

Ref No. :ARIPL/TJBNSCM/ENV/32

Dated: ...25.11.2023.....

To,

**The Additional Principal Chief Conservator of Forest  
MoEF&CC, Regional Office (WCZ)  
Ground Floor, East Wing "New Secretariat Building"  
Civil Line, Nagpur- 440001 (M.S)**

Sub: Six Monthly EC Compliance report with respect to Takli Jena Bellora (North) and Takli Jena Bellora (South) Opencast cum Underground Coal Block of Production capacity (1.1 MTPA Opencast; 1.0 MTPA Underground) located at Wardha Valley Coalfield, Maharashtra, India.

Ref: EC Identification No.-EC22A042MH110729, File No.-IA-J-11015/62/2021-IA-II(M)  
Date of Issue EC - 03/11/2022.

Dear Sir,

In compliance of the condition stipulated in ECs under reference, please find enclosed herewith six- monthly EC compliance report for the period of 01.04.2023 to 30.09.2023 with respect to Takli Jena Bellora (North) and Takli Jena Bellora (South) Opencast cum Underground Coal Block of Production capacity (1.1 MTPA Opencast; 1.0 MTPA Underground) located at Wardha Valley Coalfield, Maharashtra, India.

This is for your kind information.

With kind regards,

  
Agent



**Takli Jena (North) & Takli Jena (South) Coal Mine  
Aurobindo Realty Infrastructure Private Limited**

Copy To:

- 1) Regional Officer, MPCB, Udyog Bhavan, 1<sup>st</sup> Floor Opp. Bus Stand, Railway Station Road, Chandrapur- 442401.
- 2) Sub-Regional Officer, MPCB, Udyog Bhavan, 1<sup>st</sup> Floor Opp. Bus Stand, Railway Station Road, Chandrapur- 442401.

**Aurobindo Realty & Infrastructure Private Limited**

Site Office: Anand Villa, Ganesh Nagar, Tukum, Chandrapur, Maharashtra – 442401, INDIA,  
Regd Office Address: 1-121/1, Survey Nos. 66, (Part), Miyapur, Hyderabad, Telangana-500049, INDIA

CIN :U45500TG2016PTC111433 |  www.aurobindorealty.com

## Six Monthly EC Compliance Report of

Proposed Takli Jena Bellora (North) and Takli Jena Bellora (South) Opencast cum Underground Coal Block of Production capacity 1.5 MTPA in total area of 936 Ha (OC-236.90 Ha & UG-699.10 Ha) located at Wardha Valley Coalfield, Maharashtra, India

#	Conditions	Compliances
<b>Specific conditions</b>		
i.	PP to obtain CTE/CTO from SPCB for the production capacity of 1.5 MTPA for opencast and underground as proposed by PP.	Consent to establish/Consent to operate has been obtained from Maharashtra Pollution Control Board on dated 17.07.2023 <b>(Copy of CTE/CTO enclosed as Annexure-1)</b> .
ii.	PP Shall prepare a detailed plan for distribution of water within and outside Mine lease area from dewatering of Daga mine Pit in consultation with gram panchayat and shall implement the water treatment plant to meet the requirement with the start of production.	Water distribution plan has been made. Rs 24.27 Lakhs has been allotted for water and wastewater treatment and will be implemented immediate post the commencement of mine.
iii.	As proposed by PP vide letter dated 26.09.2022 Rs. 2.2 Crore shall be invested for water distribution system in 6 villages (Kiloni, Kadholi, new Kondha, Takli and Gotala Rith) with commissioning of mine. PP to implement the revised public hearing budget to tune of RS. 3.03 crore on proposed activities.	An amount of 48 Lakh has been allocated for water distribution against budget cost of revised public Hearing budget to tune of Rs 3.03 crore. Work will be completed immediately after commissioning of mine.
iv.	PP to implement revised EMP budget of Rs. 22.79 crore as capital expenditure on pollution control measures with annual recurring cost of Rs. 4.19 crore.	We shall implement revised budget including expenditure on pollution control measures. <b>(Revised EMP budget enclosed as Annexure-2)</b>
v.	In addition to manual monitoring, PP to install a continuous Ambient air Quality monitoring station at suitable location preferably village side with consultation of SPCB. The real time data so generated shall be upload on company website. In, addition, data should also be displayed digitally to entry and exist gate of mine lease area for public display.	We have procured continuous Ambient Air Quality Monitoring Station, and we have consulted with SRO, Chandrapur for suitable location of CAAQMS.
vi.	PP shall implement the plan for transportation of coal nearly 80% i.e., 1.2 MTPA through Railway and rest 20% i.e., 0.3 MTPA by road.	About 1.2 MTPA coal shall transported by road to the Tadali Railway siding, located about 26km from the mine, for which required consent from Railway authorities has been obtained. Rest 0.3 MTPA shall be transported by road through 30-35 tones covered truck.
vii.	Presently as recommended by EAC, only, Bellora nallah shall be diverted with due permission from irrigation Department of the Maharashtra State government and PP to take adequate safety measures to restore the catchment areas fall under these streams. However, no diversion to Takli stream shall be allowed for the next 12 years. PP to take adequate measures for its environment/ natural flow and also ensure that no untreated mine water shall enter into this stream and proper garland drain shall be made all along the stream to catch mine water.	Presently we will only divert Bellora Nallah & We have obtained NOC permission from irrigation Department. <b>(WRD NOC enclosed as Annexure-3)</b> Proper garland drain will be provided to catch mine water.



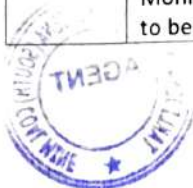
#	Conditions	Compliances
viii.	PP shall construct a pucca road to maintain the safety of people residing nearby along the transportation route with plantation either side of road.	Shall be implemented after the commissioning of mine.
ix.	PP shall install fix fog cannon (Mist sprayer) and fixed sprinkler all along the haul road till CHP, Railway siding and OB dump area and accordingly sufficient number of fog cannons (not less than 10 nos.) with 40 mts jet length shall be installed within 6 months. It should be ensured that air pollution level confirm to the standard prescribed by MoEF&CC/ CPCB.	05 nos. of FOG CANON Machine (mist sprayer) in the first phase for the installation all along the haul road. Expected to complete before commencement of mining activity.  Procurement of 01 no. Mobile Coal Handling System has been completed. The same shall be mobilized just before the commencement of mining activities.
x.	PP shall construct a proper cemented 4 lane approach road of 1.36 km for the purpose of transportation of Coal from mine lease area to nearby National highway.	Land up to the Highway is already possessed by (ARIPL). No external/ village road will be used for communicating/ transportation from mine to National highway. Internal Road (on the land owned by ARIPL) up to the highway will be done with progression of mine after commission.
xi.	Project proponent to plant 1,50,000no of native trees with broad leaves along the transportation route in the three years to prevent the effect of air pollution. After completion of tree plantation number of trees shall be duly endorsed by District Forest Officer.	50,000 nos. of trees will be planted annually during monsoon season. Plantation of 1,50,000 nos. of trees of native species will be complete in next three years. Internal road will be used for communicating from mine to National highway. Broad Leaf trees will be planted on both side of this road.
xii.	PP shall deploy only 30-35 tonnes covered trucks/ dumpers to reduce fleet size till rapid loading system and to implement surface miner and conveyor belt system from pit head to CHP as feasible.	We shall deploy 30-35 tones cover trucks for the transportation of materials.
xiii.	PP shall conduct third party audit of compliance of EC condition and an interval six month, and its report shall be submitted to IRO, MoEF&CC.	We have initiated the tender process for the selection of NABL/ MoEF&CC accredited laboratory for third party audit of EC compliance.
xiv.	The status of mine closure activity must be included in every six months compliance report submitted to the state pollution control board and IRO.	Mine closure activities are the part of mining activity once the mining activity will start after obtaining consent to operate, we will submit mine closure activity with six monthly compliance report to the MPCB and IRO MoEF&CC.
xv.	PP to maintain the topped haul road properly to minimize the dust emission. PP to also develop pucca roads by seeking consent from the panchayat with widening of roads especially roads interlinking the villages within the study area of 10 km radius buffer zone.	We will maintain the haul road on a regular basis and water spraying arrangements will be provided to minimize the dust emission.
xvi.	PP to install solar lights along the road used for transportation of minerals to avoid the accidents at night and also seek its maintenance. PP is asked to also identify the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone within one year.	Once the production will start, we will provide solar lightening arrangements beside roads and office and will ensure its maintenance if any.
xvii.	PP to provide bio toilets to the villages located within study areas within 1 year from the grant of this EC.	We have purchased bio toilets for village and ready to establish in respective villages.



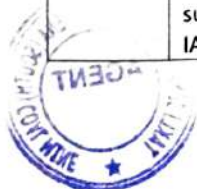
#	Conditions	Compliances
xviii.	Persons of nearby villages shall be given training on livelihood and skill development to make them employable with its proper records.	Skill development and livelihood training will be conducted by C.S.R. team.
xix.	PP to fulfil all the commitment made in the minutes of the Public Hearing to address the issues raised therein in a time bound manner and progressive report to be furnished to IRO in every six monthly as compliance report.	Noted.
xx.	The illumination and sound at night at project site disturb the villages in respect of both human and animal population. consequent sleeping disorder and stress may affect the health in the village located close to mining operations. Habitations have a right for darkness and minimal noise level at night. PPs must ensure that the biological clock of the villagers is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.	Noise level monitoring will be carried out and noise level at site will be kept as per the noise level standard. Illumination is limited to site and roads only.
xxi.	PP shall pay farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms.	Not Applicable.
xxii.	PP should establish in house (at project site) environmental laboratory for measurement of environmental parameter with respect to air quality and water (surface and ground). A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineer, Laboratory chemist, and staff for monitoring of air, water quality parameters on routine basis. Any non-compliance or infringement should be reported to the concerned authority.	We will engage NABL accredited laboratory for regular monitoring of environment pollutants. They will report to Environment Cell project site as well as head quarter.
xxiii.	PP to implement the recommendation of land subsidence study carried out for underground mine and report shall be submitted to IRO in every six-monthly report.	Shall be implemented after the commissioning of mine.
xxiv.	PP to obtain the star rating as per the guidelines of Ministry of Coal.	We will take steps in the evaluation of mining footprints and sustainable development framework for taking up mining activities under its umbrella.
xxv.	Hon'ble supreme court in an writing Petition(s) civil No 114/2014, common Cause vs union of India & Ors vide its judgement dated 8 <sup>th</sup> January 2020 has directed the Union of India to Union of India to impose a condition in mining lease and similar condition in the environmental clearance and the mining plan to the effect that 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 he land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after mining activity is over at the cost of the mining lease holders/project proponent". The implementation repots of the above said conditions shall be set to the regional office of the MoEF&CC.	Not Applicable.



#	Conditions	Compliances
a)	<b>Statutory Compliance</b>	
i.	The project proponent shall obtain forest clearance under the provision of forest (Conservation) Act, 1986, in case of the diversion of the forest land and non-forest purpose involved in the project.	Not Applicable.
ii.	The project proponent shall obtain clearance from National Board of Wildlife, if applicable.	Not Applicable.
iii.	The project proponent shall prepare a site-specific conservation plan/ wildlife Management plan and approved by the Chief Wildlife Warden. The recommendation of the approved site-specific conservation plan /Wildlife conservation plan shall be implemented in the consultation with the state Forest Department. The implementation report shall be furnished along with six monthly compliance report (In case of the Schedule I species in the study area).	Wildlife conservation plan has been made and submitted with EIA/EMP report. <b>(Wildlife Conservation plan attached as Annexure-4)</b>
iv.	The project proponent shall obtain consent to Establish/Operate under the provisions of Air (Prevention & Control pf Pollution) Act, 1981 and water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.	Consent to establish/Consent to operate has been obtained from Maharashtra Pollution Control Board on dated 17.07.2023
v.	The project proponent shall obtain necessary permissions from the Central Ground Water Authority.	NOC from CGWA for withdrawal of ground water 94.03 KLD and Mine seepage 7907.41 KLD has been obtained vide: CGWA/NOC/MIN/ORIG/2022/16172 and valid up to 30/08/2024. <b>(Copy of CGWA NOC enclosed as Annexure-5)</b>
vi.	Solid/ hazardous waste generated in the mines needs to address in accordance with the Solid Waste Management Rules, 2016/ Hazardous & Other Waste Management Rules, 2016.	There is only solid waste generated from proposed mine is overburden which will be stacked as per mining plan subsequently reclaimed with vegetation. During mining operation used oil, empty barrels and oil and grease skimming will be generated for which we will take authorization under Hazardous and Other Waste (Management and Transboundary Movement) Rules 2016. Hazardous waste will be disposed of as per Hazardous and Other Waste (Management and Transboundary Movement) Rules 2016 within 90 days from the date of generation and we will maintain records.
b)	<b>Air Quality monitoring and preservation</b>	
i.	Continuous ambient air quality monitoring station as prescribed in the status be established in the core zone as well as in the buffer zone for monitoring of pollutants namely PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> . Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive target in consultation with the State pollution Control Board. Online ambient air quality monitoring station may also be installed in addition to the regular monitoring station as per the requirement and/ or in consultation with the SPCB. Monitoring of heavy metal such as HG, As, Ni, CD, Cr etc to be carried out at least once in six months.	Online continuous ambient air quality monitoring station will be installed within mine premises. Location of the stations will be decided based on the consultation with the State pollution Control Board.



#	Conditions	Compliances
ii.	The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the coal industry Standard notification vide GSR 742 (EO dated 25 <sup>th</sup> September 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metal such as Hg, AS, Ni, Cd, Cr, and other monitoring data shall be regularly reported to the ministry/Regional office and to the CPCB/SPCB.	Ambient air quality monitoring in the core zone will be kept within the Coal Industry Standards notified vide GSR 742 E Dated 25 <sup>th</sup> September 2000. Air quality data will be submitted to respective statutory bodies with six monthly EC compliance report.
iii.	Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water mist sprinkling/ rain gun etc shall be carried out in critical areas prone to air pollution (with higher value of PM <sub>10</sub> /PM <sub>2.5</sub> ) such as haul road, loading/ unloading and transfer points. Fugitive dust emission from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters confirmed to the norms prescribed by central/ State Pollution control board.	We will ensure that the dispatch trucks from coal mine to destination will be properly covered with tarpaulin. Regular water sprinkling activity will be carried out to minimize fugitive dust and ensure that AAQ parameters are restricted to prescribed limit.
iv.	The transportation of coal shall be carried out as per the provision and route envisaged in the approved Mining plan or Environmental Monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, is proposed to construct a bypass road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.	We shall carry out transportation of coal as per approved mine plan or environmental monitoring plan. Precautions will be taken not allow the loaded truck to pass within village.
v.	Vehicular emission shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining PUC certificate from the authorized pollution testing centres.	It will ensure that the vehicle used for mining activities having valid PUC certificate. Regular monitoring for their PUC certificate will be taken by site safety/security staff.
vi.	Coal stockpile/crusher/ feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt Conveyors shall be fully covered to avoid air borne dust. Side cladding all among the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.	All the transfer points and junction points will be equipped with water sprinklers. Belt conveyor will be covered.
vii.	Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environment friendly sustainable technology should be implemented for mitigating such parameters.	Dust suppression system shall be provided at all desired locations with effective control measures.
<b>c)</b>	<b>Water Quality monitoring and preservation</b>	
i.	The effluent discharge (mine wastewater, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742(E) dated 25 <sup>th</sup> September 2022 and as amended from time to time by Central pollution control board.	The condition shall be complied with. Effluent generated will be properly treated at ETP and recycled for vehicle washing and dust suppression. We are in process to install effluent treatment plant of 100 KLD.
ii.	The Monitoring data shall be uploaded on the company's website and displayed at the project site at suitable location. The circular No J- 20012/I/2006-IA.11(M) dated 27 <sup>th</sup> May 2009 issued by Ministry of	We shall upload on the company's website and displayed at the project site at suitable location



#	Conditions	Compliances
	Environment, forest and Climate Change shall also be referred in this regard for its compliance.	
iii.	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring of ground water levels shall be carried out four times a year i.e., pre- monsoon, monsoon, post-monsoon, and winter. The ground water quality shall be monitored once in a year, and the data thus collected shall be sent regularly to MoEF&CC/RO.	We will monitor groundwater level (4 times in a year) regular basis and the test report will be submitted to MoEF&CC/RO once in a year.
iv.	Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the ministry of Environment, forest and Climate change/ Regional office.	Water quality of upstream and downstream water bodies will be monitor by NABL accredited laboratory and report will be submitted six monthly EC compliance report to MoEF&CC/RO.
v.	Ground water, excluding mine water shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of groundwater resources.	Ground water will not use for mining operations only mine water will be used for mining operation i.e., dust suppression, green belt development, washing of equipment's etc. Rainwater harvesting cum settling ponds will be constructed and Roof top rainwater harvesting structure will be developed.
vi.	Catch and/or garland drains and siltation ponds in adequate numbers and appropriated size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and slow of sediments directly into the river and water bodies. Further, dump material shall be avoided by providing adequate channels for flow of silt into drain. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/ habitation/ waterbodies.	Garland drains of appropriate size; numbers will be constructed as per requirement. Plantation of native species shall be planted between toe of the dump and adjacent field/ habitation/ waterbodies.
vii.	Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village (s) after due treatment conforming to the specific requirement (standards).	Rainwater harvesting cum settling ponds will be constructed and Roof top rainwater harvesting structure will be developed for augmentation of groundwater. We will provide water as required by the villagers after treatment.
viii.	Industrial wastewater generated from CHP, workshop, and other wastewater, shall be properly collected, and treated so as to conform to the standard prescribed under the standards prescribed under Water act 1974 and Environment (protection) Act 1986 and the rules made there under and as amended from time to time. Adequate ETP/STP needs to be provided.	Industrial wastewater will be treated with 100 KLD Effluent Treatment Plant.  Domestic wastewater will be treated with 44 KLD Sewage Treatment Plant.
ix.	The water pumped out from the mine, after siltation shall be utilized for industrial purpose viz. watering the mine area, road, green belt development etc. the drain	Mine water after siltation will be used for dust suppression and green belt development.



#	Conditions	Compliances
	shall be regularly desilted particularly after monsoon and maintain properly.	
x.	The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/ pond/ lake etc. shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved mining Plan/EIA/EMP report and due approval of the concerned State/Gol authority. The construction of embankments to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as per prescribed by the law.	<p>Diversion of nallah within mine working will be carried out as per the approved mining plan and EIA/EMP.</p> <p>Surface drainage plan will be prepared.</p> <p>Embankment construction will be done as per the permission granted by DGMS.</p>
xi.	The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5 km. a riverine/ riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation/ water resource department in state government.	During mine pit de-watering, it was estimated that around 6000 KLD of water will be available from mine sumps for distribution to surrounding villages for irrigation purpose. The distribution of water by laying HDPE pipeline with pumping facility is about 7.95 km.
<b>d)</b>	<b>Noise and Vibration Monitoring prevention</b>	
i.	Adequate measures shall be taken for control of noise level as per noise Pollution Rules, 2016 in the work environment. Workers engage in blasting and drilling operation, operation of HEMM, etc shall be provided with personnel protective equipment (PPE) like ear plug/ muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.	<p>Regular maintenance of mine equipment's and HEMM will be done to restrict noise, ear plugs/muffs will be provided to the workers engaged in noisy area.</p> <p>Blasting will be done during daytime only.</p>
ii.	Controlled blasting techniques shall be practices in order to mitigate ground vibration, fly rocks, noise, and air blast etc. as per the guidelines prescribed by the DGMS.	Controlled blasting techniques will be practiced as per the guidelines prescribed by the DGMS.
iii.	The noise level survey shall be carried out as per prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.	Noise level monitoring will be done on different locations and report for the same will be submitted to Ministry/RO on regular basis with six monthly EC compliance report.
<b>e)</b>	<b>Mining Plan</b>	
i.	Mining plan shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there- under as applicable.	Mine plan has been carried out as per provision of mine act 1952 and other applicable subordinate legislations made there under.
ii.	Mining shall be carried out as per the provision mining plan (including Mining Closure Plan) abiding by mining law related to coal mining and the circular issued by Directorate general Mines Safety (DGMS).	Mining will be done as per the approved mining plan.
iii.	No mining shall be carried out in forest land without obtaining forestry clearance as per Forest (conservation) Act, 1980.	Not Applicable.





#	Conditions	Compliances
iv.	Efforts should be made to reduce energy and fuel consumption by conservation, efficiency, improvements, and use of renewable energy.	As far as possible renewable source of energy will be used in form of solar energy. Solar lighting arrangements will be provided in offices and roads.
f)	<b>Land reclamation</b>	
i.	Digital Survey of entire lease hold area /core zone using satellite Remote sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest, and climate Change (MoEF&CC) from time to time shall be submitted to MoEF&CC/Regional Office (RO).	Digital survey of the lease area shall be carried out once in three years after the commissioning of mine and report will be submitted to MoEF&CC/Regional Office (RO).
ii.	The final mine void depth should preferably be as per the approved Mine closure Plan, and in case it exceeds 40m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive topsoil. Post mining land will be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in guideline for preparation of Mine closure Plan issued by the Ministry of Coal dated 27 <sup>th</sup> august 2009 and subsequent amendments.	Mine closure activities will be done in accordance with approved mine closure plan for the project.
iii.	The entire excavated area, backfilling external OB dumping (including Topsoil) and afforestation plan shall be in conformity with the during mining/ post mining land use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-à-vis the post mining land use pattern shall be submitted to the MOEF&CC/RO	Backfilling of the excavated area, OB dump management and afforestation will be in accordance to approved mining Plan and EIA/EMP report. Progress of reclamation and afforestation shall be submitted after the commissioning of mine.
iv.	Fly ash shall be used for external dump of overburden, backfilling or stowing of mines as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3 <sup>rd</sup> November 2009 as amended from time to time. Efforts shall be made to utilise gypsum generated from Flue Gas Desulfurization (FGD), if, any along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.	We agreed to comply the condition after obtaining permission from DGMS.
v.	Further, it may be ensured that as per the time scheduled specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked sites(s) only and shall not be kept utilized. The topsoil shall be used for land reclamation and plantation purpose. Active OB dump shall be stabilised with native grass species to prevent erosion and surface runoff. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and Management and rehabilitated area shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the	Topsoil will be stacked as per mining plan, and it will be utilized for plantation purpose within mine premises. For stabilization of active dump, we will use native grass species to prevent erosion and surface runoff. Excavated area will be backfilled and subsequently reclaimed by native species as per the mining plan. Compliance status shall be submitted to the Ministry of Environment, forest, and Climate change/Regional Office.



#	Conditions	Compliances
	Ministry of Environment, forest, and Climate change/Regional Office.	
vi.	The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with state government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme court with regard to acquiring grazing land.	Not applicable.
<b>g)</b>	<b>Green Belt</b>	
i.	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered/ endemic flora/ fauna. If any, spotted/ reported in the study area. The action plan in this regard, if, any shall be prepared and implemented in consultation with the State Forest and Wildlife Department.	There were no rare or endangered or threatened (RET) species either in the core area or the buffer zone.
ii.	Greenbelt consisting of 3 tire plantations of width not less than 7.5 m shall be developed all along the mine lease as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/ coal transportation road.	We will develop 3 tier plantations with local native species within the safety barrier, beside roads and area available. Plantation activity will be done on every year during monsoon season.
<b>h)</b>	<b>Public hearing and Human health issues</b>	
i.	Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & it's RO on six monthly basis.	Adequate Illumination will be provided, and we will monitor illumination with the help of lux meter and report will submit to board with six monthly compliance report.
ii.	The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.	Occupational health check-up for the workers will be done and maintain as per the DGMS circular and Mines Rules.
iii.	Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.	Safety training for the workers will be done and face mask and ear plugs/muffs will be provided to the workers who will working in core zone.
iv.	Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land outsees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.	Issues raised during Public Hearing will be taken care appropriately. Land outsees will be compensated as per the R&R policy.
v.	The project proponent shall follow the mitigation measures provided in this Ministry's OM No. Z - 11013/57/2014 IA.11 (M) dated 29 <sup>th</sup> October 2014, titled 'Impact of mining activities on habitations issues	We shall be followed the mitigation measures as per Ministry OM No. Z-11013/57/2014 IA.11 (M) dated 29 <sup>th</sup> Oct 2014.



#	Conditions	Compliances
	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'.	
<b>i)</b>	<b>Corporate Environmental Responsibility</b>	
i.	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders.	Corporate Environment Responsibility has been made.
ii.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	The Environment Management Cell has been established at project site as well as head quarter.
iii.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.	Year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Progress report will be submitted to the Ministry/Regional Office at six-month interval.
iv.	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	Self-Environment audit shall be conducted after commissioning of mining activities and third-party audit will be done in every three years.
<b>j)</b>	<b>Miscellaneous</b>	
i.	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.	Complied. Advertisement on the following newspaper regarding environmental clearance has been published on 10.11.2022. 1. Lokmat 2. Lokmat Times 3. Lokmat Samachar <b>(Copy of newspaper enclosed as Annexure-6).</b> Environment Clearance can also be seen on companies. website: <a href="https://www.ksez.in/mining-ec/">https://www.ksez.in/mining-ec/</a> <b>(Copy of image showing Environment Clearance uploaded to website enclosed as Annexure-7).</b>
ii.	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	Complied. Copy of Environment Clearance submitted to local bodies i.e., Collectorate, Gram Panchayats, MPCB, Tehsildar etc. <b>(Receiving copies of the same is enclosed as Annexure-8).</b>
iii.	The project proponent shall upload the status of compliance of the stipulated environment clearance	We shall upload environmental clearance compliance report in company's website



#	Conditions	Compliances
	conditions, including results of monitored data on their website and update the same on half yearly basis.	
iv.	The project proponent shall monitor the criteria pollutants level namely: PM10, SO2, NOx (ambient levels) or critical sectoral parameters. indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	CAAQMS shall be install and connected to CPCB/MPCB server also real time data can be shown on main gate of the project site.
v.	The project proponent shall submit six monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest, and Climate Change at environment clearance portal.	Six monthly environmental clearance compliance report will be submitted to board and same will be uploaded to parivesh portal as well as in company's website.
vi.	The project proponent shall follow the mitigation measures provided in this Ministry's OM No. Z-11013/57/2014 IA.II (M) dated 29 <sup>th</sup> October 2014, titled 'Impact of mining activities on habitations issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.	All pre-caution shall be taken in accordance with OM No. Z- 11013/57/2014 IA.II (M) dated 29 <sup>th</sup> October 2014.
vii.	The project proponent shall submit the environmental statement for each financial year in Form V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	Environmental statement for each financial year will be submitted to board on or before 30 <sup>th</sup> September every year and same will be uploaded in company's website.
viii.	The project authorities shall inform to the Regional Office of the MOEF&CC regarding commencement of mining operations.	We will inform to the MPCB and MoEF&CC regarding commencement and operation of mining.
ix.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	Will be complied.
x.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	All the recommendations and commitments made in EIA/ EMP, and issues raised during public hearing/ EAC being complied with.
xi.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change.	No further expansion or modifications in the plant shall be made without approval of Ministry of Environment, forests, and Climate Change.
xii.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Only factual data's will be submitted.
xiii.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Noted
xiv.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Noted
xv.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.	Full cooperation will be extended to the officials of regional office of MoEF&CC. Any other information desired, shall be promptly provided.



#	Conditions	Compliances
xvi.	The above conditions shall 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, Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India /High Courts and any other Court of Law relating to the subject matter.	The applicable provisions of Water Act, Air Act and Public Liability Insurance Act will be adhered. Also, the company will abide with the directions or orders passed by Hon'ble Supreme Court of India/ High Court and other Court of Law relating to the subject matter.
5.	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented in letter and spirit.	All the recommendations and commitments made in EIA/ EMP, and issues raised during public hearing being complied with.
6.	The proponent shall obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. The Ministry or any other competent authority may stipulate any further condition for environmental protection.	All the required clearances shall be obtained. Any other conditions imposed by the competent authority in future shall also be complied.
7.	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.	No such appeal is supposed to have been plead as per stipulation.
8.	The coal company/project proponent shall be liable to pay the compensation against the illegal mining, if any, and as raised by the respective State Governments at any point of time, in terms of the orders dated 2nd August, 2017 of Hon'ble Supreme Court in WP (Civil) No.114/2014 in the matter of 'Common Cause Vs Union of India & others'	Mining has not started yet. Not Applicable.
9.	The concerned State Government shall ensure that the mining operations shall not commence till the entire compensation for illegal mining, if any, is paid by the project proponent through their respective Department of Mining & Geology, in strict compliance of the judgment of Hon'ble Supreme Court.	Not Applicable.
10.	This environmental clearance shall not be operational till such time the project proponent complies with the above said judgment of Hon'ble Supreme Court, as applicable, and other statutory requirements.	Not Applicable.



# MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010706/24010437  
 Fax: 24023516  
 Website: <http://mpcb.gov.in>  
 Email: [cac-cell@mpcb.gov.in](mailto:cac-cell@mpcb.gov.in)



Kalpataru Point, 2nd and  
 4th floor, Opp. Cine Planet  
 Cinema, Near Sion Circle,  
 Sion (E), Mumbai-400022

RED/L.S.I (R35)

Date: 30/07/2022

No:- Format1.0/CAC/UAN

No.0000136886/CE/2207001673

To,  
 M/s Aurobindo Reality Infrastructure Pvt. Ltd.,  
 TAKLI JENA (NORTH) & TAKLI JENA (SOUTH) COAL  
 MINE,  
 Village Bellora, Takli, Jena, Asthi,  
 Tal-Bhadravati, Dist-Chandrapur



Your Service is Our Duty

**Sub: Consent to Establish Under RED category.**

**Ref: Minutes of Consent Appraisal Committee Meeting held on 24.06.2022**

Your application No.MPCB-CONSENT-0000136886 Dated 18.04.2022

For: grant of Consent to Establish under Section 25 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundary Movement) Rules 2016 is considered and the consent is hereby granted subject to the following terms and conditions and as detailed in the schedule I, II, III & IV annexed to this order:

- The consent to establish is granted for a period up to commissioning of the unit or up to 5 year whichever is earlier.**
- The capital investment of the project is Rs.787.79 Crs. (As per undertaking submitted by pp )**
- Consent is valid for the manufacture of:**

Sr No	Product	Maximum Quantity	UOM
Products			
1	Coal (open cast cum U/G coal mine)	1.5	MTPA

- Conditions under Water (P&CP), 1974 Act for discharge of effluent:**

Sr No	Description	Permitted (in CMD)	Standards to	Disposal Path
1.	Trade effluent	1720	As per Schedule-I	Recycled for firefighting, dust suppression and plantation
2.	Domestic effluent	44	As per Schedule-I	On land for gardening



5. **Conditions under Air (P& CP) Act, 1981 for air emissions:**

Sr No.	Stack No.	Description of stack / source	Number of Stack	Standards to be achieved
NA				

6. **Non-Hazardous Wastes:**

Sr No	Type of Waste	Quantity	UoM	Treatment	Disposal
1	Overburden	16000	m3/day	Landfill	Backfilling & reclamation of land

7. **Conditions under Hazardous & Other Wastes (M & T M) Rules 2016 for treatment and disposal of hazardous waste:**

Sr No	Category No./ Type	Quantity	UoM	Treatment	Disposal
1	4.1 Oil sludge or emulsion	1	KL/M	Recycle	Sale to authorised party / CHWTSDF
2	5.1 Used or spent oil	1	KL/M	Recycle	Sale to authorised party / CHWTSDF

8. **Conditions under Batteries (Management & Handling) Rules, 2001:**

Sr No	Type of Waste	Quantity	UoM	Disposal Path
1	Batteries	150.00	Kg/M	Send to Authorized Recycler

**Specific Conditions for used Batteries:**

- i. The applicant shall ensure that used batteries are not disposed of in any manner other than by depositing with the authorized dealer/ manufacturer/ registered recycler/ importer/ re-conditioner or at the designated collection center.
  - ii. The applicant shall file half-yearly return in Form VIII to the M.P.C. Board.
  - iii. Bulk consumers to their user units may auction used batteries to registered recyclers only.
9. The Board reserves the right to review, amend, suspend, revoke etc. this consent and the same shall be binding on the industry.
  10. This consent should not be construed as exemption from obtaining necessary NOC/permission from any other Government authorities
  11. PP shall not take any effective steps towards implementation of the project before obtaining Environment Clearance from MoEF & CC, GoI as per the EIC notification 2006 and as amendments thereto.
  12. PP shall submit the Bank Guarantee of Rs.25.0 Lakh towards compliance of Consent to establish conditions.
  13. The applicant shall obtain Consent to Operate from Maharashtra Pollution Control Board before actual commencement of the Unit/Activity.



*Ashok Shingare*

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Signed by: **Ashok Shingare**  
Member Secretary  
For and on behalf of,  
**Maharashtra Pollution Control Board**  
ms@mpcb.gov.in  
2022-07-30 15:14:13 IST





**Received Consent fee of -**

Sr.No	Amount(Rs.)	Transaction/DR.No.	Date	Transaction Type
1	1988000.00	TXN2204002149	19/04/2022	Online Payment
2	187580.00	TXN2206002934	27/06/2022	Online Payment

**Copy to:**

1. Regional Officer, MPCB, Chandrapur and Sub-Regional Officer, MPCB, Chandrapur  
- They are directed to ensure the compliance of the consent conditions.
2. Chief Accounts Officer, MPCB, Sion, Mumbai
3. CAC desk-For record and website updation purpose

**SCHEDULE-I****Terms & conditions for compliance of Water Pollution Control:**

1. A] As per your application, you have proposed to provide ETP of design capacity 100 CMD for treatment of workshop effluent and propose to provide sedimentation tank of capacity 5000 m<sup>3</sup> for treatment of mine water.  
B] The Applicant shall operate the effluent treatment plant (ETP) to treat the trade effluent so as to achieve the following standards prescribed by the Board or under EP Act, 1986 and Rules made there under from time to time, whichever is stringent:

Sr.No	Parameters	Limiting concentration not to exceed in mg/l, except for pH
(1)	pH	5.5 to 9.0
(2)	Oil & Grease	10
(3)	BOD (3 days 27°C )	30
(4)	COD	250
(5)	Total Suspended solids	100
(6)	Total Dissolved solids	2100

- C] The Industry shall ensure connectivity online monitoring system to the MPCB server including separate energy meter for pollution control system.  
D] The treated effluent shall be recycled for secondary purposes to the maximum extent and remaining shall be discharged on land for gardening within premise after confirming above standards. In no case, effluent shall find its way to outside factory premises.
2. A] As per your application, you have provided Sewage Treatment Plant of designed capacity 44 CMD for the treatment of 44 CMD of sewage.  
B] The Applicant shall operate the sewage treatment system to treat the sewage so as to achieve the following standards.

