

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL ZONE BENCH AT DELHI

ORIGINAL APPLICATION NO. 59/2024 PZ

HASDEO ARAND BACHAO SANGHARSH SAMITI ... Intervenor

In the suo motu matter of :-

**NEWS ITEM TITLED "DEFORESTATION FOR MINING RESUMES
IN HASDEO LOCALS ACTIVISTS ALLEGE DETENTION"
APPEARING IN THE HINDU DATED 22.12.2023**

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The index is filed on the 14th day of October, 2024 at New Delhi

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BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL ZONE BENCH AT DELHI

ORIGINAL APPLICATION NO. 59/2024 PZ

HASDEO ARAND BACHAO SANGHARSH SAMITI

Through Jainandan Porte s/o Sukul Ram, age 40 years

r/o village Ghatbarra, Tehsil Udaipur,

District Surguja, Chhattisgarh

... Intervenor/ Applicant

In the suo motu matter of :-

**NEWS ITEM TITLED "DEFORESTATION FOR MINING
RESUMES IN HASDEO LOCALS ACTIVISTS ALLEGE
DETENTION" APPEARING IN THE HINDU DATED 22.12.2023**

WRITTEN SUBMISSIONS ON BEHALF OF THE
INTERVENOR

MOST RESPECTFULLY SHEWETH:

1. This Hon'ble Tribunal has taken *suo motu* cognizance of the news article "Deforestation for mining resumes in Hasdeo, Locals Activists allege detention", which referred to the ongoing tree-felling operations in

Hasdeo Arand forests in furtherance of coal mining activity, and has instituted the present Original Application number 59/2024 (PZ). The said news article took note of the popular and widespread protests against deforestation by the mainly *Adivasi*, forest-dwelling villagers.

2. The Applicant Organization is comprised of villagers living in the Hasdeo Arand forest area who are affected by the ongoing and proposed coal mining in the various coal blocks situated in the Hasdeo Arand forest, and as such, is directly affected by the current proceedings before this Hon'ble Tribunal. The Applicant Organization wishes to assist the Hon'ble Tribunal in the adjudication of this matter by bringing some salient features to light, relating to the impact of ongoing mining on the environment and inhabitants of the area.

THE CHANGING NATURE OF CLEARANCES AWARDED TO THE PEKB OPEN CAST COAL MINING PROJECT

3. The Forest Advisory Committee ("FAC") of the Ministry of Environment, Forests and Climate Change ("MoEF") had initially rejected the proposal for coal mining in the PEKB coal block, given the pristine nature of the forest. However, the Hon'ble Minister overturned the FAC recommendation and decided to grant permission for forest diversion, holding that effects of mining on the fragile ecosystem could be mitigated and managed by a redesigned mining plan and a well-

executed Wildlife Management Plan. Based on this, the original Environmental Clearance (“EC”) and Forest Clearance (“FC”) were accorded to the project; however, over the course of years, the initial careful considerations of protecting the environment seem to have receded in favour of more practical considerations of the Project Proponent, to the detriment of local wildlife and inhabitants.

4. The following gives a chronology of the clearances awarded, modified or rejected, and other important events –

LIST OF DATES

Sl. No.	Date	Event
1.	20th-21st June 2011	Meeting of FAC where the FAC decided not to recommend the diversion of the proposed forest area for mining in PEKB coal block, because of the good quality of forest cover and presence of Schedule -1 species in the area.
2.	23rd June 2011	Order of the Hon’ble Minister overruling the FAC and recommending the diversion of the forest area, emphasizing a sequential mining plan and a well-managed Wildlife Conservation plan.
3.	6th July 2011	Stage-1 Forest Clearance by MoEF, highlighting the sequential mining and the implementation of a Wildlife Management Plan. A true copy of Stage -1 FC is annexed hereto and marked as <u>Annexure A-1</u> .
4.	21st December 2011	Environment Clearance for coal mining and washery with 10 MTPA capacity. The conditions include the use of coal rejects by an on-site FBC based Thermal Power Plant, and compliance with

a Conservation Plan, for endangered faunal species as well as rare and endangered plants.

A true copy of the EC dated 21.12.2011 is annexed hereto and marked as **Annexure A-2**.

5. 15th March 2012 Stage-II Forest Clearance by MoEF, also emphasizing sequential mining and a well-managed Wildlife Conservation Plan.
A true copy of Stage -2 FC is annexed hereto and marked as **Annexure A-3**.
6. 28th March 2012 Order of State Govt. diverting Forest land for mining purposes, repeating all the conditions in the Forest Clearances.
A true copy of order of the State Government dated 28.03.2012 is annexed hereto and marked as **Annexure A-4**.
7. 6th March 2013 Approval by the PCCF of the Wildlife Management Plan. A true copy of the approved Wildlife Management Plan is annexed hereto and marked as **Annexure A-5**.
8. 24th March 2014 Order of the Hon'ble NGT (Principle Bench) in Appeal 73/2012 setting aside order of the MoEF dt 23.07.2011 and all consequential orders including the order of the state government dt 28.03.2012. This order remands the case back to the MoEF with directions to seek fresh advice of the FAC on issues relating to biodiversity and wildlife management, and then pass a reasoned order. This order also suspends the mining operations of the Project Proponent.
9. 28th April 2014 Order of the Hon'ble Supreme Court in CA 4395/2014 lifting the stay on mining operations, but not on the rest of the NGT order.
10. 24th September 2014 Order of Hon'ble Supreme Court cancelling the allocation of 204 coal blocks including PEKB
11. 31st March 2014 Reallocation of PEKB Open Coal Mine Project (10 MTPA) and Pit Head Coal Washery (!0MTPA) to Project Proponent, RRVUNL
12. 25th June 2015 Revalidation of EC
13. 29th December 2015 EC amendment extending the timeline for commissioning a reject-based onsite Thermal Power Plant to "6-7 years" instead of

the earlier “2-3 years”, and the commission of a railway siding to “72 months” instead of the original “24 months.”

A true copy of the Amended EC dt 29.12.2015 is annexed hereto and marked as **Annexure A-6.**

14. 18th September 2017 Site Inspection Report by the Regional Office for PEKB, which reports that till date **no provisions of the Wildlife Management Plan have been implemented.**
A true copy of site inspection report is annexed hereto and marked as **Annexure A-7.**
15. 10th August 2018 EC allowing expansion from 10 to 15 MTPA, erroneously noting that the species observed in the core zone are only those of common occurrence.
A true copy of EC for expansion from 10 to 15 MTPA is annexed hereto and marked as **Annexure A-8.**
16. 24th July 2019 Amendment of EC Letter allowing road transportation of coal rejects, for a period of one year or formulation of comprehensive guidelines for disposal of washery rejects by the MoC, whichever is earlier
A true copy of Stage -1 FC is annexed hereto and marked as **Annexure A-9.**
17. 11th August 2020 Showcause notice to PP by the MoEF for not constructing the FBC TPP
A true copy of the showcause notice is annexed hereto and marked as **Annexure A-10.**
18. 8th October 2021 Biodiversity Assessment Report (“BAR”) for the HACF area is submitted by the State govt of Chhattisgarh to the MoEF
19. 22nd October 2021 Notification of the Lemru Elephant notified in the districts of Surguja, Korba and Raigarh, overlapping with the HACF to a large extent and close to PEKB coal block
A true copy of Lemru Elephant Reserve notification is annexed hereto and marked as **Annexure A-11.**
20. 23rd December 2021 Amendment of EC Letter allowing road transportation of coal rejects for a period of 3 years to a maximum distance of 275 kms

and a maximum volume of 1.2 MTPA

A true copy of Stage -1 FC is annexed hereto and marked as **Annexure A-12.**

21. 2nd February 2022 MoEF letter allowing commencement of Phase-2 mining 5 years ahead of schedule, which also mandates the incorporation of the BAR recommendations into the Wildlife Management Plan and its implementation
A true copy of the MoEF letter dated 2.2.2022 is annexed hereto and marked as **Annexure A-13.**
22. 14th February 2022 EC letter for expansion of mine from 15 MTPA to 18 MTPA, taking no note of the BAR or the Lemru Elephant Reserve. It included the construction of a 100 bedded hospital within 2 years of the letter for nearby villagers, as also the construction of the 3rd silo of 2000 tonnes
A true copy of EC dt 14.02.2022 is annexed hereto and marked as **Annexure A-14.**
23. 12th July 2023 EC letter for expansion of coal washery from 15 MTPA to 18 MTPA, again taking no note of BAR or the Lemru Elephant Reserve.
A true copy of EC dt 12.04.2023 is annexed hereto and marked as **Annexure A-15.**
24. 20th August 2024 Return of Proposal by EAC to the Project Proponent seeking exemption from the EC conditions to build a 100 bedded hospital.
A true copy of the relevant excerpts of the minutes for the EAC meeting for 20.08.2024 is annexed hereto and marked as **Annexure A-16.**

5. The above chronology highlights wilful non-compliance of the Project Proponent and Respondent Authorities with the following, which are examined below in detail –

- a) The Wildlife Conservation Plan, and recommendations made in the BAR
- b) EC Condition regarding onsite Thermal Power Plant based on coal washery rejects, resulting in road transportation of coal rejects adding to the environmental burden.
- c) Construction of a 100-bedded hospital

I. LACK OF COMPLIANCE WITH WILDLIFE CONSERVATION PLAN AND RECOMMENDATIONS MADE IN THE BIODIVERSITY ASSESSMENT REPORT

A. The importance of the Wildlife Conservation Plan

6. HACF is a rich forest area supporting a diverse group of flora and fauna, but the Respondent Ministry and the Project Proponent have paid scant attention to it, while allowing expansion of mining capacity, and diverting forests for Phase-2 mining. The report by Wildlife Institute of India (volume 2 of the BAR), titled “*Biodiversity assessment with emphasis on select faunal groups in the Hasdeo Arand Coal Field, Chhattisgarh*”, 2021, notes that

- a) The HACF and surrounding landscape supports a minimum of 25 species of mammals, including 9 species which are listed in the Schedule -1 of the Wildlife (Protection) Act, 1972 and have been accorded the highest level of protection under it. These include *“threatened large carnivores like common leopard, Indian grey wolf, striped hyena, sloth bear, and others...”*
- b) Elephants occur in 148 out of the 647 compartments in HACF and the landscape surrounding it, with an area of 363.98 km².
- c) During the biodiversity assessment conducted by the WII, a total of 92 species of birds were recorded in the HACF. However, the report notes that this is probably an undercount and that the site <https://ebird.org> has recorded 406 species of birds in the three districts of Surguja, Surajpur and Korba
7. Due to increase in mining activities, there has been a concomitant increase in human-wildlife conflict, as animals escape the mining zone and enter villages. Villagers in the HACF live in terror of wildlife, especially herds of elephants rampaging through their villages, killing villagers and causing destruction to crops, houses and other property. Some recent news stories of destruction caused by elephant herds in these villages are annexed collectively hereto and marked as **Annexure A-**

17(Colly). Thus, good management of wildlife is crucial to ensure the Right to a Dignified Life under Article 21 for these forest dwellers.

8. That the good quality of forest and its biodiversity was among the primary reasons that the FAC initially rejected the Project Proponent's proposal for forest diversion. As noted in the order of the Central Zone Bench of this Hon'ble Tribunal in Appeal 73/2012 dated 24.03.2012, *Sudiep Shrivastava v. State of Chhattisgarh & Ors*:

“23. Meeting of the FAC was convened on June,20th/21st,2011, when the proposal for diversion of the forest land PEKB Coal Block in question was considered. The minutes of this meeting provide some access to the mind of the FAC and therefore the relevant portion of the minutes is reproduced herein below:

11. Diversion of 1898.328 ha of forest land for Parsa East and Kante Basan captive coal block open cast mining project in favour of M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited in South Surguja Division in Surguja district of Chaattisgarh. (F. No. 8-31/2010-FC)

...

The FAC also taken into consideration the observations of the sub-committee of the FAC, which visited the area recently. The

Sub-committee consisted of Shri A.K. Bansal, Dr. Mahesh Rangarajan and Shri Harish Chaudhary and its report is part of the minutes as Annexure. It concluded that:

(i). The Quality of the forest cover available in the Parsa East and Kante Basan coal block is poorer compared to area in the Tara coal block. However, as per the study jointly undertaken by the MoEF and MoC Gross Forest Cover is 52.95% and Weighted Forest Cover comes to 27.55%.

(ii). During the short visit of the sub-committee, it was not possible to ascertain the extent of presence of wildlife (fauna and avifauna). However, the area appears to be suitable and existing habitat for wild vertebrates including large mammals that are in schedule I of the Wildlife (Protection) Act. DFO, South Surguja Division, while forwarding the proposal for diversion of forest land in the Tara coal Block, in his site inspection note dated 2nd May 2007 indicated that the area is rich in bio-diversity. These lists included Schedule-I Species (under the Wildlife Protection Act, 1972) such as the sloth bear and leopard. Their presence in turn indicates a population of wild prey species.

(iii). Previous reports of endangered species include a November 2005 sighting of a small herd of wild elephants that moved from Maheshpur to Salhi via Kantaroli, Abhaipur and Janardanpur. The elephants stayed in this area for nearly four days. The team headed by DGF&SS during their visit to the area on 27th & 28th August 2009 also confirmed the presence of elephants in the area.

(iv). Interaction with villagers, who are likely to be affected if the projects become operational, revealed inadequate knowledge about the R&R policy/measures. The process of the FRA, especially of settlement of community rights is not complete.

Based on the above findings/observations the subcommittee, the FAC does not recommend the diversion of the proposed forest area.”

9. However, the Hon’ble Minister for Environment & Forests decided to grant permission for forest diversion, over-ruling the expert advice of the FAC, only on account of six reasons that emphasise “sequential mining linked to reforestation and bio-diversity management” and a “well prepared and well executed wildlife management plan.” These six reasons are reproduced in paragraph 3 the above NGT order, and include

“(ii) **Substantial changes in the mining plans** as originally envisaged i.e. the revised proposal envisaging **sequential mining in two phases**- each phase of 15 years, firstly covering 762 hectares and in the next phase 1136 hectares, with reclamation of the mined out area to commence from the 3rd year onwards thus *making it possible to link renewal for phase-II to performance on reforestation and bio-diversity management in phase-I;*

(iii) **Wildlife concerns** to be taken care of through **a well prepared and well executed Wildlife Management Plan** under the aegis of independent institutions like the Wildlife Institute of India (WII) with involvement of other independent institutions with expertise on elephant related issues like the Nature Conservation Foundation, Wildlife Trust of India and the Centre for Ecological Studies at the Indian Institute of Science;”

10. Thus, concerns for wildlife conservation and sequential mining were emphasized both in the Environmental Clearance dated 21.12.2011 (Annexure A-2) and the Forest Clearance stage 2, dated 15.03.2022 (Annexure A-3).

11. The Environmental Clearance dated 21.12.2011 noted that

“A number of endangered fauna such as the Indian Elephant, Sloth Bear, Leopard; Hyena, etc are found in the study area. Elephants have been reported about 10 km from the ML. The CWLW, Govt of Chhattisgarh has stated that the area does not form a part of the Elephant Reserve. Forest cover of Phase -II would be left undisturbed during phase-I operation (15 years) of mining and available for wild life which venture into the habitat. During Phase -II (after 15 years), forest cover (with native species) grown in Phase-I area after reclamation, would also be available for wildlife. The mine is surrounded by forest area in the southern and eastern parts of the mine which would also provide continuity, shelter, food and water to the fauna present in the area. An amount of Rs. 22 crores has been earmarked for WL Conservation Plan, which is being prepared by the WII, Dehradun, within 4-6 months. The Plan would include – strict fire control, protection from grazing, deepening of old tanks and desilting ponds and tanks, erection of check dams, management of existing pasturelands, and development of new pastureland consisting of native species, nursery for conserving bio-diversity of native species, identification and management of specific areas such as habitats, riparian zones, etc. The migratory corridor between Samar-Sot Elephant Reserve is in district Sarguja and

Badal Khol Reserve in district Jashpur would be strengthened through the proposed Wild Life Conservation Plan.”

Further, the EC stipulates the following condition :-

“(xxvi) A Conservation Plan (in-situ and ex-situ) for endangered faunal species reported in the study area and for the medicinal plants found in and around the project area shall be prepared in consultation with Wildlife Institute of India, Dehradun within 4 months from date of environmental clearance and the Plan shall be implemented in consultation with the State Forest and Wildlife Department. An in-site conservatory of species found in the pre-mining original ecosystem and rare and endangered plant species including medicinal plant species found in the study area during pre-mining phase shall be established and reintroduced during mine reclamation and habitat restoration. The Conservation Plan shall include conservation of areas within the project boundary to be left undisturbed as free passageways for the wildlife to reach the forests in the study area. The Conservation Plan shall also include activities of mine reclamation and wildlife habitat restoration of mined out areas within the core zone and project area using native species representative of the forest ecosystem during the pre-mining phase. Separate funds of Rs. 20 crores as

capital costs and Rs. 2 crores as revenue costs shall be earmarked for implementation of the various activities under the Conservation Plan. The status of the Conservation Plan including financial status shall be reported once a year as part of the monitoring report to this Ministry and to the MOEF Regional Office, Bhopal. The proponent shall also participate in the Regional Wildlife Conservation Plan (RWLCP) for the study area prepared by the State Wildlife Dept and in addition to the above funds, shall also contribute financially for implementation of the RWLCP. Habitat development/ conservation measures along the migratory route/ habitats of elephants found/ visiting the area shall form a part of the Regional Action Plan.”

12. Similarly, the Stage 2 Forest Clearance dated 15.03.2012 and the order of the State Government for diversion of forests for PEKB block (Annexure A-4) also laid emphasis on these conditions, as below:

“8. The mining shall be done in two phases:

- (i) During phase-I, covering 15 years, the mining shall be restricted to 762.00 ha of forest land.

- (ii) During phase-II the mining permission over the remaining 1136.00 ha will be linked to the reforestation and biodiversity management in phase-1. [emphasis added]
- (iii) The project proponent will submit the application for permission of mining in phase-II along with compliance report of phase-I”

And,

“23. The Wildlife Management Plan will be implemented by the State Government and independent institutions like the Nature Conservation Foundation, Wildlife Trust of India and the Centre for Ecological Studies at the Indian Institute of Science apart from the Wildlife Institute of India may be involved in the implementation of the plan. In order to ensure proper implementation of the Wildlife Management Plan, the state government shall make necessary provisions for carrying out the monitoring and evaluation of the plan.”

13. On 6.3.2013, the PCCF approved the Wildlife Conservation Plan, by incorporating comments from the WII and annexing the report by the IIFM, Bhopal (Annexure A-5). It required the Project Proponent and the state government to ensure a wide range of activities to mitigate and manage the adverse effects of mining on wildlife and biodiversity. These

included a range of generic as well as site specific conservation measures including, *inter alia*, the following:

- (i) Creation of a biodiversity park of 10 ha area in which all the floral diversity of the buffer area will be kept
- (ii) Development of new grasslands
- (iii) Creation of snake park with a financial outlay of 100 lakhs
- (iv) Management of elephant diet by plantation of species like bamboo for habitat improvement in the corridor area

B. Non-implementation of the Wildlife Conservation Plan

14. Despite the detailed plan, it has never been implemented. This is borne out in the Certified EC Compliance Report dated 21.11.2016, which notes that the above condition (xxvi) of the EC dated 21.12.2011 requiring implementation of the Wildlife Conservation Plan has not been complied.

Point number (iii) of the EC compliance report states:

“(iii) The following conditions were observed to be not complied with by the PP:

- c) Condition no. (xxvi) as even after the lapse of a period of more than 3 years, the process for the implementation of the

provisions of the said plan has not been initiated by the State Government/ PP.”

A true copy of the certified EC compliance report dated 21.11.2016 is annexed hereto and marked as **Annexure A-18**.

15. On 13.09.2017, the Regional Office of the MoEF conducted a site visit to the PEKB, and in their report (Annexure A-07), it is also noted that there has been no implementation of the Wildlife Management Plan.

In Response to the question posed by the MoEF, “**(vi) What is their opinion about the Wildlife Management plan finally prescribed**”, the

Report notes -

“A Wildlife Management Plan involving financial provision of Rs. 22.0 Crores, concurred by the Wildlife Institute of India, Dehradun, has been proposed to be implemented in the core area and buffer area over a period of 15 years, The provisions to implement in the Wildlife Management Plan include general protection of the core area and protection and conservation of the buffer zone ecosystem by carrying out various activities like fire protection, protection from grazing, illicit felling and plantation, empowerment of people for protection, soil and moisture conservation works, etc. The Wildlife Management Plan has been

proposed to mitigate the impact of the mining operations on the wildlife in area, including providing for safe movement of elephants. However, it is observed that though the said plan has been approved for its implementation by the PCCF (Wildlife) on 6.03.2013, till date no provisions of the Wildlife Management have been implemented by the State Forest Department. On being asked for reasons in exorbitant delay in the implementation of the Wildlife Management Plan, the DFO concerned has cited the administrative constraints for non-implementation of the provisions of the Wildlife Management Plan. The Divisional Forest Office on 13.09.2017 has submitted a proposal (APO) for the approval of the Steering Committee, CAMPA, Chhattisgarh to incur an amount of Rs. 3.53 crores towards the implementation of the provisions of the Wildlife Management Plan in the area under question. Certainly, the provisions of the Wildlife Management Plan aims to mitigate the impact however, delay in their implementation jeopardize its spirit.” [Emphasis added]

Furthermore, this Report also provides the status of compliance with the conditions stipulated in the Final Forest Clearance accorded by the Central Government dated 15.03.2012, and notes the complete lack of compliance with all conditions related to wildlife and biodiversity –

“Condition not complied with by the State Government/ User Agency

- (i) **Condition no. 20** - Wildlife Management Plan has not been implemented so far.
- (ii) **Condition no. 23** - No provision for appropriate financial outlay for the establishment of Rescue and Rehabilitation team to mitigate human-wildlife conflicts have been observed to be made by the User Agency, However, to support their claim the User Agency has informed that provisions have been incorporated in the Wildlife Management Plan and accordingly, the same have not been implemented separately by them.
- (iii) **Condition no. 24** - It is observed that though the said plan has been approved for its implementation by the PCCF (Wildlife) on 6.03.2013, till date no provisions of the Wildlife Management have been implemented by the State Forest Department.
- (iv) **Condition no. 25** - No mitigative measures as prescribed in the Wildlife Management Plan for reducing the dependency of cattle and people on the surrounding forest area have been

implemented by the User Agency. However, to support their claim the User Agency has informed that provisions have been incorporated in the Wildlife Management Plan and accordingly, the same have not been implemented separately by them.

- (v) **Condition no.27** - No annual compliance report in respect of the conditions stipulated in the approval accorded under the FC Act, are being submitted to the Regional Office, Nagpur.”

16.Despite the complete non-implementation of the Wildlife Conservation Plan, an EC was granted to the Project Proponent allowing the expansion of the mine from 10 MTPA to 15 MTPA (Annexure A-8). Not only does the EC not pay any heed to the status of Wildlife Conservation Plan implementation, but it also erroneously notes that -

“(xxii) There are no national parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone. There are no endemic, endangered species having habitat in the core zone of the study area. The species observed in the core zone were of common occurrence, mostly common birds such as munias, warblers, babblers, bulbuls, egrets, and the commonly noted mammals were porcupine, mongoose, Indian hare and common fox. A wildlife conservation plan with an estimated

cost of Rs 22 crore has been prepared by retired IFS officer Mr P.C. Agrahari, which was revised based on the comments of the director Wildlife Institute of India (WII), Dehradun. The same has been approved by the Government of Chhattisgarh”

C. Gamechangers: The Lemru Elephant Reserve and Biodiversity

Assessment Report

17. That the above characterization of the forest is not correct was made amply clear when the Lemru Elephant Reserve was notified on 22.10.2021, which is situated in the neighbourhood of the PEKB coal block (Annexure A-11). The Lemru Elephant Reserve overlaps with a substantial section of the HACF, and includes a large part of the Udaipur Forest Range, the range in which the PEKB coal block is situated.

18. Around the same time, the ICFRE-WII Biodiversity Assessment Report (BAR) was also finalized, which documents in detail the biodiversity and the rich wildlife present in the PEKB and neighbouring coal blocks in the HACF. The WII report highlights the presence of several endangered species in the area, including –

a) 9 schedule-1 mammals

b) 1 endangered and 12 vulnerable plant species

c) 2 species of threatened reptiles

19. The WII study (BAR volume 2) found several new facts that emphasized the need for stronger biodiversity management considerations than previously assumed –

a) WII found that there are over 25 species of mammals including *“nine species are listed in the Schedule - I, which are accorded the highest level of legal protection under the Wildlife (Protection) Act, 1972. Mammalian species diversity includes threatened large carnivores like common leopard, Indian grey wolf, striped hyena, sloth bear, and others that appears to be widely distributed as evidenced by camera trap captures as well as detections during sign surveys”*

b) Further, the WII also found presence of 92 species of birds and 180 species of flora, 82 species of avifauna, 23 species of reptiles in the overall Hasdeo Arand forest region. This appears to be considerably higher than previously mentioned in the EIA reports on which the ECs and FCs have been based.

c) Specific to the PEKB block, WII reported that *“before coal mining began showed high species richness during the pre-mining status”*. The WII report also notes that *“with coal extraction already being*

carried out and the project status is in operational stage. Therefore, visualizing the true picture of likely impacts on physical environment is not feasible in the case of PEKB”

- d) The WII study strongly suggested a high level of elephant presence and conservatively estimated about 40 to 50 elephants could be using different parts of the landscape at different times of the year. Further, the study notes alarming incidence of human-elephant conflict,

“The human-elephant conflict in the state is already acute and has been escalating with huge social and economic costs on the marginal, indigenous local communities. Any further threat to elephants’ intact habitats in this landscape could potentially deflect human-elephant conflict into other newer areas in the state, where conflict mitigation would be impossible for the state to manage. Opening up of coal blocks for mining in the HACF would compromise the imperatives of biodiversity conservation and livelihood of forest-dependent local”

- e) In its conclusions, the report states that

“In the operational mine of PEKB, a thorough impact assessment carried out enlists range of impacts on different faunal groups. Considering the impacts, a diversity of mitigation strategies has been proposed for PEKB. Notwithstanding the mitigation strategies prescribed, it is understood that mitigating all the impacts on faunal groups such as mammals due to largescale mining is impossible. This is particularly true in the case of wide- ranging animals with large home ranges like elephants”

20. Thus, it is clear that the EC dated 10.08.2018, allowing expansion of the mine capacity from 10 MTPA to 18 MTPA was based on incorrect, inadequate and misleading information.

21. The ICFRE-WII report also notes the inadequacies in the current Wildlife Management Plan, and its manner of implementation-

- a) WII report notes that *“The wildlife conservation plan of Parsa East and Kente Basen open cast coal mine and washery project prepared by the project proponent is basic and generic in nature. Due to this, it requires substantial revision and the management prescriptions need to be spatially explicit and closely consider the ecological, behavioral and social dimensions of the landscape.”*

- b) ICFRE reports that the efficacy of translocated trees has been poor with a low survival rate of 20-30%.

“The translocated trees have been planted at random....Only few precautions were followed during transplanting and post-case such as pruning of branch to avoid any damage while transporting, planting of the uprooted trees on the same day, re-planting of the trees in the treated pit with fertilizers/pesticides/fungicides, watering at regular intervals, monitor for survival and gap filling for the dead one at few places either with Sal or Pongamia (Safety zone) or Neem (Front of Mahua Dev dump site). This was a major impediment for the team to assess the performance of the transplanted trees”

22. The ICFRE-WII report proposes elaborate amendments to the wildlife conservation plan, and devotes an entire chapter (Chapter 9) to suggested mitigation strategies to reduce the impact of coal mining on faunal groups and develop a biodiversity conservation management plan for the PEKB coal block, including :-

- a) Species specific conservation plans like “development of butterfly habitat”, “reptile habitat niche”, “facilitating nesting niche (nest box) – for hole nesting birds”, “development of dening niche”

- b) Habitat development for overall biodiversity values – development of mine pit wetland habitat
- c) Threatened flora conservation plots
- d) Development of herbal garden
- e) Elephant food resource enhancement
- f) Sloth bear food resource enhancement
- g) Four-horned antelope food resource enhancement
- h) Fish farm pond
- i) Organic farming program
- j) Human-elephant mitigation strategies

23. However, these suggestions have yet to be incorporated into any existing wildlife conservation plan.

D. Non-Compliance with the Recommendations of the Biodiversity Assessment Report

24. The MoEF accorded its approval for commencement of Phase 2 mining on 2.2.2022, after only 10 years of mining in Phase 1 – as opposed to 15 years which was envisioned originally. In its order dated 2.2.2022 (Annexure A-13), the following conditions are stipulated –

“(i) The recommendation in the Biodiversity Assessment Report (BAR) have been made keeping in view the comprehensive scenario of current production levels, biotic interference, mitigating measures, etc vis-à-vis impact on surrounding resources. Therefore, no further changes in the Mining Plan vis-a-vis land use shall be effected by the user agency without the prior approval of Central Government.

ii. The recommendations made in the BAR shall be incorporated into the Wildlife Management Plan and the same shall be implemented by the State Forest Department at the project cost.”

25.However, the first condition was violated within a matter of few days, when on 14.02.2022, the MoEF allowed the EC for expansion of mining capacity from 15 MTPA to 18 MTPA on the basis of an amended mining plan (Annexure A-14). This is based on a recommendation of the EAC, which was apparently unaware of the ICFRE-WII study and its recommendations, and also of the Lemru Elephant Reserve that has been notified in the neighbourhood of the PEKB coal block, and thus could not truly consider the impact of accelerated mining on the local wildlife.

26.The EIA study, which informs the above EAC, erroneously claims that *“No National Parks, Wildlife sanctuaries, Wildlife corridors, Tiger*

reserves, Elephant reserves and Biosphere Reserves exist within 25 km radius from the ML boundary,” (Table 1.5) disregarding the presence of the Lemru Elephant Reserve. Similarly, it disregards the comprehensive survey conducted by WII and wrongly reiterates the earlier claims that had been refuted by the BAR :-

“In the buffer zone of the study area, there are few Schedule–I species which are recorded in the study area such as Indian elephant, peafowl, jungle cat, and sloth bear. Rest of the species is recorded in the following Schedules of II, III, IV and V of Indian Wildlife (*Protection*) Act, 1972, amongst mammals and reptiles.

Migrant birds of *belonging* to raptor species such as eagle species and kites are listed in the Schedule –I of the Indian Wildlife (Protection), Act 1972 apart from *Pavo cristatus* – peafowl are confined in the Schedule–I.

Among reptilian species *Python molurus* (Indian rock python) in the study area are confined in the Schedule I, and remaining belongs to Schedule-II, IV of the Indian Wildlife (Protection), Act, 1972.

Apparently, there is no endangered botanical flora in the study area as per the Botanical Survey of India records.”

27. This same EIA/EMP report also reveals that the second condition of the MoEF order dated 2.2.2022 has not been met, and the Wildlife Conservation Plan remained unchanged from the original one approved in 2013. (Section 4.5.5)

A true copy of the relevant extracts of the EIA Report and EMP, for Expansion of PEKB from 15 MTPA to 21 MTPA, for study period: March to May 2021 is annexed hereto and marked as **Annexure A-19**.

28. On 12.07.2023, the MoEF granted EC for the expansion of the Coal Washery from 15 MTPA to 18 MTPA (Annexure A-15), again incorporating another change in the Mining Plan in violation of the condition of the MoEF order dated 2.2.2011, and without considering the impact on the biodiversity and wildlife of the area.

The EIA / EMP in this case, conducting a study from March to May 2022, again reiterates the same errors as the one from a year before – disregarding the presence of Lemru Elephant Reserve, and ignoring the findings of the ICFRE-WII report of the presence of more faunal elements in the coal blocks.

This EIA/EMP also relies upon the Wildlife Conservation Plan of 2013, without taking into account any recommendations of the BAR.

A true copy of the relevant extracts of the EIA Report and EMP, for Expansion of PEKB coal washery from 15 MTPA to 21 MTPA, for study period: March to May 2022 is annexed hereto and marked as **Annexure A-20**.

29. Thus, it is apparent from the discussion above that -

- a) ECs granted for expansion of PEKB mine and coal washery from 10 MTPA to 15 MTPA dated 10.08.2018, for expansion of PEKB mine from 15 MTPA to 18 MTPA dated 14.02.2018, and for expansion of PEKB coal washery from 15 MTPA to 18 MTPA dated 12.07.2023 have been given on the basis of false and misleading information regarding the biodiversity and presence of wildlife species in the PEKB coal block, and without considering the relevant information in the BAR.
- b) Recommendations of the BAR have not been incorporated in the Wildlife Conservation Plan

- c) The Wildlife Conservation Plan has not been implemented, causing severe and irreparable harm to the faunal and floral species in the coal block, resulting in increased human-wildlife conflict.

II. NON-COMPLIANCE WITH EC CONDITION REGARDING CONSTRUCTION OF ONSITE FBC THERMAL POWER PLANT

30. The original EC granted to the PEKB coal mining project and pit head washery on 21.12.2011 for 10 MTPA (Annexure A-2) envisaged that there would be an onsite Fluidized Bed Combustion (FBC) Thermal Power Plant (TPP) which would run on rejects from the coal washery.

“An estimated 2.25 MTPA of coal rejects would be generated in the coal washery which would be fully utilized in the proposed 135 MW pithead FBC based TPP, the exact location of which is being finalised in consultation with the villagers. The pit head FBC based TPP would be established within two years of commissioning of the pit head washery.”

31. The Specific Conditions (ii) and (iii) of the EC dated 21.11.2012 read as under –

“(ii) The exact location of the FBC based TPP shall be finalised within 2 months in consultation with the villagers and an application for TOR submitted to the MOEF immediately thereafter. The location of CHP, Washery and the FBC shall be taken up in an integrated manner vis-a-vis transportation of coal (raw, clean coal, and coal rejects) from the mine, CHP, washery and FBC TPP by closed conveyors only.

(iii) The estimated 2.25 MTPA of coal rejects shall be fully utilised for power generation in an FBC based Thermal Power Pla being established within the ML. Coal rejects shall be dispatched to the FBC based Thermal Power Plant being established withing the ML. Coal rejects shall be dispatched to the FBC based TPP through a closed belt conveyer. The linked 135 MW FBC Power Plant shall be commissioned in 2·3 years. Until an FBC based TPP is established, the coal rejects shall be sold during the initial 2·3 years, to users of coal rejects for which an Agreement shall be entered into. There shall be no storage of coal rejects within the project area beyond 2·3 months of its generation.”

32. However, such an FBC TPP has never been established, nor has any application been made for its TOR, although 42 ha of land within the ML stands earmarked for it. (See Table 2.6 in EIA/ EMP dated March – May 2022, Annexure A-19).
33. On 29.12.2015, the MoEF allowed an amendment to the EC and extended the timeline for compliance with the condition for commissioning of the FBC TPP to “6-7 years” instead of “2-3 years” from the date of commissioning of the washery (Annexure A-6), thus extending the time for which the Project Proponent can sell the coal rejects to thermal power plants.
34. On 12.08.2018, the EC for expanded capacity of 15 MTPA was granted, which also meant an increase in the amount of washery rejects from 2.25 MTPA to 3.375 MTPA. The EC dated 12.08.2018 (Annexure A-8) included a condition for all coal including rejects to be transported only via railway. However, this EC was amended on 25.07.2019 to allow road transportation of coal rejects for one year (Annexure A-9), and then again on 23.12.21 to allow road transportation of coal rejects for three years to a maximum of 1.2 MTPA for up to 275 km (Annexure A-12). Thus, while the initial conception of the PEKB coal mine and washery project envisioned that the FBC TPP would entail that there are no coal rejects

from this project, the current situation is one where the coal washery rejects are being transported by trucks and sold to powerplants.

35. On 11.08.2020, the MoEF issued a show cause notice to the Project Proponent seeking an explanation for the extreme delay in commissioning the FBC Thermal Power Plant (Annexure A-10). The certified EC compliance report dated 19.01.2022 also notes that on the day of the site visit, i.e. 17.01.2021, no FBC Thermal Power Plant was installed. A true copy of relevant excerpts from the certified EC compliance report dated 19.01.2022 is annexed hereto and marked as **Annexure A-21**. Any response or explanation offered by the Project Proponent to the above show-cause notice, or to the report of the Integrated Regional Office is not in the public domain.

36. Meanwhile, an investigative news story has claimed that documents obtained through RTI reveal that approx. 25% of the coal from the PEKB mine was going to fuel power plants owned by the Adani group in the year 2021-22. It should be noted that the Adani group is the parent group of the MDO at the PEKB coal mining project. It is not apparent from the data whether washed coal or the coal rejects from PEKB were sold to Adani owned power plants. However, in either case, ethical concerns are raised about the deliberate delay in commissioning the FBC TPP on the

one hand, and the sale of coal rejects at the expense of the public exchequer and environmental damage, on the other.

III. NON-COMPLIANCE WITH CONDITIONS RELATING TO HEALTH

37. The EC granted on 14.02.2022 for expansion from 15 to 18 MTPA (Annexure A-14) had a condition for the construction of a 100 bedded hospital.

“(vii) PP shall construct a multispecialty hospital of 100 beds for local people within 10 km buffer area of coal mine within 2 years of issue of this EC letter. Further, this hospital will accept Pradhan Mantri Jan Arogya Yojana for medical facilities to nearby villagers.”

38. On 17.01.2023, the Integrated Regional Office of the MoEF conducted a site visit for monitoring EC compliance and was informed that the PP has submitted an application to the District Collector, Sarguja, for allotment of 4 ha for construction of the hospital as per the stipulated condition.

The PA was asked to submit the compliance of the construction of the multispecialty hospital as per the stipulated condition on a quarterly basis to the IRO. A true copy of the Certified copy of EC compliance dated 20.01.2023 is annexed hereto and marked as **Annexure A-22**.

39. However, on 25.04.2024, the Project Proponent moved an application before the EAC seeking exemption from the condition on grounds of financial burden (The EAC meeting minutes are in Annexure A-16). The justification for seeking exemption given to the EAC is

“Cost of construction of hospital would be around Rs.130 Crores. In addition to this, recurring annual operation and maintenance cost of 100 bed around Rs. +20 Crores will create huge financial burden to RVUN which is beyond the capacity of RVUN. RVUN is currently facing a severe financial crisis which has impacted the ability to meet various financial obligations including pending payment against coal companies and railways.

RVUN is in a challenging position to undertake the construction of 100 bedded hospital. Additional financial burden would be onerous for RVUN.

RVUN is already spending Rs. 7.48/- per MT of coal at present for CSR as per the EC condition and has already incurred Rs. 5.31 crores over and above the mandated CSR for the year 2022-23.”

40. The EAC rejected this prayer and also noted –

“iv. As per the available records, the EAC noted that in all the existing ECs accorded to the project proponent several conditions have been prescribed by the Ministry with respect to occupational health, epidemiological study and health assessment in the vicinity of the project site. However, now the justification provided by the PP for seeking exemption from construction of 100 bedded hospital prescribed as a specific condition (vii) of the EC dated 14/02/2022 due to financial constraints is not acceptable and the same shall not be agreed upon. Further, PP failed to demonstrate the compliance made by them with respect of prescribed conditions related to the health aspects in the previous ECs.”

[Emphasis added]

41. This illustrates the manner in which the Project Proponent deals with concerns regarding the well-being and health of the residents in the mining area.

42. The Applicant respectfully submits that above narration of facts adequately demonstrates the manner in which the Project Proponent and Respondent Authorities are carrying out mining operations, which is causing grave and irreparable damage to the fragile ecosystem of the

Hasdeo forest in the PEKB coal block. The complete disregard shown by them to the biodiversity and wildlife native to the coal block, and also in defiance of other Environmental Clearance conditions meant to mitigate the harmful effects of mining and benefit local villagers, gravely endangers the local populations and their future utilization of the forest resource.

APPLICANT

FILED BY:

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ARCHIT KRISHNA (D/7777/2017)

PRIYA VATS (D/327/2022)

ADVOCATES FOR THE APPLICANT

H-19, BASEMENT, LAJPAT NAGAR -III, NEW DELHI 110024

architkrishnaoffice@gmail.com | 9810933083

Place: New Delhi

Date: 04.10.2024

Archit

Adv. For the Intervenor



BEFORE THE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH, NEW DELHI

I.A NO. _____ /2024

IN

ORIGINAL APPLICATION NO. 59/2024

IN THE SUO MOTU MATTER OF:

"NEWS ITEM TITLED "DEFORESTATION FOR MINING RESUMES IN HASDEO LOCALS ACTIVISTS ALLEGE DETENTION" APPEARING IN THE HINDU DATED 22.12.2023"

09 OCT 2024

AFFIDAVIT IN SUPPORT OF APPLICATION

I, Jainandan Singh Porte, son of Sukul Ram, aged about 40 years, resident of Ghatbarra Village Tehsil Udaipur, District Surguja, Chhattisgarh do hereby solemnly affirm and state as under:-

1. That I am an authorized representative of the Applicant Organization in the present Original Application and am well conversant with all the facts and circumstances of the case and as such I am competent to swear this affidavit.
2. That I have read and understood the contents of the accompanying Application, and that the facts stated therein are true and correct to the best of my knowledge and belief as derived from the records of the case.
3. I also state that the copies of the documents annexed to the present application are true copies of their respective originals.
4. I also state that the contents of the present application and affidavit have been read over and explained to me in Hindi.



09 OCT 2024

Deponent

हसदेव अरण्य बचाओ संघर्ष समिति
ग्राम - मदनपुर, जिला- कोरवा

VERIFICATION

I, the above-named Deponent do hereby verify that the contents stated in the above affidavit are true and correct to the best of my knowledge and belief and no part of it is false and mothering material has been concealed therefrom. **09 OCT. 2024**

Verified at _____ on this _____ day of _____ 2024.

Signature
Deponent

हसदेव अरण्य बचाओ संघर्ष समिति
ग्राम - मदनपुर, जिला- कोरबा



09 OCT 2024

SOLEMNLY AFFIRMED
OR SWORN BEFORE ME BY
THE WITHIN NAMED

मेरे समक्ष इस दस्तावेज पर
संबंधित व्यक्ति ने पठकर/
बिना शपथपूर्वक कथन आपका
और इस दस्तावेज पर अपना
अंगूठा निशान चिह्न किया

पहचानकर्ता

हमेशू पोर्त

दोडू पोर्त

पिता श्री घुर सायपोर्त

ग्राम- घाटबरा

थाना व तह- उदयपुर

जिला- सरगुजा

(दोना)

Signature
KOSHLESH PRASAD MISHRA
NOTARY/ADVOCATE
TEH.UDAIPUR.SURGUJA (C.G.)

09 OCT 2024



09 OCT 2024

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F. No. 8-31/2010-FC
Government of India
Ministry of Environment and Forests
(FC Division)

Paryavaran Bhawan, CGO Complex,
Lodhi Road, New Delhi - 110510.

Dated: 6th July, 2011

To

The Principal Secretary (Forests),
Government of Chhattisgarh,
Raipur.

Sub: Diversion of 1898.328 ha of forest land for Parsa East and Kete Basan captive coal block open cast mining project in favour of M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited in South Surguja Forest Division in Surguja district of Chhattisgarh.

Sir,

I am directed to refer to the State Government's letter no. F - 5 - 4 / 2010 / 10 - 2 dated 28.04.2010 on the subject mentioned above seeking prior approval of the Central Government under section-2 of the Forest (Conservation) Act, 1980 and to say that the proposal has been examined by the Forest Advisory Committee constituted by the Central Government under section-3 of the said Act.

After careful examination of the proposal of the State Government, the Central Government hereby conveys the stage-I approval for diversion of 1898.328 ha of forest land (for mining in two phases) in Parsa East and Kete Basan captive coal block open cast mining project in favour of M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited in South Surguja Forest Division in Surguja district of Chhattisgarh subject to fulfillment of the following conditions:

1. (i) The Compensatory Afforestation (CA) shall be raised and maintained over double degraded orange forest land in extent to the forest land proposed to be diverted.
 - (ii) The State Government shall immediately transfer and mutate the non-forest land identified for CA in favour of the State Forest Department.
 - (iii) The land identified for the purpose of CA shall be clearly depicted on a Survey of India toposheet of 1:50,000 scale.
 - (iv) The degraded orange forest land identified for raising Compensatory Afforestation shall be notified by the State Government as RF under Section-4 or PF under Section-29 of the Indian Forest Act, 1927 or under the relevant Section(s) of the local Forest Act, as the case may be, within a period of six months. The Nodal Officer (Forest Conservation) shall report compliance in this regard.
2. The User Agency shall create, fence and maintain a proper safety zone around the mining area. The User Agency shall deposit funds with the Forest Department for the creation, protection and regeneration of the safety zone area, and also shall bear the cost of afforestation over one and a half time of the safety zone area in degraded forest elsewhere.
 3. The following activities shall be undertaken by the User Agency under supervision of the State Forest Department at the project cost:

- i. Proper mitigative measures to minimize soil erosion and choking of streams shall be prepared and implemented.
 - ii. Planting of adequate drought hardy plant species and sowing of seeds to arrest soil erosion.
 - iii. Construction of check dams, retention/toe walls to arrest sliding down of the excavated material along the contour.
 - iv. No damage shall be caused to the top-soil and the user agency will follow the top soil management plan.
4. The State Government shall charge the Net Present Value of the forest area diverted under this proposal from the User Agency as per the Judgement of the Hon'ble Supreme Court of India dated 28.03.2008 & 09.05.2008 in IA No. 566 in WP (C) No. 202/1995 and as per the guidelines issued by this Ministry vide letter No. 5-3/2007-FC dated 05.02.2009 in this regard.
 5. The User Agency shall furnish an undertaking to pay the additional NPV, if so determined, as per the final decision of Hon'ble Supreme Court of India.
 6. All the funds received from the User Agency under the project shall be transferred to Ad-hoc CAMPA in account number **CAF SB01025203** of Corporation Bank, Block-11, CGO Complex, Phase-1, Lodhi Road, New Delhi - 110 510.
 7. The Wildlife Management plan and programme should be prepared under the aegis of an institution like the Wildlife Institution of India. Other independent institutions with expertise on elephant-related issues especially, like the Nature conservation Foundation, Wildlife Trust of India and the Centre for Ecological Studies at the Indian Institute of Science could also be involved in the preparation and implementation of such a management plan with funds from the project proponents (IFFCO and RVUNL). The plan should be prepared over the next four-six months and should be submitted to the Ministry for monitoring.
 8. The user agency will assist the State Government in conservation and preservation of flora and fauna of the area.
 9. The mining shall be done in two phases:
 - i. During phase-I, covering 15 years, the mining shall be restricted to 762.00 ha of forest land.
 - ii. During Phase-II, the mining permission over remaining 1136.00 ha will be linked to the reforestation and biodiversity management in phase-I.
 - iii. The project proponent will submit the application for permission for mining in phase-II along with compliance report of phase-I.
 10. The User Agency will ensure the dumping of OB as per the plan and will submit the duly approved phased Reclamation plan along with the compliance report.
 11. The forest land shall not be used for any purpose other than that specified in the proposal.
 12. No labour camps shall be set up inside the forest area.
 13. The user agency shall provide alternate fuel to the labourers working at the site to avoid damage / felling of trees.

