the hour. This will also help in monitoring the protection activities by proper coordination amongst Inter Divisional and Intra Divisional staffs Bonai Forest Division and adjacent Division at the sensitive areas.

Human Elephant Conflict Mitigation

II.10) Installation of Solar Street lamp/light in elephant affected villages and its maintenance:

From the study, it was evident that in the Zone of Influence (ZoI), the main problem is man-animal conflict, particularly with the mega herbivore i.e., elephant. Elephants make their frequent depredation to the nearby villages located in the ZOI of the project area, especially from dusk to dawn. One of the causes of conflict occur in the wee hours when the whole area become darker, due to absence of a regular stretch of lighted areas around the villages, because of lack of electric supply. It results in direct confrontation between the people and the elephant, which usually hide itself in dark and bushy areas. Hence, taking into account the whole scenario of conflict, there is a provision to install high mask solar street lights, most preferably at strategic locations around the elephant affected village areas in Bonai Forest Division. As these lights can work even without electricity, it will help the villagers to get rid of elephant attack. The solar lights will be provided at the required strategic locations in the ZoI of the project area considering the elephant movement

II.11) Provision of Tranquillizing Kit (Dart Gun & Medicines with other accessories):

In case of elephants particularly in case of tusker, when it comes in musth conditions, they become very violent and aggressive in nature. This indication will come by oozing out of white latex type of thing in volatile state. Such secretion comes through an apical opening located on his forehead. At that time, the tusker becomes violent and need the accomplishment of female elephant. Several times it is difficult to control the human-elephant conflict situations at this time of aggressiveness. Also there are several circumstances where elephants are in unhealthy condition due to various reasons. In this context they need severe medication with a proper watch by a medical team. To overcome these situations tranquillization is required by experts to take control over the elephant. This phenomenon is also required when any carnivore trespasses to human habitation. In such

cases to capture the carnivore tranquilization is essential. In such cases tranquilization is essential but at the same time revival of the tranquilized wildlife plays an important role to save them from casualty. Therefore, tranquilizing kit (Dart Gun & Medicines with other accessories) are provided and should be in ready condition where ever required in immediate basis by the experts.

II.12) Trench Fencing:

In order to mitigate Human Elephant Conflict in surrounding villages of the project area such as Kulla, Kamanda, Bhutuda, Kemsila, Tensa, Dengula, Jaldihl, Segsahi, Teheral, BadIndupur etc., it is proposed to excavate Elephant Proof Trench as a barrier. As these fringe villages are situated in a contiguous manner to forest areas such as Gonua PRF, Mendhamruni RF, Mendhamaruni PRF, Khajurdihi PRF, Bhabanipahar PRF etc. there is always a high chance of regular elephant movement to above said fringe villages which ultimately leads to Human Elephant Conflict. It has been proposed to excavate elephant proof trench over 20 RKM of size 3m top, 1m bottom and 2.5m depth and heap the dug-up earth at the fringe areas. However the exact location of construction should be decided at the suitable site condition as concerned with local staffs and villagers with their need of the hour.

II.13) Deployment of Gaja Saathi- A participatory approach:

Bonai Forest Division is very much important in respect of Human- Elephant conflict due to frequent movement of elephant. It is proposed to deploy Gajasathi in 15 units (One VSS unit or village unit consisting of 05 members) @ Rs. 50000/unit to keep a watch on elephant movement and take appropriate steps to resolve Human- Wildlife Conflict

Public Awareness and Livelihood Generation Activity through community mobilization

II.14) Existing VSS strengthening along with its infrastructure development, clean water facilities, sanitization facility etc.:

It has been suggested to re-constitute and strengthen the existing Van Surakhya Samitis (VSS) to include various ages of villagers so that the working efficiency of the VSS can keep pace with the need of the day. It has also been thought of providing Entry Point Activities such as infrastructure development, clean water facilities, sanitization facility etc. to

Villagers to gain their confidence on forest field executives so that the time of need like fire hazard, illicit felling, poaching, and depredation of wild elephants etc. their support can be obtained. To strengthen the financial backbone of local forest dependent community through convergence with line departments it has been proposed to provide them support for Vegetable and Mushroom Cultivation, Poultry farming, honey bee farming, hare farming, Piggery, Goatery, preparation of Siali leaf plates (eco-friendly), preparation of plates of maize leaf and stem etc.

II.15) Provision of MYS cum Data entry operator at Division Office, Bonai Forest Division

It is proposed to have MTS cum Data entry operator at Division Office, Bonai Forest Division through remuneration of @ Rs.20000/month in order to provide sufficient support to day to day monitoring status of elephant, fire, Mo sarkar cell, awareness campaigning, Divisional level compilation of data and other necessary activities.

FOR KEONJHAR DIVISION

A. Mitigative measures to be taken by the User Agency for Keonjhar Division

A.1. Optimiser to O/o RCCF, Rourkela

Rourkela Circle includes mining divisions like Keonjhar, Bonal & Sundergarh. Therefore, huge files relating to such mining leases have been piled up in the circle office & at the time of exigency it takes a lot of time to find out the particular file. Therefore, it is proposed to install one optimiser in the Rourkela Circle Office to systematically keep the files where CCTV camera facilities will also be available.

A.2. Study on habitat assessment and prey base survey of Carnivore habitats in Keonjhar through wildlife experts.

Understanding how prey abundance affects carnivore species' abundance in sites is critical for the conservation of both prey species and carnivore species. However, research on the effects of prey species on multiple carnivore species in a human dominated landscape in the Keonjhar region has not been tested. The findings will support the importance of prey groups' abundance for carnivore conservation in the human-dominated rural landscape of the Keonjhar.

A.3. Fire watchers

Ten fire watchers will be engaged for 6 months in a year during January-June to take up regular patrolling, carryout fire tracing of reserved forest boundary line and road sides. They will be answerable to their area Foresters and work as per the latter's direction. They will organize fire fighting with the help of villagers in case of emergency situations. They are expected to maintain good rapport with village committees.

A.4. Study on Orchids in Nayakote Beat area through expert group such as OBB, Ambica Prasad Research Foundation etc for Keonjhar Forest Division.

A.5. Hired vehicle for Elephant Squad along with driver and POL: The User Agency will provide on Vehicle for Elephant Squad along with Driver and POL. This vehicle with Squad will be deployed to keep watch over the elephants and inform the villagers as well as field forest Officers so that they will be alert and take precautionary measures to avoid crop raiding, damage to houses and elephant-human conflict. This process will hold good for Keonjhar Forest Divisions where the User Agency has applied for diversion of forest land.

B. Strategies to mitigate and minimize the adverse impact so observed in the Zone of Influence (ZoI):

Habitat Improvement

B.1. Provision of check Dam

To get desilted water two numbers of Check Dam will be constructed at suitable location . The site location is to be selected in consultation with the Range Forest Officers. The desilted water will help to quench thirst of elephant and other wildlife present in forest areas in pinch period of Summer (May-June).

B.2. Provision Grain Bins

In remote villages located deep in the forest tribal people store paddy in bamboo bins or in sacks. Elephants are very intelligent and therefore after harvesting i.e., from February to June they depredate to villages, and damages mud huts in search of paddy. To prevent this, It is proposed to provide Grain Bins to villagers to prevent loss of paddy which has been harvested by extorting hard labour of villagers.

B.3. High Mast Solar Light:

From the study, it was evident that in the Zone of Influence (ZoI), the main problem is man-animal conflict, particularly with the mega herbivore i.e., elephant. Elephants make their frequent depredation to the nearby villages located in the ZOI of the project area, especially from dusk to dawn. One of the causes of conflict occur in the wee hours when the whole area become darker, due to absence of a regular stretch of lighted areas around the villages, because of lack of electric supply. It results in direct confrontation between the people and the elephant, which usually hide itself



In dark and bushy areas. Hence, taking into account the whole scenario of conflict, there is a provision to install high mask solar street lights, most preferably at strategic locations around the elephant affected village areas in Keonjhar Forest Division. As these lights can work even without electricity, it will help the villagers to get rid of elephant attack. The solar lights will be provided at the required strategic locations in the ZoI of the project area considering the elephant movement.

B.4. Elephant Squad:

They will be engaged during crop (Paddy) raiding period over a length of six months i.e., from October to March and also for the rest period of the year for depredating elephants if they invade for crop damage like sugar cane, vegetables, mango etc. The trackers will be selected from local villages throughout the area well conversant with animal behaviours, particularly, elephants. The job of the trackers will be primarily to gather data on number of elephants, their location, their line of movement and the quantum and nature of depredation being done. Such data can be collected by pursuing elephants in morning hours along their spoor, when animals are on retreat to secluded spots (deep valleys, close to water or dense woods). Information obtained can be soon relayed to the Range officer, area Forester and concerned villagers. Trackers will be provided with mobile phones/VHF handsets, haversack, water bottle, notebook, pencil, Khukri, measuring tape etc. to record their observations. Regular tracking will help to map movement routes, identify intensity of depredation from which the nature of movement, whether benign or deliberate can be inferred. If the depredation is repetitive, a drive will be organized. The safety of people and animals are prime concern of the anti-depredation squad.