Sr.No	Parameters	Standards (mg/l)	
1	BOD (3 days 27°C )	Not to exceed	30
2	COD	Not to exceed	100
3	SS	Not to exceed	50

C] The treated sewage shall be recycled for secondary purposes to the maximum extent and remaining shall be discharged on land for gardening within premise after confirming above standards. In no case, sewage shall find its way for gardening / outside factory premises.

3. The Board reserves its rights to review plans, specifications or other data relating to plant setup for the treatment of waterworks for the purification there of & the system for the disposal of sewage or trade effluent or in connection with the grant of any consent conditions. The Applicant shall obtain prior consent of the Board to take steps to establish the unit or establish any treatment and disposal system or an extension or addition thereto.
4. The industry shall ensure replacement of pollution control system or its parts after expiry of its expected life as defined by manufacturer so as to ensure the compliance of standards and safety of the operation thereof.
5. The Applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974 and as amended, by installing water meters and other provisions as contained in the said act:

Sr. No.	Purpose for water consumed	Water consumption quantity (CMD)
1.	Industrial Cooling, spraying in mine pits or boiler feed	860.00
2.	Domestic purpose	94.00
3.	Processing whereby water gets polluted & pollutants are easily biodegradable	1580.00
4.	Processing whereby water gets polluted & pollutants are not easily biodegradable and are toxic	0.00
5.	Gardening	50

6. The Applicant shall provide Specific Water Pollution control system as per the conditions of EP Act, 1986 and rule made there under from time to time/ Environmental Clearance/ CREP guidelines.

#### **SCHEDULE-II**

##### **Terms & conditions for compliance of Air Pollution Control:**

1. As per your application, you have proposed to provide the Air pollution control (APC) system and also to erect following stack (s) to observe the following fuel pattern:

Stack No.	Source	APC System provided/proposed	Stack Height(in mtr)	Type of Fuel	Sulphur Content(in %)	Pollutant	Standard
NA	NA		0.00	-	-	NA	-

2. The Applicant shall provide Specific Air Pollution control equipments as per the conditions of EP Act, 1986 and rule made there under from time to time/ Environmental Clearance / CREP guidelines.
3. The Applicant shall obtain necessary prior permission for providing additional control equipment with necessary specifications and operation thereof or alteration or replacement/alteration well before its life come to an end or erection of new pollution control equipment.
4. The Board reserves its rights to vary all or any of the condition in the consent, if due to any technological improvement or otherwise such variation (including the change of any control equipment, other in whole or in part is necessary).

5. Control Equipments

- a. Coal handling plant provided with dust collector & automatic water sprinkler shall be operated
- b. Scientific spraying of water on all working area, dump area, stock piles with the help of appropriate dust suppression system.
- c. Minerals shall be properly covered during transportation.
- d. The applicant shall carry out tree plantation along road side, around dumps or compulsory afforestation as per proposal approved by Forest Department. The tree plantation programme shall be taken up well in advance of the actual mining activity, so that green belt of sufficient width & height is developed between mining area/road and surrounding environment.
- e. Black topped metal roads provided shall be well maintained to prevent dust formation.
- f. Overloading of dumpers shall be avoided to prevent spillages.
- g. Correct type & quantity of explosive shall be used to avoid excess dust formation & vibration in the surrounding area.
- h. The slope of the over burden shall have slope not more than 28° to the horizontal. The overburden shall be properly covered by vegetation for stabilization.
- i. Minerals transportation shall be done by installing conveyors wherever possible & mechanically covered closed trucks shall be used for transportation.

6. Standards for Ambient Air Pollutants:

The Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM), Sulphur dioxide (SO<sub>2</sub>) and Oxides of Nitrogen (NO<sub>x</sub>) concentration in downwind direction considering predominant wind direction, at a distance of 500 metres from the following dust generating sources shall not exceed the standards specified in the table given below:

Dust Generating Sources:

Loading or unloading, Haul Road, coal transportation road, Coal handling plant (CHP), Railway Sliding, Blasting, Drilling, Overburden dumps, or any other dust generating external sources like coke ovens (hard as well as soft), briquette industry, nearby road etc.

<b>Pollutant</b>	<b>Time weighted average</b>	<b>Concentration in Ambient Air</b>
Suspended Particulates Matter (SPM)	Annual Average	360 µg/m <sup>3</sup>
	24 hours	500 µg/m <sup>3</sup>
Respirable Particulate Matter (size less than 10 µm) (RPM)	Annual Average	180 µg/m <sup>3</sup>
	24 hours	250 µg/m <sup>3</sup>
Sulphur Dioxide (SO <sub>2</sub> )	Annual Average	80 µg/m <sup>3</sup>
	24 hours	120 µg/m <sup>3</sup>
Oxides of Nitrogen as NO <sub>x</sub>	Annual Average	80 µg/m <sup>3</sup>
	24 hours	120 µg/m <sup>3</sup>

- i. In case of any residential or commercial or industrial place falls within 500 metres of any dust generating sources, the National Ambient Air Quality Standards notified vide MOEFCC GOI notification dtd 16.11.2009 as ammended shall be made applicable.
- ii. The applicant shall provide minimum three ambient air quality monitoring stations within mining area which should be monitored for SPM, RSPM, SO<sub>2</sub>, NO<sub>x</sub>, HC, CO etc. The Annual Arithmetic Mean of minimum 104 measurements in a year taken twice a week 24 hourly at uniform interval shall conform to the National Ambient Air Quality Standards prescribed under Air (Prevention and Control of Pollution) Act, 1981 and Environment (Protection) Act, 1986. The records of results of monitoring done shall be made available for inspection to the officers of the Board.

7. The applicant shall take adequate measures for control of noise levels from its own sources as follows:

<b>Sr. No</b>	<b>Location</b>	<b>Permissible Norms [in dB (A)]</b>	<b>Desired minimum thickness of green belt (m)</b>
1.	Along Road side	65 (Commercial Area)	20
2.	In colonies	55 (Residential Area)	20
3.	Near Opencast Mines	75 (Industrial Area)	10
4.	Near CHPs	75	30
5.	Near Shaft	75	20
6.	Near Mine exhaust fan	75	> 50

8. Other conditions:

- i. Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess standards laid down, such information shall be forthwith reported to Board, concerned Police station, office of Directorate of Health services, Dept. of explosives, Inspectorate of Factories & Local Body. In case of failure of pollution control equipments, the production process connected to it shall be stopped.

### SCHEDULE-III

#### Details of Bank Guarantees:

Sr. No	Consent (C2E/C2O/C2R)	Amt of BG Imposed	Submission Period	Purpose of BG	Compliance Period	Validity Date
1	C2E	Rs.25.0 Lakh	15 days	Towards compliance of consent to establish conditions	Regular Activity	31.03.2024

The above Bank Guarantee(s) shall be submitted by the applicant in favour of Regional Officer at the respective Regional Office within 15 days from the date of issue of Consent.

#### BG Forfeiture History

Srno.	Consent (C2E/C2O/C2R)	Amount of BG imposed	Submission Period	Purpose of BG	Amount of BG Forfeiture	Reason of BG Forfeiture
NA						

#### BG Return details

Srno.	Consent (C2E/C2O/C2R)	BG imposed	Purpose of BG	Amount of BG Returned
NA				



## **SCHEDULE-IV**

### **General Conditions:**

1. The applicant shall provide facility for collection of environmental samples and samples of trade and sewage effluents, air emissions and hazardous waste to the Board staff at the terminal or designated points and shall pay to the Board for the services rendered in this behalf.
2. If the MIDC pipeline is broken/ overflowing chamber, in such cases industry shall not discharge their treated effluent into MIDC drain, it shall be sent to CETP by tanker.
3. Industry should monitor effluent quality, stack emissions and ambient air quality monthly/quarterly.
4. The applicant shall provide ports in the chimney/(s) and facilities such as ladder, platform etc. for monitoring the air emissions and the same shall be open for inspection to/and for use of the Board's Staff. The chimney(s) vents attached to various sources of emission shall be designated by numbers such as S-1, S-2, etc. and these shall be painted/ displayed to facilitate identification.
5. Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess of standards laid down, such information shall be forthwith Reported to Board, concerned Police Station, office of Directorate of Health Services, Department of Explosives, Inspectorate of Factories and Local Body. In case of failure of pollution control equipment, the production process connected to it shall be stopped.
6. The applicant shall provide an alternate electric power source sufficient to operate all pollution control facilities installed to maintain compliance with the terms and conditions of the consent. In the absence, the applicant shall stop, reduce or otherwise, control production to abide by terms and conditions of this consent.
7. The firm shall submit to this office, the 30th day of September every year, the Environmental Statement Report for the financial year ending 31st March in the prescribed Form-V as per the provisions of rule 14 of the Environment (Protection) (Second Amendment) Rules, 1992.
8. The industry shall recycle/reprocess/reuse/recover Hazardous Waste as per the provision contain in the H&OW(M&TM) Rules 2016, which can be recycled/processed/ reused/ recovered and only waste which has to be incinerated shall go to incineration and waste which can be used for land filling and cannot be recycled/ reprocessed etc. should go for that purpose, in order to reduce load on incineration and landfill site/environment.
9. The industry should comply with the Hazardous & Other Wastes (M & TM) Rules, 2016 and submit the Annual Returns as per Rule 6(5) & 20(2) of Hazardous & Other Wastes (M & TM) Rules, 2016 for the preceding year April to March in Form-IV by 30th June of every year.
10. An inspection book shall be opened and made available to the Board's officers during their visit to the applicant.
11. The applicant shall make an application for renewal of the consent at least 60 days before the date of the expiry of the consent.
12. Industry shall strictly comply with the Water (P&CP) Act, 1974, Air (P&CP) Act,1981 and Environmental Protection Act,1986 and industry specific standard under EP Rules 1986 which are available on MPCB website([www.mpcb.gov.in](http://www.mpcb.gov.in)).
13. The industry shall constitute an Environmental cell with qualified staff/personnel/agency to see the day to day compliance of consent condition towards Environment Protection.

14. Separate drainage system shall be provided for collection of trade and sewage effluents. Terminal manholes shall be provided at the end of the collection system with arrangement for measuring the flow. No effluent shall be admitted in the pipes/sewers downstream of the terminal manholes. No effluent shall find its way other than in designed and provided collection system.
15. Neither storm water nor discharge from other premises shall be allowed to mix with the effluents from the factory.
16. The applicant shall install a separate meter showing the consumption of energy for operation of domestic and industrial effluent treatment plants and air pollution control system. A register showing consumption of chemicals used for treatment shall be maintained.
17. Conditions for D.G. Set
  - a) Noise from the D.G. Set should be controlled by providing an acoustic enclosure or by treating the room acoustically.
  - b) Industry should provide acoustic enclosure for control of noise. The acoustic enclosure/ acoustic treatment of the room should be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on higher side. A suitable exhaust muffler with insertion loss of 25 dB (A) shall also be provided. The measurement of insertion loss will be done at different points at 0.5 meters from acoustic enclosure/room and then average.
  - c) Industry should make efforts to bring down noise level due to DG set, outside industrial premises, within ambient noise requirements by proper siting and control measures.
  - d) Installation of DG Set must be strictly in compliance with recommendations of DG Set manufacturer.
  - e) A proper routine and preventive maintenance procedure for DG set should be set and followed in consultation with the DG manufacturer which would help to prevent noise levels of DG set from deteriorating with use.
  - f) D.G. Set shall be operated only in case of power failure.
  - g) The applicant should not cause any nuisance in the surrounding area due to operation of D.G. Set.
  - h) The applicant shall comply with the notification of MoEFCC, India on Environment (Protection) second Amendment Rules vide GSR 371(E) dated 17.05.2002 and its amendments regarding noise limit for generator sets run with diesel.
18. The industry should not cause any nuisance in surrounding area.
19. The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standard in respect of noise to less than 75 dB (A) during day time and 70 dB (A) during night time. Day time is reckoned in between 6 a.m. and 10 p.m. and night time is reckoned between 10 p.m. and 6 a.m.
20. The applicant shall maintain good housekeeping.
21. The applicant shall bring minimum 33% of the available open land under green coverage/ plantation. The applicant shall submit a yearly statement by 30th September every year on available open plot area, number of trees surviving as on 31st March of the year and number of trees planted by September end
22. The non-hazardous solid waste arising in the factory premises, sweepings, etc. be disposed of scientifically so as not to cause any nuisance / pollution. The applicant shall take necessary permissions from civic authorities for disposal of solid waste.
23. The applicant shall not change or alter the quantity, quality, the rate of discharge, temperature or the mode of the effluent/emissions or hazardous wastes or control equipment provided for without previous written permission of the Board. The industry will not carry out any activity, for which this consent has not been granted/without prior consent of the Board.

24. The industry shall ensure that fugitive emissions from the activity are controlled so as to maintain clean and safe environment in and around the factory premises
25. The industry shall submit official e-mail address and any change will be duly informed to the MPCB.
26. The industry shall achieve the National Ambient Air Quality standards prescribed vide Government of India, Notification dtd. 16.11.2009 as amended.

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This certificate is digitally & electronically signed.

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# MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010706/24010437  
 Fax: 24023516  
 Website: <http://mpcb.gov.in>  
 Email: [cac-cell@mpcb.gov.in](mailto:cac-cell@mpcb.gov.in)



Kalpataru Point, 2nd and  
 4th floor, Opp. Cine Planet  
 Cinema, Near Sion Circle,  
 Sion (E), Mumbai-400022

RED/L.S.I (R35)

Date: 17/07/2023

No:- Format1.0/CAC/UAN No.MPCB-  
 CONSENT-0000154086/CO/2307000963

To,  
 M/s Aurobindo Reality Infrastructure Pvt. Ltd.,  
 TAKLI JENA (NORTH) & TAKLI JENA (SOUTH) COAL  
 MINE,  
 Village Bellora, Takli, Jena, Asthi,  
 Tal-Bhadravati, Dist-Chandrapur



**Sub: First Consent to operate under RED category.**

- Ref:**
1. Board accorded consent to establish vide No.Format1.0/CAC/ UAN-136886/CE/2207001673 dated 30.07.2022 valid up to COU or 5 years whichever is earlier.
  2. Minutes of Consent Appraisal Committee Meeting held on 07.07.2023.

Your application No.MPCB-CONSENT-0000154086 Dated 24.11.2022

For: grant of Consent to Operate under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 and Rule 18(7) of the Hazardous & Other Wastes (Management & Transboundary Movement) Rules 2016 is considered and the consent is hereby granted subject to the following terms and conditions and as detailed in the schedule I, II, III & IV annexed to this order:

1. **The consent to operate is granted for a period up to 30/06/2024**
2. **The capital investment of the project is Rs.235.00 Crs. (As per C.A Certificate submitted by industry )**
3. **Consent is valid for the manufacture of:**

Sr No	Product	Maximum Quantity	UOM
Products			
1	Coal (open cast cum U/G coal mine)	1.5	MTPA

4. **Conditions under Water (P&CP), 1974 Act for discharge of effluent:**

Sr No	Description	Permitted (in CMD)	Standards to	Disposal Path
1.	Trade effluent	1720	As per Schedule-I	Recycled for firefighting, dust suppression and plantation
2.	Domestic effluent	44	As per Schedule-I	On land for gardening



5. **Conditions under Air (P& CP) Act, 1981 for air emissions:**

Sr No.	Stack No.	Description of stack / source	Number of Stack	Standards to be achieved
NA				

6. **Non-Hazardous Wastes:**

Sr No	Type of Waste	Quantity	UoM	Treatment	Disposal
1	Overburden	16000	m3/day	Landfill	Backfilling & reclamation of land

7. **Conditions under Hazardous & Other Wastes (M & T M) Rules 2016 for Collection, Segregation, Storage, Transportation, Treatment and Disposal of hazardous waste:**

Sr No	Category No./ Type	Quantity	UoM	Treatment	Disposal
1	33.1 Empty barrels /containers /liners contaminated with hazardous chemicals /wastes	60	Nos./Y	Recycle	Sale to authorised party / CHWTSDf
2	5.1 Used or spent oil	12	KL/A	Recycle	Sale to authorised party / CHWTSDf
3	35.3 Chemical sludge from waste water treatment	5	MT/M	Landfill	CHWTSDf
4	33.2 Contaminated cotton rags or other cleaning materials	50	Kg/Annum	Incineration	CHWTSDf
5	35.4 Oil and grease skimming	2	KL/A	Incineration	CHWTSDf

8. **Conditions under Batteries (Management & Handling) Rules, 2001:**

Sr No	Type of Waste	Quantity	UoM	Disposal Path
1	Batteries	150.00	Kg/M	Send to Authorized Recycler

**Specific Conditions for used Batteries:**

- i. The applicant shall ensure that used batteries are not disposed of in any manner other than by depositing with the authorized dealer/ manufacturer/ registered recycler/ importer/ re-conditioner or at the designated collection center.
  - ii. The applicant shall file half-yearly return in Form VIII to the M.P.C. Board.
  - iii. Bulk consumers to their user units may auction used batteries to registered recyclers only.
9. The Board reserves the right to review, amend, suspend, revoke etc. this consent and the same shall be binding on the industry.
10. This consent should not be construed as exemption from obtaining necessary NOC/permission from any other Government authorities

11. The applicant shall comply with the conditions of the Environmental Clearance granted by MoEFCC, Gol vide letter No IA-J-11o15/62/2021-IA-II(M) dated 03.11.2022.
  12. The work of ETP for treatment of workshop effluent, STP and Sedimentation tank for treatment of mine water shall be completed within 3 months and submit the BG of Rs.15.0 Lakh towards compliance of same.
  13. The installation & commissioning of the CAAQMS shall be done within 3 months and submit the BG of Rs.10.0 Lakh towards compliance of same.
  14. Industry shall provide the adequate air pollution control system to the CHP, Conveyor belts, Crusher, mist type water sprinkling system to the coal stock yard, coal transport roads, haul roads within 3 months and submit the BG of Rs.20.0 Lakh towards compliance of same.
  15. Industry shall submit the detailed plan for distribution of water within and outside Mine Lease area for dewatering of Daga Mine Pit in consultation with Gram Panchayat.
  16. A proper garland drain shall be constructed all along the stream to catch the mine water.
  17. PP shall construct a pucca road to maintain the safety of people residing nearby along the transportation route with plantations on either side of the road.
  18. PP shall install fixed fog cannon (mist sprayer) and fixed sprinkler all along the haul road till CHP, Railway siding and OB Dump area and accordingly enough numbers Fog Canons (not less than 10 Nos.) with 40 Mts jet length.
  19. PP shall construct a cemented 4 lane approach road of 1.36 Km for the purpose of transportation of Coal from the mine lease area to nearby National Highway.
  20. PP shall submit the BG of Rs.50.0 Lakh towards O & M of pollution control system and compliance of consent and EC conditions.
  21. PP shall submit the BG as per BG regime of the mine.
  22. Industry shall submit the undertaking on stamp paper regarding the compliances of above points within a month.
  23. The applicant shall make an application for renewal of consent 60 days prior to date of expiry of the consent.
- This consent is issued as per communication letter dated 03/11/2022 which is approved by competent authority of the board.



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**Signed by: Dr J. B. Sangewar**  
 Joint Director(WPC) & InCharge Of CAC-Cell  
 For and on behalf of,  
**Maharashtra Pollution Control Board**  
 cac-cell@mpcb.gov.in  
 2023-07-17 15:10:52 IST

**Received Consent fee of -**

Sr.No	Amount(Rs.)	Transaction/DR.No.	Date	Transaction Type
1	1070000.00	TXN2211003534	28/11/2022	Online Payment

**Copy to:**

1. Regional Officer, MPCB, Chandrapur and Sub-Regional Officer, MPCB, Chandrapur  
 - They are directed to ensure the compliance of the consent conditions.
2. Chief Accounts Officer, MPCB, Sion, Mumbai
3. CAC desk-For record and website updation purpose

## **SCHEDULE-I**

### **Terms & conditions for compliance of Water Pollution Control:**

1. A] As per your application, you have proposed to provide ETP of design capacity 100 CMD for treatment of workshop effluent and propose to provide sedimentation tank of capacity 5000 m<sup>3</sup> for treatment of mine water.
- B] The Applicant shall operate the effluent treatment plant (ETP) to treat the trade effluent so as to achieve the following standards prescribed by the Board or under EP Act, 1986 and Rules made there under from time to time, whichever is stringent:

<b>Sr.No</b>	<b>Parameters</b>	<b>Limiting concentration not to exceed in mg/l, except for pH</b>
(1)	pH	5.5 to 9.0
(2)	Oil & Grease	10
(3)	BOD (3 days 27°C )	30
(4)	COD	250
(5)	Total Suspended solids	100
(6)	Total Dissolved solids	2100

- C] The Industry shall ensure connectivity online monitoring system to the MPCB server including separate energy meter for pollution control system.
  - D] The treated effluent shall be recycled for secondary purposes to the maximum extent and remaining shall be discharged on land for gardening within premise after confirming above standards. In no case, effluent shall find its way to outside factory premises.
2. A] As per your application, you are proposed to provide Sewage Treatment Plant of designed capacity 44 CMD with MBBR technology for the treatment of 44 CMD of sewage.
  - B] The Applicant shall operate the sewage treatment system to treat the sewage so as to achieve the following standards.

<b>Sr.No</b>	<b>Parameters</b>	<b>Standards (mg/l)</b>	
1	BOD (3 days 27°C )	Not to exceed	30
2	COD	Not to exceed	100
3	SS	Not to exceed	50

- C] The treated sewage shall be recycled for secondary purposes to the maximum extent and remaining shall be discharged on land for gardening within premise after confirming above standards. In no case, sewage shall find its way for gardening / outside factory premises.
3. The Board reserves its rights to review plans, specifications or other data relating to plant setup for the treatment of waterworks for the purification there of & the system for the disposal of sewage or trade effluent or in connection with the grant of any consent conditions. The Applicant shall obtain prior consent of the Board to take steps to establish the unit or establish any treatment and disposal system or an extension or addition thereto.

4. The industry shall ensure replacement of pollution control system or its parts after expiry of its expected life as defined by manufacturer so as to ensure the compliance of standards and safety of the operation thereof.
5. The Applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974 and as amended, by installing water meters and other provisions as contained in the said act:

<b>Sr. No.</b>	<b>Purpose for water consumed</b>	<b>Water consumption quantity (CMD)</b>
1.	Industrial Cooling, spraying in mine pits or boiler feed	860.00
2.	Domestic purpose	94.00
3.	Processing whereby water gets polluted & pollutants are easily biodegradable	1580.00
4.	Processing whereby water gets polluted & pollutants are not easily biodegradable and are toxic	0.00
5.	Gardening	50

6. The Applicant shall provide Specific Water Pollution control system as per the conditions of EP Act, 1986 and rule made there under from time to time/ Environmental Clearance/ CREP guidelines.

#### **SCHEDULE-II**

#### **Terms & conditions for compliance of Air Pollution Control:**

1. As per your application, you have provided the Air pollution control (APC) system and erected following stack (s) to observe the following fuel pattern:

<b>Stack No.</b>	<b>Source</b>	<b>APC System provided/proposed</b>	<b>Stack Height(in mtr)</b>	<b>Type of Fuel</b>	<b>Sulphur Content(in %)</b>	<b>Pollutant</b>	<b>Standard</b>
NA	NA		0.00	-	-	NA	-

2. The Applicant shall provide Specific Air Pollution control equipments as per the conditions of EP Act, 1986 and rule made there under from time to time/ Environmental Clearance / CREP guidelines.
3. The Applicant shall obtain necessary prior permission for providing additional control equipment with necessary specifications and operation thereof or alteration or replacement/alteration well before its life come to an end or erection of new pollution control equipment.
4. The Board reserves its rights to vary all or any of the condition in the consent, if due to any technological improvement or otherwise such variation (including the change of any control equipment, other in whole or in part is necessary).
5. Control Equipments
  - a. Coal handling plant provided with dust collector & automatic water sprinkler shall be operated
  - b. Scientific spraying of water on all working area, dump area, stock piles with the help of appropriate dust suppression system.
  - c. Minerals shall be properly covered during transportation.

- d. The applicant shall carry out tree plantation along road side, around dumps or compulsory afforestation as per proposal approved by Forest Department. The tree plantation programme shall be taken up well in advance of the actual mining activity, so that green belt of sufficient width & height is developed between mining area/road and surrounding environment.
- e. Black topped metal roads provided shall be well maintained to prevent dust formation.
- f. Overloading of dumpers shall be avoided to prevent spillages.
- g. Correct type & quantity of explosive shall be used to avoid excess dust formation & vibration in the surrounding area.
- h. The slope of the over burden shall have slope not more than 28° to the horizontal. The overburden shall be properly covered by vegetation for stabilization.
- i. Minerals transportation shall be done by installing conveyors wherever possible & mechanically covered closed trucks shall be used for transportation.

6. Standards for Ambient Air Pollutants:

The Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM), Sulphur dioxide (SO<sub>2</sub>) and Oxides of Nitrogen (NO<sub>x</sub>) concentration in downwind direction considering predominant wind direction, at a distance of 500 metres from the following dust generating sources shall not exceed the standards specified in the table given below:

Dust Generating Sources:

Loading or unloading, Haul Road, coal transportation road, Coal handling plant (CHP), Railway Sliding, Blasting, Drilling, Overburden dumps, or any other dust generating external sources like coke ovens (hard as well as soft), briquette industry, nearby road etc.

<b>Pollutant</b>	<b>Time weighted average</b>	<b>Concentration in Ambient Air</b>
Suspended Particulates Matter (SPM)	Annual Average	360 µg/m <sup>3</sup>
	24 hours	500 µg/m <sup>3</sup>
Respirable Particulate Matter (size less than 10 µm) (RPM)	Annual Average	180 µg/m <sup>3</sup>
	24 hours	250 µg/m <sup>3</sup>
Sulphur Dioxide (SO <sub>2</sub> )	Annual Average	80 µg/m <sup>3</sup>
	24 hours	120 µg/m <sup>3</sup>
Oxides of Nitrogen as NO <sub>x</sub>	Annual Average	80 µg/m <sup>3</sup>
	24 hours	120 µg/m <sup>3</sup>

- i. In case of any residential or commercial or industrial place falls within 500 metres of any dust generating sources, the National Ambient Air Quality Standards notified vide MOEFCC GOI notification dtd 16.11.2009 as ammended shall be made applicable.
- ii. The applicant shall provide minimum three ambient air quality monitoring stations within mining area which should be monitored for SPM, RSPM, SO<sub>2</sub>, NO<sub>x</sub>, HC, CO etc. The Annual Arithmetic Mean of minimum 104 measurements in a year taken twice a week 24 hourly at uniform interval shall conform to the National Ambient Air Quality Standards prescribed under Air (Prevention and Control of Pollution) Act, 1981 and Environment (Protection) Act, 1986. The records of results of monitoring done shall be made available for inspection to the officers of the Board.

7. The applicant shall take adequate measures for control of noise levels from its own sources as follows:

<b>Sr. No</b>	<b>Location</b>	<b>Permissible Norms [in dB (A)]</b>	<b>Desired minimum thickness of green belt (m)</b>
1.	Along Road side	65 (Commercial Area)	20
2.	In colonies	55 (Residential Area)	20
3.	Near Opencast Mines	75 (Industrial Area)	10
4.	Near CHPs	75	30
5.	Near Shaft	75	20
6.	Near Mine exhaust fan	75	> 50

8. Other conditions:

- i Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess standards laid down, such information shall be forthwith reported to Board, concerned Police station, office of Directorate of Health services, Dept. of explosives, Inspectorate of Factories & Local Body. In case of failure of pollution control equipments, the production process connected to it shall be stopped.

### **SCHEDULE-III**

#### **Details of Bank Guarantees:**

<b>Sr. No.</b>	<b>Consent (C2E/ C2O /C2R)</b>	<b>Amt of BG Imposed</b>	<b>Submission Period</b>	<b>Purpose of BG</b>	<b>Compliance Period</b>	<b>Validity Date</b>
1	C2O	Rs.2.0 Lakh	15 days	Regular monitoring of ground water level and quality should be carried out by establishing the network of existing wells and constructing new piezometers during mining operation	6 monthly	31.03.2025
2	C2O	Rs.5.0 Lakh	15 days	Catch drain and situation ponds of appropriate size should be constructed to arrest silt and sediment flow from soil, OB and mineral dumps. Water so collected should be utilized for watering of the mining area, roads green belt developers etc.	Regular Activity	31.03.2025
3	C2O	Rs.5.0 Lakh	15 days	Coal transportation shall be done by covered/closed trucks. Overloading of shall be avoided to prevent spillages.	Regular Activity	31.03.2025
4	C2O	Rs.20.0 Lakh	15 days	Industry shall provide the adequate air pollution control system to the CHP, Conveyor belts, Crusher, mist type water sprinkling system to the coal stock yard, coal transport roads, haul roads within 3 months	3 months	31.03.2025
5	C2O	Rs.5.0 Lakh	15 days	Convert existing water sprinkling arrangement into chemical fogging arrangement (MgCl2)	3 months	31.03.2025

Sr. No	Consent (C2E/C2O/C2R)	Amt of BG Imposed	Submission Period	Purpose of BG	Compliance Period	Validity Date
6	C2O	Rs.5.0 Lakh	15 days	Deploying mechanized sweepers which are automated suction sweeper for cleaning the coal dust from road.	3 months	31.03.2025
7	C2O	Rs.5.0 Lakh	15 days	Adoption and installation of tyre wash system to mining transportation at entry and exit point of mining area.	3 months	31.03.2025
8	C2O	Rs.5.0 Lakh	15 days	Adoption of Bioswales technology on the road sides. Bioswales is a landscape element of construction design, primarily a run off conveyance system by the sides of road, to remove dust, silt and debris	3 months	31.03.2025
9	C2O	Rs.10.0 Lakh	15 days	The installation & commissioning of the CAAQMS shall be done within 3 months	3 months	31.03.2025
10	C2O	Rs.5.0 Lakh	15 days	Over burden (OB) should be stacked at earmarked dumpsites only and should not be kept active for long period. Proper terracing of OB should be carried out so that the overall slope will come down to 28°. Over Burden shall be disposed by way of backfilling.	Regular Activity	31.03.2025
11	C2O	Rs.50.0 Lakh	15 days	Operation and Maintenance of pollution control system so as to maintain consented standards prescribed in consent and towards compliance of consent conditions and Environment Clearance conditions.	Regular Activity	31.03.2025
12	C2O	Rs.15.0 Lakh	15 days	The work of ETP for treatment of workshop effluent, STP and Sedimentation tank for treatment of mine water shall be completed within 3 months	3 months	31.03.2025



Sr. No	Consent (C2E/C2O/C2R)	Amt of BG Imposed	Submission Period	Purpose of BG	Compliance Period	Validity Date
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The above Bank Guarantee(s) shall be submitted by the applicant in favour of Regional Officer at the respective Regional Office within 15 days from the date of issue of Consent.

#### BG Forfeiture History

Srno.	Consent (C2E/C2O/C2R)	Amount of BG imposed	Submission Period	Purpose of BG	Amount of BG Forfeiture	Reason of BG Forfeiture
NA						

#### BG Return details

Srno.	Consent (C2E/C2O/C2R)	BG imposed	Purpose of BG	Amount of BG Returned
NA				

### SCHEDULE-IV

#### General Conditions:

1. The applicant shall provide facility for collection of environmental samples and samples of trade and sewage effluents, air emissions and hazardous waste to the Board staff at the terminal or designated points and shall pay to the Board for the services rendered in this behalf.
2. If the MIDC pipeline is broken/ overflowing chamber, in such cases industry shall not discharge their treated effluent into MIDC drain, it shall be sent to CETP by tanker.
3. Industry should monitor effluent quality, stack emissions and ambient air quality monthly/quarterly.
4. The applicant shall provide ports in the chimney/(s) and facilities such as ladder, platform etc. for monitoring the air emissions and the same shall be open for inspection to/and for use of the Board's Staff. The chimney(s) vents attached to various sources of emission shall be designated by numbers such as S-1, S-2, etc. and these shall be painted/ displayed to facilitate identification.
5. Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess of standards laid down, such information shall be forthwith Reported to Board, concerned Police Station, office of Directorate of Health Services, Department of Explosives, Inspectorate of Factories and Local Body. In case of failure of pollution control equipment, the production process connected to it shall be stopped.
6. The applicant shall provide an alternate electric power source sufficient to operate all pollution control facilities installed to maintain compliance with the terms and conditions of the consent. In the absence, the applicant shall stop, reduce or otherwise, control production to abide by terms and conditions of this consent.
7. The firm shall submit to this office, the 30th day of September every year, the Environmental Statement Report for the financial year ending 31st March in the prescribed Form-V as per the provisions of rule 14 of the Environment (Protection) (Second Amendment) Rules, 1992.
8. The industry shall recycle/reprocess/reuse/recover Hazardous Waste as per the provision contain in the H&OW(M&TM) Rules 2016, which can be recycled/processed/ reused/ recovered and only waste which has to be incinerated shall go to incineration and waste which can be used for land filling and cannot be recycled/ reprocessed etc. should go for that purpose, in order to reduce load on incineration and landfill site/environment.