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14. Any tree felling shall be done only when it is unavoidable under strict supervision of the State Forest Department.
15. No damage to the flora and fauna of the adjoining area shall be caused.
16. The user agency will obtain Environmental clearance and any other clearances required for such project.
17. The user agency shall undertake transplantation of important tree species under 60 cm girth under the supervision of the State Forest Department.
18. The user agency shall establish and operate a Vocational Training Institute having capacity to impart training in at-least five disciplines, to be decided by the State Government concerned in consultation with the user agency, for the benefits of the eligible unemployed youth in the project affected villages. The user agency should also endeavour to employ such trained manpower in their own industry or any other appropriate industry, preferably located in vicinity of the forest land being diverted.
19. The user agency shall setup an independent Social Welfare Department / Division and follow the subsequent condition of the project-affected and the project-displaced persons in such a way as to understand their socio-economic conditions before and after the project and take such corrective measures as are necessary to restore them to their original or better-than-original condition.
20. The user agency will provide permanent vehicular mobility to the Regional Office for periodic monitoring of the projects already existing and those are coming up in the area.
21. The State Government will not come up for opening up the main Hasdeo-Arand area.
22. The user agency will obtain the clearance under the provisions of ST&OTFD (Recognition of Forest Rights) Act, 2006 before the final approval and will submit certificate towards the settlement of all claims and rights over the proposed forest land under the Act, along with the compliance report, as per the advisory dated 03.08.2009 issued by MoEF.
23. Any other condition that the CCF (Central), Regional Office, Bhopal, may impose from time to time for the protection and improvement of flora and fauna in the forest area.

After receipt of the compliance report on fulfillment of the conditions mentioned above, the Central Government shall consider the handing over of forest land for non-forest purposes under section-2 of the Forest (Conservation) Act, 1980.

Yours faithfully,


(N.C. Saravanan)

Assistant Inspector General of Forests

Copy to:

1. The Principal Chief Conservator of Forests, Government of Chhattisgarh Raipur.
2. The Nodal Officer (FCA), O/o the PCCF, Government of Chhattisgarh Raipur.
3. The Chief Conservator of Forest (Central), Eastern Regional Office, Bhopal.
4. User Agency.
5. Monitoring cell.
6. Guard file.


(N.C. Saravanan)

Assistant Inspector General of Forests

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Ministry of Environment & Forests (MOEF)

No.J-11015/03/2008-IA.II(M)

Paryavaran Bhawan,
C.G.O.Complex,
New Delhi -110510.

To

Dated: 21st December 2011

Managing Director,
M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd.,
Vidyut Bhawan,
Janpath, Jyoti Nagar,
JAIPUR - 302005.

Sub: Parsa East and Kanta Basan Opencast Coal Mine Project (10 MTPA) and Pit Head Coal Washery (10 MTPA) of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd., located in Hasdeo-Arand Coalfields, in villages Parsa, Kente, Basan, Salhi, Hariharpur, Ghatbara, Parogiya, Tehsil Udaypur, Dist. Sarguja, Chhattisgarh-Environmental clearance - reg.

Sir,

This is with reference to letter No. RVUN/Dy. CE (fuel)/XEN (F)/F./D. 544 dated 29.12.2007 along with application for Terms of Reference (TOR) for a new **Parsa East and Kanta Basan Opencast Coalmine Project of 10 million tonnes per annum (MTPA) production capacity** and this Ministry's letter dated 13.03.2008 granting the TOR and subsequent letter No. RVUNL/CE (PPC&F)/F./D.557 dated 29.05.2008 along with application for TOR for a pit head coal washery of 10 MTPA capacity and this Ministry's letter dated 11.07.2008 granting the TOR and your application for environmental clearance dated 27.07.2009 for the **Parsa East and Kanta Basan Opencast Mine Project-cum-Pit head Coal Washery** and subsequent letters dated 14.09.2009, 29.10.2009, 30.11.2009, 22.01.2010, 29.06.2011, 23.08.2011, 24.08.2011, 19.09.2011, 29.09.2011 and 14.10.2011. In addition, letter No. F 5-9/2008/10-2 dated 22.09.2009 of the Secretary, Forest Dept., Government of Chhattisgarh along with letter dated 17.09.2009 of Office of Principal Chief Conservator (Wildlife) and Chief Wildlife Warden, Government of Chhattisgarh and subsequent letter No 3306/2299/2011/10-2 dated 06/09/2011 of Additional Secretary Forest Dept., Govt. of Chhattisgarh have also been received on the project in the Ministry. The Ministry of Environment & Forests has considered the application. It is noted that the proposal is for opening a **new Parsa East and Kanta Basan Opencast Mine project of 10 MTPA production capacity in a total project area of 2711.034 ha along with a pit head coal washery of 10 MTPA (ROM)** to be located within the leasehold of the mine located in Hasdeo-Arand Coalfields in Tehsil Udaypur, Dist. Sarguja, Chhattisgarh. Grade of coal is mainly G. The washed coal is for captive consumption of linked Thermal Power Plants - Chhabra Phase-II (2x 250 MW) and Jhalawar (Kalisindh 2x 600 MW) of the company located in Rajasthan. Rated capacity of 10 MTPA would be achieved during the third year. An estimated 2.25 MTPA of coal rejects would be generated in the coal washery which should be fully utilised in the proposed 135 MW pithead FBC based TPP, the exact location of which is being finalised in consultation with the villagers. The pit head FBC based TPP would be established within two years of commissioning of the pit head Washery.

The total project area is **2711.034 ha** which includes a **total mining lease area of 2388.525 ha** and 322.509 ha outside the ML area for infrastructure and external OB dumps. Of the total project area of 2711.034 ha, 1898.328 ha is forestland, 702.163 ha is agricultural land, and 110.543 ha is Govt. wasteland. The project is to be operated in two phases of 15 years each. The total land requirement for phase -I (for the initial 15 years) is 1300.5 ha, of which 762.0 ha is

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forest land, 538.50 ha is non-forest land and 1136.328 ha is forestland and 274.206 ha is non-forest land. There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 15 km buffer zone. River Atem and streams joining it from the block control the drainage of the project area and the direction of flow of River Atem is away from the Hasdeo-Arand coalfield. There are 16 protected forests and one reserved forest within the study area of which two are located within the core zone - Phatepur PF and Matringa PF. Since the mine lease is on the fringe of Hasdeo-Arand coalfield, the forests of the Hasdeo-Arand coalfields would not be fragmented. Forestry clearance has been obtained 1898.328ha of forest land vide MOEF letter No. letter No. 8-31/2010-FC dated 06.07.2011. A number of endangered fauna such as the Indian Elephant, Sloth Bear, Leopard; Hyeana, etc are found in the study area. Elephants have been reported about 10km from the ML. The CWLW, Govt. of Chhtatisgrah has stated that the area does not form a part of the Elephant Reserve. Forest cover of Phase-II would be left undisturbed during Phase-I of operation (15 years) of mining and available for wild life which venture into the habitat. During Phase-II (after 15 years), forest cover (with native species) grown in Phase-I area after reclamation, would also be available for the wild life. The mine is surrounded by forest area in the southern and eastern parts of the mine which would also provide continuity, shelter, food and water to the fauna present in the area. An amount of Rs 22 crores has been earmarked for WL Conservation Plan, which is being prepared by the WII, Dehradun within 4-6 months. The Plan would include - strict fire control, protection from grazing, deepening of old tanks and desilting ponds and tanks, and erection of check dams, management of existing pasturelands and development of new pasture land consisting of native species, nursery for conserving bio-diversity of native species, identification and management of specific areas such as habitats, riparian zones, etc. The migratory corridor between Samar - Sol Elephant Reserve in district Sarguja and Badal Khol Reserve in district Jashpur would be strengthened through the proposed Wild Life Conservation Plan.

Of the total project area of 2711.034 ha, 2388.525 ha is quarry area, 165.83 ha is for external OB dump, 47.34 ha is for coal washery (of which 30 ha is for the Plant and storage area and the balance 17.34 ha is for green belt), 31.44 ha is for colony, 21.62 ha is for infrastructure which includes a 10 MTPA capacity CHP, and 56.279 ha is area for safety zone and for rationalisation. Of the total forestland of 1898.328 ha, 1654.109 ha is protected forests, 214.963 ha is Chote Jhar ke Jungle, and 29.256 ha is Bade Jhar Ke Jungle. The project is opencast mining by mechanised method involving shovel-and-dumper and surface miners which would eliminate drilling and blasting for coal extraction. Drilling and blasting would be required fro OB removal. Blasting would be by use of delayed electric detonator. Grade of coal is F. Water table is in the range of 3.50-8.20m bgl during pre-monsoon and near surface-6m bgl during post-monsoon. The total estimated OB generation from the mine is 2334.62 Mm³/day (560.11Mm³ in Phase-I and 1774.51 Mm³ in Phase -II). The total estimated top soil generation in the entire mine life is 30.13 Mm³ (Phase -I-12.80 Mm³, Phase -II-17.33. Of an estimated 2334.6 Mm³ of OB generated over the life of mine, 64.40 Mm³ of OB would be dumped in two external OB dumps of a max. height of 60m and 90m in an area of 165.83 ha, and the balance 2270.22 Mm³ of OB would be backfilled in the decoaled void. Mining would be sequential and backfilling would begin at the end of 3rd year which would continue till end of mine life and there would be no external dumping from 4th year onward. An estimated 30.13 mm³ of topsoil would be generated over the life of the mine, which would be used for green belt development and mine reclamation. Backfilling would begin from the 4th year, and there would be no external dumping from 4th year onwards. Ultimate working depth of the mine is 225m below ground level (bgl). At the post mining stage, the entire quarry area would be backfilled and reclaimed with vegetation and there would be no void left as a water body.

The proposed coal washery to be established within the ML would be wet process based on heavy media/cyclones/jigs for washing raw coal from the coalmine of 32.1%-54.2% ash content and clean coal (7.75 MTPA) after washing would have an ash content of 29.5-30.5%. Transportation of 30,300 TPD raw coal (of 40% ash content) from the mine pit to the surface and to CHP and thereafter by closed belt conveyors to the coal washery. Clean coal (of ash content of 30.5% or less) and middling from the pit head coal washery would be loaded by rapid loading system and transported by rail via Surajpur Railway Station to linked TPPs located at a distance of 78km. A Railway Siding is proposed to be commissioned within 24 months adjoining the mine. The balance 2.25 MTPA of coal rejects of 72% ash content would be utilised for power generation in an FBC based

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Thermal Power plant also to be established within the ML. Coal rejects would be dispatched to the FBC based TPP through a closed belt conveyor.

Peak water requirement would be 9000 m³/d, which includes 3600 m³/d for the mine and 5400 m³/d for the coal washery (which includes 3750 m³/d make-up water for the coal washery and 1650 m³/d for dust suppression); which will be met from mine pit water and rainwater. The first year's water requirement for the project would be met from tube well and thereafter tubewell water is for domestic consumption only. Clearance from groundwater angle has been obtained from the Central Ground Water Authority on 23.09.2009 for use of groundwater to an extent of 615 m³/d. An STP is proposed for the colony.

The project involves R&R of 5 villages – Parsa, Kente, Saihi, Hariharpur, and Ghatbara comprising 243 home and land losers, 56 homestead losers and 159 land losers. An R&R Action Plan for Rs 20.693 crores has been prepared. A CSR Action Plan has been prepared which includes activities for tribal welfare. A sum of Rs. 10 crores as one time capital expenditure and Rs 5/T annually for coal production for the life of the mine has been earmarked for activities under CSR to be taken up for the adjoining villages. Community development work would be carried out which includes skill development of the local communities and addressing issues such as availability of minor forest produce for the tribal/local communities. Public Hearing was held for the coalmine project-cum-coal washery on 16.01.2009. Life of the mine-cum-coal washery at the rated capacity of 10 MTPA is 45 years. Mining Plan was approved by Ministry of Coal on 16.07.2009. Capital cost of the Coalmine project **Rs 1120.25 crores** and for the coal washery is **Rs 88 crores**.

2. The Ministry of Environment & Forests hereby accords environmental clearance for the above-mentioned **Parsa East and Kanta Basan Opencast Mine Project of 10 MTPA production capacity along with a pit head coal washery (10 MTPA ROM) of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd., involving a total project area of 2711.034 ha** under the Environmental Impact Assessment Notification, 2006 and subsequent amendments thereto and Circulars thereunder subject to the compliance of the terms and conditions mentioned below:

A. Specific Conditions

- (i) The maximum production of Parsa East and Kanta Basan Opencast Mine Project shall not exceed 10 MTPA production capacity and the production of pit head coal washery shall not exceed 10 MTPA ROM.
- (ii) The exact location of the FBC based TPP shall be finalised within 2 months in consultation with the villagers and an application for TOR submitted to the MOEF immediately thereafter. The location of CHP, Washery and the FBC shall be taken up in an integrated manner vis-à-vis transportation of coal (raw, clean coal, and coal rejects) from the mine, CHP, washery and FBC based TPP by closed conveyors only.
- (iii) The estimated 2.25 MTPA of coal rejects shall be fully utilised for power generation in an FBC based Thermal Power Plant being established within the ML. Coal rejects shall be dispatched to the FBC based TPP through a closed belt conveyor. The linked 135 MW FBC Power Plant shall be commissioned in 2-3 years. Until an FBC based TPP is established, the coal rejects shall be sold during the initial 2-3 years, to users of coal rejects for which an Agreement shall be entered into. There shall be no storage of coal rejects within the project area beyond 2-3 months of its generation.
- (iv) Coal transportation of clean coal and middling to the linked TPPs located at a distance of 78km, shall be entirely by rail or by conveyor-cum-rail mode only except for the initial 2-3 years.
- (v) A Railway Siding to be established adjoining the mine shall be commissioned within 24 months. Until the railway Siding is constructed and commissioned, transportation of clean coal and middling to the linked TPPs at Rajasthan shall be by high capacity trucks (30-T or more) only. Clean coal and middling from the pit head coal washery shall be loaded by

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rapid (silo) loading system and transported by rail only after the commissioning of the railway siding and establishment of network to Surajpur TPS located at a distance of 78km.

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- (vi) Transportation of 30,300 TPD raw coal (of 40% ash content) from the mine pit to the surface and to CHP and thereafter to the coal washery shall be by closed belt conveyors only. Transport of coal rejects to the FBC based TPP shall also be by closed belt conveyors only.
 - (vii) The drainage of River Atern outside the project area shall not be disturbed through construction of embankment or by diversion of nalas/streams without prior study and approval.
 - (viii) Topsoil shall be stacked properly within the dump area with proper slope at earmarked site(s) and shall be used concurrently for reclamation and development of green belt within a year of its generation.
 - (ix) Sequential mining shall be undertaken for the two-phases and internal dumping (backfilling) would be started at the end of 3rd year and no external dumping from 4th year onwards. By the end of phase -I (15th year), about 74% of the total excavated area would be backfilled and reclaimed. At the end of project an area of 1929.84 ha would be reclaimed out of a total ML area of 2388.53 ha. There shall be no external OB dumping from the end of 3rd year onwards.
 - (x) OB shall be stacked at earmarked external OB dumpsite of 165.83 ha within ML area and shall be a maximum height of 60m and one of 90m with a bench height of 30m each. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional office located at Bhopal on yearly basis.
 - (xi) Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilised for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly.
 - (xii) Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also be provided for adequate retention period to allow proper settling of silt material.
 - (xiii) Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
 - (xiv) There shall be no drilling and blasting for coal extraction and use of shovel and dumper combination with drilling and blasting shall be for OB removal only. Controlled blasting shall be practiced only during daytime with use of delay electric detonators. Drills shall be wet operated. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.
 - (xv) The raw coal, washed coal and coal wastes (rejects) shall be stacked properly within the washery premises at earmarked site(s) within stockyards of one-day storage capacity fitted with wind breakers/shields. Adequate measures shall be taken to ensure that the stored raw coal, washed coal and coal wastes do not catch fire.
 - (xvi) Crushers at the CHP shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system,

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haulage roads, transfer points, etc. Hoppers of the coal crushing unit and washery unit shall be fitted with high efficiency bag filters and mist spray water sprinkling system shall be installed and operated effectively at all times of operation to check fugitive emissions from crushing operations, transfer points, stockyards and at the Railway Siding.

- (xvii) All approach roads shall be black topped and internal roads and major haul roads shall be black topped or concreted and swept regularly with mechanical sweepers. A 3-tier avenue plantation using local species shall be developed along the main roads, and approach roads to the mine and to the washery and to Railway Siding. In addition, green belt shall be developed using local species all along the periphery of the site, along the areas such as the washery unit, crushing unit, and stockyards. Railway Siding and Silo Loading Area shall be properly maintained and green belt developed all around it. Water sprinkling arrangements shall be established and functional during transfer and loading of coal.
- (xviii) A 30m green belt consisting of a 3-tier plantation using native species shall be developed between quarry and villages, and external OB dump and villages and the R&R site. The green belt/plantation using a mix of native species shall be developed within two three years of grant of environmental clearance.
- (xix) Proper records of quantum of raw coal, clean coal and coal rejects generated and being utilised shall be maintained. Proper records of ash content (of raw coal, clean coal and coal rejects) shall be maintained in this regard. The company shall enter into a contract for the use of coal rejects until the FBC TPP is commissioned within 24-36 months. The details of quantum and ash content of raw coal, clean coal and coal rejects generated and utilised shall be uploaded regularly on the company website.
- (xx) The Washery unit shall be a zero-discharge facility and no wastewater shall be discharged from the washery into the drains/natural watercourses. Recycled water shall be used for development and maintenance of green belt and in the Plant Operations. A Filter Press shall be installed in the washery plant for recovery of water.
- (xxi) The entire total estimated requirement of make-up water of 3750m³/day for the coal washery shall be met from mine water. No groundwater shall be used for the mine and Washery Plant Operations except for drinking purpose and during the initial first year of mine operation. Any additional water requirement envisaged for mine/washery operations shall be obtained from mine pit water, by recycle/reuse to the maximum extent and from rainwater harvesting measures.
- (xxii) Heavy metal content in raw coal, washed coal and coal rejects shall be analysed twice in a year and records maintained thereof and also uploaded on the company website.
- (xxiii) No fly ash from the linked TPPs shall be used in backfilling of the void without undertaking an environmental feasibility study and without prior approval of this Ministry under EIA Notification, 2006.
- (xxiv) Area brought under afforestation shall not be less than 2600.633ha, which includes reclaimed external OB dump (165.83 ha), topsoil dump, backfilled area (2365.949 ha), along ML boundary, infrastructure and washery area (26.976 ha), along roads, green belt (41.878 ha), in undisturbed areas/safety zone and in colony by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.
- (xxv) A Plan for OB dumping and management so that there is no void left at the post mining stage shall be submitted to the Ministry immediately. A Progressive Mine Closure Plan shall be implemented by reclamation of the total quarry area of 2365.949 ha backfilling and reclamation by afforestation, to create a 3-storeyed forest in lieu of original forest, by planting native species in consultation with the local DFO/Agriculture Department/relevant

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institution. The density of the trees shall be around 2500 plants per ha. At the post mining stage, the entire quarry area shall be backfilled and reclaimed with vegetation and there shall be no void left as a water body.

- (xxvi) A Conservation Plan (in-situ and ex-situ) for endangered faunal species reported in the study area and for the medicinal plants found in and around the project area shall be prepared in consultation with Wildlife Institute of India, Dehradun within 4 months from date of environmental clearance and the Plan shall be implemented in consultation with the State Forest and Wildlife Departments. An in-situ conservatory of species found in the pre-mining original ecosystem and rare and endangered plant species including medicinal plants species found in the study area during pre-mining phase shall be established and reintroduced during mine reclamation and habitat restoration. The Conservation Plan shall include conservation of areas within the project boundary to be left undisturbed as free passageways for the wildlife to reach the forests in the study area. The Conservation Plan shall also include activities of mine reclamation and wildlife habitat restoration of mined out areas within the core zone and project area using native species representative of the forest ecosystem during the pre-mining phase. Separate funds of Rs. 20 crores as capital costs and Rs. 2 crores as revenue costs shall be earmarked for implementation of the various activities under the Conservation Plan. The status of the Conservation Plan including financial status shall be reported once a year as part of the monitoring report to this Ministry and to the MOEF Regional Office, Bhopal. The proponent shall also participate in the Regional Wildlife Conservation Plan (RWLCP) for the study area prepared by the State Wildlife Dept. and in addition to the above funds shall also contribute financially for implementation of the RWLCP. Habitat development/conservation measures along the migratory route/habitats of elephants found/visiting the area shall form a part of the Regional Action Plan.
- (xxvii) Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May and in monsoon. Data thus collected shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.
- (xxviii) The Company shall put up artificial groundwater recharge measures including rainwater harvesting structures for augmentation of groundwater resource in case monitoring indicates decline in water table. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- (xxix) ETP shall also be provided for workshop, and CHP. Effluents shall be treated to conform to prescribed standards, particularly for pH and TSS in case of discharge into any watercourse within or outside the lease.
- (xxx) An STP shall be provided for the township/colony to treat the domestic effluents to prescribed standards and for their reuse in project activities.
- (xxxi) Industrial wastewater (workshop and wastewater from the washery) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed for treatment of workshop effluents.
- (xxxii) R&R Plan prepared for an estimated Rs. 20.693 crores shall be not less than the norms laid down/approval by the State Government and shall not be inferior than that in the National R&R Policy and shall be completed within a specified time-frame. R&R shall include specific income generation schemes and setting up of SHGs and cooperatives, and activities and assistance under the Tribal development Plan for the tribals being displaced and provision of annuities for the under-privileged sections. The provision also includes a Corpus Fund for the maintenance of the Resettlement site. The status of the implementation of the R&R

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Plan along with financial status of the activities undertaken shall be uploaded on the company website and updated at least once in a year.

- (xxxiii) The proponent shall provide not less than Rs. 10 crores towards capital costs and Rs 5/T of coal as revenue expenditure (which shall be up scaled after adjusting for depreciation of the rupee) towards activities undertaken under CSR for 12 villages – Salhi, Hariharpur, Parsa, Parogia, Basan, Shivanagar, Suskam, Sontarai, Janardanpur, Tara, Mendra and Fatehpur - for the life of the project. The activities shall include establishing/strengthening of schools roads, drainage and sanitation, community halls, drinking water in the villages and skill development of the local communities. The CSR Plan shall also include Tribal Welfare activities for the tribals and their skill development for alternate livelihood and addressing issues such as availability of minor forest produce for the tribal/local communities. The details of the activities and expenditure made thereon in each of the villages taken up under CSR shall be displayed on the company's website and updated at least once in six months. The socio-economic development of the villages shall be monitored over the life of the project using indices such as the UNDP Human Development Index.
- (xxxiv) For monitoring land use pattern and for post mining land use, a time series of landuse maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhopal.
- (xxxv) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests for approval 5 years in advance of final mine closure for approval. The Plan shall include habitat restoration of the project area consisting of a 3-storied forest ecosystem, using a mix of native species found in the pre-mining ecosystem in the study area.
- (xxxvi) A dedicated team drawn from disciplines of ecology, wildlife, sociology, hydrology, etc shall be engaged over the life of the project for implementation of Wildlife Conservation Plan, R&R and CSR Plan and for progressive and final mine closure plan and issues of habitat restoration.

B. General Conditions

- (i) No change in technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.
- (ii) No change in the calendar plan including quantum of mineral coal and waste being produced shall be made.
- (iii) Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring PM_{10} , $PM_{2.5}$, SO_2 and NO_x . Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, in the particulate matter etc. shall be carried out at least once in six months.
- (iv) Data on ambient air quality (PM_{10} , $PM_{2.5}$, SO_2 and NO_x .) and heavy metals such as Hg, As, Ni, Cr, etc) and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhopal and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EP Rules, 1986 shall be furnished as part of the compliance report.

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- (v) Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
- (vi) Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, and treated so as to conform to the standards including for heavy metals before discharge prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.
- (vii) Vehicular emissions shall be kept under control and regularly monitored.
- (viii) Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EP Rules, 1986.
- (ix) Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.
- (x) A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
- (xi) The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhopal.
- (xii) The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at <http://envfor.nic.in>
- (xiii) A copy of the environmental clearance letter shall be marked to concerned Panchayat/Zila Parishad, Municipal Corporation or Urban Local Body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on the company's website.
- (xiv) A copy of the clearance letter shall be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.
- (xv) The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in the public domain. The monitoring data of environmental quality parameters (air, water, noise and soil) and critical pollutants such as PM10, PM2.5, SO₂ and NO_x (ambient and stack if any) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mines office and in corporate office and on the company's website.

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- (xvi) The project proponent shall submit status reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the MOEF, the respective Zonal offices of CPCB and the SPCB.
- (xvii) The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
- (xviii) The environmental statement for each financial year ending 31st March in Form-V is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MOEF by E-mail.
3. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.
5. The above conditions will be enforced *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.



(Dr. T. Chandini)
Director

Copy to:

1. Secretary, Ministry of Coal, New Delhi.
2. DG (F) and Special Secretary, Ministry of Environment and Forests, New Delhi.
3. Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur.
4. Principal Chief Conservator of Forests and CWLW, Govt. of Chhattisgarh, Raipur.
5. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, E-2/240 Arear Colony, Bhopal - 462016.
6. Chairman, Chhattisgarh State Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, RAIPUR-Chhattisgarh - 492001.
7. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110032.
8. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
9. District Collector, Sarguja, Government of Chhattisgarh.
10. Monitoring File 11. Guard File 12. Record File.

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F. No. 8-31/2010-FC
Government of India
Ministry of Environment & Forests
(FC Division)

Paryavaran Bhawan, C.G.O Complex,
 Lodhi Road, New Delhi - 110510.
 Dated: 15th March, 2012

To
 The Principal Secretary (Forests),
 Government of Chhattisgarh,
 Raipur.

Sub: **Diversion of 1898.328. ha in two phases of forest land for Parsa East and Kete Basan captive coal block open cast mining project in favour of M/s Rajasthan Rajya Vidut Utpadan Nigam Limited in South Surguja Forest Division in Surguja District of Chhattisgarh – reg.**

Sir,

I am directed to refer to the State Government's letter no. FS-4/2010/10-2 dated 28.04.2010 on the subject cited above seeking prior approval of the Central Government under the Forest (Conservation) Act, 1980. After careful consideration of the proposal by the Forest Advisory Committee constituted under section-3 of the said Act, in-principle approval was granted vide this Ministry's letter of even number dated 06.07.2011 subject to fulfilment of certain conditions prescribed therein. The State Government has furnished compliance report in respect of the conditions stipulated in the in-principle approval and has requested the Central Government to grant final approval.

In this connection, I am directed to say that on the basis of the compliance report furnished by the State Government vide letter no. vide its letter no. 331-53/2455 dated 31.12.2011, approval of the Central Government is hereby granted under section-2 of the Forest (Conservation) Act, 1980 for diversion of 1898.328. ha in two phases of forest land for Parsa East and Kete Basan captive coal block open cast mining project in favour of M/s Rajasthan Rajya Vidut Utpadan Nigam Limited in South Surguja Forest Division in Surguja District of Chhattisgarh subject to fulfilment of the following conditions:

1. Legal status of forest land shall remain unchanged.
 - a. Compensatory afforestation shall be raised and maintained by the State Forest Department over degraded orange forest land double in extent to the forest land proposed to be diverted at the project cost.
 - b. Fencing, protection and regeneration of the safety zone area shall be done at the project cost. Besides this, afforestation on degraded forest land, to be selected elsewhere, measuring one and a half times the area under safety zone, shall also be done at the project cost.
 - c. Wherever possible and technically feasible, the User Agency shall undertake afforestation measures in the blanks within the lease area, as well as along the roads outside the lease area diverted under this approval, in consultation with the State Forest Department at the project cost.

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2. Following activities undertaken by the project proponent under the supervision of the State Forest Department at the project cost:
 - (i) Proper mitigative measures to minimize soil erosion and choking of streams shall be prepared and implemented.
 - (ii) Planting of adequate drought hardy plant species and sowing of seeds to arrest soil erosion.
 - (iii) Construction of check dams, retention / toe walls to arrest sliding down of the excavated material along the contour.
 - (iv) The areas shall be reclaimed keeping in view the international practice of stabilizing the dumps by grading / benching so that angles of repose (normally less than 28 at any given place) are maintained.
 - (v) No damage shall be caused to the top-soil and the user agency will follow the top soil management plan.
3. The approval under the Forest (Conservation) Act, 1980 is subject to the clearance under the Environment (Protection) Act, 1986 and any other Acts/Regulation/Rules.
4. The period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease proposed to be granted under the Mines and Minerals (Development & Regulating) Act, 1957, or Rules framed there under, subject to a maximum period of 30 years.
5. The User Agency shall furnish an undertaking to pay the additional NPV, if so determined, as per the final decision of Hon'ble Supreme Court of India.
6. Demarcation of mining lease area will be done on the ground at project cost using four feet high reinforced cement concrete pillars with serial numbers, forward and back bearings and distance from pillar to pillar.
7. Mining/reclamation schedule shall be implemented by the user agency at their cost as per Environmental Management Plan / phased reclamation programme. The annual report about the progress of reclamation should be submitted to the CCF (Central), Regional Office, Bhopal.
8. The mining shall be done in two phases:
 - i. During phases-I, covering 15 years, the mining shall be restricted to 762.00 ha of forest land.
 - ii. During phase -II the mining permission over remaining 1136.00 ha will be linked to the reforestation and biodiversity management in phase-I.
 - iii. The project proponent will submit the application for permission for mining in phase - II along with compliance report of phase-I.

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9. The user agency will ensure the dumping of OB and phase wise rehabilitation and afforestation of the used / mined out pits / voids as per the approved plan under the supervision of the State Forest Department.
10. The user agency will make arrangement for free supply of alternate fuels to labourers and staff working on the project site so as to avoid any pressure on the adjacent forest areas.
11. The forest land shall not be used for any purpose other than that specified in the proposal.
12. Any tree felling shall be done only when it is unavoidable and under strict supervision of the State Forest Department.
13. No damage to the flora and fauna of the area shall be caused.
14. No labour camps shall be set up inside the forest area.
15. The forest land proposed to be diverted shall under no circumstances shall be transferred to any other agency, department or person without prior approval of the Central Government.
16. The user agency will implement the Resettlement and Rehabilitation Plan as per the R&R Policy of State Government.
17. The user agency will undertake transplantation of important tree species under 60 cm girth under the supervision of State Forest Department.
18. The State Government will not come up for opening up of the main Hasdeo-Arand area.
19. The user agency will ensure proper implementation of Wildlife Management Plan prepared by the State Government.
20. The user agency will assist the State Government in conservation and preservation of the flora and fauna of the area.
21. The State Government will suitably incorporate the comments, as suggested by of the WII, Dehradun, into the Wildlife Management Plan prepared for the area. The project proponent has deposited an amount of Rs. 22 crores (Rs. Twenty two crores) towards cost of implementation of the Wildlife Management Plan. Increased costs, if any, due to incorporation of the suggestions of WII, Dehradun will be borne by the user agency. Final copy of the Wildlife Management Plan will be submitted to this Ministry and the Regional Office, Bhopal within a period of three months for the purpose of monitoring. A soft copy in PDF format will also be submitted to the Ministry.
22. The user agency will make provision for appropriate financial outlay for the establishment of Rescue and Rehabilitation team to mitigate human-wildlife conflicts.
23. The Wildlife Management Plan will be implemented by the State Government and independent institutions like the Nature Conservation Foundation, Wildlife Trust of India and the Canter for Ecological Studies at the Indian Institute of Science apart from the Wildlife Institute of India may be involved in implementation of the Plan. In order to ensure proper implementation of the Wildlife Management Plan, the State Government shall make necessary provisions for carrying out the monitoring and evaluation of the plan. It would be appropriate to include

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Chief Wildlife Warden of the State in monitoring the implementation of the Plan.

24. The user agency will undertake and implement suitable mitigative measures as prescribed in the Wildlife Management Plan for reducing the dependency of cattle and people on the surrounding forest area.
25. Any other condition that the Chief Conservator of Forests (Central), Regional Office, Bhopal may impose from time to time in the interest of conservation, protection or development of forests.
26. The user agency shall submit the annual compliance report in respect of the above conditions to the State Government and to the Regional Office, Bhopal regularly.

Yours faithfully,


(Shiv Pal Singh)

Sr. Assistant Inspector General of Forests

Copy to:-

1. The Principal Chief Conservator of Forests Government of Chhattisgarh, Raipur.
2. The Nodal Officer, Office of the PCCF, Government of Chhattisgarh, Raipur.
3. The Chief Conservator of Forest, Regional Office, Bhopal.
4. User Agency
5. Monitoring Cell, FC Division.
6. Guard file.


(Shiv Pal Singh)

Sr. Assistant Inspector General of Forests

छत्तीसगढ़ शासन
वन विभाग
दाऊ कल्याण सिंह भवन, मंत्रालय, रायपुर

कमांक एफ 5-4/2010/10-2

रायपुर, दिनांक: 28/03/2012

प्रति,

✓
प्रधान मुख्य वन संरक्षक,
छत्तीसगढ़, रायपुर ।

विषय :- Diversion of 1898.328 ha in two phases of forest land of Parsa East and Kete Basen Captive coal Block open cast mining project in favour of M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited in South Sarguja Forest Division in Sarguja District of Chhattisgarh

संदर्भ:- भारत सरकार, पर्यावरण एवं वन मंत्रालय, नई दिल्ली का पत्र कमांक 8-31/2010-FC, दिनांक 15.03.2012 ।

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विषयगत भारत सरकार, पर्यावरण एवं वन मंत्रालय, नई दिल्ली के पत्र कमांक 8-31/2010-FC, दिनांक 15.03.2012 (छायाप्रति संलग्न) के माध्यम से सरगुजा जिले के दक्षिण सरगुजा वनमंडल अंतर्गत कुल 1898.328 हे. वनभूमि दो चरणों में परसा ईस्ट तथा कांटे बासन कैप्टिव कोल ब्लॉक खुली खदान परियोजना के वनेत्तर उपयोग हेतु मेसर्स राजस्थान राज्य विद्युत उत्पादन निगम लिमिटेड को वन संरक्षण अधिनियम 1980 की धारा-2 के अंतर्गत सशर्त औपचारिक अनुमोदन किया गया है। जिसके आधार पर राज्य शासन एतद्वारा उपरोक्तानुसार सरगुजा जिले के दक्षिण सरगुजा वनमंडल अंतर्गत 1898.328 हे. वनभूमि दो चरणों में परसा ईस्ट तथा कांटे बासन कैप्टिव कोल ब्लॉक खुली खदान परियोजना हेतु मेसर्स राजस्थान राज्य विद्युत उत्पादन निगम लिमिटेड को वनेत्तर उपयोग हेतु औपचारिक अनुमोदन निम्न शर्तों के अधीन किया जाता है :-

1. Legal status of forest land shall remain unchanged.
 - a. Compensatory afforestation shall be raised and maintained by the State Forest Department over degraded orange forest land double in extent to the forest land proposed to be diverted at the project cost.
 - b. Fencing, protection and regeneration of the safety zone area shall be done at the project cost. Beside this, afforestation on degraded forest land, to be selected elsewhere, measuring one and a half times the area under safety zone, shall also be done at the project cost.
 - c. Wherever possible and technically feasible, the User Agency shall undertake afforestation measures in the blanks within the lease area, as well as along the roads outside the lease area diverted under this approval, in consultation with the State Forest Department at the project cost.
2. Following activities undertaken by the project proponent under the supervision of the State Forest Department at the project cost:
 - (i) Proper mitigative measures to minimize soil erosion and choking of streams shall be prepared and implemented.
 - (ii) Planting of adequate drought hardy plant species and sowing of seeds to arrest soil erosion.
 - (iii) Construction of checks dams, retention/toe walls to arrest sliding down of the excavated material along the contour.
 - (iv) The areas shall be reclaimed keeping in view the international practice of stabilizing the dumps by grading/benching so that angles of repose (normally less than 28 at any given place) are maintained.
 - (v) No damage shall be caused to the top-soil and the user agency will follow the top soil management plan.
3. The approval under the Forest (Conservation) Act, 1980 is subject to the clearance under the Environment (Protection) Act, 1986 and any other Acts/Regulation/Rules.
4. The period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease proposed to be granted under the Mines and Minerals (Development & Regulating) Act, 1975, or Rules framed there under, subject to a maximum period of 30 years.

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5. The user Agency shall furnish an undertaking to pay the additional NVP if so determined, as per the final decision of Hon'ble Supreme Court of India.
6. Demarcation of mining lease area will be done on the ground at project cost using four feet high reinforced cement concrete pillars with serial numbers, forward and back bearings and distance from pillar to pillar.
7. Mining/reclamation schedule shall be implemented by the user agency at their cost as per Environmental Management Plan/phased reclamation programme. The annual report about the progress of reclamation should be submitted to the CCF (central), Regional Office, Bhopal.
8. The mining shall be done in two phases:
 - i. During phase-I, covering 15 years, the mining shall be restricted to 762.00 ha of forest land.
 - ii. During phase-II the mining permission over remaining 1136.00 ha will be linked to the reforestation and biodiversity management in phase-I.
 - iii. The project proponent will submit the application for permission for mining in phase-II along with compliance report of phase-I.
9. The user agency will ensure the dumping of OB and phase wise rehabilitation and afforestation of the used /mined out pits / voids as per the approved plan under the supervision of the State Forest Department.
10. The user agency shall establish and operate a Vocational Training Institute having capacity to impart training in at-least five disciplines, to be decided by the State Government concerned in consultation with the user agency, for the benefits of the eligible unemployed youth in the project affected villages. The user agency should also endeavour to employ such trained manpower in their own industry or any other appropriate industry, preferably located in vicinity of the forest land being diverted. Any other condition imposed by the MoEF New Delhi's stage-I approval letter No. 8-31/2010-FC, Dated 06/07/2011, which is yet to be fulfilled, should be fulfilled by the user agency.
11. The user agency will make arrangement for free supply of alternate fuels to labourers and staff working on the project site so as to avoid any pressure on the adjacent forest areas.
12. The forest land shall not be used for any purpose other than that specified in the proposal.
13. Any tree felling shall be done only when it is unavoidable and under strict supervision of the State Forest Department.
14. No damage to the flora and fauna of the area shall be caused.
15. No labour camps shall be set up inside the forest area.
16. The forest land proposed to be diverted shall under no circumstances shall be transferred to any other agency, department or person without prior approval of the Central Government.
17. The user agency will implement the Resettlement and Rehabilitation Plan as per the R&R Policy of State Government.
18. The user agency will undertake transplantation of important tree species under 60 cm girth under the supervision of State Forest Department.
19. The State Government will not come up for opening up of the main Hasdeo - Arand area.
20. The user agency will ensure proper implementation of Wildlife Management Plan prepared by the State Government.
21. The user agency will assist the State Government in conservation and preservation of the flora and fauna of the area.
22. The State Government will suitably incorporate the comments, as suggested by of the WII, Dehradun, into the Wildlife Management Plan Prepared for the area. The project proponent has deposited an amount of Rs. 22 crores (Rs. Twenty two crores) towards cost of implementation of the Wildlife Management Plan. Increased costs, if any, due to incorporation of the suggestion of WII, Dehradun will be borne by the user agency. Final copy of the Wildlife Management Plan will be submitted to this Ministry and Regional Office, Bhopal within a period of three months for the purpose of monitoring. A soft copy in PDF format will also be submitted to MoEF New Delhi.
23. The user agency will make provision for appropriate financial outlay for the establishment of Rescue and Rehabilitation team to mitigate human-wildlife conflicts.
24. The wildlife management plan will be implemented by the State Government and independent institutions like the Nature Conservation Foundation, Wildlife Trust of India and the Center for Ecological Studies at the India Institute of Science apart from the Wildlife Institute of India may be involved in implementation of the Plan. In order to insure proper implementation of the Wildlife Management Plan, the State Government shall make necessary provisions for carrying out the monitoring and evaluation of the plan. It would be appropriate to include Chief wildlife Warden of the State in monitoring the implementation of the Plan.

25. The user agency will undertake and implement suitable mitigative measures as prescribed in the Wildlife Management Plan for reducing the dependency of cattle and people on the surrounding forest area.
26. Any other condition that the Chief Conservator of Forest (Central), Regional Office, Bhopal may impose from time to time in the interest of conservation, protection or development of forests.
27. The user agency shall submit the annual compliance report in respect of the above conditions to the State Government and to the Regional Office, Bhopal regularly.

संलग्न :- उपरोक्तानुसार ।

छत्तीसगढ़ के राज्यपाल के नाम से
तथा आदेशानुसार,

(एम.टी. नंदी)

विशेष सचिव

छत्तीसगढ़ शासन, वन विभाग

रायपुर, दिनांक: 28/03/2012

पृष्ठांकमांक एफ 5-4/2010/10-2

प्रतिलिपि :-

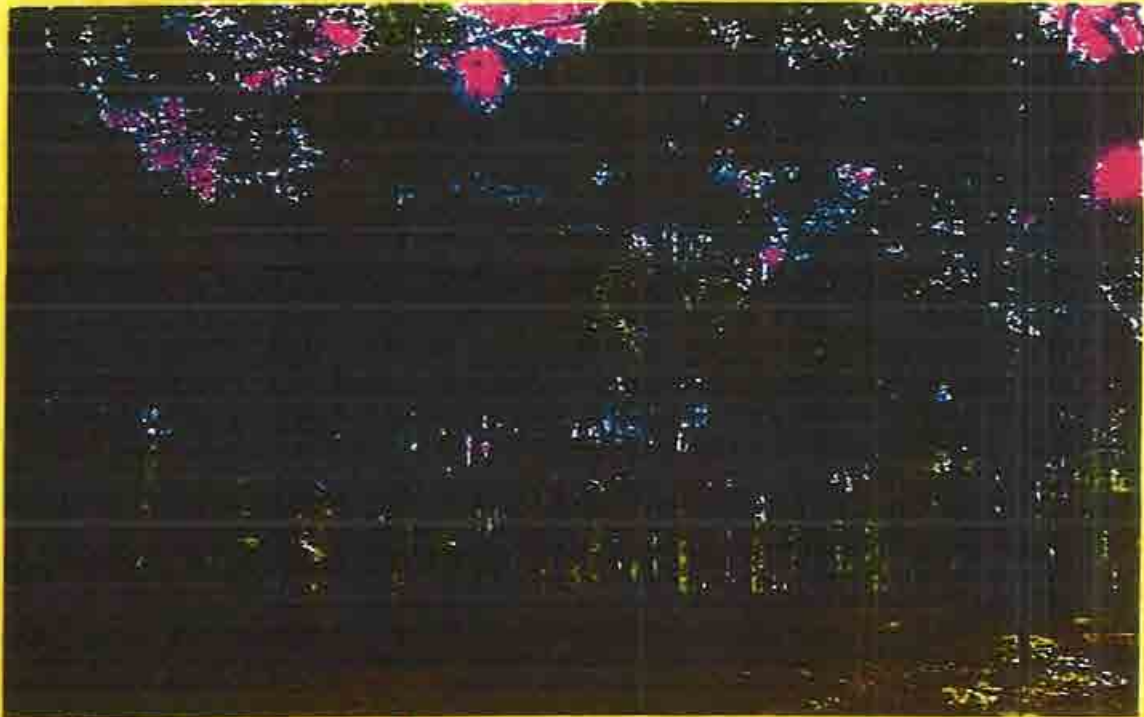
1. मुख्य वन संरक्षक (भू-प्रबंध) कार्यालय प्रधान मुख्य वन संरक्षक छत्तीसगढ़ रायपुर ।
2. वन संरक्षक, सरगुजा वृत्त अंबिकापुर ।
3. अवर सचिव, छत्तीसगढ़ शासन, खनिज साधन विभाग, मंत्रालय रायपुर ।
3. वनमंडलाधिकारी, दक्षिण सरगुजा वनमंडल अंबिकापुर ।
4. आवेदनकर्ता श्री एस.एम.गोयल, अतिरिक्त मुख्य अभियंता (C&F) राजस्थान राज्य विद्युत उत्पादन निगम लिमिटेड ज्योती नगर जयपुर (राजस्थान) ।

को ओर सूचनार्थ अग्रेषित ।

विशेष सचिव,

छत्तीसगढ़ शासन, वन विभाग

WILD LIFE CONSERVATION PLAN
OF
PARSA EAST & KENTE BASEN
OPENCAST COAL MINE
&
WASHERY PROJECT



**RAJASTHAN RAJYA VIDYUT UTPADAN
NIGAM LIMITED**

-: PREPARED BY:-
P.C. AGRAHARI
IFS (RETD.)

कार्यालय प्रधान मुख्य वन संरक्षक (वन्यप्राणी प्रबंधन एवं जैव विविधता संरक्षण)

सह मुख्य वन्यप्राणी अभिरक्षक, छत्तीसगढ़

मेडिकल कॉलेज रोड, "अरण्य भवन", रायपुर

फोन नं. 0771-2552228 / फैक्स - 0771-2552227

ई-मेल : pccfwl@sify.com/cwlw-cg@nic.in

क्रमांक/व.प्रा./437/प्रबन्ध

रायपुर, दिनांक 06/03/2013

प्रति,

मुख्य वन संरक्षक
(भू-प्रबंध एवं वन संरक्षण अधिनियम)
छत्तीसगढ़

विषय :- Diversion of 1898 ha. of forest Land for Parsa East Kete Basan Captive Coal block open cast mining project in favour of M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited in South Sarguja Forest Division in Sarguja District of Chhattisgarh.