B.5. Health Monitoring of Wildlife/Immunization of Cattle:

As the cattle of the area adjoining to the plant, graze in the forest (ZoI) by tradition and come in contact with wild herbivores; any cattle born epidemic may contaminate wild animals. Hence, the cattle population should be immunized at regular intervals (once in a year) with the technical co-operation of local Veterinary Asst. Surgeon. This will not only prevent spread of cattle borne diseases to wild animals but also raise the milk yielding capacity of the domestic cows and thus the rural people will be benefitted. Negligence to cattle immunisation has caused to sacrifice 6 elephants in the recent past in Karlapat Sanctuary of Kalahandi (South Division). The Cattle mostly suffer from FMD (Foot and Mouth Disease) which propagates to elephant, Wild boar etc.

Recently Govt. Of India has allocated funds to Animal Husbandry Dept. for vaccination@Rs.1/- per cattle which is being governed by vaccine Veterinary Expert Dr. Balaram Sahu (Cell No.9437290258) of OUAT, Bhubaneswar. The disease is **Haemorrhagic septicaemia**. The vaccine used is as mentioned below. Therefore, no additional fund needs to be allocated for this purpose by Forest Dept.

Product Name	Type	Strain/Subtype	Adjuvant	Licensed Countries
FUTVAC	Killed Virus	Type O (Strain IND/O/R2/75), Type A (Strain IND/O/40/2000), Type Asia (Strain IND/Asia1/63/72)	Oil	India

B.6. 20 Gajasathi in four villages: 20 numbers of Gajasathi will be deployed to keep watch over the elephants and inform the villagers as well as field forest Officers so that they will be alert and take precautionary measures to avoid crop raiding, damage to houses and elephant-human conflict. This process will hold good for Keonjhar Forest Divisions where the User Agency has applied for diversion of forest land.

B.7. Salt Licks: Many animals especially Elephants regularly visit salt licks (mineral licks) to consume clay, supplementing their diet with nutrients and minerals. Some animals require the minerals at these sites not for nutrition, but to ward off the effects of secondary compounds that are included in the arsenal of plant defences against herbivory. The minerals of these sites usually contain calcium, magnesium, sulfur, phosphorus, potassium, and sodium. Salt lick sites play a critical role in the ecology and diversity of organisms that visit these sites. Therefore, it is proposed to construct Ten numbers of Salt licks at suitable location. The site location is to be selected in consultation with the Range Forest Officers.

CHAPTER-4(A) ANIMAL PASSAGE PLAN

This is not a linear Project. Therefore, natural protection from experience of the wildlifers who are dealing with their natural phenomenon is being practiced as mentioned in Mitigative Measures of Chapter-IV.

CHAPTER-5

FINANCIAL IMPLICATIONS AND MONITORING

A. Total financial implication of Management Intervention and cash flow statement for 10 years (year wise) is given here. Also monitoring, evaluation and interim review provision shall be mentioned.

Table 5.1: Financial provision of works borne by Use Agency/Project Proponent (BONAI FOREST DIVISION)

Sl. No.	Management Interventions	Area in ha./Unit in no./RKM	Total Amount (Rs. in Lac.)
1	10 Nos. of Fire Watcher will be engaged for a period of 06 months (January to June) for 05 years	10 Nos.	To be Borne by User Agency
2	Provision of firefighting equipment towards mitigation of forest fire and protection of forest (unit consists of fire blowers, safety equipment to the fire watchers, medicines etc.)p	40 Nos.	
3	Awareness Promotion regarding wildlife protection, wildlife conservation, forest protection & forest conservation	120 Nos.	
4	Provision for bird bath within the project area	10 Nos.	
5	Provision for Eco-friendly bird nests on trees within the project area and fringe villages	100 Nos.	
6	Provision of four wheeler vehicle along with its POL as well as maintenance costs and remuneration (as per Government approved high skilled labour rate for the concerned financial year) of driver at Division Level, Bonai Forest Division for monitoring wildlife protection and other forest related activities	01 No.	
7	Provision of remuneration to GIS Assistant at GIS Cell of Division Office, Bonai Forest Division @ 40000 per month	LS	
8	Provision of distribution of Grain Bins to the household of surrounding villages of project area for storage of food materials in order to mitigate the Human-Elephant Conflict	500 Nos.	

**SITE SPECIFIC WILDLIFE CONSERVATION PLAN FOR JUMKA PATHIRIPOSHI
IRON ORE BLOCK OF M/S RUNGTA MINES LTD.**

9	Provision of high powered torches at Division Office, Bonai Forest Division for regular tracing of movement of elephants in different Range and subsequent distribution at community level	500 Nos.	
10	Provision of MTS at Division Office, Bonai Forest Division by remuneration (as per Government approved high skilled labour rate for the concerned financial year) for five years	05 Nos.	
11	Jana Surakhya Gaja Rakhya in five villages= 10 Km (2Km in each), either through VSS/Community/Private Person and its maintenance (100% cost to be borne by User Agency including beneficiaries contribution)	10 Km	


Divisional Forest Officer
Bonai Division

Table 5.2: Financial provision of works in Zone of Influence

Implemented by Bonal Forest Division

To be borne by Forest Department

Sl. No.	Management Interventions	Area in ha./Unit in no./RKM	Unit cost (RS. in Lac.)	Total Amount (Rs. in Lac.)
1	Protection & Enforcement Activities			
	(a) Establishment of Intra Divisional Watchtower cum Anti-Poaching Unit at Koira-Barsuan Boundary to support protection activities and elephant monitoring activities (including water supply, solar light system, boundary facility, other logistic support etc.)	1 No.	40.00	40.00
	(b)(1) Engagement of 10 Squad members for assisting staff in protection, wildlife monitoring and anti-depredation activities (@Rs.333.00 per Manday)- x 10 members x 12 months x 05 years	10 Nos.	60.00	60.00
	X (b)(2) Hired Vehicle Rs. 31,000/- x 12 months x 10 years = Rs. 37.20 Lakhs	01 No	37.20	37.20
	X (b)(3) POL for vehicle Rs. 15000/- x 12 months x 10 years = Rs. 18.00 Lakhs	LS	18.00	18.00
	(c) Procurement of camping equipments (Tents, sleeping bag, water bottle, all terrain shoes, carry bag, torch etc.)	100 Nos.	0.30	30.00
2	Wildlife Habitat Management			
	(a) Habitat enrichment with plantation of Fruit bearing species/Fodder Plantation	20 ha.	2.15	43.00
	(b) Habitat enrichment with plantation of Bamboo(preferably through bamboo seed balls)	20 ha.	0.30	6.00
	(c) Desilting, Renovation & maintenance of existing water bodies	5 Nos.	3.00	15.00
	(d) Construction of Check Dam along the Nallah	02 Nos.	15.00	30.00
3	Wildlife Monitoring			
	(a) Procurement of Camera Trap	25 Nos.	0.40	10.00
	(b) Procurement of Monitoring Kits (including Binoculars, Compass, Range Finders, camera etc.)	10 Nos.	0.70	7.00

**SITE SPECIFIC WILDLIFE CONSERVATION PLAN FOR JUMKA PATHIRIPOSHI
IRON ORE BLOCK OF M/S RUNGTA MINES LTD.**

X	(c) Construction of anti-poaching barrack at sensitive location of Bonai Forest Division (Including water supply, solar light system, boundary facility, other logistic support etc.)	01 No.	35.00	35.00 X
4	Human Elephant Conflict Mitigation			
	(a) Installation of Solar Street lamp/light in elephant affected villages and its maintenance	100 Nos.	0.40	40.00
	(b) Provision of Tranquillizing Kit (Dart Gun & Medicines with other accessories)	02 No.	7.00	14.00
	(c) Provision of Elephant Proof Trench	20 RKM	7.00	140.00
	(d) Deployment of Gaja Saathi - A participatory approach (15 units of 05 members each@Rs.50000/unit/year)	15 Nos.	0.50	37.50
5	Public Awareness and Livelihood Generation Activity through community mobilization			
	(a) Existing VSS strengthening along with its infrastructure development, clean water facilities, sanitization facility, logistic support, health insurance etc.	10 Nos.	10.00 20.00	100.00 200.00
6	Engagement of five Data Entry Operator cum MTS at Division office @ Rs. 20000/month for 05 years	02- 05 No.	12.00	24,000 60,000
	Total		596.50	822.70
	20% Escalation		119.30	164.54
	Grand Total		715.80	987.20


 Divisional Forest Officer
 Bonai Division

Annual Work Programme:

Details of the flow of funds for different years of the plan for ZoI are given below (Rs. In Lac)

Sl. No.	Management Interventions	Area in ha./Unit in no./R KM	Total Amount (Rs. in Lac.)	Year wise Financial Target (Rs. In Lac.)				
				1st year	2nd year	3rd year	4th year	5th year
1	Protection Enforcement Activities							
	(a) Establishment of Intra Divisional Watchtower cum Anti-Poaching Unit at Kolra-Barsuan Boundary to support protection activities and elephant monitoring activities (including water supply, solar light system, boundary facility, other logistic support etc.)	1 No.	40.00	40.00	-	-	-	-
	(b)(1) Engagement of 10 Squad members for assisting staff in protection, wildlife monitoring and anti-depredation activities (@Rs.333.00 per Manday)- x 10 members x 12 months x 05 years	10 Nos.	60.00	12.00	12.00	12.00	12.00	12.00
	(b)(2) Hired Vehicle Rs. 31,000/- x 12 months x 10 years = Rs. 37.20 Lakhs	01 No	37.20	37.20	-	-	-	-
	(b)(3) POL for vehicle Rs. 15000/- x 12 months x 10 years = Rs. 18.00 Lakhs	LS	18.00	18.00	-	-	-	-
	(c) Procurement of camping equipment (Tents, sleeping bag, water bottle, all terrain shoes, carry bag, torch etc.)	100 Nos.	30.00	10.00	10.00	10.00	-	-
2	Wildlife Habitat Management							