9. The industry should comply with the Hazardous & Other Wastes (M & TM) Rules, 2016 and submit the Annual Returns as per Rule 6(5) & 20(2) of Hazardous & Other Wastes (M & TM) Rules, 2016 for the preceding year April to March in Form-IV by 30th June of every year.
10. An inspection book shall be opened and made available to the Board's officers during their visit to the applicant.
11. The applicant shall make an application for renewal of the consent at least 60 days before the date of the expiry of the consent.
12. Industry shall strictly comply with the Water (P&CP) Act, 1974, Air (P&CP) Act, 1981 and Environmental Protection Act, 1986 and industry specific standard under EP Rules 1986 which are available on MPCB website(www.mpcb.gov.in).
13. The industry shall constitute an Environmental cell with qualified staff/personnel/agency to see the day to day compliance of consent condition towards Environment Protection.
14. Separate drainage system shall be provided for collection of trade and sewage effluents. Terminal manholes shall be provided at the end of the collection system with arrangement for measuring the flow. No effluent shall be admitted in the pipes/sewers downstream of the terminal manholes. No effluent shall find its way other than in designed and provided collection system.
15. Neither storm water nor discharge from other premises shall be allowed to mix with the effluents from the factory.
16. The applicant shall install a separate meter showing the consumption of energy for operation of domestic and industrial effluent treatment plants and air pollution control system. A register showing consumption of chemicals used for treatment shall be maintained.
17. Conditions for D.G. Set
  - a) Noise from the D.G. Set should be controlled by providing an acoustic enclosure or by treating the room acoustically.
  - b) Industry should provide acoustic enclosure for control of noise. The acoustic enclosure/ acoustic treatment of the room should be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on higher side. A suitable exhaust muffler with insertion loss of 25 dB (A) shall also be provided. The measurement of insertion loss will be done at different points at 0.5 meters from acoustic enclosure/room and then average.
  - c) Industry should make efforts to bring down noise level due to DG set, outside industrial premises, within ambient noise requirements by proper siting and control measures.
  - d) Installation of DG Set must be strictly in compliance with recommendations of DG Set manufacturer.
  - e) A proper routine and preventive maintenance procedure for DG set should be set and followed in consultation with the DG manufacturer which would help to prevent noise levels of DG set from deteriorating with use.
  - f) D.G. Set shall be operated only in case of power failure.
  - g) The applicant should not cause any nuisance in the surrounding area due to operation of D.G. Set.
  - h) The applicant shall comply with the notification of MoEFCC, India on Environment (Protection) second Amendment Rules vide GSR 371(E) dated 17.05.2002 and its amendments regarding noise limit for generator sets run with diesel.
18. The industry should not cause any nuisance in surrounding area.
19. The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standard in respect of noise to less than 75 dB (A) during day time and 70 dB (A) during night time. Day time is reckoned in between 6 a.m. and 10 p.m. and night time is reckoned between 10 p.m. and 6 a.m.

20. The applicant shall maintain good housekeeping.
21. The applicant shall bring minimum 33% of the available open land under green coverage/ plantation. The applicant shall submit a yearly statement by 30th September every year on available open plot area, number of trees surviving as on 31st March of the year and number of trees planted by September end
22. The non-hazardous solid waste arising in the factory premises, sweepings, etc. be disposed of scientifically so as not to cause any nuisance / pollution. The applicant shall take necessary permissions from civic authorities for disposal of solid waste.
23. The applicant shall not change or alter the quantity, quality, the rate of discharge, temperature or the mode of the effluent/emissions or hazardous wastes or control equipment provided for without previous written permission of the Board. The industry will not carry out any activity, for which this consent has not been granted/without prior consent of the Board.
24. The industry shall ensure that fugitive emissions from the activity are controlled so as to maintain clean and safe environment in and around the factory premises
25. The industry shall submit official e-mail address and any change will be duly informed to the MPCB.
26. The industry shall achieve the National Ambient Air Quality standards prescribed vide Government of India, Notification dtd. 18.11.2009 as amended.

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This certificate is digitally & electronically signed.

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Ref No. :

ARIPL/HO/REPLY/CTO/2022-23/1100

Dated: 20/02/2023

**REVISED EMP BUDGET**

S. No.	A. AIR ENVIRONMENT	Capital Cost	Recurring Cost/Annum
1	APCE at crusher & conveying system	1.03	0.1545
2	Dust extraction system at CHP	1.2	0.18
3	Water sprinklers (Mobile-28KL capacity - 2 Qty) (Static watersprinklers - 10 Qty)	1.5	0.225
4	Environmental Laboratory	2.5	0.75
5	Continuous Ambient Air Quality Monitoring Systems(CAAQMS, AAQMS & Weather Monitoring System)	1.6	0.24
	<b>TOTAL OF AIR ENVIRONMENT</b>	<b>7.83</b>	<b>1.5495</b>
	B. WATER ENVIRONMENT	Capital Cost	Recurring Cost/Annum
1	Garland drains along mine pit, Toe wall arrest & Check dams	1.4	0.21
2	Settling ponds	0.3	0.045
3	Embankment design & construction	2.8	0.42
4	ETP (Oil and grease trap for workshop wastewater)	0.8	0.12
5	STP (Sewage treatment for domestic wastewater)	0.6	0.09
6	Installation of water meter and piezometer	0.1	0.005
7	Periodic monitoring of water quality	0.5	0.075
	<b>TOTAL OF WATER ENVIRONMENT</b>	<b>6.5</b>	<b>0.965</b>
	C. NOISE & GROUND VIBRATION ENVIRONMENT	Capital Cost	Recurring Cost/Annum
1	Periodic noise monitoring and management	0.15	0.0225
2	Controlled blasting monitoring for vibration	-	0.4
	<b>TOTAL OF NOISE &amp; GROUND VIBRATION ENVIRONMENT</b>	<b>0.15</b>	<b>0.4225</b>
	D. SOIL & WASTE DUMP ENVIRONMENT	Capital Cost	Recurring Cost/Annum
1	Stabilisation	3	0.45
	<b>TOTAL COST OF SOIL ENVIRONMENT</b>	<b>3</b>	<b>0.45</b>
	E. PLANTATION & GREEN BELT DEVELOPMENT	Capital Cost	Recurring Cost/Annum
1	Green belt along safety barrier	3.06	0.459
2	Plantation in back filled area	2.25	0.3375
	<b>TOTAL COST OF PLANTATION</b>	<b>5.31</b>	<b>0.7965</b>
	<b>GRAND TOTAL EMP BUDGET</b>	<b>22.79</b>	<b>4.1835</b>

**Aurobindo Realty & Infrastructure Private Limited**

Site Office: Anand Villa, Ganesh Nagar, Tukum, Chandrapur, Maharashtra – 442401, INDIA,  
 Regd Office Address: 1-121/1, Survey Nos. 66, (Part), Miyapur, Hyderabad, Telangana-500049, INDIA

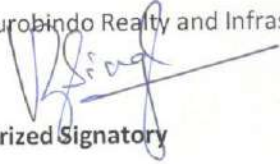
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Dated: .....

Hope you will satisfy and understand our situation.

Thanking You,

For, Aurobindo Realty and Infrastructure Private Limited



Authorized Signatory

Encl: as above

C.C.: The Sub Regional Officer, Maharashtra Pollution Control Board, Udyog Bhawan, 1<sup>st</sup> Floor, Railway Station Road, Chandrapur, Maharashtra.



महाराष्ट्र शासन  
जलसंपदा विभाग

कार्यकारी अभियंता, चंद्रपूर पाटबंधारे विभाग, चंद्रपूर  
सिव्हील लाईन, नागपूर रोड, चंद्रपूर- ४४२ ४०१  
दुरध्वनी क्र. ०७१७२-२५५८९८

Email ID- eecidc@yahoo.in, eecidc@rediffmail.com



स्वातंत्र्याचा अमृत महोत्सव

जा.क्र. २४२१ / प्रशा-३/ टाकळी-जेना-बेलोरा ना-हरकत/२०२२

दिनांक :- २१/१२/२०२२

प्रति,

दी असीस्टंट व्हाईस प्रेसिडेंट,  
टाकळी-जेना-बेलोरा (अंशिकी शिथळी इन्फ्रा. प्र. जी)  
नॉर्थ अँड साऊथ कोल ब्लॉक  
चंद्रपूर.

विषय :- ना-हरकत प्रमाणपत्र मिळण्याबाबत.

संदर्भ :- आपले कार्याचे पत्र क्र. ARIPL/ WRD/ ID/१०८५, दिनांक ०१.१२.२०२२.

आपले उपरोक्त संदर्भिय पत्रान्वये आपले अधिनिस्त टाकळी-जेना-बेलोरा (North) आणि टाकळी-जेना- बेलोरा (South) कोल ब्लॉकचे जुन्या खदानीमध्ये साचलेले पाणी ०.३३४ दलघमी लगतच्या नाल्यामध्ये (कोंढा नाला) सोडण्यासाठी या विभागाचे ना-हरकत प्रमाणपत्राची मागणी केलेली आहे. सदर प्रस्तावाचा विचार करुन तसेच प्रत्यक्ष क्षेत्रीय तपासणी करुन आपणांस खालील नमुद अटी व शर्तीसह जुन्या खदानीतील साठलेले पाणी ०.३३४ दलघमी लगतच्या कोंढा नाल्यामध्ये विसर्जन (सोडण्यास) करण्यांस या पत्राद्वारे ना-हरकत देण्यांत येत आहे.

### अटी व शर्ती

१. नाल्यामध्ये सोडण्यांत येणारा विसर्ग (Discharge) हा कमाल १५०० घमी/ तास असावा. तसेच प्रत्यक्ष विसर्ग सोडण्यांत येण्यासाठी वापरावयाचे पंप, त्यांची क्षमता, तसेच पंप चालल्याची वेळ इ. दररोजचा तपशिल ठेवण्यांत यावा. कोणत्याही परिस्थितीत यापेक्षा जास्त विसर्ग नाल्यामध्ये जाणार नाही याची जबाबदारी कंपनीची राहिल.
२. विसर्जित करण्यांत येणारे पाणी हे दुषीत नसावे. तसेच हे पाणी पिल्यामुळे कोणतीही जीवित हानी होऊ नये तसेच पाण्याचा वापर नाल्याशेजारील शेतकऱ्यांना सिंचनासाठी केल्यास पिकांस नुकसान होऊ नये. पाण्याच्या शुध्दतेबाबतची जबाबदारी ही पुर्णतः कंपनीची राहिल तसेच नाला/ नदीमधील जलचरास नुकसान होऊ नये.
३. खदानीतुन उपसलेले पाणी नाल्यात सोडण्यांत येत असल्यातुळे, नाला प्रवाहीत होणार आहे तसेच नाल्यामध्ये काही ठिकाणी खोलगट भागात (डोह) पाणी साठणार आहे. करिता कंपनीकडुन नाल्याकाठावरील गावात पाणी सोडण्यासंबंधी आगाऊ सुचना देण्यांत याव्या तसेच काही विशिष्ट ठिकाणी (धोकादायक ठिकाणी) सुरक्षा रक्षक



नेमण्यांत यावे. (कोणतीही अनुचित घटना टाळण्याकरिता) आवश्यक असल्यास तसे दर्शविणारे फलक लावण्यांत यावे.

४. कंपनीने सादर केलेल्या प्रस्तावातील परिच्छेद ७ मधील उपाययोजना संपुर्णपणे पाळण्यांत याव्यात.

उपरोक्त ना- हरकत हे केवळ जुन्या खदानीतील साठविलेले पाणी उपसासाठी असुन भविष्यात इतर खदान व खडे तयार होतील त्यासाठी कंपनीने स्वतंत्र पाणी व्यवस्थापन यंत्रणा तयार करावी.

करिता माहिती व पुढील कार्यवाहीस सादर.

सहपत्र:- निरंक

  
(शा.बा.काळे)  
कार्यकारी अभियंता  
चंद्रपूर पाटबंधारे विभाग  
चंद्रपूर

प्रतिलिपी — मा. अधीक्षक अभियंता, चंद्रपूर पाटबंधारे प्रकल्प मंडळ, चंद्रपूर यांना माहितीसव सविनय सादर.



## WILD LIFE CONSERVATION PLAN

For Takli Jena Bellora Coal Mining Project (1.5 MTPA),  
Tehsil Bhadravati, District Chandrapur, Maharashtra

**AUROBINDO REALTY AND INFRASTRUCTURE PRIVATE  
LIMITED**

Prepared by  
**VIMTA LABS LIMITED, 142, IDA, PHASE-II,  
Cherlapally, Hyderabad-51**





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## **1.0 INTRODUCTION**

Takli Jena Bellora (North) and Takli Jena Bellora (South) coal mine located in Wardha coal field in Chandrapur District of Maharashtra State which has been allocated to M/s. Aurobindo Realty and Infrastructure Private Limited (ARIPL). The Mine was allotted to M/s Aurobindo Realty and Infrastructure Private Limited (ARIPL) in 2020-21 auction process initiated by Govt of India. After fulfilling all vesting conditions as mentioned in the Coal Mine Development and Production Agreement, the office of the nominated authority, MoC, GoI has issued the vesting order to M/S Aurobindo Realty and Infrastructure Private Limited with effect from 03<sup>rd</sup> March 2021 vide vesting order No. 104/19/2020-NA dated 03<sup>rd</sup> March 2021 for a total area of 936.00 Ha.

Takli Jena Bellora coal mine block having an area of 936.00 Ha is located in villages Pandwadala, Takli, Bellora, Jena Niwali, Asthi Rith, Gotala Rith, Govardip Rith, Khandala Rith, Kiloni, Dongargaon Khardi and Somnala in Bhadravati tehsil, Chandrapur District in Maharashtra State.

## **2.0 PURPOSE OF REPORT**

As per Environmental Impact Assessment (EIA) Notification dated 14<sup>th</sup> September 2006, proposed project falls under Schedule Mining of Minerals-'1(a)' of Category-'A' and requires prior Environmental Clearance (EC) to be obtained from Ministry of Environment, Forest & Climate Change (MoEF&CC).

MOEF&CC has accorded Terms of Reference (TOR) for EIA Study vide its letter No. IA-J-11015/62/2021-IA-II(M) dated 04<sup>th</sup> October 2021.

As per the Terms of Reference (TOR) owing to the presence of Schedule-I species of flora & fauna in the 10 km radius of the buffer zone and considering the possibility of schedule -I species movement in buffer zone from TATR (Tadoba Andhari Tiger Reserve) located at 19.7 Km towards North-East direction, the Wildlife Conservation Plan needs to be prepared. The requirement is mentioned in MOEF&CC ToR No. IA-J-11015/13/2020/IA-II(M) issued dated 02.10.2020, considering point VII of Point A, Generic TOR, which necessitates that Wild Life Conservation Plan needs to be prepared for the scheduled I fauna species recorded in the study area.

The lease boundary of project does not fall under corridors of any National Park and Wildlife Sanctuary. Further, the scheduled I species are not recorded in core zone but the same are recorded in buffer zone of the study area. Therefore, a Wildlife Conservation Plan has been prepared for submission to Chief Wildlife Warden for approval.

## **3.0 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT**

### **3.1 Identification of Project:**

Takli Jena Bellora (North) and Takli Jena Bellora (South) Coal Mine Block located in Wardha coalfield in Chandrapur district of state of Maharashtra, has been allocated to Aurobindo Realty & Infrastructure Private Limited (ARIPL), a subsidiary of Aurobindo Pharma Limited a leading pharmaceutical manufacturing company. This block is allotted for commercial mining for supply of coal in the region of Maharashtra and Andhra Pradesh and that of the country to the extent

of production planned from the mine. The block is allocated for the purpose of sale of coal, including sale to affiliates and related parties, utilization of coal for any purpose including but not limited to captive consumption, coal gasification, coal liquefaction and export of coal. The entire coal produced from this mine is proposed to be sold in the market.

Coal production is proposed through shovel – dumper combination and drill blast for Overburden. For Underground mining a combination of Continuous miner + LHD/SDL combination is proposed.

Mining Plan for this block was prepared by M/s. DMT consulting Pvt. Ltd, Kolkata based on systematic prospecting of coal by Directorate of Geology and Mining, Maharashtra. The mining plan envisages a production of peak rated capacity of 1.5 MTPA.

### **3.2 Identification of the Project Proponent:**

Aurobindo Realty and Infrastructure Private Limited ("ARIPL") is a private limited company incorporated on August 11, 2016 in India under the Companies Act, 2013 with corporate identity number U45500TG2016PTC111433, having registered office at 1-121/1, Survey. No.66 (Part) & 67 (Part), Miyapur Hyderabad, Telangana 500049, India and corporate address at TITANIUM, Plot No. 1-98/8/75-A & 75-B, Jubilee Enclave, Madhapur, Hyderabad, Telangana 500081, India. ARIPL was formed keeping in view the potential growth of infrastructure segment to handle rapidly growing construction business.

ARIPL has presence across commercial, retail and residential property development and has an impressive portfolio of EPC contracts for several upcoming projects. Working with a pool of talented professionals, the company has developed strong technical expertise by integrating state-of-art technology to specifically address the end users' needs with the timely execution of quality work as its core competence. The strict quality control measures, innovative concepts and adhering to strict delivery schedules will form ARIPL one of the most trusted name in the industry.

ARIPL has been allocated 2 coal mines through auction by Govt of India i.e., Urma Paharitola Coal Mine and Takli Jena Bellora (North & South) Coal Mine in 2020-21 auction process.

The Coal produced from Takli Jena Bellora (North & South) Coal Mine is proposed to be sold to nearby consumers.

### **4.0 ENVIRONMENT SETTINGS**

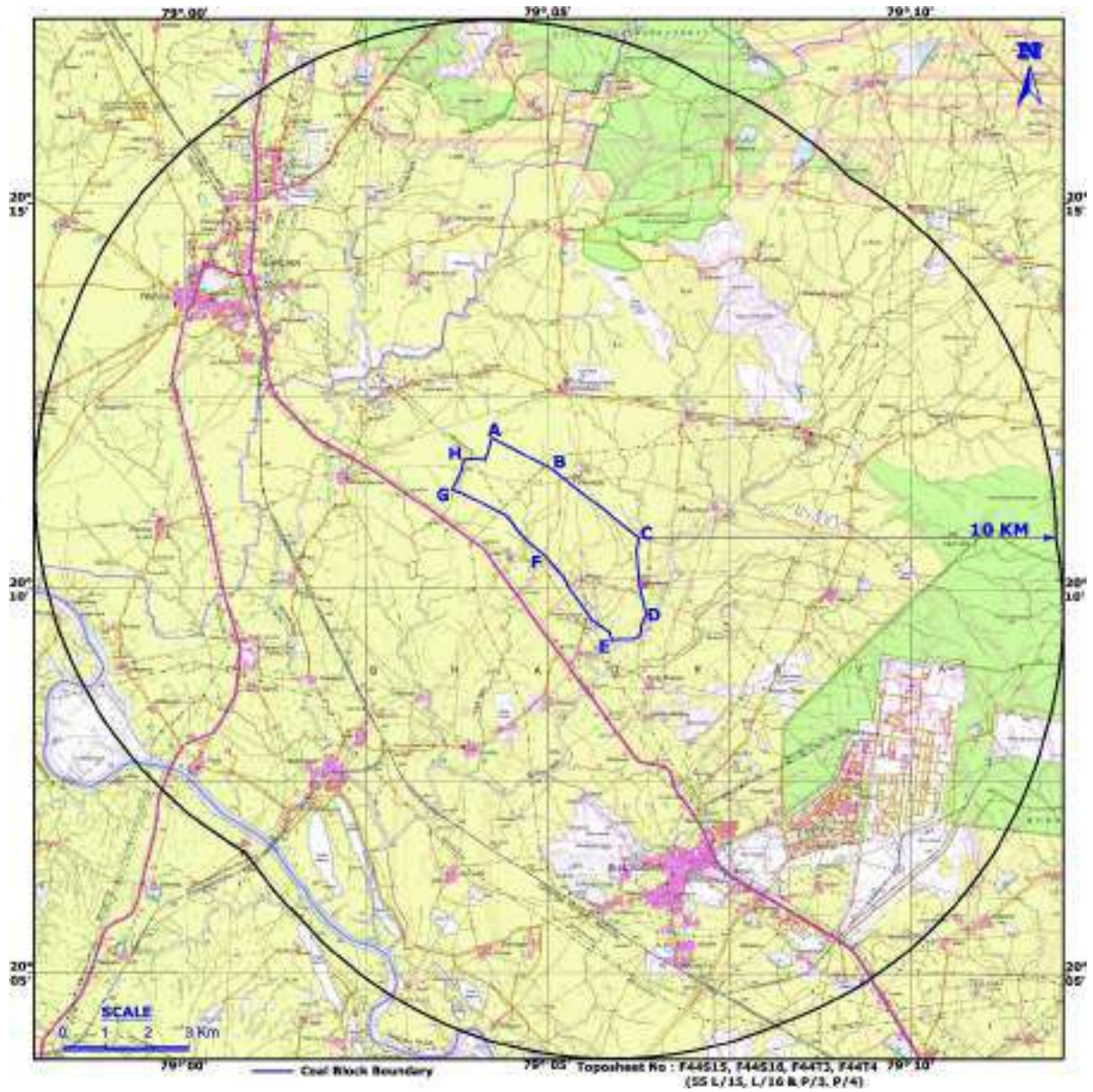
The environmental setting of the proposed coal-mining project is given in the following **Table-1**.

**TABLE-1**  
**ENVIRONMENTAL SETTING OF THE MINE LEASE AREA**

Sr. No.	Particulars	Details		
		Points	Latitude	Longitude
1	Coordinates	A	20°11'46.760" N	79°04'14.806" E
		B	20°11'18.884" N	79°04'20.024" E
		C	20°11'20.185" N	79°04'42.759" E
		D	20°11'18.143" N	79°05'16.302" E
		E	20°10'57.77" N	79°04'59.571" E
		F	20°10'34.306" N	79°04'59.095" E
		G	20°10'26.461" N	79°05'38.260" E
		H	20°10'3.235" N	79°05'43.363" E
		I	20°09'33.483" N	79°06'2.914" E
2	Toposheets	55 P/4 (1:50,000)		
3	Elevation above MSL	190- 215 m above Mean Sea Level		
4	Present land use	Opencast and Underground coal mine(Industrial)		
5	Nearest highway	264 (0.7 Km, SW); SH-233 (5.8 Km, W)		
6	Nearest railway station	ri Railway station (12 Km)		
7	Nearest airport	pur (97Km, N)		
8	Nearest town/city	dravati town (5 km, S)		
9	Nearest villages	Kiloni, Ekarjuna, Dhanoli, Manora Tanda, Baranj Mokasa, Kandoli, Wislon		
10	Villages within M L area	Pandwadala, Takli, Bellora, Jena Niwali, Asthi Rith, Gotala Rith, Govardip Rith, Khandala Rith, Kiloni, Dongargaon Khardi and Somnala		
11	Archaeologically important places	Nil within 10 km radius		
12	National parks/ wildlife sanctuaries	Nil within 10 km radius		
13	Reserved / protected forest	<ul style="list-style-type: none"> <li>• Bhandak R.F (4.0 Km, SE)</li> <li>• Salori R.F (4.9 Km, N)</li> <li>• Shegaon R.F (7.3 Km, N)</li> </ul>		
14	State, national boundaries	Nil within 10 Km radius		
15	Streams/rivers	<ul style="list-style-type: none"> <li>• Khandala Nala (Within ML area)</li> <li>• Tikri Nala (Within ML area)</li> <li>• Bellora Nala (Within ML area)</li> <li>• Kondha Nala (Adjacent)</li> <li>• Shirnai Nadi (2.9 Km, W)</li> <li>• Wagjai Nala (6.6 Km, N)</li> <li>• Wardha River (9.5 Km, SW)</li> </ul>		
16	Defence installations	Ordinance Factory (5.6 Km, SE)		
17	Seismicity	The mine lease area falls under seismic zone-III as per IS: 1893 (Part1): 2002		
18	List of major other industries and mines	<ul style="list-style-type: none"> <li>• Karnataka EMTA coal mine ltd (KEMTA) (0.1Km, SE)</li> <li>• WCL Mine (7.2 Km, SSW)</li> <li>• Navin Kunada Mine (7.6 Km, SSW)</li> <li>• Junad Open Coal Mine (10.0 Km, SSW)</li> </ul>		

*Note: Aerial distances are taken into consideration*

The study area map (10 km radius) of the proposed mining project is shown in **Figure-1**.



**FIGURE-1**  
**STUDY AREA MAP (10KM RADIUS)**

## 5.0 **SCOPE OF THE STUDY**

Field studies were conducted for a period of three months (01.10.2021 to 31.12.2021) representing winter season. The scope of this study broadly includes the following:

- To conduct primary field survey and collect secondary published data and literature review pertaining to 10-km radius study area;
- To Identify Scheduled –I flora & fauna, if any in 10 km radius of the study area from the proposed mine lease boundary; and
- To prepare a Wildlife Conservation Plan.

## 6.0 **FLORA AND FAUNA STUDIES**

### 6.1 **General Description of the Project area**

The project area has a mildly undulating topography with altitudes ranging between 190 m and 205 m above MSL. General slope of the ground is towards south and south west. The project area has a mildly undulating topography with altitudes varying between 192 m and 207 m above MSL. General slope of the ground is towards Konda nallah which is a seasonal tributary of Wardha River and flows in South-Westerly direction at the southern end of the block.

The proposed vested block area is free of any forest land. Most of the land is owned by locals, whose main source of livelihood is agriculture. Land is cultivated for Cotton, Jowar and Soyabean. Vegetation is scanty and scattered. Trees like Mohua, Babul and Tamarind are seen in the area.

There are operating mines/industries like Karnataka EMTA coal mine ltd (KEMTA) (0.1 km, SE), WCL mine (7.2 km, SSW), Navin Kunada mine (7.6 km, SSW), Junad open coal mine (10.0 km, SSW).

The total mine lease area is 936 Ha out of which 893 Ha (95.4% of total mine lease) is Agriculture land or cropland. The rest is under human habitation, old mine pits, old overburden dump etc as shown in Table 1. It is evident from the above that no forestland is involved in the mine lease and hence no forest clearance is required

There are no eco-sensitive areas such as the National Parks. Wildlife Sanctuaries or Biosphere Reserves, tiger or elephant corridors or Ramsar Wetlands or Important bird areas (IBAs) or Nature heritage sites within the mine lease area or within study area of 10 km radius. However, Tadoba Andhari Tiger Reserve (TATR) located at 19.8 km NE from the coal block.

### 6.2 **Vegetation and Flora of the Mine Lease Area (Core Area)**

There are no forests in the mine lease area. Essentially, there are three types of wild vegetation in the core area. The weed flora associated with dry or rainfed crops like Cotton, Red gram, Sunflower, Chillies etc., the weeds associated paddy fields and the wild vegetation in wastelands including residential areas. Besides the above, there are cultivated plants including avenue trees, timber, fruit and pulpwood plants. But there are no plantations or agroforests in the mine lease



area. A list of trees, shrubs and climbers found in the mine lease area during the rainy season in the mine lease area is given in **Table 2**. A list of weeds and herbaceous plants found in the mine lease is given in **Table 3**. However, aquatic and semiaquatic weeds are included in the list of aquatic and semiaquatic macrophytes.



**FIGURE-2**  
**COTTON AND RED GRAM FIELDS IN THE MINE LEASE AREA**



**FIGURE-3**  
**PADDY FIELDS IN THE MINE LEASE AREA**

**TABLE-2**  
**LIST OF TRESS, SHRUBS AND CLIMBERS FOUND IN THE MINE LEASE AREA**

Scientific Name	Common / Local Name	Family
<i>Abrus precatorius</i>	Gunja	Fabaceae
<i>Acacia catechu</i>	Khair	Mimosaceae
<i>Acacia leucophloea</i>	Gohira	Mimosaceae
<i>Acacia nilotica</i>	Babul	Mimosaceae
<i>Aegle marmelos</i>	Bel / Bilva	Rutaceae
<i>Agave americana</i>	Kalabanda	Agavaceae
<i>Ailanthus excelsa</i>	Maha neem	Simaroubaceae
<i>Alangium salvifolium</i>	Akol	Alangiaceae
<i>Alhagi camelorum</i>	Camel thorn	Fabaceae
<i>Annona squamosa</i>	Seethaphal	Annonaceae
<i>Azadirachta indica</i>	Nimboni	Meliaceae
<i>Breynia retusa</i>	Dalfodi	Phyllanthaceae
<i>Breynia vitis-ideae</i>	Indian Snowberry	Phyllanthaceae
<i>Butea monosperma</i>	Palash	Fabaceae
<i>Calotropis gigantea</i>	Safed Aak	Asclepiadaceae
<i>Calotropis procera</i>	Aak	Asclepiadaceae
<i>Canthium parviflorum</i>	Katbor	Rubiaceae
<i>Carissa spinarum</i>	Karvand	Apocynaceae
<i>Cassia fistula</i>	Sunari / Rela	Caesalpiniaceae
<i>Cassia auriculata</i>	Tnner's Cassia	Caesalpiniaceae
<i>Chromolaena odorata</i>	Seam weed	Asteraceae
<i>Dalbergia sissoo</i>	Shisham / Sissoo	Fabaceae

<b>Scientific Name</b>	<b>Common / Local Name</b>	<b>Family</b>
<i>Dolichandrone falcata</i>	Medhsinghi	Bignoniaceae
<i>Erythrina suberosa</i>	Balthia(Paldhua)	Fabaceae
<i>Eucalyptus tereticornis</i>	Eucalyptus	Myrtaceae
<i>Ficus benghalensis</i>	Wad / Banyan	Moraceae
<i>Ficus religiosa</i>	Pipal	Moraceae
<i>Hemidemus indicus</i>	Indian Sarsaparilla	Periplocaceae
<i>Holoptelia integrifolia</i>	Dauranja	Ulmaceae
<i>Ipomoea carnea</i>	Besharam	Convolvulaceae
<i>Ixora pavetta</i>	Maakadi	Rubiaceae
<i>Lantana camara</i>	Ghaneri	Verbanaceae
<i>Limonia acidissima</i>	Kawat	Rutaceae
<i>Mangifera indica</i>	Amba	Anacardiaceae
<i>Morinda tinctoria</i>	Achu	Rubiaceae
<i>Opuntia elatior</i>	Nagphani	Cactaceae
<i>Phoenix Sylvestirs</i>	Khajuri	Arecaceae
<i>Pithecellobium dulce</i>	Chichbilai	Mimosaceae
<i>Syzygium cumunii</i>	Jambhul	Myrtaceae
<i>Tamarindus indica</i>	Chinch / Tentuli	Caesalpiniaceae
<i>Tectona grandis</i>	Teak	Verbenaceae
<i>Terminalia arjuna</i>	Arjun	Combretaceae
<i>Vitex penducularis</i>	Chadaigudi	Verbenaceae
<i>Wrightia tinctoria</i>	Kala kuda	Apocynaceae
<i>Ziziphus nummularia</i>	Ber	Rhamnaceae



**FIGURE-4**  
**PLANTATION AND TREES FOUND IN THE MINE LEASE AREA**

**TABLE-3**  
**LIST OF ALL GRASSES, HERBS AND HERBACEOUS SPECIES LOCATED IN MINE LEASE AREA**

Scientific Name	Family
<i>Abutilon crispum</i>	Malvaceae
<i>Abutilon indicum</i>	Malvaceae
<i>Acalypha indica</i>	Euphorbiaceae
<i>Achyranthes aspera</i>	Amaranthaceae
<i>Adhatoda vasica</i>	Acanthaceae
<i>Aerva lanata</i>	Amaranthaceae
<i>Aerva tomentosa</i>	Amaranthaceae
<i>Ageratum conyzoides</i>	Asteraceae
<i>Alloteropsis cimicina</i>	Poaceae
<i>Amaranthus spinosus</i>	Amaranthaceae
<i>Andropogon jwarancusa</i>	Poaceae
<i>Argemone mexicana</i>	Papaveraceae
<i>Aristida depressa</i>	Poaceae
<i>Aristida hystrix</i>	Poaceae
<i>Aristida setacea</i>	Poaceae
<i>Aristolochia bracteata</i>	Aristolochiaceae
<i>Boerhaavia diffusa</i>	Nyctaginaceae
<i>Bothriochloa pertusa</i>	Poaceae
<i>Brachiaria cruciformis</i>	Poaceae
<i>Brachiaria distachya</i>	Poaceae
<i>Brachiaria mutica</i>	Poaceae
<i>Brachiaria reptens</i>	Poaceae
<i>Bulbostylis barbata</i>	Cyperaceae
<i>Cassytha filiformis</i>	Lauraceae
<i>Cenchrus ciliaris</i>	Poaceae
<i>Chloris barbata</i>	Poaceae
<i>Chrysopogon fulvus</i>	Poaceae
<i>Cissus quadrangularis</i>	Ampelidaceae
<i>Citrullus vulgaris</i>	Cucurbitaceae
<i>Cleome aspera</i>	Capparidaceae
<i>Cleome gynandra</i>	Capparidaceae
<i>Conyza stricta</i>	Asteraceae
<i>Crinum asiaticum</i>	Amaryllidaceae
<i>Crotalaria verrucosa</i>	Fabaceae
<i>Croton bonplandianum</i>	Euphorbiaceae
<i>Cymbopogon coloratus</i>	Poaceae
<i>Cymbopogon caesius</i>	Poaceae
<i>Cynodon dactylon</i>	Poaceae
<i>Cyperus rotundus</i>	Cyperaceae
<i>Datura metel</i>	Solanaceae
<i>Desmodium gangeticum</i>	Fabaceae

Scientific Name	Family
<i>Desmodium triflorum</i>	Fabaceae
<i>Dichanthium annulatum</i>	Poaceae
<i>Dichanthium caricosum</i>	Poaceae
<i>Eremopogon faveolatus</i>	Poaceae
<i>Evolvulus alsinoides</i>	Convolvulaceae
<i>Evolvulus nummularis</i>	Convolvulaceae
<i>Heteropogon contortus</i>	Poaceae
<i>Hibiscus micranthus</i>	Malvaceae
<i>Hyptis suaveolens</i>	Lamiaceae
<i>Indigofera enneaphylla</i>	Fabaceae
<i>Neptunia triquetra</i>	Mimosaceae
<i>Oldenlandia umbellata</i>	Rubiaceae
<i>Parthenium hysterophorus</i>	Asteraceae
<i>Polycarpaea corymbosa</i>	Caryophyllaceae
<i>Ruellia tuberosa</i>	Acanthaceae
<i>Rungia repens</i>	Acanthaceae
<i>Scilla indica</i>	Liliaceae
<i>Senna uniflora</i>	Caesalpiniaceae
<i>Sida acuta</i>	Malvaceae
<i>Sida cordifolia</i>	Malvaceae
<i>Tragia involucrata</i>	Euphorbiaceae
<i>Trainthema portulacastrum</i>	Ficoidaceae
<i>Tridax procumbens</i>	Asteraceae
<i>Urginea congesta</i>	Liliaceae
<i>Urginea coromandeliana</i>	Liliaceae
<i>Waltheria indica</i>	Sterculiaceae
<i>Withania somnifera</i>	Solanaceae

### 6.3 Terrestrial Fauna of the Mine Lease Area or Core Area

From the point of fauna of the mine lease area and its surroundings, there is very little reliable published or documented information. Hence, photos of all the Schedule-I species that are likely to occur in the area were shown to the local teachers and the cattle grazers to know, whether they had seen them at any point of time. According to the information given to the survey team, there were no Elephants or tigers or leopards or wolves or sloth bears or blackbucks lizard or Python in the core area, However Peacock and Bengal Monitor Lizard are found in the core zone. Other than common rodents, reptiles and amphibians, there was nothing special about the fauna of the mine lease. Two Schedule-I species was found in the mine lease area i.e., Bengal monitor lizard (*Varanus bengalensis*) & Peacock (*Pavo cristatus*). A list of mammals, reptiles and amphibians either spotted or reported from the mine lease area is given in **Table-4**.