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कृपया मुख्य वन संरक्षक (भू-प्रबंध), छत्तीसगढ़ के पत्र क्रमांक/भू-प्रबंध/खनिज /331-45/272 रायपुर, दिनांक 28.02.2013 का अवलोकन करना चाहेंगे जिसके द्वारा मेसर्स राजस्थान राज्य विद्युत उत्पादन निगम लिमिटेड के पक्ष में कोवला उत्खनन हेतु परसा पूर्व एवं कांठेयसान खुली खदान के लिए 1898 हेक्टेयर वनभूमि का व्यपवातेत करने के प्रकरण में इस परियोजना से संबंधित वन्यप्राणी संरक्षण योजना प्रेषित करते हुए अनुमोदन हेतु निवेदन किया गया है।

2. इस परियोजना से संबंधित वन्यप्राणी संरक्षण योजना पूर्व में परियोजना प्रस्तावकों द्वारा प्रस्तुत की गई थी जिसे प्रधान मुख्य वन संरक्षक (वन्यप्राणी) के पत्र क्रमांक/व.प्रा./प्रबंध/09/3062, दिनांक 17/09/2009 द्वारा रु. 22.00 करोड़ की वन्यप्राणी संरक्षण योजना पर अनुमोदन देते हुए छत्तीसगढ़ शासन, वन विभाग को प्रेषित की गई थी।

3. उपरोक्त विषय एवं संदर्भ में लेख है कि विषयवस्तु प्रकरण की द्वितीय चरण को स्वीकृति के समय मेसर्स राजस्थान राज्य विद्युत उत्पादन निगम लिमिटेड द्वारा तैयार कराई गई वन्यप्राणी संरक्षण योजना पर वन (संरक्षण) अधिनियम 1980 की धारा-3 के तहत गठित पर्यावरण व वन मंत्रालय, भारत सरकार की फॉरेस्ट एडवाइजरी कमेटी के द्वारा विचार किये जाने के उपरान्त भारत सरकार, पर्यावरण व वन मंत्रालय, नई दिल्ली के पत्र दिनांक 06/07/2011 द्वारा कुछ शर्तों के साथ सैद्धांतिक स्वीकृति जारी की गयी।

4. अधिरोपित शर्त के पैरा 21 के अनुसार यह निर्देशित किया गया है कि प्रस्तावित वनक्षेत्र के उल्लेखित प्रयोजन हेतु व्यापवर्तन संबंधित प्रस्तुत वन्यप्राणी संरक्षण योजना के संबंध में वन्यजीव संस्थान, देहरादून द्वारा दिये गये सुझावों को राज्य शासन द्वारा परियोजना प्रस्ताव में समुचित रूप से सम्मिलित किया जाये। निर्देश में यह भी उल्लेखित है कि संस्थान द्वारा वन्यप्राणी प्रबंधन योजना क्रियान्वित किये जाने की राशि के रूप में 22 करोड़ रुपये जमा करायी गयी है। वन्य जीव संस्थान द्वारा सुझाये गये बिन्दुओं का समावेश योजना में किये जाने हेतु यदि अतिरिक्त राशि की आवश्यकता होगी तो उक्त राशि उपयोगकर्ता संस्थान द्वारा जमा की जायेगी।

5. पर्यावरण व वन मंत्रालय, भारत सरकार, नई दिल्ली के उपरोक्त निर्देश के पालन में उपयोगकर्ता एजेंसी द्वारा वन्यजीव संस्थान के दिये गये सुझावों को सम्मिलित किया जाकर पुनरीक्षित वन्यप्राणी योजना प्रस्तुत की गयी है। जिसके संबंध में वन्यजीव संस्थान के सुझावों पर इस कार्यालय का अभिमत चाहा गया है। इस कार्यालय का उक्त परिप्रेक्ष्य में बिन्दुवार अभिमत निम्नानुसार है :-

1. वन्य जीव संस्थान के सुझावों की कंडिका 1.1 में यह सुझाव दिया गया था कि भारतीय वन प्रबंध संस्थान, भोपाल के द्वारा प्रस्तावित क्षेत्र के वनस्पतियों एवं जीवों के अध्ययन के संबंध में जिस प्रतिवेदन का उल्लेख प्रधान मुख्य वन संरक्षक (वन्यप्राणी) एवं मुख्य वन्य प्राणी अभिरक्षक, छत्तीसगढ़ के पत्र क्रमांक 3062 दिनांक 17/09/2019 में किया गया है, उसकी एक प्रति प्रबंध योजना के साथ संलग्न की जाये। क्योंकि उक्त प्रतिवेदन में जायी जाने वाली वनस्पतियों एवं जीवों की सर्व सूची संलग्न है जो संरक्षण योजना के क्रियान्वयन के समर्थ उपयोगी होगी। उपयोगकर्ता एजेंसी द्वारा उपरोक्त सुझाव का पालन करते हुये भारतीय वन प्रबंधन संस्थान, भोपाल के प्रतिवेदन को वन्य जीव संरक्षण योजना के अनुलग्नक टप्प के रूप में संलग्न किया गया है। इस प्रकार उपरोक्त सुझाव पर कार्यवाही पूर्ण की गयी है।
2. सुझावों की कंडिका 1.2 में यह उल्लेखित किया गया है कि वनमंडलाधिकारी दक्षिण सरगुजा वनमंडल अंबिकापुर के द्वारा अतिरिक्त 2.00 करोड़ की राशि से विभिन्न कार्य प्रस्तावित किये गये हैं, जिसमें अनुक्रमांक 7 पर यह प्रस्तावित है कि राशि रु. 100.00 लाख के बजट प्रावधान द्वारा क्षेत्र में पाये जाने वाले सोंपों का सर्वे, पहचान और रनेक पार्क की स्थापना जैसे कार्य किये जायें। इस संबंध में लेख है कि राज्य के वन्यप्राणी प्रभाग द्वारा सरगुजा वनवृत्त के जशपुर वनमंडल के तपकरा में राज्य शासन द्वारा सर्पज्ञान केंद्र की स्थापना की गयी है। इस कारण सरगुजा में पृथक से रनेक पार्क की स्थापना किया जाना उचित नहीं होगा। अपितु सर्पज्ञान केंद्र स्थापित किये जाने हेतु प्रावधानित राशि का उपयोग उक्त सर्पज्ञान केंद्र को संसाधनों के उन्नयन व पदस्थ अमले की क्षमता विकास के लिये किया जा सकता है।
3. वनमंडलाधिकारी दक्षिण सरगुजा के द्वारा प्रस्तावित कार्यों की स्मरणी में स्मरक क्रमांक 9 पर राशि रु. 25.00 लाख के बजट का प्रावधान किया जाकर यह प्रस्तावित किया गया है कि उक्त राशि से हाथियों के प्रबंधन के लिये हाथियों के भोजन के अवयवों (Component of Diet) का विश्लेषण किया जाये एवं हाथियों के भोजन के दृष्टिकोण से उपयोगी वृक्षों की प्रजातियों का रोपण उनके रहवास क्षेत्रों में किया जाये। साथ ही प्रस्तावित खादान व गतिविधियों का हाथियों के विस्थापित होने तथा उससे संबंधित योजनाओं के अध्ययन, हाथियों तथा सोंपों के रहवास क्षेत्रों पर प्रस्तावित गतिविधियों के प्रभाव का भी अध्ययन किया जाये।

उक्त बिन्दु के संबंध में वन्यजीव संस्थान, देहरादून का यह सुझाव है कि प्रस्तावित गतिविधियों वन्यप्राणियों के प्रबंधन के दृष्टिकोण से उचित नहीं है। अतः प्रस्तावित कार्यों का पुनरावलोकन किया जाकर उनके स्थान पर लोगों एवं गवेशियों का वन क्षेत्रों पर दबाव समाप्त किये जाने, रेपिड रिस्पॉस और बचाव दल की स्थापना किये जाने, मानव वन्य प्राणी द्वन्द्व को कम किये जाने जैसे कार्यों के संबंध में प्रावधान किया जाये।

4. वन्यजीव संस्थान, देहरादून के उपरोक्त सुझाव के पालन में इस कार्यालय द्वारा उपयोगकर्ता संस्थान के द्वारा प्रस्तुत पुनरीक्षित संरक्षण परियोजना प्रस्ताव का अध्ययन किया गया। प्रस्तुत पुनरीक्षित परियोजना प्रस्ताव की कंडिका 3.3.1 (2) में चराई व वनों पर मानवीय दबाव कम करने की गतिविधियों को संचालित करने से संबंधित प्रावधान रखा गया है। इसके लिये 100.00 लाख रुपये की राशि भी प्रावधानित की गयी है। परंतु रेपिड रिस्पॉस व बचाव दल की स्थापना का प्रावधान योजना में नहीं किया जा सका है जिसके लिये कम से कम 1.00 करोड़ रुपये का प्रावधान किया जाकर उपरोक्त गतिविधि को सम्मिलित किया जाना चाहिये। मानव वन्यप्राणी द्वन्द्व को कम करने के लिये प्रस्ताव में प्रावधान किया गया है। प्रस्तुत परियोजना प्रस्ताव के पृष्ठ क्रमांक 35 के आयटम क्रमांक 5 में संयुक्त वन प्रबंधन समितियों के सशक्तीकरण, वन्यप्राणी बचाव केन्द्र की स्थापना, जनहानि एवं जनघायल प्रकरणों में प्रभावितों को सहायता राशि दिये जाने का प्रावधान किया जाकर 2.07 करोड़ रुपये की राशि का भी प्रावधान परियोजना प्रस्ताव में किया गया है।
5. चराई, अवैध कटाई से सुरक्षा एवं वृक्षारोपण से संबंधित कंडिका पर वन्य जीव संस्थान द्वारा दिये गये सुझाव में यह उल्लेख किया गया था कि वन्य प्राणी प्रबंधन के दृष्टिकोण से खुले क्षेत्रों में वृक्षारोपण किये जाने की गतिविधि का औचित्य नहीं है। अतः उसके स्थान पर जैविक दबाव को कम करने एवं प्राकृतिक पुनरुत्पादन को बढ़ावा देने की गतिविधि सम्मिलित करते हुये वृक्षारोपण की गतिविधि प्रस्ताव से विलोपित किया जाना चाहिये। भारतीय वन्यजीव संस्थान ने अपने अभिमत में यह लेख किया है कि खुले स्थानों पर वृक्षारोपण करना वन्यप्राणी प्रबंधन की दृष्टि से उपयुक्त नहीं होगा परंतु जिन स्थलों पर वनाच्छादन है परंतु बिगड़ी स्थिति में है उन स्थलों पर उसे सधान किया जा सकता है। यद्यपि इस कार्य के लिए अलग से प्रावधान नहीं किया जा रहा है परंतु क्रियान्वयन के समय मुख्य वन्यप्राणी अभिरक्षक की अनुमति से स्थल विशिष्ट प्रोजेक्ट हेतु कुछ फेरबदल किए जा सकेंगे। संस्थान के सुझाव के अनुसार परियोजना प्रस्ताव के पृष्ठ 16 की कंडिका (3) में उल्लेखित गतिविधि के अनुसार वनों की सुरक्षा हेतु स्थानीय ग्रामीणों व वन सुरक्षा समिति सदस्यों के क्षमता विकास हेतु गतिविधियों को प्रस्तुत परियोजना प्रस्ताव के पृष्ठ क्रमांक 35 पर आईटम क्रमांक 5 के रूप में सम्मिलित करते हुये राशि रु. 1.00 करोड़ का प्रावधान किया गया है।
6. वन्यजीव संस्थान द्वारा जल एवं मृदा संरक्षण के साथ वृक्षारोपण की गतिविधि को वन्यप्राणी संरक्षण प्रस्ताव में सम्मिलित किये जाने के संबंध में यह अभिमत दिया है कि प्रस्तावित छः सामान्य प्रकार की गतिविधियों में से (VI) बिन्दु पर उल्लेखित गतिविधि यथा खुले क्षेत्रों में वृक्षारोपण को वन्यप्राणी प्रबंधन के सिद्धान्तों के अनुरूप नहीं होने के कारण उसे प्रबंध योजना से विलोपित किया जाये। पुनरीक्षित योजना में उक्त सुझावों के परिप्रेक्ष्य में आंशिक संशोधन

किया गया है परंतु पृष्ठ क्रमांक 22 पर वृक्षारोपण के प्रस्ताव को विलोपित नहीं किया गया है। अतः उक्त संशोधन कर प्रस्ताव पुनरीक्षित किया जाना उचित होगा।

7. वन्यप्राणी प्रबंधन हेतु रहवास क्षेत्रों में की जाने वाली गतिविधियों को न्यूनतम रखते हुये रहवारा प्रबंधन की गतिविधियों को सुधारात्मक अथवा प्रतिकूल कारणों पर प्रभावी रोक लगाने तक ही सीमित रखना उचित बतलाया गया है। यह भी उल्लेखित किया गया है कि वृक्षारोपण के स्थान पर वन्य प्राणियों के लिये भोजन के दृष्टिकोण से उपयुक्त चारा की स्थानीय प्रजातियों को क्षेत्र में बढ़ाया जाना चाहिये। इसके लिये विशेषज्ञों का सहयोग लेकर स्थानीय घास की प्रजातियों को रहवास क्षेत्र में बढ़ाये जाने की गतिविधियों को सम्मिलित किया जाना चाहिये। प्रस्तुत परियोजना प्रस्ताव के पृष्ठ क्रमांक 35 पर आईटम क्रमांक 7 एवं 8 पर विशेषज्ञों की सहायता से खरपतवार के प्रबंधन एवं चारा के प्रबंधन व विकास गतिविधियों के लिये राशि रु 2.00 करोड़ का प्रावधान किया गया है।
8. उपयोगकर्ता एजेंसी द्वारा प्रस्तुत परियोजना प्रतिवेदन 20 वर्षों की तैयार की गयी है। परियोजना के लागू किये जाने के कारण कोर व डफर में आने वाले वन क्षेत्रों के वन्य प्राणियों पर पड़ने वाले प्रभाव परियोजना के प्रारंभ होते ही पड़ने लगेंगे। अतः 20 वर्षों में वन्यप्राणी संरक्षण की गतिविधियों को लागू करने की अवधि काफी लंबी होगी एवं उसका उद्देश्य अनुसार परिणाम सफल होने की संभावना कम होगी। अतः परियोजना की अवधि दस वर्षों की रखा जाना अपेक्षित प्रयोजन व उद्देश्य के अनुकूल होगा। इस कारण प्रस्तुत वन्य प्राणी संरक्षण परियोजना के पूर्ण किये जाने की अवधि बीस वर्षों के स्थान पर पंद्रह वर्षों की रखी जाये।

6. अतः उपरोक्त बिन्दुओं को ध्यान में रखकर एवं वन्य जीव संस्थान, देहरादून के सुझावों को वन्यप्राणी संरक्षण योजना में सम्मिलित करने के उद्देश्य से परियोजना प्रस्ताव में वन्यप्राणी प्रबंधन संबंधित प्रस्तावित गतिविधियों में आंशिक संशोधन प्रस्तावित करते हुये परियोजना प्रस्ताव की गतिविधियों एवं बजट प्रावधान **ANNEXTURE-1** अनुसार संशोधन करने का सुझाव प्रस्तावकों को दिया गया।

7. परियोजना प्रस्तावकों द्वारा उनके पत्र क्रमांक आर.वी.यू.एन./डी.(टी)/पी.सेल/एफ./डी. 59, दिनांक 05 मार्च, 2013 द्वारा दिए गए सुझावों को मान्य करते हुए वन्यप्राणी संरक्षण योजना पंद्रह वर्ष के लिए प्रस्तावित की गई है।

8. उपरोक्तानुसार आंशिक संशोधन व इस कार्यालय के अभिमत के साथ परसा ईस्ट व कंटे बासेन औपेन कास्ट खादान के लिये प्रस्तुत वन्यप्राणी संरक्षण योजना प्रस्ताव का अनुमोदन किया जाकर अग्रिम कार्यवाही हेतु वन्यप्राणी संरक्षण योजना की एक प्रति प्रेषित है।

सहपत्र— उपरोक्तानुसार।

(रामप्रकाश)

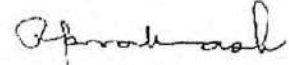
प्रधान मुख्य वन संरक्षक (वन्यप्राणी)

छत्तीसगढ़, रायपुर

पु.क्रमांक / व.प्र. / 438
प्रतिलिपि :-

रायपुर, दिनांक 06/03/2013

1. प्रमुख सचिव, छत्तीसगढ़ शासन, वन विभाग, मंत्रालय, महानदी भवन, रायपुर की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।
2. संचालक (तकनीकी), राजस्थान विद्युत उत्पादन निगम लिमिटेड, विद्युत भवन जनपद, ज्योति नगर, जयपुर- 302005 की ओर अनुमोदित वन्यप्राणी संरक्षण योजना की एक प्रति के साथ आवश्यक कार्यवाही हेतु प्रेषित।



प्रधान मुख्य वन संरक्षक (वन्यप्राणी)
छत्तीसगढ़, रायपुर

ANNEXTURE-1

YEARWISE DETAIL OF THE PROPOSED EXPENSES FOR TWENTY YEARS FOR THE IMPACT AREAS OF THE PARSA EAST & KETE BASEN
OPEN CAST COAL MINE PROJECT UNDER WILD LIFE CONSERVATION AND MANAGEMENT PROJECT

Sr. No.	Items of the work	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Total Amount in crores
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1.	a. Survey and preparation of annual plans	0.100	0.100	0	0	0	0	0	0	0	0	0	0	0	0	0	0.200
	b. Identification of workable areas for the project and ensuring improvement in the forest resources by supporting natural regeneration, reducing pressure on the forest and thereby ensuring improvement in the fuel, fodder & MFP species along with the measures like plantation of suitable species on the fringe.	0.010	0.010	0.010	0.010	0.010	0	0	0	0	0	0	0	0	0	0	0.050
	c. Survey and identification of wetland in the proposed area	0.050	0.050	0	0	0	0	0	0	0	0	0	0	0	0	0	0.100
	d. Survey and identification of the Biodiversity of the proposed project site	0.050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.050
	e. Habitat Survey for the respective project site	0.050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.050
	f. Survey and identification of reptiles, Birds, Butterfly, Insects available in the project site.	0.050	0.050	0	0	0	0	0	0	0	0	0	0	0	0	0	0.100
	g. Survey of medicinal plants and their identification in the proposed project site.	0.100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.100
2.	Protection work in the core Areas (i.e. Fencing of boundaries, fields and villages as required)	0.150	0.150	0.150	0.150	0.150	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	1.450
3.	Fire Protection works	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	1.500
4.	Protection from grazing and illicit felling	0.100	0.100	0.080	0.080	0.080	0.060	0.060	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	1.000
5.	Empowering and sensitising people for protection of wild life and Eco-development works etc.	0.100	0.100	0.080	0.080	0.080	0.060	0.060	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	1.000

ALB

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	(a) Construction and activation of office building cum meeting Hall for strengthening Joint forest Management committees for wild life conservation and development	0.200	0.160	0.160	0	0	0	0	0	0	0	0	0	0	0	0	0.520
	(b) Establishment and activation of rescue centre with trained and skilled persons for mitigating human-wild life conflict.	0.100	0.100	0.100	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.504
	(c) Provision for compensation to loss of crop, property, human life and injury caused by wild life.	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	1.500
6.	Soil and moisture conservation works	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	1.995
7.	weed management and assisting natural regeneration under the guidance of expert scientist and experienced forester	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	1.005
8.	Management & Development of grasslands by sowing and planting of local species of grasses with the assistance of experts and scientists.	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	1.005
9.	Management of identified wetlands for better habitats formation for wild life and brds.	0.020	0.020	0	0	0	0	0	0	0	0	0	0	0	0	0	0.050
10.	Study, monitoring and maintenance of the physio-chemical properties of the wetland in the beginning, middle and at the end of the project to suit the wild life in the area	0.020	0.020	0	0	0	0	0	0	0	0	0	0	0	0	0	0.040
11.	Conservation of floral Biodiversity, creation of Biodiversity Parks for the conservation of gene pool.	0.250	0.250	0.250	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.100	0.100	0.100	0.100	1.979
12.	Conservation of endangered /Vulnerable flora.(By both in-situ and ex-situ conservation methods)	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.495
13.	Conservation of Riparian Zones	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.495
14.	MANAGEMENT OF ELEPHANT																
	a. Improvement of elephant habitats	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	3.000
	b. Plantation of local grasses, Bamboos and herbs preferred by elephants	0.100	0.100	0.100	0	0	0	0	0	0	0	0	0	0	0	0	0.300

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	c. Erection and maintenance of Solar Fencing of adjoining revenue villages (approx. 50 Km)	0.340	0.330	0.330	0	0	0	0	0	0	0	0	0	0	0	0	1.000
	d. Elephant awareness campaign	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.195
	e. Formation of " Hathi Mitra Dal" (Elephant friendly team) for monitoring and sensitising local people to the cause of wild life with a view to reduce man-animal Conflict .	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.405
	f. Vehicle and othe infrastructural facilities for Hathi Mitra Dal & Rescue and Response team.	0.100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.100
15.	Research, monitoring and Evaluation, generating and publishing reports.	0	0	0.100	0	0	0.100	0	0	0.050	0	0	0.050	0	0	0.050	0.350
16.	Providing budget for strengthening and upgradation of Sarp Gyan Kendra at Tapkara In Jashpur	0.200	0.222	0	0	0	0	0	0	0	0	0	0	0	0	0	0.422
17.	Miscellaneous works (Proposed by field officers and approved by Chief Wild Life warden , Chhattisgarh)	0.120	0.120	0.100	0.100	0.100	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	1.040
	TOTAL -	2.983	2.665	2.233	1.314	1.314	1.234	1.134	1.124	1.174	1.124	1.121	1.170	1.120	1.120	1.170	22.000

Ram Prakash
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Principal Chief Conservator of Forests (Wildlife)
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1. INTRODUCTION

1.1. PROJECT AREA :

This Plan aims to protect and Conserve the wildlife in particular and the forest area in general around the mining lease area of the Parsa east and Kente Basen open cast coalmine and washery project. The core area of the project is 2711.034 ha. which is spread near the villages Parsa, Kente, Harapara, Mahadev Para, Patelpara, Ghatbarra and Hariharpur of Udaipur Tehsil of Surguja District. A Buffer area of approximately 10 km. radius from the outer periphery of this core area has been selected for intensive management and Conservation of wildlife. This area includes forest area of Korba and Katghora division of the Korba District in the south and the forest of surguja district in all other directions.

The buffer zone is mainly having sal forest of dry deciduous and in some patches moist deciduous nature. The principal species of the area is sal with its common associates as saja, bija, tendu, haldu, dhaora and other sps. There are many perennial streams in the area. The region is plain to highly undulating with many highlands like Gaur pahar, Mahesh pahar, Chhitti ghutra pahar, Ramgarh pahar, Matringa protected forest highlands, Kamrel pahar, lam pahar, Bendragarh pahar, Chiruguru pahar etc.

There are two main rivers flowing though the buffer area i.e. Atem Nadi in the north and Chhoti Chornai Nadi in the south of the Buffer area. Hundreds of small rivulets and stream flow through the buffer area. Notable among them

are Chirhut nala, Rokha, nala, Bagbahar nala and Bamhani nala, The north portion of the buffer area includes more villages compared to the South, West and East Directions which are more dense, and continuous A well known historical site i.e. Ramgarh pahar is located in the north east of buffer zone. The highest elevation of this area is 976 mts. above Mean Sea level.

1.2 CONSERVATION PLAN AREA:

The area for the wildlife conservation includes not only the core and buffer zone, but will also include the corridor area for the migratory elephants. This arrival of elephants in the area takes place through the route which passes through the forest areas of katghora, korba and dharamgajah forest divisions.

1.3 FLORAL & FAUNA IN THE CORE AND BUFFER AREA :

A. Trees

S.No.	Botanical Name	Family	Local Name
1.	<i>Acacia arabica</i> Willd.	Mimosaceae	Bambhur, Bamura
2.	<i>Acacia catechu</i> Willd.	Mimosaceae	Khair
3.	<i>Adina cordifolia</i> Hook. f.	Rubiaceae	Karmi
5.	<i>Aegle marmelos</i> Correa.	Rutaceae	Bel
6.	<i>Albizzia odoratissima</i> Benth	Leguminosae	Bansa
7.	<i>Albizzia procera</i> Benth	Mimosaceae	Karhi
8.	<i>Anogeissus latifolia</i> Wall.	Combretaceae	Dahu, Dho, Dhaura
10.	<i>Bauhinia Malabarica</i> Roxb.	Caesalpiniaceae	Quilar
11.	<i>Bauhinia retusa</i> Roxb.	Leguminosae	Tewur, tewer
12.	<i>Bauhinia variegata</i> L.	Caesalpiniaceae	Champa
13.	<i>Bombax Malabaricum</i> DC.	Malvaceae	Semer, Semal
14.	<i>Boswellia serrata</i> Roxb.	Burseraceae	Saliha
15.	<i>Buchanania lanzan</i> Spr. Syn: <i>B. latifolia</i> Roxb.	Anacardiaceae	Char
16.	<i>Careya arborea</i> Roxb.	Myrtaceae	Kumahi, kumhi
17.	<i>Casearia graveolens</i> Dalz.	Apocynaceae	Kari
18.	<i>Cedrela toona</i> Roxb.	Meliaceae	Tun

19.	<i>Chloroxylon swietenia</i> DC.	Meliaceae	Bhirra, bharahi
20.	<i>Cleistanthus Collinus</i> Benth.	Euphorbiaceae	Gauri, Rari, Garachi
21.	<i>Cordia macleodii</i> H.F. & Th.	Boraginaceae	Dhahjar, Dahgan
22.	<i>Cordia mixa</i> L.	Boraginaceae	Lasoda
23.	<i>Dalbergia latifolia</i> Roxb.	Leguminosae	Sirish
24.	<i>Dendrocalamus strictus</i> Nees	Leguminosae	Dhobnin, Dhobin
25.	<i>Dillenia pentagyna</i> Roxb.; Syn: <i>D. floribunda</i> Hk.f.Th.	Dilleniaceae	Kurkut, korkut
26.	<i>Diospyrus melanoxylon</i> Roxb.	Ebenaceae	Tendu
27.	<i>Dispyrus montana</i> Roxb.	Ebenaceae	Maker tendu
28.	<i>Ehretia laevis</i> Roxb.	Boraginaceae	Bhambhoor, Bhumber
29.	<i>Eugenia heyneana</i> Wall	Myrtaceae	Jamti
30.	<i>Ficus bengalensis</i> L.	Moraceae	Gad nifir
31.	<i>Ficus racemosa</i> L.; <i>F. glomerata</i> Roxb.	Moraceae	Gular
32.	<i>Ficus infectoria</i> Roxb.	Moraceae	Pakri, Pakhri
33.	<i>Ficus religiosa</i> L.	Moraceae	Pipal
34.	<i>Flemingia bracteata</i> Wight.	Leguminosae	Ghui
35.	<i>Gardenia latifolia</i> Ait.	Rubiaceae	Parol, piprol, mali
36.	<i>Gardenia turgida</i> Roxb.	Rubiaceae	Khadhar
37.	<i>Garura pinnata</i> Roxb.	Burseraceae	Khenkara, Kekad, Kenkar
38.	<i>Glochidion zeylanicum</i> A. Juss.	Euphorbiaceae	Luda
39.	<i>Gmelina arborea</i> Roxb.	Verbinaceae	Khmhar
40.	<i>Grewia tiliifolia</i> Vahl.	Tiliaceae	Dhaman
41.	<i>Hardwickia binata</i> Roxb.	Leguminosae	Anjan
42.	<i>Holarrhena antidysenterica</i> Wall.	Apocynaceae	Koriya
43.	<i>Holoptelea integrifolia</i> Planch.	Ulmaceae	Chil bil
44.	<i>Hymenodictyon excelsum</i> Wall.	Rubiaceae	Pote
45.	<i>Lagerstroemia parviflora</i> Roxb.	Lythraceae	Sidha
46.	<i>Lanea coromandelica</i> (Houtt.) Merr.	Anacardiaceae	
47.	<i>Litsaea sebifera</i> Persn.	Lauraceae	Maida
48.	<i>Madhuca indica</i> Gmel	Sapotaceae	Mahuwa
49.	<i>Mangifera indica</i> L.	Anacardiaceae	Aam
50.	<i>Mitragyna parviflora</i>	Rubiaceae	Muhi gander, Karam
51.	<i>Odina wodier</i> Roxb.	Anacardiaceae	Gunja, Mine, Jhingain, Mohi
52.	<i>Ougenia dalbergioides</i> Benth.	Leguminosae	Sandhan, Tilsa
53.	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Awala
54.	<i>Pterocarpus marsupium</i> Roxb.	Leguminosae	Bija

55.	<i>Punica granatum</i> L.	Lythraceae	Anar
56.	<i>Randia dumetorum</i> Lamk.	Rubiaceae	Menda, Mendhal, Mainfal
57.	<i>Randia uliginosa</i> DC.	Rubiaceae	Pendar
58.	<i>Saccopetalum tomentosum</i> H.F.&Th.	Anonaceae	Kari
59.	<i>Schleichera trijuga</i> Willd.	Spindaceae	Kusum
60.	<i>Schrebera swietenoides</i> Roxb.	Olaceae	Ghata
61.	<i>Semecarpus anacardium</i> L.	Anacardiaceae	Bhelwa
62.	<i>Shorea robusta</i> Gaertn.	Dipterocarpaceae	Sal, sarayi
63.	<i>Soymida fabrifuga</i> A. Juss.	Meliaceae	Rohina, Rohan
64.	<i>Stephegyne parviflora</i> Korth	Rubiaceae	Gur ghont, hurahi
65.	<i>Sterculia urens</i> Roxb.	Sterculiaceae	Khurul, Khurlu
66.	<i>Streblus asper</i> Lour.	Moraceae	Manjani
67.	<i>Symplocos racemosa</i> Roxb.	Symplocaceae	Lodh
68.	<i>Syzizium cuminii</i> (L.) Skeels	Myrteaceae	Jamun
69.	<i>Tectona grandis</i> L.	Verbenaceae	Sajwan, Sagwan
80.	<i>Terminalia arjuna</i> Bedd.	Combretaceae	Kahua, Arjun
81.	<i>Terminalia bellerica</i> Roxb.	Combretaceae	Baira
82.	<i>Terminalia chebula</i> Retz.	Combretaceae	Harra
83.	<i>Terminalia tomentos</i> W.&A.	Combretaceae	Saja
84.	<i>Trema politoria</i> Planch.	Urticaceae	Dhandhani
85.	<i>Wendlandia tinctora</i>	Rubiaceae	Tilayi
86.	<i>Wrightia tomentosa</i> Roem & Sch.	Apocynaceae	Dudhiya

B. Shrubs

S.No.	Botanical Name	Family	Local Name
1.	<i>Antidesma acidum</i> Retz:s	Mimosaceae	Bambhur, Bamura
2.	<i>Asparagus racemosus</i> Willd.	Liliaceae	Kargi
3.	<i>Bauhinia purpurea</i> L.	Leguminoceae	Kewlar
4.	<i>Bridelia retusu</i> Spreng	Euphorbiaceae	Katayi, Kasayi
5.	<i>Butea monosperma</i> (Lamk.) Taub.	Leguminoceae	Parsa
6.	<i>Carissa spinarum</i> DC.	Apocynaceae	Kari
7.	<i>Casearia bourdillonii</i> Mukherjee; Syn: c. tomentoas Roxb.	Samydaceae	Kokhundri, todari
8.	<i>Cassia fistula</i> L.	Leguminoceae	Tawer, taruwar
9.	<i>Cassia fistula</i> L.	Amlu ban	Amlu ban
10.	<i>Cochlospermum religiosum</i> (L.) Aston: Syn: C. gossypium DC.	Bixaceae	Gal, gala, gal

11.	<i>Dendrocalamus strictus</i> Neesgal	Poaceae	Bans
12.	<i>Desmodium pulchellum</i> Benth.	Leguminoceae	Chipi, chipti
13.	<i>Dichrostachys cinerea</i> W. & A.	Leguminoceae	Tati ban
14.	<i>Elaeodendron glaucum</i> Pers.	Celastraceae	Mamri, Mimri, Jamrasi
15.	<i>Embelia robusta</i> Roxb.	Myrsinaceae	Soso podo
16.	<i>Eranthemum pulchellum</i> Andr; Syn: <i>E.nerdosum</i> (Vahl) T. Ander.	Lamiaceae	Ban tushi
17.	<i>Eriolaena hookeriana</i> W. & A.	Stereulaceae	Bhoti
18.	<i>Euphorbia neriifolia</i> L.	Euphorbiaceae	Thuha
19.	<i>Elacourtia indic</i> (Burm.f.) Merr.	Bixaceae	Ramkatayi, Kakaer
20.	<i>Flemingia chappar</i> Benth	Leguminoceae	Gal phuli
21.	<i>Grewia hirsuta</i> Vahl.	Tiliaceae	Khamhar
22.	<i>Hamiltonia suaveolens</i> Roxb.	Rubiaceae	Bichhiya, Barcha
23.	<i>Helicteris isora</i> L.	Sterculiaceae	Aaithi, Marorphali
24.	<i>Heptapleurum venulosum</i> Seem	Araliaceae	Kahua gauda
25.	<i>Indigofera pulchella</i> Roxb.	Leguminoceae	Bhul bhuli, Ghirhul
26.	<i>Lantana camara</i> L.	Verbinaceae	Bajar Batti
27.	<i>Limonia acidissima</i> L.	Rutaceae	Bilsena, bansemi
28.	<i>Murrayakoenigii</i> spreng.	Rutaceae	Mithi neem
29.	<i>Nerium odorum</i> Sol.	Apocynaceae	Kanher. Kaner
30.	<i>Nyetanthes orbortristis</i> L.	Verbiaceae	Khirsali
31.	<i>Ricinus communis</i> L.	Euphorbiaceae	Arandi
32.	<i>Seabania aegyptiaca</i> Pers.	Leguminoceae	Dhandhani, Dhandhan
33.	<i>Thespesia lampus</i> Dalz.	Malvaceae	Masbandi, Mundi
34.	<i>Vitex negundo</i> L.	Verbinaceae	Chindwar
35.	<i>Withania somnifera</i> Dunal.	Solanaceae	Awagandha
36.	<i>Woodfordia floribunda</i> Salisb.	Lythraceae	Dhai, Dhawai
37.	<i>Xanthium strumarium</i>	Asteraceae	Gokharu
38.	<i>Ziziphus zylophyra</i> willd,	Rhamnaceae	Ghontiya, Ghont, Dhontu

C. Herbs

S.No.	Botanical Name	Family	Local Name
1.	<i>Achyranthus aspera</i> L.	Amaranthaceae	Gathiya, Aghada
2.	<i>Acorus calamus</i> L.	Acoraceae	Bach
3.	<i>Argimone Mexicana</i> L.	Berberidaceae	Sher
4.	<i>Atylosia scarabaeoides</i> Benth.	Leguminoceae	Jangli tur
5.	<i>Bergenia</i> sp.	Malvaceae	Patther chatty
6.	<i>Cassia obtusifolia</i> L.	Caesalpiniaceae	Chhinchhori, Chirotha

7.	<i>Cassia tora</i> L.	Leguminosaceae	Charonta
8.	<i>Chlorophytum tuberosum</i> Baker	Liliaceae	Safed musli
9.	<i>Castus speciosus</i> (Koen.) Sm.	Zingiberaceae	Kewu, ban haldi
10.	<i>Curcuma angustifolia</i> Roxb.	Zingiberaceae	Tikhur
11.	<i>Dioscorea</i> sp	Dioscoraceae	Gethi kandha/Karuha
12.	<i>Gloriosa superba</i> L.	Liliaceae	Kharha godi, karihari
13.	<i>Hibiscus abelmoschus</i> L.	Malvaceae	Kapalsiya kandha
14.	<i>Indigofera Hlandulosa</i> Willd	Leguminosaceae	Barhabad, Barbada
15.	<i>Ipomoea Carnea</i> Jacq.	Convolvulaceae	Besaram
16.	<i>Mimosa pudica</i> L.	Mimosaceae	Lachkura, chui mui
17.	<i>Peucedanum nagpurensis</i> (Cl.) Prain	Asteraceae	Tejraj
18.	<i>Phoenix acaulis</i> Buch	Palmaceae	Chind
19.	<i>Urginea indica</i> Kunth.	Hyacinthaceae	Ban pyaz

D. Climbers including woody Climbers

S.No.	Botanical Name	Family	Local Name
1.	<i>Abrus precatorius</i> L.	Leguminosaceae	Kwunti
2.	<i>Acacia caesia</i> W.et.A.	Mimosaceae	Khair
3.	<i>Alangium salvifolium</i> (L.f.) Wangerin; <i>A. Lamarekii</i> Thw	Coranaceae	Akol
4.	<i>Bauhinia vahlii</i> W. & A.	Leguminosaceae	Mahul
5.	<i>Butea superba</i> Roxb.	Leguminosaceae	Nar parsa
6.	<i>Caesalpinia bonducella</i> Flem	Caesalpinaceae	Gataran
7.	<i>Celastrus peniculata</i> Willd.	Celastraceae	Unjain
8.	<i>Ceropegia bulbosa</i> Roxb.	Aselepiadaceae	Bosiy kandha
9.	<i>Cissus quadrangularis</i> L; Syn: <i>Vitis quadrangularis</i> Wall.	Vitaceae	Hathjod
10.	<i>Cryptolepis buchmanii</i> R. & S.	Asclipidiaceae	Dudhnar
11.	<i>Derris scandens</i> Benth.	Leguminosaceae	Nakuwa kandha
12.	<i>Dioscorea bulbifera</i> L.	Dioscoraceae	Agitha
13.	<i>Ipomoea mauritiana</i> Jacq.	Convolvulaceae	Patal kohra
14.	<i>Marsdenia tenacissima</i> W. & A.	Asclipidiaceae	Chikti
15.	<i>Spatholobus roxburghii</i> Benth	Leguminosaceae	Bendo
16.	<i>Tinospora cordifolia</i> Miers	Menispermaceae	Guruchi
17.	<i>Zizyphus rugosa</i> Lamk	Rhamnaceae	Churaban, Churna

E. Grasses

S.No.	Botanical Name	Family	Local Name
1.	<i>Andropogon contortus</i> L.	Poaceae	Sukra, Churant
2.	<i>Apluda varia</i> Hack	Peaceae	Phuliban
3.	<i>Cynodon daetylon</i> Pers	Poaceae	Doob
4.	<i>Desmostachya bipinnata</i> (L.) Stapf.	Poaceae	Kush
5.	<i>Dichanthium annulatum</i> (Forsk.) Stapf	Poaceae	Biri ban, marbal
6.	<i>Echinochlou colonum</i> (L.) Link	Poaceae	Sawa, sama
7.	<i>Eragostis tenella</i> L.	Poaceae	Bhur bhusi
8.	<i>Eulalipsis binata</i> (Retz.) Hubb.	Poaceae	Bagayi
9.	<i>Imperata cylindrical</i> (L.) Beauv.	Poaceae	Chhir ban
10.	<i>Ischaemum pilosum</i> Hack	Poaceae	Kunda
11.	<i>Saceharum spontaneum</i> L.	Poaceae	Kansa
12.	<i>Sehima sulcatum</i> A. Camus	Poaceae	Sedu

F. Mammals

S.No.	Common name	Scientific name
1.	Barking Deer	<i>Muntiacus muntijac</i>
2.	Sambhar	<i>Cervus unicolor</i>
3.	Spotted Deer	<i>Axis axis</i>
4.	Common Langur	<i>Presbytia entellus</i>
5.	Rhesus macaque	<i>Macaca mulatta</i>
6.	Elephant	<i>Elephus maximus</i>
7.	Rlying fox	<i>Pteropus gingantens</i>
8.	Sloth bear	<i>Mehursus Ursinus</i>
9.	Jungle cat	<i>Felis chaus</i>
10.	Striped hyena	<i>Hyena hyena</i>
11.	Jackal	<i>Canis aureus</i>
12.	Five striped Squirrel	<i>Funambulus pennanti</i>
13.	Field Rat	<i>Bandicota bengalensis</i>
14.	Bandicoot	<i>Neosocia bandicota</i>
15.	House Rat	<i>Rattus rattus-refescena</i>
16.	India Hare	<i>Lepus nigricollis</i>
17.	Indian Wild Boar	<i>Sus scrofa</i>
18.	Common Indian Mongoose	<i>Herpestes edwardsi</i>

G. Reptile

S.No.	Common name	Scientific name
1.	Brook's geecko	Hemidactylus brookii
2.	Yellow-green house gecko	Hemidactylus flaviviridis
3.	Bark gecko	Hemidactylus leschenaultia
4.	Termite gecko	Hemidactylus triedrus
5.	Garden lizard	Calotes versicolor
6.	Blanfore rock agama	Psammophilus blanfordanus
7.	Fan-throated lizard	Sitana ponticerana
8.	Common Skink	Mobuya carinata
	Snakes	
9.	Red sand boa	Eryx johnii
10.	Indian rock python	Python molurus
11.	Buffstriped keelback	Amphicesma stolata
12.	Rat snake	Ptyas mucosus
13.	Bronze back tree snake	Dendrelaphis tristis
14.	Indian green keelback	Macropisthodon plumbicolour
15.	Streaked kukri snake	Oligodon taeniolatus
16.	Checkered keelback	Xenochrophis piscator
17.	Spectacled cobra	Naja naja
18.	Slender coral snake	Calliophis melanurus
19.	Russell's viper	Doboia russellii
20.	Indian saw-scaled viper	Echis carinatus
21.	Common krait	Bungarus caeruleus
22.	Common cat snake	Boiga trigonata
23.	Common trinket snake	Elaphe helena

H. Birds

S.No.	Common name	Scientific name
1.	Yellow-Footed Green Pigeon	Treron phoenicoptera
2.	Rock Pigeon	Columba livia
3.	Eurasian Collared Dove	Streptopelia decaoeto
4.	Spotted Dove	Streptopelia Chinesis
5.	Red Collared Dove	Streptopelia transquebarica
6.	Alexandrin Parakeet	Psittacula eupatira
7.	Rose ringed Parakeet	Psittacula eupatira
8.	Plum Headed Parakeet	Psittacula cyanocephala
9.	Common howk cuckoo	Hierococeyx varius
10.	Asian Koel	Eudynamys scolopacea
11.	Greater Coueal	Centropus sinensis
12.	Pied crested Cuckoo	Clamator jacobimus
13.	Spotted owl	Athene bromah

14.	Jangle Owlet	Glaucidium radiatum
15.	Indian Night Jar	Caproimulgus asiaticus
16.	Asian plam Swift	Cypsiurus balasiensis
17.	Housed Swift	Apus offinis
18.	Pied king Fisher	Ceryle rüdis
19.	Common King Fisher	Alcedo Atthis
20.	White throated King Fisher	Halcyon smyrnensis
21.	Blue Cheeked Bee Eater	Merops persicus
22.	Green Bee Eater	Merops orientalis
23.	Indian Roller	Coracias benghalensis
24.	Common Hoopoe	Upupa epops
25.	Indian Grey Hornbill	Ocyrceros birostris
26.	Coppersmith Barbet	Megalaima haemacephla
27.	Black Rumped Flameback	Dinopim benghalense
28.	Streak Throated woodpecker	Picus xanthopygaeus
29.	Heart Spotted Woodpecker	Hemicircus canente
30.	Wir-tailed Swallow	Hirundo smithii
31.	Bay-backed Shrike	Lanius vittatus
32.	Long-tailed Shrike	Lanus schach
33.	Eurasian Golden Oriole	Oriolus xanthornus
34.	Black-Hooded Oriole	Oriolus xathounus
35.	Black Drongo	Dicrurus macroceros
36.	White bellied Drongo	Dicrurus Caerulescens
37.	Greater Racket-tailed Drongo	Dicrurus paradiseus
38.	Large Cuckooshrike	Coracina macei
39.	Brahminy starling	Strurnus pogodarum
40.	Rosy Starling	Sturnus roseus
41.	Asian Pied Starling	Sturnus Contra
42.	Bank Myna	Acridotheres ginginianus
43.	Common Myna	Aeridotheres tristis
44.	Jangle Myna	Aeridotheres fuscus
45.	House Crow	Corvus splendens
46.	Large-billed Crow	Corvus macrorhynchos
47.	Rufous Treepie	Dendrocitta Vagabunda
48.	Small Minivet	Pericrocotus Cinnomomeus
49.	Scarlet Minivet	Pericrocotus flammeus
50.	Common Wood shrike	Tephrodornis
51.	Common Iora	Aegithina tiphia
52.	Grey Heron	Ardea cinerea
53.	Cattle egret	Bubulcus ibis
54.	Great Egret	Egratta albus
55.	Little Egret	Egretta garzetta
56.	Oriental White Eye	Zosterops palpebrosus
57.	Black-shouldered Kite	Elanus caeruleus
58.	Black Kite	Milvus migrans


59.	Shikra	Accipiter badius
60.	Changeable Hawk Eagle	Spizaetus Cirrahatus
61.	Tawnty Eagle	Aquila rapax
62.	Crested Serpent Eagle	Spilornis Cheela
63.	Black francolin	Francolinus francolinus
64.	Painted Francolin	Francolinus Pictus
65.	Common Quail	Cotuenix Coturnix
66.	Jungle Bush Quail	Perdicula asiastica
67.	Red Spur Fowl	Galloperdix spondica
68.	Red Jungle Fowl	Gallus gallus
69.	Indian Peafowl	Pavo cristatus
70.	Red-wattled lapwing	Vanellus indicus
71.	Red vented Bulbul	Pycnonotus cafer
72.	Jungle Babble	Turdoides striatus
73.	Tickells bule flycatchher	Cyornic tickelliae
74.	Asian Paradise Flycatcher	Terdoides striatus
75.	White Browed fantail Flycatcher	Rhipidura aureola
76.	Ashy Wren Warbler	Prinia socialis
77.	Black Redstart	Phoenicurus ochruros
78.	Pied Bush chat	Soxicola caprata
79.	Plain Prinia	Prinia inornata
80.	Grey-Breasted Prinia	Prinia hodgsonii
81.	Indian Robin	Saxicoloides fulicata
82.	Oriental Magpie Robin	Copsychus Saularis

1.4 About Presence/Movement of Elephant in the area

The forest of the Central province inhabited elephants in olden times. During Mughal times, the Jungles of Surguja District were the main source for supply of elephants to Mughal army. Latter accounts of the presence of elephants in chhattisgarh are described in a travelogue "Highlands of central India" Written by Captain Forsyth. He has described the movements of elephants from Amarkantak plateau up to Udaipur forest areas. He himself has seen herds of elephants in the jungles of Pendra, Belgahaha, Ratanpur, Matin, Lafagarh, Korba and Tara forests. We do not find any evidence of the presence of elephants in Chhattisgarh from the start of twentieth century.

Elephants started migrating to chhattisgarh from the 80's One stream of Elephants entered the State from Jharkhand from north, and other stream form Orissa from east. Since last 7-8 years elephants have been regularly visiting the forests of Surgujas, Korba, Jashpur, Raigarh and Korea District. In certain patches like Badalkhol sanctuary of jashpur their period of stay is increasing year after year.

A herd of 6 elephants has been visiting the project areas since last four years, In last two years extensive damage to the crop and property villagers has been done by elephants in Basen and Kete villages. In the year 2008, elephants have visited the buffer areas twice i.e. in summer as well as in winter. Elephants generally enter Dharamjaigarh forest area in C.G. from sundergarh forest in orissa. From here they enter forest of Korba, Katghora and reach the adjacent forest area of Surguja. Their back movement is also from the same route. It has come to our knowledge that the Government of India Ministry of Environment and Forest and the State Government of Chhattisgarh have accorded their section for creating elephant reserve named "Lemru elephant Reserve" in Korba forest division and "Badal Khol elephant reserve" in Jashpur Forest division. If the habitat of these reserve are suitably managed, it can stop the further movement of elephants to the project site considerably.


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2. CONSERVATION PLAN: OBJECTIVES

2.1 Planning Philosophy:

Anthropogenic and commercial activities in the forest areas always create disturbances in the ecosystem. In present context many activities of commercial nature are unavoidable. It hold more true for mining activity as power is one of the emergent needs of the country. Most of the good coal reserves are located in good forest areas. So if the mining is to be carried out in forest area, every attempt should be made to see that the disturbances are adequately compensated by sound management and conservation practices.

The objectives of conservation plan must necessarily secure the values identified in the area in question. Planning should set the course for desired conditions in future Planning should be helpful in conservation, maintenance, regulation, restoration and creation of desired conditions. Conservation programme may also enable the people living in the area to participate effectively in the management of natural resources and conservation of vulnerable elements of nature.

2.2 Objectives :

In the light of above Philosophy of conservation, the present conservation plan needs to achieve following objectives.

1. Conservation of wildlife in the buffer zone of the mining area i.e. within 10 k.m. radius of the periphery of core area by adopting suitable strategies.