**SITE SPECIFIC WILDLIFE CONSERVATION PLAN FOR JUMKA PATHIRIPOSHI
IRON ORE BLOCK OF M/S RUNGTA MINES LTD.**

	(a) Habitat enrichment with plantation of Fruit bearing species/Fodder Plantation	20 ha.	43.00	30.50	6.00	5.00	1.50	-
	(b) Habitat enrichment with plantation of Bamboo(preferably through bamboo seed balls)	20 ha.	6.00	6.00	-	-	-	-
	(c) Desilting, Renovation & maintenance of existing water bodies	05 Nos.	15.00	6.00	6.00	3.00	-	-
	(d) Construction of Check Dam along the Nallah	02 Nos.	30.00	15.00	15.00	-	-	-
3	Wildlife Monitoring							
	(a) Procurement of Camera Trap	25 Nos.	10.00	10.00	-	-	-	-
	(b) Procurement of Monitoring Kits (including Binoculars, Compass, Range Finders, camera etc.)	10 Nos.	7.00	7.00	-	-	-	-
	(c) Construction of anti poaching barrack at sensitive location of Bonai Forest Division (Including water supply, solar light system, boundary facility, other logistic support etc.)	01 No.	35.00	35.00	-	-	-	-
4	Human Elephant Conflict Mitigation							
	(a) Installation of Solar Street lamp/light in elephant affected villages and its maintenance	100 Nos.	40.00	20.00	20.00	-	-	-
	(b) Provision of Tranquilizing Kit (Dart Gun & Medicines with other accessories)	02 No.	14.00	7.00	7.00	-	-	-
	(c) Provision of Elephant Proof Trench	20 RKM	140.00	40.00	40.00	40.00	20.00	-
	(d) Deployment of Gaja Saathl - A participatory approach (15 units of 05 members each@Rs.50000/unit/year)	15 Nos.	37.50	7.50	7.50	7.50	7.50	7.50
5	Public Awareness and Livelihood							

**SITE SPECIFIC WILDLIFE CONSERVATION PLAN FOR JUMKA PATHIRIPOSHI
IRON ORE BLOCK OF M/S RUNGTA MINES LTD.**


Generation Activity through community mobilization								
	(a) Existing VSS strengthening along with its infrastructure development, clean water facilities, sanitization facility, logistic support, health insurance etc.	10 Nos.	150.00 200.00	20.00 40.00	20.00 40.00	20.00 40.00	20.00 40.00	20.00 40.00
6	Engagement of five Data Entry Operator cum MTS at Division office @ Rs. 20000/month for 05 years	02 05 No.	24.00 60.00	4.80 12.00	4.80 12.00	4.80 12.00	4.80 12.00	4.80 12.00
Total		596.50	822.70	353.20	175.50	129.50	93.00	71.50
20% Escalation		110.50	164.54	70.64	35.10	25.90	18.60	14.30
Grand Total		715.80	987.24	423.84	210.60	155.40	111.60	85.80


 Divisional Forest Officer
 Bonga District

KEONJHAR FOREST DIVISION

To be borne by User Agency


Sl. No.	Para Ref.	Management Interventions	Amount in lakh
1.	A.1	Strengthening Office of RCCF Rourkela for better management of office records through installation of Optimiser to conserve all forest and wildlife records.	LS
2.	A.2	Study on habitat assessment & prey base survey of Carnivore habitats in Keonjhar through wildlife experts	
3.	A.3	10 Number of fire watchers to be engaged for a period of 06 months (January to June) for 5 years	
4.	A.4	Study on Orchids in Nayakote Beat area through expert group such as OBB, Ambica Prasad Research Foundation etc	
5.	A.5	Hired vehicle for Elephant Squad along with driver and POL	


Divisional Forest Officer
Keonjhar Division

KEONJHAR FOREST DIVISION (FOR ZOI)

To be implemented by Forest Division

Sl. No.	Para Ref.	Interventions	Amount in lakh
Wildlife Habitat Improvement			
1.	B.1	Provision to two check dams@15 lakh each on volume basis =Rs. 30.00 lakhs	30.00
Protection & Surveillance			
2.	B.2	Provision for providing Grain bins of 300 nos. @Rs.3500/- each = Rs.10.50 lakhs	10.50
3.	B.3	High Mast Solar Light @ Rs. 25000/- per light x 20 nos. = Rs. 5.00 Lakhs	5.00
4.	B.4	Two Elephant squad (5 member in each team) to keep watch over the elephant movement @ Rs.12000/-PM x 10 Nos. x 12 months x 05 years =Rs.72.00 Lakhs	72.00
5.	B.5	Cattle Immunization @ Rs.3.00 Lakhs	3.00
6.	B.6	20 Gajasathi in four villages through VSS (5 nos in each village) (Rs 50000x 20x5 years)	50.00 10.00
7.	B.7	Salt licks ten numbers (Rs 10x 25000)	2.50
Total			173.00 133.00
20% Escalation			34.60 26.80
Grand Total			207.60 159.80



Divisional Forest Officer
Keonjhar Division

Annual Work Programme For Keonjhar Division:

Details of the flow of funds for different years of the plan for ZoI are given below (Rs. In Lac)

Sl. No.	Para Ref	Type of Interventions	y1	y2	y3	y4	y5	Total
1	B.1	Check Dams	15.00	-	15.00	-	-	30.00
2	B.2	Grain Bins	2.10	2.10	2.10	2.10	2.10	10.50
3	B.3	High Mask Solar Light	2.00	2.00	1.00	-	-	5.00
4	B.4	Elephant Squad	14.40	14.40	14.40	14.40	14.40	72.00
5	B.5	Cattle Immunisation	1.50	1.50	-	-	-	3.00
6	B.6	Gaja Sathi	10.00 2.00	10.00 2.00	10.00 2.00	10.00 2.00	10.00 2.00	50.00 10.00
7	B.7	Salt lick	1.25	1.25	-	-	-	2.50
Total			46.25	31.25	42.50	26.50	26.50	173.00
Escalation-20%								34.60
Grand Total								207.60

133.00
16.60
159.60


 Divisional Forest Officer
 Keonjhar Division

B. Location of the proposed interventions

Location of the above-mentioned interventions have been decided by DFO, Bonai Division according to availability of space and requirement.

C. Monitoring Committee

There shall be a monitoring committee for proper implementation, planning, site selection providing guidance and review of the activities/interventions. The committee will be headed by the DFO Bonai Forest Division and DFO Keonjhar Forest Division with representative of the Project proponent, Range officers, Foresters as members. ACF (HQ) will be the member Secretary of the committee.

D. Plan period

The plan is for a period of 5 years.

E. Cumulative total of Interventions for both Project Area and Zone of Influence:

The total cost of the conservation plan is Rs. ^{875.40} ~~194.84~~ Lakhs (Rs. ^{110.30} ~~987.24~~ Lakhs for Bonai Forest Division and Rs. ^{15.40} ~~207.60~~ Lakhs for Keonjhar Forest Division) including cost escalation @ 20%. The entire amount will be deposited by the User Agency in CAMPA.



Divisional Forest Officer
Keonjhar Division


Divisional Forest Officer
Bonai Division

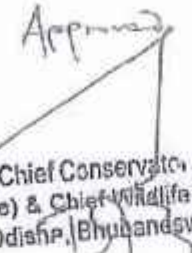
ABSTRACT OF COST

Division	Core	Burder	Total Amount in lacs
BONAI	-	987.24 715.80	987.24 715.80
KEONJHAR	-	207.60 159.60	207.60 159.60
TOTAL AMOUNT IN LAKHS	-	1194.84 875.40	1194.84 875.40

Rupees eight crore seventy five lakh forty thousand only
(Rupees Eleven Crore Ninety Four Lakh Eighty Four Thousand only)


 Divisional Forest Officer
 Keonjhar Division


 Divisional Forest Officer
 Bonai Division

Approved

 Principal Chief Conservator of Forests
 (Wildlife) & Chief Wildlife Warden
 Odisha, Bhubaneswar

Countersigned

 Regional Chief Conservator of Forests
 Rourkela Circle, Rourkela

*The plan is for 5 years and will be reviewed by the
 DFOs concerned at least one year before expiry of its implementation.
 The new agency will bear the cost of such plan on its approval.*

CHAPTER- 6

ANNEXURE AND MAPS

- a) MAP INDICATING PROJECT AREA WITH 10 K.M. RADIUS. (PLATE-I)
- b) MAP INDICATING THE DISTANCE OF PROTECTED AREA TO PROJECT AREA. (PLATE-II)
- c) LOCATION OF MINES WITHIN 10 KM RADIUS OF THE PROJECT AREA (PLATE-III)
- d) AUTHENTICATED FLORA & FAUNA LIST. (ANNEXURE-I)
- e) TERMS OF REFERENCE (TOR) (ANNEXURE-II)

TOPO MAP SHOWING 10 KM ZONE OF INFLUENCE OF JUMKA PATHIRIPOSHI PAHAR ...ON ORE BLOCK OF M/S RUNGTA MINES L.T.D.