**TABLE-4**  
**LIST OF MAMMALS, REPTILES, AMPHIBIANS AND BIRDS EITHER SPOTTED OR REPORTED OR RECORDED FROM THE CORE AREA.**

Scientific Name	Common Name	IUCN / WPA
<b>MAMMALS</b>		
<i>Bandicota bengalensis</i>	Indian Mole Rat	LC / V
<i>Bandicota indica</i>	Large Bandicoot Rat	LC / V
<i>Cynopterus sphinx</i>	Short-nosed fruit bat	LC /IV
<i>Funambulus palmarum</i>	3 stripped palm squirrels	LC / IV
<i>Golunda ellioti</i>	Indian Bush Rat	LC / V
<i>Herpestes auropunctatus</i>	Small Indian mongoose	LC / II
<i>Herpestes edwardsi</i>	Common mongoose	LC / II
<i>Hipposideros fulvus</i>	Fulvous Leaf-nosed bat	LC /IV
<i>Macaca mulatta</i>	Rhesus monkey	LC / II
<i>Mus booduga</i>	Little Indian Field Mouse	LC / V
<i>Mus musculus</i>	House Mouse	LC / V
<i>Petaurista philippensis</i>	Common giant flying squirrel	NT / II
<i>Pipistrellus ceylonicus</i>	Pipistrelle bat	LC /IV
<i>Pipistrellus tenuis</i>	Least Pipistrelle	LC /IV
<i>Rattus rattus</i>	Rat	LC/ IV
<i>Rousettus leschenaulti</i>	Fulvous fruit bat	LC /IV
<i>Scotophilus kuhlii</i>	Asiatic Lesser Yellow House bat	LC /IV
<i>Suncus etruscus</i>	Pygmy Shrew	LC /IV
<i>Suncus murinus</i>	House shrew	LC /IV
<i>Sus scrofa</i>	Wild boar	LC / III
<b>REPTILES</b>		
<i>Calotes versicolor</i>	Garden lizard	LC / IV
<i>Hemidactylus flaviviridis</i>	Indian wall lizard	LC / IV
<i>Ptyas mucosa</i>	Rat snake	LC / II
<i>Typhlops diardii</i>	Blind Snake	LC / II
<i>Varanus bengalensis</i>	Bengal Monitor Lizard	VU / I
<b>AMPHIBIANS</b>		
<i>Bufo melonosticatus</i>	Common Indian Toad	LC / IV
<i>Euphlyctis hexadactylus</i>	Green pond frog	LC / IV
<i>Hoplobatrachus tigerinus</i>	Tiger Frog	LC / IV
<i>Polypedates maculatus</i>	Tree frog	LC / IV
<b>BIRDS</b>		
<i>Acridotheres tristis</i>	Common Myna	LC /IV
<i>Alcedo atthis</i>	Small blue kingfisher	LC /IV
<i>Bubulcus ibis</i>	Cattle Egret	LC /IV
<i>Ceryle rudis</i>	Lesser pied Kingfisher	LC /IV
<i>Columba livia</i>	Blue Rock Pigeon	LC /V

Scientific Name	Common Name	IUCN / WPA
<i>Corvus splendens</i>	House crow	LC /IV
<i>Dicrurus macrocercus</i>	Black drongo	LC /IV
<i>Egretta garzetta</i>	Little egret	LC /IV
<i>Lonchura punctulate</i>	Munia spotted	LC /IV
<i>Megalaima haemacephala</i>	Copper smith Barbet	LC /IV
<i>Mesophoyx intermedia</i>	Median egret	LC /IV
<i>Milvus migrans</i>	Black kite	LC /IV
<i>Passer domesticus</i>	House sparrow	LC /IV
<i>Prinia socialis</i>	Ashy prinia	LC /IV
<i>Psittacula kramera</i>	Rose-Ringed Parakeet	LC /IV
<i>Saxicolodites fulicata</i>	Indian robin	LC /IV
<i>Upupa epops</i>	Common hoopoe	LC /IV
<i>Pavo cristatus</i>	Peacock	LC/I

## 7.0 VEGETATION AND FLORA OF THE STUDY AREA

Except for a small area towards the east and north of the mine lease, there are no forests or plantations in the buffer zone of the mine lease. The reserved forests (Bhandak R.F., Salori R.F and Shegaon R.F) present in the buffer zone are mostly open and they belong to the Tropical dry deciduous type. Within the 10 Km buffer zone, there are open degraded scrub jungles and moderately closed teak mixed forests. As can be observed from the map of the study area (**Figure - 1**), most part of the buffer zone is under cultivation of seasonal crops. A list of trees, shrubs and perennial climbers found in the buffer zone is given in **Table-5**.

**TABLE-5**  
**LIST OF TREES, SHRUBS AND PERENNIAL CLIMBERS FOUND IN THE**  
**BUFFER ZONE OF THE MINE LEASE AREA**

Scientific Name	Common / Local Name	Family	Habit
<i>Abelmoschus crinitus</i>	Van Bhindi	Malvaceae	Shrub
<i>Abrus precatorius</i>	Gugchi ratti	Fabaceae	Shrub
<i>Acacia caesia</i>	Gurar	Mimosaceae	Climber
<i>Acacia catechu</i>	Khair	Mimosaceae	Tree
<i>Acacia ferruginea</i>	Safedkhair	Mimosaceae	Tree
<i>Acacia leucophloea</i>	Reunja	Mimosaceae	Tree
<i>Acacia nilotica</i>	Babul	Mimosaceae	Tree
<i>Acacia pennata</i>	Raoni	Mimosaceae	Climber
<i>Adhatoda vasia</i>	Adusa	Acanthaceae	Shrub
<i>Aegle marmelos</i>	Be/ /Bael	Rutaceae	Tree
<i>Ailanthus excelsa</i>	Maharukh	Simaroubaceae	Tree
<i>Alangium salvifolium</i>	Akol	Cornaceae	Tree
<i>Albizia lebeck</i>	Gurar	Mimosaceae	Tree



<b>Scientific Name</b>	<b>Common / Local Name</b>	<b>Family</b>	<b>Habit</b>
<i>Albizia odoratissima</i>	Chichola	Mimosaceae	Tree
<i>Albizia procera</i>	Chichwa / Gurar	Mimosaceae	Tree
<i>Ampelosissus latifolia</i>	Dokarbel	Vitaceae	Climber
<i>Annona squamosa</i>	Sitaphal	Anonaceae	Shrub
<i>Anogeissus latifolia</i>	Dhau / Dhaora	Combretaceae	Tree
<i>Azadirachta indica</i>	Neem	Meliaceae	Tree
<i>Bauhinia acuminata</i>	Dwarf white Orchid Tree	Caesalpiniaceae	Tree
<i>Bauhinia purpurea</i>	Keolar	Caesalpiniaceae	Tree
<i>Bauhinia racemosa</i>	Astura of Asta	Caesalpiniaceae	Tree
<i>Bauhinia vahlii</i>	Mahul	Caesalpiniaceae	Climber
<i>Bauhinia variegata</i>	Kachnar	Caesalpiniaceae	Tree
<i>Bombax ceiba</i>	Semal	Bombacaceae	Tree
<i>Boswellia serrata</i>	Salai	Burseraceae	Tree
<i>Bridelia retusa</i>	Kasai	Euphorbiaceae	Tree
<i>Buchanania lanzan</i>	Char	Anacardiaceae	Tree
<i>Buchanania latifolia</i>	Achar	Anacardiaceae	Tree
<i>Butea monosperma</i>	Palas	Fabaceae	Tree
<i>Calotropis gigantea</i>	Aak	Asclepiadeacea	Shrub
<i>Calycopteris floribunda</i>	Kukranji	Combretaceae	Climber
<i>Careya arborea</i>	Kumbhi	Lecythidaceae	Tree
<i>Casearia graveolens</i>	Tondri	Salicaceae	Tree
<i>Casearia tomentosa</i>	Gilchi	Salicaceae	Tree
<i>Cassia auriculata</i>	Tarwair	Caesalpiniaceae	Shrub
<i>Cassia fistula</i>	Amaltas	Caesalpiniaceae	Tree
<i>Cassia tora</i>	Panwar	Caesalpiniaceae	Shrub
<i>Celastrus paniculata</i>	Malkangni	Celastraceae	Climber
<i>Chloroxylon swietenia</i>	Ghiria or Bhirra	Rutaceae	Tree
<i>Clerodendron infortunatum</i>	Bhant	Verbenaceae	Shrub
<i>Cochlospermum religiosum</i>	Ganiar of Galgal	Bixaceae	Tree
<i>Colebrookia oppositifolia</i>	Kalabansa	Lamiaceae	Shrub
<i>Combretum decandrum</i>	Piwar bel	Combretaceae	Climber
<i>Cordia dichotoma</i>	Seelu /Lasora	Borgianaceae	Tree
<i>Cordia myxa</i>	Daiyar	Boraginaceae	Tree
<i>Crataeva religiosa</i>	Barna	Capparaceae	Tree
<i>Crotolaria albida</i>	Jangli san	Fabaceae	Shrub
<i>Cryptolepis buchanani</i>	Nagbel	Asclepiadaceae	Climber
<i>Cuscuta reflexa</i>	Amarbel	Convolvulaceae	Climber
<i>Dalbergia latifolia</i>	Shisham	Fabaceae	Tree
<i>Dalbergia paniculata</i>	Dhobin / Phansi	Fabaceae	Tree
<i>Dalbergia sissoo</i>	Sissoo	Fabaceae	Tree
<i>Desmodium pulchellum</i>	Chipti	Fabaceae	Shrub
<i>Dillenia pentagyan</i>	Suarukh / Kalla	Dilleniaceae	Tree

Scientific Name	Common / Local Name	Family	Habit
<i>Diospyros melanoxylon</i>	Tendu	Ebenaceae	Tree
<i>Discorea bulbifera</i>	Agitha	Dioscoreaceae	Climber
<i>Discorea daemonia</i>	Baichandi	Dioscoreaceae	Climber
<i>Dodonea visocosa</i>	Kharenta	Sapinfaceae	Shrub
<i>Elephantopus scaber</i>	Van Tambakhu	Asteraceae	Shrub
<i>Emilia sonchifolia</i>	Hirankhuri	Asteraceae	Shrub
<i>Erythrina suberosa</i>	Panger	Fabaceae	Tree
<i>Euphorbia nerifolia</i>	Thuar	Euphorbiaceae	Shrub
<i>Ficus benghalensis</i>	Bad	Moraceae	Tree
<i>Ficus glomerata</i>	Gular	Moraceae	Tree
<i>Ficus infectoria</i>	Pakar	Moraceae	Tree
<i>Ficus religiosa</i>	Pipal	Moraceae	Tree
<i>Flacourtia indica</i>	Kakai	Salicaceae	Tree
<i>Flemingia semialata</i>	Van Rahar	Fabaceae	Shrub
<i>Gardenia latifolia</i>	Papra	Rubiaceae	Tree
<i>Gardenia resenifera</i>	Dikamali	Rubiaceae	Tree
<i>Gardenia turgida</i>	Phetra of Chamarkarar	Rubiaceae	Tree
<i>Garuga pinnata</i>	Kekad	Burseraceae	Tree
<i>Gmelina arborea</i>	Sewan / Gamari	Verbenaceae	Tree
<i>Grewia hirsuta</i>	Gursakri	Tiliaceae	Shrub
<i>Grewia tiliaefolia</i>	Dhaman	Tiliaceae	Tree
<i>Gymenma sylvestris</i>	Gudmar	Asclepiadaceae	Climber
<i>Gymnosporia montans</i>	Baikal	Celastraceae	Shrub
<i>Haldina cordifolia</i>	Haldu	Rubiaceae	Tree
<i>Hardwickia binata</i>	Anjan	Caesalpinaceae	Tree
<i>Helicteres isora</i>	Mororphali	Sterculiaceae	Shrub
<i>Holarrhena antidysenterica</i>	Kurchi	Apocynaceae	Shrub
<i>Holoptelea integrifolia</i>	Chirol	Ulmaceae	Tree
<i>Ichnocarpus frutescens</i>	Dhimarbel	Apocynaceae	Climber
<i>Indigofera pulchella</i>	Neel	Leguminosae	Shrub
<i>Jasminum multiflorum</i>	Jangli Chameli	Oleaceae	Shrub
<i>Kydia calycina</i>	Barange / Pula	Malvaceae	Tree
<i>Lagerstroemia parviflora</i>	Lendia	Lythraceae	Tree
<i>Lannea grandis</i>	Gunja or Moyan	Anacardiaceae	Tree
<i>Lantana camara</i>	Raimunia	Verbinaceae	Shrub
<i>Leea macrophylla</i>	Hathikand	Vitaceae	Shrub
<i>Litsea glutinosa</i>	Maidalakri	Lauraceae	Tree
<i>Madhuca latifolia</i>	Mahua	Sapotaceae	Tree
<i>Mallotus phillippensis</i>	Sindhuri Kunjuna	Euphorbiaceae	Tree
<i>Mangifera indica</i>	Aam	Anacardiaceae	Tree
<i>Manilkara hexandra</i>	Kirni / Milk Tree	Sapotaceae	Tree
<i>Milium tomentosum</i>	Kari	Anonaceae	Tree

<b>Scientific Name</b>	<b>Common / Local Name</b>	<b>Family</b>	<b>Habit</b>
<i>Millettia auriculata</i>	Gauj	Fabaceae	Climber
<i>Millettia extensa</i>	Gulhari	Fabaceae	Shrub
<i>Mimnsops elengii</i>	Khirhi	Sapotaceae	Tree
<i>Mimosa hamata</i>	Chilati	Momosaceae	Climber
<i>Mimosa rubicanus</i>	-	Leguminoseae	Shrub
<i>Mitragyna parvifolia</i>	Kaim / Mundi	Rubiaceae	Tree
<i>Morinda tinctoria</i>	Aal	Rubiaceae	Tree
<i>Mucuna pruriens</i>	Kewanch	Fabaceae	Climber
<i>Murraya exotica</i>	Madhukamini	Rutaceae	Tree
<i>Murraya keonigi</i>	Mithinim	Rutaceae	Tree
<i>Murraya paniculata</i>	Madhukamni	Rutaceae	Shrub
<i>Nyctanthes arbor-tristis</i>	Harsinghar	Oleaceae	Tree
<i>Opuntia dillenii</i>	Nagphani	Cactaceae	Shrub
<i>Ougeinia oojeinensis</i>	Tinsa	Fabaceae	Tree
<i>Phoenix sylvestris</i>	Wild date Palm	Arecaceae	Shrub
<i>Phyllanthus emblica</i>	Aonla	Phyllanthaceae	Tree
<i>Pongamia pinnata</i>	Karanj	Fabaceae	Tree
<i>Pterocarpus marsupium</i>	Bija	Fabaceae	Tree
<i>Randia dumatorum</i>	Mainphal	Rubiaceae	Tree
<i>Randia uliginosa</i>	Bhaxidar katul	Rubiaceae	Tree
<i>Rhus parviflora</i>	Khatua	Ancardiaceae	Shrub
<i>Rubia cordifolia</i>	Raktavirar	Rubiaceae	Shrub
<i>Sapindus emarginatus</i>	Ritha	Sapindaceae	Tree
<i>Schleichera oreosa</i>	Kusum	Oleaceae	Tree
<i>Schrebera swietenoides</i>	Ghato / Mokha	Oleaceae	Tree
<i>Securinega leucopyrus</i>	Panchadhara	Phyllanthaceae	Shrub
<i>Semecarpus anacardium</i>	Bhilma	Anacardiaceae	Tree
<i>Smilax zeylanica</i>	Ramdaton	Liliaceae	Climber
<i>Soymida febrifuga</i>	Rohan	Meliaceae	Tree
<i>Sterculia urens</i>	Kullu / Kulu	Sterculiaceae	Tree
<i>Stereospermum chelonoides</i>	Padar / Padri	Bignoniaceae	Tree
<i>Stereospermum personatum</i>	Padri / Padari	Bignoniaceae	Tree
<i>Strobilanthesauriculatus</i>	Maruadona	Labiatae	Shrub
<i>Syzygium cuminii</i>	Jamuan	Myrtaceae	Tree
<i>Tamarindus indica</i>	Imli	Caesalpiniaceae	Tree
<i>Tectona grandis</i>	Sagwan /Sagon	Verbenaceae	Tree
<i>Terminalia arjuna</i>	Arjun	Combataceae	Tree
<i>Terminalia bellerica</i>	Bahera	Combretaceae	Tree
<i>Terminalia chebula</i>	Harra	Combataceae	Tree
<i>Terminalis tomentosa</i>	Saja	Combretaceae	Tree
<i>Thespesia lampas</i>	Vankapas	Malvaceae	Shrub
<i>Trema orientalis</i>	Potrush	Cannabinaceae	Tree

Scientific Name	Common / Local Name	Family	Habit
<i>Urginea indica</i>	Jangli Pyaj	Aspragaceae	Shrub
<i>Vallis solanacea</i>	Dudhbel	Apocynaceae	Climber
<i>Vitex negundo</i>	Nirgundi	Verbenaceae	Shrub
<i>Waltheria indica</i>	Dhawai	Sterculiaceae	Shrub
<i>Woodfordia fruticosa</i>	Halduli	Lythraceae	Shrub
<i>Wrightia tinctoria</i>	Dudhi	Apocynaceae	Tree
<i>Xanthium strumarium</i>	Common cocklebur	Tiliaceae	Shrub
<i>Ziziphus mauritiana</i>	Ber	Rhamnaceae	Tree
<i>Ziziphus oenobila</i>	Makor	Rhamnaceae	Shrub
<i>Ziziphus rotundifolia</i>	Jharberi	Rhamnaceae	Shrub
<i>Ziziphus rugosa</i>	Churan	Rhamnaceae	Shrub
<i>Ziziphus xylopyra</i>	Ghaotr Chatber	Rhamnaceae	Tree

**TABLE-6**  
**LIST OF HERBS AND HERBACEOUS SPECIES INCLUDING GRASSES FOUND**  
**DURING THE RAINY SEASON IN BUFFER ZONE**

Scientific Name	Common / Local Name	Family
<i>Abelmoschus ficulneus</i>	Jangli Bhindi	Malvaceae
<i>Acanthospermum hispidum</i>	Starbur	Acanthaceae
<i>Achyranthes aspera</i>	Chirchira, Latjira, Aadhajhad	Solanaceae
<i>Alternanthera philoxerodes</i>	Alligator weed	Solanaceae
<i>Alternanthera sessilis</i>	Bada gathua	Solanaceae
<i>Andrographis echiodides</i>	False waterwillow	Acanthaceae
<i>Andrographis paniculata</i>	Kadu Chirayta	Acanthaceae
<i>Andropogon muricatum</i>	Palwan, Palwal	Poaceae
<i>Andropogon aciculatus</i>	Chhuriya	Poaceae
<i>Andropogon citratus</i>	Nibu ghans	Poaceae
<i>Andropogon pertusus</i>	Palwan, Palwal	Poaceae
<i>Anisochilus carnosus</i>	Jangli Salviya	Lamiaceae
<i>Apuda mutica</i>	Pholhara, Phooli	Poaceae
<i>Aristida depressa</i>	Lamb	Poaceae
<i>Aristida setaceae</i>	Sarai	Poaceae
<i>Arundo donax,</i>	Barru	Poaceae
<i>Cassia tora</i>	Chirota, Panwar Puwar	Caesalpiniaceae
<i>Cenchrus ciliaris</i>	Anjan, Dhaman	Poaceae
<i>Chloris barbata</i>	Swollen finger grass	Poaceae
<i>Chloris tenella</i>	Kandi, Kandai	Poaceae
<i>Cynodon dactylon</i>	Doob	Poaceae
<i>Cyperus alternifolius</i>	Pahari Gondra	Poaceae
<i>Cyperus rotundus</i>	Gondra	Poaceae
<i>Cyperus squarrosus</i>	Nagarmotha	Poaceae

<b>Scientific Name</b>	<b>Common / Local Name</b>	<b>Family</b>
<i>Desmodium dichotomum</i>	Lipti	Fabaceae
<i>Desmodium pulchellum</i>	Chipti	Fabaceae
<i>Desmostachya bipinnata</i>	Kusa, kush	Poaceae
<i>Dichanthium annulatum</i>	Kail	Poaceae
<i>Echinops echinatus</i>	Uont Katara	Asteraceae
<i>Eclipta prostrata</i>	Bhrangraj	Asteraceae
<i>Eragrostis ciliaris</i>	Gophertail Love grass	Poaceae
<i>Eragrostis gangetica</i>	Phuljhadi	Poaceae
<i>Eragrostis interrupta</i>	Chhoti Bhurbhusi	Poaceae
<i>Eragrostis plumosa</i>	Phaljhadi, Chitchiti	Poaceae
<i>Eragrostis tenella</i>	Japanese Love grass	Poaceae
<i>Eranthemum purpurascens</i>	Van tulsi	Acanthaceae
<i>Eulaliopsis binata</i>	Baber, Sabai	Poaceae
<i>Euphorbia hirta</i>	Badi dudhai	Euphorbiaceae
<i>Hemidesmus indicus</i>	Anantmool	Apocynaceae
<i>Heteropogon contortus</i>	Sukal, Kural	Poaceae
<i>Imperata cylindrica</i>	Chhir	Poaceae
<i>Indigofera tinctoria</i>	Neel	Fabaceae
<i>Ischaemum pilosum</i>	Sheda, Senar	Poaceae
<i>Ischaemum rugosum</i>	Saramolla grass	Poaceae
<i>Ischaemum sulcatus</i>	Kunda	Poaceae
<i>Iseilema laxum</i>	Chirai chara	Poaceae
<i>Lucas aspera</i>	Bhondki	Lamiaceae
<i>Ocimum canum</i>	Jangli tulsi (Chhoti)	Lamiaceae
<i>Panicum antidotale</i>	Ghamor, gharrum	Poaceae
<i>Panicum distichum</i>	Knot grass	Poaceae
<i>Panicum repens</i>	Kuri	Poaceae
<i>Panicum sanguinale</i>	Takri	Poaceae
<i>Parthenium hysterophorus</i>	Gajar ghans	Asteraceae
<i>Paspalum scrobiculatum</i>	Kodon	Poaceae
<i>Pennisetum cenchroides</i>	Anjan, Dhaman	Poaceae
<i>Pennisetum hohenackeri</i>	Moya, Mavai	Poaceae
<i>Pennisetum pedicellatum</i>	Deenanath	Poaceae
<i>Pharagmites karka</i>	Naal	Poaceae
<i>Portulaca oleracea</i>	Badi Lona	Portulacaceae
<i>Saccharum munja</i>	Mooz	Poaceae
<i>Saccharum bengalensis</i>	Sirpati	Poaceae
<i>Saccharum spontaneum</i>	Chaumukhi	Poaceae
<i>Sehima nervosum</i>	Museli, Muchhel	Poaceae
<i>Sehima sulcatum</i>	Pavoriya	Poaceae
<i>Setaria glauca</i>	Bandra, Kotul	Poaceae
<i>Sida acuta</i>	Wire weed	Malvaceae
<i>Sida cordifolia</i>	Flannel weed	Malvaceae
<i>Sida rhombifolia</i>	Mahabla	Malvaceae

Scientific Name	Common / Local Name	Family
<i>Solanum nigrum</i>	Bhatkataiya	Solanaceae
<i>Sorghum halepense</i>	Johnson grass	Poaceae
<i>Sporobolous indicus</i>	Chiriya ka dana	Poaceae
<i>Sporobolus coromandelianus</i>	Chhoti Bhurbhunsi	Poaceae
<i>Sporobolus pulchellus</i>	Bhurbhunsi	Poaceae
<i>Sporobolus tenuissimus</i>	Usar ki ghas, Palanji	Poaceae
<i>Tephrosia purpurea</i>	Bajradanti	Fabaceae
<i>Themeda arundinacea</i>	Dekhna	Poaceae
<i>Themeda caudata</i>	Gunhar	Poaceae
<i>Themeda quadrivalvis</i>	Poaceae Gunher	Poaceae
<i>Themeda triandra</i>	Bhand, Guner	Poaceae
<i>Themeda quadrivalvis</i>	Grader Grass	Poaceae
<i>Thysanolaena maxima</i>	Deobahari, Phulbahari	Poaceae
<i>Tribulus terrestris</i>	Gokharu	Zygophyllaceae
<i>Vernonia cinerea</i>	Sahdevi	Asteraceae

### 7.1 Ecology and Biodiversity of the Study Area

Proposed Takli Jena Bellora (North & South) Opencast cum Underground Coal Block of Production capacity (1.1 MTPA Opencast; 1.0 MTPA Underground) located at Wardha Valley Coalfield, Maharashtra, India. The Wardha Valley Coalfield covering an area of about 7500 sq. Km. lies in the Yavatmal and Chandrapur district of Maharashtra. It is bounded by Latitude 20° 29' 06" to 20°48'22" and Longitudes 79°09'15" to 79°26'39" and located in the central part of India. The coalfield area is covered under Survey of India toposheet no. 55L/15, 55L/16, 55P/3, 55P/4, 55P/8, 56I/13, 56M/5, 56M, and 55p/7 on RF 1:50000. This coalfield holds a premier position in India for having the considerable share of reserve of thermal grades non-coking coal for catering the demand of coal in the western part of country. The reserved forests in the Wardha Valley coalfield are Tadoba, Balharsha and Bhandak in the western side, Rajura in the southern side, Satna, Raikot, Pardi and Borgaon in the eastern side. The details of the forests and waterbodies present in the study area is provided in **Table-7**.

**TABLE-7**  
**LIST OF FORESTS AND WATERBODIES PRESENT IN THE STUDY AREA**

Sr.No	Name of the Forest	Direction	Distance in (Km)
1	Bhandak R.F	Southeast	4.0
2	Salori R.F	North	4.9
3	Shegaon R.F	North	7.3
<b>Tiger Reserve</b>			
4	Tadoba Andhari Tiger Reserve	Northeast	15 from the ESZ
<b>Waterbodies</b>			
5	Tanks	Within ML Area	0.0
6	Takli Nala	Within ML Area	0.0
7	Nala passing in Bellora	Within ML Area	0.0
8	Kondha Nala	Southeast	Adjacent
9	Nala	West	Passing through

Sr.No	Name of the Forest	Direction	Distance in (Km) the mine lease
10	Shirnai Nadi	West	2.9
11	Wagjai Nala	North	6.6
12	Wardha River	South southwest	9.1
13	Upasa Nala	East	12.6
14	Daiwal Nadi	Northwest	14.9

## 7.2 Terrestrial Fauna of the Study Area

There are no National Parks, Wildlife Sanctuaries or Biosphere reserves or Important Bird Areas (IBAs) or Ramsar Wetlands or any other protected areas except reserve forests within 10 Kms. But because of the presence of wild habitats like reserve forests, some common wild animals have been reported from the study area.

It may be noted from the data that there are no Rare or endangered or threatened (RET) species or Schedule I species with the exception of Common Indian Monitor (*Varanus bengalensis*) and the Peacock (*Pavo cristatus*). However, *Varanus bengalensis* and *Pavo cristatus* are not listed under any of the Red categories of the IUCN. They belong to Least concern (LC) category and there is no threat to the species. The main threat to *Varanus bengalensis* is hunting for meat and skin. There are strong scientific indications that the populations of Peacock have not only more than doubled during the past couple of years and they also expanded to Kerala State where Peacocks were absent earlier. The main threat to the Peacocks is poaching for meat and feathers; and the use of pesticide treated seeds in agriculture. Management plan for both the Common Monitor lizard and the Peacock is given under the EMP.

## 7.3 Aquatic Flora and Fauna of the Study Area

There are also a large number of small irrigation tanks but no perennial reservoirs. During the study period, most of the lotic and lentic bodies located in the study area had good amount of water. A list of aquatic and semiaquatic macrophytes found in the waterbodies including paddy fields is given in Table-5. A list of fishes either added or caught or reported from the water bodies is given in Table-6. As per the fish database, there are no RET species.

**TABLE-8**  
**LIST OF PLANT AQUATIC AND SEMIAQUATIC**  
**MACROPHYTE FOUND IN THE STUDY AREA**

Scientific Name	Family
<i>Acanthus ilicifolius</i>	Acanthaceae
<i>Alternanthera philoxeroides</i>	Amaranthaceae
<i>Ammannia baccifera</i>	Lythraceae
<i>Arundo donax</i>	Poaceae
<i>Azolla pinnata</i>	Azollaceae
<i>Brachiaria mutica</i>	Poaceae
<i>Chrysopogon aciculatus</i>	Poaceae
<i>Commelina bengahlensis</i>	Commelinaceae

Scientific Name	Family
<i>Cyperus diffusus</i>	Cyperaceae
<i>Cyperus brevifolius</i>	Cyperaceae
<i>Cyperus compressus</i>	Cyperaceae
<i>Cyperus exaltatus</i>	Cyperaceae
<i>Cyperus iria</i>	Cyperaceae
<i>Cyperus rotundus</i>	Cyperaceae
<i>Cyperus triceps</i>	Cyperaceae
<i>Echinochloa crusgalli</i>	Poaceae
<i>Echinochloa colona</i>	Poaceae
<i>Eclipta prostrata</i>	Asteraceae
<i>Eichhornia crassipes</i>	Pontederiaceae
<i>Fimbristylis dichotoma</i>	Cyperaceae
<i>Fimbristylis miliacea</i>	Cyperaceae
<i>Fimbristylis ovata</i>	Cyperaceae
<i>Fimbristylis umbellata</i>	Cyperaceae
<i>Hydrilla verticillata</i>	Hydrocharitaceae
<i>Imperata cylindrica</i>	Poaceae
<i>Ipomoea aquatica</i>	Convolvulaceae
<i>Kyllinga triceps</i>	Cyperaceae
<i>Malachra capitata</i>	Malvaceae
<i>Marsilea quadrifolia</i>	Marsileaceae
<i>Marsilea minuta</i>	Marsiliaceae
<i>Nelumbo nucifera</i>	Nelumbonaceae
<i>Nymphaea nauchali</i>	Nymphaeaceae
<i>Nymphaea stellata</i>	Nymphaeaceae
<i>Nymphoides indica</i>	Nymphaeaceae
<i>Ottelia alismoides</i>	Hydrocharitaceae
<i>Oxalis corniculata</i>	Oxalidaceae
<i>Panicum sanguinale</i>	Poaceae
<i>Paspalidium geminatum</i>	Poaceae
<i>Pistis stratioides</i>	Araceae
<i>Schoenoplectus articulatus</i>	Cyperaceae
<i>Scirpus supinus</i>	Cyperaceae
<i>Typha angustata</i>	Typhaceae
<i>Vallisneria spiralis</i>	Hydrocharitaceae

**TABLE-9**  
**LIST OF FISHES REPORTED FROM THE PENGANGA RIVER**

Name of Species	Common Name	Family
<i>Catla catla</i>	Catla	Cyprinidae
<i>Chanda nama</i>	Elongate glassy Perchlet	Ambassidae
<i>Channa gachua</i>	Dwarf Snakehead	Channidae
<i>Channa striata</i>	Snakehead murrel	Channidae
<i>Cirrhinus cirrhosus</i>	Mrigal carp	Cyprinidae



<b>Name of Species</b>	<b>Common Name</b>	<b>Family</b>
<i>Clarias dussumieri</i>	Cat fish	Clariidae
<i>Cyprinus carpio</i>	Common carp	Cyprinidae
<i>Garra mullya</i>	Mullya Garra	Cyprinidae
<i>Glossogobius giuris</i>	Tank goby or bar-eyed goby	Gobiidae
<i>Labeo bata</i>	Minor Carp	Cyprinidae
<i>Labeo boga</i>	Boga Labeo	Cyprinidae
<i>Labeo calbasu</i>	Orange fin Labeo	Cyprinidae
<i>Labeo fimbriatus</i>	Fringed-lipped Peninsula carp	Cyprinidae
<i>Labeo potail</i>	Deccan labeo	Cyprinidae
<i>Labeo rohita</i>	Rohu	Cyprinidae
<i>Mastacembelus armatus</i>	Tire track eel	Mastacembelidae
<i>Ompok bimaculatus</i>	Butter Catfish	Siluridae
<i>Oreochromis mossambicus</i>	Mozambique tilapia	Cichlidae
<i>Oreochromis niloticus</i>	Nile tilapia	Cichlidae
<i>Osteobrama belangeri</i>	Peninsular osteobrama	Cyprinidae
<i>Osteobrama vigorsii</i>	Bheema osteobrama	Cyprinidae
<i>Parambassis ranga</i>	Indian glassy fish	Ambassidae
<i>Puntius chola</i>	Swamp barb or chola barb,	Cyprinidae
<i>Puntius dorsalis</i>	Long snouted barb	Cyprinidae
<i>Puntius sophore</i>	Pool Barb	Cyprinidae
<i>Puntius ticto</i>	Ticto Barb or Two spot Barb	Cyprinidae
<i>Rasbora daniconius</i>	Slender Rasbora	Cyprinidae
<i>Rita gogra</i>	Bagrid Catfish	Bagridae
<i>Rita kuturnee</i>	Bagrid Catfish	Bagridae
<i>Silonia childreni</i>	Schilbid catfish	Schilbeidae
<i>Sperata aor</i>	Long-whiskered catfish	Bagridae
<i>Wallago attu</i>	Fresh Water shark	Siluridae

## 8.0 **TADoba ANDHARI TIGER RESERVE (TATR)**

Notably Maharashtra's oldest and largest National Park, the "Tadoba National Park", also known as the "Tadoba Andhari Tiger Reserve" is one of India's 47 project tiger reserves existing in India. It lies in the Chandrapur district of Maharashtra state. The total area of the tiger reserve is 1,727 Sq.km, which includes the Tadoba National Park, created in the year 1955. The Andhari Wildlife Sanctuary was formed in the year 1986 and was amalgamated with the park in 1995 to establish the present Tadoba Andhari Tiger Reserve. The word 'Tadoba' is derived from the name of God "Tadoba" or "Taru," which is praised by local tribal people of this region and "Andhari" is derived from the name of Andhari River that flows in this area. Map of the Tadoba Andhari Tiger Reserve and its buffer zone is shown in Fig 2.