2. Protection of villages and property in the core area as also in the adjacent buffer area from the possible damages due to movement of elephants.
3. Soil and Moisture conservation in the buffer area for making sufficient water available to the wildlife. This will ensure good moisture regime in the area, thereby improving the health of eco-system.
4. Activities intended to arrest the movement of migratory elephants in core area like habitat development of corridor area and improving the habitat of proposed Lemru elephant reserve.
5. Educating, training and equipping villagers for reducing man animal conflict in particular and protection of flora and fauna in the buffer area in general.
6. Eco-development of the villages to reduce biotic pressures on forest of buffer area
7. General protection of the forest by reducing illicit felling grazing and protection from other adverse factors.
8. Adopting best mining practices by the mining authorities to minimize the adverse impact and carrying out extensive planting in dumps and other areas in consonance with the prevalent rules of forest and environment deptt. to create near natural conditions in the Core zone.

(Activities related to this objective will be carried out by mining authorities, whereas activities related to rest all objectives will be carried out by the forest deptt. in the manner prescribed ahead).


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3. CONSERVATION PLANNING: PRESCRIPTIONS

3.1 Introduction -

The protection and conservation of flora and fauna in the core and buffer area will be done by preparing annual plan of operation. The prescription for carrying out the work will be broadly categorized as follows:

1. General Protection Works
2. Specific Conservation Measures

As the forest of the buffer zone houses good number of flora and fauna, every attempt will be made to protect and conserve the forest ecosystem so that the fauna is also conserved. Apart from this the activities will be carried out for habitat development of wildlife conservation point of view. Specific measures will be adopted to keep migratory elephants away from the core area. For this habitat development works in the route of migration will be carried out. Details of the activities to be carried out areas follows:-

3.2 General Protection of the Core Area.

As per the mining plan, the mining activities will start from the northern portion of the core area and will come towards southern limit after around 15-20 years. The forests, in the northern part of the core area are more fragmented but are more compact and continuous in the southern part. As the forests in the

core zone will be cleared in a phased manner no conservation measures are being prescribed. If the forest deptt. thinks it necessary, the Southern and Eastern boundaries can be fenced by erecting suitable structures to check the advancement of wild animals in the core zone. It is proposed that villages falling in the core area should be shifted to safer zone and rehabilitated properly as per Govt. Rules.

3.3 Protection & conservation of Buffer Zone Ecosystem

Extensive protection measures will be taken in the buffer area for management and conservation of flora & fauna here. The activities to be carried out here are being classified as follows :

- (A) General Protection works.
- (B) Specific habitat improvement works

3.3.1 The activities to be carried out under General Protection works are as follows.

(1.) Fire Protection:

Strict fire control will be maintained in the buffer zone. The fire lines clearing and burning will be done in time and fire watchers will be employed during the fire season. Other activities related to fire

protection, if mentioned by the executing agency (forest deptt.), will also be carried out after approval from the competent authorities (mentioned in next chapter).

(2) Protection From Grazing & Illicit Felling and Plantations :

As per the existing laws certain grazing units are allowed, but grazing is strictly prohibited in plantation areas, coupes, areas closed for regenerations and area undergoing recent forestry operation. Additional protection measures should be taken to ensure that the closure is really effective. Wherever required plantation of suitable species will be carried out.

(3) Empowering People for Protection:

This is a very important and essential programme of any conservation plan. Now - a - days, with the advent of joint forest management plan, the local villagers are being increasingly involved in the protection works. At many places it is yielding good results.

Training and awareness programmes will have to be carried out for villagers. In the first phase trust building activities will be taken up. Trust can not develop till an agency as one group and local villagers as the other start understanding each others aspirations and problems. Stakes on both sides should be critically analysed and eco-development

activities should be carried out. These activities should form the basis for conservation strategies. The project area is located in Udaipur Range of south Surguja division. There are 71 Joint Forest Management committees in Udaipur range. All joint forest management committees will be strengthened for betterment of existing forest and wildlife conservation, but the committees in buffer zone should be strengthened with specific purpose of wildlife conservation and protection of their habitat from illicit felling illicit grazing and fire etc. some new JFM committees should be formed where no JFM committees are in existence. All JFM committees will work as per the rule and regulation prevailing for JFM committees in the State of Chhattisgarh. There training and other requirement will be fulfilled from the fund made available by the user agencies.

In Udaipur range where the project area is situated there are 71 joint forest management committees have been formed by the forest department and they all are in function. Members of JFMc sit together at regular interval and discuss about their requirement and protection of the forest under guidance of forest official like forest guard or forester. Who is ex-officio secretary of the joint forest management committees. Higher officials also supervised the proceedings of JFMc and give proper guidance to them.

There are 7 villages in the core area and the 7 villages in the buffer area of the proposed Parsa East & Kente Basen Opencast Coal

Mine and Washery. All these villages except shivpur have identity has JFMc. Some villages have more than one JFMc in there village, thus there are 18 JFMc are functioning in the Project Area.

It is proposed that all the JFMc should be strengthen by providing educate hunt made available by the user agencies. This fund will be utilized after preparing micro plan for each JFMc. to generate extra income to the villagers and reduce their dependence over the forest and they will take care of the habitat and wildlife whole heartedly. They should be encouraged for stall feeding. So that their cattle do not enter in the core and buffer area and there will be minimum conflict between human and wildlife. proper training to JFMc members and monitoring and evaluation of there work will also be carried out annually by the forest officials. Installment of fund to JFMc will be released on the basis of their performance.

(4) Soil And moisture Conservation Works :

One of the biggest problems of forest management is improvement of moisture regime in the area. During March till the onset of rains, wild animals move closer to human habitation in search of water, leading to man-animal conflict and loss of wildlife also. Such incidences have become very common throughout. One of the biggest reasons for this is that enough moisture conservation measures have not

been taken up. In the entire buffer area such works will be taken up in the following manners.

- (i) Staggered trenches of 2 mt. x 60 cm X 30 cm shall be dug in areas prone to erosion. The site for this should be carefully selected. It should be done in areas having high slope and having open areas (density less than 0.3); so that surface run off may not cause erosion.
- (ii) Small earthen check dams and pucca stop check dam will be constructed in suitable locations. The technical feasibility of these structures should be thoroughly examined before taking up such constructions .
- (iii) Creation of new water holes at suitable places.
- (iv) Wherever required deepening of old tanks and desilting of pucca stop dams already existing in the area, can be carried out.

3.3.2. Specific conservation Measures :

The area- specific and habitat specific, habitat improvement activities will be taken up in the area for overall protection and conservation of wild animals in the area. Habitat improvement practices like eradication of

weeds such as lantana, Eupatorium, Phoenix, Cassia tora, Vantulsa etc. help in making the area a good habitat for herbivore. Creation of water sources uniformly throughout the area also helps in reduced dispersal incidences of wild animals in human habitation areas. The overall approach for habitat improvement works should be taken with minimum disturbance to wild life. The main activities under habitat improvement works will be as follows :-

(A) Weed Management :

Weeds like Eupatorium, Van tulsa, charonta, Galphulli and Chind are seen in the area. In fact although at some places weed act as good soil binders reducing erosion and surface runoff but because they are not desired at that place, they are called weeds. Chind (Pnoenix) comes up in areas where fire breaks repeatedly. But once it has colonised the area, even if the frequency of fire hazard reduces to negligible, it doesn't go away and starts interfering with regeneration of principal species.

Such areas that are suitable for weed eradication will be selected annually for carrying out operations. Although a variety of biological and chemical control measures are available, still the forest staff largely depends on uprooting of weeds for eradications. Care should be taken to completely uproot the weed and burn it before the seed fall. The area should be worked up in two successive years for complete eradication, as the seeds fallen before the uprooting may germinate in the area.

These worked up areas need close monitoring to prevent emergence of same or new weeds there. If needed, the technical guidance, from Research Center for weed sciences (ICAR) Jabalpur and IGFRJ Jhansi can be availed.

If the weed infested area is having good canopy density, efforts should be made to see that regeneration of principal species that may come up profusely in the area in rainy season after weed eradication work is protected. If the weed infested area is open one it can be converted into grassland by suitable management intervention, after the eradication of weeds. Weed management should be done under the guidance of expert forester, scientist having experience in dealing with weed ameliorative measures.

(B) Management of existing Grass lands: development of new grasslands

Natural grasslands are those open areas in the forests that support palatable grasses. Grasslands are absolutely essential for maintaining good population of herbivore. .

Plantation activity should generally not be taken up in these grasslands. Forest departments working plans have a general prescription for planting 'blanks' or grassy banks. Unless these grasslands are managed as fodder reserves, these are the prime target for plantation activities.

In the buffer area many blanks or degraded forest areas have good growth of grass. In such areas the development of grasses will be encouraged by suitable inter ventions. To maintain existing grassland/ grass bearing good

areas in perpetuity it is necessary to keep them free from the invasion of weeds and woody species. Study of open areas, and grass meadows shows that these areas are being used by various wild animals. Also weeds like phoenix sps are showing presence in areas and woody species have also started invading the areas. To keep these areas in good health following measures are to be taken.

- (i) Cutting and uprooting of unpalatable grasses, before their seeding starts. Cutting be done by sickle and uprooting by kudali.
- (ii) Uprooting of weeds from these areas at the end of rainy season before seeding.
- (iii) Uprooting of woody species in rainy season.
- (iv) Fire protection around these meadows.
- (v) Maintenance of water resources near/inside these areas.
- (vi) Planting of local species of grasses which are found in the area.

Regular monitoring about the grass land use pattern by different species should be done. Seasonal use of grasslands by wild animals should be studied. Presence and absence of palatable and not-palatable grasses and invasion of weeds and woody species should be monitored for amending management interventions suitably.

(C) **Management of Specific Habitats:**

(a) **Bio-Diversity Hot-Spots**

In buffer area, there are many pocket where floral biodiversity is very good. These areas are repository of gene pool. Effort should be made to protect these areas. A biodiversity park of 10 ha. area will be made in suitable forest area, in which all the floral diversity of the buffer area will be kept.

(b) **Habitat of Geomorphological origin.**

Microhabitat elements of geomorphologic origin (unique habitat) Caves/dens, overhangs in rocks usually along drainage occur in buffer area. Depending upon the size of a cave/den and the dimensions of its openings, location and surrounds, different species, mainly carnivores use it as shelter, breeding sites and a secure place for raising the young. Cliffs have flat shelves along the top used by vultures and eagles for roosting or nesting the roof of overhangs can have hives of honey bees, nests and nesting colonies of swallows, swifts etc. At the base of cliff there might be caves and overhangs. These areas are exposed to disturbances by people. Such areas will be located annually and suitable protection will be given to them.

(c) **Riparian Zones:-**

The riparian zones are among the most diverse, productive and vulnerable habitats and perform several critical ecological functions. They act as corridors, connectors of all habitats due to their location pattern from highest to lowest attitudes. They are used disproportionately more as compared to their availability by wildlife, cattle and men. They are highly vulnerable to change since riparian vegetation is linear. Most animal species are heavily dependent on conditions and attributes of riparian zones since water is associated. In the buffer area there exist many ephemeral and perennial riparian zones. Both have characteristic biological values and ecological functions

These riparian zones exist along Chirhut nala, Rokna nala, Jhinga nala, Semardwari nala, Chhoti Chornai nadi, Atem nadi, Turripiani nala and many such streams flowing through the area. These riparian zones have suffered greatly because of many adverse biotic interference. Alignment of roads along these zones should be avoided. No felling is to be done in the complete width of the zone. Other location specific activities are to be taken up for protection of riparian zone.

(D) **Management of Elephant related issues**

As Stated earlier, one herd of elephants has been frequenting the area since last 3-4 years. The herd in recent years has approached nearer to villages in core area. The herd after reaching project area goes back to the forests on the northern part of korba division.

After carefully study of the migration route, activities will be taken up to manage the habitation in such a way that it reduces advancement of elephants to project site. As the elephant's coming to this area come through forests of Dharamjaigarh and Korba forest division, activities related to habitat improvement can be taken up in these areas also, after carefully examining the pattern of migration. The affected villages in the buffer zone will be taken up in a phased manner for fencing of the areas to reduce the crop and property damage. The villagers will be trained and a rescue team will be formed in each village susceptible to damages by the movement of elephants. Other relevant measures found suitable by the forest department will also be taken up.

E. Research, Monitoring and evaluation:

Forestry related research activities, studies etc. can be taken up in the area. for example ethnobotanical studies of the area will be taken up and a medicinal plants nursery will be created for conservation, research and educational purposes. Monitoring of the works being done will be carried out annually.

3.4 Miscellaneous works:

Forest are dynamic ecosystems. Apart from the above described activities, the management may feel the necessity of doing some other kind of works related to conservation of flora and fauna of the area due to emergence

of new facts and conditions. If such necessity is felt these works will be mentioned in the annual plan of operations to be prepared by field officers and finally approved by the conservator of the forest. These miscellaneous works may include to a very limited extent (maximum up to 5% of the annual cost of operations) activities related to the welfare of the frontline forest staff of the area)



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4. EXECUTION OF THE PLAN

4.1. Area -

The Plan period will be 20 years taken from the commencement year. The plan will be executed by the forest department. The department will prepare annual plan of operations (APO) in core & buffer area and also in the migration route of elephants whether or not it falls in buffer area. The various forest divisions falling in core area, buffer area and migration route of elephants are as follows.

- (1) Core Area.
 - * South Surguja Forest Division

- (2) Buffer area
 - * South Surguja forest division
 - * Korba forest division
 - * Katghora forest division

- (3) In the migration route of elephants reaching unto project site.
 - * Dharmjaygarh forest division.
 - * Korba forest division.
 - * Katghora forest division
 - * South Surguja forest division.

The money to be spent annually on the works to be done in buffer area will be distributed in proportion of the area of forest division. Around 80% area of buffer zone falls in Surguja district.

4.2 Annual Planning -

Whole of the area of Core & Buffer zone proposed to be treated and area of migratory route proposed for treatment (to be decided Jointly by C.F. Surguja and C.F. Bilspur in Consultation with the CWLW of the state) will be given treatment in 20 year. The money for the treatment will be made available by Rajasthan Rajya Vidyut Utpadam Nigam Ltd. The commencement year for the plan will be the year in which the mining operations start.

Each year the area to be treated will be extensively surveyed by the field forest staff i e forest guard, forester and Range Officer, The treatment plan along with the treatment map of the area will be prepared by the range officer. The plan thus prepared will be scrutinized by Sub-divisional and Divisional Forest Officer and then will be forwarded to the Conservation of forests of the circle for approval, The commencement of work will take place after the approval. The concerned D.F.O. Will send a demand note to the appropriate authorities of RRVUN Ltd. who will without unreasonable delay allot the money to the concerned D.F.O. The disbursement of money, execution of the work and records and account keeping will be done as per departments existing rules and regulations.

4.3 Cost Calculation for the plan :

Keeping the comments of WII on previous plan and the suggestions given by the DFO south Surguja Division accepted by the WII the cost of the plan has been calculated as under.

S.No.	Items of the work	appx Cost (In Crores)	Remark
1.	(a) Survey & preparation of annual plan	0.20	
	(b) Creation of Forest resources in peripheral area buffer Zone line fodder fuel wood & MFP by identifying the suitable area for respective plantations.	0.05	Suggested by DFO, South Surguja Division
	(c) Survey and identification of wetland in proposed area	0.10	Suggested by DFO, S.Surguja
	(d) Survey and study on broidery of proposed site.	0.05	Suggested by DFO, S.Surguja
	(e) Habitat survey for the respective project site.	0.05	Suggested by DFO, S.Surguja
	(f) Survey and identification of reptiles, Birds, Butterfly, Insects available in the project site.	0.10	Suggested by DFO, S.Surguja
	(g) Survey of medicinal plants and their identification in proposed project site.	0.10	Suggested by DFO, S.Surguja
2.	Protection work in Core Area (i.e. fencing of boundaries. Fencing of fields and villages as per requirement	1.50	
3.	Fire Protection works	1.50	

4.	Protection from Grazing and illicit felling	1.00	
5.	Empowering People for protection, Eco-development works etc. (a) Construction of office building for Joint Forest Management committees come meeting hall. (b) Construction of rescue centers for mitigating human wildlife conflict with trained personals. (c) Provision for compensation to loss of crop, property human life and injury by wildlife for entire plan period.	1.00 0.50 0.50 1.50	
6.	Soil & Moisture Conservation works	2.00	
7.	Weed management under guidance of expert scientist are experience forester.	2.00	
8.	Management & development of grasslands by planting of local species of grasses which are found in the area.	1.50	
9.	Management of identified wetland for better wildlife habitat formation.	0.05	Suggested by DFO, S.Surguja
10.	Physio chemical properties of wetland in the initial, mid and end of the project for the respective project.site.	0.05	Suggested by DFO, S.Surguja
11.	Conservation of the floral diversity, creation of biodiversity parks for creation of gene pool.	2.00	

12.	Protection of the habitats of geomorphological origin and their conservation.	0.50	
13.	Conservation of the riparian zones	1.00	
14.	Habitat improvement in the elephant corridor area. protection of crop and property in the affected villages training and misc. other activities.	2.50	
15.	Research & Monitoring and Evaluation.	0.75	
16.	Miscellaneous works (proposed by field officers and approved by the C.F.)	1.50	
	Total	22.00	
		crores	

Thus over plan period ie 20 years, 22 crores will be spent. It means annually a plan of operations covering the above listed activities will be prepared upto the financial limit of 1.1 crore. The forest department keep doing these forestry activities in a routine way under the prescriptions of working plan. If because of these activities, the works to be done described above is not required or if some new works are required, the annual plan of operations can be suitably modified to avoid duplicity.

--0--


Deputy Chief Engineer (PPC&F)
RRVUNL, Jaipur


(P. C. Agrahari)
I.F.S. (Retd.)
BILASPUR (C.G.)
E (07752)-407435

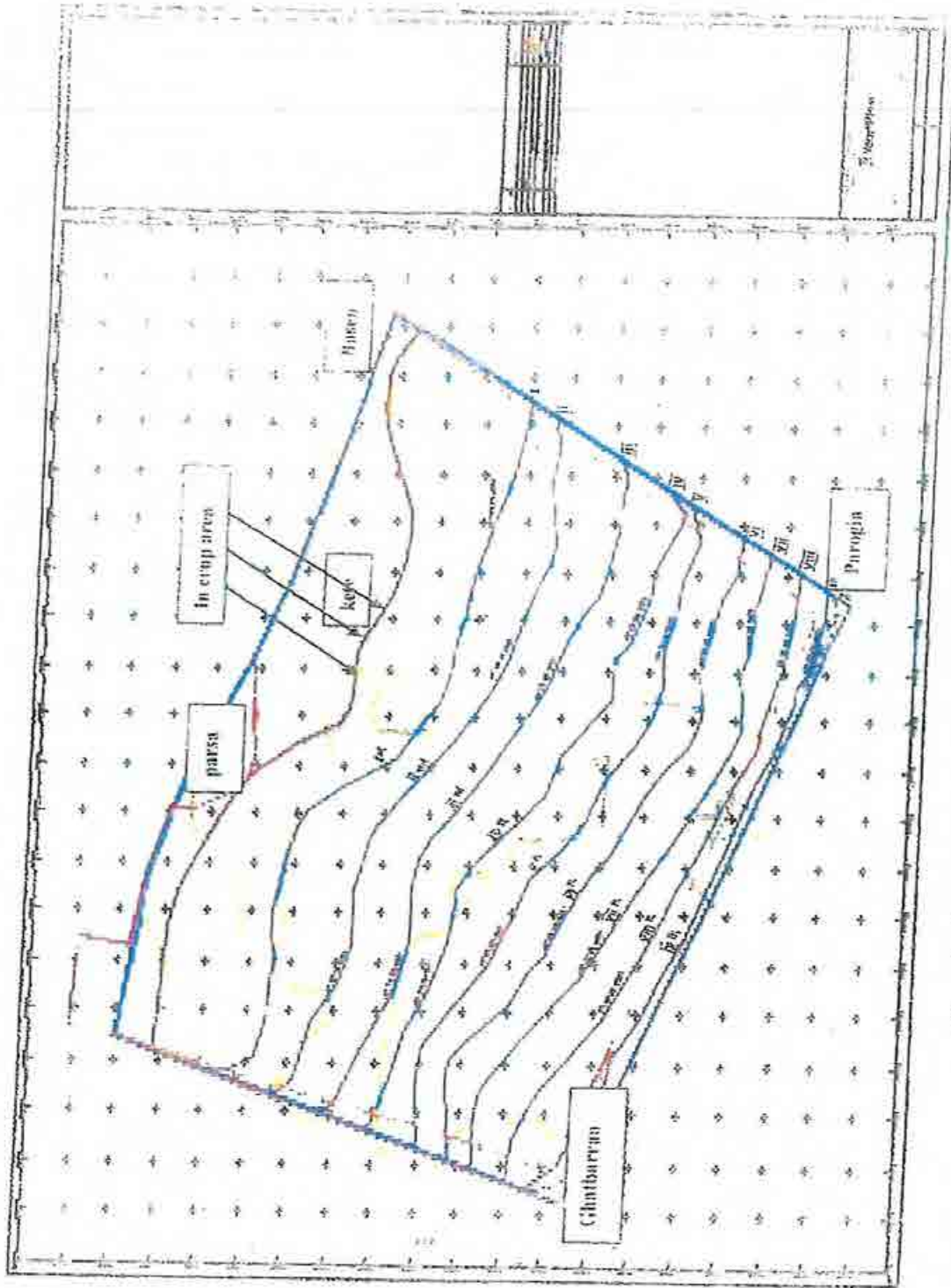


Figure 1.1. Phased mining plan at five year interval showing location of villages.

[Signature]
Deputy Chief Engineer (PPGAR)
RRVUNL, Jaipur

ANNEXURE - I

ANNEXURE-I
COPY OF TOR ISSUED BY MOEF AND COMPLIANCE

No. J-11015/CO/2008-IA-II(M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
CGO Complex,
New Delhi-110010.

Dated: 18th March 2008

To

M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd.,
Vidyut Bhawan, Janpath,
Jaipur Nagar,
JAIPUR - 302005.

Subj: Farsa East and Ketho Basan Open cast Mine (10 MTPA) of M/s Rajasthan Rajya
Vidyut Utpadan Nigam Limited, Farsa and Ketho Coalfields in Tehsil Udaypur,
Dist. Surguja, Chhattisgarh - Terms of Reference (TOR) - reg.

Sd.

The undersigned is directed to refer to your letter no. RUVN/Dy.CE(Fuel)/XRN (F)/R/D.344 dated 29/12/2007 regarding the subject mentioned above and consideration of the same in the meeting of Expert Appraisal Committee (EAC) held on 26th - 27th March 2008. It was noted that the proposal is for opening a new open cast coal mine project of 10 MTPA in two coal blocks - Farsa East and Ketho Basan in Hasdeo Arand Coalfields in district Surguja, Chhattisgarh. The coal is for meeting the req. of M/s RRVUNL's two proposed thermal power projects - Chhabra Phase-II (500 MW) and Jasawar (Kalkind 1000 MW). The total ML area is 2767 ha of which 1995 ha is forestland consisting of only protected forest, 636 ha is agr. land and 86 ha is Govt. land. Surface mine is to be used for extraction of coal and OB removal by shovel-dumper. Coal washery unit designed for 10 MTPA of raw coal (23,500 TPD) and consuming about 5700 m³/d of water is proposed at a later stage. Transportation to washery would be by conveyor belt. Of the total lease area, 2320 ha would be quarry area, 50 ha is for OB dump, 20 ha is for infrastructure, and 377 ha is for safety zone and rationalisation area. Mine township would be outside the ML. Of the total quarry area of 2320 ha, 1995 ha would be reclaimed. R&R is applicable for 6 villages - Salmi, Hartharpur, Farsa, Ketho, Chhabra and Paroglya for 472 PAFs found in the core zone. 70% of the area is tribal population. Average stripping ratio is 1:5.3. Ultimate working depth is 250m. At the end of mine life, avoid of 325 ha would left. Life of the proposed mine is about 30 years. Despatch of coal from the ML to the linked TPPs would be by rail at a distance of 70 km. It is proposed to establish a railway track, which is being surveyed. There are no major streams, canals, or rivers found in the study area. River Aton and Chhoti Chhoti Nhera, at a distance of 2 km and 4 km respectively from the lease boundary. The area also does not fall within 10km of any ecologically sensitive area.

The Committee desired that the linked coal washery unit should have been included in the proposal so that the combined impacts could be assessed. Based on the application along with documents and presentation thereon and discussions held, the Committee prescribed the following TOR:


Deputy Chief Engineer (PPCoFI)
RRVUNL, Jaipur

AI-1

ANNEXURE-I
COPY OF TOR ISSUED BY MOEF AND COMPLIANCE

- (i) An EIA-EMP Report would be prepared for establishing an opencast coal mine project of 10 MTPA rated capacity based on the generic structure specified in Appendix III of the EIA Notification 2006.
- (ii) An EIA-EMP Report would be prepared for 10 MTPA rated capacity based on project specific activities on the environment of the region and the environmental quality - air, water, land, biotic community, etc. through collection of data and information generation of data on impacts including prediction modelling for 5.3 MTPA of coal production based on approval of project/Mining Plan for 10 MTPA. Baseline data collection can be for any season except monsoon.
- (iii) A map specifying locations of the State, District and Project location.
- (iv) A Study area map of the core zone and 10km area of the buffer clearly delineating the major topographical features such as the land use, ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance are found in the area, surface drainage of rivers/streams/nales/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources.
- (v) Land use map (1:50,000 or 100,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note of the land use.
- (vi) Map showing the core zone delineating the agricultural land (irrigated and irrigated, uncultivable land (as defined in the revenue records), forest areas (as per records).
- (vii) Contour map of 3m intervals and Site plan of the mine showing the various proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zones, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area and if any, in topography such as existing roads, drains/natural water bodies are to be left undisturbed along with any natural drainage adjoining the lease and modification of thereof in terms of construction of embankments/bunds, proposed diversion/rechanneling of the water courses, etc., approach roads, major haul roads, etc.
- (viii) Break up of lease area as per different land uses and their stage of acquisition.
- (ix) Break-up of lease area as per mining operations.
- (x) Impact of changes in the land use due to the start of the project since part of the land being acquired is forestland and agr. land.
- (xi) Collection of one-season (non-monsoon) primary base-line data on environmental quality - air (SPM, RPM, SO_x and NO_x), noise, water (surface and groundwater), soil.
- (xii) Map of the study area (core and buffer zone clearly delineating the location of various stations superimposed with location of habitats, other industries/mines, polluting sources. The number and location of the stations in both core zone should be selected on the basis size of lease area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on

ANNEXURE-1
COPY OF TOR ISSUED BY MOEF AND COMPLIANCE

- (xiii) One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCII guidelines and parameters for water testing for both ground water as per ISI and surface water as per CPCII guidelines.
- (xiii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until end of mine life should be reflected on the basis of the approved reserve capacity and extended plans of production from the approved Mining Plan. Geological maps should be included.
- (xiv) Details of mining methods, technology, equipment to be used, etc., rationale for selection of that technology and equipment proposed to be used vis-a-vis the potential impacts. The use of surface miner/rock breaker to be examined to eliminate drilling and blasting operations.
- (xv) The Committee noted that since Schedule I fauna and important medicinal plant species are reportedly abundant in the study area, a detailed inventory would be required along with Conservation Plan for the endangered flora/fauna and with comments of the Chief Wildlife Warden of the State Government. Study on the existing flora and fauna in the study area (carried out by an institution of relevant discipline and the list of flora and fauna study authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna) Study on the existing flora and fauna in the study area carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. If the study area has endangered flora and fauna or if the project falls within 10km of an ecologically sensitive area, then a comprehensive Conservation Plan should be prepared and furnished along with comments from the CWLW of the State Govt. The Plan must incorporate dedicated corridors for movement of elephants within the region.
- (xvi) A detailed Area Drainage Study should be carried out and on impact of diversion of the gala on the surface hydrology studied. Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing through the ML and adjoining the lease and the impact on the existing users and impacts of mining operations thereon. Impact of construction of embankment on the surface hydrology of the area. Detailed water balance should be provided. The break up of water requirement for the mine should be given separately.
- (xvii) Detailed hydrology and hydrogeology studies required to be carried out. Mine pit water to be used after mine development intersects water table. Details of the source of water during the intervening period along with approval of the competent authority should be provided. Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-a-vis the competing users. Water req. estimated for drinking appeared to be high and requires to be reworked.
- (xix) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime studies with at least one pumping test to analyse the aquifer

ANNEXURE-I
COPY OF TOR ISSUED BY MOEF AND COMPLIANCE

- characteristics within the core zone and 10km buffer zone including long-term modelling. Details of rainwater harvesting and measures for recharge of groundwater should be reflected.
- (xx) Impact of blasting, noise and vibrations. Examine II surface miner and/rock breaker could be used to avoid blasting.
- (xxi) AAQ stations established near the edge of 10km buffer zone should be relocated close to habitation and one control station. Impact of mining on the AAQ, predictive modelling using the ISC3S (Revised) or latest model. Since the linked TPS is to be located within the 10 sq. m study area, the Committee desired that the AQIP Modelling should be carried for the integrated operation of the Coal Mine and the TPS at their peak capacity.
- (xxii) Impacts of mineral transportation - within and outside the lease along with flow-chart illustrating the specific areas generating fugitive emissions. Impacts of transportation by belt conveyer handling, transfer of mineral and waste on air quality, generation of effluents from workshop, management plan for maintenance of HEMM, machinery, equipment. Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities.
- (xxiii) Details of waste generation - OB, topsoil - as per the approved calendar programme and their management shown in figures as well explanatory chapter with tables giving progressive development and mine closure plan, green belt developments, backfilling programme and conceptual pool mining land use, OB dump height and structure should be based on slope stability studies with a max of 25° angle as the ultimate slope. The dumps should be situated away from the diverted rails with a clearance of at least 100m from the rails and any other water course. Section of dumps (ultimate), both longitudinal and cross section) with relation to the adjacent area should be shown.
- (xxiv) Impact and management of wastes and types of rehandling and backfilling as part of progressive mine closure and reclamation.
- (xxv) Flow chart of water balance. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. Details of STP in colony and RTP in mine. Recycling of water to the max possible extent.
- (xxvi) Occupational health issues. Baseline data on the health of the population and measures for occupational health and safety of the personnel and manpower for the mine and TPP.
- (xxvii) Disaster Management Plan and risk assessment.
- (xxviii) Integrating in the Env. Management Plan with measures for minimizing use of natural resources - water, land, energy, etc.
- (xxix) Progressive Green belt and afforestation plan (both in text, figures as well as in tables prepared by MOEF). Selection of species (local) for the afforestation/plantation programme based on original survey/landuse.
- (xxx) Conceptual Final Mine Closure Plan with financial allocation including decommissioning and details of post-mining land use developments and for habitat restoration of land/habitat to pre-mining. Plant species should be native species and exotics should be avoided for habitat restoration.
- (xxxi) Including cost of EMP (capital and recurring) in the project cost and for progressive and final mine closure plan.


Deputy Chief Engineer (PPC&F)
RRVUNL, Jaipur

ANNEXURE-I
COPY OF TOR ISSUED BY MOEF AND COMPLIANCE

- (xxvii) Detailed R&R Plan with specific details addressing tribals, their relocation, land, livelihood options, etc under the existing legislations as applicable. Detailed R&R Plan with data on the existing socio-economic status of the population in the study area and broad plan for resettlement of the displaced population, etc for the resettlement colony, alternative livelihood options/employment for the displaced people, civic and housing amenities, bank offered, etc and the schedule of the implementation of the R&R Plan.
- (xxviii) Detailed plan for socio-economic and welfare measures. The PP may explore establishment of cooperatives with some run by women involving entrepreneurship/skills/resources of the local area and involving local communities.
- (xxix) Public Hearing should cover the details of notices issued in the newspaper and community models, etc. The notices issued by the general public and community models, etc. form of the Public Hearing is in the regional language of the concerned State. The details of the same should be provided.
- (xxx) In-built mechanism of self monitoring of compliance of environmental regulations.
- (xxxi) Manpower req. was high and should be re-examined.
- (xxxii) Status of any litigation/ court cases filed/pending on the project.

The following general points should be noted:

- (i) All documents should be properly indexed, page numbered.
- (ii) Period/dates of data collection should be clearly indicated.
- (iii) Authenticated English translation of all material provided in Regional languages.
- (iv) After the preparation of the draft EIA-EMP Report as per the aforesaid TOR, the proponent shall file the Public Hearing conducted as prescribed in the EIA Notification 2006 and take necessary action for obtaining environmental clearance under the provisions of the EIA Notification 2006.
- (v) The letter/application for EC should quote the MOEF file No. and also attach a copy of the letter prescribing the TOR.
- (vi) The copy of the letter received from the Ministry on the TOR prescribed for the project should be attached as an appendix to the final EIA-EMP Report.
- (vii) The final EIA-EMP report submitted to the Ministry must incorporate the issues in TOR and that raised in Public Hearing. The index of the final EIA-EMP report must indicate the specific chapter and page no. of the EIA-EMP Report where the specific TOR prescribed by Ministry and the issue raised in the P.H. have been incorporated.

After the preparation of the draft EIA-EMP Report as per the aforesaid TOR and the public hearing conducted as prescribed in the EIA Notification 2006 and the proponent take necessary action for obtaining environmental clearance under provisions of the EIA Notification 2006.

(Signature)
(Dr. T. Chandni)
Director

Copy to: Chairman, Chhattisgarh Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Aranti Vihar, RAIPUR-Chhattisgarh - 492001.

No. RVUN/CE (PPO & F)/P. /D. /148
Copy to M/s Adani Enterprises Ltd. Adani House, Plot No.83 Sector-32, Institutional Area, Gurgaon (Haryana) for information and necessary action please.

Dated: 1-6-08

(Signature)
Date

ANNEXURE-I
COPY OF TOR ISSUED BY MOEF AND COMPLIANCE

No J-11015/03/2008-1A.11(M)
Government of India
Ministry of Environment & Forests

Parvayan Sharma,
CGO Complex,
New Delhi-110510.

To

Dated: 11th July 2008

M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd.,
Vidyut Bhawan, Janpath,
Jodhpur,
JAIPUR - 302005.

Subj: Parsa East and Kente Basin Opencast Mine Coal Washery (10 MTPA) of
Rasdao-Arand Coalfields in Tehsil Udaypur, Dist. Sarguja, Chhattisgarh.
Terms of Reference (TOR) - rag.

Sr.

The undersigned is directed to refer to your letter no. RVUNCE (PPC & F)/F./D.557 dated 29.05.2008 regarding the above-mentioned subject. The proposal was considered in the EAC (T&C) meeting held on 28th - 30th June 2008. It was noted that the aforesaid proposal is for establishing a coal washery within the premises of the Parsa East & Kente Basin Opencast Coal Mine which was granted TOR on 18.03.2008 for establishing the Parsa East & Kente Basin Opencast coal mine project of 10 MTPA within a lease area of 2767 ha. The present proposal is for establishing a pithead coal washery of 10 MTPA capacity within the ML area. The total area required for the coal washery is 30 ha. The mine water after intersection of the water table after 3 years of mine operation, would be used for the coal washery. It was informed that during the first 3 years, water from River Auhum, The washed coal would be sent by rail. The washery would generate 3 MTPA of coal rejects. The company plans to tie-up with another company for use of the coal rejects. The coal rejects amounting to about 4000 TPD would involve 150 trucks for their transportation.

The Committee was of the view that no transportation of the wastes/rejects should be permitted by road. The proponent should explore the use of the rejects in their own FBC TPP in case transport by conveyor/HGR/rail to another user cannot be tied up.

The Committee based on the application and the documents furnished, presentation made and discussions held, recommended the TOR as given below:

- (i) The impacts of the washery onto the environment quality - air (SPM, RSPM, SOx and NOx), noise, water (surface and groundwater), soil and should form a part of the EIA-EMP Report prepared for the Parsa East & Kente Basin Opencast Mine for which TOR was granted on 18.03.2008.
- (ii) The Report should contain a brief description of the plant, the technology used, the source of coal, the mode of transport of incoming unwashed coal and the outgoing washed coal. Specific pollution control and mitigative measures for the entire process.
- (iii) Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations vis-à-vis washery should be given separately.

ANNEXURE-I
COPY OF TOR ISSUED BY MOEF AND COMPLIANCE

- source of water for use in mine, sanction of the competent authority in the State Govt. and examine if the unit can be zero discharge including recycling and reuse of the wastewater for other uses such as green belt, etc.
- (vi) Impact of choice of the selected use of technology and impact on air quality and waste generation (emissions and effluents).
 - (v) Management/disposal/use of coal waste rejects No transportation of the waste/rejects should be permitted by road. The proponent should explore the use of the rejects in their own FBC TPP in case transport by conveyor/MGR/rail to another user cannot be set up.
 - (vi) Details of green belt development.
 - (vii) Including cost of EMP (capital and recurring) in the project cost.
 - (viii) Submission of sample test analysis of:
 - i. Characteristics of coal to be washed- this includes grade of coal and other characteristics - ash, S and Hg level etc.
 - ii. Characteristics and quantum of washed coal.
 - iii. Characteristics and quantum of coal waste rejects
 - (ix) Public Hearing should be held for the Coal mine-cum washery unit.

The following general points should be noted:

- (i) All documents should be properly indexed, page numbered.
- (ii) Period/date of data collection should be clearly indicated.
- (iii) Authenticated English translation of all material provided in Regional languages.
- (iv) After the preparation of the final EIA-EMP Report on the coal mine-cum-coal washery as per the TOR granted on 18.05.2008 along with TOR as above, the proponent shall get the Public Hearing conducted as prescribed in the EIA Notification 2006 and take necessary action for obtaining environmental clearance under the provisions of the EIA Notification 2006.
- (v) The copy of the letter received from the Ministry on the TOR prescribed for the project should be attached as an enclosure to the final EIA-EMP Report.
- (vi) The final EIA-EMP report submitted to the Ministry must incorporate the issues in TOR and that raised in Public Hearing. The index of the final EIA-EMP report, must indicate the specific chapter and page no. of the EIA-EMP Report where the specific TOR prescribed by Ministry and the issue raised in the P.H. have been incorporated.

Yours faithfully,

(Dr. T. Chandini)
Director

Copy to: Chairman, Chhattisgarh Environment Conservation Board, 14/3 Park Street,
Choubey Colony, Raipur - 492001.

P. K. Sengupta
Deputy Chief Engineer (PPC&F)
RRVUNL, Jaipur

ANNEXURE - III

Detail of Villages Coming under the proposed project , Parsa East & Kente Basen Opencast Coal Mine & Washery Project

Sr.No.	Name of the villages	The Distance of the Village (in k.m.) from Project site	Total Household	Population		
				Male	Female	Total
Core Zone						
1	Salhi	0.5	179	534	539	1073
2	Hariharpur	0.5	47	114	111	225
3	Parsa	0	189	466	400	866
4	Parogia	0.5	55	140	138	278
5	Ghatbarra	1.0	189	557	541	1098
6	Kete	1.25	94	236	247	483
7	Basen	1.25	83	216	208	424
Buffer Zone						
1	Shivnagar	2.0	104	399	364	763
2	Suskam	3.0	19	62	42	104
3	Sontarai	3.0	720	353	181	367
4	Janardanpur	3.0	73	179	171	350
5	Tara	4.0	243	548	488	1036
6	Mendra	4.0	94	234	246	480
7	Fatepur	3.8	74	205	194	399


 Deputy Chief Engineer (PPC&F)
 RRVUNL, Jalpur

ANNEXURE - IV

**List of Joint Forest Management Committees functioning in
the Project Area.**

Sr.No.	Name of the R.A. Circle	Name the Beat	Name of JFM Committee
1	Tara	Tara	Tara
2	Tara	Tara	Fatehpur
3	Tara	Abhaipur	Mendra
4	Basen	Basen	Parsa (a)
5	Basen	Basen	Parsa (b)
6	Basen	Basen	Kete
7	Basen	Ghatbarra	Ghatbarra (a)
8	Basen	Ghatbarra	Ghatbarra (b)
9	Tara	Tara	Hariharpur (a)
10	Tara	Tara	Salhi (a)
11	Basen	Basen	Basen
12	Basen	Chakeri	Basen
13	Basen	Gharbarra	Suskum
14	Basen	Parogia	Parogia
15	Basen	Sontarai	Sontarai
16	Tara	Tara	Janardanpur
17	Tara	Tara	Salhi (b)
18	Tara	Hariharpur	Hariharpur (b)


 Deputy Chief Engineer (PPC&F)
 RRVUNL, Jaipur



ANNEXURE-V

आरक्षीय वन्यजीव संस्थान
Wildlife Institute of India
29th February, 2012-02-29

No.DWII/0149/2012

To

Shri S.P. Singh
Sr. Assistant Inspector General of Forests
F.C. Division
MoEF, Paryavaran Bhavan
CGO Complex, Lodi Road
New Delhi-110003

Subject:- **Regarding integrated Wildlife Management Plan in respect of proposals for Tara Parsa East and Kante Basen Coal-Blocks in Chattisgarh.**

Reference:- 1. Your letter No. F.No.8-31/2010.FC dated 18.1.2012.
2. PCCF Office letter No. का/मु प्रबंध/खनिज/246/194 dated 4.2.2012.

Sir,

Pursuant to your letter under reference, the State Government of Chattisgarh has submitted two separate Wildlife Conservation/Management Plan in respect of Proposals for Tara and for Parsa East - Kante Basen Coal Mine. State Govt. Of Chattisgarh vide its letter under reference 2, has stated that these two plans have been prepared in compliance to para 7 of Stage I clearance for diversion of forests for two separate proposals namely Tara and Parsa East -Kante Basen Coal block granted vide MoEF letter No.F-8-38/2009/FC dated 5th July, 2011 and F-8-31/2010/FC dated 6th July, 2011 respectively.

2. The coal blocks, in question, though proposed to be worked by two separate agencies, are close to each other and form part of South Surguja Forest Division only. In fact the aerial distance as calculated in GIS domain between Tara Coal block and Parsa East and Kante Basen Coal blocks is about 2.5 kms. only. There is more than 50% overlap in the buffer zone of these projects (Annexure I). Therefore preparing two separate Wildlife Management Plans was not required. It would have been appropriate to have one wildlife management for this landscape. However, since these two plans have now been prepared in compliance of Stage I clearance to two project proposals, comments have been provided accordingly in Annexure II and III separately. These comments may please be included in the respective plan by the state gov. of C.G

Yours faithfully,

(P.R. Sinha)

Director

Copy to: Shri Mudit Kumar Singh, Chief Conservator of Forests, Raipur, Chattisgarh with reference to his letter dated 4.2.2012.

(P.R. Sinha)


Deputy Chief Engineer (PPC&F)
RRVUNL, Jaipur

Shri S.P. Singh
Sr. Assistant Inspector General of Forests
F.C. Division
MoEF, Paryavaran Bhavan

29th February, 2012-02-29

To

INDW/0149/2012

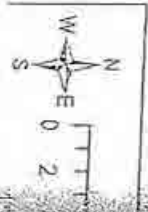


38

Forest Reserve
Forest
Boundary

Shade
Water

Scale 1 inch = 1 mile



6 1/2 in

Annexure II

Comments on Wildlife Habitat Conservation and Management Plan for Tara Coal Project.

Para 2.5 page 1742

Statement in para 1 that 'hence there is no threat to wildlife or biodiversity from Tara coal project of Chattisgarh Mineral Development Corporation' is at variance with para 6.4 (fauna) which says that 'the study area has low density of wild fauna' and should, therefore, be deleted.

Para 9

Zonation Atlas

The assertion made in highlighted part under this para that 'The proposed zonation area is -----is not posing any threat to wildlife or biodiversity of the area' is not relevant. Such statement should be deleted as no survey or study has been done in an area.

Para 9.1

The statement that 'there is no threat to wildlife or biodiversity from Tara Coal project of Chattisgarh Mineral Development Corporation' should be deleted for the reasons mentioned in paragraphs above.

10.8

The statement that 'But Wildlife Census is undertaken -----at a given period of time' should be deleted. It is not correct to say that as wildlife is constantly on move, it is impossible to determine which biome it occupies at a given period of time'.

Annexure III

Comments on Wildlife Conservation Plan of Parsa East and Kente Basen Open Cast Coal Mine and Washery Project

General

1.

1.1 The letter of PCCF and Chief Wildlife Warden, Chattisgarh attached with the report mentions about study report of IIFM Bhopal on the flora, fauna and elephant movement and depredation. The study report is relevant for preparation and implementation of conservation plan as it appears to contain information in addition to inventorization of fauna and flora. It should therefore be annexed to the report as it may help in developing and implementing annual plans by the Implementing agency. ✓

1.2 Apart from ₹ 20.00 crore proposed in the management plan, PCCF WL has recommended additional 2.00 crores for the plan. The details are given in the letter No. तनांक/मा०चि०/०९/८०० dated 2.9.2009 from DFO South Surguja Division Ambikapur which is appended with the plan document. The proposed activities include survey and identification of snakes and provision for Snakes Park (SI.No.7) with an outlay of ₹ 100 lakhs. Similarly at SI.No.9 provision for ₹25.00 lakh under 'Analyze of Elephant Diet components and planting of suitable tree species on the migration plan impact of habitat alteration reptiles' is not clear as to what it means. SI.No.10, 11, 12, 13 are also not clear. It is therefore suggested the CWLW should review the proposed work as they do not seem to us to be appropriate as part of the Wildlife Management Plan. The provisions made in SI.No.7, 9, 10, 11, 12, 13 may be considered for utilizing on programmes for reducing dependence of cattle and people on the forest in the region and for establishment of Rapid Response and Rescue teams for mitigating human wildlife conflict.

Para 15.1 to Para 26.2.3.8

(Pages 1773 -1880)

The details given in the para 15.1 to Para 26.2.3.8 spanning 107 pages is devoted to elephant related matters. The details range from issues like physiology of elephants, domesticated elephants, acoustic analysis of calls, population estimation techniques etc. The PCCF Wildlife may look into it and decide on the relevance of the material provided in the document and decide on retaining it as part of the main text. In my view the entire section from para 15.1 to 26.2.3.8 should either be deleted or given as annuxure to the plan for reference only.

Para 28 Financial Estimates for the Project

In view of the comments above, the Table 31 should be revised as under -

- (1) The components under Sl.No.1 A (d), (f), (J)&(k) should be deleted. The total financial outlay provided in all these four activities comes to ₹190 lakhs. This amount should be used for establishment of Rescue and Rehabilitation teams to deal with problem animals including elephants. The details may be worked out by the Forest Department in consultation with forest department of Madhya Pradesh or Gujrat where such teams form part of wildlife management.

Para 31

The proposal for Monitoring and Evaluation provided in Para 31 is welcome as it would ensure proper implementation of plan. However, it would be appropriate to include Chief Wildlife Warden of the state as part of the monitoring committee. It will provide the perspective from wildlife angle to preparation and implementation of annual plans.

Para 3.3.1

Comments on activities proposed to be carried out under General Protection works are as under:-

Page 16 (2) Protection from Grazing and Illicit felling and plantation.

The prescriptions given are general in nature and do not identify the underlying factors for unregulated grazing and illicit felling in the area. Generally, unremitting biotic pressure which includes excessive grazing, causes habitat degradation. In such scenario prescription of planting suitable species does not work nor are necessary from wildlife management stand point. The focus should be on taking appropriate measures to reduce biotic pressure and allow natural regeneration. Hence prescription of 'plantation of suitable species' should be deleted. In fact the prescription provided in under para (3) 'Empowering People for Protection' should be the main plank of management strategy.