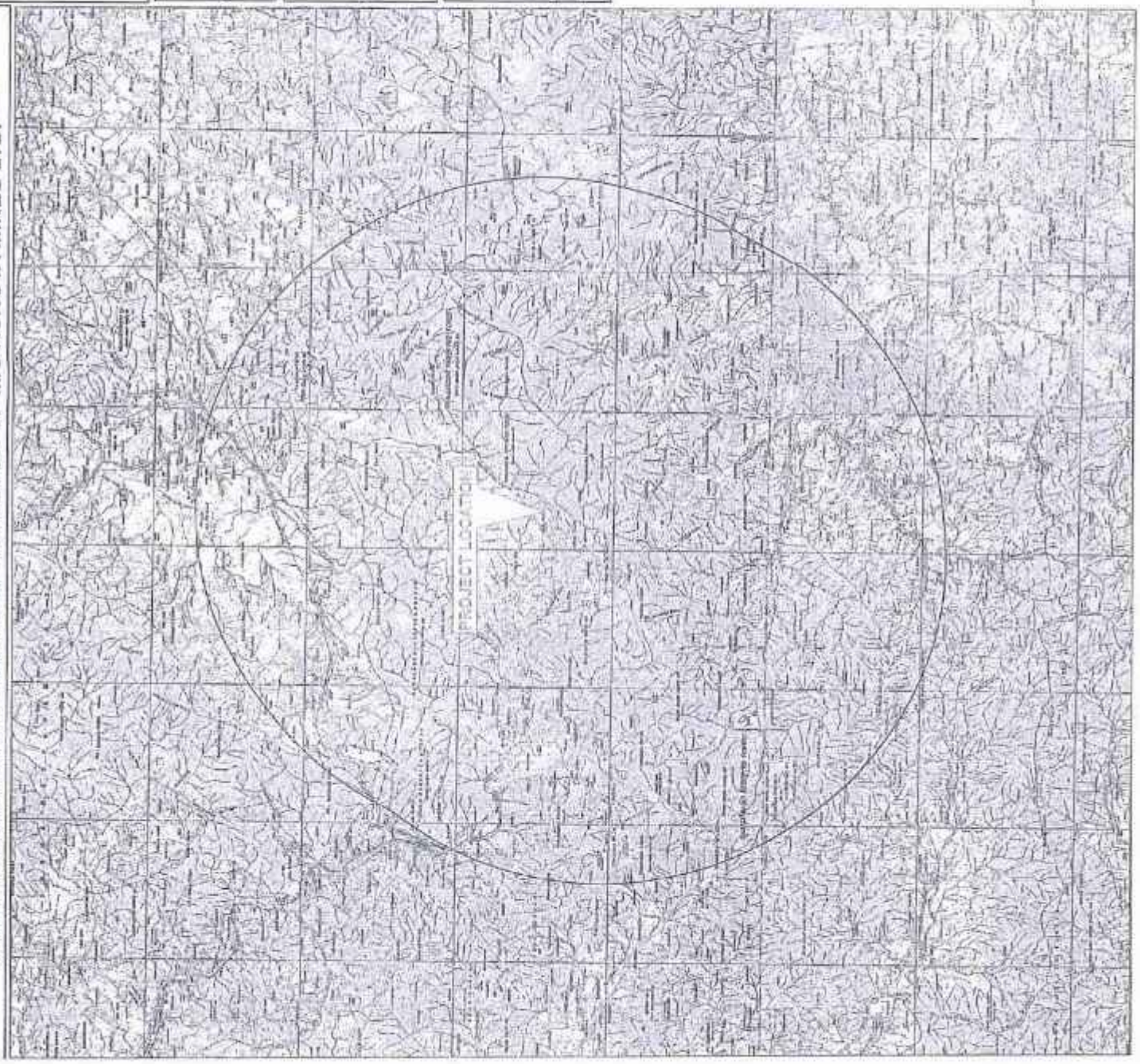


SCALE
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REFERENCE
OPEN SERIES MAP NO:-
F45N1, F45N2, F45N5, F45N6

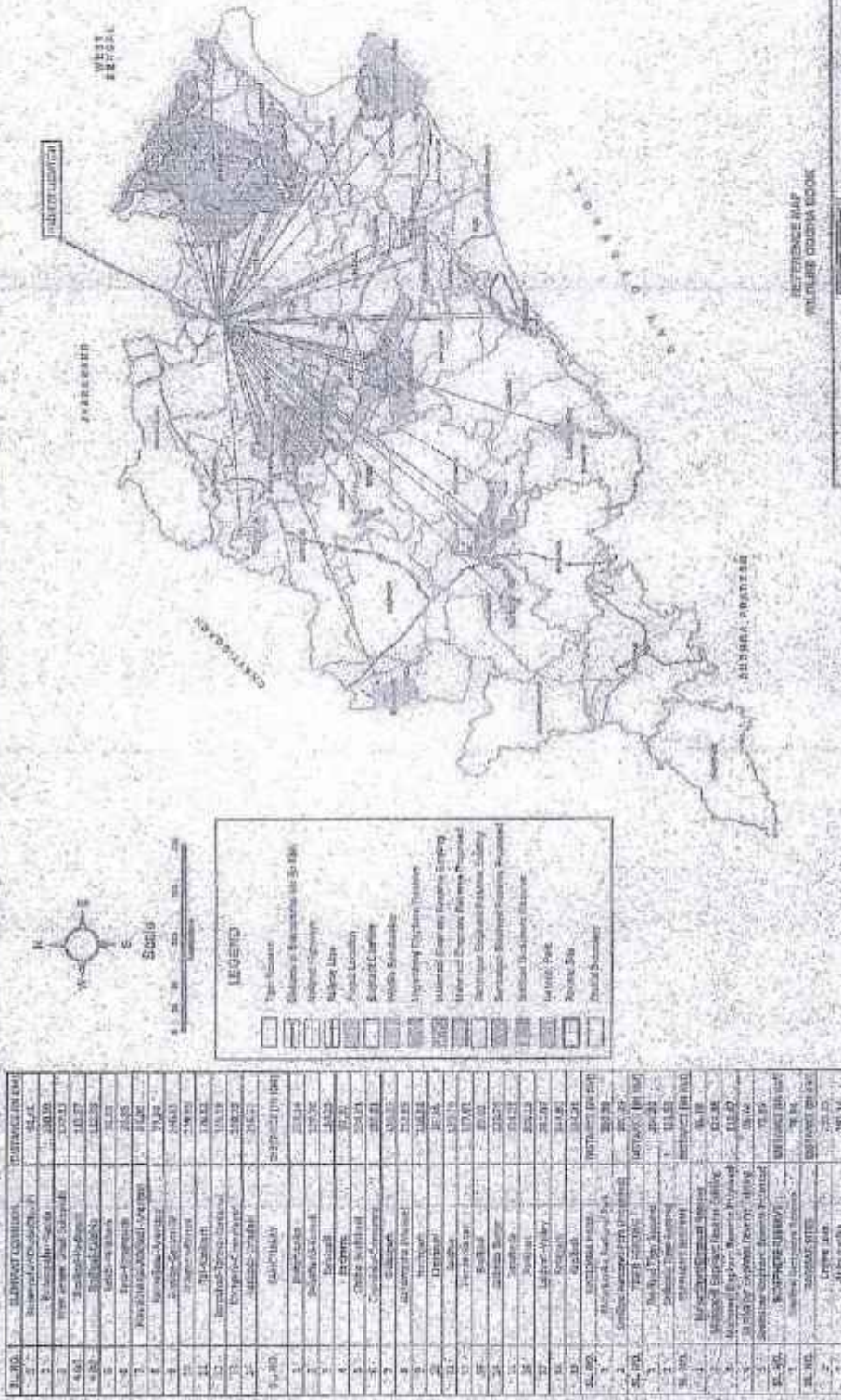
PROJECT NAME
JUMKA PATHIRIPOSHI PAHAR IRON
ORE BLOCK OF M/S RUNGTA
MINES LTD.

LEGEND
PROJECT LOCATION
10 KM ZONE OF INFLUENCE



Scale 1:50,000
Topographic Survey
Department of Surveying
Government of India

THE MAP OF ODISHA SHOWING THE DISTANCE OF PROJECT AREA OF JUMKA PATHIPOSHI PAHAR IRON ORE BLOCK OF M/s RUNGTA MINES LIMITED IN SUNDERGARH DISTRICT, ODISHA FROM THE NEAREST NATIONAL PARKS/SANCTUARIES/ELEPHANT RESERVES/ TIGER RESERVES/BIOSPHERE RESERVE/ ELEPHANT CORRIDORS AND RAMSAR SITES