On May 5, 2010, the MoEF&CC Government notified 1,103.34 sq. km Tadoba Buffer zone. It includes 125 sq.km area under Forest Development Corporation of

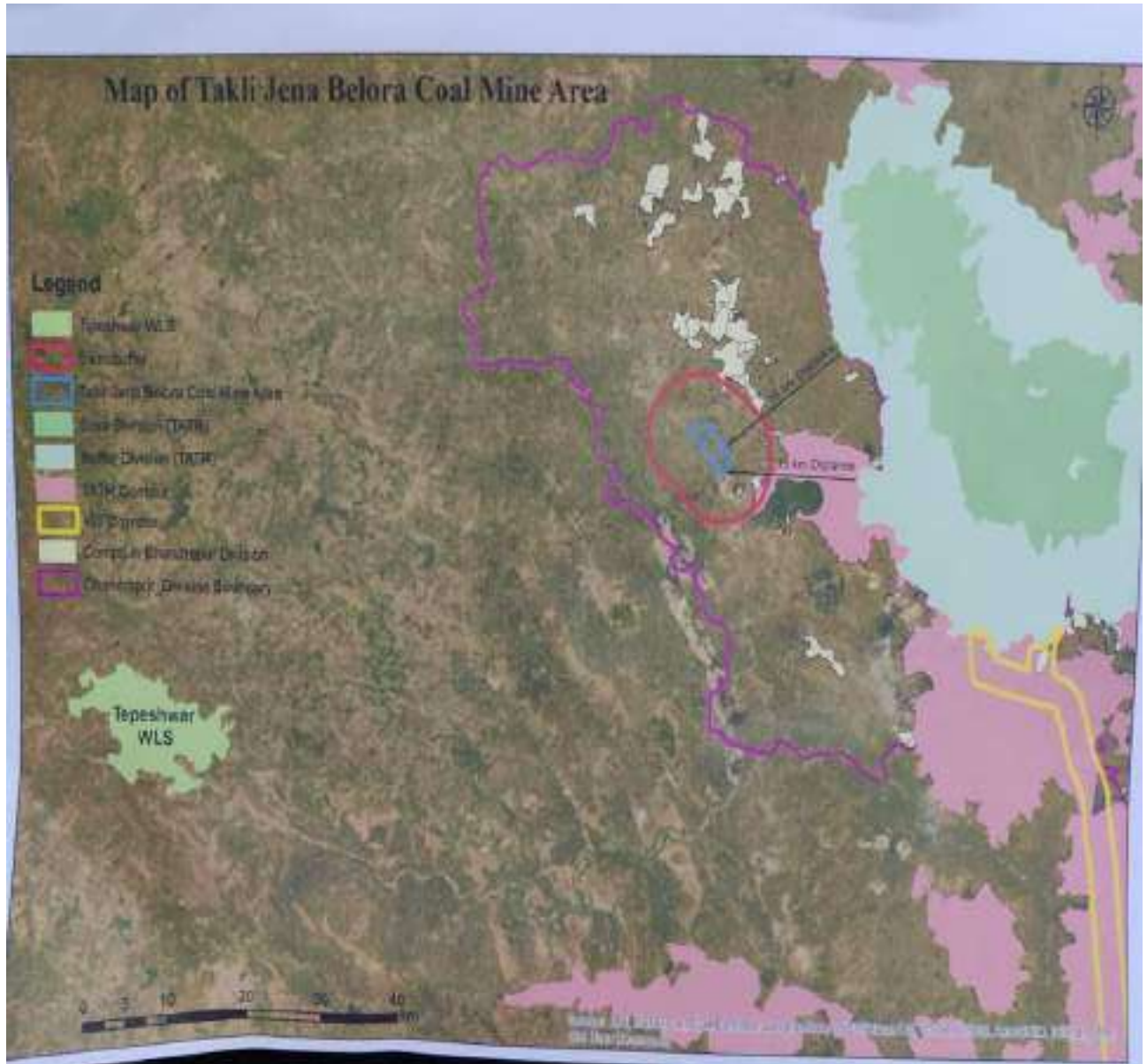
Maharashtra (FDCM); 901.66 Sq.km under Chandrapur Forest Division; 76.17 sq.km under Brahmapuri Forest Division. According to the latest Tadoba Eco-sensitive Zone Notification of 11<sup>th</sup> September 2019, the total ESZ area is 1347 sq.km including the TATR area of 625 sq.km. Thus, the area of the ESZ (722 sq.km) is more than the area of the TATR (625 sq.km)

According to the Tiger Status Report of 2018, out of a total of 106 Tigers in the TATR area, 83 are in the TATR and 23 are in the areas outside the TATR. Though, Tigers were not spotted in the study area, pug marks of a Tiger were found in a temporary wetland (tank) of the buffer zone. Similarly, stray cases of movement of Leopard had been reported from the buffer zone. Along with these carnivores a few other Mammals, Birds and reptiles belonging to Schedule I of the wildlife (Protection) Act, 1972 were reported from the forests of the buffer zone. Hence, a site-specific integrated wildlife Management plan has been submitted to the State Forest and Wildlife Department.

### **8.1 Distance b/w the Tadoba Andhari Tiger Reserve (TATR) and the boundary of the mine lease**

The Eco-sensitive Zone (ESZ) of the Tadoba Andhari Tiger Reserve was notified on 11<sup>th</sup> September 2019 by the MoEF&CC. The nearest distance between the mine lease and Eco-sensitive Zone of Tadoba Andhari Tiger Reserve (TATR) is 15 km as shown in **Figure-4**. But Bhandak, Salori and Shegaon Reserve Forests extend in to the 10 km buffer zone of the mine lease as shown in Table 2. These Reserve Forests are contiguous with the TATR. But there are no wildlife corridors within the 10 km study area.

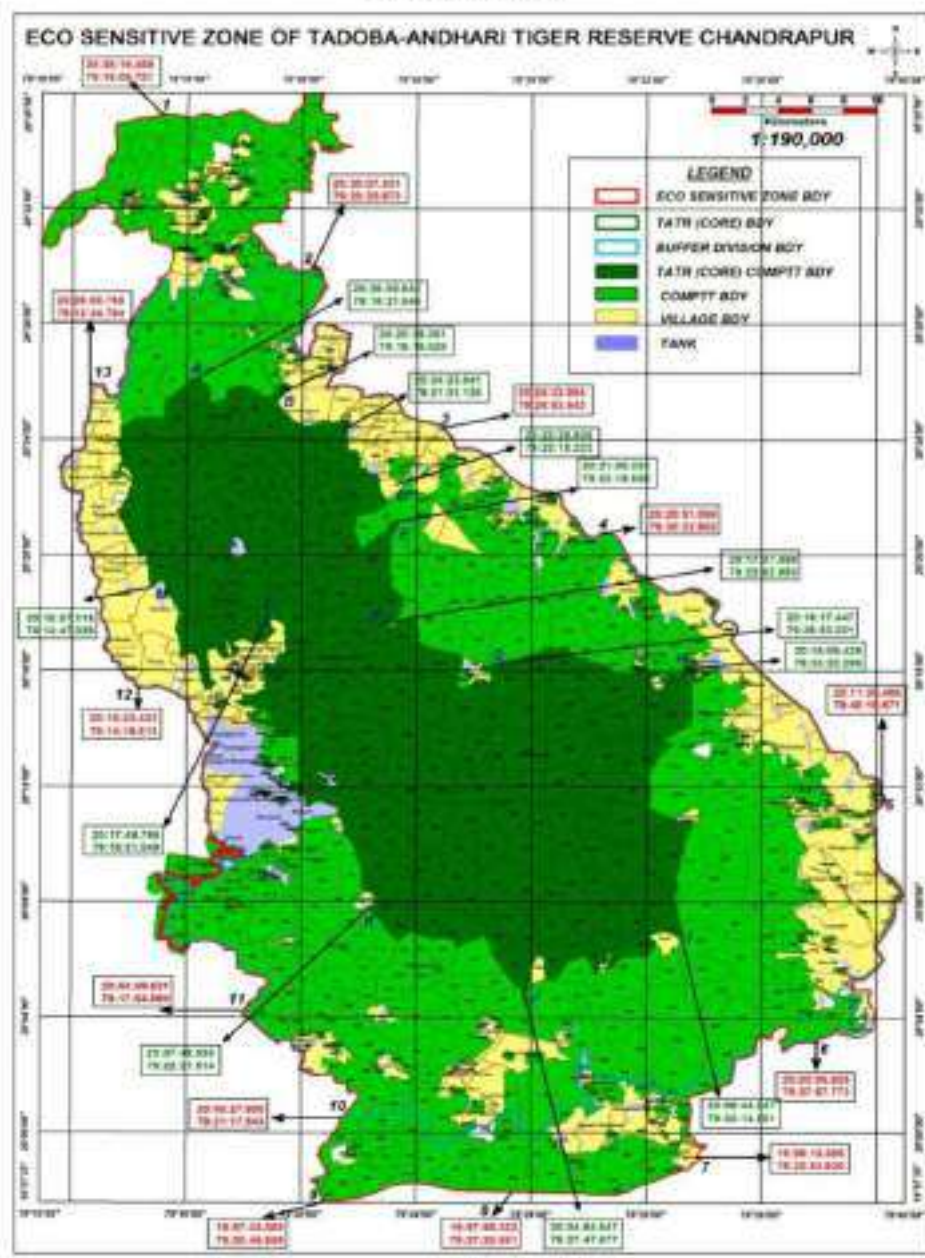
The map from the notification is shown as **Figure-5**. As shown in **Figure-4** the shortest distance between the ESZ of TATR and the boundary of the mine lease area is 15 Km (vide **Figure-1**). A circle of 16 Km radius from the center of the mine lease is shown by the side of the TATR. Thus, from the documentary evidence, the nearest distance between the mine lease and the buffer zone of the TATR is 15 Km. The Wildlife corridor towards the south east of the mine lease is more than 25 Km. Similarly, the Tapeswar wildlife sanctuary located towards the southwest of mine lease is about 50 Km. Thus, it is clear that that there are no wildlife sanctuaries or tiger reserves or national parks or other eco-sensitive areas within 10 km from the mine lease.



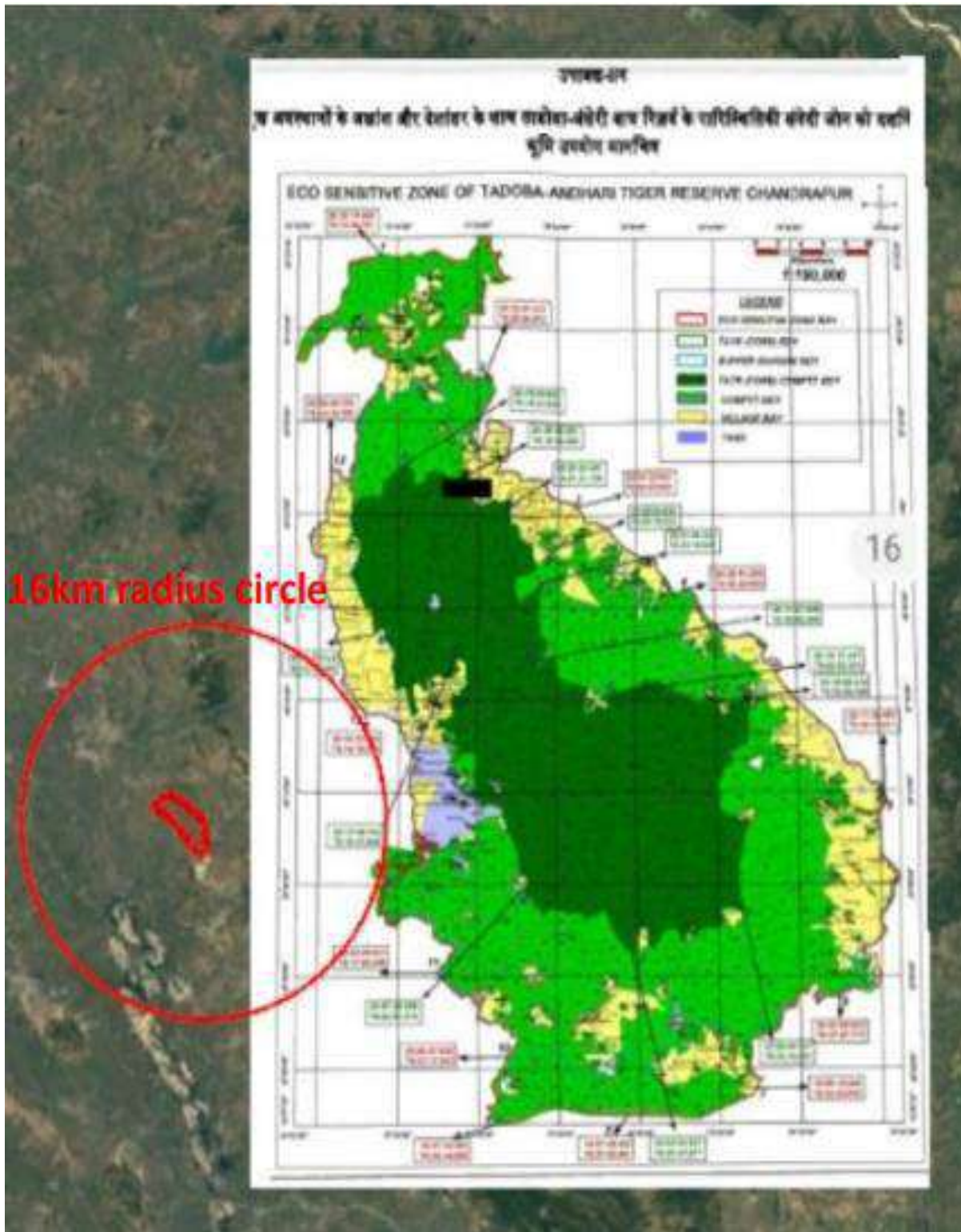
**FIGURE-4**  
**ECO-SENSITIVE MAP OF THE MINE LEASE AREA**

उपारंभ-111

प्रमुख अवस्थानों के अक्षांश और देशांतर के साथ ताडोबा-अंधारी बाघ रिज़र्व के पारिस्थितिकी संवेदी जोन को दर्शाने वाला भूमि उपयोग मानचित्र



**FIGURE-5**  
**MAP SHOWING THE CORE AREA, BUFFER ZONE AND**  
**THE ECO-SENSITIVE ZONE (ESZ) AROUND THE TATR**



**FIGURE-6**  
**MAP SHOWING THE MINE LEASE AREA AND THE TATR WITH 16 KM CIRCLE**

Tadoba Andhari Tiger Reserve (TATR) in Tadoba is a predominantly southern tropical dry forest with dense woodlands comprising about 87 per cent of the protected area. The most popular species of the trees are Teak (*Tectona grandis*) and Bamboo (*Dendrocalamus strictus*) in this forest. Other trees include Ain or Crocodile bark tree (*Terminalia elliptica*), Bija (*Pterocarpus marsupium*), Dhauda, (*Anogeissus latifolia*), Hald (*Haldina cardifolia*) Salai (*Boswellia serrata*) and Semal (*Bombax ceiba*), Tendu (*Diospyros melanoxylon*). Beheda, (*Terminalia chebula*), Hirda, (*Terminalia bellirica*) Karaya Gum (*Sterculia urens*), Mahua (*Madhuca longifolia*), Crepe myrtle (*Lagerstroemia indica*,) and *Lannea coromandelica* are other common species. Ceylon satinwood or East Indian satinwood (*Chloroxylon swietenia*) is a fire-resistant species growing here. Palas or flame of the forest (*Butea monosperma*) adds vibrant colour to the forest. Black plum trees (*Syzygium cumini*) and Arjun (*Terminalia arjuna*) grow in the riparian habitat around the lake. At the waterhole at Panchadhara, huge Arjun trees are seen. Grass is found throughout the reserve. Bamboo thickets grow throughout the reserve. The climber Kach Kujali or Velvet bean (*Mucuna pruriens*) found here is a medicinal plant used to treat Parkinson's disease.

The TATR is rich in fauna. The Zoological survey of India (ZSI) brought a book (Conservation Series 25) in 2006 on the fauna of the TATR. Apart from this the list of animals noted in this part include, Tigers, Indian leopards, Sloth bears, Gaur, Nilgai, Dhole, Striped Hyena, Small Indian Civet, Jungle Cats, Sambar, Spotted Deer, Barking Deer, Chital, Marsh Crocodile, Indian Python, Indian Cobra, Grey-headed Fish Eagle, Crested Serpent Eagle, Peacock, Jewel Beetles, Wolf Spiders. It houses 195 species of birds, including a wide variety of water birds, raptors, and endangered species and 74 species of butterflies, including the pansies, monarch, Mormons, and swordtails. It gives life to many insect species, including the endangered danaid egg-fly and great egg fly and dragonflies, jewel beetles, signature spider, giant wood spider, wolf spiders, crab spiders, and lynx spiders.

There are certain night animals too which make their presence felt specially during night like, the ratel, Indian Pangolins, porcupines, four horned antelopes, and gaurs

Zoological Survey of India brought out Conservation Area Series 25 on Fauna of Tadoba - Andhari Tiger Reserve, Maharashtra in 2006. It provides checklists of all Mammals, Birds, Reptiles and Amphibians basing on extensive and intensive primary survey and research findings of different investigators. These checklists thus cover all seasons and decades of research. Pradhan (2006) compiled a checklist of 80 Mammals from TATR as shown in **Table- 10**.

**TABLE-10**  
**LIST OF MAMMALS REPORTED FROM TATR BY PRADHAN (2006)**

Scientific Name	Common Name	Family	IUCN / WPA
<i>Anathana ellioti</i>	Indian/Madras Tree Shrew	Tupaiaidae	LC / IV
<i>Antelope cervicapra</i> *	Blackbuck	Bovidae	VU / I
<i>Axis axis</i> *	Spotted Deer	Cervidae	LC / IV
<i>Bandicota bengalensis</i> *	Indian Mole Rat	Murida	LC / V
<i>Bandicota indica</i> *	Large Bandicoot Rat	Murida	LC / V
<i>Bos gaurus</i> *	Indian Gaur / Bison	Bovidae	VU / I
<i>Boselaphus tragocamelus</i> *	Blue Bull / Nilgai	Bovidae	LC / III

Scientific Name	Common Name	Family	IUCN / WPA
<i>Canis aureus</i> *	Golden Jackal	Canidae	LC / II
<i>Canis lupus pallipes</i> *	Indian Wolf	Canidae	VU / I
<i>Cervus unicolor</i> *	Sambar	Cervidae	LC / III
<i>Cremnomys blanfordi</i>	Blanford's Rat	Murida	LC / V
<i>Cuon alpinus</i>	Indian Wild Dog	Canidae	NT / II
<i>Cynopterus sphinx</i> *	Short-nosed fruit bat	Pteropodinae	LC /IV
<i>Felis chaus</i> *	India Jungle Cat	Felidae	NT / II
<i>Felis silvestris</i>	Indian Desert Cat	Felidae	EN / I
<i>Funambulus palmarum</i> *	Three striped Squirrel	Sciuridae	LC /IV
<i>Funambulus pennanti</i> *	Five striped Squirrel	Sciuridae	LC /IV
<i>Golunda ellioti</i> *	Indian Bush Rat	Murida	LC / V
<i>Herpestes edwardsii</i> *	Indian Grey Mongoose	Herpestidae	LC /II
<i>Herpestes smithii</i>	Indian ruddy mongoose	Herpestidae	DD / II
<i>Hipposideros ater</i>	Dusky Leaf-nosed bat	Hipposideridae	LC /IV
<i>Hipposideros fulvus</i> *	Fulvous Leaf-nosed bat	Hipposideridae	LC /IV
<i>Hipposideros galeritus</i>	Cantor's Leaf-nosed bat	Hipposideridae	NT / IV
<i>Hipposideros lankadiva</i>	KeJaart's Leaf-nosed bat	Hipposideridae	LC /IV
<i>Hipposideros speoris</i>	Schneider's Leaf-nosed bat	Hipposideridae	LC /IV
<i>Hyaena hyaena</i> *	Striped Hyaena	Hyaenidae	DD / III
<i>Hystrix indica</i> *	Indian crested porcupine	Hystricida	LC / IV
<i>Lepus nigricollis</i> *	Indian Hare	Leporidae	LC / IV
<i>Lutragale perspicillata</i>	Smooth-coated Indian Otter	Mustelidae	NE / II
<i>Macaca mulatta</i> *	Rhesus macaq	Cercopithecidae	LC / II
<i>Manis crassicaudata</i>	Pangolin	Pholidota	EN / I
<i>Megaderma lyra</i> *	Indian false vampire bat	Megadermatidae	LC /IV
<i>Megaderma spasma</i>	Lesser false vampire bat	Megadermatidae	LC /IV
<i>Mellivora capensis</i>	Honey Badger	Mustelidae	DD /I
<i>Melursus ursinus</i> *	Sloth Bear	Ursidae	VU / I
<i>Millardia meltada</i>	Soft-furred Metad	Murida	LC / V
<i>Miniopterus schreibersi</i>	Schreiber's Long-fingered bat	Vespertilionidae	LC /IV
<i>Moschiola meminna</i> *	Mouse Deer	Tragulidae	VU / I
<i>Muntiacus muntjak</i> *	Barking Deer	Cervidae	LC / III
<i>Mus booduga</i> *	Little Indian Field Mouse	Murida	LC / V
<i>Mus musculus</i> *	House Mouse	Murida	LC / V
<i>Mus phillipsi</i> *	Wroughton's small spiny Mouse	Murida	LC / V
<i>Mus platythrix</i>	Indian Brown spiny mouse	Murida	LC / V
<i>Panthera pardus</i> *	Leopard	Felidae	VU / I
<i>Panthera tigris</i> *	Tiger	Felidae	EN / I
<i>Paradoxurus hermaphroditus</i>	Common Palm civet	Viverridae	LC /II
<i>Petaurista philippensis</i> *	Common giant flying squirrel	Sciuridae	NT / II
<i>Pipistrellus dormeri</i>	Dormer's bat	Vespertilionidae	LC /IV
<i>Pipistrellus ceylonicus</i> *	Pipistrelle bat	Vespertilionidae	LC /IV
<i>Pipistrellus coromandra</i>	Coromandel PipistrelIe	Vespertilionidae	LC /IV
<i>Pipistrellus tenuis</i> *	Least Pipistrelle	Vespertilionidae	LC /IV
<i>Prionailurus bengalensis</i>	Leopard Cat	Felidae	NT / I
<i>Pteropus giganteus</i> *	Indian flying fox	Pteropodinae	LC /IV
<i>Rattus rattus</i> *	House Rat	Murida	LC / V
<i>Ratufa indica</i>	Indian Giant squirrel	Sciuridae	VU / II
<i>Rhinolophus lucIus</i>	Great Eastern Horseshoe bat	Rhinolophidae	NT / IV
<i>Rhinolophus rouxii</i>	Roux's Horseshoe bat	Rhinolophidae	NT / IV
<i>Rhinopoma hardwickei</i>	Mouse-tailed bat	Rhinopomatidae	LC /IV
<i>Rhinopoma microphyllum</i>	Mouse-tailed bat	Rhinopomatidae	LC /IV

Scientific Name	Common Name	Family	IUCN / WPA
<i>Rousettus leschenaulti</i> *	Fulvous fruit bat	Pteropodinae	LC / IV
<i>Scotophilus heathi</i> *	Asiatic Greater Yellow House bat	Vespertilionidae	LC / IV
<i>Scotophilus kuhlii</i> *	Asiatic Lesser Yellow House bat	Vespertilionidae	LC / IV
<i>Semnopithecus entellus</i> *	Hanuman Langur	Cercopithecidae	LC / II
<i>Suncus etruscus</i> *	Pygmy Shrew	Soricidae	LC / IV
<i>Suncus murinus</i> *	House shrew	Soricidae	LC / IV
<i>Suncus stoliczkanus</i> *	Anderson's shrew	Soricidae	LC / IV
<i>Sus scrofa</i> *	Wild boar	Suidae	LC / III
<i>Tadarida aegyptiaca</i>	Egyptian Free-tailed bat	Molossidae	LC / IV
<i>Tadarida plicata</i>	Wrinkle-lipped Free-tailed bat	Molossidae	LC / IV
<i>Taphozous melanopogon</i>	Black-bearded tomb bat	Emballonuridae	LC / IV
<i>Taphozous saccolaimus</i>	Pouch bearing bat	Emballonuridae	LC / IV
<i>Taphozous melanopogon</i>	Long-winged tomb bat	Emballonuridae	LC / IV
<i>Taphozous nudiventris</i>	Naked-rumped tomb bat	Emballonuridae	LC / IV
<i>Tatera indica</i>	Indian Antelope Rat	Murida	LC / V
<i>Tetracerus quadrieornis</i>	Four Horned Antelope	Bovidae	VU / I
<i>Vandeleuria oleracea</i>	Indian Long-tailed Tree Mouse	Murida	LC / V
<i>Viverricula indica</i> *	Small Indian civet	Viverridae	NT / II
<i>Vulpes bengalensis</i> *	Bengal Fox	Canidae	LC / II

(Species either spotted or reported from the reserve forests of the buffer zone are indicated by \*)

## 8.2 Birding in Tadoba Andhari Tiger Reserve

The existence of River Andhari inside the Tadoba National Park gives way to a wide diversity of water birds, and raptors. There are approximately 195 species of birds that have been recorded in the park, including three endangered species, including the grey-headed fish eagle, the crested serpent eagle, and the changeable hawk-eagle. The Tadoba is one of the finest birding destinations in Maharashtra with dense forest zones, bamboo zones, grasslands, and wetlands that suits both the forest and the wetland birds.

The interesting species of birds in the reserve, including the migrants are- Orange-headed Thrush, Indian Pitta, Crested Treeswift, Stone Curlew, Crested Honey Buzzard, Paradise Flycatcher, Bronze-winged Jacana, Lesser Golden-backed Woodpecker, Warblers, Black-naped Blue Flycatcher, Oriental Honey Buzzard, White-eyed Buzzard, Pariah Kite, Eurasian Sparrow Hawk, Black Shouldered Kite, Shikra, Short-toed Snake Eagle, Bonelli's Eagle, Common Kestrel, Open Bill Stork, Black Ibis, Bar Headed Goose, Black Stork, Lesser Adjutant Stork, Brahminy Duck, Comb Duck, Little Grebe, Grey Heron, Large Egret, Median Egret, Indian Shag, Purple Heron, Banded Bay Cuckoo, White-breasted Water Hen, Green Sandpiper, Wood Sandpiper, Common Sandpiper, River Tern, Painted Sand Grouse, Jungle Bush Quail, Indian Peafowl, Spotted Owlet, Forest Wagtail, Grey Wagtail, White Wagtail, House Sparrow, Indian Robbin, Indian Roller, Ruby Throat, Blue Throat, Black Redstart, Grey Tit, Common Stonechat, Brahminy Myna, Asian Pied Starling, House Crow, Large-billed Crow, and many more.

A checklist of 192 species of birds from the TATR was prepared by Mahabal (2006). The inventory of birds of Tadoba-Andhari Reserve comprises 192 species, of which about 60% species have been mainly observed by Mahabal (2006) during the survey period in October 1997, whereas the rest of the bird species



have been compiled on the basis of published / unpublished literature including personal communications. In Tadoba-Andhari Tiger Reserve, areas like Panchdhara, Kala Alnb, Tadoba Lake side, Teli Daln, Kolsa Tank were found to be good spots for bird community. It may however be stated that the list is quite old considering the rapid changes that have taken place on account of mining and other developmental activities. Hence, an attempt was made to figure out which of the birds listed by Mahabal (2006) could be found in the study area. Most of the resident aquatic birds reported by Mahabal (2006) have been found in the study area. A checklist of the Avifauna of TATR and their status with respect to the study area has been given in **Table 11**. The main limitation of the data is that Mahabal (2006) himself admits that he had seen only 60% of the species and there is no quick way to verify the data through primary survey for reasons such as (1) An extensive and intensive survey in a tiger sanctuary is not permitted and (2) it is beyond the scope of the EIA.