Page 17

Under Para (4) Soil & Moisture Conservation Works:- Under this heading six generic prescriptions are given. The prescription of plantation under (vi) in open area is not appropriate from Wildlife Management point of view and should be deleted.

Para 3.3.2 Specific Conservation Measures

The main thrust in any wildlife management plan should be minimum management intervention in the habitat. The habitat management should be either ameliorative, i.e. removal/reduction of negative factors and compensatory development i.e. bringing back attributes which have been lost over a period of time. Accordingly, prescription under (B) vi on page 21 'sowing of palatable grass seeds and berseem' should be deleted. Instead the prescription should be for planting of such local species of grasses which are found in the area. Weed management should be done as per guidance of expert scientist or forester having experience in dealing with weed ameliorative measures.

कार्यालय वनमण्डलाधिकारी, दक्षिण सरगुजा वनमण्डल अम्बिकापुर (छ.ग.)

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क्रमांक/मा.चि./09/३००६
प्रति.

अम्बिकापुर, दिनांक/०२/०९/२००९

वन संरक्षक,
सरगुजा वन वृत्त,
अम्बिकापुर (छ.ग.)

विषय :- Wild life Conservation Plan of Parsa East & Kente Basen opencast Mine and pit head coal washery of 10 MTPA each of M/s. Rajasthan Rajya Vidyut Utpadan Nigam Limited of Hsdo-arand Coalfields Tehsil Udaipur Sarguja Chhattisgarh- schedule-I faunal species reg.

संदर्भ:- आपका पत्र क्रमांक/मा.चि./2009/3020 दिनांक 11.06.2009 एवं पत्र क्रमांक/मा.चि./4315 दिनांक 18.08.2009.

—00—


विषयांतर्गत संदर्भित पत्र के अनुक्रम में उप वनमण्डलाधिकारी, उदयपुर के द्वारा परसा ईस्ट एवं केंते बासेन कौन्टिव कोल ब्लॉक परियोजना में प्रस्तावित क्षेत्र का स्थल निरीक्षण/भ्रमण किया गया। उप वनमण्डलाधिकारी, उदयपुर के पत्र क्रमांक/781 दिनांक 02.09.2009 के अनुसार प्रस्तुत कंजरवेशन प्लान में प्रावधानित राशि रूपये 20.00 करोड़ के अतिरिक्त निम्न बिन्दुओं पर अतिरिक्त राशि का प्रावधान किया जाना प्रस्तावित किया गया है :-

S.No.	Particulars	Proposed Amount (In Lakh)
1.	Creation of Forest resources in the peripheral area of buffer Zone line fodder fuel wood and MFP by identifying the suitable area for respective plantations.	5.00
2.	Survey and identification of wetland in the proposed area.	10.00
3.	Survey & study on Broidery of proposed site.	5.00
4.	Management of identified wetland for better Wildlife Habitat formation.	5.00
5.	Habitat Survey for the respective project site.	5.00
6.	Survey and identification of reptiles, Bird, Butterfly, Insects available in the project site.	10.00
7.	Survey and identification of Snakes Provision for Snakes park.	100.00
8.	Medicinal Plants Survey & identification in the proposed project site.	10.00

9.	Analyze of Elephant diet components and planting of suitable tree species on the migration plan impact of habitat alterations on the reptile.	25.00
10.	Diversity in the project area in the paternal of one year.	5.00
11.	Impact of habitat alteration on the Birds divert in the project area in the internal of one year.	5.00
12.	Impact of habitat alteration on the Butterflies divert in the proposed project area in the internal of one year.	5.00
13.	Impact of habitat alteration on the medicinal plants.	5.00
14.	Physiochemical properties of wetland in the initial mid and end of the project period for the respective project site.	5.00
Total :-		200.00

राजस्थान राज्य विद्युत उत्पादन निगम द्वारा प्रस्तुत वाईल्ड लाईफ कंजरवेशन प्लान के अंतर्गत उपरोक्तानुसार राशि सम्मिलित किया जाना उचित होगा।

प्रतिवेदन अवलोकनार्थ एवं आवश्यक कार्यवाही हेतु सम्प्रेषित है।



वनमण्डलाधिकारी

दक्षिण सरगुजा वनमण्डल
अम्बिकापुर (छ.ग.)

पृ.क्रमांक/मा.चि./09/२०१

अम्बिकापुर, दिनांक/०२/०९/२००९

प्रतिलिपि :- उप वनमण्डलाधिकारी, उदयपुर एवं वन परिक्षेत्राधिकारी, उदयपुर को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।


वनमण्डलाधिकारी

दक्षिण सरगुजा वनमण्डल
अम्बिकापुर (छ.ग.)

कार्यालय वन संरक्षक, सरगुजा वनवृत्त, अम्बिकापुर, छत्तीसगढ़

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क०/मा०चि०/...../2009

अम्बिकापुर, दिनांक

प्रति

प्रधान मुख्य वन संरक्षक,

(वन्यप्राणी)

रायपुर (छ.ग.)

2340
8-9-09

विषय :-

Wild life Conservation Plan of Parsa East & Kente Basen opencast Mine and pit head coal washery of 10 MTPA each of M/s. Rajasthan Rajya Vidyut Utpadan Nigam Limited of Hsdo-arand Coalfields Tehsil Udaipur Sarguja Chhattisgarh- schedule-I faunal species reg.

संदर्भ:-

आपका पत्र क्रमांक/व.प्रा./प्रबंध/1805 दिनांक 03.08.2009.

—00—

विषयांतर्गत परसा ईस्ट एवं केते बासेन कोटिव कोल ब्लॉक परियोजना हेतु प्रस्तुत वाईल्ड

D.F.O.
South Surguja Dist
Ambikapur

लाईफ कंजरवेशन प्लान का परीक्षण वनमण्डलाधिकारी, त्रिगुण सरगुजा वनमण्डल, अम्बिकापुर द्वारा किया गया है। वनमण्डलाधिकारी, दक्षिण सरगुजा वनमण्डल अम्बिकापुर के पत्र क्रमांक/मा.चि./800 दिनांक 02.09.2009 द्वारा प्रस्तुत प्रतिवेदन के अनुसार कंजरवेशन प्लान में प्रावधानित राशि रूपये 20.00 करोड़ के अतिरिक्त रूपये 2.00 करोड़ राशि का प्रावधान किया जाना प्रस्तावित किया गया है।

वाईल्ड लाईफ कंजरवेशन प्लान के अंतर्गत प्रस्तुत प्लान के अतिरिक्त वनमण्डलाधिकारी, दक्षिण सरगुजा वनमण्डल द्वारा प्रस्तावित बिन्दुओं का समावेश किया जाना उचित होगा।

प्रतिवेदन अवलोनार्थ एवं आवश्यक कार्यवाही हेतु सम्प्रेषित।

संलग्न :- उपरोक्त अनुसूची

वन संरक्षक

पृ.क०/मा०चि०/1378/2009

सरगुजा वनवृत्त, अम्बिकापुर
अम्बिकापुर, दिनांक 7/09/09

प्रतिलिपि :- वनमण्डलाधिकारी, दक्षिण सरगुजा वनमण्डल, अम्बिकापुर को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

वन संरक्षक
सरगुजा वनवृत्त, अम्बिकापुर

ANNEXURE - VII



in the name of Forest Dept. Jaipur
 13/08/08
 2008

[Signature]
 Deputy Chief Engineer (PPC&F)
 RRVUNL, Jaipur

**Flora Fauna Study & Wildlife Conservation
Plan of Parsa East & Kente Basen Opencast
Coal Mine & Washery Project**

Team

Yogesh Dubey

C.P. Kala

Team Leader: Yogesh Dubey

for

Rajasthan Rajya Vidyut Utpadan Nigam Ltd.

By



**Indian Institute of Forest Management
Bhopal – 462003, MP, India**

March 2009

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Introduction

1.1 Coal scenario in India

Energy is one of the basic inputs to the accelerated economic development. India now ranks 3rd amongst the coal producing countries in the world. According to the 2008 BP Statistical Energy Survey, India had end 2007 coal reserves of 56498 million tonnes, 6.66% of the world total. Through a sustained programme of investment and greater thrust on application of modern technologies, it has been possible to raise the production of coal from a level of about 70 million tonnes at the time of nationalization in the early 1970's to production of 478.18 million tonnes in 2007. Most of the coal production in India comes from open pit mines which contribute over 81% of the total production. A number of large open pit mines of over 10 million tonnes per annum capacity are in operation. Underground mining currently accounts for around 19% of national output. Most of the production is achieved by conventional Bord and Pillar mining methods.

Coal is the dominant energy source in India, accounting for more than half of the country's requirements. 70% of India's coal production is used for power generation, with the remainder being used by heavy industry and public use. Domestic supplies satisfy most of India's coal demand. According to the 2008 BP Statistical Energy Survey, India had 2007 coal consumption of 208 million tonnes oil equivalent. Unfortunately most of India's coal is characterized by high ash content, but the quality has other useful qualities such as low sulphur content (generally 0.5%), low iron content in ash, low refractory nature of ash, low chlorine content and low trace element concentration.

About 88% of the total coal production in the country is produced by various subsidiaries (a total of 390 mines) of Coal India L., which is the largest supplier of coal in the country. At present all private mines are allowed to operate only if they are producing coal to supply to a specific industry (e.g. power station, industry).

India has a long history of commercial coal mining covering nearly 220 years starting from 1774 by M/s Sumner and Heatly of East India Company in the Raniganj Coalfield along the Western bank of river Damodar. However, for about a century the growth of Indian coal mining remained sluggish for want of demand but the introduction of steam locomotives in 1853 gave a fillip to it. Within a short span, production rose to an annual average of 1 million tonne (mt) and India could produce 6.12 mts. per year by 1900 and 18 mts per year by 1920. The production got a sudden boost from the First World War but went through a slump in the early thirties. The production reached a level of 29 mts. by 1942 and 30 mts. by 1946.

With the advent of Independence, the country embarked upon the 5-year development plans. At the beginning of the 1st Plan, annual production went upto 33 mts. During the 1st Plan period itself, the need for increasing coal production efficiently by systematic and scientific development of the coal industry was being felt. Setting up of the National Coal Development Corporation (NCDC), a Government of India Undertaking in 1956 with the collieries owned by the railways as its nucleus was the first major step towards planned development of Indian Coal Industry.

1.2. Environmental Implications

Mineral production is often not in consonance with conservation of forests. Since at many places commercial reserves exist below thick forests, minerals are taken out from the mother earth using appropriate mining method. Most of the time to reach the ore body/ coal seams, huge quantum of overburden is removed. There are large numbers of environmental issues associated with mining. The existing terrestrial configuration gets disturbed and the magnitude of disturbance depends on surface topography, depth of deposit, size of operation, excavation technology, beneficiation process etc.

A major conflict arises between development and biodiversity conservation when projects are located in the wilderness areas. Losses are incurred due to desiccation of forest and loss of biodiversity, change in drainage pattern, displacement of people, soil erosion, dust, noise, water pollution and health and safety aspects. Usually with the implementation of such projects the migratory tract may come under greater pressure, compounding the impacts upon conservation of flora and fauna.

1.3 Need for an EIA

As per the Environmental Impact Assessment Notification (2006, revised), Govt. of India mining projects have been classified as A category projects. Under this notification no new developmental projects can be undertaken in any part of India unless environmental clearance has been accorded by the Central Government. The proposed mining project falls under the category "A" which makes an EIA a very important prerequisite.

1.4 Role of Indian Institute of Forest Management

Indian Institute of Forest Management (IIFM), Bhopal has been retained to carry out a Flora fauna study of the proposed project area, i.e. Parsa East and Kente Basen coal block in Surguja District, Chhatisgarh and prepare a wildlife conservation plan as per TOR stipulated by the Ministry of Environment and Forests for EIA study (Annexure I).

1.5 Scope of Work

The following is the scope of work in brief:

- Study of existing Flora and Fauna of the project site and 10 km around.
- Preparation of Wildlife Conservation Plan for endangered flora and fauna.
- To determine if the project site forms corridor for any endangered faunal species or not or whether there exists any elephant corridor in the buffer zone of the mining lease area.

The report is presented in two parts. The Part I is the Flora Fauna study and Part II is the Wildlife Conservation Plan.

Project Description

2.1 Project Description

Parsa East & Kente Basen Coal blocks of Hasdo-Arand Coalfield, Surguja District, Chhattisgarh have been allotted to the Rajasthan Rajya Vidyut Utpadan Nigam Ltd., Jaipur (RVUNL) vide letter no. 13016/74/2006 - CA - I dt. 19/25 June 2007. These two blocks have been allotted to meet coal requirement of RVUNL's two proposed thermal power projects, i.e. Chhabra Phase-II (500 MW) and Jhaliwar (Kalisind 1000 MW). The project at a glance is as follows:

1.	Name of Coal Block	Parsa East & Kente Basen
2.	Location	Hasdo-Arand Coalfield, Tehsil: Udaypur, Dist.: Surguja, State: Chhattisgarh.
3.	Climatic Conditions	Annual maximum temperature: 42.52°C Annual minimum temperature: 5.0°C Humidity range: 26 % to 92 % Average annual rainfall: 1400 mm
4.	Topography	Elevated flat land with a small rounded or elongated mounds. Elevation ranges from 513 to 560 m.
5.	Mine Area / block Area	2711.034 ha.
6.	Coal Reserves (Geological)	532.86 Mill. tonnes
7.	Overburden	2334.62 M Cum
8.	Stripping Ratio	1:5.16
9.	Quarry Depth (Max)	225m
10.	Mine life	50 years
11.	Present Land Use	Forest land : 1898.328 Ha. Govt. Land : 110.543 Ha. Agricultural Land : 702.163 Ha. Total : 2711.034 Ha.
12.	Target Production Capacity	10 Million tones per annum (MTPA) Pit head Washery - 10 MTPA (ROM)
13.	Mining Technology	OB- By Shovel-Dumper Combination Coal-By Surface Miner

2.2 Site Details

The allotted coal blocks are located in the north central part of Hasdo-Arand coalfield bounded by latitude $22^{\circ} 47' 39.1''$ to $22^{\circ} 50' 54.3''$ N & longitude $82^{\circ} 46' 38.6''$ to $82^{\circ} 50' 50.8''$ E covered by Survey of India Toposheet No. 64J/13.

The main accessibility to Hasdo-Arand Coalfield is from State Highway No.2A, which passes almost through the central part of the Coalfield. Parsa East & Kente Basen blocks are approachable from Salhi-Parsa (8 Km.) metalled road branching SH-2A at about 6 km. from Tara village toward Ambikapur. The distance of Tara village is 158 km. from Bilaspur. The total distance of Kente Basen from Bilaspur is 175 Km.

Kente and Parsa are the two prominent villages spread over in the northern part of the block. The houses are scattered over Harrapara & Mahadevpara settlements. In the central and southern region, houses are spread over in Patelpara and Ghatbarea settlements. The location map is presented in Plate 2.1 and Plate 2.2.

2.3 Topography and Drainage

The block area is characterized by elevated flat land with a few small rounded or elongated mounds. It is incised by a number of seasonal streamlets. The elevation of the area ranges from 513 m to 560 m with higher value in the north and the lower in the south. There is no major stream in Kete area although number of small ephemeral streams flow through the block.

2.4 Geology

In general, the sedimentary deposits in Hasdo-Arand Basin show E-W to NW-SE strike with 3° to 5° dip towards south. In the block area, the deposits show NW - SE strike with dip about 3° towards SW. Few faults of throw up to 20 meter are also expected to occur in the area.

2.5 Coal Quality

The quality of coal to be extracted is of "F" grade.

2.6 Coal Evacuation

It is planned to dispatch coal from mine face / washery to the power plants by rail. No railway line passes through the allotted blocks. The nearest rail head is at Jainagar on Anuppur-Amilikapur, a branch line of SEC Railways. Approximate distance between mine and Jainagar is 70 km. Therefore, a 70 km long rail track will have to be established.

Feasible alignment is likely to be Jainagar-Kulashpur-Fathepur-Newardand-Parsodikalan - Puhuputra - Gorta - Lakshmanpur - Andhla - Aingas - Santarn (Udaipur) - Dandgaon - Shivnagar - Salhi - Parsa. Most suitable alignment is being surveyed by experts.

2.7 Mining Technology

For OB removal hydraulic diesel operated shovel dumper combination will be used with drilling and blasting. Since the property is flat, surface miner will be deployed for cutting of coal to (-)100mm size and loading by pay loader to dumpers / trucks. This technology is cheaper, eco-friendly and avoids drilling, blasting and crushing. Coal quality dilution from roof and floor also gets reduced by using the surface miner. The coal will be transported from face to Railway siding / washery as per need.

2.8 Manpower

The manpower requirement is estimated as 1707 and executives strength as 50. Housing provisions will be made keeping 60% satisfaction for staff and 100% for executives.

2.9 Land Use

2.9.1 Pre-Mining Land Use

The total land involved in the proposed project is 2711.034 ha. This excludes the requirement of township. The break-up of land use is as follows:-

i) Forest Land	= 1868.328 ha
ii) Agricultural Land	= 702.163 ha
iii) Govt. Land	= 110.543 ha

	= 2711.034 ha

2.9.2 Land Use during mine life

Land use will undergo progressive changes from the mine development stage to mine decommissioning phase.

a) Quarry area	= 2371.705 ha
b) OB Dumps (External)	= 165.830 ha
c) Washery	= 47.340 ha
d) Colony	= 31.440 ha
e) Infrastructure	= 21.620 ha
f) Buffer and rationalization area	= 73.099 ha
Total Mine Lease Area	= 2711.034 ha

2.9.3 Land Use at the end of Mine Life

a) Mine Void (water body)	= 219.255 ha
b) Reclaimed Area	= 1968.770 ha
c) OB Dumps (External)	= 165.830 ha
d) Infrastructure	= 21.620 ha
e) Rationalization area	= 56.279 ha
f) Washery	= 47.340 ha
g) Colony	= 31.440 ha
Total Mine Lease Area	= 2711.034 ha

2.10 Project area

Chhattisgarh is rich in forest resources. About 44% of the total area of the State is under forest cover. 53.9 % of the total geographical area of Surguja District itself is under forest cover.

As per Udvardy (1975), the State is placed under Indo-malayan realm. Sal and mixed forests are the main forest types of Chhattisgarh. Biogeographically the state is placed in Deccan Plateau zone and the project site falls on the border of 6B (Deccan peninsula Chota Nagpur) and 6C Deccan peninsula Eastern Highlands (Rodgers and Panwar, 1988).

The project area mainly comprises of Sal forest and falls under the south Surguja Division of Surguja forest circle. The mine block is part of the Udaipur range of south Surguja Division. The forest is mainly protected forest with site quality III for most of the area and site quality IV A in some of the compartments. The major forest type observed in the project and the study area is northern dry mixed deciduous forest. The forest density ranges from open to dense. In areas close to human interferences forests are affected as a result of tree cutting and grazing, which has resulted in low density of tree cover. Trees of mature ages are observed in the project site. The major tree species reported in the study area including buffer zone are Sal (*Shorea robusta*), Salai (*Boswellia serrata*), Saja (*Terminalia tomentosa*), Kusum (*Scheuchzeria oleosa*), Tendu (*Diospyros melanoxylon*), Chai Bochimula langan, Dhauri, Anogeissus latifolia, Salhi, Baswellia serrata, Jamti Eugenia heyneana and Bihwa (*Semicarpus anarcardin*). Bamboo (*Dendro calamus striatus*) is also seen in some of the areas.

Faunally the area is not very rich as the wildlife in area is very scarce except sloth bears which are relatively abundant in the area.

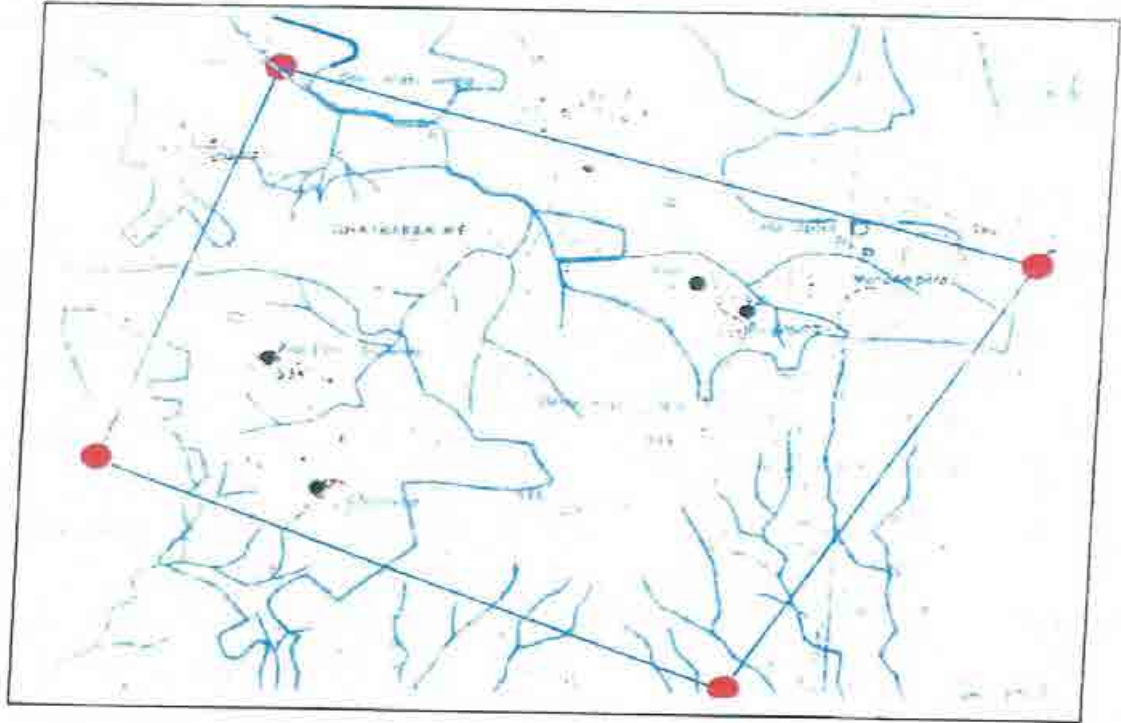


Plate 2.1 Location Map Proposed Mining Lease area

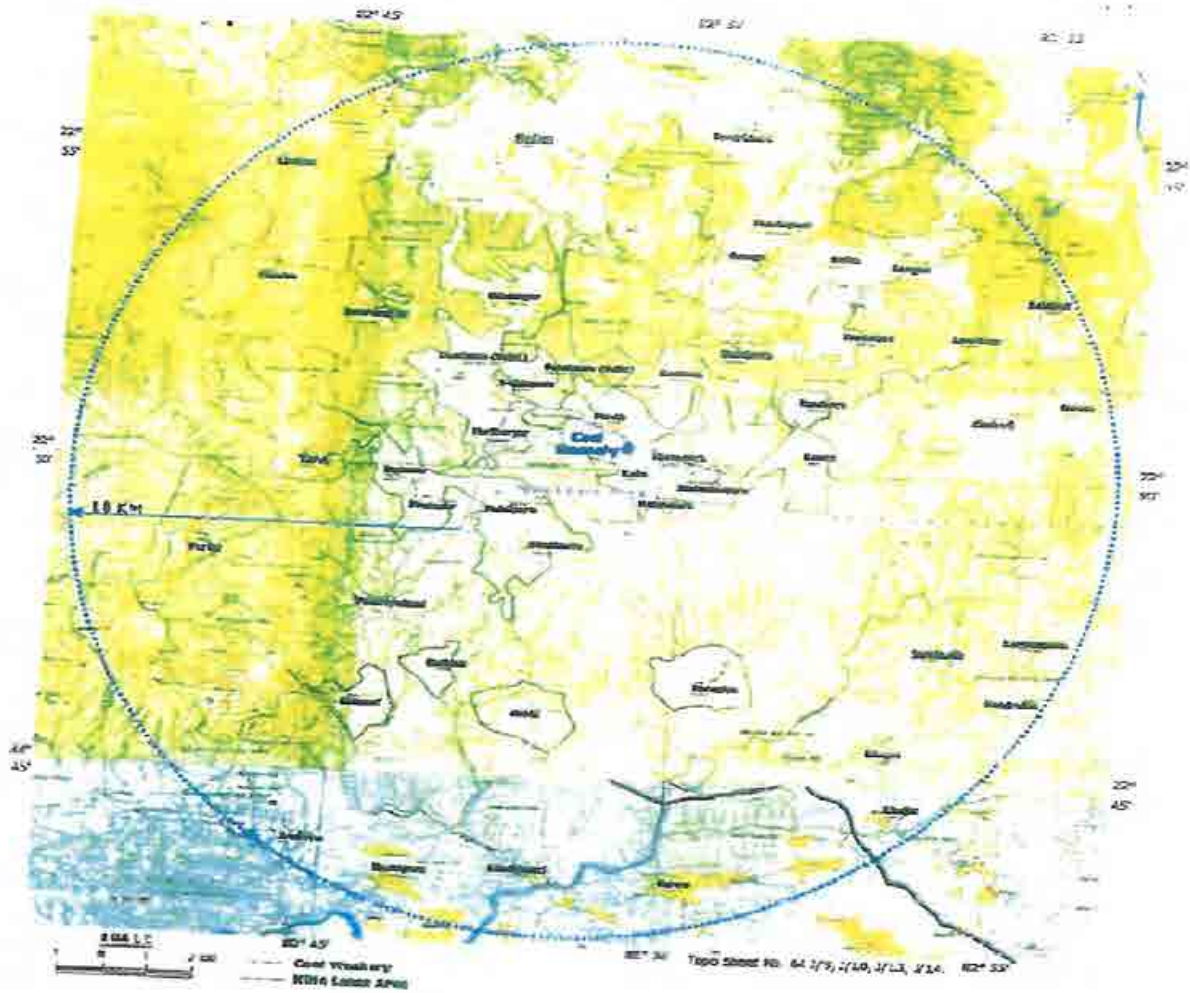


Plate 2.2. Map of study area showing core and buffer zone

3

Ecological Baseline Data- Methods

Baseline information forms an important part of the ecological component of EIA. Field surveys are important as they help identifying important habitats, resident and migratory species and communities, corridors and parameters that enable potential impacts to be assessed. The methodological approach of assessing different parameters of the study is described below.

3.1 Methods for Ecological Observations

Field surveys were conducted between August 2008 to September 2008 in the Core zone (project area) and Buffer zone (10 km radius from the outer periphery of the core) hereinafter referred to as study area (Plate 2.2). Field surveys are important for ascertaining the project location as they help in finding important habitats, species and communities, corridors and other important ecological parameters. A comprehensive assessment (including relevant quantitative information) was carried out during this study.

A cross section of the area was traversed on foot for the purpose of preliminary ecological understanding of the study area. The assessment team traversed the entire proposed project area so as to make a complete coverage of the study area. General characteristics of landscape, vegetation and land use were noted. Assistance of local people conversant with local flora was also taken during the field visit. Standard field guides were used to aid in the identification and validation. The rare, threatened and endemic species of plants, animals and birds of the region were identified through the literature consultation.

3.2 Habitat Assessment

The term habitat has been used here in a broader sense for general land cover rather than for a particular species. A rapid habitat assessment was carried out in core and buffer zones of the proposed coal block. Rapid surveys were carried out for overall assessment and characterization of landscape of the study area. Based on the interpretation of landscape and habitat assessment, key habitat areas as well as significant landscape elements were identified. The extensive network of roads and trails were used for the rapid assessment of habitat in the study area.

3.3 Flora

For sampling and systematically surveying the project area, the entire area was surveyed for understanding the patterns in vegetation distribution and the current status of floristic diversity.

Extensive floral surveys were carried out in the study area. Systematic surveys of plant species were conducted in the proposed project area covering various microhabitats, altitudes, aspects and terrain types. Field identification of plants was made with the help of relevant flora such as D.O will and Haynes Flora.

The quantitative survey of flora was carried out using the line transect sampling method. Line transects and plot sampling was used in the entire study area to collect data on vegetation. Standard field guides were used to aid in the identification and gather more information of the floral diversity along the designated transects. Specimens of doubtful species were collected for further validation and verification. The detailed analysis of flora was attempted based on literature consultation on the rare, threatened and endemic plants of the region.

An ethnobotanical survey was conducted eliciting information through personal interview of villagers with the help of local assistants and also through direct and indirect observations made during the field surveys. Locals who practice traditional medical

practices and local traders were interviewed for more information on medicinal plants, uses and availability of various medicinal plants within the project area. Plot sampling was used to gather information on different vegetation forms. For Tree, Shrub and Herb study, quadrat size of 10m x 10m, 5m x 5m and 1m x 1m was used respectively. The plots for shrub and herbs were nested within the tree plots. A total of 84 plots were sampled during the study in the study area to assess the vegetation.

The vegetation in the buffer zone was extensively inventoried. At the same site the area was searched for the presence/absence of rare and threatened plants apart from general inventory search for rare plants that was carried out all along the buffer zone.

3.4 Fauna

Rapid surveys were carried out in all parts of core and buffer zone. The faunal surveys focused on mammals, avifauna, butterflies and reptiles. Intensive surveys were carried out in habitats in all the areas proposed coal block as it being the core area for the mining and maximum disturbance is expected in this area. Extensive surveys were carried out in the 10 km radius buffer zone as this area will not be directly impacted but will receive impacts of some order due to the proposed activity based on the distance from the core zone. Data on the presence/absence of the different faunal species in the study area were recorded largely based on direct and indirect evidences such as tracks, spoor, dung, calls and moults. Secondary information sources such as published information, unpublished reports, departmental records, personal communication and informal interviews with officials of various departments and villagers were also taken into account for supplementing site/specific primary data collected during field studies.

Standard field guides were used for identification of fauna during the surveys (Ali and Ripley, 1983; Grimmet *et al.*, 2000; Prater, 1980; Haribal 1993; Blyth 1982; Evans, 1932).

3.4.1 Mammals

Data on the presence/absence of the different faunal species were recorded largely based on direct and indirect evidences such as tracks, spoor, dung, calls and mounds and supplemented using secondary information sources as explained above. Night drive counts were also carried out in the study area to ascertain that the nocturnal species were not missed out.

3.4.2 Birds

Bird surveys were carried out by direct sightings and also by bird calls to ascertain the presence of birds in the study area. Point counts were also used in area where visibility was not good. At each of such point a minimum of 15 minutes were spent to ascertain the presence of species by way of calls or any other indirect signal that could confirm the presence to species in the study area.

3.4.3 Butterflies

Butterflies were also surveyed in the study area during the study as the area is endowed with rich lepidopteron diversity. At each of the site butterfly counts were conducted during morning and afternoon hours. Butterfly counts were done by traversing throughout the area and an attempt was made to cover as much area as possible. The walks were mainly two to three km long passing through all kinds of habitats and terrain and all species within 5 m square in front of the recorder were counted, with no limit on height. Where species could not be approached very closely 8X40 binoculars were used to identify species.

3.4.4 Reptiles

Survey of reptiles and amphibians was conducted in the entire study area. In each site, possible microhabitats such as stream, paths, forest, large boulders were screened. The movement of snakes and amphibians is generally after the twilight in the evening. However, some are active during the day, especially lizards which need to bask in the

sun. Loose rocks and the rotten wood logs were physical moved to check the fauna underneath. Water puddles formed after the rains were checked for amphibians and fishes.

In addition to this, inhabitants of the nearby villages were closely questioned regarding the reptiles and amphibians in the area and the time they encountered them.

3.4.5 Water Environment

Aquatic surveys were carried out in the stretch of nullahs and stream in the proposed project area for fishes, amphibians and any other aquatic wildlife species. The information on fishes was also collected from the locals of the area.



Plate 3.1. Field work in progress in the proposed coal block

4

Ecological Baseline Data – Flora

4.1 Introduction

The distinct climatic, edaphic and geographical conditions of central India have paved the way for establishing its floral wealth, of which the dry deciduous forests occupy a significantly large chunk of geographical areas. Generally, the dry deciduous forests are neither exceptionally species-rich nor high in numbers of endemic species. However, a large human population depends on these forests for their survival, which also forms vital habitats for several wildlife species.

The State of Chhatisgarh is rich in forests as well as tribal population. For centuries, these forest dwellers have been using the surrounding forest resources for various purposes. They collect plant species for food, shelter and medicine and also use to graze their livestock in the forest areas. The natural disturbances along with anthropogenic activities have shaped the present floral diversity and species composition in these forests, which is intensively studied and described in this chapter. It is presumed that at different stages of their life cycle, forests may have different structures, varying from the simple to very complex (tree stands with many layers from the ground to the canopy and a wide variation in individual tree size).

The floral inventory of forests in the study area was prepared by intensive surveys across the various habitat types and landscape units. Besides, the quantitative information was gathered by sampling forests through quadrats and transects. The frequency, density, and basal area for tree species growing in the core zone of proposed mining area were calculated. The importance value index was also prepared for all tree species by summing up the relative values of frequency, density and dominance. Tree saplings and shrub species were also quantified for the core zone area.

4.2 Floral diversity

The investigations resulted in documentation of 167 species of vascular plants in both core and buffer zone areas (Table 4.1). These species were distributed over 53 families and classified over different life forms. Of the total 167 plant species, 75 were tree species, 39 were shrub species, 42 were herbs, grasses and climbers and 11 were woody climber species.

Table 4.1: List of plants recorded in both core and buffer zones of the proposed mining area

Sl. No.	Botanical Name	Local Name	Habit	Family
1	<i>Abrus precatorius</i> L.	Kwunti	Climber	Leguminosaceae
2	<i>Acacia arabica</i> Willd.	Bambhar, Bamura	Tree	Mimosaceae
3	<i>Acacia caesia</i> W. et A.	Guriyar, Gurur	Woody Climber	Mimosaceae
4	<i>Acacia catechu</i> Willd.	Khair	Tree	Mimosaceae
5	<i>Acacia pinnata</i> Willd.	Arel	Climber	Mimosaceae
6	<i>Achyranthus aspera</i> L.	Gathiya, Aghada	Herb	Amaranthaceae
7	<i>Acorus calamus</i> L.	Bach	Herb	Acoraceae
8	<i>Adina cordifolia</i> Hook. f.	Karmi	Tree	Rubiaceae
9	<i>Aegle marmelos</i> Corret.	Bel	Tree	Rutaceae
10	<i>Alangium salvifolium</i> (L. f.) Wangerin; Syn: <i>A. lamarekii</i> Thu.	Akol	Climber	Coronaceae
11	<i>Albizzia odoratissima</i> Benth	Bansa	Tree	Leguminosaceae
12	<i>Albizzia procera</i> Benth	Karhi	Tree	Mimosaceae
13	<i>Andropogon contortus</i> L.	Sukra, churant	grass	Poaceae
14	<i>Anogeissus latifolia</i> Wall.	Dahu, Dho, Dhaura	Tree	Combretaceae
15	<i>Antidesma acidum</i> Retz.; Syn: <i>A. diandrum</i> Rath.	Saroti, sarwat	Shrub	Euphorbiaceae
16	<i>Apludo varia</i> Hack.	Phuli ban	Grass	Poaceae
17	<i>Argemone mexicana</i> L.	Sher	Herb	Berberidaceae
18	<i>Asparagus racemosus</i> Willd.	Kargi	Shrub	Liliaceae
19	<i>Atylosia scarabaeoides</i> Benth.	Jangli tur	Herb	Leguminosaceae
20	<i>Bauhinia malabarica</i> Roxb.	Quilar	Tree	Caesalpinaceae
21	<i>Bauhinia purpurea</i> L.	Kewlar	Shrub	Leguminosaceae
22	<i>Bauhinia retusa</i> Roxb.	Tewur, tewer	Tree	Leguminosaceae
23	<i>Bauhinia vahlii</i> W. & A.	Mahul	Climber	Leguminosaceae
24	<i>Bauhinia variegata</i> L.	Champa	Tree	Caesalpinaceae
25	<i>Bergenia</i> sp.	Patthar chatty	Herb	Malvaceae
26	<i>Bombax malabaricum</i> DC	Semer, semal	Tree	Malvaceae
27	<i>Boswellia serrata</i> Roxb.	Saliha	Tree	Burseraceae

Sl. No.	Botanical Name	Local Name	Habit	Family
28	<i>Bridelia retusa Spreng.</i>	Katayi, Kasayi	Shrub	Euphorbiaceae
29	<i>Buchanania lanzani Spr. Syn: B. latifolia Roxb.</i>	Char	Tree	Anacardiaceae
30	<i>Butea monosperma (Lamk.) Taus.</i>	Parsa	Shrub	Leguminosae
31	<i>Butea superba Roxb.</i>	Nar parsu	Climber	Leguminosae
32	<i>Caesalpinia bonducella Klem.</i>	Gataran	Woody Climber	Caesalpiniaceae
33	<i>Careya arborea Roxb.</i>	Kumahi, kumhi	Tree	Myrtaceae
34	<i>Carissa spinarum DC.</i>	Kari	Shrub	Apocynaceae
35	<i>Casearia graveolens Datz.</i>	Chilhi	Tree	Samydaceae
36	<i>Casearia bourdillonii Mukherjee: Syn: C. tomentosa Roxb.</i>	Kokhundi, todari	Shrub	Samydaceae
37	<i>Cassia auriculata L.</i>	Tawer, taruwar	Shrub	Leguminosae
38	<i>Cassia fistula L.</i>	Amli ban	Shrub	Leguminosae
39	<i>Cassia obtusifolia L.</i>	Chhichhori, Chirotha	Herb	Caesalpiniaceae
40	<i>Cassia tora L.</i>	Charonta	Herb	Leguminosae
41	<i>Cedrela toona Roxb.</i>	Tun	Tree	Meliaceae
42	<i>Celastrus peniculata Willd.</i>	Unjain	Woody Climber	Celastraceae
43	<i>Ceropegia bulbosa Roxb.</i>	Bosiya kandha	Climber	Asclepiadaceae
44	<i>Chlorophytum tuberosum Baker</i>	Safed musli	Herb	Liliaceae
45	<i>Chloroxylon swietenia DC.</i>	Bhirra, bharaahi	Tree	Meliaceae
46	<i>Cissus quadrangularis L.; Syn: Vitis quadrangularis Wall.</i>	Hathjod	Climber	Vitaceae
47	<i>Cleistanthus collinus Benth.</i>	Gauri, Rari, Garachi	Tree	Euphorbiaceae
48	<i>Cochlospermum religiosum (L.) Aston: Syn: C. gossypium DC.</i>	Gal gala, gal gal	Shrub	Bixaceae
49	<i>Cordia macleodii H. J. & Th.</i>	Dahjar, Dahgan	Tree	Boraginaceae
50	<i>Cordia mixa L.</i>	Lasoda	Tree	Boraginaceae
51	<i>Costus speciosus (Koen.) Sm.</i>	Kewu, ban haldi	Herb	Zingiberaceae
52	<i>Cryptolepis buchanani R. & S.</i>	Dudhnar	Climber	Ascleridaceae
53	<i>Curcuma angustifolia Roxb.</i>	Tikhur	Herb	Zingiberaceae
54	<i>Cynodon dactylon Pers.</i>	Doob	Grass	Poaceae
55	<i>Dalbergia latifolia Roxb.</i>	Sirish	Tree	Leguminosae
56	<i>Dalbergia paniculata Roxb.</i>	Dhobnin, dhobin	Tree	Leguminosae
57	<i>Dalbergia sissoo Roxb.</i>	Shisoo	Tree	Leguminosae
58	<i>Dendrocalamus strictus Nees</i>	Bans	Shrub	Poaceae
59	<i>Derris scandens Benth.</i>	Nakuwa kandha	Woody Climber	Leguminosae
60	<i>Desmodium pulchellum Benth.</i>	Chipi, chipti	Shrub	Leguminosae
61	<i>Desmostachya bipinnata (L.) Stapf.</i>	Kush	Grass	Poaceae
62	<i>Dichanthium annulatum (Forsk.) Stapf.</i>	Biri ban, marbel	Grass	Poaceae
63	<i>Dichrostachys cinerea W. & A.</i>	Tati ban	Shrub	Leguminosae

Sl. No.	Botanical Name	Local Name	Habit	Family
64	<i>Dillenia pentagyna</i> Roxb.; Syn: <i>D. floribunda</i> Hk. f. Th.	Kurkut, korlut	Tree	Dilleniaceae
65	<i>Dioscorea bulbifera</i> L.	Agitha	Climber	Dioscoreaceae
66	<i>Dioscorea</i> sp	Gethi kandha/ Karaha	Herb	Dioscoreaceae
67	<i>Diospyrus melanoxylon</i> Roxb.	Tendu	Tree	Ebenaceae
68	<i>Diospyrus montana</i> Roxb.	Maker tendu	Tree	Ebenaceae
69	<i>Echinochloa colonum</i> (L.) Link	Sawa, sama	Grass	Poaceae
70	<i>Ehretia laevis</i> Roxb.	Bhambhoor, Bhoimbar	Tree	Boraginaceae
71	<i>Elaeodendron glaucum</i> Pers.	Mamri, Mimri, Jamrasi	Shrub	Celastraceae
72	<i>Embelia robusta</i> Roxb.	Soso podo	Shrub	Myrsinaceae
73	<i>Eragrostis tenella</i> L.	Ehur bhusi	Grass	Poaceae
74	<i>Eranthemum pulchellum</i> Andr.; Syn: <i>E. nervosum</i> (Vahl) T. Ander.	Ban tulsī	Shrub	Lamiaceae
75	<i>Eriolaena hookeriana</i> W. & A.	Bhoti	Shrub	Sterculiaceae
76	<i>Eugenia heyneana</i> Wall.	Jamti	Tree	Myrtaceae
77	<i>Eulaliopsis binata</i> (Retz.) Hubh.	Bagayi	Grass	Poaceae
78	<i>Euphorbia nerifolia</i> L.	Thuba	Shrub	Euphorbiaceae
79	<i>Ficus bengalensis</i> L.	Gad nifir	Tree	Moraceae
80	<i>Ficus racemosa</i> L.; <i>F. glomerata</i> Roxb.	Gular	Tree	Moraceae
81	<i>Ficus infectoria</i> Roxb.	Pakri, Pakhri	Tree	Moraceae
82	<i>Ficus religiosa</i> L.	Pipal	Tree	Moraceae
83	<i>Flacourtia indica</i> (Burn. f.) Merr.	Ramkatayi, kaker	Shrub	Bixaceae
84	<i>Flemingia bracteata</i> Wight.	Ghui	Tree	Leguminosae
85	<i>Flemingia chappar</i> Benth.	Gal phuli	Shrub	Leguminosae
86	<i>Gardenia latifolia</i> Ait.	Paprol, piprol, Mali	Tree	Rubiaceae
87	<i>Gardenia turgida</i> Roxb.	Khadhar	Tree	Rubiaceae
88	<i>Garura pinnata</i> Roxb.	Khenkara, Kekad, Kenkar	Tree	Burseraceae
89	<i>Glochidion zeylanicum</i> A. Juss.	Luda	Tree	Euphorbiaceae
90	<i>Gloriosa superba</i> L.	Kharha godi, karihari	Herb	Liliaceae
91	<i>Gmelina arborea</i> Roxb.	Khamhar	Tree	Verbinaceae
92	<i>Grewia hirsuta</i> Vahl.	Ghansi	Shrub	Tiliaceae
93	<i>Grewia tiliaefolia</i> Vahl.	Dhaman	Tree	Tiliaceae
94	<i>Hamiltonia suaveolens</i> Roxb.	Bichhiya, Barchu	Shrub	Rubiaceae
95	<i>Harbortekia binata</i> Roxb.	Anjan	Tree	Leguminosae
96	<i>Helicterus isora</i> L.	Anithi, marorphali	Shrub	Sterculiaceae
97	<i>Heptapleurum venulosum</i> Seem.	Kahua gauda	Shrub	Anthiaceae
98	<i>Hibiscus abelmoschus</i> L.	Kapalsiya kandha	Herb	Malvaceae
99	<i>Holarrhena antidysenterica</i> Wall.	Koriya	Tree	Apocynaceae
100	<i>Holoptelea integrifolia</i> Planch.	Chil bil	Tree	Ulmaceae
101	<i>Hymenodictyon excelsum</i> Wall.	Pote	Tree	Rubiaceae

Sl. No.	Botanical Name	Local Name	Habit	Family
102	<i>Imperata cylindrica</i> (L.) Beauv.	Chhir ban	grass	Poaceae
103	<i>Indigofera glandulosa</i> Willd.	Barhabad, Barbacla	Herb	Leguminosae
104	<i>Indigofera pulchella</i> Roxb.	Bhal bhuli, Ghirhu	Shrub	Leguminosae
105	<i>Ipomoea carnea</i> Jacq.	Besaram	Herb	Convolvulaceae
106	<i>Ipomoea mauritiana</i> Jacq.	Patal kohru	Woody Climber	Convolvulaceae
107	<i>Ischaemum pilosum</i> Hack.	Kunda	Grass	Poaceae
108	<i>Lagerstroemia parviflora</i> Roxb.	Sidha	Tree	Lythraceae
109	<i>Lannea coromandelica</i> (Houtt.) Merr.		Tree	Anacardiaceae
110	<i>Lantana camara</i> L.	Bajar butti	Shrub	Verbinaceae
111	<i>Limonia acidissima</i> L.	Bilsena, banseni	Shrub	Rutaceae
112	<i>Litsea sebifera</i> Persn.	Maida	Tree	Lauraceae
113	<i>Madhuca indica</i> Gmel	Mahuwa	Tree	Sapotaceae
114	<i>Mangifera indica</i> L.	Aam	Tree	Anacardiaceae
115	<i>Marsdenia tenacissima</i> W. & A.	Chikti	Climber	Asclidiaceae
116	<i>Mimosa pudica</i> L.	Lachkura, chai nui	Herb	Mimosaceae
117	<i>Mitragyna parviflora</i>	Muhi gander, karam	Tree	Rubiaceae
118	<i>Murraya koenigii</i> Spreng.	Mithi neem	Shrub	Rutaceae
119	<i>Nerium odoratum</i> Sol.	Kanher, Kaner	Shrub	Apocynaceae
120	<i>Nyctanthes arbor-tristis</i> L.	Khirsali	Shrub	Verbinaceae
121	<i>Ocotea woderi</i> Roxb.	Gunja, Mine, Jhingain, Mohi	Tree	Anacardiaceae
122	<i>Ougonia dalbergioides</i> Benth.	Sandhan, tilsa	Tree	Leguminosae
123	<i>Peucedanum nagpurensis</i> (C.I.) Prain	Tejraj	Herb	Asteraceae
124	<i>Phoenix acaulis</i> Buch	Chind	Herb	Palmaceae
125	<i>Phyllanthus emblica</i> L.	Awala	Tree	Euphorbiaceae
126	<i>Pterocarpus marsupium</i> Roxb.	Bija	Tree	Leguminosae
127	<i>Punica granatum</i> L.	Anar	Tree	Lythraceae
128	<i>Randia dumetorum</i> Lamk.	Menda, Mendhal, Mainfal	Tree	Rubiaceae
129	<i>Randia uliginosa</i> DC.	Pendar	Tree	Rubiaceae
130	<i>Ricinus communis</i> L.	Arandi	Shrub	Euphorbiaceae
131	<i>Saccharum spontaneum</i> L.	Kansa	Grass	Poaceae
132	<i>Saccopetalum tomentosum</i> H. f. & Th.	Kari	Tree	Anonaceae
133	<i>Schleichera trijuga</i> Willd.	Kasum	Tree	Sapindaceae
134	<i>Schrebera swietenoides</i> Roxb.	Ghata	Tree	Oleaceae
135	<i>Setaria sulcatum</i> A. Camus	Sedu	grass	Poaceae
136	<i>Semecarpus anacardium</i> L.	Bichwa	Tree	Anacardiaceae
137	<i>Sesbania aegyptiaca</i> Pers.	Dhan dhani, Dhandhan	Shrub	Leguminosae
138	<i>Shorea robusta</i> Gaertn.	Sal. sarayi	Tree	Dipterocarpaceae
139	<i>Soyimida fabrifuga</i> A. Juss	Rohina, rohan	Tree	Meliaceae