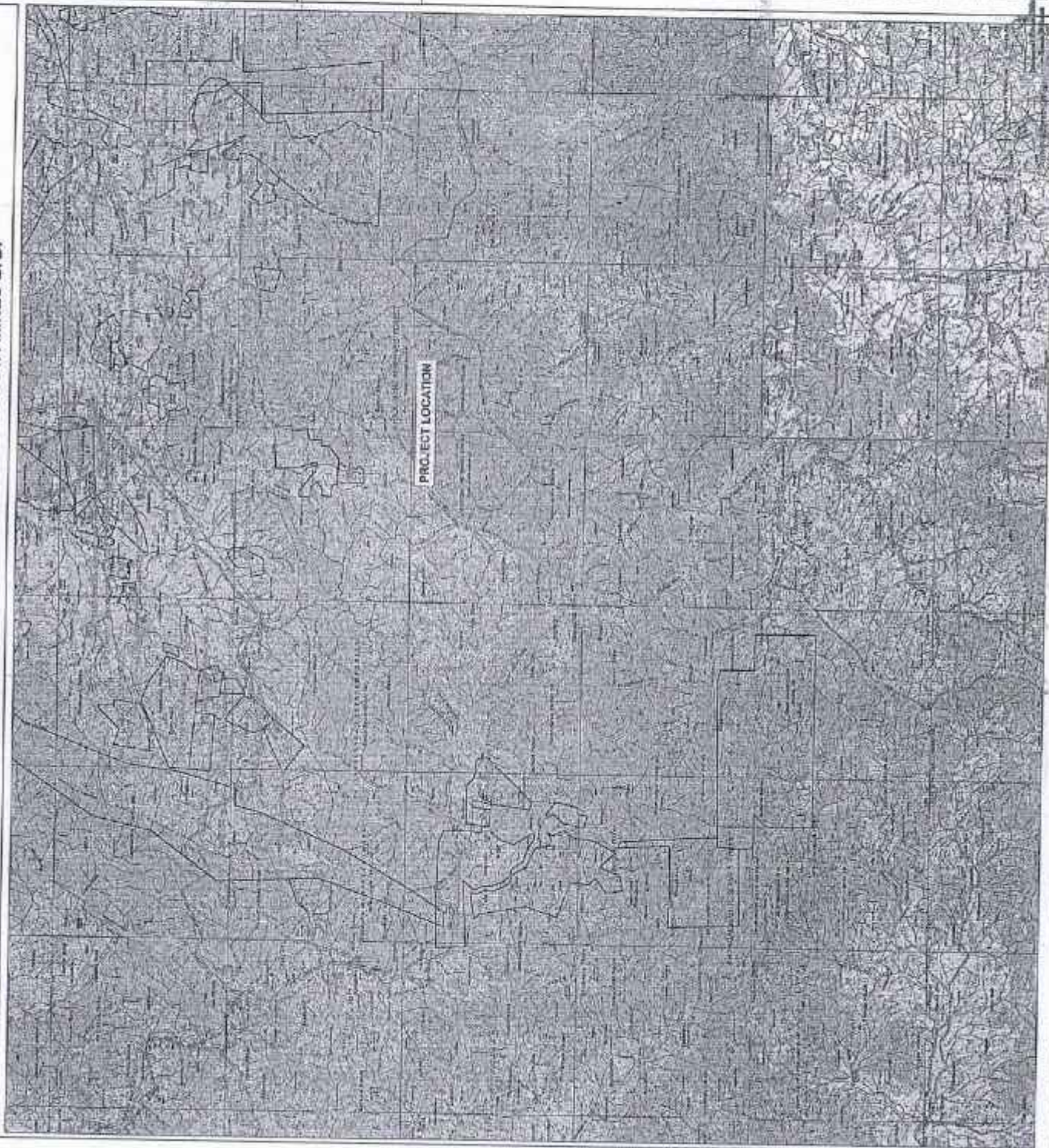
Sl. No.	NEAREST LOCATIONS	DISTANCE (IN KM)
1	Sundergarh District	54.75
2	Baramulla	100.00
3	Keonjhar	100.00
4	Boudh	100.00
5	Balasore	100.00
6	Deogarh	100.00
7	Keonjhar	100.00
8	Keonjhar	100.00
9	Keonjhar	100.00
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100	Keonjhar	100.00

REFERENCE MAP
WORLD MAP
INDIA MAP
ODISHA MAP

For M/s RUNGTA MINES LIMITED
Forest Range Officer, Sundergarh
Baramulla Range
Director

COUNTERSIGNED
Bijayendra Kumar Mishra
Range Officer
Sundergarh

TOPO MAP SHOWING THE NUMBER OF LEASES WITHIN 10 KM BUFFER ZONE OF JUMKA PATHRIPOSHI PAHAR IRON ORE BLOCK OF M/S RUNGTA MINES LTD.



SCALE: 1:50,000

REFERENCE

OPEN SERIES MAP NO.:- F45N1, F45N6, F45H4, F45H6, F45N2, F45N6

PROJECT NAME

JUMKA PATHRIPOSHI PAHAR IRON ORE BLOCK OF M/S RUNGTA MINES LTD.

Legend

- PROJECT LOCATION
- LEASE BOUNDARIES IN KOIDA
- 10 KM ZONE OF INFLUENCE

MINING LEASES UNDER 10 KM INFLUENCE ZONE OF JUMKA PATHRIPOSHI PAHAR IRON ORE BLOCK

Sl. NO.	MINE'S NAME
1	DMC, EURNITHAR
2	DMC, BANTHA-IRON MINE
3	ADL BHUTUDA MARGARISE MINE
4	AVTC-CHALUSUDA
5	E LAL & CO. LTD. MIN ORE MINE IN LASHI VILL
6	RUNGTA-SEKUNDA MN MINE
7	SABU-202-TODA RF
8	SAIL TIL 230
9	CHALI PRASAD SHARMA BAIKELA IRON & MIN MINE
10	GETAJARI BAIKELA
11	PENGLIN TRACKING AGENCY BAIKELA IRON MINE
12	S N MOHANTY BAIKELA
13	KORP, TAKTRA IRON
14	E BAIKELA
15	D SARIYA, BAIKELA
16	SPN, TIB, IRON ORE MINE
17	TANTRA SAJUTE OF ORISSA INDUSTRIES LTD.
18	OMM, ORAHALURI MN
19	TA BANI MINERALS, NUAGRON
20	SD SARMA, NUAGRON
21	BANGHALANI MINE
22	S N MOHANTY NUAGRON IRON & MN
23	KANAKACHARA MINING & MINERAL LTD.
24	OMM, TENTULURHI MN
25	S N MOHANTY KST IRON- BEN-BUX
26	KSA, JALDHI, TANTIBERAM
27	RUNGTA, SONS PVT. LTD. KATHER- KORA MN
28	BS MISRA, KANTHEL, KORA
29	TARABI MINERALS, DUMARI
30	RUNGTA-BONAI-INDUS. CO TEHERAI IRON & MIN
31	MAYADIN SARADA KHAIJURDH
32	ORISSA MIANG AMERE & MITA, LTD., PATAMUNDA MINI MINE

(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. 3798/ITDA(FRA) Dated: 22/11/2022

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 147.803 Hectares (Kensara village - 67.660 Ha. & Batagaon village- 80.143 Ha) of forest land proposed to be diverted in favour of M/s Rungta Mines Limited for Mining & other ancillary purpose in the district falls within the jurisdiction of Kensara and Batagaon village of Bhutuda GP under Lahunipara Tahasil. It is further certified that:

- (a) the complete process of recognition and vesting of forest rights under the FRA,2006 has been carried out for the entire 147.803 Hectares (Kensara village - 67.660 Ha. & Batagaon village- 80.143 Ha) of forest land proposed for diversion. A copy of records of all consultations and meetings of the Forest Rights Committee (s), Gram Sabha (s), Sub-Division Level Committee (s) and the District Level Committee are enclosed as attachment 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. Copies of certificate issued by the Gram Sabha Resolution of Kensara & Batagaon village is enclosed as Annexure-I & II
- (d) the discussion and decisions on such proposals had taken pace 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

LAND SCHEDULED OF PROPOSED LAND FOR DIVERSION

Sl. No.	Name of village	Khata No.	Plot No.	Kisam	Area in Ha
1	Kensara	10	98/p	Pahad	9.327
		10	95/p	Pahad	0.070
		10	101/p	Pahad	1.983
		10	100/p	Pahad	7.413
		10	97/p	Pahad	3.067
		10	95/p	Pahad	0.011
		10	98/p	Pahad	4.391
		10	99/p	Pahad	2.858
		10	101/p	Pahad	0.469
		10	100/p	Pahad	6.304
		10	103/p	Pahad	15.476
		10	45/p	Pahad	3.758
		10	102/p	Pahad	12.533
					Sub-Total
2	Batagaon	11	22/p	Pahad	17.360
		11	18/p	Pahad	6.041
		11	20/p	Pahad	15.120
		11	21/p	Pahad	19.328
		11	23/p	Pahad	11.074
		11	35/p	Pahad	0.421
		11	36/p	Pahad	5.917
		11	50/p	Pahad	4.882
					Sub-Total
			Total	147.803	



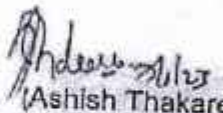
COLLECTOR,
SUNDARGARH

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.3rd 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 9.175 Ha. of forest land proposed to be diverted in favour of M/s. Rungta Mines Ltd. for mining and ancillary activities within Jumka Pathriposhi Iron Ore Block falls the jurisdiction of village -Kadakala under Banspal 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 9.175 Ha. 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. 27 /Rev/ Dt 10.01.2023
Copy of Certificate alongwith its enclosures(Annexure-1 to 8)
forwarded to the Divisional Forest Officer, Keonjhar for information and necessary action


Addl. District Magistrate,
Keonjhar

ENVIRONMENTAL
CLEARANCE

Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment
Authority (SEIAA), ODISHA)

To,

The Director
RUNGTA MINES LTD
Rungta Mines Limited
Barbil, Keonjhar, Odisha - 758035

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/409777/2022 dated 08 Dec 2022. The particulars of the environmental clearance granted to the project are as below:

1. EC Identification No.	EC23B001OR118212
2. File No.	409777/767-MINB1/12-2022
3. Project Type	New
4. Category	B
5. Project/Activity including Schedule No.	1(a) Mining of minerals
6. Name of Project	Jumka Pathriposhi Pahar Iron Ore Block
7. Name of Company/Organization	RUNGTA MINES LTD
8. Location of Project	ODISHA
9. TOR Date	N/A

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 02/12/2023

(e-signed)
Dr. K. Murugesan, IFS
Member Secretary
SEIAA - (ODISHA)

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.