**TABLE-11**  
**LIST OF BIRDS REPORTED FROM TATR AND IT'S STATUS IN STUDY AREA**

Scientific Name	Common Name	Family	IUCN / WPA	Status in study area
<i>Accipiter badius</i>	Shikra	Accipitridae	LC / I	Yes
<i>Accipiter nisus</i>	Eurasian Sparrow Hawk	Accipitridae	LC / I	No
<i>Acridotheres tristis</i>	Common Myna	Sturnidae	LC / IV	No
<i>Actitis hypoleucos</i>	Common Sandpiper	Scolopacidae	LC / IV	Yes
<i>Aegithina tiphia</i>	Common Iora	Irenidae	LC / IV	No
<i>Alauda gulgula</i>	Small Skylark	Alaudidae	LC / IV	Yes
<i>Alcedo atthis</i>	Small Blue Kingfisher	Alcedinidae	LC / IV	Yes
<i>Amandava amandava*</i>	Red Munia	Eastrildidae	LC / IV	Yes
<i>Amandava Formosa*</i>	Green Munia	Eastrildidae	LC / IV	Yes
<i>Amaurornis phoenicurus</i>	White-breasted Waterhen	Rallidae	LC / IV	Yes
<i>Anas acuta</i>	Northern Pintail	Anatidae	LC / IV	No
<i>Anas clypeata</i>	Northern Shoveler	Anatidae	LC / IV	No
<i>Anas crecca</i>	Common Teal	Anatidae	LC / IV	Yes
<i>Anas poecilorhyncha</i>	Spot-billed Duck	Anatidae	LC / IV	No
<i>Anaslomus oscitans</i>	Asian Open Bill Stork	Ciconiidae	LC / IV	Yes
<i>Anhinga melanogaster*</i>	Darter/Snake Bird	Anhingidae	LC / IV	Yes
<i>Anthus rufulus*</i>	Paddy-field Pipit	Motacillidae	LC / IV	Yes
<i>Apus affinis</i>	Indian House Swift	Apodidae	LC / IV	Yes
<i>Aquila rapax</i>	Twany Eagle	Accipitridae	LC / I	No
<i>Ardea cinerea*</i>	Grey Heron	Ardeidae	LC / IV	Yes
<i>Ardea purpurea*</i>	Purple Heron	Ardeidae	LC / IV	Yes
<i>Ardeola grayii*</i>	Indian Pond Heron	Ardeidae	LC / IV	Yes
<i>Athene brama</i>	Spotted Owlet	Strigidae	LC / IV	No
<i>Aythya fuligula</i>	Tufted Pochard	Anatidae	LC / IV	Yes

Scientific Name	Common Name	Family	IUCN / WPA	Status in study area
<i>Aythya nyroca</i>	Ferruginous Pochard	Anatidae	LC / IV	Yes
<i>Bubo bubo</i>	Eurasian Eagle Owl	Strigidae	LC / IV	No
<i>Bubulcus ibis</i> *	Cattle Egret	Ardeidae	LC / IV	Yes
<i>Burhinus oedicephalus</i>	Stone-Curlew	Burhinidae	LC / IV	Yes
<i>Butastur teesa</i>	White-eyed Buzzard	Accipitridae	LC / I	No
<i>Cacomantis passerinus</i>	Plaintive Cuckoo	Cuculidae	LC / IV	Yes
<i>Caprimulgus asiaticus</i>	Common Indian Nightjar	Caprimulgidae	LC / IV	No
<i>Caprimulgus indicus</i>	Indian Jungle Nightjar	Caprimulgidae	LC / IV	No
<i>Casmerodius albus</i>	Eastern Large Egret	Ardeidae	LC / IV	Yes
<i>Celeus brachyurus</i>	Rufous Woodpecker	Capitonidae	LC / IV	Yes
<i>Centropus sinensis</i>	Greater Coucal	Cuculidae	LC / IV	No
<i>Ceryle rudis</i>	Lesser Pied Kingfisher	Alcedinidae	LC / IV	Yes
<i>Charadrius dubius</i> *	Little -Ringed Plover	Charadriidae	LC / IV	Yes
<i>Chloropsis aurifrons</i>	Gold-fronted Chloropsis	Irenidae	LC / IV	No
<i>Chloropsis cochinchinensis</i>	Jerdon's Chloropsis	Irenidae	LC / IV	No
<i>Chrysomma sinense</i>	Yellow-eyed Babbler	Timaliina	LC / IV	Yes
<i>Ciconia episcopus</i>	White-necked Stork	Ciconiidae	LC / IV	Yes
<i>Circaetus gallicus</i>	Short-toed Snake Eagle	Accipitridae	LC / I	No
<i>Circus aeruginosus</i>	Western Marsh harrier	Accipitridae	LC / I	No
<i>Circus macrourus</i>	Pal lied Harrier	Accipitridae	LC / I	No
<i>Cisticola juncidis</i>	Streaked Fantail Warbler	Sylviinae	LC / IV	Yes
<i>Clamator jacobinus</i>	Pied-Crested Cuckoo	Cuculidae	LC / IV	Yes
<i>Columba livia</i> *	Blue Rock Pigeon	Columbidae	LC / IV	Yes
<i>Copsychus saularis</i> *	Oriental Magpie-Robin	Muscicapidae	LC / IV	Yes
<i>Coracias benghalensis</i> *	Indian Roller	Coraciidae	LC / IV	Yes
<i>Coracina macei</i>	Large Cuckoo Shrike	Campephagidae	LC / IV	Yes
<i>Corvus macrorhynchos</i> *	Indian Jungle Crow	Corvidae	LC / IV	Yes
<i>Corvus splendens</i> *	Indian House Crow	Corvidae	LC / V	Yes
<i>Coturnix coromandelica</i>	Rain Quail	Phasianidae	LC / IV	Yes
<i>Coturnix coturnix</i>	Common Quail	Phasianidae	LC / IV	Yes
<i>Cuculus canorus</i> *	Common Cuckoo	Cuculidae	LC / IV	Yes
<i>Cuculus micropterus</i>	Indian Cuckoo	Cuculidae	LC / IV	Yes
<i>Culicicapa ceylonensis</i>	Grey-headed Flycatcher	Muscicapinae	LC / IV	No
<i>Cyornis tickelliae</i>	Tickell's Blue-Flycatcher	Muscicapinae	LC / IV	No
<i>Cypsiurus batasiensis</i>	Palm Swift	Apodidae	LC / IV	Yes
<i>Dendrocitta</i>	Indian Tree Pie	Corvidae	LC / IV	No

Scientific Name	Common Name	Family	IUCN / WPA	Status in study area
<i>vagabunda</i>				
<i>Dendrocopos mahrattensis</i>	Yellow fronted Pied Woodpecker	Capitonidae	LC / IV	Yes
<i>Dendrocopos nanus</i>	Brown-capped Pygmy Woodpecker	Capitonidae	LC / IV	Yes
<i>Dendrocygna javanica</i>	Lesser Whistling Duck	Anatidae	LC / IV	Yes
<i>Dicaeum agile</i>	Thick-billed Flowerpecker	Dicaeidae	LC / IV	No
<i>Dicaeum erythrorhynchos</i>	Tickell's Flowerpecker	Dicaeidae	LC / IV	No
<i>Dicrurus caerulescens</i>	Indian White-bellied Drongo	Dicruridae	LC / IV	No
<i>Dicrurus macrocercus*</i>	Black Drongo	Dicruridae	LC / IV	Yes
<i>Dinopium benghalense</i>	Lesser Golden-backed Woodpecker	Capitonidae	LC / IV	Yes
<i>Dumetia hyperythra</i>	Rufous bellied Babbler	Timaliina	LC / IV	Yes
<i>Egretta garzetta*</i>	Little Egret	Ardeidae	LC / IV	Yes
<i>Elanus caeruleus</i>	Black -shouldered Kite	Accipitridae	LC / I	No
<i>Eremopterix grisea</i>	Ashy-crowned Sparrow Lark	Alaudidae	LC / IV	Yes
<i>Eudynamis scolopacea*</i>	Asian Koel	Cuculidae	LC / IV	Yes
<i>Eumyias thalassina</i>	Verditer Flycatcher	Muscicapinae	LC / IV	No
<i>Falco tinnunculus</i>	Common Kestrel	Falconidae	LC / IV	Yes
<i>Ficedula superciliaris</i>	Ultramarine Flycatcher	Muscicapinae	LC / IV	No
<i>Falco peregrinus</i>	Peregrine Falcon	Falconidae	LC / I	No
<i>Francolinus pictus</i>	Painted Francolin	Phasianidae	LC / IV	Yes
<i>Francolinus pondicerianus</i>	Grey Francolin	Phasianidae	LC / IV	Yes
<i>Fulica atra</i>	Common Coot	Rallidae	LC / IV	Yes
<i>Galerida cristata</i>	Crested Lark	Alaudidae	LC / IV	Yes
<i>Galerida deva</i>	Sykes's Crested Lark	Alaudidae	LC / IV	Yes
<i>Gallicrex cinerea</i>	Water Cock	Rallidae	LC / IV	Yes
<i>Gallinago gallinago</i>	Common Snipe	Scolopacidae	LC / IV	Yes
<i>Gallinula chloropus*</i>	Common Moorhen	Rallidae	LC / IV	Yes
<i>Galloperdix spadicea</i>	Red Spur-Fowl	Phasianidae	LC / IV	Yes
<i>Gallus sonneratii</i>	Grey Jungle Fowl	Phasianidae	LC / IV	Yes
<i>Grus antigone</i>	Sarus Crane	Gruidae	VU / I	No
<i>Gyps bengalensis</i>	Indian White Backed - Vulture	Accipitridae	CR / I	No
<i>Halcyon capensis</i>	Stork-billed Kingfisher	Alcedinidae	LC / IV	Yes
<i>Halcyon smyrnensis</i>	White-breasted Kingfisher	Alcedinidae	LC / IV	Yes
<i>Haliastur indus</i>	Brahminy Kite	Accipitridae	LC / I	No
<i>Hemiprocne coronata</i>	Crested Tree Swift	Hemiprocnidae	LC / IV	Yes

Scientific Name	Common Name	Family	IUCN / WPA	Status in study area
<i>Hierococcyx varius</i>	Brainfever Bird	Cuculidae	LC / IV	Yes
<i>Himantopus himantopus</i>	Black-winged Stilt	Recurvirostridae	LC / IV	Yes
<i>Hirundo concolor</i>	Dusky Crag Martin	Hirudinidae	LC / IV	Yes
<i>Hirundo daurica</i>	Red rumped Swallow	Hirudinidae	LC / IV	Yes
<i>Hirundo fluvicola</i>	Streak -throated Swallow	Hirudinidae	LC / IV	Yes
<i>Hirundo rusttea</i>	Common Swallow	Hirudinidae	LC / IV	Yes
<i>Hirundo smithii</i>	Wire-tailed Swallow	Hirudinidae	LC / IV	Yes
<i>Hydrophasianus chirurgus *</i>	Pheasant-tailed Jacana	Jacanidae	LC / IV	Yes
<i>Ammomanes phoenicurus</i>	Rufous-tailed Finch-Lark	Alaudidae	LC / IV	Yes
<i>Lanius excubitor</i>	Great Grey Shrike	Lanidae	LC / IV	No
<i>Lanius schach</i>	Rufous-backed Shrike	Lanidae	LC / IV	No
<i>Lanius vittatus</i>	Bay-backed Shrike	Lanidae	LC / IV	No
<i>Icthyophaga ichthyaetus</i>	Greater Grey-headed Fish Eagle	Accipitridae	LC / I	No
<i>Lonchura malabarica</i>	White-throated Munia	Eastrildidae	LC / IV	No
<i>Lonchura punctulata</i>	Spotted Munia	Eastrildidae	LC / IV	Yes
<i>Lonchura striata</i>	White-rumped Munia	Eastrildidae	LC / IV	No
<i>Megalaima haemacephala</i>	Coppersmith Barbet	Capitonidae	LC / IV	Yes
<i>Megalaima zeylanica</i>	Brown-headed Barbet	Capitonidae	LC / IV	Yes
<i>Merops orientalis</i>	Small Bee- eater	Meropidae	LC / IV	Yes
<i>Merops philippinus</i>	Blue-Tailed bee-eater	Meropidae	LC / IV	Yes
<i>Mesophoyx internledia*</i>	Median Egret	Ardeidae	LC / IV	Yes
<i>Metopidius indicus</i>	Bronze-winged Jacana	Jacanidae	LC / IV	Yes
<i>Milvus migrans*</i>	Black kite	Accipitridae	LC/ IV	Yes
<i>Motacilla alba*</i>	White Wagtail	Motacillidae	LC / IV	Yes
<i>Motacilla cinerea*</i>	Grey Wagtail	Motacillidae	LC / IV	Yes
<i>Motacilla citreola</i>	Citrine Wagtail	Motacillidae	LC / IV	No
<i>Motacilla jlava</i>	Yellow Wagtail	Motacillidae	LC / IV	No
<i>Motacilla maderaspatensis</i>	Large Pied Wagtail	Motacillidae	LC / IV	Yes
<i>Muscicapa daurica</i>	Asian Brown Flycatcher	Muscicapinae	LC / IV	Yes
<i>Nectarinia asiatica</i>	Indian Purple Sunbird	Nectarinida	LC / IV	Yes
<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	Nectarinida	LC / IV	No
<i>Neophron percnopterus</i>	Egyptian Vulture	Accipitridae	EN/ I	No
<i>Nettapus coromandelianus</i>	Cotton Teal	Anatidae	LC / IV	Yes
<i>Numenius arquata</i>	Curlew	Scolopacidae	LC / IV	Yes
<i>Ocyrceros birostris</i>	Indian Grey Hornbill	Bucerotidae	LC / IV	Yes
<i>Oriolus oriolus</i>	Eurasian Golden Oriole	Oriolidae	LC / IV	No

Scientific Name	Common Name	Family	IUCN / WPA	Status in study area
<i>Oriolus xanthornus</i>	Black-headed Oriole	Oriolidae	LC / IV	No
<i>Orthotomus sutorius</i>	Indian Tailor Bird	Sylviinae	LC / IV	Yes
<i>Parus major</i>	Great Tit	Paridae	LC / IV	No
<i>Passer domesticus*</i>	Indian House Sparrow	Passeridae	LC / IV	Yes
<i>Pavo cristatus</i>	Peacock	Phasianidae	LC / I	Yes
<i>Perdica asiatica</i>	Jungle Bush Quail	Phasianidae	LC / IV	Yes
<i>Pericrocotus cinnaimomeus</i>	Small Minivet	Campephagidae	LC / IV	Yes
<i>Pericrocotus lammeus</i>	Scarlet Minivet	Campephagidae	LC / IV	Yes
<i>Phaenicophaeus leschenaulti</i>	Sirkeer Malkoha	Cuculidae	LC / IV	No
<i>Phalacrocorax niger</i>	Little Cormorant	Phalacrocoracidae	LC / IV	Yes
<i>Phoenicurus ochruros</i>	Black Redstart	Muscicapidae	LC / IV	No
<i>Phylloscopus collybita</i>	Common Chiff Chaff	Sylviinae	LC / IV	Yes
<i>Pitta brachyura</i>	Indian Pitta	Pittidae	LC / IV	Yes
<i>Platalea leucorodia</i>	Eurasian Spoonbill	Threskiornithidae	LC / I	No
<i>Ploceus philippinus*</i>	Baya Weaver	Passeridae	LC / IV	Yes
<i>Podiceps cristatus</i>	Great Crested Grebe	Podicipedidae	LC / IV	No
<i>Porphyrio porphyrio*</i>	Purple Moorhen	Rallidae	LC / IV	Yes
<i>Prinia hodgsonii</i>	Franklin's Prinia	Sylviinae	LC / IV	No
<i>Prinia inornata</i>	Plain Prinia	Sylviinae	LC / IV	No
<i>Prinia socialis*</i>	Ashy Prinia	Sylviinae	LC / IV	Yes
<i>Prinia sylvatica</i>	Jungle Prinia	Sylviinae	LC / IV	No
<i>Pseudibis papillosa</i>	Black Ibis	Threskiornithidae	LC / IV	No
<i>Psittacula cyanocephala</i>	Plum-headed Parakeet	Psittacidae	LC / IV	No
<i>Psittacula eupatria</i>	Alexandrine Parakeet	Psittacidae	LC / IV	No
<i>Psittacula krameri*</i>	Rose-Ringed Parakeet	Psittacidae	LC / IV	Yes
<i>Pterocles indicus</i>	Painted Sandgrouse	Pteroclididae	LC / IV	Yes
<i>Pycnonotus cafer</i>	Red-vented Bulbul	Pycnonotidae	LC / IV	Yes
<i>Pycnonotus jocosus</i>	Red-whiskered Bulbul	Pycnonotidae	LC / IV	Yes
<i>Rhipidura albicollis</i>	White-throated Fantail Flycatcher	Muscicapinae	LC / IV	Yes
<i>Rhipidura aureola</i>	White-browed Fantail Flycatcher	Muscicapinae	LC / IV	Yes
<i>Rhodonessa rujina</i>	Red-crested Pochard	Anatidae	LC / IV	Yes
<i>Rostratula benghalensis</i>	Greater Painted Snipe	Rostratulidae	LC / IV	Yes
<i>Sarkidiornis melanotus</i>	Comb Duck	Anatidae	LC / IV	Yes
<i>Saxicola caprata</i>	Pied Bushchat	Muscicapidae	LC / IV	Yes
<i>Saxicoloides julicata</i>	Indian Robin	Muscicapidae	LC / IV	Yes
<i>Sireptopelia decaocto*</i>	Eurasian Collared Dove	Columbidae	LC / IV	Yes
<i>Sitta castanea</i>	Chestnut-bellied	Sittidae	LC / IV	No

Scientific Name	Common Name	Family	IUCN / WPA	Status in study area
	Nuthatch			
<i>Spilornis cheela</i>	Lesser Crested Serpent Eagle	Accipitridae	LC / I	No
<i>Spizaetus cirrhatus</i>	Changeable Hawk Eagle	Accipitridae	LC / I	No
<i>Sterna aurantia</i>	River Tern	Laridae	VU / IV	Yes
<i>Streptopelia chinensis</i>	Spotted dove	Columbidae	LC / IV	Yes
<i>Streptopelia senegalensis</i>	Little brown Dove	Columbidae	LC / IV	Yes
<i>Sturnus contra</i>	Asian Pied Starling	Sturnidae	LC / IV	No
<i>Sturnus pagodarum</i>	Brahminy Starling	Sturnidae	LC / IV	Yes
<i>Tactybaptus ruficollis</i>	Little Grebe	Podicipedidae	LC / IV	Yes
<i>Tadorna ferruginea</i>	Brahminy Shelduck	Anatidae	LC / IV	Yes
<i>Tephrodornis pondicerianus</i>	Common Wood shrike	Campephagidae	LC / IV	Yes
<i>Terpsiphone paradisi</i>	Asian Paradise-Flycatcher	Muscicapinae	LC / IV	Yes
<i>Threskiornis melanocephalus</i>	Oriental White Ibis	Threskiornithidae	NT / IV	No
<i>Treron phoenicoptera</i>	Yellow -legged green pigeon	Columbidae	LC / IV	No
<i>Tringa glareola</i>	Wood Sandpiper	Scolopacidae	LC / IV	Yes
<i>Tringa nebularia</i>	Common Green Shank	Scolopacidae	LC / IV	Yes
<i>Tringa ochropus</i>	Green Sandpiper	Scolopacidae	LC / IV	Yes
<i>Tringa totanus</i>	Common Red Shank	Scolopacidae	LC / IV	Yes
<i>Turdoides caudatus</i>	Common Babbler	Timaliina	LC / IV	Yes
<i>Turdoides malcolmi</i>	Large Grey Babbler	Timaliina	LC / IV	Yes
<i>Turdoides striatus</i>	Peninsular Jungle Babbler	Timaliina	LC / IV	Yes
<i>Turnix suscitator</i>	Common Buttonquail	Turnicidae	LC / IV	Yes
<i>Upupa epops</i>	Common Hoopoe	Upupida	LC / IV	Yes
<i>Vanellus indicus*</i>	Red -wattled Lapwing	Charadriidae	LC / IV	Yes
<i>Vanellus malabaricus</i>	Yellow-wattled Lapwing	Charadriidae	LC / IV	Yes
<i>Zoothera citrina</i>	Orange-headed Thrush	Muscicapidae	LC / IV	Yes
<i>Zosterops palpebrosa</i>	Oriental White Eye	Zosteropida	LC / IV	Yes

### 8.3 Impact of the proposed coal mine on the RET and Schedule I Fauna

A list of all Schedule-I species reported from the TATR and their status in the core area (Mine lease) and its buffer zone of 10 km radius is presented in Table 12. It may be noted from the Table 12 that there are only two Schedule I species in the core (mine lease) area. They are represented by the Peacock (*Pavo cristatus*) and Common Monitor lizard (*Varanus bengalensis*). But in case of the reserve forest areas of the buffer zone, Blackbuck (*Antilope cervicapra*), Indian Gaur or Bison (*Bos gaurus*), Sloth Bear (*Melursus ursinus*), Mouse Deer (*Moschiola meminna*), Leopard (*Panthera pardus*), Tiger (*Panthera tigris*) and Four Horned Antelope

(*Tetracerus quadrieornis*) among Mammals; Shikra (*Accipiter badius*) and Peacock (*Pavo cristatus*) among the birds were either spotted or reported. Among the Reptiles, Common monitor Lizard (*Varanus bengalensis*) and Python (*Python molurus*) have been recorded or reported from the forest areas of the buffer zone.

**TABLE-12**  
**LIST OF RET AND SCHEDULE-I SPECIES OF FAUNA REPORTED**  
**FROM TATR AND THEIR STATUS IN CORE/BUFFER ZONE**

Scientific Name	Common Name	IUCN/ WPA	Whether found in	
			Core	Buffer
	<b>Mammals</b>			
<i>Antilope cervicapra</i>	Blackbuck	VU / I	No	Yes
<i>Bos gaurus</i>	Indian Gaur / Bison	VU / I	No	Yes
<i>Canis lupus pallipes</i>	Indian Wolf	VU /I	No	Yes
<i>Felis silvestris</i>	Indian Desert Cat	EN / I	No	No
<i>Manis crassicaudata</i>	Pangolin	EN /I	No	No
<i>Mellivora capensis</i>	Honey Badger	DD /I	No	No
<i>Melursus ursinus</i>	Sloth Bear	VU /I	No	Yes
<i>Moschiola meminna</i>	Mouse Deer	VU / I	No	Yes
<i>Panthera pardus</i>	Leopard	VU /I	No	Yes
<i>Panthera tigris</i>	Tiger	EN /I	No	Yes
<i>Prionailurus bengalensis</i>	Leopard Cat	NT / I	No	No
<i>Tetracerus quadrieornis</i>	Four Horned Antelope	VU / I	No	Yes
	<b>Birds</b>			
<i>Accipiter badius</i>	Shikra	LC / I	No	Yes
<i>Accipiter nisus</i>	Eurasian Sparrow Hawk	LC / I	No	No
<i>Aquila rapax</i>	Twany Eagle	LC / I	No	No
<i>Butastur teesa</i>	White-eyed Buzzard	LC / I	No	No
<i>Circaetus gallicus</i>	Short-toed Snake Eagle	LC / I	No	No
<i>Circus aeruginosus</i>	Western Marsh harrier	LC / I	No	No
<i>Circus macrourus</i>	Pal lied Harrier	LC / I	No	No
<i>Elanus caeruleus</i>	Black -shouldered Kite	LC / I	No	No
<i>Flaco peregrinus</i>	Peregrine Falcon	LC / I	No	No
<i>Grus antigone</i>	Sarus Crane	VU / I	No	No
<i>Gyps bengalensis</i>	Indian White Backed -Vulture	CR / I	No	No
<i>Haliastur indus</i>	Brahminy Kite	LC / I	No	No
<i>Icthyophaga ichthyaetus</i>	Greater Grey-headed Fish Eagle	LC / I	No	No
<i>Neophron percnopterus</i>	Egyptian Vulture	EN/ I	No	No
<i>Pavo cristatus</i>	Peacock	LC / I	Yes	Yes
<i>Platalea leucorodia</i>	Eurasian Spoonbill	LC / I	No	No
<i>Spilornis cheela</i>	Lesser Crested	LC / I	No	No

Scientific Name	Common Name	IUCN/ WPA	Whether found in	
	Serpent Eagle			
<i>Spizaetus cirrhatus</i>	Changeable Hawk Eagle	LC / I	No	No
	<b>Reptiles</b>			
<i>Crocodylus palustris</i>	Marsh Crocodile	VU / I	No	No
<i>Lissemys punctata</i>	Southern flap-shelled turtle	NT / I	No	No
<i>Python molurus</i>	Rock Python	VU / I	No	Yes
<i>Varanus bengalensis</i>	Bengal Monitor Lizard	VU / I	Yes	Yes

## 8.0 CONSERVATION PLAN FOR THE SCHEDULE-I SPECIES WITHIN CORE ZONE

### 8.1 Conservation of Monitor Lizard (*Varanus bengalensis*)



**FIGURE-7**  
**MONITOR LIZARD (*Varanus bengalensis*)**

#### Classification:

Kingdom	Animalia
Phylum	Chordata
Class	Reptilia
Order	Squamata
Family	Varanidae
Genus	Varanus
Subgenus	Empagusia
Species	<i>V. bengalensis</i>
Binomial Name	<i>Varanus bengalensis</i>

#### Conservation Status of Monitor Lizard:

##### Conservation:

While it is assessed LC (Least Concern) by the IUCN 2009, the assessment currently requires updating. The Bengal monitor is listed as Appendix I of CITES and Schedule I of the 1972 Wildlife Protection Act. The wild population is decreasing as it is hunted for both consumption and medicinal purposes. As it is



adaptable to a range of habitats, the threat of habitat degradation is relatively less prominent and is superseded by the threat of agricultural pollution, as pesticides reduce the availability of prey.

### **General Description:**

*Varanus bengalensis* or the Indian monitor lizard is found all over India. This lizard is ground dwelling and prefers the shady places and builds nests in sand dunes and mud tunnels. Due to ever expanding urbanization, habitat loss of this species is on rise and because of that this animal is entering the households where people kill it due to several orthodox beliefs. According to IUCN Red List, *Varanus bengalensis* is considered as the least concerned species in terms of conservation priorities but its population size is decreasing at an alarming rate. The primary reason for population decline, according to Sharma et al (2018), is the killing of this animal by local people due to lack of awareness about the importance of this lizard. People hunt the *Varanus bengalensis* for meat consumption as well as for skin sale. They also discovered several false beliefs among local peoples which cause immense harm to these monitors. Rural people believe that if a tongue of a land monitor is eaten by inserting in a ripe banana, it will give super memory to the child. Another common belief is that chewing the tail of a land monitor strengthens the gums and the flesh of a land monitor is a remedy for convalescents. Since the land monitor rarely drinks water from the water outlet, people believe that if a person eats the flesh of a land monitor, he will never suffer from wheeze. The oil of *Varanus bengalensis*, extracted from the fat bodies of lizard is used for the treatment for failing vision, arthritis, rheumatism, piles and muscular pains and for cooking purpose in extreme winters. Apart from the above, *Varanus bengalensis* are also killed while crossing the roads by vehicles and dogs.

### **Distribution & Habitat:**

The species ranges from Iran to Java, among the most widely distributed of varanid lizards as they are eurytopic and adaptable to a range of habitats. It is found in river valleys in eastern Iran, Afghanistan, India, Nepal, Sri Lanka, Pakistan, Burma and Bangladesh.

### **Ecology and Behaviour:**

Bengal monitors are usually solitary and usually found on the ground, although the young are often seen on trees. Bengal monitor prefers forest over agricultural areas. Bengal monitors shelter in burrows they dig or crevices in rocks and buildings. Bengal monitors, like other varanids, show true sleep at night and are diurnal, becoming active around 6 AM and bask in the morning sun. During winter, in the colder parts of their distribution range, they may take shelter and go through a period of reduced metabolic activity. They are not territorial and may change their range seasonally in response to food availability.

They are usually shy and avoid humans. They have keen eyesight and can detect human movement nearly 250 m away. When caught, a few individuals may bite, but rarely do so. Although they are found on agricultural land, they prefer forests with large trees. Generally, high ground cover with large trees are favorable areas. Captives have been known to live for nearly 22 years. Predators of adults include pythons, mammalian predators and birds.

The species is distributed mainly in the lower elevations, and is found both in dry semiarid desert habitats to moist forest. They are often found in agricultural areas.

### **Ecological Role**

Monitor lizards perform an essential function in agricultural and forest ecosystems by feasting on insects, rodents, bird eggs, snakes, fish, and crabs, thereby regulating their populations. In some regions, they are also a source of food for other predators. Monitor lizards are also scavengers and play a significant role in biomass decomposition and recycling. They clear carrion and help in controlling the spread of disease.

### **Feeding**

Bengal monitors tend to remain active the whole day. Large adults may ascend vertical tree trunks, where they sometimes stalk and capture roosting bats. The species is a generalist, and feeds on a varied diet of invertebrates and vertebrates. Hares and rodents such as Indian bandicoot rats are often caught by digging them out of their nests. Bengal monitors will also scavenge carrion, and sometimes congregate when feeding on large carcasses such as that of deer. In areas where livestock are common, they often seek out dung to forage for beetles and other insects.

### **Conservation status**

According to the IUCN Red List of Threatened Species, *Varanus bengalensis* is a species of Least Concern. This is based on its wide geographic range. However, there are increasing pressures on the species. They are hunted for their meat, skins, and for use in medicine. Due to expanding human habitation and urbanization, the range threats to their population are likely to increase in the future. (Papenfuss, et al., 2010).

### **Conservation Efforts**

1. Awareness among the local peoples for its conservation is prime important as mostly the lizards are being hunted for Meat, skin and medicine.
2. Illegal trade to meet the demand for skin, and consumption of monitor lizard meat is a current challenge and therefore consumer-centric awareness campaigns will be crucial.
3. The ongoing demand for Hatha Jodi and the myths and misconceptions associated with its use clearly highlight the need to develop a robust enforcement strategy to protect the species from poaching and trafficking. Further, the demand for Hatha Jodi has also been observed online, which underlines the significance of employing effective measures to combat wildlife cybercrime.
4. Loss of habitat and expansion of human settlements have increased the pressure on monitor lizard populations in India, hence the need for habitat restoration programmes in their confined geographical regions.

## **8.2 Conservation Plan for Indian Peafowl (*Pavo cristatus*)**



**FIGURE-10**  
**INDIAN PEA FOWL (*Pavo Cristatus*)**

**Classification**

Kingdom:	Animalia
Phylum:	Chordata
Class:	Aves
Order:	Galliformes
Family:	Phasianidae
Genus:	Pavo
Species:	Pavo cristatus
Vernacular name:	Indian Peafowl

**Introduction:**

A detailed biological survey of the core zone (Project site) and buffer zone (10 km radius from periphery of the project) was carried out giving details of flora and fauna. However, peacock which belongs to Schedule-I of the Wildlife (Protection) Act 1972 are commonly found in the buffer zone of study area.

The Indian Peafowl appears so frequently in religion, folklore, art and craft, that it is possibly the most recognised bird across India. Internationally as well, the peafowl (perhaps alongside the tiger) is immediately associated with India. Having been declared the national bird in 1963, the species also finds itself under the highest level of legal protection in the country, being placed in Schedule-I of the Wildlife (Protection) Act, 1972 and further amendments.

**Distribution:**

Peafowl are spread across the plains and hills of India, except in extremely dry or wet regions. The abundance trend is that of a general increase, both in the long term and currently. This trend appears to result from a combination of range expansion, and a population increase virtually throughout its distribution. The protection (and associated penalties for poaching and poisoning) afforded by being in Schedule-I may also have contributed to increase. Some parts of the country report greater levels of crop damage by peafowl, a trend that calls for careful conflict assessment and management. According to the State of India's Birds 2020 Report, Peacock population more than doubled in India during the past one decade. In the neighbouring Sri Lanka, it is assumed the proportions of a

pest. According to the IUCN Red list, Peacock is in the least concern (LC) category.

Peacock or Indian peafowl (*Pavo cristatus*) is a familiar and universally known large pheasant. It is a National Bird of India, belongs to Schedule-I of the Wildlife (Protection) Act 1972 was reported from some villages of the study area. The male has a spectacular glossy green long tail feathers that may be more than 60 percent of the bird's total body length. These feathers have blue, golden green and copper colored ocelli (eyes). The long tail feathers are used for mating rituals like courtship displays. The feathers are arched into a magnificent fan shaped form across the back of the bird and almost touching the ground on both sides. Females do not have these graceful tail feathers. They have the fan like crest with whitish face and throat, chestnut brown crown and hind neck, metallic green upper breast and mantle, white belly and brown back rump and tail.

### **Habitat**

**Body length:** 180-230 cm

**Weight:** 2750-6000 gm

**Habitat:** In the undergrowth in deciduous forests near streams, Tall trees for roosting Size of the male tail feathers, its coloration and numbers of eyes presents determine the dominance of the male in peacock hierarchy. The females are believed to be attracted towards the male with longest and most colorful tail feathers.

### **Conservation Status ICUN:**

Least Concern IWPA: Schedule I CITES: Not listed, Peacocks are gregarious by nature. In the breeding season they are usually seen in small parties of one male with three to five females whereas in the non breeding season they remain in separate parties of adult males and females with juveniles. Peacocks roost in tall trees and emerge from the dense thickets to feed in fields and openings in forests and fields.

### **Life Cycle**

**Breeding:** April-September (Project area)

**Nest site:** On ground in undergrowth (wild) On buildings by semi-feral birds in villages.

### **Habitat Use**

All the direct sightings of the peacock were located near the human dominated areas. This species is well adapted to natural village environment setting. According to the villagers, peacock is present in both, village and forest areas. Day time they temporarily move towards the surrounding agriculture areas for feeding while during night time roosts on the trees present in the village.

### **Food Habits**

Peafowls are omnivores, eating plant parts, flower petals, seed heads, insects and other arthropods, reptiles and amphibians. In the study area, dense tree canopy cover supports good insect diversity which is very common food for peafowl. A total of 15 nos. peafowl observed at 4 locations within buffer area (10 km radius

from periphery of project site) of project site. Present survey of the peafowl in study area cleared that; peafowl is using both, village adjacent habitats. However, the following points can give an insight on the overall status of peafowl in the study area and thereby plan for better management strategies related to proposed activities. People of the surveyed villages were well aware of the habits and habitats of peafowl in the study area. Moreover, local people are against hunting and poaching of the Peacocks. In the study area peafowl uses agriculture (adjacent to village) as a feeding and breeding ground. Some of the peacocks are taking shelter in the village adjacent habitats while some prefer to forest habitats.

#### **Conservation Plan:**

Peacock is a large and beautiful flying bird and rightly crowned as the National Bird. It occurs all over India both in forest and non-forest areas. The Peacocks worshipped as the Vahana/ carriers of Karthikeya / Subrahmanya Swamy/ Murugan in India, Nepal and Sri Lanka. Hence, there is no threat from locals. In the project under consideration, Peacocks were found in the buffer zone mainly in local temples where they are protected. They were not found in the project site or core area.

There are two major kinds of threats to Peacock. One is illegal poaching for meat and feathers and the other is due to consumption of pesticide treated seeds sown by farmers. In spite of the above, there are healthy populations according to the State of India's Birds 2020 Report and there is no risk of extinction. If allowed to domesticate, Peacocks shall become pet birds and their numbers can increase very rapidly.

#### **Conservation Efforts:**

- I. Encourage afforestation activities in consultation with forest department. The selection of plant species should be in consultation with local forest department based on requirements of avifauna roosting, food (Grains, Pulses, fruiting trees etc.) and shelter.
- II. Small Grove of Trees (a group of trees that grow close together, generally without many bushes or other plants) will be planted in habituated areas of villages and school compounds located in buffer area in consultation with local forest department. Groves are small patches of vegetation will be protected in traditional manner.
- III. Organize seminar, conferences, nature club, poster presentation at school and Gram Panchayat level around the bird habitation area. Local population will be made aware to do not kill birds for meat, feathers.
- IV. Train the staff & laborers involved in project activities and make them aware of sensitive avifauna status as National Bird of India, and Schedule-I species protected under Indian Wildlife Protection Act, 1972 and related knowledge.
- V. Wildlife Signage containing information about environment, wildlife, forest conservation, about wildlife animals along with photographs will be displayed in core and buffer areas to create awareness among the local people.

- VI. Wildlife Environment Day and Wildlife Week (1st to 07th Oct) will be celebrated together with forest department and involving local population to create awareness among the people for the conservation of peafowl avifauna species.

#### 9.0 **STRATEGIES FOR MANAGEMENT OF SCHEDULE-I SPECIES OUTSIDE THE CORE AREA:**

Though there are plans and strategies for Management of each and every Schedule I species, it is not feasible to conserve any species in isolation under the natural conditions since every organism is interlinked and interconnected to every other organism by innumerable invisible links. The very fundamental ecological principle underlines that no organism lives in isolation if separated from its environment and the environment includes the abiotic and biotic components and their interactions.

The word Management is deliberately chosen here instead of the widely popular word conservation since conservation could mean preservation. Management should be holistic and comprehensive and should not be sectorial. That is why, great emphasis and stress is laid on integrated wildlife management but not conservation of Schedule I species alone. Hence, separate conservation plan for every schedule I species reported from the buffer zone and the TATR is not given.