Sl. No.	Botanical Name	Local Name	Habit	Family
140	<i>Spatholobus roxburghii</i> Benth.	Bendo	Woody Climber	Leguminosae
141	<i>Stephegyne parviflora</i> Korth.	Gur ghont, gurahi	Tree	Rubiaceae
142	<i>Sterculia urens</i> Roxb.	Khurul, khurlu	Tree	Sterculiaceae
143	<i>Strobilus asper</i> Lour.	Manjani	Tree	Moraceae
144	<i>Symplocos racemosa</i> Roxb.	Todh	Tree	Symplocaceae
145	<i>Syzizium cumini</i> (L.) Skeels	Jamun	Tree	Myrtaceae
146	<i>Tectona grandis</i> L.	Sajwan, Sagwan	Tree	Verbenaceae
147	<i>Terminalia arjuna</i> Bedd.	Kahua, arjun	Tree	Combretaceae
148	<i>Terminalia bellerica</i> Roxb.	Baira	Tree	Combretaceae
149	<i>Terminalia chebula</i> Retz.	Harra	Tree	Combretaceae
150	<i>Terminalia tomentosa</i> W. & A.	Saja	Tree	Combretaceae
151	<i>Thespesia lampus</i> Dalz.	Masbandi, mundi	Shrub	Malvaceae
152	<i>Tinospora cordifolia</i> Miers.	Guruchi	Climber	Menispermaceae
153	<i>Trema politoria</i> Planch.	Dhandhani	Tree	Urticaceae
154	<i>Urginea indica</i> Kunth.	Ban pyaz	Herb	Hyacinthaceae
155	<i>Vallisneria spiralis</i> (L.) Kuntze. Syn: <i>V. heuriei</i> Spr.	Dudhiya kandha	Woody Climber	Apocynaceae
156	<i>Ventilago madraspatana</i> Guertn.	Kyanti, Keoti	Woody Climber	Rhamnaceae
157	<i>Vitex negundo</i> L.	Chindwar	Shrub	Verbinaceae
158	<i>Vitis carnosia</i> Wall.	Dhokar bela	Woody Climber	Vitaceae
159	<i>Vitis latifolia</i> Roxb.	Doker bela	Woody Climber	Vitaceae
160	<i>Waltheria indica</i> L.	Halduli	Shrub	Sterculiaceae
161	<i>Wendlandia tinctora</i>	Tilay	Tree	Rubiaceae
162	<i>Withania somnifera</i> Dunal.	Awagandha	Shrub	Solanaceae
163	<i>Woodsfordia floribunda</i> Salisb.	Dhai, Dhawai	Shrub	Lythraceae
164	<i>Wrightia tomentosa</i> Roem. & Sch.	Dudhiya	Tree	Apocynaceae
165	<i>Xanthium strumarium</i>	Gokharu	Shrub	Asteraceae
166	<i>Ziziphus xylaphyrea</i> Willd.	Ghontiya, Ghont, Dhontu	Shrub	Rhamnaceae
167	<i>Zizyphus rugosa</i> Lamk.	Churaban, Churna	Woody Climber	Rhamnaceae

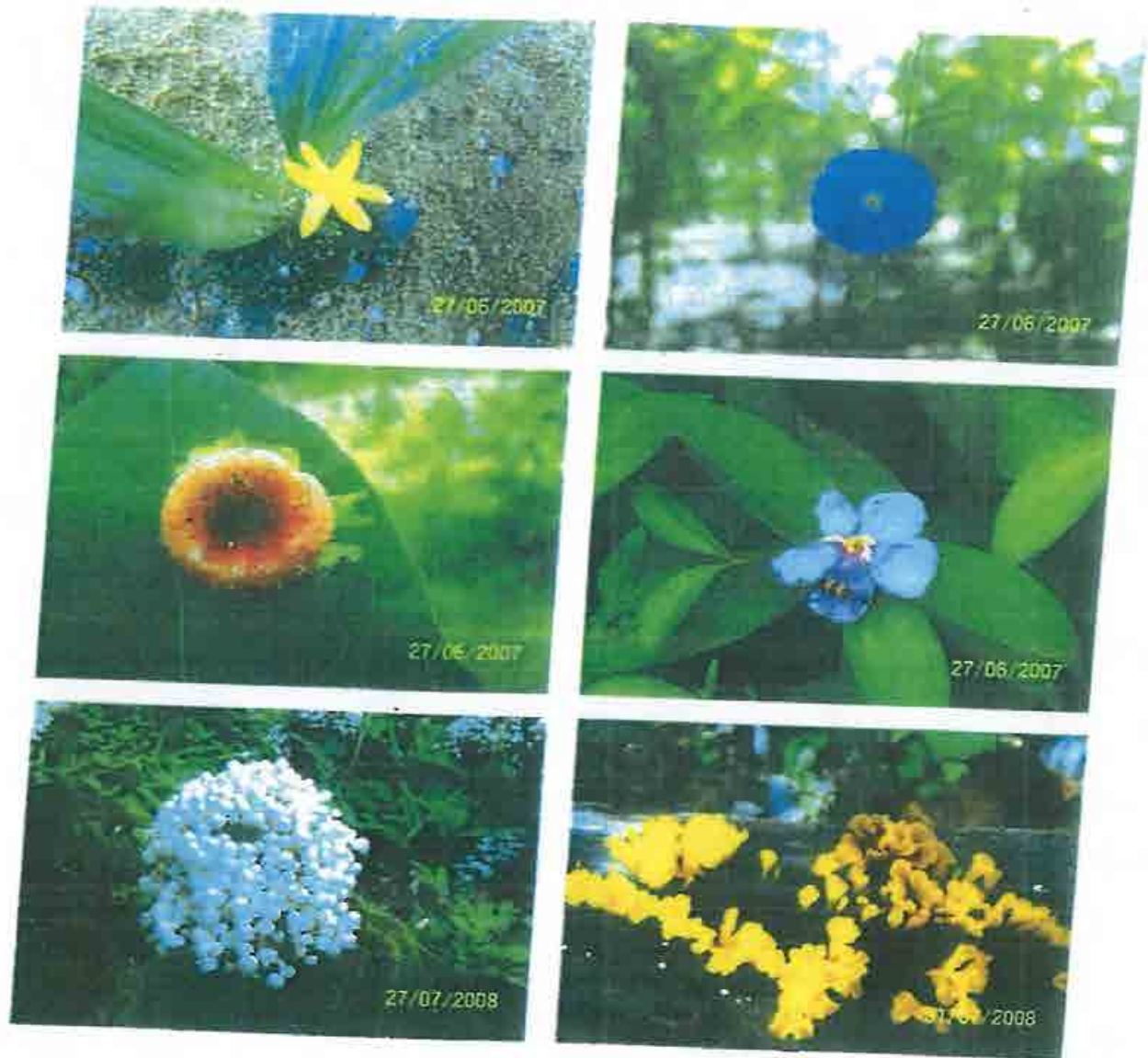


Plate 4.1. Floral diversity at the project site

Within the core zone area a total of 101 species of vascular plants were documented during the survey (Table 4.2). Of these 50 were tree species, 22 were shrub, 21 were herb, grasses and climbers and 8 were woody climber species (Table 4.3). Leguminosae was the most dominant family in terms of species (26 species in entire

study area and 15 species in core zone only), followed by Poaceae (13 species in entire study area and 5 exclusively in core zone areas) and Rubiaceae (10 species in entire study area and 7 exclusively in core zone areas). The other dominant families of plant species in the study area were Euphorbiaceae, Mimosaceae, Verbenaceae, Sterculiaceae, Combretaceae, Apocynaceae, Anacardiaceae and Moraceae. Of the total plant families, 43% obtained single plant species (Table 4.4).

Table 4.2. List of plants recorded in the core zone of the proposed mining area

SL. No.	Botanical Name	Local Name	Habit	Family
1	<i>Acacia arabica</i> Willd.	Bambhur, Bamara	Tree	Mimosaceae
2	<i>Acacia caesia</i> W. et A.	Goriyar, Garur	Woody Climber	Mimosaceae
3	<i>Acacia catechu</i> Willd.	Khair	Tree	Mimosaceae
4	<i>Achyranthus aspera</i> L.	Gathiya, Aghada	Herb	Amaranthaceae
5	<i>Adina cordifolia</i> Hook. f.	Karni	Tree	Rubiaceae
6	<i>Aegle marmelos</i> Correa.	Bel	Tree	Rutaceae
7	<i>Albizia procera</i> Benth	Karhi	Tree	Mimosaceae
8	<i>Andropogon contortus</i> L.	Sukra, churant	grass	Poaceae
9	<i>Anogeissus latifolia</i> Wall.	Dahu, Dho, Dhaura	Tree	Combretaceae
10	<i>Antidesma diandrum</i> Roth.	Saroti, sarwat	Shrub	Euphorbiaceae
11	<i>Apluda varia</i> Hack.	Phuli ban	Grass	Poaceae
12	<i>Argemone mexicana</i> L.	Sher	Herb	Berberidaceae
13	<i>Asparagus racemosus</i> Willd.	Kargi	Shrub	Liliaceae
14	<i>Atylosia scabraeoides</i> Benth.	Jangli tur	Herb	Leguminosae
15	<i>Bauhinia malabarica</i> Roxb.	Quilar	Tree	Caesalpiniaceae
16	<i>Bauhinia variegata</i> L.	Champa	Tree	Caesalpiniaceae
17	<i>Bombax malabaricum</i> DC.	Semer, semal	Tree	Malvaceae
18	<i>Boswellia serrata</i> Roxb.	Saliha	Tree	Bursiferaceae
19	<i>Bridelia retusa</i> Spreng.	Katayi, Kasayi	Shrub	Euphorbiaceae
20	<i>Buchanania lanzan</i> Spr.	Char	Tree	Anacardiaceae
21	<i>Butea monosperma</i> (Lamk.) Taub.	Parsa	Shrub	Leguminosae
22	<i>Butea superba</i> Roxb.	Nar parsa	Climber	Leguminosae
23	<i>Careya arborea</i> Roxb.	Kumahi, kumhi	Tree	Myrtaceae
24	<i>Carissa spinarum</i> DC.	Kari	Shrub	Apocynaceae
25	<i>Casearia graveolens</i> Dulz.	Chilhi	Tree	Samydaeae
26	<i>Casearia tomentosa</i> Roxb.	Kokhundi, todari	Shrub	Samydaeae
27	<i>Cassia obtusifolia</i> L.	Chhichhori, Chirotha	Herb	Caesalpiniaceae
28	<i>Cassia tora</i> L.	Charonta	Herb	Leguminosae

SL. No.	Botanical Name	Local Name	Habit	Family
29	<i>Celastrus peniculata</i> Willd.	Urjain	Woody Climber	Celastraceae
30	<i>Cissus quadrangularis</i> L.	Hathjod	Climber	Vitaceae
31	<i>Cordia macleanii</i> H. J. & Th.	Dhahjar, Dahgan	Tree	Boraginaceae
32	<i>Cynodon dactylon</i> Pers.	Doob	Grass	Poaceae
33	<i>Delbergia latifolia</i> Roxb.	Sirish	Tree	Leguminosae
34	<i>Delbergia paniculata</i> Roxb.	Dhobnin, dhobin	Tree	Leguminosae
35	<i>Delbergia sissoo</i> Roxb.	Shisoo	Tree	Leguminosae
36	<i>Dendrocalamus strictus</i> Nees	Bans	Shrub	Poaceae
37	<i>Desmodium pulchellum</i> Benth.	Chipi, chipti	Shrub	Leguminosae
38	<i>Dichrostachys cinerea</i> W. & A.	Tati ban	Shrub	Leguminosae
39	<i>Dioscorea bulbifera</i> L.	Agitha	Climber	Dioscoraceae
40	<i>Dioscorea</i> sp.	Gethi kandha/ Karuha	Herb	Dioscoraceae
41	<i>Diospyros melanoxylon</i> Roxb.	Tendu	Tree	Ebenaceae
42	<i>Elaeodendron glaucum</i> Pers.	Mamri, Mimri, Jamrasi	Shrub	Celastraceae
43	<i>Embelia robusta</i> Roxb.	Šoso podo	Shrub	Myrsinaceae
44	<i>Eugenia heyneana</i> Wall.	Jamti	Tree	Myrtaceae
45	<i>Ficus bengalensis</i> L.	Gad nifir	Tree	Moraceae
46	<i>Ficus infectoria</i> Roxb.	Pakri, Pakhri	Tree	Moraceae
47	<i>Ficus religiosa</i> L.	Pipal	Tree	Moraceae
48	<i>Flacourtia indica</i> (Burm. f.) Merr.	Ramkatayi, kaker	Shrub	Bisnaceae
49	<i>Gardenia latifolia</i> Ait.	Paprol, piprol, Mali	Tree	Rubiaceae
50	<i>Gardenia turgida</i> Roxb.	Khadhar	Tree	Rubiaceae
51	<i>Garura pinnata</i> Roxb.	Khenkara, Kekad, Kenkar	Tree	Burseraceae
52	<i>Glochidion zeylanicum</i> A. Juss.	Luda	Tree	Euphorbiaceae
53	<i>Gloriosa superba</i> L.	Kharha godi, karihari	Herb	Liliaceae
54	<i>Hamiltonia suaveolens</i> Roxb.	Bichhiya, Barcha	Shrub	Rubiaceae
55	<i>Hardeniopsis hinata</i> Roxb.	Anjan	Tree	Leguminosae
56	<i>Helicteris isora</i> L.	Anithi, marorphali	Shrub	Sterculiaceae
57	<i>Hibiscus abelmoschus</i> L.	Kapalsiya kandha	Herb	Malvaceae
58	<i>Holarrhena antidysenterica</i> Wall.	Koriya	Tree	Apocynaceae
59	<i>Hymenodictyon excelsum</i> Wall.	Pote	Tree	Rubiaceae
60	<i>Imperata cylindrica</i>	Chhir ban	grass	Poaceae
61	<i>Indigofera glandulosa</i> Willd.	Barhabad, Barbada	Herb	Leguminosae
62	<i>Indigofera pulchella</i> Roxb.	Bhul bhuli, Gbirlul	Shrub	Leguminosae
63	<i>Ipomoea carnea</i> Jacq.	Besaram	Herb	Convolvulaceae
64	<i>Ipomoea mauritiana</i> Jacq.	Patil kohra	Woody Climber	Convolvulaceae
65	<i>Lagerstroemia parviflora</i> Roxb.	Sidha	Tree	Lythraceae
66	<i>Lantana camara</i> L.	Bajar batti	Shrub	Verbinaceae

Sl. No.	Botanical Name	Local Name	Habit	Family
67	<i>Madhuca indica</i> Gmel	Mahuwa	Tree	Sapotaceae
68	<i>Mangifera indica</i> L.	Aam	Tree	Anacardiaceae
69	<i>Marsdenia tenuissima</i> W. & A.	Chikti	Climber	Ascleridiaceae
70	<i>Mimosa pudica</i> L.	Lachkura, chui mui	Herb	Mimosaceae
71	<i>Mitragyna parviflora</i>	Muhi gander, karam	Tree	Rubiaceae
72	<i>Odina wodier</i> Roxb.	Gunja, Mine, Jhingain, Mohi	Tree	Anacardiaceae
73	<i>Ougenia dalbergioides</i> Benth.	Sandhan, tilsa	Tree	Leguminosae
74	<i>Phoenix acaulis</i> Bueh	Chind	Herb	Palmaceae
75	<i>Phyllanthus emblica</i> L.	Awala	Tree	Euphorbiaceae
76	<i>Pterocarpus marsupium</i> Roxb.	Bija	Tree	Leguminosae
77	<i>Punica granatum</i> L.	Anar	Tree	Lythraceae
78	<i>Ricinus communis</i> L.	Arandi	Shrub	Euphorbiaceae
79	<i>Saccopetalum tomentosum</i> H. J. & Th.	Kari	Tree	Anonaceae
80	<i>Schleichera triflora</i> Willd.	Kusum	Tree	Sapindaceae
81	<i>Senecarpus anacardium</i> L.	Bhelwa	Tree	Anacardiaceae
82	<i>Sesbania aegyptiaca</i> Pers.	Dhan dhani, Dhandhan	Shrub	Leguminosae
83	<i>Shorea robusta</i> Gaertn.	Sal, sarayi	Tree	Dipterocarpaceae
84	<i>Sterculia urens</i> Roxb.	Khurul, khurlu	Tree	Sterculiaceae
85	<i>Symplocos racemosa</i> Roxb.	Lodhi	Tree	Symplocaceae
86	<i>Syzizium cumini</i> (L.) Skeels	Janun	Tree	Myrtaceae
87	<i>Terminalia bellerica</i> Roxb.	Baira	Tree	Combretaceae
88	<i>Terminalia chebula</i> Retz.	Harra	Tree	Combretaceae
89	<i>Terminalia tomentosa</i> W. & A.	Saja	Tree	Combretaceae
90	<i>Thespesia lampus</i> Dalz.	Masbandi, mundi	Shrub	Malvaceae
91	<i>Urginea indica</i> Kunth.	Ban pyaz	Herb	Hyacinthaceae
92	<i>Vallisneria spiralis</i> (L.) Kuntze	Dudhiya kandha	Woody Climber	Apocynaceae
93	<i>Ventilago madraspatana</i> Gaertn.	Kyonti, Keoti	Woody Climber	Rhamnaceae
94	<i>Vitex nigundo</i> L.	Chindwar	Shrub	Verbinaceae
95	<i>Vitis carnosu</i> Wall.	Dhokar bela	Woody Climber	Vitaceae
96	<i>Vitis latifolia</i> Roxb.	Doker bela	Woody Climber	Vitaceae
97	<i>Wendlandia tinctora</i>	Tilayi	Tree	Rubiaceae
98	<i>Woodfordia floribunda</i> Salisb.	Dhai, Dhawai	Shrub	Lythraceae
99	<i>Wrightia tomentosa</i> Roem. & Sch.	Dudhiya	Tree	Apocynaceae
100	<i>Ziziphus xylophyra</i> Willd.	Ghontiya, Ghont, Dhonti	Shrub	Rhamnaceae
101	<i>Ziziphus rugosa</i> Lamk.	Churaban, Churna	Woody Climber	Rhamnaceae

Table 4.3. Distribution of plant life forms in the study area

Sl. No.	Core zone		Core and buffer zone	
	Life forms	Number of species	Life forms	Number of species
1	Tree	30	Tree	75
2	Shrub	22	Shrub	39
3	Herb & Grass	17	Herb & Grass	31
4	Climber	4	Climber	11
5	Woody Climber	8	Woody Climber	11
	Total	101	Total	167

Table 4.4. Distribution of plant species by families

Family	Number of species in Core and Buffer zone	Number of species in Core zone
Acoraceae	1	0
Amaranthaceae	1	1
Anacardiaceae	5	3
Anonaceae	1	1
Apocynaceae	5	4
Araliaceae	1	0
Aselipidiaceae	3	1
Asteraceae	2	0
Berberidaceae	1	1
Bixaceae	2	1
Boraginaceae	3	1
Burseraceae	2	2
Caesalpinaceae	4	3
Celastraceae	2	2
Combretaceae	5	4
Convolvulaceae	2	2
Coriaceae	1	0
Dilleniaceae	1	0
Dioscoraceae	2	2
Dipterocarpaceae	1	1
Ebenaceae	2	1
Euphorbiaceae	-	5
Hyacinthaceae	1	1
Lamiaceae	1	0
Lauraceae	1	0
Leguminosaceae	26	15

Family	Number of species in Core and Buffer zone	Number of species in Core zone
Liliaceae	3	2
Lythraceae	3	3
Malvaceae	4	3
Meliaceae	3	0
Menispermaceae	1	0
Mimosaceae	6	5
Moraceae	4	3
Myrsinaceae	1	1
Myrtaceae	3	3
Olaceae	1	0
Palmaceae	1	1
Poaceae	13	5
Rhamnaceae	3	3
Rubiaceae	10	7
Rutaceae	3	1
Samydaceae	2	2
Sapindaceae	1	1
Sapotaceae	1	1
Solanaceae	1	0
Sterculaceae	4	2
Symplocaceae	1	1
Tiliaceae	2	0
Ulmaceae	1	0
Urticaceae	1	0
Verbenaceae	5	2
Vitaceae	3	3
Zingiberaceae	2	0

4.3 Structure and composition of forests

There was diverse pattern in the distribution of various tree and shrub species. A total of 25 tree species occurred in the sampling plots (Table 4.5). *Shorea robusta* Gaertn was the most frequent species (75%), followed by *Madhuca indica* Gmel (0.37), *Diospyrus melanoxylon* Roxb (0.29) and *Buchnanian lanzan* Spr. (0.26). Some of the species in the study area had high density whereas others had a low density. *Shorea robusta* Gaertn had highest density (122.62 individuals per ha.), followed by *Madhuca indica* Gmel (51.19 individual per ha.), *Diospyrus melanoxylon* Roxb. (32.14 individuals per ha.) and *Buchnanian lanzan* Spr. (29.76 individuals per ha.). The basal area of tree species varied

from species to species. *Shorea robusta* Gaertn had highest basal area (13.31 per $m^2/ha.$), followed by *Madhuca indica* Gmel (2.95 per $m^2/ha.$), *Ficus bengalensis* L. (2.76 per $m^2/ha.$), *Anogeissus latifolia* Wall.(1.96 per $m^2/ha.$), *Diospyrus melanoxylon* Roxb.(1.93 per $m^2/ha.$), *Boswellia serrata* Roxb.(1.47 per $m^2/ha.$) and *Buchnanian lanzan* Spr. (1.19 per $m^2/ha.$).

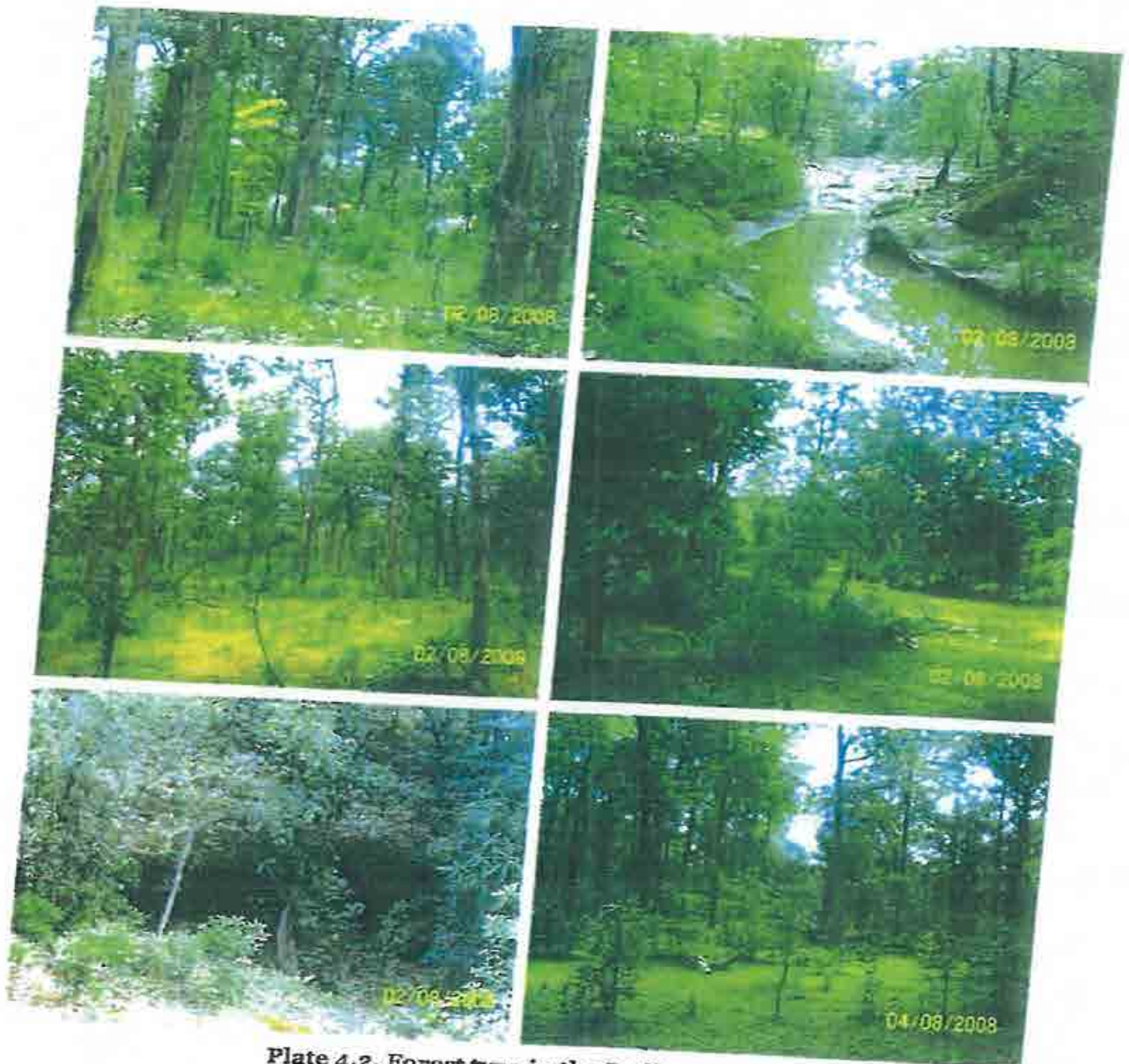


Plate 4.2. Forest type in the Buffer zone

Table 4.5. Frequency, density, basal area and abundance of tree species in the core zone of the study area

Tree Species	Local Name	Frequency	Abundance	Density per ha.	Basal Area / m ² / ha.
<i>Adina cordifolia</i> Hk. f.	Karmi	0.04	1.00	3.57	0.98
<i>Albizia procera</i> Benth.	Kari	0.01	1.00	1.19	0.24
<i>Anogeissus latifolia</i> Wull.	Dhaura	0.15	1.15	17.86	1.96
<i>Boswellia serrata</i> Roxb.	Saliha	0.10	1.00	9.52	1.47
<i>Bridelia retusa</i> Spreng.	Kasavi	0.02	1.00	2.38	0.69
<i>Buchnanan lanzan</i> Spr.	Char	0.26	1.14	29.76	1.19
<i>Casearia graveolens</i> Dalz.	Chilhi	0.01	1.00	1.19	0.01
<i>Delbergia paniculata</i> Roxb.	Dhobin	0.01	1.00	1.19	0.19
<i>Diospyrus melanoxylon</i> Roxb.	Tendu	0.29	1.13	32.14	1.93
<i>Eugenia heyneana</i> Wall.	Jamti	0.08	1.14	9.52	1.10
<i>Ficus bengulensis</i> L.	Bargad	0.01	1.00	1.19	2.76
<i>Gardenia latifolia</i> Ait.	Mali	0.02	1.00	2.38	0.04
<i>Garura pinnata</i> Roxb.	Kenkara	0.05	1.00	5.95	0.14
<i>Lagerstroemia parviflora</i> Roxb.	Sidha	0.08	1.29	10.71	0.45
<i>Madhuca indica</i> Gmel	Mahuwa	0.37	1.39	51.19	2.95
<i>Odina wodier</i> Roxb.	Gunja	0.01	1.00	1.19	0.31
<i>Ougenia dalbergioides</i> Benth.	Tilsa	0.01	1.00	1.19	0.11
<i>Phyllanthus emblica</i> L.	Awala	0.08	1.14	9.52	0.38
<i>Schleichera trijuga</i> Willd.	Kusum	0.01	1.00	1.19	0.08
<i>Semecarpus anacardium</i> L.	Bhelwa	0.05	1.00	4.76	0.31
<i>Shorea robusta</i> Gaertn.	Sal	0.75	1.63	122.62	13.31
<i>Symplocos racemosa</i> Roxb.	Loth	0.05	1.00	4.76	0.05
<i>Terminalia bellerica</i> Roxb.	Baira	0.01	1.00	1.19	0.09
<i>Terminalia chebula</i> Retz.	Harra	0.02	1.00	2.38	0.16
<i>Terminalia tomentosa</i> W. & A.	Saja	0.05	1.25	5.95	0.37
Total		2.56	27.26	334.52	31.28



Plate 4.3. Forest area in Core Zone

The relative frequency, relative density and relative dominance of *Shorea robusta* Gaertn were highest in the study area, followed by *Madhuca indica* Gmel and *Diospyrus melanoxylon* Roxb. (Table 4.6). The importance value index (IVI) was calculated

highest for *Shorea robusta* in the entire study area (108.50), followed by *Madhuca indica* Gmel (39.15), *Diospyrus melanoxylon* Roxb. (26.95), *Buchnanian lanzan* Spr. (22.94), *Anogeissus latifolia* Wall. (17.66) and *Boswellia serrata* Roxb. (11.27). In general, the forest was dominated by *Shorea robusta* Gaert and thus categorized as Sal forest. *Madhuca indica*, *Diospyrus melanoxylon*, *Buchnanian lanzan*, *Anogeissus latifolia* and *Boswellia serrata* were the major associated or companion species of Sal forest in the entire study area. *Eugenia heyneana* Wall., *Lagerstroemia parviflora* Roxb., *Adina cordifolia* Hk. f., *Terminalia tomentosa* W. & A., *Garura pinnata* Roxb., *Phyllanthus emblica* L., *Semecarpus anacardium* L., *Bridelia retusa* spreng, and *Symplocos racemosa* Roxb. were the other major species in terms of frequency, density and dominance found in the study area (Table 4.6).

Table 4.6. Relative frequency, relative density, relative dominance and importance value index (IVI) of tree species in the study area

Tree Species	Local Name	Relative Frequency	Relative Density	Relative Dominance	IVI
<i>Adina cordifolia</i> Hk. f.	Karni	1.40	1.07	3.13	5.61
<i>Albizia procera</i> Benth.	Kari	0.47	0.36	0.78	1.60
<i>Anogeissus latifolia</i> Wall.	Dhaura	6.05	5.34	6.27	17.66
<i>Boswellia serrata</i> Roxb.	Saliha	3.72	2.85	4.71	11.27
<i>Bridelia retusa</i> spreng.	Kasayi	0.93	0.71	2.20	3.84
<i>Buchnanian lanzan</i> Spr.	Char	10.23	8.90	3.81	22.94
<i>Casearia graveolens</i> Dalz.	Chilli	0.47	0.36	0.04	0.86
<i>Delbergia paniculata</i> Roxb.	Dhobin	0.47	0.36	0.59	1.41
<i>Diospyrus melanoxylon</i> Roxb.	Tendu	11.16	9.61	6.18	26.95
<i>Eugenia heyneana</i> Wall.	Jamū	3.26	2.85	3.53	9.63
<i>Ficus bengalensis</i> L.	Bargad	0.47	0.36	8.84	9.66
<i>Gardenia latifolia</i> Ait.	Mali	0.93	0.71	0.12	1.76
<i>Garura pinnata</i> Roxb.	Kenkara	1.86	1.78	0.45	4.09
<i>Lagerstroemia parviflora</i> Roxb.	Sidha	3.26	3.20	1.45	7.90
<i>Madhuca indica</i> Gmel	Mahuwa	14.42	15.30	9.43	39.15
<i>Odina walteri</i> Roxb.	Gunja	0.47	0.36	0.98	1.80
<i>Ougenia dulbergioides</i> Benth.	Tilso	0.47	0.36	0.36	1.18

Tree Species	Local Name	Relative Frequency	Relative Density	Relative Dominance	IVI
<i>Phyllanthus emblica</i> L.	Awala	3.26	2.85	1.21	7.31
<i>Schleichera trijuga</i> Willd.	Kusum	0.47	0.36	0.25	1.07
<i>Semecarpus emacardium</i> L.	Bhelwa	1.86	1.42	0.98	4.26
<i>Shorea robusta</i> Gaertn.	Sal	29.30	36.66	42.55	108.50
<i>Symphlocos racemosa</i> Roxb.	Lodh	1.86	1.42	0.15	3.43
<i>Terminalia bellerica</i> Roxb.	Baira	0.47	0.36	0.30	1.12
<i>Terminalia chebula</i> Retz.	Harn	0.93	0.71	0.52	2.16
<i>Terminalia tomentosa</i> W. & A.	Saja	1.86	1.78	1.19	4.83

A total of 15 shrub species were occurred in the sampling plots during the survey. *Flacourtia indica* (Burm. f.) Merr. was the most frequent shrub species, followed by *Ziziphus xylophyra* Willd., *Elaeodendron glaucum* Pers., *Butea monosperma* (Lamk.) Taub. and *Woodfordia floribunda* Salisb. The density of *Woodfordia floribunda* Salisb. was highest (246.48 individuals per ha.), followed by *Flacourtia indica* (Burm. f.) Merr. (211.27 individuals per ha.), *Butea monosperma* (Lamk.) Taub. (84.51 individuals per ha.), *Thespesia lampus* Dalz. (77.46 individuals per ha.) and *Ziziphus xylophyra* Willd. (77.46 individuals per ha.). In terms of IVI, *Flacourtia indica* (Burm. f.) Merr., *Woodfordia floribunda* Salisb., *Ziziphus xylophyra* Willd., *Butea monosperma* (Lamk.) Taub. and *Elaeodendron glaucum* Pers. were the dominant shrub species in the Sal forest of the study area (Table 4.7).

Table 4.7. Abundance, frequency, density, relative frequency, relative density and importance value index (IVI) of shrub species in the study area

Shrub Species	Local name	Abundance	Frequency	Density per ha.	Relative Frequency	Relative Density	IVI
<i>Antidesma dimorphum</i> Roth.	Saroti	1.00	0.01	7.04	2.13	0.79	2.92
<i>Asparagus racemosus</i> Willd.	Asparagus	1.00	0.02	14.08	4.25	1.59	5.84
<i>Butea monosperma</i> (Lamk.) Taub.	Parsu	2.00	0.07	84.51	12.76	9.52	22.28
<i>Dendrocalamus strictus</i> Nees	Baus	1.00	0.01	7.04	2.13	0.79	2.92
<i>Desmodium pulchellum</i> Benth.	Chipi	1.00	0.02	14.08	4.25	1.59	5.84
<i>Eleocharis glauca</i> Pers.	Jamrasi	1.47	0.07	49.30	12.76	5.56	18.31
<i>Eubelia robusta</i> Roxb.	Sosoplota	1.00	0.02	14.08	4.25	1.59	5.84
<i>Flacourtia indica</i> (Burm. f.) Merr.	Ramkatayi	3.75	0.10	211.27	17.01	23.81	40.82
<i>Helicteres isora</i> L.	Aeithi	1.00	0.02	14.08	4.25	1.59	5.84
<i>Ipomoea carnea</i> Jacq.	Ipomoea	6.00	0.01	42.25	2.13	4.70	6.89
<i>Phyllanthus emblica</i> L.	Awala	1.50	0.02	21.13	4.25	2.38	6.63
<i>Ricinus communis</i> L.	Arandi	1.00	0.01	7.04	2.13	0.79	2.92
<i>Thespesia lampus</i> Dalz.	Masbandi	5.50	0.02	77.46	4.25	8.73	12.98
<i>Woodfordia floribunda</i> Solish.	Dhawayi	8.75	0.05	246.48	8.50	27.58	36.28
<i>Ziziphus xylophyra</i> Willd.	Dhontu	1.57	0.08	77.46	14.88	8.73	23.61



Plate 4.4. Forest area in the Core zone

The saplings of 30 tree species were found in the sampling plots. The frequency of *Diospyrus melanoxyton* Roxb. was recorded highest, followed by *Shorea robusta* Gaertn, *Buchnanania lanzan* Spr. and *Madhuca indica* Gmel. The density of *Shorea robusta* saplings (7788.73 saplings per ha.) was highest, followed by *Diospyrus melanoxyton* (6683.10 saplings per ha.) and *Terminalia tomentosa* W. & A. (1056.34 saplings per ha.). Apart from these species, the

other species which had relatively high saplings in the study area were *Madhuca indica* Gmel., *Cardia nucleodii* H. J. & Th., *Buchanania lanzan* Spr., *Anogeissus latifolia* Wall., *Pterocarpus marsupium* Roxb. and *Holarrhena antidysenterica* Wall. (Table 4.8).

Table 4.8. Distribution pattern of tree saplings in the study area

Tree Sapling	Local name	Abundance	Freq- uency	Relative Frequency	Density per ha.	Relative Density	IVI
<i>Adina cordifolia</i> Hook. f.	Karmi	1.00	0.04	0.69	21.13	0.10	0.79
<i>Anogeissus latifolia</i> Wall.	Dhaura	4.00	0.18	3.15	422.54	2.04	5.49
<i>Bauhinia variegata</i> L.	Champa	1.00	0.02	0.46	14.08	0.07	0.53
<i>Bombax malabaricum</i> DC	Semer	1.00	0.02	0.46	14.08	0.07	0.53
<i>Buchanania lanzan</i> Spr.	Char	2.58	0.51	9.90	781.60	3.77	13.67
<i>Careya arborea</i> Roxb	Kumahi	1.00	0.06	1.15	35.21	0.17	1.32
<i>Cuscuta graucalens</i> Dalz	Chilhi	1.82	0.43	8.29	457.75	2.21	10.50
<i>Cardia nucleodii</i> H. J. & Th.	Dhahjar	7.43	0.17	3.22	732.39	3.53	6.75
<i>Delbergia paniculata</i> Roxb.	Dhobin	1.00	0.04	0.69	21.13	0.10	0.79
<i>Diospyros melanoxylon</i> Roxb.	Tendu	13.37	0.85	16.35	6683.10	32.20	18.55
<i>Eugenia hagniana</i> Wall.	Janti	1.00	0.02	0.46	14.08	0.07	0.53
<i>Ficus religiosa</i> L.	Pipal	1.00	0.01	0.23	7.04	0.03	0.26
<i>Gardenia latifolia</i> Ait.	Mali	21.50	0.02	0.46	302.82	1.46	1.92
<i>Gardenia turgida</i> Roxb.	Khadhar	2.11	0.11	2.07	133.80	0.64	2.72
<i>Garura pinnata</i> Roxb.	Kekad	1.00	0.11	2.07	63.38	0.31	2.38
<i>Holarrhena antidysenterica</i> Wall.	Korya	2.71	0.20	3.91	323.94	1.56	5.48
<i>Hymenodictyon excelsum</i> Wall.	Pote	1.00	0.04	0.69	21.13	0.10	0.79
<i>Lagerstroemia parviflora</i> Roxb.	Sidha	1.48	0.30	5.70	260.56	1.26	7.01
<i>Madhuca indica</i> Gmel	Mahuwa	3.34	0.38	7.37	753.52	3.63	11.00
<i>Odina woderi</i> Roxb.	Gurja	2.25	0.05	0.92	63.38	0.31	1.23
<i>Ougenia dalbergioides</i> Benth.	Sadhan	6.50	0.02	0.46	91.55	0.44	0.90
<i>Pterocarpus marsupium</i> Roxb.	Bija	4.55	0.13	2.53	352.11	1.70	4.23
<i>Saccolpetaalum tomentosa</i> H. J. & Th.	Kari	1.25	0.10	1.84	70.12	0.34	2.18
<i>Semecarpus anacardium</i> L.	Bhelwa	1.14	0.08	1.61	56.34	0.27	1.88
<i>Shorea robusta</i> Gaertn.	Sal	17.02	0.77	14.97	7788.73	37.53	52.50
<i>Sterculia urens</i> Roxb.	Khurul	2.75	0.11	2.07	176.66	0.85	2.92
<i>Symplocos racemosa</i> Roxb.	Lordh	1.00	0.01	0.23	7.04	0.03	0.26
<i>Terminalia chebula</i> Retz.	Harra	1.50	0.02	0.46	21.13	0.10	0.56
<i>Terminalia tomentosa</i> W. & A.	Saja	5.00	0.26	6.91	1056.34	5.09	12.01
<i>Wrightia tomentosa</i> Roem. & Sch.	Dadhiva	1.00	0.01	0.23	7.04	0.03	0.26
Total		113.30	5.17	99.94	20753.52	100	199.94

The regeneration pattern in tree species was much uncertain with many tree species. The saplings of 7 tree species were not encountered in the sampling plots during the survey, although these tree species were found in the study area. These species were *Albizzia procera* Benth., *Boswellia serrata* Roxb., *Bridelia retusa* Spreng., *Ficus bengalensis* L., *Phyllanthus emblica* L., *Schleichera trijuga* Willd. and *Terminalia bellerica* Roxb. Similarly, 11 tree species were only encountered in the sapling stage and no mature tree species was encountered in the sampling plots. These species were *Bauhinia variegata* L., *Bombax malabaricum* DC., *Careya arborea* Roxb., *Cordia macleodii* H. f. & Th., *Ficus religiosa* L., *Gardenia turgida* Roxb., *Holarrhena antidysenterica* Wall., *Hymenodictyon excelsum* Wall., *Pterocarpus marsupium* Roxb., *Saccopetalum tomentosum* H. f. & Th. and *Wrightia tomentosa* Roem. & Sch.

4.4 Status of medicinal plants

Of the total plant species, 36 species distributed over 26 families were used for curing various ailments by the local people living in the study area. The medicinal plants used by local people occupied various life forms, of which 14 were herbaceous species (3 climbers, 1 grass and 10 forbs), 13 were tree species, 6 were woody climber species and 3 were shrub species (Table 4.9). Combretaceae and Liliaceae had the highest number of species used in curing diseases. Different plant parts of these species such as root, tuber, leaf, fruit, bark, resin, seed, latex etc. were used as medicine. In majority of cases, root (14 species) was used for preparing medicine, followed by fruit (7 species) and bark (5 species). More than one plant parts of 4 plant species such as *Garuga pinnata* Roxb., *Helicteris isora* L., *Holarrhena antidysenterica* Wall. and *Ficus bengalensis* L. were used as medicine. Cough, bodyache, dysentery, cut-wounds, scorpion bite, snake bite, muscular pain, indigestion, etc were among the ailments cured by using these plant species.

Table 4.9. Plant species used by local people of the study area for curing various ailments

Botanical Name	Family	Local Name	Habit	Use	Part used
<i>Achyranthus aspera</i> L.	Amaranthaceae	Gathiya, Aghada	Herb	Diuretic, tonic, insect and scorpion bite	Leaf
<i>Acrotis calanios</i> L.	Avicenniaceae	Bach	Herb	Medicine	Root
<i>Aegle marmelos</i> Correa.	Rutaceae	Bel	Tree	Medicine	Fruit
<i>Asparagus racemosus</i> Willd.	Liliaceae	Kargi	Shrub	Intestinal pain	Root
<i>Boswellia serrata</i> Roxb.	Burseraceae	Saliha	Tree	Medicine	Resin
<i>Caesalpinia bonducella</i> Flem.	Caesalpiniaceae	Gataran	Woody Climber	Tonic	Seed
<i>Celastrus pemeulatu</i> Willd.	Celastraceae	Unjain	Woody Climber	Oil wounds	Seed
<i>Ceropegia bulbosa</i> Roxb.	Aselepiadaceae	Bosiya kandha	Climber	Medicine	Root
<i>Chlorophytum tuberosum</i> Baker	Liliaceae	Safed musli	Herb	Medicine	Tuber
<i>Chloroxylon swietenia</i> DC.	Meliaceae	Bhirra, bharahi	Tree	Mosquito repellent	Leaf
<i>Cissus quadrangularis</i> L.	Vitaceae	Hathjod	Climber	Medicine	Root
<i>Curcuma angustifolia</i> Roxb.	Zingiberaceae	Tikhur	Herb	Medicine	Root
<i>Cynodon dactylon</i> Pers.	Poaceae	Duob	Grass	Medicine	Root
<i>Dioscorea bulbifera</i> L.	Dioscoraceae	Agitha	Climber	Medicine	Tuber
<i>Dioscorea</i> sp	Dioscoraceae	Gethi kandha/ Karuha	Herb	Medicine	Fruit
<i>Diospyros melanoxylon</i> Roxb.	Ebenaceae	Tendo	Tree	Snake bite	Root
<i>Elocadendron glaucum</i> Pers.	Celastraceae	Mamri, Jamusi	Shrub	Snake bite	Root
<i>Ficus bengalensis</i> L.	Moraceae	Gad miri	Tree	Dysentery	Latex, bark
<i>Garcinia pinnata</i> Roxb.	Burseraceae	Khenkara, Kekad	Tree	Snake bite, wounds	Bark, fruit
<i>Gloriosa superba</i> L.	Liliaceae	Karihari	Herb	Phoda funsi	Root
<i>Helleteris isora</i> L.	Sterculiaceae	Aathi, marorphan	Shrub	Colic, intestinal disorder	Bark, fruit
<i>Hibiscus abelmoschus</i> L.	Malvaceae	Kapalsiya kandha	Herb	Bleeding in urine	Root
<i>Holarrhena antidysenterica</i> Wall.	Apocynaceae	Kariya	Tree	Fever, dysentery	Root, Bark
<i>Ipomoea mauritiana</i> Jacq.	Convolvulaceae	Patal kohra	Woody Climber	Indigestion	Root
<i>Pencedamum nyporensis</i> (Cl.) Prax	Asteraceae	Tejraj	Herb	Medicine	Root
<i>Phoenix acutis</i> Bugh	Palmaceae	Chind	Herb	After child birth	Fruit
<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Awala	Tree	Indigestion	Fruit
<i>Sonchecarpus amacardium</i> L.	Anacardiaceae	Bhelwa	Tree	Intoxication	Fruit
<i>Symplocos jahirihari</i> A. Juss.	Meliaceae	Rohina, rohan	Tree	Muscular pain	Bark

Botanical Name	Family	Local Name	Habit	Use	Part used
<i>Terminalia arjuna</i> Bedd.	Combretaceae	Kahun, arjun	Tree	Medicine	Bark
<i>Terminalia bellerica</i> Roxb.	Combretaceae	Baira	Tree	Cough	Fruit
<i>Terminalia chebula</i> Retz.	Combretaceae	Harra	Tree	Cough	Fruit
<i>Oryzias indica</i> Kunth.	Hyacinthaceae	Ban pyaz	Herb	Scorpion bite	Tuber
<i>Vallisneria spiralis</i> L.	Apocynaceae	Dudhaya kundha	Woody Climber	Lactating mother	Latex
<i>Vitis rotundifolia</i> L.	Vitaceae	Dhokar bela	Woody Climber	Bodyache	Root
<i>Ziziphus rugosa</i> Lamk.	Rhamnaceae	Churalan, Churna	Woody Climber	Bodyache	Whole

The area harboured several important medicinal plants used in Ayurvedic medicines. *Terminalia arjuna* Bedd., *Terminalia bellerica* Roxb., *Terminalia chebula* Retz., *Phyllanthus emblica* L., *Holarrhena antidysenterica* Wall., *Hibiscus abelmoschus* L., *Gloriosa superba* L., *Dioscorea bulbifera* L., *Aegle marmelos* Correa., *Boswellia serrata* Roxb., *Acetis vilanus* L., *Asparagus racemosus* Willd. etc. were among the prominent ingredients of the Ayurvedic medicine. All three species viz., *Terminalia arjuna*, *Terminalia bellerica* and *Phyllanthus emblica* of important Ayurvedic medicine Triphala were available in the study area.