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive,
and Virtuous Environmental Single-Window Hub)





SEIAA File No. 409777/767-MINB1/12-2022

Subject: Proposal for Mining of Iron Ore from Jumka Pathiriposhi Pahar Iron Ore Block with total excavation of 3.98 MTPA (ROM Iron Ore: 3.35 MTPA + waste: 0.63MTPA) Over a ML area of 158.509 Ha. (Govt. forest land is 156.978Ha. and Private land is 1.531Ha.) located in villages-Batagaon, Kensara under Tahasil-Lahunipara, District-Sundargarh and Village- Kadakala, Under Tahasil- Banspal, District- Keonjhar by M/s Rungta Mines Ltd-Environmental Clearance reg.

Sir,

This has reference to your online proposal No. SIA/OR/MIN/409777/2022 dated 08.12.2022, submitted to SEIAA, Odisha for grant of Environmental Clearance (EC) for mining of iron ore from Jumka Pathiriposhi Pahar Iron Ore Block with total excavation of 3.98 MTPA (ROM Iron Ore: 3.35 MTPA + waste: 0.63MTPA) Over a ML area of 158.509 Ha. (Govt. forest land is 156.978Ha. and Private land is 1.531Ha.) located in villages-Batagaon, Kensara under Tahasil- Lahunipara, District-Sundargarh and Village- Kadakala, Under Tahasil- Banspal, District- Keonjhar by M/s Rungta Mines Ltd filed by Sri Hirak Mazumder, Director in terms of the provisions of the Environment Impact Assessment (EIA) Notification, 2006 under the Environment (Protection) Act, 1986 and subsequent amendments thereto.

2. Proposal in Brief:

Proposal No.	SIA/OR/MIN/409777/2022
Date of application	08.12.2022
File No.	409777/767-MINB1/12-2022
Project Type	EC
Category	B1
Project/Activity including Schedule No.	I(a) Mining of Minerals-Non-Coal Mining
Name of the Project	Proposal is for Environmental Clearance of M/s Rungta Mines Ltd. for the Jumka Pathiriposhi Pahar Iron Ore Block which has been allotted through auction. The total excavation will be 3.98 MTPA (ROM Iron Ore: 3.35 MTPA + waste: 0.63) by opencast mechanized method over a mining lease area of 158.509 ha. (Govt. forest land is 156.978ha. and Private land is 1.531ha.) located in villages - Batagaon, Kensara of Lahunipara Tahasil of Sundargarh District And Village- Kadakala, Banspal Tahasil of Keonjhar

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Name of the company/Organization	district, Odisha of Sri Hirak Mazumder. Applicant: M/s Rungta Mines Ltd, Sri Hirak Mazumder, Director
Location of Project	Villages- Batagaon ,Kensara Of Lahunipara Tahasil Of Sundargarh District And Village -Kadakala,Banspal Tahasil of Keonjhar district, Odisha
ToR Date	08.02.2022
Name of the Consultant	M/s. Centre for Envotech Pvt. Ltd.

3. **Project Details:** The highlights of the proposal as ascertained from the application as submitted by PP and as revealed from proceedings/discussion held during the meeting of SEAC/SEIAA, are given as under.

- (i) This is a proposal of M/s. Rungta Mines Ltd for environmental Clearance for mining of iron ore from Jumka Pathiriposhi Pahar Iron Ore Block with total excavation of 3.98 MTPA (ROM Iron Ore: 3.35 MTPA + waste: 0.63MTPA) Over a ML area of 158.509 Ha. (Govt. forest land is 156.978Ha. and Private land is 1.531Ha.) located in villages-Batagaon, Kensara under Tahasil-Lahunipara, District-Sundargarh and Village- Kadakala, Under Tahasil-Banspal, District-Keonjhar filed by Sri Hirak Mazumder, Director.
- (ii) The Project Proponent has submitted that M/s Rungta Mines Ltd. was declared as the "Preferred Bidder" for Jumka Pathiriposhi Pahar Iron Ore Block, as per auction conducted by Government of Odisha. The block covers 158.509 ha of land falling in villages-Batagaon, Kensara under Tahasil- Lahunipara, District-Sundargarh and Village- Kadakala, Under Tahasil- Banspal, District- Keonjhar of Odisha. The Project area comprises of 156.978 Ha. forest land and 1.531 ha non forest government land. The project area is presently a virgin land.
- (iii) Status of Statutory Clearances for the project:-
 - Mining plan is approved from IBM vide letter no. IBM MP/A/18-ORI/BHU/2021-22 dated 24.11.2021.
 - Forest Clearance for 156,978ha. has been applied online vide proposal number FP/OR/MIN/150048/2021 on 10/12/2021 for diversion of 156.978 ha of forest land.
 - Surface Water withdrawal permission has been applied to Water Resources department vide application no. 2022040841000367 on dt. 08.04.2022.
 - Site Specific Wildlife Conservation Plan is under preparation by Forest Department. Request letter was submitted to DFO Bonai Forest Division, Bonai, vide letter no. RSPL/BBL/GEO/2022-23/ dated 30.05.2022 for preparation and Approval of Site Specific Wildlife Conservation Plan of Jumka Pathiriposhi Pahar Iron Ore Block.
- (iv) Location of Project: The proposed Jumka Pathiriposhi Pahar Iron Ore Block is located in villages of Batagaon, Kensara (also known as Kedeshala) in Sundargarh district & village Kadakala in Keonjhar District of Odisha. The mining lease area falls in



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the Survey of India Toposheet no. 73 G/1 (open series map F45N1). The area is bound by Latitude 21°47'32.62280" N to 21°48'54.81396" N and Longitude 85°12'13.87352" E to 85°13'25.32167" E. The block is connected by all-weather forest road currently and at a distance of 9.7km from Koida Town and 125.2km from District Sundergarh. Nearest railway station is Barsuan, 10.6 km WNW aerially. The nearest civilian airports are situated at Rourkela (64 km, NNW), Ranchi (166 km, N) and Jharsuguda (120 km, W). Nearest Highway is NH-520, Rajamunda to Rimuli Road-10.3km, N. There are no National parks, Wildlife Sanctuary, Biospheres reserves within 10 km radius. The nearest sanctuary is Simlipal Wildlife sanctuary at a distance of 89.03 km in E direction from the proposed project and elephant Reserve is Mayurbhanj at 58.78 km. There are five reserve forests (Sarkanda R.F. (2.9 km, NW), R.F. Near Anandapur (Bhabari Pahar) (7.8 km, NNE), Khajurdihi R.F. (0.8 km, NE), Khandadhar RF (6.4 km, SW), Torha R.F. (6.0 km, WNW) present within 10 km radius of the project. The PP has submitted that there is presence of Schedule-I species like Elephant, Indian Monitor Lizard and Sloth bear in buffer zone of study area.

- (v) Mining Lease Area Details: The total mining lease area is 158.509 Ha Ha. The M.L area over 158.509 Ha-ha comprises forest & non-forest land. The PP had submitted that according to the land schedule, the Govt. forest land is 156.978Ha. and Private land is 1.531Ha in the project.
- (vi) ToR Details -The Terms of Reference (ToR) for undertaking detailed EIA studies was granted by MOEF&CC's vide letter no. LA-J11015/2/2022-IA- II(NCM) dated 18.02.2022.
- (vii) Public Hearing Details - Public hearing was held in two districts in respect of the project. Public Hearing in Keonjhar district, was held on 09.09.2022 at 11:00 am at Kadakala playground, Khata No. 42 (Rakhita), Plot No.51/314/1, District Keonjhar and in Sundargarh district, it was held on 03.09.2022 at 10:30 am at Football playground, Kemsara village, Bhutuda G.P., District Sundargarh. During public hearing, most of the people welcomed the project and the major issues raised were on generation of employment opportunity, provision of good school & education, water supply facility, establishment of healthcare unit, skill development, etc. The PP has committed to comply the issues raised during public hearing. The Budget allocated for PH commitments is Rs.264.7 lakhs (capital cost) and Rs. 172.7 lakhs (recurring cost).
- (viii) Topography- The iron ore block is located on a hill area with undulating topography. Elevation of core zone ranges from 914 m to 1042 m above mean sea level. General gradient of the mine lease area is towards the west with an occasional mound in the northern portion. Jumka Pathiriposhi Pahar Iron Ore Block is free from any mining activity since it is a new mine. However, within the 10 km radius of the project there are several working as well as non-working iron/ manganese mines. No prominent drainage pattern is developed over the lease hold area. There is no perennial nallah passes through the lease area. The Phulamanali nallah which is 2.6 KM SSW to the lease. The topography of the mine is such that no run off from the lease will meet the Nallah.