#### 9.1 **Conservation of Sloth Bear (*Melursus ursinus*)**



**FIGURE-9**  
**SLOTH BEAR (*Melursus ursinus*)**

#### **Classification:**

Kingdom:	Animalia
Phylum:	Chordata
Class:	Mammalia
Order:	Carnivora
Family:	Ursidae
Genus:	Melursus
Species:	M. ursinus

**Distribution:**

It is endemic to Indian sub-continent, and it has discontinuous distribution. Sloth Bear populations have declined, and its range has shrunk over the past century, primarily due to habitat loss. However, even fundamental information on distribution and present status is lacking for most of its range. We collated recent information from literature and by distributing questionnaires to wildlife researchers, managers, and naturalists in India.

**Description:**

Long, shaggy typically black pelage, the fur being particularly long around the neck and back of the head. Adaptations for digging and consuming ants and termites include long (6cm to 8cm) slightly curved front claws with inward turning front paw, a broad palate, protrusible lips, and the lack of the two upper middle incisors. Adult males generally weigh 80kg to 145kg, and adult females 55kg to 95kg.

**Populations and status**

New IUCN criteria for categorizing species by degree of threat rely on estimates of abundance (total numbers and rate of decline), distribution (total occupied area and degree of fragmentation), and probability of extinction (IUCN 1996). Under these criteria, the sloth bear is listed as Vulnerable (IUCN 1996), although much of these data are not available for sloth bears, and it is questionable.

**Range:** Patchy distribution throughout the Indian sub-continent, mainly in forested areas. Not found in the mountain regions of Himachal Pradesh and Jammu and Kashmir, the northwestern deserts of Rajasthan, and the non-forested area of southern India.

**Habitat:** Common sloth bears are found in forests, scrub areas and, during the dry season, grasslands.

**Status:** Protected under Schedule I of the Indian Wildlife Protection Act which prohibits hunting but allows bears to be killed in self-defense or, in special circumstances, where damage has been caused. The population appears to be falling and sloth bears are described as "vulnerable" in the IUCN Red List.

**Life span:** Up to 40 years in captivity, likely to be significantly less in the wild.

**Food:** The bears are omnivorous and fruit and termites form major parts of their diet. In those areas where bears eat greater quantities of fruit (up to 90 percent of their diet) human land use and presence may well be causing them to avoid termite colonies. They also eat other insects and larvae, leaves, flowers, honey, eggs, small mammals and carrion.

**Behaviour:** Mainly nocturnal common sloth bears often sleep in caves during the day. Whilst sloth bears do not hibernate, they are much less active during the rainy season. They are excellent climbers. Although they have a keen sense of

smell their eyesight and hearing seem relatively poor. Whilst generally solitary except for mothers with cubs and during mating, there is some evidence that the bears are not territorial and will sometimes associate with one another. Males have been observed in the company of females with cubs. Mating commonly occurs during May to July but does vary by region. Research indicates that in India mating most commonly occurs in June. Most births occur from September to January following a six- or seven-month gestation period. Females usually give birth in a cave or in a shelter built on the ground, usually to one or two cubs but sometimes to three. Cubs remain with their mother for 18 months to two years, during which time she will not become pregnant again.

**Threats:** Habitat loss and poaching are the major threats to the common sloth bear. Historically bears have been poached to be used as captive dancing bears but this is declining and in 2012 it was announced that all Kalandar tribesmen had ceased the practice of keeping dancing bears. Poaching still occurs to obtain bear parts for use in medicine and bears are also hunted and killed due to their reputation for aggression towards humans and for crop destruction

Though, it is in the lower risk category of the IUCN, its numbers are declining mainly due to loss of habitat. Efforts are going of mapping the sloth bear habitats and to sustain the healthy populations. Daroji Sloth Bear Sanctuary near Hampi in Karnataka, Agra Bear Rescue Facility in U.P and the Jessore Sloth Bear Sanctuary are the three main sanctuaries with special facilities for rescue and rehabilitation established in India.

A preliminary survey of literature reveals that it is not possible to conserve them in isolation. There is no way to conserve the Sloth Bear in the project site as the habitat is not suitable and hence an integrated wildlife management plan needs to be put in place by the Wildlife department with assistance of the project proponent.

**Conservation efforts:**

1. With the help of Local People and employees of the company watch will be keep on the wild life as sell as illegal tree felling Forest and forest department will be informed if such a incident occurs to take legal action against the off enders if necessary help of forest department will be taken to see by any such stranded animals, particularly sloth bear if it is strays to the Railway Line area to a safer area. Fruit trees, like Mahua (madhucalati folia) Tendu (diospyrosmelanoxylon) and Jamun (syzygiumcumini) etc will be planted for sloth bear.
2. Providing Food and Fodder through enrichment of floral Components: Massive tree planting activities will be taken up through Forest Development corporation/Forest Department in the adjoining area of forest Land as well is Revenue Land of Villages. The fruit bearing tree and flowering trees will be given preference to the benefit of wild life and human being as well.
3. Encourage Local Villages to Grow Trees On Their Field Bunds/Court Yard etc: In Consultation with Forest Department, the Company will provide some saplings of tree species important for wood, timber and fuel will be distributed to the Villagers. Bamboo will be another important species with environmental & economic value. this no doubt, will help reduce Dependence on Forest, as a result the ecological condition of the area will improve and they will be attracted to this area.
4. For The Benefit Of Sloth Bear:- Of any bear is either stranded in Danger , with the help of Forest Department will be translocated to a place, that the



department will chose. the local people of the area with the financial help from the company will be taught how to deal with the beer so as to avoid the danger to each other. Company will provide the necessary financial support to the Forest deptt for training programme.

## 9.2 Indian Rock Python (*Python molurus*) Conservation Plan



**FIGURE-12**  
**ROCK PYTHON (*Python molurus*)**

### Classification

Phylum	Chordata
Class	Reptila
Order	Squamata
Suborder	Surpentes
Family	Pithonidae
Genus	Python
Species	Python molurus

### General Description:

A large snake generally reaching up to 6 meters and in extreme cases up to 9 metres, the Indian Python inhabits lowland forests. It is adept at both swimming and climbing trees. As with other pythons, it kills its prey which are mainly small mammals by the process of constriction and suffocation (Guptha, 2013).

The Indian Rock Python is thick-bodied and smooth scaled, head broader than neck, eye has vertical pupil and upper surface of head has large scales of different shapes and average length of 18ft. The overall colour of the rock Python varies from body full of irregular shaped patches with main dorsal colour white mixed with yellow, grey or brown; colour of patch mostly dark brown or blackish, between these patches yellowish-brown colour exists.

A python may live more than 20 years. They are solitary creatures, but males and females seek each other out to mate. The female coils about her eggs to incubate them. Young pythons have many natural enemies, including eagles, crocodiles, large cats such as leopards and tigers, and hyenas.

This is a non-venomous snake and can grow up to 4m and weigh 45 kg. The colour is dark brown and yellowish white in a blotched pattern. They are very good swimmers and take to water when disturbed but on land, they hiss and

remain motionless. The species is oviparous and lay up to 100 eggs in a clutch protected and incubated by the female. Being exothermic, python basks in open but can also raise body temperature by muscular contractions.

Python occurs in wide range of habitats viz. rocky foothills, grass lands, marshes, swamps, wood lands, open jungle. At times, they take refuge in mammal burrows, hollow trees etc. It has also been reported close to habitation and crop fields. The snake feeds on mammals, birds and reptiles but prefers the first. Chital deer, fawns, hares, mouse deer, jungle fowl are natural food. It can swallow prey bigger than its size as the jaw bones are not hinged. The prey is constricted to death by muscular movement and swallows head first. Once held in jaw, prey cannot escape because of inward bent teeth.

Pythons are protected by Law under Schedule I of the Wildlife (Protection) Act. They are killed due to ignorance or out of fear when they enter habitation and capture goats or poultry. They are also silently poached for their ornamental skin. Road kills is another tragedy for Pythons as they cross roads slowly they are crushed to death by fast moving vehicles.

The presence of Python in the buffer zone is recorded based on the information given by the people working in the Coal mines located in the buffer zone. It was a onetime occurrence. Subsequently, nobody knows anything about this reptile. Pythons are neither confined to the project site and its buffer zone nor are they common everywhere. They are rarely seen in most parts of India and in the neighbouring countries. They are not killed for meat but for skin in India. The main threat is due to fear of snakes. They are also killed when they attack sheep or goats etc. According to the IUCN data, there is no immediate threat to the Pythons and hence they are placed in the lower risk category of NT. The project site and its buffer zone are extensively disturbed it is not a suitable habitat for their conservation in situ. The vehicle drivers shall be instructed to ensure safe road crossing by Pythons since road kills is one of the causes for the death of Pythons.

#### **Conservation Efforts:**

1. Identify critical python habitat and map the priority sites.
2. Design sign boards showing presence of Pythons in the area
3. Provision of veterinary care and Rescue for the species when it there is a direct encounter with the local residents
4. Local snake rescue teams should be informed whenever there is a direct encounter with the Python
5. Conduct awareness campaigns in schools on protected species, anti-poaching and conservation laws.
6. Distribution of pamphlets, handouts comprising a list of Do's and Don'ts when encountered a Python must be carried out among the people.

### 9.3 Conservation of Tiger (*Panthera tigris*):



#### **Classification:**

Kingdom: Animalia  
Phylum: Chordata  
Class: Mammalia  
Order: Carnivora  
Suborder: Feliformia  
Family: Felidae  
Subfamily: Pantherinae  
Genus: *Panthera*  
Species: *P. tigris*

#### **Distribution& Habitat:**

The tiger is essentially associated with forest habitats. Tiger populations thrive where populations of wild cervids, bovids and suids are stable. Records in Central Asia indicate that it occurred foremost in Tugay riverine forests along the Atrek, Amu Darya, Syr Darya, Hari, Chu and Ili Rivers and their tributaries. In the Caucasus, it inhabited hilly and lowland forests. Historical records in Iran are known only from the southern coast of the Caspian Sea and adjacent Alborz Mountains. In the Amur-Ussuri region, it inhabits Korean pine and temperate broadleaf and mixed forests, where riparian forests provide food and water, and serve as dispersal corridors for both tiger and ungulates. On the Indian subcontinent, it inhabits mainly tropical and subtropical moist broadleaf forests, moist evergreen forests, tropical dry forests and the swamp forests of the Sundarbans. In the Eastern Himalayas, tigers were documented in temperate forest up to an elevation of 4,200 m (13,800 ft) in Bhutan and of 3,630 m (11,910 ft) in the Mishmi Hills. In Thailand, it lives in deciduous and evergreen forests. In Laos, 14 tigers were documented in semi-evergreen and evergreen forest interspersed with grassland in Nam Et-Phou Louey National Protected Area during surveys from 2013 to 2017. In Sumatra, tiger populations range from lowland peat swamp forests to rugged montane forests.

#### **General Description:**

The tiger has a muscular body with powerful forelimbs, a large head and a tail that is about half the length of its body. Its pelage is dense and heavy, and colouration varies between shades of orange and brown with

white ventral areas and distinctive vertical black stripes; the patterns of which are unique in each individual. Stripes are likely advantageous for camouflage in vegetation such as long grass with strong vertical patterns of light and shade. The tiger is one of only a few striped cat species; it is not known why spotted patterns and rosettes are the more common camouflage pattern among felids. The orange colour may also aid in camouflage as the tiger's prey are dichromats, and thus may perceive the cat as green and blended in with the vegetation.

A tiger's coat pattern is still visible when it is shaved. This is not due to skin pigmentation, but to the stubble and hair follicles embedded in the skin. It has a mane-like heavy growth of fur around the neck and jaws and long whiskers, especially in males. The pupils are circular with yellow irises. The small, rounded ears have a prominent white spot on the back, surrounded by black. These spots are thought to play an important role in intraspecific communication.

The tiger's skull is similar to a lion's skull, with the frontal region usually less depressed or flattened, and a slightly longer postorbital region. The lion skull shows broader nasal openings. Due to the variation in skull sizes of the two species, the structure of the lower jaw is a reliable indicator for their identification. The tiger has fairly stout teeth; its somewhat curved canines are the longest among living felids with a crown height of up to 90 mm (3.5 in).

#### **Conservation Measure:**

India accords topmost priority for conservation of Tigers. Project Tiger is a tiger conservation programme launched in April 1973 by the Government of India during Prime Minister Indira Gandhi's tenure. The National Tiger Conservation Authority (NTCA) was established in December 2005, following a recommendation of the Tiger Task Force, constituted by the Prime Minister of India for reorganised management of Project Tiger and the many Tiger Reserves in India. **All India Tiger Estimations are made once in every four years and the Status of the Tiger Report is released on Global Tigers day (29<sup>th</sup> July). The NTCA comes out every with Annual Plan of operation (APO).**

1. As per the section 38 v (3) of the Wildlife Protection Act, 1972 The State Government shall prepare a Tiger Conservation Plan including staff development and deployment plan for the proper management of each area referred to in sub-section (1), so as to ensure—
2. (a) Protection of tiger reserve and providing tiger reserve specific habitat inputs for maintaining a viable population of tigers, co-predators and prey animals.
3. (b) Ecologically compatible land uses in tiger reserves and areas linking one Protected Area (PA) with another PA or tiger reserve for providing dispersal habitat and corridors.
4. (c) Forestry operations of regular forest divisions and divisions adjoining tiger reserves are not incompatible with the needs of tiger conservation.
5. Out of 50 tiger reserves, the TCPs of following 35 tiger reserves have been approved by NTCA and rest are under preparation / scrutiny. TATR is one among the 35 Tiger Reserves approved by the NTCA.

Any plan for tiger conservation should be in accordance with the guidelines of the NTCA. There is no chance of conserving the Tigers in areas outside the protected areas.

#### 9.4 Conservation of Leopard (*Panthera pardus fusca*)



##### **Classification:**

Kingdom: Animalia  
 Phylum: Chordata  
 Class: Mammalia  
 Order: Carnivora  
 Suborder: Feliformia  
 Family: Felidae  
 Sub Family: Pantherinae  
 Genus: Panthera  
 Species: P.pardus

##### **Distribution and Habitat:**

The leopard has the largest distribution of all wild cats, occurring widely in Africa, the Caucasus and Asia, although populations are fragmented and declining. It is considered to be extirpated in North Africa. It inhabits foremost savanna and rainforest, and areas where grasslands, woodlands, and riverine forests remain largely undisturbed. In sub-Saharan Africa, it is still numerous and surviving in marginal habitats where other large cats have disappeared. There is considerable potential for human-leopard conflict due to leopards preying on livestock. Some leopard populations in the country live quite close to human settlements and even in semi-developed areas. Although adaptable to human disturbances, leopards require healthy prey populations and appropriate vegetative cover for hunting for prolonged survival and thus rarely linger in heavily developed areas.

##### **Description:**

The leopard's fur is generally soft and thick, notably softer on the belly than on the back. Its skin colour varies between individuals from pale yellowish to dark golden with dark spots grouped in rosettes. Its belly is whitish and its ringed tail is shorter than its body. Its pupils are round. Leopards living in arid regions are pale cream, yellowish to ochraceous and rufous in colour; those living in forests and mountains are much darker and deep golden. Spots fade toward the white underbelly and the insides and lower parts of the legs. Rosettes are circular in East African leopard populations, and tend to be squarish in Southern African and larger in Asian leopard populations. The fur tends to be grayish in colder climates,

and dark golden in rain forest habitats. The pattern of the rosettes is unique in each individual. This pattern is thought to be an adaptation to dense vegetation with patchy shadows, where it serves as camouflage.

**Conservation measures:**

According to the final report of Wildlife Institute of India 2016 on "Status and Distribution of Major Mammalian Fauna in the State of Madhya Pradesh," Leopard (*Panthera pardus*) has had the reputation of being one of the least studied of the large carnivores despite being the most abundant have widest geographic distribution of all felids and achieve this feat by their flexibility of habitat choice and having a varied diet. The sparse information on leopards in the Indian subcontinent has mostly come from studies that focused on the tiger. The Indian subspecies, *Panthera pardus fusca*, is found in all forested habitats in the country, absent only in the arid deserts and above the timber line in the Himalayas.

The leopard is quite adaptable with respect to habitat and food requirements, being found in intensively cultivated and inhabited areas as well as near urban development. There are frequent reports of leopards from many human dominated landscapes across India where it is involved in severe human-wildlife conflicts. Leopards may not be as adversely affected as tigers under deteriorating habitat conditions of continual loss of habitat and intense poaching for illegal trade in body parts has caused a decline in their population. It is listed as a species of vulnerable by the IUCN red list. In India, however, it is listed in Schedule I of the Indian Wildlife (Protection) Act, 1972, under the highest level of protection. This is because poaching for skins, bones and claws, habitat destruction, loss of wild prey and poisoning carcasses of livestock killed by leopards are a significant threat to the species.

Leopards are frequently spotted in recent times in cities like Bangalore, Hyderabad and many other areas. They seem to venture out of jungles in search of prey and water. Habitat conservation is considered to be important for conservation of Leopards.

Conservation Status: IUCN Status: Vulnerable (VU) and Wildlife (Protection) Act Schedule I.

## 9.5 Conservation of Indian Gaur or Indian Bison (*Bos gaurus gaurus*)



### **Classification:**

Kingdom:	Animalia
Phylum:	Chordata
Class:	Mammalia
Order:	Artiodactyla
Family:	Bovidae
Subfamily:	Bovinae
Genus:	Bos
Species:	B.gaurus

### **Description:**

The gaur is the largest extant bovid. It is a strong and massively built bovine with a high convex ridge on the forehead between the horns, which protrudes anteriorly, causing a deep hollow in the profile of the upper part of the head. There is a prominent ridge on the back. The ears are very large. In the old bulls, the hair becomes very thin on the back. The adult male is dark brown, approaching black in very old individuals. The upper part of the head, from above the eyes to the nape of the neck, is ashy grey, or occasionally dirty white. The muzzle is pale coloured, and the lower part of the legs are pure white or tan. The cows and young bulls are paler, and in some instances have a rufous tinge, which is most marked in groups inhabiting dry and open areas. The tail is shorter than in the typical oxen, reaching only to the hocks. They have a distinct ridge running from the shoulders to the middle of the back; the shoulders may be as much as 12 cm (4.7 in) higher than the rump. This ridge is caused by the great length of the spinous processes of the vertebrae of the fore-part of the trunk as compared with those of the loins. The hair is short, fine and glossy; the hooves are narrow and pointed.

The gaur does not have a distinct dewlap on the throat and chest. Both sexes have horns, which grow from the sides of the head, curving upwards. Between the horns is a high convex ridge on the forehead. At their bases they present an elliptical cross-section, a characteristic that is more strongly marked in bulls than in cows. The horns are decidedly flattened at the base and regularly curved

throughout their length, and are bent inward and slightly backward at their tips. The colour of the horns is some shade of pale green or yellow throughout the greater part of their length, but the tips are black. The horns, of medium size by large bovid standards, grow to a length of 60 to 115 cm (24 to 45 in). The cow is considerably lighter in colour than the bull. Her horns are more slender and upright, with more inward curvature, and the frontal ridge is scarcely perceptible. In young animals, the horns are smooth and polished. In old bulls they are rugged and dented at the base.

The gaur has a head-and-body length of 250 to 330 cm (8 ft 2 in to 10 ft 10 in) with a 70 to 105 cm (28 to 41 in) long tail, and is 142 to 220 cm (4 ft 8 in to 7 ft 3 in) high at the shoulder, averaging about 168 cm (5 ft 6 in) in females and 188 cm (6 ft 2 in) in males. At the top of its muscular hump just behind its shoulder, an average adult male is just under 200 cm (6 ft 7 in) tall and the male's girth at its midsection (behind its shoulders) averages about 277 cm (9 ft 1 in). Males are about one-fourth larger and heavier than females.

Body mass ranges widely from 440 to 1,000 kg (970 to 2,200 lb) in adult females and 588 to 1,500 kg (1,296 to 3,307 lb) in adult males. In general measurements are derived from gaurs surveyed in India. Indian gaur males averaged about 1,500 kg (3,300 lb) (in a sample of 13) and females weigh a median of approximately 700 kg (1,500 lb). In China, the shoulder height of gaurs ranges from 165 to 220 cm (5 ft 5 in to 7 ft 3 in), and bulls weigh up to 1,500 kg (3,300 lb).

### **Distribution and Habitat**

Gaur historically occurred throughout mainland South and Southeast Asia, including Vietnam, Cambodia, Laos, Thailand, Peninsular Malaysia, Myanmar, India, Bangladesh, Bhutan, China and Nepal. Today, the range of the species is seriously fragmented, and it is regionally extinct in Sri Lanka.

Gaur are largely confined to evergreen forests or semi-evergreen and moist deciduous forests, but also occur in deciduous forest areas at the periphery of their range. Gaur habitat is characterized by large, relatively undisturbed forest tracts, hilly terrain below an altitude of 1,500 to 1,800 m (4,900 to 5,900 ft), availability of water, and an abundance of forage in the form of grasses, bamboo, shrubs, and trees. Their apparent preference for hilly terrain may be partly due to the earlier conversion of most of the plains and other low-lying areas to croplands and pastures.

In India, the population was estimated to be 12,000–22,000 in the mid-1990s. The Western Ghats and their outflanking hills in southern India constitute one of the most extensive extant stronghold of Gaur, in particular in the Wayanad-Nagarhole-Mudumalai-Bandipur complex.

### **Conservation Measures**

Indian gaur or Indian bison (*Bos gaurus gaurus*) is a wild bovid. It is categorized as vulnerable in the IUCN Red list of threatened species, 2009 and listed in schedule-1 of Indian wildlife (Protection), Act, 1972. The gaur is a bovid with a



strong and massive build with a convex ridge on the forehead. It juts out anteriorly causing a deep hollow profile on the upper part of the head. It has large ears and a prominent ridge along its back. The adult male is dark brown and changes to black when it gets older. The hair is short, fine and glossy with narrow and pointed hooves, Indian bisons are found on the forested hills and grassy areas.

They are largely confined to evergreen forests or semi-evergreen and moist deciduous forests, but also occur in deciduous forest areas at the periphery of their range. Weight of adult male is between 600 kg to 1500 kg., and the weight of adult female is between 400 kg to 1000 kg. Size between 240 cm to 340 cm. and the length of tail is between 70 cm to 105 cm. Both sexes carry horns, which grow from the sides of the head. Length of the horns is between 60 to 110 cm. They are social animals, and live-in small groups. They reach sexual maturity between 2 to 3.5 years. Breeding takes place year-round, but it is mainly between December and June. They reach sexual maturity between 2 to 3.5 years. One calf, after a gestation period of about 275 days.

Gaurs are found in evergreen forests or semi-evergreen and deciduous forests. A typical gaur habitat consists of large, almost undisturbed forest tracts, hilly terrain, availability of water and a large presence of forage such as bamboo, shrubs and trees. Due to its immense size the gaur has few natural predators. The exceptions are tigers, crocodiles and humans. It's difficult to take down a fully-grown gaur hence predators go for either sick animals or young calves.

The gaur has been thriving in protected areas. The Gaur population in India was estimated to be at 12000-22000 in the mid-1990s. They are primarily found in hilly regions of South India like Wayanad, Nagarhole, Mudumalai and Bandipur. There is a thriving population of about 2000 individuals in the Nagarhole and Bandipur National Parks and about 1000 in the Tadoba Andhari Tiger Project. An estimation exercise carried out in the Nilgiris Forest division in 2020 found about 2000 individuals.

Gaurs are especially threatened due to poaching along with opportunistic hunting. They are sought after for their meat, leather and trophies. From the above account it is clear that the Indian Bison just needs a safe and sustainable forest habitat and protection from Hunting or poaching. The integrated wildlife management plan suggested takes care of the needs of Bison and offers adequate protection.

## 9.6 Conservation of Indian Wolf (*Canis lupus pallipes*)



**Classification:**

Kingdom: Animalia  
 Phylum: Chordata  
 Class: Mammalia  
 Order: Carnivora  
 Family: Canidae  
 Genus: Canis  
 Species: *C.lupus*

**Description:**

The Indian wolf is similar in structure to the Eurasian wolf, but is smaller, more slightly built, and has shorter fur with little to no underfur. It is typically around 57–72 cm (22–28 in) at shoulder height, with males ranging from 19 to 25 kg (42–55 lb) and females 17–22 kg (37–49 lb) in weight. Its length ranges from 103 to 145 cm (41–57 in) from nose to tail. Like the Arabian wolf, it has short, thin fur in summer, though the hair on the back remains long even in summer, an adaptation thought to be against solar radiation. The fur is generally greyish-red to reddish-white with grey tones. The hairs are grizzled with black, particularly on the back, which sports a dark V-shaped patch around the shoulders. The limbs are paler than the body, and the underparts are almost completely white. Pups are born sooty-brown, with a milk-white patch on the chest that fades with age.

Its habits are similar to those of other grey wolf subspecies, though the Indian wolf generally lives in smaller packs rarely exceeding 6–8 individuals, and is relatively less vocal, having rarely been known to howl.

**Distribution and Habitat:**

The northern regions of Afghanistan and Pakistan are important strongholds for the wolf. It has been estimated that there are about 300 wolves in approximately 60,000 km<sup>2</sup> (23,000 sq mi) of Jammu and Kashmir in northern India, and 50 more in Himachal Pradesh. Hindus traditionally considered the hunting of wolves, even dangerous ones, as taboo, for fear of causing a bad harvest. The Santals, however, considered them fair game, as with every other forest-dwelling animal.

During British rule in India, wolves were not considered game species, and were killed primarily in response to them attacking game herds, livestock, and people. In 1876, in the North-West Provinces and Bihar State, 2,825 wolves were killed in response to 721 fatal attacks on humans. Two years later, 2,600 wolves were killed in response to attacks leaving 624 humans dead. By the 1920s, wolf extermination remained a priority in the NWP and Awadh. Overall, over 100,000 wolves were killed for bounties in British India between 1871 and 1916. In modern India, the Indian wolf is distributed across the states of Gujarat, Rajasthan, Haryana, Uttar Pradesh, Madhya Pradesh, , it is estimated that there are around 2000–3000 Indian wolves in the country.

They are mainly found outside of protected reserves and feed mainly on domestic animals, such as goats or sheep. However, in areas where natural prey is still abundant, for example in Velavadar National Park or Panna Tiger Reserve, natural prey species are still preferred. Although protected since 1972, Indian wolves are classed as Endangered, with many populations lingering in low numbers or living in areas increasingly used by humans. Although present in Bhutan, there is no information on the wolves occurring there.

### **Conservation measures**

The Indian wolf (*Canis lupus pallipes*) is a subspecies of grey wolf inhabiting semi-arid and arid areas. It has a wide distribution range that extends from the Indian subcontinent to Israel. High levels of conflict are reported from human dominated landscapes with incidents of livestock lifting attributed to them. According to the National Study book of Indian Wolf (*Canis lupus pallipes*) 2017, The Indian wolf inhabits areas dominated by scrub, grasslands and semi-arid pastoral agro-ecosystems (Jhala, 2013); however, in the eastern parts of its range extending across parts of Odisha, Bihar and West-Bengal they are known to inhabit moister low-density forested habitats. The availability of undisturbed patches that offer shade during the day and protection for whelping, denning and play areas for pups are crucial for habitat selection (Jhala 2013).

Jahla (2013) states that the Wolves (*Canis lupus pallipes*) inhabit thorn forests, scrub-lands, arid and semi-arid grassland habitats in India. It is one of the common large carnivores found in the agro-pastoral regions of semi-arid India. Majority of the 2000-3000 strong wolf population of India survives outside of protected areas and in close proximity with people. These wolves primarily subsist on livestock. Rural India supports a very large cattle population and most people do not consume beef in several regions of India. The tendency of discarding cattle and buffalo carcasses that die of disease, old age, and starvation around villages, sustains high densities of carnivores like wolves, hyenas (*Hyaena hyaena*) and jackals (*Canis auris*). Besides scavenging the wolf also predaes livestock like goats, sheep and cattle calves. Wolf predation severely affects the economy of the pastoral communities (nomadic and resident) that barely manage to etch out a living from the highly over grazed and degraded landscape of semi-arid India. The pastoral community invests significantly in measures to protect sheep and goats from wolf predation. These measures include night vigils, maintaining guard dogs, building thorn corrals, and bringing the stock back to the village each night.

### **Threats to Wolves in India:**

Apart from the well-known causes such as of habitat loss; shrinkage and fragmentation of habitat the attitude of people who consider them as their enemies since they are known to attack sheep, goats, calves of cattle, Chicken etc during night time. Indian wolf (*Canis lupus pallipes*) continues to face threats to their long-term survival in their natural habitats across their distribution range in India and are accordingly listed in Schedule I of the Wildlife (Protection) Act of India 1972. The factors responsible for their decline remain operational and the populations across their range are showing declining trend. Further recent genomics studies have clearly demonstrated them to be genetically distinct from other populations of the sub-species. Maintenance of demographically stable and

genetically viable ex-situ populations is thus crucial for ensuring the continued survival of the species.

### **Measures suggested for conservation of Wolf.**

In areas where the wolf's major prey were wild ungulates, people tended to view wolves with less hostility and rarely were wolves directly persecuted. Whereas, in areas where wolves subsist on livestock, people's attitudes were extremely hostile and most of the wolf mortality observed was human related. This analysis suggests that some form of economic compensation for wolf damage would help improve public attitudes towards the wolf in India. Accordingly, the project proponent offers to compensate any loss of account of Wolf attack on livestock within the 10 Km buffer zone, if it is established that it is due to Wolf. Similarly, the forest and wildlife Department should strictly enforce measures under the Wildlife (Protection) Act, 1972 for the conservation of Wolves.

## **9.7 Strategies for Management of Schedule-I species outside the core area:**

Though there are plans and strategies for Management of each and every Schedule I species, it is not feasible to conserve any species in isolation under the natural conditions since every organism is interlinked and interconnected to every other organism by innumerable invisible links. The very fundamental ecological principle underlines that no organism lives in isolation if separated from its environment and the environment includes the abiotic and biotic components and their interactions.

The word Management is deliberately chosen here instead of the widely popular word conservation since conservation could mean preservation. Management should be holistic and comprehensive and should not be sectorial. That is why, great emphasis and stress is laid on integrated wildlife management but not conservation of Schedule I species alone. Hence, separate conservation plan for every schedule I species reported from the buffer zone and the TATR is not given.

The main components of the integrated wildlife plan are:

- Generation of baseline data through intensive and extensive survey to identify the status of the wildlife; inventorization of resources; identification of the limits and impediments to development; identification of threats and opportunities through SWOT (strengths, weaknesses, opportunities and threats) analysis.
- Prioritization of developmental plans and actions
- Implementation of sustainable habitat improvement plans in a holistic manner
- Monitoring and review of plans of action from time to time for necessary modifications and changes if needed
- Management group comprising of the State Forest and Wildlife department as the nodal agency; the project proponent as the funding agency; experts from WII and dedicated volunteers from NGOs for effective planning, implementation, monitoring and review.

Areas / activities identified for funding by the Project proponent:

As an ad-hoc measure the following areas and activities are identified for funding. However, these are only suggestive and there can be revision and internal adjustments for effective utilization. The project proponent undertakes to pay Rs.1,00,00,000 every year for the first 5 years to the state forest and wildlife department for implementation of different activities within the protected areas including the reserve forests of the buffer zone. Thereafter, Rs.50,00,000/- per year shall be paid for the next five years for maintenance and further development. Thus, it comes to a total of Rs.7,50,00,000/- in 10 years. Within the mine lease area, another Rs.10 crores will be sent during the life of the mine under the EMP.

A statement of responsibilities and roles of the State Forest and Wildlife Department and the Project proponent in wildlife Management in the study area and its surroundings is given in **Table-13**. Proposed budget and funding pattern for wildlife conservation is shown in **Table 14**.