4.5 Vegetation in the Protected Forests

There are sixteen (16) protected forests and one (1) reserved forest within the 10 km radius of the mining lease area, of these 2 protected forests viz., Phatepur and Matringa were within the core zone areas. The vegetation distribution across the protected and reserved forests is described below.

4.5.1 Pendrakhi Protected Forest

Pendrakhi protected forest is located within 10 km radius towards the northwest direction of the core zone. *Shorea robusta*, *Diospyrus melanoxylon* and *Madhuca indica* are the dominant tree species with average circumference of breast height (dbh) of 100 cm, 103 cm and 85 cm respectively. This protected forest is mainly Sal-mixed forest and had relatively good vegetation cover as well as plant species diversity. Some of the important ethnobotanical species found in this protected forest were *Chloroxylon*

swietenia, *Bahunia variegata* and *Bahunia vahlii*. Saja has the highest number of saplings in this protected forest, followed by *Anogeissus latifolia*, *Diospyrus melanoxylon* and *Shorea robusta*. The ground flora was mainly dominated by grass- herb species. Few trees of *Phyllanthus emblica*, a medicinal plant species categorized as vulnerable, are also found in these forests with mean cbh of about 60 cm.

4.5.2 Chakeri Protected Forest

This locality was at 5.1 km towards east and north east of the core zone. The major tree species in this protected forest are *Shorea robusta*, *Buchnanian lanzan*, *Terminalia tomentosa*, *Symplocos racemosus*, *Albezzia procera*, and *Diospyrus melanoxylon* that composed the top canopy vegetation. The lower and middle canopies are composed of *Buchnanian lanzan*, *Casearia graveolens*, *Shorea robusta*, *Terminalia tomentosa*, *Diospyrus melanoxylon*, *Albezzia procera* etc. The ground vegetation is dominated by *Cassia* spp. such as *Cassia fistula*, *Cassia obtusifolia* and *Cassia tora*.

4.5.3 Tara East Protected Forest

This protected forest was located at 2.8 km west of core zone. The forest was mainly dominated by sal. Some other tree species such as *Terminalia tomentosa*, *Anogeissus latifolia*, *Maduca indica* and *Delbergia panniculata* are also found in this protected forest. The ground vegetation is mainly dominated by *Phoenix acaulis*. *Cissus quadrangularis*, a climber used as medicine, is also found in this forest area.

4.5.4 Janardhanpur Protected Forest

Janardhanpur protected forest is located at 2.3 km north-west of core zone area. The forest is mainly dominated by *Shorea robusta* with *Anogeissus latifolia*, *Terminalia tomentosa*, *Buchnanian lanzan*, *Maduca indica* and *Diospyrus melanoxylon* as the major companion tree species. *Woodfordia floribunda* was the major shrub species and *Phoenix acaulis* dominated the ground vegetation. *Abrus precatorius*, a climber, is also found in this protected forest.

4.5.5 *Shivnagar Protected Forest*

This protected forest is located at 3.7 km north of core zone. The forest is mainly dominated by *Shorea robusta* with *Madhuca indica*, *Terminalia tomentosa*, *Buchanania lanzan*, and *Diospyros melanoxylon* as the major associate tree species. *Asparagus racemosus*, a near-threatened medicinal plant species used for curing internal injuries, is found in this protected forest area.

4.5.6 *Ramgarh Protected Forest*

Ramgarh, a hillock, is located at 8.2 km north-east of core zone. Due to the distinct geography (hillock with rocky mountains), the vegetation composition of Ramgarh protected forest is different from rest of the buffer zone areas. Apart from *Shorea robusta*, some of the important tree species found in the Ramgarh protected forest are *Garua pinnata*, *Hymenodictyon excelsum*, *Odina wodier*, *Gardenia turgida*, *Gardenia latifolia* and *Boswellia serrata*. *Nyctanthus arbortristis*, *Desmodium pulchellum* and *Antidesma acidum* are among the important shrub species in this protected forest. The ground vegetation is also found in patches. *Desmostachya bipinnata* is the major grass species at the hill top. Some important plant species such as *Bergenia sp.* and *Costus spaciosus* used for health care are also found growing in these forests.

4.5.7 *Kotmi Protected Forest*

This protected forest is situated at 7.8 km north to north-east of core zone. In the Sal forests of Kotmi protected forest many other important tree and shrub species, such as, *Lagerstrœmia parviflora*, *Madhuca indica*, *Anogeissus latifolia*, *Semecarpus amacardium*, *Garua pinnata*, *Butea monosperma* etc. are also found. The fringes of this forest are infested by *Lantana camara*, a woody weed species that was suppressing the native ground vegetation.



Plate 4.5. Forest Type in Buffer zone

4.5.8 Bhandargaon Protected Forest

The protected forest of Bhandargaon is situated at 9.9 km north to north-east of core zone. The forest is quite open and only few scattered tree species mainly of *Shorea robusta*, *Madhuca indica* and *Diospyrus melanoxylon* are found in this protected forest. A single individual of one of the important tree species, called as *Terminalia arjuna*, with 400 cm dbh categorized as near threatened is found in Bhandargaon protected forest. This species is growing at the bank of small rivulet.

4.5.9 Murgaoon Protected Forest

The Murgaoon protected forest is located at 6.6 km north of core zone. Apart from *Shorea robusta*, the major tree species are *Buchnania lanzan*, *Madhuca indica* and *Diospyrus melanoxylon*. *Curissu spinatum*, a shrub species and *Derris scandens*, a woody climber are found growing in this protected forest.

4.5.10 Dhajag Protected Forest

The protected forest of Dhajag is situated at 7.4 km west of core zone. This protected forest is composed of mixed tree species dominated by *Bombax sp* and *Anogeissus latifolia*. Some areas in this forest are predominated by *Odina wadler*, *Aegle marmelos*, an important medicinal plant species was found growing in this mixed forest. The other dominant species in this forest are *Lagerstromia parviflora*, *Butea monosperma*, *Bahunia retusa*, *Pterocarpus marsupium*, *Ziziphus xylophyra*, *Adina cordifolia*, etc. *Ipomea carnea* is found growing in the trail or road side areas. There are also plantations of *Jatropha*, a species used for *Jatropha* oil, a substitute of diesel.



Plate 4.6. Forest type in Buffer zone

4.5.11 Paturiya Protected Forest

The protected forest of Paturiya is situated at 4.6 km south to south west of core zone. This forest is dominated by *Diospyrus melanoxylon*, *Anogeissus latifolia*, *Madhuca indica* and *Shorea robusta*. An important tree species, *Soyamida fabrifuga*, used as medicine for curing muscular pain is found as one of the dominant tree species in this forest. *Woodfordia floribunda* is one of ethnobotanical species used in preparing natural dye was found in the riverine areas.

4.5.12 Chirwan Protected Forest

The Chirwan protected forest is located at 9.2 km north of core zone. The major tree species in this protected forest are *Shorea robusta*, *Buchnanania lanzan*, *Madhuca indica*, *Lannea coromandelica* and *Diospyrus melanoxylon*. *Bridella retusa* and *Woodfordia floribunda* are other important species growing in this forest.

4.5.13 Phatepur Protected Forest

Phatepur protected forest is located within the mining lease area. *Shorea robusta* is the most dominant species in this forest, followed by *Terminalia tomentosa*, *Cordia macleodii*, *Buchnanania lanzan*, and *Anogeissus latifolia*. The saplings of *Shorea robusta* is found highest in this forest, followed by *Cordia macleodii* and *Diospyrus melanoxylon*. *Flacourtia indica* is the major dominant shrub species. The ground flora was mainly dominated by *Cassia fistula* and *Achyranthus aspera*. *Holarrhena antidysenterica* was one of the important tree species in this forest used in the treatment of dysentery. The presence of *Butea monosperma* and *Ipomoea carnea* indicated the manmade disturbances in this forest as the Phatepur village is located in the fringes of this forest.

4.5.14 Chandanagar Protected Forest

The Chandanagar protected forest is located at 8.9 km north to north west of core zone. The major tree species in this protected forest are *Shorea robusta*, *Madhuca indica* and *Diospyrus melanoxylon*.

4.5.15 *Matringa Protected Forest*

This protected forest is located within the mining lease area. *Shorea robusta* is the dominant tree species in this protected forest, followed by *Madhuca indica*, *Semecarpus anacardium* and *Diospyrus melanoxylon*.

4.5.16 *Putter Protected Forest*

The Putter protected forest is located at 4.5 km east to north east of the core zone. The forest is dominated by *Shorea robusta* with *Madhuca indica* and *Diospyrus melanoxylon* as the major associate species.

4.5.17 *Pidiya Reserved Forest*

This reserved forest is located at 1.6 km west of the core zone. *Shorea robusta* is the dominant tree species in these forests with *Diospyrus melanoxylon*, *Anogeissus latifolia* and *Madhuca indica* as the major associate species.

4.6. Status of threatened plant species

Of the total plant species found in the study area, 18 species fall under various threat categories. *Acorus calamus* L. is the endangered species as categorized by the IUCN red list criteria. This species was found in the marshy and water logged areas. There are reports on declining population of *Acorus calamus* throughout entire State of Chhattisgarh over the past decade (Ved et. al., 2003). This species is widely used for medicine, and exploitation for preparing herbal drug is rated as possible threat for its survival in the wild. *Acorus calamus* is being cultivated in different parts of Chhattisgarh State.

A total of 12 species viz., *Gloriosa superba* L., *Dioscorea bulbifera* L., *Sterculia urens* Roxb., *Curcuma angustifolia* Roxb., *Boswellia serrata* Roxb., *Pterocarpus marsupium* Roxb., *Phyllanthus emblica* L., *Peucedanum mugpurensis* (Cl.) Prain, *Custus speciosus* (Koen.) Sm., *Chlorophytum tuberosum* Baker, *Celastrus peniculata* Willd., and *Terminalia chebala* Retz. are vulnerable in the study area and are also used by local people for curing various types of ailments. There are 5 plant species growing in the

study area, which have been categorized as near threatened species (Table 4.10). These threatened plant species found in the study area are described as under.

Table 4.10. Rare and endangered plant species in the study area

Botanical Name	Local Name	Habit	Family	Rarity status
<i>Abrus precatorius L.</i>	Kwunti	Climber	Leguminosaceae	Near Threatened
<i>Acorus calamus L.</i>	Bach	Herb	Acoraceae	Endangered
<i>Asparagus racemosus Willd.</i>	Kargi	Shrub	Liliaceae	Near Threatened
<i>Boswellia serrata Roxb.</i>	Saliha	Tree	Burseraceae	Vulnerable
<i>Buchanania lanzan Spr.</i>	Char	Tree	Anacardiaceae	Near Threatened
<i>Celastrus paniculata Willd.</i>	Unjain	Woody Climber	Celastraceae	Vulnerable
<i>Ceropegia bulbosa Roxb.</i>	Bosiya kandha	Climber	Asclepiadaceae	Near Threatened
<i>Chlorophytum tuberosum Baker</i>	Safed musli	Herb	Liliaceae	Vulnerable
<i>Costus speciosus (Koen.) Sm.</i>	Kewal, ban haldi	Herb	Zingiberaceae	Vulnerable
<i>Curcuma angustifolia Roxb.</i>	Tikhur	Herb	Zingiberaceae	Vulnerable
<i>Dioscorea bulbifera L.</i>	Agitha	Climber	Dioscoraceae	Vulnerable
<i>Gloriosa superba L.</i>	Kharha godi, karihari	Herb	Liliaceae	Vulnerable
<i>Peucedanum naggpurens (Cl.) Prain</i>	Tejraj	Herb	Asteraceae	Vulnerable
<i>Phyllanthus emblica L.</i>	Awala	Tree	Euphorbiaceae	Vulnerable
<i>Pterocarpus marsupium Roxb.</i>	Bija	Tree	Leguminosaceae	Vulnerable
<i>Sterculia urens Roxb.</i>	Khurul, khurlo	Tree	Sterculiaceae	Vulnerable
<i>Terminalia arjuna Bedd.</i>	Kahua, arjun	Tree	Combretaceae	Near Threatened
<i>Terminalia chebula Retz.</i>	Harra	Tree	Combretaceae	Vulnerable

4.6.1 *Acorus calamus L.*

This species is locally known as Bach and belongs to the family Acoraceae. As per the IUCN red list criteria this species has been categorized as endangered species to the state of Chhatisgarh. There has been a continuous decline in the population of this species in the wild and over the past decade 50 to less than 80 % populations of this species has been reduced in the wild. This species occurs in the water logged and marshy areas. The rhizomes of *Acorus calamus* is traded at local to international market. This species needs special care and should be planted in the bunds of ponds where marshy conditions exist.

Within Chhattisgarh this species has been reported from Surguja, Bastar, Dhamtari, Bilaspur, Kavadha, Durg and Raigarh areas (Ved et. al., 2003).

4.6.2 *Abrus precatorius* L.

Abrus precatorius is locally known as Kwanti and belongs to the family Leguminosae. This species is categorized as near threatened as per the IUCN red list criteria to the state of Chhattisgarh. Over the past decade about and less than 30 % populations of this species has been reduced in the wild. The major habitat of this species is forested area. Leaves, shoot and root of this species are in local, national and international trade. This species is used for preparing herbal medicines, especially for curing dental problems, baldness, dandruff, and skin diseases.

4.6.3 *Asparagus racemosus* Willd.

This species is locally known as Kargi and belongs to the family Liliaceae. In the IUCN red list criteria, this species falls in the near threatened category, especially to the state of Chhattisgarh. Over the past decade about 30 % populations of this species has been reduced in the wild. Forested area and outskirts of forests as undergrowth in mixed and open forest are the major habitat of this species. Root is the important plant part, which is used and traded in local, national and international market. The density of Kargi species was 14.08 individuals per ha and frequency was 0.02 in the core zone of the study area. Since the population of this species is low and declining over the year, ex-situ conservation of this species needs to be done at the large scale. This species may be grown as the under story species with the plantation of trees.

4.6.4 *Boswellia serrata* Roxb.

Boswellia serrata Roxb. is locally known as Saliba belongs to the family Burseraceae. In the IUCN red list criteria, this species falls in the vulnerable category with respect to the state of Chhattisgarh. Over the past decade more than 30 % populations of this species has been reduced in the wild. Tropical dry deciduous forests are the ideal habitats of this species. Gum of this species is used as medicine and therefore extracting gum through

destructive harvesting imposes major threat on its population in the wild. *Boswellia serrata* is one of the highly traded medicinal plant species (Ved and Garaya, 2007). Extensive use of its wood for packing and plywood is leading to further depletion of its population in wild. The density of Saliba was 9.52 individuals per ha and frequency was 0.10 in the core zone of the study area. The dominance and relative dominance of this species in terms of basal area were 1.47 m² per hectares and 4.71 respectively. The IVI of this species was 11.27. This species has poor regeneration capacity as evident in the present study that saplings were not encountered in the sampling plots, therefore it needs special care.

4.6.5 *Buchanania lanzan Spr.*

This species is locally known as Char belongs to the family Anacardiaceae. In the IUCN red list criteria, this species falls in near threatened category for the state of Chhatisgarh. *Buchanania lanzan* is one of the highly traded medicinal plants collected from the tropical dry deciduous forests. The fruit and seeds of this species are in local to international trade. The density of Char was 29.76 individuals per ha and frequency was 0.26 in the core zone of the study area. The dominance and relative dominance of this species in terms of basal area were 1.19 m² per hectares and 3.81 respectively. This species was one of the important and companion species of the Sal forests in the study area. The IVI of this species was 22.94, which reflects the dominance of this species in terms of frequency, density and basal area. The sapling density of Char was 14.08 individuals per ha and sapling frequency was 0.51 in the core zone of the study area.

4.6.6 *Celastrus paniculata Willd.*

Celastrus paniculata is locally known as Ujain belongs to the family Celastraceae. In the IUCN red list criteria, this species falls in the vulnerable category for the state of Chhatisgarh. *Celastrus paniculata* is one of the highly traded medicinal plants collected from the tropical dry and moist deciduous forests. The seeds of this species are in trade. *Celastrus paniculata* is a treasured medicinal herb that is revered for its effects on the

brain and has been used for centuries in Ayurveda for sharpening the memory and increasing intellect. It is a woody climber and removal of this climber for seeds has resulted in the population decline. Further seed collection has affected the regeneration of this species in the wild. The species does not grow easily and thus there is also difficulty in propagation and cultivation at large scale of this species.

4.6.7 *Ceropegia bulbosa* Roxb.

Ceropegia bulbosa is locally known as Bosiya kandha and belongs to the family Aselepiadaceae. In the IUCN red list criteria, this species falls in near threatened category for the state of Chhatisgarh. This species generally grows in the mixed forests and declining in its natural habitats. The leaf, fruit and rhizomes of this species are used as medicine.

4.6.8 *Chlorophytum tuberosum* Baker

This species is locally known as Safed Musli and belongs to the family Liliaceae. This species falls in the vulnerable category for the state of Chhatisgarh as per the assessment of IUCN red list criteria. Open mixed forests are the major habitats of this species. Underground plant parts, such as tubers, of this species are in trade. Recently apart from medicine, this species is being used in carpet and tobacco industry which is creating pressure on the wild populations.

4.6.9 *Costus speciosus* (Koen.) Sm.

Costus speciosus is locally known as Kewu/ ban haldi and belongs to the family Zingiberaceae. In the IUCN red list criteria, this species falls in the vulnerable category for the state of Chhatisgarh. This species mainly grows in the Sal forests and deforested lands and shady places. Rhizomes are collected for trade and used in medicine. Due to early harvesting of rhizomes, seed formation is scanty and thus creating problem for regeneration. There has been more than 30 % decline in the wild populations of this species over the past decade.

4.6.10 *Curcuma angustifolia* Roxb.

Curcuma angustifolia is locally known as Tikhur and belongs to the family Zingiberaceae. This species falls in the vulnerable category for the state of Chhatisgarh as per the assessment of IUCN red list criteria. This species mostly grows in the moist hillock areas. Rhizomes are collected for trade and used for preparing medicine. There has been a continuous decline of this species in the wild due to overharvesting.

4.6.11 *Dioscorea bulbifera* L.

This species is locally known as Agitha and belongs to the family Dioscoreaceae. As per the assessment of IUCN red list criteria, this species falls in the vulnerable category for the state of Chhatisgarh. Dry mixed forests are the major habitats of this species. Underground plant parts such as tubers are collected for trade and used as medicine. Though it is widely distributed but due to over-collection, there has been a continuous decline of this species in the wild.

4.6.12 *Gloriosa superba* L.

Gloriosa superba is locally known as Kalihari/ and or Kharha godi and belongs to the family Liliaceae. As per the assessment of IUCN red list criteria, this species falls in the vulnerable category for the state of Chhatisgarh. It is a climber herb and dry mixed forests are the major habitats of this species. Underground plant parts such as rhizomes are collected for trade and used as medicine. Seeds are also used as medicine. The existing populations of this species are under pressure due to overharvesting from the wild as the rhizomes and seeds are in local, national and international trade.

4.6.13 *Peucedanum nagpureense* (Cl.) Prain

Peucedanum nagpureense is locally known as Tejraj belongs to the family Asteraceae. This species falls in the vulnerable category for the state of Chhatisgarh as per the assessment of IUCN red list criteria. Deciduous mixed forests are the major habitats of this species. Roots and seeds are collected for local, national and international trade for preparing

herbal medicine. This species was very low in frequency and density and did not occur on the sampling plots during the survey.

4.6.14 *Phyllanthus emblica L.*

This is a tree species locally known as Awala and belongs to the family Euphorbiaceae. As per the assessment of IUCN red list criteria, this species falls in the vulnerable category for the state of Chhatisgarh. Mixed forests are the major habitats of this species. Fruits are collected for food and medicine by local people. Destructing harvesting of fruits is the major cause of concern for the conservation of this species. The density of Awala species was 9.52 individuals per ha and frequency was 0.08 in the core zone of the study area. The dominance and relative dominance of this species in terms of basal area were 0.38 m² per hectares and 0.112 respectively.

4.6.15 *Pterocarpus marsupium Roxb.*

Pterocarpus marsupium is a tree species locally known as Bija and belongs to the family Leguminosae. This species falls in the vulnerable category for the state of Chhatisgarh as per the assessment of IUCN red list criteria. Tropical dry deciduous forests are the major habitats of this species. Wood and gum are collected for local to global trade. The sapling density of Bija was 352.11 individuals per ha in the core zone of the study area, however, mature tree species did not occur in the sampling plots.

4.6.16 *Sterculia urens Roxb.*

Sterculia urens is a tree species locally known as Khurul and belongs to the family Sterculiaceae. This species falls in the vulnerable category for the state of Chhatisgarh as per the assessment of IUCN red list criteria. Tropical dry deciduous forests are the major habitats of this species. Gum of this species is collected for preparing medicine. Overexploitation for gum is the cause of mounting pressures on the wild populations. The mature tree species of Khurul was not encountered in the sampling plots, however its sapling was found in sampling plots. The density of saplings of Khurul was 176.06 individuals per ha and relative frequency 2.07 in the core zone of the study area.

4.6.17 *Terminalia arjuna* Bedd.

This is a tree species locally known as Arjun and belongs to the family Combretaceae. As per the assessment of IUCN red list criteria, this species falls in near threatened category for the state of Chhatisgarh. Bark is the major plant part of this species used in curing medicine. Tropical forests along water sources are the major habitats of this species. This species was found in the buffer zone of the study area.

4.6.18 *Terminalia chebula* Retz.

Terminalia chebula is a tree species locally known as Harra and belongs to the family Combretaceae. As per the assessment of IUCN red list criteria, this species falls in the vulnerable category for the state of Chhatisgarh. Dry deciduous forests are the major habitats of this species. Fruit of this species are collected for curing cough and cold. The density of this species was calculated 2.38 individuals per ha for the rare zone of the study area. The dominance and relative dominance of Harra in terms of basal area were 0.16 m² per hectares and 0.52 respectively.

4.7 Inferences

The findings of this study reflect that the forest vegetation in the study area is predominated by *Shorea robusta*, which have *Madhuca indica*, *Diospyrus melanoxylon* and *Buchanania lanzan* as the major companion species. The forest has either the high girth class mature tree species or the saplings of these tree species. The middle canopy or the middle girth class tree species have the low availability. The ground vegetation has also obtained poor diversity. The low vegetation cover and density are due to high anthropogenic pressures mainly in the form of heavy livestock grazing and collection of ethnobotanically important species.

The forest though low in tree, shrub and herb density, 18 species found fall under various threat categories as per the IUCN categories. Some of the rare species were not encountered in the sampling plots during the survey due to low population size and restricted distribution pattern. None of the mature individual of Khural tree species

encountered in the sampling plots, however its sapling was found. Tejraj was one of the threatened species, very low in frequency and density, and did not occur on the sampling plots during the survey.

There were different types of pressures on threatened plant species as destructing harvesting of Awala fruits was the major cause of concern. The entire fruit bearing twig of Aonla was broken in most of the cases for gathering fruits. The populations of Kadihari are under pressure due to overharvesting of its rhizome and seeds from the wild as these plant parts are traded in local to international market. Underground plant parts such as tubers of Agitha are collected for trade and used as medicine. Though Agitha has a wide range of distributed but due to over-collection, there has been a continuous decline of this species in the wild. In case of Kewu, due to early harvesting of rhizomes, seed formation is scanty and thus creating problem for its regeneration. Seed collection of Unjain has affected the regeneration of this species in the wild. Unjain does not grow easily and thus there is a moderate level of difficulty in propagation and cultivation at large scale of this species.

Extensive use of some of the rare species such as wood of Saliba for packing and plywood is leading to depletion of its population in wild. Saliba has poor regeneration capacity as evident in the present study that saplings were not encountered in the sampling plots. All these threatened but important species need special care. These threatened tree species need to be restored through plantations in the similar habitat types. The understory species such as Kargi may be grown as the under story species with the tree plantation. Species like Bach that occurs in the water logged and marshy areas needs special care and may be planted in the bunds of ponds where marshy conditions exist. The ex-situ conservation of these species should be done at the large scale for their survival in consultation with the State Forest Department.

Ecological Baseline Data - Fauna

The information presented here represents the status of fauna in the study area which may be considered as baseline status of the project area for future reference.

5.1 Fauna

The project area falls in the Surguja district of Chhattisgarh State and covers low elevations habitats. The faunal species recorded (Table 5.1) during the survey are based on both direct and indirect evidences.

The accounts of different faunal groups are presented below in Table 5.1

Table 5.1. Number of faunal groups reported in the study area

Faunal groups	No. of Species
Mammals	15
Birds	82
Reptiles	23
Butterflies	63
Spiders	27
Fishes	10

5.2 Mammals

The project area is quite poor as far as the mammalian fauna is concerned. Very few evidences were found of mammals in the area. Vocalization of Rhesus macaque (*Macaca mullatta*) and Common Indian langur (*Presbytis Entellus*) was heard from neighboring forest areas in the buffer zone but there was no direct sighting or indirect evidence of their presence in the entire project area in the core zone. The only mammalian species that were frequently seen in the project area (Core zone) was five striped squirrels. Rhesus macaques were seen only in Rangarh forest, which forms a part of buffer zone about 8.2 Km from the project area. Common langurs were seen in Tara forest, which is again part of the buffer bordering the core zone. Common Indian Mongoose was seen

once in the core zone of the project area. Jackals were the only animals to be frequently seen in the forests in immediate vicinity of Kete and Parsa villages. Other than these, there were no direct sightings during the survey period.

Of the total mammalian species seen in the study area, only Asian elephant and sloth bear are from Schedule I of the Wildlife Protection Act 1972. Wild dogs are reported in the census data of Udaipur Forest Range (Table 5.4) but during the survey their presence could not be confirmed either by direct sighting or by any of the indirect means. People in the area and the accompanying field assistant from village Kete also did not confirm the presence of the species in the area. Although there were some reports of wild dogs seen in the buffer zone namely Pendrakhi and Saidu forest areas few years back by the local people.

Table 5.2. List of mammals seen or reported from the study area

Common name	Scientific name	Sighting	Core	Buffer
Barking Deer	<i>Muntiacus muntiac</i>	No evidence/reported	-	✓
Sambhar	<i>Cervus unicolor</i>	No evidence /reported	-	✓
Spotted Deer	<i>Axis axis</i>	No evidence/reported	-	✓
Common Langur	<i>Presbytis entellus</i>	Direct evidence	-	✓
Rhesus macaque	<i>Macaca mulatta</i>	Direct evidence	-	✓
Elephant	<i>Elephas maximus</i>	Indirect evidence	✓	✓
Flying fox	<i>Pteropus giganteus</i>	seen	✓	✓
Sloth bear	<i>Mehrsus Ursinus</i>	Indirect evidence	✓	✓
Jungle cat	<i>Felis chaus</i>	No evidence/reported	-	✓
Striped hyena	<i>Hyena hyena</i>	Indirect sighting	✓	✓
Jackal	<i>Canis aureus</i>	Seen	✓	✓
Five striped Squirrel	<i>Funambulus Pennanti</i>	Seen	✓	✓
Field Rat	<i>Bandicota bengalensis</i>	Seen	✓	✓
Bandicoot	<i>Neosocia bandicota</i>	Seen	✓	✓
House Rat	<i>Rattus rattus-refescena</i>	Seen	✓	✓
Indian Hare	<i>Lepus nigricollis</i>	Indirect evidence	✓	✓
Indian wild Boar	<i>Sus scrofa</i>	Indirect evidence	✓	✓
Common Indian Mongoose	<i>Herpestes edwardsi</i>	Seen	✓	-

Table 5.3. Status of mammals found as per WPA, 1972

Common name	Scientific name	Status
Barking Deer	<i>Muntiacus muntjac</i>	Schedule III
Sambhar	<i>Capreolus unicolor</i>	Schedule III
Spotted Deer	<i>Axis axis</i>	Schedule III
Common Langur	<i>Presbytis entellus</i>	Schedule II
Rhesus macaque	<i>Macaca mulatta</i>	Schedule II
Asian Elephant	<i>Elephas maximus</i>	Schedule I
Flying fox	<i>Pteropus giganteus</i>	Schedule V
Sloth bear	<i>Ursus ursinus</i>	Schedule I
Jungle cat	<i>Felis chaus</i>	Schedule II
Striped hyena	<i>Hyaena hyaena</i>	Schedule III
Jackal	<i>Canis aureus</i>	Schedule II
Five striped Squirrel	<i>Funambulus pennanti</i>	Schedule IV
Field Rat	<i>Bandicota bengalensis</i>	Schedule V
Bandicoot	<i>Neosocia bandicota</i>	Schedule V
House Rat	<i>Rattus rattus-refescens</i>	Schedule V
Indian Hare	<i>Lepus nigricollis</i>	Schedule IV
Indian wild Boar	<i>Sus scrofa</i>	Schedule II
Common Indian Mongoose	<i>Herpestes edwardsi</i>	Schedule IV

Table 5.4. Population status of wild mammals in core zone and its vicinity in the buffer zone

Species	Forest area					Total
	Salhi Buffer	Ghatbarra Core	Easen Buffer	Parogiya Buffer	Tara Buffer	
Barking deer	-	3	2	4	-	14
Common Langur	-	98	112	18	100	328
Sloth Bear	10	26	10	15	10	71
Jackal	20	32	25	10	50	137
Wild Pig	-	3	2	6	-	11
Rhesus macaque	-	106	52	52	50	260
Hyena	5	-	2	-	1	08
Wild dog	-	-	15	-	20	35

Source: Udaipur range forest office census records 2005

Table 5.5. Status of Select mammals in the Buffer zone of the Study Area
(10 km radius)

Species	Elephant	S. bear	Hyena	jackal	Sāmbhar	Chital	Rhesus	Langur
Forest area								
Chandenagar P.F.	A	P	P	P	A	P	P	P
Chirwan P.F.	A	P	P	P	A	A	A	A
Murgaon, P.F.	P	P	A	P	A	A	P	A
Janardhanpur P.F.	A	P	P	P	A	P	A	P
Shivnagar, P.F.	A	P	P	P	A	P	A	P
Bhandargaon P.F.	A	P	P	P	A	A	A	P
Kotml, P.F.	A	P	A	A	A	A	P	P
Rangarh, P.F.	A	P	A	A	A	A	P	P
Putter, P.F.	A	P	A	A	A	P	A	P
Chakeri, P.F.	P	P	P	P	A	A	A	P
Matringa, P.F.	P	P	P	P	A	P	P	P
Pendrakhi, P.F.	P	P	P	P	P	P	P	P
Paturiya, P.F.	P	P	P	P	P	P	P	P
Phatepur, P.F.	A	P	P	P	A	A	A	A
Tara East, P.F.	P	P	P	P	P	P	P	P
Dhajaj, P.F.	P	P	P	A	A	A	P	P
Pidliya, R.F.	U	P	P	P	A	A	P	P

P=Present, A=Absent, U=unknown

5.2.1 Status of Mammals & their Habitats

The study area is mostly protected forest and is subjected to severe pressure from the villagers. The grazing pressures are immense and livestock grazing is prevalent in all the areas of the project site. Though the habitat reveals that it should be supportive of mammalian fauna but owing to the pressures the population status of mammal is very low in the project area. Large herds of cattle and livestock can be seen virtually daily in the entire project area. Some of the dense patches in the Ghatbarra area appear to be moderately good bear habitat. The Rocky and boulder areas in the project site appeared suitable for Sloth bears which are quite common in the Project area as well as in the entire forested tract in buffer zone and surrounding area.

Forested areas in the vicinity of the human settlements are good habitats for Hyenas and jackals. Hyenas were reported only close to the human habitations. One sighting of hyena was reported from Tara village in the buffer zone of the study area.

The suitability of the forest area in terms of elephant habitat was difficult to assess as the total residency period of elephants in the study area is very less ranging from five to ten days in a year. During their residency in the area they mostly invade villages for food at night and during early morning hours.

5.2.2 Sloth bear Status

Sloth bear is one of the reasonably common animals in the area. It is not only common in the project area but is also very common in the entire Surguja Circle. It is more or less uniformly distributed as per the sighting records, the local people reporting and the indirect evidence encountered during the field survey suggests. It is very difficult to assess the population of sloth bears in the area as they are nocturnal in nature and is difficult to sight. Sloth bear evidences have been found everywhere in the proposed project site and also in the buffer zone. There have been few cases of mauling by Sloth bear also reported by people. There is a population of 26 sloth bears from the core zone of the proposed mining block.

5.2.3 Elephant Status

Historically, according to Forsyth (1889), northern Chhattisgarh used to be the home of elephants. However, they became locally extinct in the early part of the twentieth century (Krishnan, 1972). In 1988 elephants migrated from Jharkhand into Chhattisgarh and for the first time, caused extensive damage to life and property. In 1993, the then Madhya Pradesh government captured 10 elephants in order to prevent any further invasions of elephants into Chhattisgarh. Just two years after this operation, i.e. from 1995 onwards, elephants have regularly gained access to Chhattisgarh.

Elephants in the recent past do not have a long history of residency in study area and more particularly in the project area. Elephants have started visiting the forest in the project area for past three to four years only. Ever since the herds of elephants have entered Chhattisgarh in late 1980's and subsequently in the following years, the herds



Plate 5.1. Wildlife evidence from the project area

have been moving from one place to the other in search of habitat. In the study area a herd of six elephants 2 adult males, 1 young male and 3 females has been visiting for last three to four years. Currently the movement is restricted mostly to the buffer zone and only thrice has the herd strayed in the core zone. The discussion with the villagers revealed that in the year 2005 the herd strayed in to the agricultural fields of Kete and Parsa villages causing damage, only to the standing crop. In the year 2007 the damage was caused only in the agricultural fields of Parsa village. In the year 2008 for the first time the herd strayed in to the outskirts of village Kete and caused damage to approximately eight houses. The herd broke into the houses and ransacked the stored paddy and other grains in the houses.

As told by the villagers Elephants for last three years have been coming only in summers but since last year they have started coming twice (in summers as well as in winters). The herd size is consistent for last two years. Six elephants pass by the proposed project site. Few villages like Ghatbarra, Hariharpur, Salhi are not affected by the elephants as elephants have not passed these villages ever. Elephants have come to village Kete once and broken the property inside the village and ransacked the grain stores of the local people. Elephants so far have not entered the Parsa village area and what ever damage they have caused in the Kete Village is only in the hutments in the peripheral area close to the forest. Elephants occasionally stray into peripheral areas of core zone on their way from Basen to Saïdu (Plate 5.2) for their onward movement towards Korba. For last three years elephants have been reported to be moving on this tract in the vicinity of the proposed project area.

But as it is evident from last three years information, it can be inferred that elephants do visit the study even if it is for five to ten days in a year. There is strong evidence of elephant presences in the buffer zone of the study area as it can be seen through series of indirect evidence in form of broken houses, robbed granaries and foot prints of elephants in the villages and human settlement (plate 5.3).

Currently the population of elephants moving adjacent to the proposed project area is only six. This herd may continue to use these areas seasonally or may completely abandon it also owing to man animal conflict in the area or may become resident and further increase the conflict level by raiding crops and houses for paddy, Mahua and any other grain stored in houses.



Plate 5.2. Elephant movement pattern in the buffer zone of project area



Plate 5.3. Elephant evidence from the buffer zone of the study area.

5.3 Avifauna

A total of 82 species of birds were recorded in the study area during the survey. The project area is quite rich in avian diversity but mostly only generalist species are seen in area. One species belonging to Schedule I of the Wildlife Protection Act (1972), namely,

Indian Peafowl is found in the buffer zone namely Rangarh PF, which is 8.2 km, NE of the mine block. This area is naturally protected by local people as it is pilgrimage site. Few individuals of Indian Peafowl were seen in this area. Apart from this no species belonging to Schedule I of the WPA 1972 is reported to be found in the study area. A detailed inventory of bird species encountered during the survey is given in Table 5.6.

Table 5.6. List of birds seen in proposed study area

S.No	Common name	Scientific name	WPA 1972 Status	Reported from Core/Buffer
1	Yellow-footed Green Pigeon	<i>Tyreron phoenicoptera</i>	Schedule IV	Core, Buffer
2	Rock Pigeon	<i>Columba livia</i>	Schedule IV	Core, Buffer
3	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Schedule IV	Buffer
4	Spotted Dove	<i>Streptopelia chinensis</i>	Schedule IV	Core, Buffer
5	Red Collared Dove	<i>Streptopelia tranquebarica</i>	Schedule IV	Core, Buffer
6	Alexandrine Parakeet	<i>Psittacula eupatoria</i>	Schedule IV	Core, Buffer
7	Rose ringed Parakeet	<i>Psittacula krameri</i>	Schedule IV	Core, Buffer
8	Plum Headed Parakeet	<i>Psittacula cyanocephala</i>	Schedule IV	Buffer
9	Common hawk cuckoo	<i>Hierococcyx varius</i>	Schedule IV	Core, Buffer
10	Asian Koei	<i>Eudynamis scolopacea</i>	Schedule IV	Buffer
11	Greater Coucal	<i>Centropus sinensis</i>	Schedule IV	Core, Buffer
12	Pied crested Cuckoo	<i>Clamator jacobinus</i>	Schedule IV	Buffer
13	Spotted owl	<i>Athene bramuh</i>	Schedule IV	Core, Buffer
14	Jungle Owllet	<i>Glaucidium radiatum</i>	Schedule IV	Core, Buffer
15	Indian Night Jar	<i>Caprimulgus asiaticus</i>	Schedule IV	Core, Buffer
16	Asian palm Swift	<i>Cypsiurus balasienensis</i>	Schedule IV	Buffer
17	Housed Swift	<i>Apus affinis</i>	Schedule IV	Core, Buffer
18	Pied king Fisher	<i>Ceryle rudis</i>	Schedule IV	Buffer
19	Common King Fisher	<i>Alcedo atthis</i>	Schedule IV	Core, Buffer
20	White throated King Fisher	<i>Halcyon smyrnensis</i>	Schedule IV	Core, Buffer
21	Blue Checked Bee Eater	<i>Merops persicus</i>	Schedule IV	Core, Buffer
22	Green Bee Eater	<i>Merops orientalis</i>	Schedule IV	Core, Buffer

S.No	Common name	Scientific name	WPA 1972 Status	Reported from Core/Buffer
23	Indian Roller	<i>Coracias benghalensis</i>	Schedule IV	Buffer
24	Common Hoopoe	<i>Upupa epops</i>	Schedule IV	Core, Buffer
25	Indian Grey Hornbill	<i>Ocyurus hinstris</i>	Schedule IV	Buffer
26	Coppersmith Barbet	<i>Megalaima haemacephala</i>	Schedule IV	Core, Buffer
27	Black Rumped Flameback	<i>Dinopim benghalense</i>	Schedule IV	Core, Buffer
28	Streak Throated woodpecker	<i>Picus xanthopygus</i>	Schedule IV	Core, Buffer
29	Heart Spotted Woodpecker	<i>Hemicircus cantata</i>	Schedule IV	Core, Buffer
30	Wire-tailed Swallow	<i>Hirundo smithii</i>	Schedule IV	Buffer
31	Bay-backed Shrike	<i>Lanius vittatus</i>	Schedule	Core, Buffer
32	Long-tailed Shrike	<i>Lanius schuch</i>	Schedule IV	Core, Buffer
33	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	Schedule IV	Core, Buffer
34	Black- Hooded Oriole	<i>Oriolus xanthornus</i>	Schedule IV	Core, Buffer
35	Black Drongo	<i>Dicrurus macrococtus</i>	Schedule IV	Core, Buffer
36	White bellied Drongo	<i>Dicrurus caeruleus</i>	Schedule IV	Core
37	Greater Racket-tailed Drongo	<i>Dicrurus paradiseus</i>	Schedule IV	Core
38	Large Cuckooshrike	<i>Coracina macul</i>	Schedule IV	Core, Buffer
39	Brahminy starling	<i>Sturnus pagodarum</i>	Schedule IV	Core, Buffer
40	Rosy Starling	<i>Sturnus roseus</i>	Schedule IV	Core, Buffer
41	Asian Pied Starling	<i>Sturnus contra</i>	Schedule IV	Core, Buffer
42	Bank Myna	<i>Aeridotheres ginginianus</i>	Schedule IV	Buffer
43	Common Myna	<i>Aeridotheres tristis</i>	Schedule IV	Core, Buffer
44	Jungle Myna	<i>Aeridotheres fuscus</i>	Schedule IV	Core, Buffer
45	House Crow	<i>Corvus splendens</i>	Schedule V	Core, Buffer
46	Large-billed Crow	<i>Corvus macrorhynchos</i>	Schedule V	Core, Buffer
47	Rufous Treepie	<i>Dendrocitta vagabunda</i>	Schedule IV	Core, Buffer
48	Small Minivet	<i>Pericrocotus cinnamomeus</i>	Schedule IV	Core, Buffer
49	Scarlet Minivet	<i>Pericrocotus flammeus</i>	Schedule IV	Core, Buffer
50	Common Wood shrike	<i>Tephrodornis pondicerianus</i>	Schedule IV	Core, Buffer
51	Common Iora	<i>Aegithina tiphia</i>	Schedule IV	Core, Buffer

S.No	Common name	Scientific name	WPA 1972 Status	Reported from Core/Buffer
52	Grey Heron	<i>Ardea cinerea</i>	Schedule IV	Buffer
53	Cattle egret	<i>Bubulcus ibis</i>	Schedule IV	Buffer
54	Great Egret	<i>Egretta albus</i>	Schedule IV	Core, Buffer
55	Little Egret	<i>Egretta garzetta</i>	Schedule IV	Core, Buffer
56	Oriental White Eye	<i>Zosterops palpebrosus</i>	Schedule IV	Core, Buffer
57	Black-shouldered Kite	<i>Elanus caeruleus</i>	Schedule IV	Core, Buffer
58	Black Kite	<i>Milvus migrans</i>	Schedule IV	Core, Buffer
59	Shikra	<i>Accipiter badius</i>	Schedule IV	Core, Buffer
60	Changeable Hawk Eagle	<i>Spizaetus cirrhatus</i>	Schedule IV	Core, Buffer
61	Tawny Eagle	<i>Aquila rapax</i>	Schedule IV	Buffer
62	Crested Serpent Eagle	<i>Spilornis cheela</i>	Schedule IV	Core, Buffer
63	Black Francolin	<i>Francolinus francolinus</i>	Schedule IV	Core, Buffer
64	Painted Francolin	<i>Francolinus pictus</i>	Schedule IV	Core, Buffer
65	Common Quail	<i>Coturnix coturnix</i>	Schedule IV	Core, Buffer
66	Jungle Bush Quail	<i>Perdix asiatica</i>	Schedule IV	Core, Buffer
67	Red Spur Fowl	<i>Gallus squamifrons</i>	Schedule IV	Buffer
68	Red Jungle Fowl	<i>Gallus gallus</i>	Schedule IV	Buffer
69	Indian Peafowl	<i>Pavo cristatus</i>	Schedule I	Buffer
70	Red-wattled lapwing	<i>Vanellus indicus</i>	Schedule IV	Core, Buffer
71	Red vented Bulbul	<i>Pycnonotus cafer</i>	Schedule IV	Core, Buffer
72	Jungle Babbler	<i>Turdoides striatus</i>	Schedule IV	Core, Buffer
73	Tickells Bule Flycatcher	<i>Cyornis tickelliae</i>	Schedule IV	Core, Buffer
74	Asian Paradise Flycatcher	<i>Terpsiphona paradisi</i>	Schedule IV	Core, Buffer
75	White Browed fantail Flycatcher	<i>Rhipidura aureola</i>	Schedule IV	Core, Buffer
76	Ashy Wren Warbler	<i>Prinia socialis</i>	Schedule IV	Core, Buffer
77	Black Redstart	<i>Phoenicurus acheruus</i>	Schedule IV	Core, Buffer
78	Pied Bush chat	<i>Saxicola caprata</i>	Schedule IV	Core, Buffer
79	Plain Prinia	<i>Prinia inornata</i>	Schedule IV	Buffer
80	Grey-Breasted Prinia	<i>Prinia hodgsonii</i>	Schedule IV	Core, Buffer

S.No	Common name	Scientific name	WPA 1972 Status	Reported from Core/Buffer
81	Indian Robin	<i>Saxicoloides fulvicata</i>	Schedule IV	Core, Buffer
82	Oriental Magpie Robin	<i>Copsychus Saularis</i>	Schedule IV	Core, Buffer

5.4 Reptiles

Among reptiles there were direct sighting of Rat Snakes, Cobra, Common Krait in the study area. Few moults of a Rat snake (*Ptyas mucosus*) were also found in the study area. House Gecko (*Hemidactylus flaviridis*) was commonly seen in the entire study area. Common Skink (*Mabuya carinata*) and Garden Lizards were also commonly seen in project area. Discussions with local people did confirm the presence of Krait (*Bungarus caeruleus*), Saw's scaled viper (*Echis carinatus*), Russell's viper (*Vipera russellii*) in the area. As per the reports of local people, the sightings were not very common and not many people had seen snakes in the proposed project area. The reptilian species seen in the study area are given below in Table 5.7 based on the direct sightings, indirect evidence and discussions held with the local people during the survey. Rat snakes were fairly common in the forest area close to the human settlements as the people store paddy in their houses which attracts rats and bandicoots and in turn attract rat snakes.

Of all the species of reptiles seen and reported from the area only Indian Rock Python is protected under Schedule I of WPA 1972. No conclusive data could be collected with respect to the total population estimate of Python. Interviews with villagers only confirmed the presence of the species. No one however reported sighting python in last five years in the project area. In the last ten years people do not recollect any incidence of snake bite case also in the project area. The sightings that people had in past were mostly in the vicinity of village areas close to water bodies.