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- (ix) Total Reserves - The iron ore block is a virgin/ new area. The entire mine lease area is mineralized. The entire resources estimated falls in 331, 332 & 333 category as G2 level. The area has been explored by GSI and MECL through 85 (29 by GSI and 56 by MECL) number of drill holes (5363.1 m) at a spacing of 200 X 200 m. The exploration confirms to G-2 category under UNFC guidelines. The Geological Reserve is 155.864 million tonnes and Mineable Reserves is 140.278 million tonnes while. The production table during plan period for 5 year is as follows

Year	Production proposal (MTPA)
1 st year, 2024-25	0
2 nd year 2025-26	0
3 rd year 2026-27 (From 27.10.2026 to 31.03.2027)	1.432 (for 156 days/five months only)
4 th year 2027-28	3.35
5 th year 2028-29	3.35

- (x) Mining method: Opencast mechanised mining method has been chosen for the proposed Jumka Pathiriposhi Pahar Iron Ore Block. Fully mechanized opencast mining method shall be adopted with excavator, loader, dumpers etc. for excavation work. Height & width of individual benches is proposed to be kept as 10 m and 18 m in ore and 10 m and 12 m in OB respectively. The conventional opencast method with utilization of excavator of capacity up to 4.2 m³, dumpers of capacity up to 30/40 MT, rock-breakers, deep-hole drilling and blasting will be adopted. The overall pit slope would be kept 45°.
- (xi) Waste Generation and Management - During the five year of mining plan period, 481073 cum of waste will be generated. The alluvial soil capping the rock bed is the loosen OB that exists in some part of the block. This will be removed separately and simultaneously used for plantation. Only temporary storage for top soil is proposed. It will be stored on 7.301 ha of land. The maximum height of the OB dump during plan period will be 50 m (wrt 948 mRL on south side) and 20 m (wrt 978 mRL wrt the adjoining areas). The top of the OB dump will be at 998 mRL compared to 948 mRL of the adjoining area. The height of the OB dump will be enhanced due to dumping of more and more waste, which will be generated during proposed period of mining after plan period. Although, backfilling is not proposed during initial 5 year plan period, as reserve of iron ore in the proposed quarry will not be exhausted, but after OB dumping on 7.301 ha, the balance waste generated till end of the mine will be used for backfilling. Life of Mines is 50 years from execution of mine lease.
- (xii) Water requirement: Total requirement of water is estimated at 464 KLD. Out of which, for Drinking purposes, ground water will be used is 94 KLD and surface water will be used for Mining purposes, either from Phulamanali Nala or harvested rain water is 370 KLD. Water will be utilized for green belt development (30KLD), sprinkling on haul roads/dust suppression (24KLD), drinking & domestic purpose in mine, camp outside lease and periphery, High Pressure water jet in Crushing and screening (95KLD) and



- Miscellaneous (5KLD).
- (xiii) Wastewater management: No wastewater is anticipated from mining activities. Domestic sewage will be treated to the norms prescribed by regulatory agencies prior to reuse. The mine will be zero discharge except during monsoons. The domestic wastewater from facilities in the mines will be treated in septic tanks with soak pits. There shall be a rainwater harvesting pond in the mine lease area.
- (xiv) Power Requirement: The total power requirement for the mine will be about 200 KVA which shall be sourced from the nearby line of TP Western Odisha Distribution Limited. In case of power failure, generators of total capacity 200 KVA will be used.
- (xv) Flora/Fauna: Within core zone 20 species of trees, 4 species of shrubs, 3 species of climbers and 2 species of grasses are present. Common native species such as Arjun, Bel, Char, Kendu, Jamun, Neem, Palas, etc. are also present in the core area. 4 species of mammals, 2 species of reptiles, 5 species of birds were recorded from the core zone. Avifaunal species found are House Crow, House Sparrow, Pigeon etc. Mammals found are squirrel, cat, mongoose and rat. Reptiles reported are krait and rat snake. Three Schedule I animal namely, Elephant, Sloth bear and Indian Monitor Lizard has been reported in the buffer area.
- (xvi) Green belt: Till the end of life of mine, greenbelt having width 7.5 m on 5.77 ha land shall be developed with. A budget of Rs. 5.85 lakhs (capital cost) and Rs. 8.52 lakhs/ annum (recurring) is proposed towards green plant & plantation. Plantation around various facilities, on dump, mined out areas, dismantled facility area and along periphery shall be undertaken in a phased manner. Plantation shall be started from third year of mining and continued till conceptual period. An estimated 2500 trees per ha shall be planted. Plantation will attract small fauna and birds and serve as micro habitats.
- (xvii) Baseline study of the study area was conducted during winter season i.e. from 01.12.2021 to 28.02.2022 for the project. Following results were obtained:
- Ambient Air Quality - Monitoring was carried out in 8 locations & results shows the values of PM₁₀ range from 28.4 to 44.8 µg/m³, PM_{2.5} was found to vary from 16.3 to 20.9 µg/m³, SO₂ from 1.1 to 6.6 µg/m³ and NO₂ from 2.0 to 6.6 µg/m³ in the buffer area of 10km radius. The CO levels were ranged from below detectable limit to 0.987 mg/m³, Nickel, Arsenic and Lead was found below detectable limit (BDL) of <0.6 ng/m³; <0.4ng/m³; <0.07µg/m³ respectively. The maximum incremental values due to mining, in absence of any control measures, were found to be estimated as 1.806 µg/m³ for PM₁₀ and 1.038 µg/m³ for PM_{2.5} within ML at the air quality monitoring location. Incremental has been estimated as 1.337 µg/m³ for SO₂ and 22.410 µg/m³ for NO₂ at the ML boundary. The ore will be transported by road through trucks. The maximum incremental values due to transportation have been estimated as 5.60 µg/m³ for PM₁₀, 1.36 µg/m³ for PM_{2.5}, 0.05 µg/m³ for SO₂ and 2.35 µg/m³ for NO_x at a distance of 20 m from the road. When these incremental GLC are added to the baseline air quality level, the resultant 24 hours average air quality has been found well within the limits specified in the National Ambient Air Quality Standards.
 - Noise Quality - The noise levels were measured at eight stations in core and

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buffer zone located in residential areas. The noise levels observed during day time varies from 45.31 to 51.66 dB (A) and at night time varies from 36.30 to 40.34 dB (A). All the noise values observed are well within the limits prescribed by National Ambient Air Quality Standards for Noise.

- **Surface water quality** - monitored in 8 locations and pH range from 6.8 to 7.4., total dissolved solids – 30mg/l to 76mg/l, Iron content is BDL – 0.40mg/l, Chloride content ranges from 4mg/l to 14mg/l, sulphate content ranges from 1mg/l to 6mg/l, Fluoride content is BDL., Magnesium content ranges from 2mg/l to 7mg/l All other parameters were also found to be within the permissible limits.
- **Ground water quality** - monitored in 8 locations and pH ranges from 6.7 to 7.8., total dissolved solids ranges from 30mg/l to 268mg/l, total Hardness as CaCO₃ ranges from 16mg/l to 48mg/l, total alkalinity ranges from 20mg/l to 243mg/l .Iron content is BDL – 0.88mg/l, Chloride content ranges from 4mg/l to 14mg/l, sulphate content is BDL – 3mg/l, Fluoride content is BDL – 0.24mg/l, Magnesium content ranges from 1mg/l to 22mg/l. All other parameters were also found to be within the permissible limits.
- **Soil quality** - Top soil samples were collected from core & buffer zone, from four locations. Samples were collected from North and South side of core zone and in buffer zone from Kedeshala and Batagaon villages. Particle size analysis shows that the texture of the soil is fine to medium grained sand with reddish colour. pH has been observed to be acidic with low electrical conductivity. Organic carbon is high at all locations. The phosphorus and nitrogen content at all locations is low to high.

(xviii) Traffic density survey was conducted at three locations namely, near Jaldihi village (3.1 km, NE), near Batagaon village (1.3 km, SW) and Shilgurha village (8.7 km, W). Traffic volume recorded was 24, 32 and 3596 passenger car units per day, respectively. Based on observed traffic data and existing road width, current utilisation of maximum capacity of the road is 1.41 % at Jaldihi, 1.88% at Batagaon and 17.98% at Shilgurha.

(xix) Land Use/ Land cover – The land utilization plan as per the table:

Land ownership	Area	%
A. Forest		
A. Revenue Forest	9.175	5.76
Proposed Reserve Forest	147.803	93.24
Grand Total	156.978	99.04
B. Non-Forest Land	1.531	0.96
Total	158.509	100

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Land Use	Area in Ha.
Forest	156.978
Agricultural Land	0
Surface water Bodies	0
Settlements	0
Road	0
Grazing land	0
Barren land	0
Waste Land	1.531
Total	158.509

Sl. No.	Particulars	Area in ha. (in conceptual period)
1.	Mined out area	120.796
2.	Overburden/Waste dumping	7.301
3.	Ore stock yard	9.29
4.	Temporary Office, weigh bridge etc.	3.0
5.	Mine Road	8.012
6.	Rain water harvesting pond	0.52
7.	Mobile Crushing & Screening plants	3.82
8.	Others (Plantation etc.)	5.77
	Total	158.509

- (xx) Manpower: The manpower required for the mine during operation phase for unskilled, semi-skilled, skilled & other categories will be 258 persons.
- (xxi) Project Cost: The expected cost of the project is Rs.380 crores. The EMP cost estimated to be Rs. 204.10 lakhs as capital cost and Rs. 81.08 Lakhs/year as recurring cost.
- (xxii) The Environment consultant M/s Centre for Envotech and Management Consultancy Pvt. Ltd., Bhubaneswar along with the proponent made a presentation on the proposal before the Committee on 23.12.2022.
4. The SEAC have appraised the proposal for EC in its meeting dated 27.03.2023 and have recommended for grant of Environmental Clearance for the project, stipulating various conditions. However, the Environmental Clearance shall be issued by the SEIAA, Odisha after receipt of Stage-I Forest Clearance from the proponent as stipulated in MoEF&CC, Govt. of India office memorandum no. J-11013/41/2006-IA.II(1), dated 09.09.2011 and office memorandum no. J-11013/41/2006-IA.II(1), dated 18th May, 2012. The matter was further examined in the State Environment Impact Assessment Authority (SEIAA), Odisha in its 120th meeting of SEIAA held on 23rd, 24th and 25th May, 2023 and the Authority

DAI



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deliberated on the matter and decided that the PP shall submit Stage-I Forest Clearance within 12 months as per MOEF&CC OM No.J-11013/41/2006-IA.II(I) dated 09.09.2011. The PP has submitted the Stage-I Forest Clearance for the project as desired by SEIAA for consideration of EC.