**TABLE-13**  
**SITE-SPECIFIC INTEGRATED WILDLIFE CONSERVATION PLAN**

Sr.No	Plan	Action	Role		Location	Agency	Funding	Timeline	
			PP	FD				ST	LT
1	Habitat Conservation and Management	Conservation and Protection of Scrubland, patches of grassland and the wildlife habitats	X	√	RFs	FD	PP	X	√
		Protection and enhancement of reserved forests	X	√	RFs	FD	PP	X	√
2	Habitat Improvement & Manipulation	Water supply, Salt licks, Fruits. Fodder development	√	√	RFs & CA	FD & PP	PP	√	√
		Development of grassland and scrubland and control of invasive weeds	√	√	RFs & CA	FD & PP	PP	√	√
3	Protection of home range and movement corridor	Protection and management of the home range in the RFs and NSWS	X	√	RFs	FD	NA	√	√
4	Reduction of mortality due to Traffic	Vehicular traffic and speed should be minimised to check the chance of accidents along the highways	√	√	Traffic	Roads	NA	√	√

Sr.No	Plan	Action	Role		Location	Agency	Funding	Timeline	
			PP	FD				ST	LT
		passing the Pas.							
5	Research and Monitoring	Regular Monitoring of Wildlife population to understand their population dynamics.	√	√	RFs	FD & WII	PP	√	√
		Research should include resource inventory, habitat carrying capacity	√	√	RFs	FD & WII	PP	√	√
6	Public awareness and involvement	Organization of Nature & Wildlife Education Program and Wildlife tours	√	√	Public institutions	PP, FD & Media	PP	√	√
		Creation of public awareness through public and social media; NGOs; Eco-clubs; Nature lovers	√	√	Public institutions	PP, FD & Media	PP	√	√
		Fixing of signages with wild animal Paintings along the highways where wildlife cross	X	√	Wildlife road crossing areas	FD	PP	√	√
7	Enhancing cooperation	Interdepartmental cooperation, public private partnership, NGOs, Institutions and local community relationship	√	√	X	FD	PP	√	√
8	Payment of compensation	In case of any conflict with wildlife within the zone of impact, compensation should be paid	√	√	Project impact zone	PP	PP	√	√
9	Pollution Control	Control of air (dust), water and noise pollution due to mining	√	X	Mine lease area & Crusher	PP	PP	√	√

**TABLE-14**  
**PROPOSED BUDGET AND FUNDING PATTERN FOR WILDLIFE CONSERVATION**

Plan	Action	Annual budget in Lakhs		Total payable by the PP in 10 years
		First 5 years	Next 5 years	
Monitoring and Assessment	Wildlife and resource assessment and mapping	50 one time only	Nil	50,00,000
Developmental plans	Plans for integrated / holistic wildlife management			
Habitat improvement	Fodder development, weed management, fire control, water resource augmentation	50	20	3,50,00,000
Forest development	Afforestation, reforestation and forest development	35	5	2,00,00,000
Surveillance	Prevention of poaching, hunting, trade of wildlife etc	6	6	60,00,000
Welfare of forest dependent communities	Training and engagement in forest development and non-forest activities	6		30,00,000
Creation of Public awareness	Mass education, creation of public awareness and motivation for wildlife conservation	2.5	2.5	25,00,000
Monitoring and review	Monitoring and review starts only after 3 years	25 during 4 th year only		25,00,000
Documentation	Creation of data base about the wildlife		10 during the last year	10,00,000
<b>Total</b>				<b>7,50,00,000</b>



भारत सरकार  
जल शक्ति मंत्रालय  
जल संसाधन, नदी विकास  
और गंगा संरक्षण विभाग  
केन्द्रीय भूमि जल प्राधिकरण  
Government of India  
Ministry of Jal Shakti  
Department of Water Resources,  
River Development & Ganga Rejuvenation  
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)

**NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION**

Project Name:	Takli Jena Bellora (north) And Takli Jena Bellora (south) Coal Mine		
Project Address:	Village: Belora, Tehsil: Bhadrawati, Chandrapur		
Village:	Belora	Block:	Bhadrawati
District:	Chandrapur	State:	Maharashtra
Pin Code:			
Communication Address:	Suchak Nivas, Kotwali Ward,, Chandrapur, Bhadrawati, Chandrapur, Maharashtra - 442501		
Address of CGWB Regional Office :	Central Ground Water Board Central Region, N.s. Building, Civil Lines, Nagpur, Maharashtra - 440001		

1. <b>NOC No.:</b>	CGWA/NOC/MIN/ORIG/2022/16172											
2. Application No.:	21-4/8012/MH/MIN/2022	3. Category: (GWRE 2020)	Safe									
4. Project Status:	New Project	5. NOC Type:	New									
6. <b>Valid from:</b>	31/08/2022	7. <b>Valid up to:</b>	30/08/2024									
8. Ground Water Abstraction Permitted:												
	Fresh Water		Saline Water									
	Dewatering		Total									
	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day									
	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day									
	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day									
	94.03	28209.00	7907.41									
			2886206.13									
9. Details of ground water abstraction /Dewatering structures												
	<b>Total Existing No.:0</b>						<b>Total Proposed No.:4</b>					
	DW	DCB	BW	TW	MP	MPu	DW	DCB	BW	TW	MP	MPu
Abstraction Structure*	0	0	0	0	0	0	0	0	2	0	0	0
Dewatering Structure*	0	0	0	0	0	0	0	0	0	0	2	0
*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit;MPu-Mine Pumps												
10. Ground Water Abstraction/Restoration Charges paid (Rs.):	8743245.00											
11. Number of Piezometers(Observation wells) to be constructed/ monitored & Monitoring mechanism.	No. of Piezometers						Monitoring Mechanism					
							Manual	DWLR**	DWLR With Telemetry			
**DWLR - Digital Water Level Recorder	2						0	1	1			

(Compliance Conditions given overleaf)

This is an auto generated document & need not to be signed.

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011

Phone: (011) 23383561 Fax: 23382051, 23386743

Website: cgwa-noc.gov.in

पानी बचाये - जीवन बचाये  
SAVE WATER - SAVE LIFE





Validity of this NOC shall be subject to compliance of the following conditions:

**Mandatory conditions:**

- 1) Installation of tamper proof digital water flow meter with telemetry on all the abstraction structure(s) shall be mandatory for all users seeking No Objection Certificate and intimation regarding their installation shall be communicated to the CGWA within 30 days of grant of No Objection Certificate.
- 2) Proponents shall mandatorily get water flow meter calibrated from an authorized agency once in a year.
- 3) Construction of purpose-built observation wells (piezometers) for ground water level monitoring shall be mandatory as per Section 14 of Guidelines. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in Annexure-II of the guidelines.
- 4) Proponents shall monitor quality of ground water from the abstraction structure(s) once in a year. Water samples from bore wells/ tube wells / dug wells shall be collected during April/May every year and analysed in NABL accredited laboratories for basic parameters (cations and anions), heavy metals, pesticides/ organic compounds etc. Water quality data shall be made available to CGWA through the web portal.
- 5) In case of mining projects, additional key wells shall be established in consultation with the Regional Director, CGWB for ground water level monitoring four (4) times a year (January, May, August and November) in core as well as buffer zones of the mine.
- 6) In case of mining project the firm shall submit water quality report of mine discharge/ seepage from Govt. approved/ NABL accredited lab.
- 7) The firm shall report compliance of the NOC conditions online in the website ([www.cgwa-noc.gov.in](http://www.cgwa-noc.gov.in)) within one year from the date of issue of this NOC.
- 8) Industries abstracting ground water in excess of 100 m<sup>3</sup>/d shall undertake annual water audit through certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means.
- 9) Application for renewal can be submitted online from 90 days before the expiry of NOC. Ground water withdrawal, if any, after expiry of NOC shall be illegal & liable for legal action as per provisions of Environment (Protection) Act, 1986.
- 10) This NOC is subject to prevailing Central/State Government rules/laws/norms or Court orders related to construction of tube well/ground water abstraction structure / recharge or conservation structure/discharge of effluents or any such matter as applicable.

**General conditions:**

- 11) No additional ground water abstraction and/or de-watering structures shall be constructed for this purpose without prior approval of the Central Ground Water Authority (CGWA).
- 12) The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction (more than that permitted in NOC for specific period).
- 13) Proponents shall install roof top rain water harvesting in the premise as per the existing building bye laws in the premise.
- 14) The project proponent shall take all necessary measures to prevent contamination of ground water in the premises failing which the firm shall be responsible for any consequences arising thereupon.
- 15) In case of industries that are likely to contaminate the ground water, no recharge measures shall be taken up by the firm inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm.
- 16) Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.
- 17) Wherever the NOC is for abstraction of saline water and the existing wells (s) is /are yielding fresh water, the same shall be sealed and new tubewell(s) tapping saline water zone shall be constructed within 3 months of the issuance of NOC. The firm shall also ensure safe disposal of saline residue, if any.
- 18) Unexpected variations in inflow of ground water into the mine pit, if any, shall be reported to the concerned Regional Director, Central Ground Water Board.
- 19) In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines.
- 20) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.
- 21) The issue of this NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and take decisions independently of the NOC.
- 22) In case of change of ownership, new owner of the industry will have to apply for incorporation of necessary changes in the No Objection Certificate with documentary proof within 60 days of taking over possession of the premises.
- 23) This NOC is being issued without any prejudice to the directions of the Hon'ble NGT/court orders in cases related to ground water or any other related matters.
- 24) Proponents, who have installed/constructed artificial recharge structures in compliance of the NOC granted to them previously and have availed rebate of upto 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, shall continue to regularly maintain artificial recharge structures.
- 25) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, pharmaceutical, other hazardous units etc. (as per CPCB list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution as per Annexure III of the guidelines.
- 26) In case of new infrastructure projects having ground water abstraction of more than 20 m<sup>3</sup>/day, the firm/entity shall ensure implementation of dual water supply system in the projects.
- 27) In case of infrastructure projects, paved/parking area must be covered with interlocking/perforated tiles or other suitable measures to ensure groundwater infiltration/harvesting.
- 28) In case of coal and other base metal mining projects, the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.
- 29) The NOC issued is conditional subject to the conditions mentioned in the Public notice dated 27.01.2021 failing which penalty/EC/cancellation of NOC shall be imposed as the case may be.
- 30) This NOC is issued subject to the clearance of Expert Appraisal Committee (EAC) (if applicable).

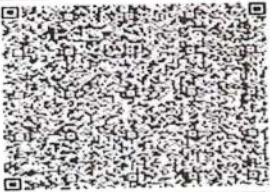
**(Non-compliance of the conditions mentioned above is likely to result in the cancellation of NOC and legal action against the proponent.)**

**LOKMAT MEDIA PRIVATE LIMITED**

Lokmat Bhavan, Pt. Nehru Marg, P.O. BOX 216, NAGPUR, MAHARASHTRA, 440012  
 Phone: (0712) 2423527 Email Id: advt.ngp@lokmat.com; rec.ngp@lokmat.com Web: www.lokmat.net  
 CIN: U99999MH1973PTC016613 PAN: AAACL1888J GSTIN: 27AAACL1888J1Z6

GST/TAX INVOICE (Advertisement)

Original for Recipient

INVO 72a7f1d3d0357ef6bdb86fa7fa200c3cd7a2567d81ad5fc29b69a0db385ca58		ACKNO 122214747023449		ACKDT 10/11/2022 19:40					
Invoice No	UA22HBLZZZ10374	Our Ref. No	DNA02200017697 Page No 1 Of 1						
Invoice Date	10-Nov-2022	Our Ref. Date	09-Nov-2022						
Details of Recipient (Billed to)		Your RO.No	1078						
Name	AUROBINDO REALTY AND INFRASTRUCTURE PVT LTD	Your RO.Date	09-Nov-2022						
Address	H.NO. 525, GANESH NAGAR, BESIDES, DR. OMPRAKASH RATHI RESIDENCE, SH 261,, CHANDRAPUR 442404	Through	RAJESH WASUDEO DEWALKAR-CHANDRA PUR						
		Retainer	SUPRIYA SARPATWAR (GAYATRI AD.						
		Caption	:						
		Client	AUROBINDO REALTY AND INFRASTRUCTURE PRIVATE LIMITE						
State/UT	MAHARASHTRA	State/UT Code	27						
GSTIN	27AAOCA6755B1ZK	Due Date of Payment	10-NOV-2022						
Place Of Supply	27-MAHARASHTRA								
Goods/Services Description	Sale of advertising space in print media			SA Code: 998363					
Sr.	Edition	Publ. Date	Position	CLR	Width	Height	Sq.Cms/	Paid/Dis	
1	LK NAGPUR	10-Nov-2022	GOOD POSITION	BW	8	10	80	P	
2	LS NAGPUR	10-Nov-2022	GOOD POSITION	BW	8	10	80	P	
3	LT NAGPUR	10-Nov-2022	GOOD POSITION	BW	8	10	80	P	
Combination							Size	Rate	Amount
NAGPUR LK+LS+LT							80	915.00	73,200.00
Name Of Account Holder	LOKMAT MEDIA PRIVATE LIMITED		Total Amount	73,200.00					
Name Of Bank	HDFC Bank Limited.		Add : Surcharge						
Account No	10092380000010.		Add : Clr. Premium	0.00					
Branch & City	DHANTOLI BRANCH, NAGPUR.		Add : Position Premium	0.00					
IFSC Code	HDFC0001009								
	Signature Not Verified		Less : Trade Discount	.00					
	Digitally signed by NEENA SANJAY PRASAD 16/Nov/2022 12:02:48 +05:30 I am approving this document		Add : Box Amount	.00					
			Total Value of Supply	73,200.00					
			Less : Total Advance received						
			Taxable Value	73,200.00					
			CGST	2.50%	1,830.00				
			SGST	2.50%	1,830.00				
			IGST	.00%	.00				
			Round Off	0.00					
			Total Invoice Value	76,860.00					
Total Invoice Value (In Words) : Seventy Six Thousand Eight Hundred Sixty Only									
Whether the tax is payable on Reverse Charge basis: N									
Note: (1) Any Complaint about the bill must be received within 7 days from the date of this bill. (2) Please Quote our Invoice no. while remitting the amount. (3) Interest will be charged at 12% if the bill is not paid before due date. (4) All disputes are subject to Nagpur Jurisdiction only.									
PAYMENT SHOULD BE STRICTLY MADE BY CROSSED CHEQUE/DRAFT/PAY ORDER DRAWN IN FAVOUR OF LOKMAT MEDIA PRIVATE LIMITED ONLY.									
IN CASE OF ELECTRONIC TRANSFER THRU NEFT/RTGS THE SAME IS TO BE DONE AS PER OUR BANK DETAILS GIVEN ABOVE									
Regd. Office :126,Mittal Tower,'B' Wing,12th Floor,Nariman Point. Mumbai 400021. Phone :022-22856749									

*Handwritten signature and date*  
 27/11/22







कंपनी का  
काम है  
कंपनी का  
काम है

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कंपनी का काम है  
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कंपनी का काम है

PH: 011-3510666/7777 | E-mail: franchise@badpanglobal.com | CIN: U74999DL1999PTC10135  
Registered Office: S.K. Tower, 998/B-1, Sarv Kottali, New Front Road, New Delhi-110005  
Kendrali # 915641603  
95241525283 | Mohal Road # 749727210 | Noida # 921902066 | Dombivli # 809798811  
9890290927 | Malcon Near Nitya Nagar # 2020523754 | Ferozpur # 832904041 | Chhatrapati  
9308089866 | Chhatrapati # 276108877 | RUMANGARH | Mahaloni # 8390061295 | Laxmi Road  
Chhatrapati # 911349498 | Nanded City # 706628787 | Lonare # 9890061295 | Chhatrapati  
# Rama Nagar # 976790844 | Shanti Nagar # 9403610757 | Badli # 9403610757  
ADMISSIONS OPEN AT: NAGPUR, Nanded Nagar # 702025131 | Badli # 9403610757

कारोबार

लोकमत समाचार

CLASIFIEDS classified online

क्लिक करो बुक करो  
http://online.lokmatclassified.com

खोती बिक्री  
कमप्यूटर में एग्जिट इंटरका इंजिन  
नामा: 20000-30000 तक  
काम: ऑटोमेटिक प्रिंटर, प्रिंटर  
प्रदान किया जाएगा बचत करण काम  
में किया जाए व ओर एग्जिट

TOP VACANCIES

शैक्षणिक  
क्षेत्र में

3 BHK 1470 Sq ft. at Prime Location Flat No. 505, Lokmat Soc., Amar Jyoti Palace Wardha Road, Nagpur. Contact: 7020251853

माइट इंजीनियरिंग, माइट  
सुपरवाइजर, डिस्टेंस इंजीनरिंग  
का जनरेट मेकैनिक्स पॉलिटेक,  
फक्त अनुभवीनाच प्राधान्य,  
(8237311211) (989818)  
आयुष्यकाम है हेल्थर नोकर,  
ऑटोमेटिकल सैफर पदम दुकान के  
निलर लवरेट चाहिए, युवावृत्त  
सुलभम कामो को प्राथमिकता,  
कार्यक्रम के माय मिले जिन टूटन  
मार्ग 214 नम मॉडर के पास,  
संदर्भण पताज. सी.ए. रोड, नागपुर  
(989818)

MY CORRECT name is  
R. VJAYALAKSHMI  
AND CORRECT D.O.B.  
is 15/01/1984 vide  
affidavit no. 310,  
dated 07/11/2022  
(VJAYALAKSHMI, DEPONENT)  
Let it be known to  
Everyone that My old  
name Vaibhav Dedhia  
has been changed to  
new name Vaibhav  
Pradeep Dedhia. Mo  
99609556090. (503974)

LIC सेवा पत्नी !! आजही LIC  
एजेंट बनो और पारिवारिक  
50,00,00/- तक कवरेजम और  
अन्य सुविधा भी,  
चर्खा - D.O., अधिकांश  
गुणवत्ता. मो. - 724939694,  
मेल - saashubla@licindia.com  
(989818)

Required Telesales  
Executive for Distance  
Learning Education  
Institute at Nagpur.  
Female Graduate with 0  
to 3yrs of Experience.  
8888847066 (989818)  
डिप्लोमा को आडाइट चाहिए,  
कमरे दुकान को आडाइट करना काम  
अनुभव है, 9 फुटन में आडाइट  
(कोई बचत, ओपरेटर) चाहिए  
मार्क: कमरेज एडु गैर, 36 मिन  
मॉडर सुलभ पत्र. 8208157238  
(989818)  
Required Qualified &  
Experienced Teachers 1) To Teach English for Primary, 2) Maths Teacher for Secondary in English Medium School, 3) Data Operator / Accountant. Cont. H.V.B., Hanuman Nagar, Nagpur. M: 9373105362, (989818)

निर्माण  
Build your Home or  
Scheme on turn key basis  
including Planning,  
Estimating & Supervision.  
Contact : Shrikant Oke,  
9822466832, 9284137252  
(989818)  
व्यवसायिक  
व्यवसायिक  
सुरक्षासो मैनेजमेंट (INR)  
नये कायमवादी सुरक्षासो  
सुरक्षासो मैनेजमेंट इन्क वजीरो  
ऑफ नो कंसीडर इन्क ब्यांकर,  
मार्क: - 7799707418 (989818)  
मोबाईल टॉवर  
(Govt. App.) कंपनी हार  
अपनी खाली अमीन पर डिजिटल  
टॉवर नाम 60 लाख रहवाने- 40  
हजार किताब + 20 लाख  
कंप्यूटर + 2 करोड़ + 20 लाख  
टॉवर + 2 करोड़ + 20 लाख  
टॉवर + 2 करोड़ + 20 लाख  
18002705152 (989818)

दो दिन की तेजी पर फलमार्ग

पेज 1 का शेष

दो लोगों को ...

ब्रह्मपुरी उपक्षेत्र/सायगाटा (कनरा सक्का 118) क्षेत्र में डॉ. रविकांत सोबरागडे, पशु चिकित्सा अधिकारी (व्यंजीव) हाडावा, वटपुर तथा शूटर अजय मराठे अगुवारी सुदृढता में ब्याघ को डेंट किया और बेहोश करने के बाद उसे पिंजरे में को फंसला लेना त्परित कठमों में से एक है

NOTICE  
This is to be brought into the notice of public that Ministry of Environment, Forest, and Climate Change (MoEF & CC) Govt of India (GOI) has granted Environmental Clearance (EC) for Takli Jena Bellora (North) and Takli Jena Bellora (South) Opencast cum Underground Coal Block of Production capacity (1.1 MTPA Opencast; 1.0 MTPA Underground) located at Wardha Valley Coalfield, Maharashtra, India on 03.11.2022 with EC Identification No-EC22A042MH110729. The coal Mining Project is owned by M/s AUROBINDO REALTY & INFRASTRUCTURE PRIVATE LIMITED and is in Talsil-Bhadrawati, Dist-Chandrapur, Maharashtra, INDIA.  
Copy of Environment clearance letter is available at website of the Ministry of Environment, Forest, and Climate Change at http://moef.gov.in

अंतरादेशी विदेशी मुद्रा विनिमय बाजार में आज अमेरिकी डॉलर के मुकाबले रुपया 45 पैसे की तेजी के साथ 81.47 (अध्यायी) प्रति डॉलर पर बंद हुआ। अंतरादेशी विदेशी मुद्रा बाजार में रुपया 87.43 पर खुला कारोबार के दौरान इन्डस 81.23 के दिन के उच्चस्तर और 81.62 के निचले स्तर को छूने के बाद अंत में 45 पैसे की तेजी के साथ 81.47 प्रति डॉलर पर बंद हुआ। पिछले कारोबारी सत्र में (सोमवार को) रुपया 81.92 प्रति डॉलर पर बंद हुआ था।

सोना ४141 टूटा और चांदी ४32 चढ़ी

नई दिल्ली : रुपय में तेजी आने से राष्ट्रीय राजधानी दिल्ली के सराया बाजार में बुधवार को सोना 141 रुपय टूटकर 5747 रुपय प्रति 10 ग्राम पर आ गया वहीं चांदी की कीमतें 132 रुपय की बढ़त के साथ 62400 रुपय प्रति किलोग्राम पर पहुंच गईं। भारतीय है कि अमेरिकी बाजार में सोने के भाव आज एक महीने के उच्चतम स्तर पर पहुंच गए। अंतरादेशी बाजार में सोना बढ़त के साथ 1713 डॉलर प्रति औंस पर रहा, जबकि चांदी गिरावट के साथ 2125 डॉलर प्रति औंस पर रही।

केसपट्टी में  
केसपट्टी में  
केसपट्टी में

हिरण्य पत्र-आइटीसी नागपुर,  
पत्रिका के साथ आइटीसी के  
निष्कर्षों को, सुपुत्रासिंह  
आयुष्यकाम है, गुरु प्रिनिस

गुरुगण, चर्मींग, नगरकाम  
स्वस्थ (निगमण काय विने हे  
दु) मिन के अउर दुर्दुर्दु हे  
केले (रवक) सुलभ निगमण  
रह. एतन, ब्याघ अग्रवृत्त



READY TO TAKE OFF



Bengaluru Terminal 2 of Kempegowda International Airport... built in a cost of around ₹5,000 crore.

Centre deregulates uplinking of satellite television channels

Makes 30-min daily public interest broadcast mandatory

New Delhi In a bid to pitch India as an uplinking hub the government on Tuesday announced relaxation in guidelines for compliance for television channels and also made a 30-minute daily public interest broadcast mandatory mainly for entertainment channels.

Neighbouring nations may uplink from India

The move is expected to allow television channels of Bhutan, Bangladesh, Sri Lanka and Nepal to uplink from India, instead of Singapore, the preferred uplinking hub for channels beamed in the subcontinent.

- The guidelines grant permission for a news agency for a five year period against one year at present
They also make it mandatory for TV Channels uplinking in frequency band other than C-band to encrypt their signals

He said there would be no requirement of prior permission for change of language or conversion of mode of transmission from Standard Definition (SD) to High Definition (HD) or vice-versa. The channel will only have to inform the ministry about the changes, he said. The guidelines were first issued in 2005 and revised in 2011. The current revision has taken place

after 11 years after taking into account the technological advances in the interim period.

In case of emergency, for a company/LLP with only two Directors/Partners, changes can be done subject to security clearance post such appointment, to enable business decision making.

The new guidelines state that a company can use news gathering equipment other than Digital Satellite News Gathering (DSNG), such as optic fibre, back pack, mobile, for which no separate permission would be necessary. The guidelines state that electronic news gathering devices can be used.

Television channels will have to broadcast 30 minutes of public interest content every day on themes of national interest such as education and spread of literacy, agriculture and rural development, health and family welfare, science and technology, welfare of women, welfare of the weaker sections of the society, protection of environment and of cultural heritage and national integration.

Musk sells Tesla stock worth nearly \$4 bn

Twitter's new owner sold more than \$19 bn worth of Tesla stock since April



WASHINGTON

Twitter's new owner and Tesla CEO Elon Musk sold nearly \$4 billion worth of Tesla shares, according to regulatory filings.

Musk, who bought Twitter for \$44 billion, sold 19.5 million shares of the electric car company from Nov 4 to Nov 8, according to Tuesday's filings with the Securities and Exchange Commission.

He sold \$7 billion of his Tesla stock in August as he worked to finance the Twitter purchase he was trying to get out of at the time. In all, Musk has sold more than \$19 billion worth of Tesla stock since April, including those in Tuesday's filings, likely to fund his share of the Twitter purchase.

The takeover of Twitter has not been smooth and the social media platform has seen the exodus of some big advertisers in recent weeks in including

United Airlines, General Motors, REI, General Mills and Audi. Musk acknowledged "a massive drop in revenue" at Twitter, which heavily relies on advertising to make money.

Musk had signalled that he was done selling Tesla shares and the revelation that those sales continue left some industry analysts exasperated.

"Our fear heading into the final days of the deal was that Musk was going to be forced to sell more Tesla stock to fund the disaster Twitter deal and ultimately those fears came true which speaks to some of the massive selling pressures on the stock of late," wrote Daniel Ives at Wedbush.

"For Musk who multiple times over the past year has said he is done selling Tesla stock yet again loses more credibility with investors and his loyalists in a boy who cried wolf moment."

Most of Musk's wealth is tied up in shares of Tesla Inc. On Tuesday, his personal net worth dropped below \$200 billion, according to Forbes, but he is still the world's richest person.

Twitter adds 'Official' label for PM Modi

NEW DELHI

An 'Official' label has been added to the Twitter handle of Prime Minister Narendra Modi and some other ministers as the US-based social media platform started rolling out a feature to distinguish between the Twitter Blue account and verified accounts.

Modi's verified blue tick Twitter handle @narendramodi was marked 'Official' with a tick mark enclosed in a circle.

The same was label was also seen on the Twitter handles of Home Minister Amit Shah, Finance Minister Nirmala Sitharaman, External Affairs Minister S Jaishankar, Defence Minister Rajnath Singh and some other ministers.

Congress party leader Rahul Gandhi, some other opposition party leaders as well as sports persons like Sachin Tendulkar too were given that label.

Tata Motors net loss down to ₹944.6 cr

Bengaluru: Tata Motors Ltd on Wednesday posted a smaller quarterly loss on improved sales volumes led by increased demand for its cars.

The Jaguar Land Rover parent reported a consoli-

dated net loss of 9.45 bn Indian rupees (\$115.95 mn) for the quarter ended Sept 30, compared with a loss of 44.42 bn rupees a year earlier. Tata CV business registered a 15% growth in sales over Q2 FY22.

NOTICE

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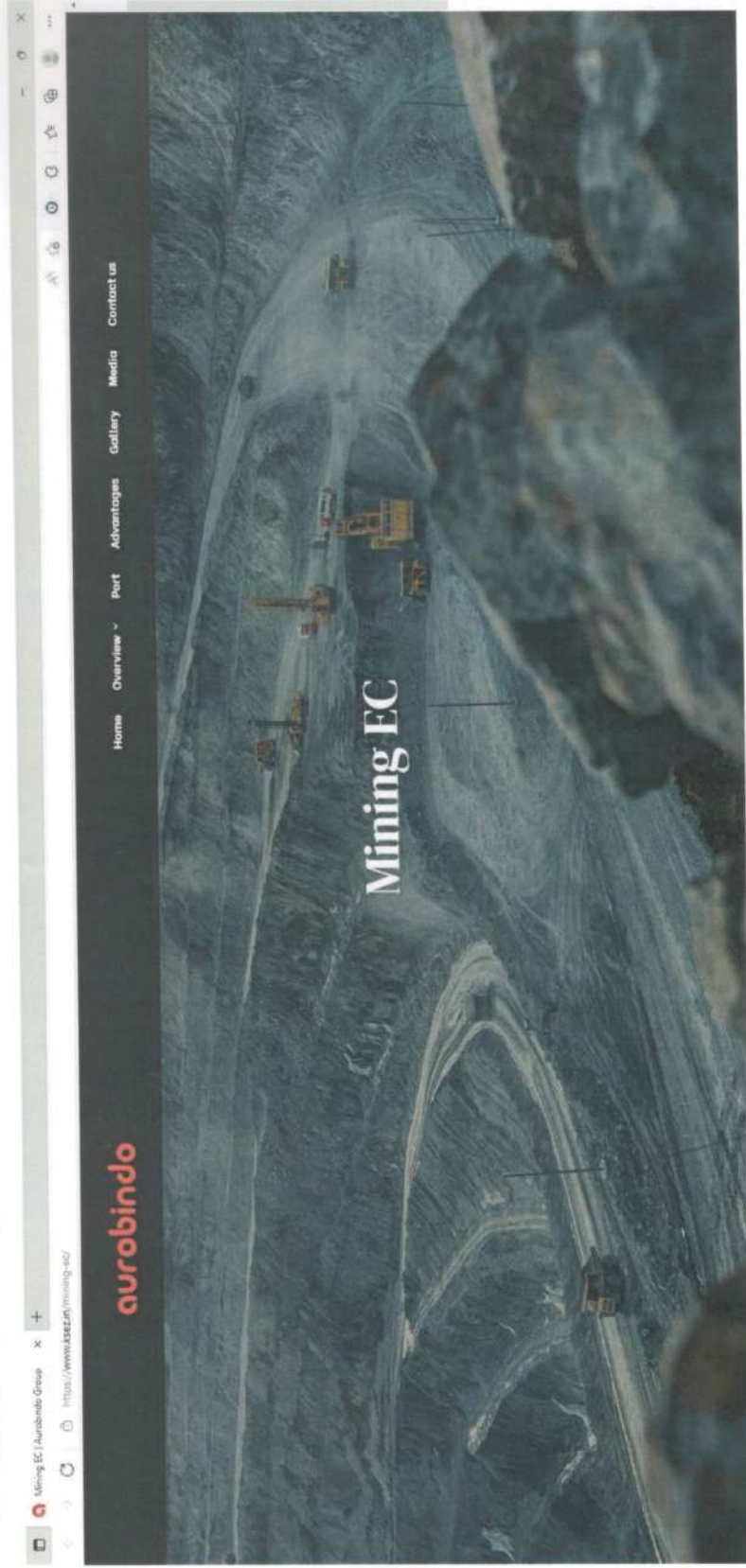
Copy of Environment clearance letter is available at website of the Ministry of Environment, Forest, and Climate Change at http://moef.gov.in/

समायक पाठ्यापक पदवसती महाराष्ट्र राज्यस्तरीय पात्रता परीक्षा (सेट) सावित्रीबाई फुले पुणे विद्यापीठ (पूर्वीचे पुणे विद्यापीठ) महााष्ट्र शासन व मोठा शासन प्रधिकृत आणि पु.जी.सी., नवी दिल्ली मान्यताप्राप्त नोंदल एजन्सी आचार्यज

Annexure - 7

Environment clearance copy uploaded to company's website

Url: [Mining EC | Aurobindo Group \(ksez.in\)](https://www.ksez.in/mining-ec/)



Ref No. : ARIP2/EC/Notification/1082

Dated: ...17/11/2022

प्रती,

१. मा. जिल्हाधिकारी, जिल्हाधिकारी कार्यालय, चंद्रपुर ता.जि. चंद्रपुर
२. मा. प्रादेशिक अधिकारी, म.प्र.नि.मं, पहिला माला, उदयोग भवन, चंद्रपुर
३. महाप्रबंधक जिल्हा उदयोग केंद्र, उदयोग भवन, चंद्रपुर
४. मुख्य कार्यकारी अधिकारी, जिल्हा परिषद, चंद्रपुर
५. उप विभागीय अधिकारी, उप-विभागीय कार्यालय, वरोरा
६. तहसिलदार, तहसिल कार्यालय, भद्रावती ता. भद्रावती जि. चंद्रपुर
७. सभापती, पंचायत समिती कार्यालय, भद्रावती ता. भद्रावती जि. चंद्रपुर
८. सरपंच, गट ग्राम. पंचायत कार्यालय, टाकळी बेलोरा, भद्रावती
९. सरपंच, ग्राम. पंचायत कार्यालय, जेना
१०. सरपंच, ग्रामपंचायत कार्यालय, पानवडाळा,
११. सरपंच, ग्रामपंचायत कार्यालय, डोंगरगाव (खर्डी)
१२. सरपंच, ग्रामपंचायत कार्यालय, कांसा शिरपुर
१३. सरपंच, ग्रामपंचायत कार्यालय, कढोली

विषय — Grant of Environmental Clearance (EC) for Takli Jena Bellora(North) and Takli Jena Bellora(South) opencast cum underground coal block of Production capacity (1.1 MTPA Opencast ; 1.0 MTPA Underground) have lease area of 936 hector located at Wardha Valley Coalfield Tah. Bhadrawati Dist. Chandrapur State. Maharashtra

संदर्भ — EC Indefication No. EC22A042MH110729 Date: 03/11/2022  
File No. IA-J-11015/62/2021-1A-II(M)

महोदय,

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*Smy*  
23.11.22  
वक/जावक लिपिक  
- विभागीय अधिकारी  
वरोरा  
प्रतिलिपी —

भवदीय  
व्दारा  
17.11.22

अरबिंदो रियल्टी अॅन्ड इन्फ्रास्ट्रक्चर प्रा. लिमी.  
टाकळी जेना बेलोरा (उत्तर) व (दक्षिण) कोल ब्लॉक

१. Vice President(Aurobindo Realty & Infrastrucutre Pvt. Ltd)

**Aurobindo Realty & Infrastructure Private Limited**

Site Office: Anand Villa, Ganesh Nagar, Tukum, Chandrapur, Maharashtra – 442401, INDIA  
Regd Office Address: 1-121/1, Survey Nos. 66, (Part), Miyapur, Hyderabad, Telangana-500049, INDIA

CIN :U45500TG2016PTC111433 | www.aurobindorealty.com



0/c

Ref No. : ARIPL/EC/Notification/1082

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५. उप विभागीय अधिकारी, उप-विभागीय कार्यालय, वरोरा
६. तहसिलदार, तहसिल कार्यालय, भद्रावती ता. भद्रावती जि. चंद्रपुर
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 सरपंच, ग्रामपंचायत कार्यालय, कढोली



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Handwritten signature and date: 23/11/2022  
 आवक / जावक विभाग  
 पंचायत समिती, भद्रावती

Handwritten signature and date: 23/11/22

आवक / जावक  
 तहसिल कार्यालय, भद्रावती

Handwritten signature: Bhaskar  
 सचिव २३/११/२०२२  
 ग्रामपंचायत पानवडाळा  
 त भद्रावती जि. चंद्रपुर

अरुबिंदो रियल्टी अँड इन्फ्रास्ट्रक्चर प्रा. लिमी.  
 टाकळी जेना बेलोरा (उत्तर) व (दक्षिण) कोल ब्लॉक



Resident(Aourobindo Realty & Infrastrucutre Pvt. Ltd)

**Aurobindo Realty & Infrastructure Private Limited**

Site Office: Anand Villa, Ganesh Nagar, Tukum, Chandrapur, Maharashtra – 44240.

दि. Regd Office Address: 1-121/1, Survey Nos. 66, (Part), Miyapur, Hyderabad, Telangana-500049

CIN :U45500TG2016PTC111433

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भवदीय  
श्री. व्ही. ए. ए. ए.  
द्वारा 17.11.22

अरबिंदो रियल्टी अॅन्ड इन्फ्रास्ट्रक्चर प्रा. लिमी.  
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22-11-22  
कार्यालय  
जिल्हा उद्योग केंद्र, चंद्रपुर