5. This proposal conforms to the item no. 1(a)-'Mining of Minerals in the schedule of EIA Notification, 2006 as amended time to time, and the major mineral extraction project falls under Category B1 as the mining lease area is ≤ 250 Ha.
6. The matter was again examined in the State Environment Impact Assessment Authority (SEIAA), Odisha in its 144th meeting held on 30.11.2023 & 01.12.2023, recommendation of SEAC, submission of PP and in accordance with the EIA Notification, 2006 and further amendments thereto. The authority perused the Stage-I FC submitted by PP on dated 29.11.2023 and decided to grant EC as per the recommendation of SEAC.
7. **Environmental Clearance (EC) is granted under the provisions of EIA Notification No. S.O. 1533 (E) dated the 14th 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 from Jumka Pathiriposhi Pahar Iron Ore Block with total excavation of 3.98 MTPA (ROM Iron Ore: 3.35 MTPA + waste: 0.63MTPA) Over a ML area of 158.509 Ha. (Govt. forest land is 156.978Ha. and Private land is 1.531Ha.) located in villages-Batagaon, Kensara under Tahasil- Lahunipara, District-Sundargarh and Village- Kadakala, Under Tahasil- Banspal, District- Keonjhar by M/s. Rungta Mines Ltd" with the following stipulations (specific and standard), environmental conditions and safeguards.**

Stipulations:

A. Specific conditions:

- (i) The proponent shall utilize different grades of iron ore (ROM) and waste generated according to IBM guidelines.
- (ii) The proponent shall carryout compensatory afforestation for the project site.
- (iii) The proponent shall adopt additional measures for dust suppression.
- (iv) Conversion of Gochar / Grazing land involved in lease area shall be made before going for mining activity.
- (v) Rainwater harvesting structures shall be implemented.
- (vi) The lessee shall take adequate safeguard measures to ensure the free flow of the nearby tributaries/nallahs.
- (vii) The EC is limited to secondary crushing and screening operations (dry process) as per approved mining plan. Under no circumstances, the lessee shall carry out any beneficiation activity (wet process) of Low-Grade Ore.
- (viii) All the ores (45-55) and +55 grades shall be used and ores & rejects shall be transported as per approved mining plan for their use. Only temporary stacks shall be operated. The mine shall avoid segregation & generation of fines and flow of silt during rainy session.
- (ix) Green processes like Controlled drilling, Environment friendly blasting, safe transportation and conveying, silt-management shall be followed as per guidelines.
- (x) The budget of Rs.264.7 lakhs (capital cost) and Rs. 172.7 lakhs (recurring cost) to

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address the concerns raised by the Public in the Public hearing to be completed within 3 years from the date of start of mining operation. PP shall comply all action plans made for public hearing concerns and make regular maintenance and record the progressive activity outcomes.

- (xi) The EMP shall be implemented in a time bound manner with a budget allocation of Rs. 204.10 lakhs as capital cost and Rs. 81.08 Lakhs/year as recurring cost. The adoption of mitigation measures and monitoring of the same as proposed in the EMP shall be done under the supervision of the qualified environmental personnel. The implementation status of the same shall be submitted to the Ministry's Integrated Regional Office.
- (xii) The proponent shall comply all the specific conditions as recommended by CSIR-NEERI on carrying capacity study (as applicable) & other specific conditions in time bound manner as applicable for the project.

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, as 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

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- thereunder 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 29th 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.parivesh.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 should install the one continuous ambient air quality monitoring stations (CAAQMS) as per the scientific study and in consultation with CPCB/SPCB. The real time data generated from the mines should be displayed digitally at entry and exit gate of mine lease area for public display and shall be linked to server of CPCB/SPCB. The monitoring of critical parameters, relevant for mining operations, of air pollution viz. PM₁₀, PM_{2.5}, NO₂, CO and SO₂ etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PC1/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone shall be done. 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 PM₁₀ and PM_{2.5} are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from ah sources shall be regularly controlled by installation of required

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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 SEIAA, Odisha 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 and 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 Integrated 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 Integrated 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 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 the Integrated Regional Office, Bhubaneswar of MoEF&CC, GoI, SEIAA, Odisha, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central

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- 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 supernatant 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. Retaining wall shall be constructed to ensure that no silt after wash up is escaped from the core / buffer zone of the mines.
- (viii) 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 Integrated Regional Office, MoEF&CC as a part of compliance in the six monthly compliance report.
- (ix) 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, as applicable. 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.
- (x) 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.
- (xi) The PP shall comply with all conditions as specified by CGWB/ Water Resources Department, Govt. of Odisha for abstraction of ground water for the project.
- (xii) The PP shall install one piezometer for ground water level monitoring and water level data shall be made available to CGWA through web portal as a part of six monthly compliance report.
- (xiii) All industries abstracting ground water in excess of 100 KLD shall be required to undertake biennial (once in two years) water audit through certified auditors of agencies as approved by CGWA and submit audit reports to CGWA.
- (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

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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 competent authority 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 to 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 concerned Integrated Regional Office, Bhubaneswar of MoEF&CC,GoI.

(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.

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- (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.

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(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 equipments 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 per recommendation of NEERI, as applicable to the project.

(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

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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) Human health issues, Public hearing & CER

- (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

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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 project proponent shall submit the time-bound action plan to the concerned integrated regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the activities committed during public hearing by the project proponent and as submitted to SEAC, in terms of the provision of the MoEF& CC Office Memorandum No-22-65/2017-IA.III dated 30th September,2020. The action plan shall be implemented within three years of the commencement of the project.
- (ix) 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. 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

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the IRO, Bhubaneswar, MoEF&CC, OSPCB & SEIAA, Odisha.

(IX) 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 concerned Integrated Regional Office (IRO), Bhubaneswar of Ministry, 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 project proponent shall augment infrastructure on drinking water, health care and education in nearby villages as per time bound action plan submitted.
- (vi) The project proponent shall obtain permission from DGMS under 106(2b) to carry out blasting operation within the lease area.
- (vii) 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 1st June and 1st December of each calendar year. No hard copies of six -monthly compliance reports shall be submitted to SEIAA. The proponent shall upload the six monthly compliance report including results of monitored data, as applicable in the website of the Ministry (www.parivesh.nic.in) for monitoring of EC Conditions as per the guidelines of Ministry.
- (viii) The environmental statement for each financial year ending 31st 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 concerned Integrated Regional Office (IRO), Bhubaneswar of MoEF&CC, GoI, Central Pollution Control Board and State Pollution Control Board.
- (ix) 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, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall

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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

be monitored and displayed at a convenient location near the main gate of the company in the public domain.

- (x) The concerned Integrated Regional Office(IRO) 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.
- (xi) The SEIAA, Odisha may revoke or suspend the EC, if implementation of any of the above stipulated conditions is not satisfactory. The SEIAA, Odisha reserves the right to alter /modify the above conditions or stipulate any further condition in the interest of environment protection.
- (xii) 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.
- (xiii) 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.
- (xiv) 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 (IA Division)**, Ministry of Environment, Forests and Climate Change Govt. of India, Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi-110003 for information.
2. **Additional Chief Secretary**, Forests & Environment Dept., Government of Odisha for information.
3. **Additional Secretary to Govt**, Steel & Mines Department, Government of Odisha for information.
4. **Member Secretary**, State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-8, Bhubaneswar for information.
5. **Additional Principal Conservator of Forests**, Integrated Regional Office (IRO), Ministry of Environment & Forests, A/3, Chandrasekharpur, Bhubaneswar for information.
6. **Regional Director**, CGWA, South Eastern Region, Bhujal Bhawan, Khandagiri, Bhubaneswar, Pin-751030.

del



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(Protection) Act, 1986

7. The Director of Mines, Odisha, Bhubaneswar/DDM,Koira/ DFO,Keonjhar/ DFO,Bonai for information and necessary action.
8. Collector & DM, Sundargarh for Information and necessary action.
9. Collector & DM, Keonjhar for Information and necessary action.
10. Guard file for record/Website/Parivesh Portal.

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Member Secretary



Validity unknown

Digitally signed by D. K. Murugesan,
IFS
Designation: Member Secretary
Date and Time: 12/2/2023 7:01:44 PM

**PHOTOGRAPHS OF MINE LEASE BOUNDARY OF
JUMKA PATHIRPOSHI PAHAR IRON ORE BLOCK OF M/s. RUNGTA MINES LTD.**