Table 5.7. List of reptilian species from the project area

S.no	Common name	Scientific name,	WPA 1972 Status	Reported Core/Buffer
1	Brook's gecko	<i>Hemidactylus brookii</i>	-	Buffer
2	Yellow-green house gecko	<i>Hemidactylus flaviviridis</i>	-	Core/Buffer
3	bark gecko	<i>Hemidactylus leschenaultia</i>	-	Core/Buffer
4	Termite gecko	<i>Hemidactylus triedrus</i>	-	Core/Buffer
5	Garden lizard	<i>Calotes versicolor</i>	-	Core/Buffer
6	Blanford's rock agama	<i>Psammodromus blanfordianus</i>	-	Core/Buffer
7	Fan-throated lizard	<i>Sitana ponticeriana</i>	-	Core/Buffer
8	Common skink	<i>Mabuya carinata</i>	-	Core/Buffer
	SNAKES			
9	Red sand boa	<i>Eryx johnii</i>	Schedule IV	Core/Buffer
10	Indian rock python	<i>Python molurus</i>	Schedule I	Core/Buffer
11	Buffstriped keelback	<i>Amphiesma stolata</i>	Schedule IV	Core/Buffer
12	Rat snake	<i>Ptyas mucosus</i>	Schedule II	Core/Buffer
13	Bronze back tree snake	<i>Dendrelaphis tristis</i>	Schedule IV	Core/Buffer
14	Indian green keelback	<i>Macropisthodon plumbeicolour</i>	Schedule IV	Core/Buffer
15	Streaked kukri snake	<i>Oligodon taeniolatus</i>	Schedule IV	Core/Buffer
16	Checkered keelback	<i>Xenochrophis piscator</i>	Schedule II	Core/Buffer
17	Spectacled cobra	<i>Naja naja</i>	Schedule II	Core/Buffer
18	Slender coral snake	<i>Calliophis melanurus</i>	Schedule IV	Core/Buffer
19	Russell's viper	<i>Daboia russellii</i>	Schedule II	Buffer
20	Indian saw-scaled viper	<i>Echis carinatus</i>	Schedule IV	Core/Buffer
21	Common krait	<i>Bungarus caeruleus</i>	Schedule IV	Core/Buffer
22	Common cat snake	<i>Boiga trigonata</i>	Schedule IV	Core/Buffer
23	Common trinket snake	<i>Elaphe helena</i>	Schedule IV	Core/Buffer

5.5 Butterflies

A total of 63 species of butterflies were recorded from the study area during the survey (Table 5.8). The butterfly richness was higher in the areas that appeared to be disturbed by human and livestock interference. In the disturbed areas openings are created and these openings act as good habitat for butterflies by letting enough sunlight reach the ground. Butterflies need open sunlight and prefer habitats which will provide food plants and sunlight. All such openings in the forest area provide excellent feeding and breeding habitat the butterflies.

Natural Small openings in forest also provide excellent habitat for basking and flowering plants to come up in these forests. The moist patches in riverine areas also attract butterflies. Possibly these moist patches act as source of minerals for butterflies as many of them can be seen sitting over such patches. Areas in vicinity of natural drains close to the Villages provide excellent habitats for butterflies.

Table 5.8. Butterfly species found in the proposed project area

S.no	Name	Scientific name	Status	Sighting Core/Buffer
	PAPILIONIDAE			
1	Spot Swordtail	<i>Pathysa nimius</i>	NR	Core, Buffer
2	Tailed Jay	<i>Graphium agammemnon</i>	NR	Core
3	Crimson Rose	<i>pachliopta hector</i>	NR	Core, Buffer
4	Common Mime	<i>Chilasa elytia elytia</i>	NR	Core, Buffer
5	Lime Butterfly	<i>Princeps demoleus</i>	NR	Core
6	Common Mormon	<i>Princeps polytes romulus</i>	NR	Core Buffer
7	Psyche	<i>Leptasia nina nina</i>	NR	Core Buffer
8	Indian Cabbage white	<i>Pieris canidia indica</i>	C	Core Buffer
9	Pioneer	<i>Anapheis aurota aurota</i>	NR	Core Buffer
10	Chocolate Albatross	<i>Appias lyncida elenora</i>	NR	Core
11	Yellow Orange Tip	<i>Ixias pyrene familiaris</i>	NR	Core, Buffer
12	Great orange Tip	<i>Hebomoia glaucippe glaucippe</i>	NR	Core, Buffer
13	Common Jezebel	<i>Delias eucharis</i>	C	Core, Buffer
	COLIADINAE			
14	Common Emigrant	<i>Catopsilia pomona</i>	C	Core, Buffer
15	Mottled Emigrant	<i>Catopsilia pyranthe</i>	NR	Core, Buffer
16	Tailed Sulphur	<i>Dercas verhuelli</i>	NR	Core, Buffer
17	Spotless Grass Yellow	<i>Eurema laeta</i>	NR	Core, Buffer
18	Common Grass Yellow	<i>Eurema hecabe</i>	C	Core, Buffer
	MILETINAE			
19	Forest Pierrot	<i>Taraka hamada</i>	NR	Core, Buffer
	CURETINAE			
20	Common Acacia Blue	<i>Surendra todara</i>	NR	Core, Buffer
21	Common Leaf Blue	<i>Amblypodia onita</i>	NR	Core, Buffer
22	Common Silverline	<i>Spindasis vulcans</i>	NR	Core, Buffer
23	Cornelian	<i>Deudorix epijarbus</i>	NR	Core
	POLYOMMATINAE			
24	Common Cerulean	<i>Jamides celeno</i>	NR	core, Buffer
25	Peablue	<i>Lampides boeticus</i>	NR	Core, Buffer
26	Dark Cerulean	<i>Jamides bochus</i>	NR	Core, Buffer
27	Zebra Blue	<i>Syntarucus plinius</i>	NR	Buffer
28	Common Pierrot	<i>Castalius rosamon</i>	R	Core, Buffer
29	Grass Jewel	<i>Zizceria trochilus</i>	NR	Buffer
30	Pale Grass Blue	<i>Pseudozizceria maha</i>	C	Buffer
31	Bright babul Blue	<i>Azamus ubaldus</i>	NR	Core
32	Common Hedge Blue	<i>Acetolepis puspa</i>	NR	Buffer

SATYRINAE				
33	Common Evening Brown	<i>Melanitis leda</i>	R	Core, Buffer
34	Dark Evening Brown	<i>Melanitis phedima</i>	C	Core, Buffer
35	Common Bushbrown	<i>Mycalesis perseus</i>	C	Core
36	Common Four-Ring	<i>Ypthina huberti</i>	NR	Core
CHARAXINAE				
37	Tawny Rajah	<i>Charaxes polyxena</i>	NR	Core, Buffer
38	Common Nawab	<i>Polyura athamas</i>	NR	buffer
NYMPHALINAE				
39	Common Leopard	<i>Phalanta phalanta</i>	NR	Core, Buffer
40	Yellow Pansy	<i>Precis hierta</i>	NR	Core, Buffer
41	Blue Pansy	<i>Precis arithya</i>	NR	Core, Buffer
42	Lemon Pansy	<i>Precis lemonias</i>	NR	Core, Buffer
43	Peacock Pansy	<i>Precis almana</i>	NR	Buffer
44	Grey Pansy	<i>Precis atlites</i>	NR	Core, Buffer
45	Chocolate Soldier	<i>Precis iphita</i>	NR	core
44	Painted Lady	<i>Cynthia cardui</i>	U	Core, Buffer
45	Indian Tortoiseshell	<i>Aglais cachmirensis</i>	U	Core, Buffer
46	Damoid Eggfly	<i>Hypolimnas misippus</i>	NR	core
47	Great Eggfly	<i>Hypolimnas bolina</i>	NR	Core, Buffer
48	Common Sailer	<i>Neptis hylas</i>	NR	core
49	Balekvein Sergeant	<i>Parathyma ranga</i>	NR	core
50	Common Sergeant	<i>Parathyma perius</i>	NR	Core, Buffer
51	Commander	<i>Moduza procris</i>	NR	Buffer
52	Common Earl	<i>Tanaecia julii</i>	NR	Core, Buffer
HELICONIINAE				
53	Tawny Coster	<i>Acraea violae</i>	NR	Buffer
DANAINAE				
54	Blue Tiger	<i>Tirumala limniace</i>	NR	Core, Buffer
55	Glossy Tiger	<i>Parantixa uglea</i>	NR	Core, Buffer
56	Common Tiger	<i>Danaus genutia</i>	NR	Core, Buffer
57	Plain Tiger	<i>Danaus chrysippus</i>	C	Core, Buffer
58	Common Crow	<i>Euploea core</i>	-	Core, Buffer
HESPERIIDAE				
59	Common Owl	<i>Hasora badra</i>	U	Buffer
HESPERIINAE				
60	Grass Demon	<i>Ulaspes folus</i>	NR	Core, Buffer
61	Common Redeve	<i>Matapa aria</i>	NR	Core, Buffer
62	Dark palm Dart	<i>Felicota ancilla</i>	U	Core, Buffer
63	Blank Swift	<i>Calotis kumara</i>	U	Core

NR - Not Rare
 C - Common
 U - Unknown



Plate 5.4. Butterfly diversity in the study area.

5.6 Spiders

A total of 27 species of spiders were recorded from the study area during the survey period. Spiders were seen all over the project area as well as the buffer zone. Spiders are

voracious predators of insects and because they are able to survive the periods of low food availability and take advantage of periods of abundance they are well adapted to variety of habitat types. The orb making spiders were more common in areas where there were clearly marked aerial galleries for insect movement. These spiders were commonly seen in the Ghatbarra forest area as it has tall Sal trees and large aerial galleries required for making orbs. The detailed list of spiders recorded during the survey period is given below in table 5.9.

Table 5.9. List of spiders recorded in the study area

S.no	Common name	Scientific name	Sighting Core/Buffer
1	Coin trapdoor	<i>Sason cinetipes</i>	Core, Buffer
2	Brown funnel web spider	<i>Plesiophrictus collinus</i>	Core, Buffer
3	Wall orb	<i>Araneus bitunifer</i>	Buffer
4	Speckled hand four leg	<i>Argiope anasoga</i>	Core, Buffer
5	Long orb	<i>Cyclosa confragata</i>	Core
6	Fluted orb	<i>Heremia ornaticissima</i>	Core, Buffer
7	Leaf retreat orb	<i>Neoscona runfi</i>	Core, Buffer
8	Giant wood spider	<i>Nephila maculata</i>	Core
9	Black wood spider	<i>Nephila kuhlii</i>	Core
10	Yellow club	<i>Chiracanthium melanostoma</i>	Core, Buffer
11	Ashy social spider	<i>Stegodyphus sarasinorum</i>	Core, Buffer
12	Common two-tail	<i>Hersilia savignyi</i>	Buffer
13	Giant crab spider	<i>Heteropoda venatoria</i>	Buffer
14	Tube wolf	<i>Hippasa greenalliae</i>	Buffer
15	Funnel wolf	<i>Hippasa ugelenoides</i>	Core, Buffer
16	Tunnel wolf	<i>Lyonsa madagatrix</i>	Core, Buffer
17	Green lynx	<i>Peucedtia viridana</i>	Core, Buffer
18	Brown lynx	<i>Oxyopes rufisternum</i>	Core, Buffer
19	Bux longlegs	<i>Crassopriza lyonii</i>	Core, Buffer
20	Round longlegs	<i>Artema atlanta</i>	Core, Buffer
21	Zebra jumper	<i>Plexippus paykulli</i>	Core, Buffer
22	Common big-jaw	<i>Tetragnatha mendibulata</i>	Core, Buffer
23	Long-legged straw	<i>Eucta javana</i>	Core, Buffer
24	Horseshoe tommy	<i>Misumenena menoka</i>	Core, Buffer
25	Black lens tommy	<i>Misumenoides kripalaniae</i>	Core, Buffer
26	Twig tommy	<i>Thururus kotigeharus</i>	Core, Buffer
27	Garden spider	<i>Araneus diadematus</i>	Core, Buffer



Plate 5.5. Biological diversity in the study area.

5.7 Fish

A total of 10 fish species were recorded based on the interviews with the local fisherman. Most of the fish species reported are from the Atem River and Choti Chorni River. Both

the rivers fall in the buffer zone of the project area about 2 km NW and 5.5 km SE respectively.

Table 5.10. List of fish Species reported from the Buffer Zone

S.No	Common name	Scientific name
1	Chela	<i>Oxygaster clypeoid's</i>
2	Gohria	<i>Labea Boggut</i>
3	Chital	<i>Notopterus chitala</i>
4	Magur	<i>Clarius magur</i>
5	Katwa	<i>Mystus vittatus</i>
6	Tamboos	<i>Anguilla Bengalensis</i>
7	Bam	<i>Mustoeemlelus paucellus</i>
8	Dukkar	<i>Nandus nandus</i>
9	Murrel	<i>Channa striatus</i>
10	Gungara	<i>Ompak bimaculatus</i>

5.8 Overall habitat status

Overall habitat condition in the study area is not good, owing to tremendous amount of grazing pressure all over the area. There is also tremendous hunting pressure in the area. Tribals move with bow and arrow and almost everyone encountered in the forest narrated some or the other story of hunting. Local people now feel that it is not so easy to get wild animals as they have moved out to the denser and deeper areas. The disturbance signs are prevalent and can be seen in the entire stretch of the project area. There is also immense lopping pressure in the area as it is evident from Plate 5.6. Charcoal making is also one of the activities being carried out by some villagers in the area.

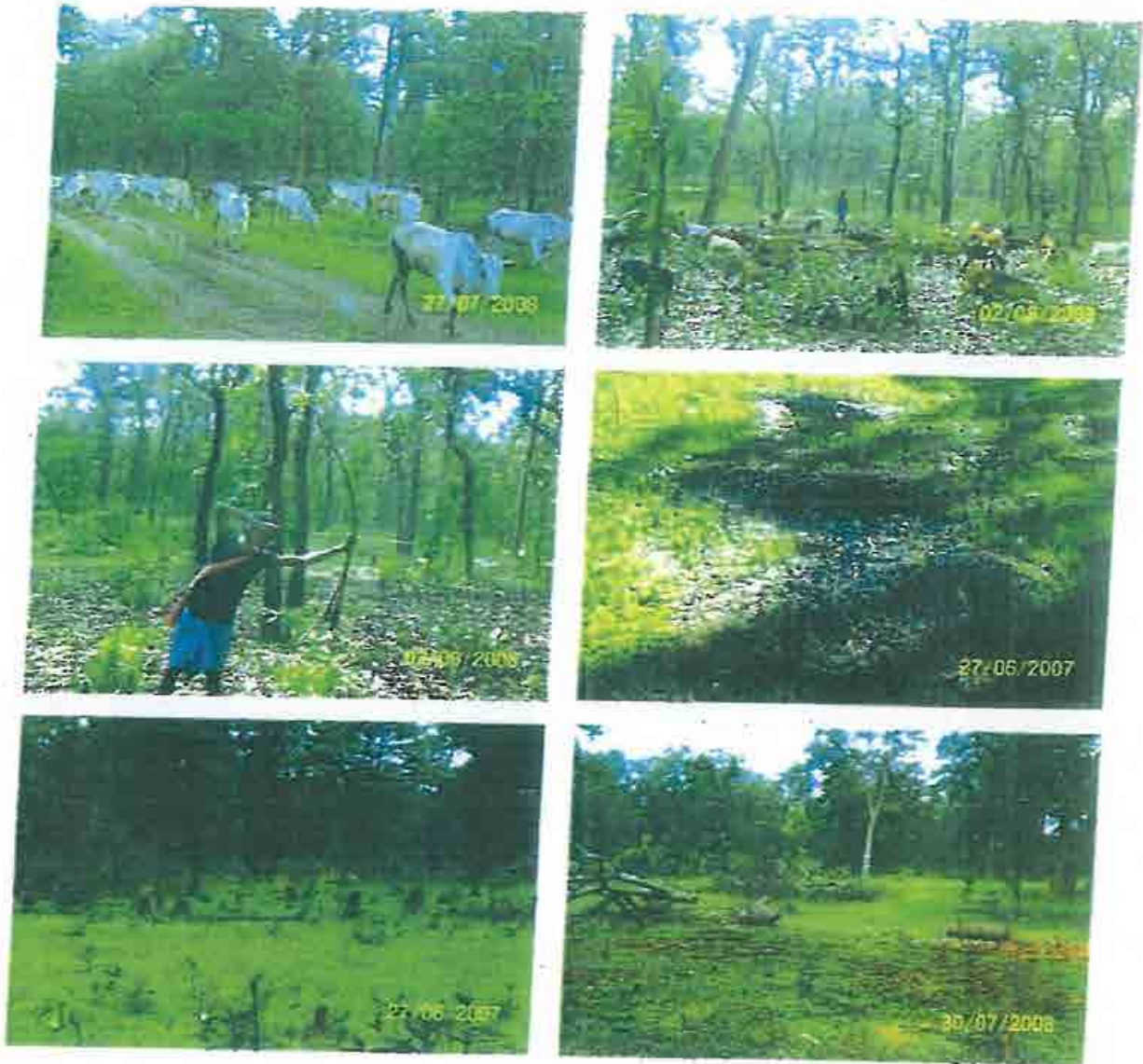


Plate 5.6. Anthropogenic pressures in the study area

EP S Lome
Deputy Chief Engineer (PPC&F)
RRVUNL, Jaipur

Annexure A-6

No. J-11015/03/2008-IA-II (M)
Government of India
Ministry of Environment, Forest & Climate Change
IA-II (Coal Mining) Division

Indira Paryavaran Bhawan,
Jorbagh Road, N Delhi-3

Dated: 29th December, 2015

To,
The Managing Director,
M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd.,
Vidyut Bhawan, Janpath, Joyti Nagar,
Jaipur - 302 005 (Rajasthan)

Phone: 0141-274927, 2740006 (Email: fuel.rvun@gmail.com)

Sub: Parsa East and Kanta Basan Opencast Coal Mine Project of 10 MTPA and Pit Head Coal Washery of 10 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd, located in Hasdeo-Arand Coalfields in District Sarguja (Chhattisgarh) - EC Amendment - reg.

Sir,
This is with reference to your letter No.RVUN/CE (Fuel)/SE (Fuel-II)/F.D.1057 dated 16th July, 2015, proposal No.IA/CG/CMIN/10814/2007 dated 4th August, 2015 and further letter dated 24th September, 2015 for amendment in the Environmental Clearance granted to the above mentioned project on 21st December, 2011, corrigendum dated 22nd June, 2012 and modification in EC dated 4th March, 2013.

2. The Ministry of Environment, Forest & Climate Change has considered the application. It is noted that the proposal is for amendment in Environmental Clearance conditions for Parsa East and Kanta Basan Opencast Coal Mine Project of 10 MTPA and Pit Head Coal Washery of 10 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd, located in Hasdeo-Arand Coalfields in villages Parsa, Kente, Basan, Salhi, Hariharpur, Ghatbara, Parogiya, Tehsil Udaypur, District Sarguja (Chhattisgarh).

3. The proposal was considered by the Expert Appraisal Committee (EAC) in the Ministry for Thermal & Coal Mining Projects in its 42nd EAC meeting held on 31st August - 1st September, 2015. The details of the project, as per the documents submitted by the Project Proponent (PP), and also as informed during the above said EAC meeting are reported to be as under:

(i) The Parsa East and Kanta Basan Opencast Coal Mine Project of 10 MTPA and Pit Head Coal Washery of 10 MTPA located in Hasdeo-Arand Coalfields in Tehsil Udaypur, District Sarguja (Chhattisgarh) was granted Environmental Clearance by the Ministry vide letter dated 21st December, 2011 in favour of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd.

SKJ

(ii) Total project area is 2711.034 ha which includes mining lease area of 2388.525 ha and 322.509 ha outside the ML area for infrastructure and external OB dumps. Of the project area, 1898.32 ha is forest land, 702.163 ha is agriculture land 110.543 ha is Government waste land.

(iii) Subsequent to cancellation of coal blocks by Hon'ble Supreme Court and fresh allocation of the above coal mine again in favour of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd, the EC was revalidated vide letter dated 25th June, 2015 in pursuance of the vesting orders of Ministry of Coal. The revalidation of EC was subject to certain conditions including that 'All conditions stipulated in the EC/corrigendum/amendment letter No.J-11015/03/2008-IA.II (M) dated 21st December, 2011, 22nd June, 2012 and 4th March, 2013 shall remain unchanged'

(iv) Owing to delays due to legal interventions, the PP has requested for amendment in specific conditions contained in 2A (iii) & (v) of the EC dated 21st December, 2011. These details are as under:-

Para	Existing condition	Proposed conditions (amendment sought)
2A(iii)	The estimated 2.25 MTPA of coal rejects shall be fully utilised for power generation in an FBC based Thermal Power Plant being established within the ML Coal rejects shall be dispatched to the FBC based TPP through a closed belt conveyor. The linked 4 x 135 MW FBC Power Plant shall be commissioned in 2-3 years. Until a FBC based TPP is established, the coal rejects shall be sold during the initial 2-3 years, to users of coal rejects for which an Agreement shall be entered into. There shall be no storage of coal rejects within the project area beyond 2-3 months of its generation.	The estimated 2.25 MTPA of coal rejects shall be fully utilised for power generation in an FBC based Thermal Power Plant being established within the ML Coal rejects shall be dispatched to the FBC based TPP through a closed belt conveyor. The linked 4 x 135 MW FBC Power Plant shall be commissioned in 6-7 years. Until a FBC based TPP is established, the coal rejects shall be sold during the initial 6-7 years, to users of coal rejects for which an Agreement shall be entered into. There shall be no storage of coal rejects within the project area beyond 2-3 months of its generation
2A(v)	A Railway siding to be established adjoining the mine shall be commissioned within 24 months. Until the railway Siding is constructed and commissioned, transportation of clean coal and middling to the linked TPPs at Rajasthan shall be by high capacity trucks (30-T or more) only. Clean coal and middling from the pit head coal washery shall be loaded by rapid (silo) loading system and transported by rail only after the commissioning of the railway siding and establishment of rail network to Surajpur TPS located at a distance of 78 km.	A Railway siding to be established adjoining the mine shall be commissioned within 72 months. Until the railway Siding is constructed and commissioned, transportation of clean coal and middling to the linked TPPs at Rajasthan shall be by high capacity trucks (30-T or more) only. Clean coal and middling from the pit head coal washery shall be loaded by rapid (silo) loading system and transported by rail only after the commissioning of the railway siding and establishment of rail network to Surajpur TPS located at a distance of 78 km.

4. The EAC, in its 42nd meeting held in August/September, 2015, has recommended both the amendments proposed by the project proponent as contained in para 3 (iv) above, subject to the outcome of the judgement of Hon'ble Supreme Court and the decision of the FAC.

5. All other conditions contained in the EC/corrigendum/amendment letter No.J-11015/03/2008-IA.II (M) dated 21st December, 2011, 22nd June, 2012 and 4th March, 2013 shall remain unchanged.

SKV
29/12/2015
(S. K. Srivastava)
Scientist E

Copy to:-

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi-1
2. The DG (Forest), MOEFCC, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi -3
3. The Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur
4. The Principal Chief Conservator of Forest and CWLW, Govt. of Chhattisgarh, Raipur
5. The Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, E-2/240 Arera Colony, Bhopal - 462016
6. The Chairman, Chhattisgarh State Environment Conservation Board, 1- Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, Raipur (Chhattisgarh) - 492001
7. The Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
8. The Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi
9. The District Collector, Sarguja, Government of Chhattisgarh
10. Monitoring File 11. Guard File 12. Record File

SKV
29/12/2015
(S. K. Srivastava)
Scientist E

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Annexure A-7



भारत सरकार
GOVERNMENT OF INDIA
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
MINISTRY OF ENVIRONMENT, FORESTS & CLIMATE
CHANGE

Regional Office (WCZ)
Ground Floor, East Wing
New Secretariat Building
Civil Lines, Nagpur - 440001
appcfcentral-ngp-mef@gov.in

FC-Misc-158/RON/2017-NGP/2502

Dated: 18th September, 2017

To

✓ Sh. Sandeep Sharma,
Assistant Inspector General of Forests (FC),
Forest Conservation Division,
Ministry of Environment Forests and Climate Change,
4th Floor, Agni Wing, Indira Paryavaran Bhawan,
Jorbagh, Alignaj, New Delhi.

Sub: **Site Inspection Report by the Regional Office (WCZ) Nagpur in respect of Parsa East and Kete Basen Coal Block and proposal for prospecting of 1745.883 ha of forest land in Kete Extension Coal Block in Suguja District in the State of Chhattisgarh**

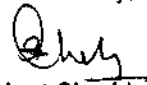
Sir,

I am directed to refer to the State Government of Chhattisgarh's letter no. F-55-22/2017/10-2 dated 1.05.2017 on the above subject and the minutes of the meeting dated 30.08.2017 of the Forest Advisory Committee (FAC) wherein a site inspection report has been desired from the Regional Office of the MoEF&CC at Nagpur in respect of area of the User Agency for which approval has already been accorded by the Central Government on 15.03.2012 and to say that site inspection of the area proposed for diversion has been carried out by the undersigned on 13.09.2017.

An inspection report containing the observation of the undersigned and comments and recommendation of the Addl. PCCF (Central) is enclosed herewith for further necessary action in the matter.

Encl: As above.

Yours faithfully,


(Charan Jeet Singh)
Scientist 'C'

TO CFWRK
4/10/17

9/9/17
Anand

Copy to:
1. Guard File.

— sd —
(Charan Jeet Singh)
Scientist 'C'

SITE INSPECTION REPORT BY THE REGIONAL OFFICE (WCZ) NAGPUR IN RESPECT OF PARSA EAST AND KETE BASAN (PEKB) AND KETE BLOCKS INVOLVING FOREST LAND OF 1898.328 HA AND 1745.883 HA, RESPECTIVELY IN SURGUJA DISTRICT IN THE STATE OF CHHATTISGARH – REGARDING.

Name of the Inspecting Officer – Charan Jeet Singh, Scientist 'C', Regional Officer (WCZ), Nagpur

Site inspection of the above mentioned proposal was carried out on 13.09.2017 with the officials of State Forest Department and representatives of the User Agency. During the inspection discussions were held with the Divisional Forest Officer, Surguja and other staff of the Forest Department and also with the representatives of the User Agency. Detailed report in the matter is given as under:

BACKGROUND

- (i) The Forest Advisory Committee (FAC) in its meeting held on 30.08.2017 has inter-alia recommended following:
 - a. Regional Office, Nagpur shall inspect the area and consider all facts in light of the decision of NGT and Hon'ble Supreme Court order in Civil Appeal No. 4395 of 2014 in the matter of Rajasthan Rajya Vidyut Utpadan Nigam Limited Vs. Sudeip Srivastava.
 - b. The Regional Office shall also submit its report on the compliance of the conditions imposed by the MoEF&CC in approval granted to the same User Agency for Parsa East and Kete Basan Captive Coal Block Open Cast Mining project in South Surguja Forest Division vide Ministry's letter no. 8-31/2010-FC dated 15.03.2012.
- (ii) Hon'ble NGT, pursuant of diversion order dated 28.03.2012 passed by the State Government of Chhattisgarh in favour of the User Agency, vide its order dated 24.03.2014 Appeal No. 73 of 2012, set aside the orders dated 23.06.2011 passed by the then Hon'ble MEF&CC rejecting the advice of the FAC and order dated 28.03.2012 of the State Government. The Hon'ble NGT in the said order also directed the MoEF&CC to seek fresh advice of the FAC on the following:

"(i) What type of flora and fauna in terms of bio-diversity and forest cover existed as on the date of the proposal in PEKB Coal Blocks in question. (ii) is/was the PEKB Coal Blocks habitat to endemic or endangered species of flora and fauna. (iii) Whether the migratory route/corridor of any wild animal particularly, elephant passes through the area in question and, if yes, its need. (iv) Whether the area of PEKB Block has that significant conservation/protection value so much so that the area cannot be compromised for coal mining with appropriate conservation/management strategies. (v) What is their opinion about opening the PEKB Coal Blocks for mining as per the sequential mining and reclamation method proposed as well as the efficacy of the translocation of the tree vis-a-vis the gestation period for regeneration of the flora (vi) What is their opinion about the Wildlife Management plan finally prescribed. (vii) What conditions and restriction do they propose on the mining in question, if they favour such mining? Liberty is granted to the FAC to seek advice/opinion/specialised knowledge from any authoritative source such as Indian Council of Forestry Research and Education Dehradun or Wildlife Institute of India including the sources indicated in the present case by the parties.
- (iii) Pursuant to the recommendation of the FAC and also on light of observations of the Hon'ble NGT, an inspection of the area was undertaken by the Regional Office on 13.09.2017. Following was revealed during inspection:

1. OBSERVATIONS OF THE HON'BLE NGT

- (i) **Status of flora and fauna in terms of biodiversity and forest cover**



As per discussion held during the inspection, it is revealed that so far, no extensive study has been conducted in the area for the assessment of floral and faunal diversity. Discussion with the officials/staff of the State Forest Department revealed that the forest type of the area includes Moist peninsular Low Level Sal Forest, Southern Moist Mixed Deciduous Forest and Dry peninsular Sal Forest. Vegetation density of most of the forest cover varies from 0.4 to 0.7. Major vegetation composition of the area is *Shorea robusta*, *Terminalia tomentosa*, *Pterocarpus marsupium*, *Adina cordifolia*, *Anogeissus latifolia*, *Bauhinia spp.*, *Ficus, spp.*, *Dalbergia lattifolia*, *Holoptelia interifolia*, *Gmelina arborea*, *Hardwickia binnata*, *Lagestromia parviflora*, *Tectona grantis*, *Terminalia spp.* and other miscellaneous species. Similarly, with respect to the faunal diversion, species like Elephant, Sloth bear, Hyena, leopard, jackal and wild boar have been reported by the State Forest Department based on the data maintained by them on human-wildlife conflicts. Details pertaining to the floral and faunal diversity in the area has been retrieved from secondary sources such as Working Plan of the Forest Division, no project area specific study on the assessment of floral and faunal diversity has been conducted for far in the area.

It was also informed by the User Agency that as per recent study conducted in May, 2017 by the India-Business & Biodiversity initiatives (IBBI), CII-ITC Center of Excellence, Gurgaon it has been reported that there are 97 plant species have been reported in the area, comprising of 44 trees, 16 shrubs, 35 herbs and 2 fungi species. Similarly, in the Wildlife Management Plan prepared for the Parsa East and Kete Basen Coal Block, there are 86 tree species, 38 shrubs species, 19 herbs, 17 climbers species, and 12 species of grass have been reported in the area.

Further, with regards to faunal diversity also no study establishing the faunal biodiversity in the area is available. As per the Wildlife Movement Plan, there are 18 species of mammals, 23 species of reptiles and 82 species of birds reported in the area. Detail pertaining to the other faunal diversity of vertebrates viz. amphibian and aquatic and invertebrates diversity is not available for the area.

Given the large track of forests and life forms in the area, it seems that diversity in these studies may be taken as indicative of biodiversity in the area. Therefore, to assess the exact biodiversity, extensive study through some organization of repute such as Indian Council of Forestry Research and Education, Dehradun should be conducted.

ii) *is/was the PEKB Coal Blocks habitat to endemic or endangered species of flora and fauna.*

As mentioned in the preceding para, it cannot be ascertained from the available data on floral and faunal diversity, if coal block of PEKB and Kete Basen are habitats to endemic species or otherwise. Further, analysis of the available data on flora and fauna revealed that certain endangered plant species and schedule-I species exist in the area. However, for want of credible study on the complete inventory of the floral and faunal diversity, it is difficult to assess the exact number of critical, endangered and vulnerable species. As per the existing Wildlife Management Plan, there are 18 plants species which have been reported as threatened in the area under question.

(iii) *Whether the migratory route/corridor of any wild animal particularly, elephant passes through the area in question and, if yes, its need.*

As per the discussion held with the Divisional Forest Officer, Surguja, and other officials of the State Forest Department, it was gathered that so far, there is no notified corridor of the elephants in the State. However, movements of elephants in Chhattisgarh occurs from Jharkhand and Odisha regularly along their existing corridors. The DFO, Surguja informed that elephants migrate to Chhattisgarh from Jharkhand and Odisha and the movements mainly occurs in Surguja, Korba, Jashpur, Raigarh and Korea Districts. It was also informed that no mapping of the corridors of the elephant's movements has been done so far. It was further elaborated during the discussion with

the officials/staff of the Forest Department that based on the reporting of elephants movements in the area, following three tentative migratory routes are undertaken by the elephants:

Route-I

Elephants enter the State of Chhattisgarh from Jharkhand in the North in Jashpur District, passes through the forest area and reaches to Tamorpingla and Samersot Wildlife Sanctuary in Balrampur and Surajpur District, respectively. From these two sanctuaries stray movement of elephants occurs in nearby forest area like Mainpat.

Route-II

Elephants enter Chhattisgarh from Odisha in the east in Raigarh District take route through the forests of Dharamjaigarh and reaches to Korba. The dense forests of Lemru in Korba serves as temporary habitat of elephants. During the course of temporary stay the elephants make stray movements to the nearby forest areas.

Route-III

Elephants enter Chhattisgarh from Odisha in the east in Raigarh District, traverse through the forests of Dharamjaigarh, Pathalgaon/Jaspur, Sitapur, Lakhanpur/Sarguja and then reaches to Tamor Pingla WLS in Surajpur District.

it was further informed by the officials/staff of the Forest Department that during the course of their movements along the above corridors, stray movements of elephants occurs to the nearby forest areas and during such movements, human-wildlife conflicts occurs. It was further reported that no regular movements of elephants has been reported in the PEKB and Kete Coal Block. The nearest stray movement of the elephants was recorded in Patkura village which is located a distance of approximately 20 Km from the mine of the User Agency.

It was further revealed during discussion that area in question does not form the migratory route/corridor of any wild animals particularly, elephant. The officials/staff of the Forest Department further adverting to the record pertaining to the human-wildlife conflicts revealed that during the last period of 4 years and current year, intensity of human-wildlife conflicts, in respect of leopard has been reported high in Forest Ranges of Lundra, Sitapur, Ambikapur, and Udaipur. A list containing detail of human-wildlife conflicts is enclosed as Annexure-I.

(iv) Whether the area of PEKB Block has that significant conservation/protection value so much so that the area cannot be compromised for coal mining with appropriate conservation/management strategies

The area under question showcases rich Sal forests. Vegetation density associated with forest ranges from open forest to moderately dense and very dense forests. Further, biotic pressure in the form of grazing, lopping and illicit felling was also observed during the inspection. Further, as narrated in preceding para, no extensive study has been conducted in the area for the assessment of floral and faunal diversity and for want of any credible study on the complete inventory of the floral and faunal diversity; it is difficult to comment on likely conservation/protection value associated with the forests. Further, it is also pertinent to mention here that mining in the area under question is already going on the strength of Hon'ble Supreme Court order dated 28.04.2014 passed in Civil Appeal No (s). 4395 of 2014, and so far, the User Agency has carried out mining over an area of 384.0 ha, comprised of 234.0 ha of forest land and 150.0 ha of tenancy land. Therefore, in light of fact that mining operations and conservation strategies in the same area cannot go hand in hand and also for want of credible inventory on floral and faunal diversity, it is difficult to associate conservation/protection value to the area under question. However, if the credible information on the surrounding forest area is generated through



extensive surveys by reputed organizations, conservation/protection values can be ascertained fairly.

(v) What is their opinion about opening the PEKB Coal Blocks for mining as per the sequential mining and reclamation method proposed as well as the efficacy of the translocation of the tree vis-a-vis the gestation period for regeneration of the flora.

It is observed during the inspection so far mining is being carried out by the User Agency within the area of 762 ha approved for first phase of mining for a period of 15 years. So far, the User Agency has carried out mining over an area of 384.0 ha, comprised of 234.0 ha of forest land and 150.0 ha of tenancy land. Further, with regards to the efficacy of the reclamation methods, it is observed that User Agency has been undertaking progressive reclamation work with the advancement of mining operations. An area of 70.35 ha has been reclaimed biologically by the User Agency. A detail of technical and biological reclamation undertaken by the User Agency is enclosed as **Annexure-II**. Further, it is also imperative to mention here that so far the User Agency has translocated 5,989 trees of 60 cm girth of sal and other species within their lease area such as on the sides of haul roads, blanks areas in the safety zone, etc. A survival percentage of 85-90% has been reported. In view of the foregoing submissions, the further view may be taken at the MoEF&CC level regarding efficacy of the sequential mining, reclamation method and translocation of trees.

(vi) What is their opinion about the Wildlife Management plan finally prescribed.

A Wildlife Management Plan involving financial provision of Rs. 22.0 Crores, concurred by the Wildlife Institute of India, Dehradun, has been proposed to be implemented in the core area and buffer area over a period of 15 years. The provisions to implement in the Wildlife Management Plan include general protection of the core area and protection and conservation of the buffer zone ecosystem by carrying out various activities like fire protection, protection from grazing, illicit felling and plantation, empowerment of people for protection, soil and moisture conservation works, etc. The Wildlife Management Plan has been proposed to mitigate the impact of the mining operations on the wildlife in area, including providing for safe movement of elephants. However, it is observed that though the said plan has been approved for its implementation by the PCCF (Wildlife) on 6.03.2013, till date no provisions of the Wildlife Management have been implemented by the State Forest Department. On being asked for reasons in exorbitant delay in the implementation of the Wildlife Management Plan, the DFO concerned has cited the administrative constraints for non-implementation of the provisions of the Wildlife Management Plan. The Divisional Forest Office on 13.09.2017 has submitted a proposal (APO) for the approval of the Steering Committee, CAMPA, Chhattisgarh to incur an amount of Rs. 3.53 crores towards the implementation of the provisions of the Wildlife Management Plan in the area under question. Certainly, the provisions of the Wildlife Management Plan aims to mitigate the impact however, delay in their implementation jeopardize its spirit.

(vii) What conditions and restriction do they propose on the mining in question, if they favour such mining? Liberty is granted to the FAC to seek advice/opinion/specialized knowledge from any authoritative source such as Indian Council of Forestry Research and Education Dehradun or Wildlife Institute of India including the sources indicated in the present case by the parties.

As stated in the previous para mining in the area already going on in the area under question. Contention of Hon'ble NGT in the above observation appears to holistically examine the all dimensions of environmental, ecological and social impacts of mining and based on the outcome permission or denial for mining may be decided and if permitted what would be restrictions. MoEF&CC, New Delhi while according approval under the Forest (Conservation) Act, 1980, has stipulated certain set of conditions which needs to be complied with the User Agency throughout their mining lease period. A compliance report on the status of conditions stipulated in the

approval accorded by the Central Government is also enclosed herewith. Most of the conditions stipulate in the approval are being complied with by the State Government/User Agency, except Wildlife Management Plan.

2. Status of compliance of conditions stipulated in the approval accorded by the Central Government in the approval dated 15.03.2012


The Central Government vide its letter dated 15.03.2012 accorded approval subject to fulfilment of certain conditions prescribed therein. A detailed report on the status of compliance of conditions stipulated in the Stage-I approval is enclosed at **Annexure-III**. From the examination of the monitoring of conditions stipulated in the Stage-II approval dated 15.03.2012, following is revealed:

Condition complied with Partially by the State Government/User Agency

- (i) **Condition no. 2** - As per details made available by the office of the DFO, Surguja, so far, compensatory afforestation has been carried out over an area of 3737 ha against the stipulated area of 3796.656 ha. An area of 59.656 ha is yet to be undertaken for compensatory afforestation. Further, no detail pertaining to year wise plantation undertaken and survival percentage thereof could be retrieved from the office of the DFO, Surguja as the same was not available readily. With regards to the digitized map of the area, it was informed that same is under process and it will be made available in due course.
- (ii) **Condition no. 8** - It is observed that reclamation works are carried out by the User Agency. The user agency has informed that mining/reclamation schedule is being implemented as per Environmental Management Plan / phased reclamation programme. However, no annual report about the progress of reclamation is being submitted to Regional Office, Nagpur.

Condition not complied with by the State Government/User Agency

- (i) **Condition no. 20** - Wildlife Management Plan has not been implemented so far.
- (ii) **Condition no. 23**- No provision for appropriate financial outlay for the establishment of Rescue and Rehabilitation team to mitigate human-wildlife conflicts have been observed to be made by the User Agency. However, to support their claim the User Agency has informed that provisions have been incorporated in the Wildlife Management Plan and accordingly, the same have not been implemented separately by them.
- (iii) **Condition no. 24** - It is observed that though the said plan has been approved for its implementation by the PCCF (Wildlife) on 6.03.2013, till date no provisions of the Wildlife Management have been implemented by the State Forest Department.
- (iv) **Condition no. 25** - No mitigative measures as prescribed in the Wildlife Management Plan for reducing the dependency of cattle and people on the surrounding forest area have been implemented by the User Agency. However, to support their claim the User Agency has informed that provisions have been incorporated in the Wildlife Management Plan and accordingly, the same have not been implemented separately by them.
- (v) **Condition no. 27**- No annual compliance report in respect of the conditions stipulated in the approval accorded under the FC Act, are being submitted to the Regional Office, Nagpur.



AREA OF 1745.883 HA OF FOREST LAND PROPOSED FOR PROSPECTING OF COAL IN KETE EXTENSION COAL BLOCK (KECB)

- (i) The Ministry of Coal, Government of India, vide its letter no. 13016/26/2004-CA-I/CA-III(Pt.) (Vol.II) dated 31.03.2015, allotted the KECB to User Agency i.e. Rajasthan Rajya Vidyut Utpadan Nigam Limited for captive purpose. A copy of the letter dated 31.03.2015 is enclosed at Annexure - VII. The KECB is contiguous to Parsa East and Kete Basen Coal Block (PEKB). All three coal blocks are located in outer fringe areas of Hasdeo Arand Coalfields. The User Agency has proposed prospecting in the KECB to assess the coal reserve and subsequently to carry out captive mining to meet coal requirement for their Super Critical and other Thermal Power Plants located in the State of Rajasthan.
- (ii) The proposal of the User Agency envisages drilling of 153 boreholes of 4" Dia over an area of 1745.883 to assess the pattern of distribution of coal seams in the KECB and to estimate the proven reserve base in the coal block.
- (iii) The legal status of the forest land proposed for prospecting is Protected Forest. As per information furnished in Part-II submitted online, average density has been reported to be 0.6. During the inspection also, it was observed that density of forest area proposed for prospecting ranges between 0.4 to 0.7. The forest types of the area falls into the category of Moist peninsular Low Level Sal Forest, Southern Moist Mixed Deciduous Forest and Dry peninsular Sal Forest. Forests of the area are maintained under SCI and IWC Working Circles and the DCF concerned has reported adequate regeneration in the area.
- (iv) It was observed during the inspection that forest area of KECB has mostly flat terrain with sal as dominant species. The area was also observed to have cart roads which are currently used by the villagers for their movements and by the Forest Department for various forest management related activities. The User Agency has proposed to use such cart roads during the prospecting and no construction of new roads has been proposed. The representative from the User Agency have also informed that in case the location of bore hole is not approachable by cart roads, the rigs/machines will be dismantled and transported manually to the location of bore hole.
- (v) Important wildlife reported in the area sloth bear, Hyena, jackal, wild boar, etc. In addition to these movement of elephants and leopard has also been reported in area. However, examination of the proposed area using DSS tools revealed the sloth bear as an important species in the area and area does not form part of any tiger corridors, tiger reserve, PAs. Further examination of the area revealed that no remnant Forest Type are found in the area. It was also gathered during the inspection that area of the KECB does not form the part of elephant corridors, however, stray movement of elephants has been reported in the area. Similarly, leopards, based on the human-wildlife conflicts records maintained by the State Forest Department, have also been reported in the forests of the area. Area does not form part of any PAs and Eco-sensitive Zone. Nearest PAs areas are Samarsot Wildlife Sanctuary, Tamoringla Sanctuary and Badalkhol Sanctuary which and they are situated at an approximate distance of 150 Km, 80 Km, and 156 Km, respectively from the area under question.
- (vi) Biotic pressure in the form of grazing, lopping and illicit felling was also observed during the inspection. It was informed that there are total 50 villages falling in the core and buffer areas (10 Km) of the forest land proposed for coal mining. Out of the total 50 villages 7 villages fall in the core zone while 43 villages falls in the buffer zone. It was informed by the User Agency 2 villages have been reported to be directly affected by the mining. Rehabilitation of these 2 villages has been proposed by the user Agency. Villagers in these villages have been reported to dependent on forest to meet their requirement like fuelwood, grazings and other livelihood needs (Annexure-VIII).

Chay

- (vii) No violation of the Forest (Conservation) Act, 1980 were observed in the area proposed for diversion. The authorities in the State Forest Department and State Government have recommended the proposal for prospecting without any specific condition.
- (viii) Examination of the proposed area using DSS tools revealed that as per Decision Rule No. 2, the area falls into the category of pristine forests.

Other information

- (i) The Rajasthan Rajya Vidyut Nigam Limited (RVUNL) has been allotted three coal blocks in the area by the Ministry of Coal. Currently, mining is undertaken in Parsa East and Kete Basen Coal Block. The two coal block viz. KECEB and Parsa Coal Block have been allotted by the Ministry of Coal to the RVUNL vide its letter dated 31.03.2015 and 8.09.2015, respectively. All three coal blocks have been allotted for captive use of the coal.
- (ii) During the inspection it was also gathered that the User Agency has RVUNL has 6 Thermal Power Plants (TPP) in the State of Rajasthan having total power generation capacity of 7,580 MW and total annual coal requirement of 35.12 MT. It was further informed that out of the total 6 TPP, 2 TPP are Super Critical TPP requiring 11.06 MTPA of coal. Out of 2 Super Critical TPP, Chhabra SCTPP is currently operation while 2nd SCTPP will be fully operational by January, 2018. The remaining TPP of the User Agency have been reported to be operational. Current coal linkages for aforementioned TPP, are with SECL and PEKB, KECEB and Parsa Coal Blocks. The PEKB coal has total coal reserve of 452 MT, out of which 23 MT have been mined out so far at an annual production capacity of 10 MTPA. At an enhanced production of 15 MTPA, the life of the mine will be 34 years. The User Agency has further informed that estimated coal reserves in Parsa and Kete Extension Coal Block area has coal reserves of 150 MT and 200 MT respectively. An annual production of 12 MTPA (5 MTPA-Parsa CB; 7 MTPA KECEB) will be realized from these two coal blocks in near future to meet the coal requirement of TPPs of the User Agency. Details of TPP and their coal requirement, as made available by the User Agency, is enclosed at **Annexure -IX**.
- (iii) It was also informed by the User Agency that proposal seeking prior approval of the Central Government under the Forest (Conservation) Act, 1980 for diversion of 860 ha of forest land for coal mining in Parsa Coal Block has been submitted to the authorities in the State Forest Department and the same is under consideration in the Divisional Forest Office, Surguja.


(Charan Jeet Singh)
Scientist 'C'

**COMMENTS AND RECOMMENDATIONS OF THE ADDITIONAL PRINCIPAL CHIEF
CONSERVATOR OF FORESTS (CENTRAL), REGIONAL OFFICE NAGPUR**

The detailed observations on the proposal have already been made in the inspection report. From the observations recorded in the inspection report, it can be ascertained that area is rich in vegetation, particularly sal species and movement of wildlife has also been reported. Three coal block i.e. PEKB, Parsa Coal Block and KECB are contiguous in the area and currently, mining operation are undertaken in the PEKB. So far, the User Agency, out of total 2388.525 ha of lease area, has carried out mining over an area of 384.0 ha, comprised of 234.0 ha of forest land and 150.0 ha of tenancy land. Captive mining in the new area has been proposed by the User Agency to meet the demand of coal. Had it been on a standalone case of mining, given the density of forest, it would not deserve consideration for approval under the Forest (Conservation) Act, 1980. However, as the proposed area is one of the 3 coal blocks, out of which mining is already going on in coal block contiguous to this area, the proposal may be considered.

Kanwarjit Singh
(Kanwarjit Singh)
Addl. PCCF (Central)
18/9/17

F. No. 8-46/2017-FC
 Government of India
 Ministry of Environment, Forests & Climate Change
 (Forest Conservation Division)

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

Dated: 19th December, 2017

To,
 The Principal Secretary (Forests),
 Government of Chhattisgarh,
 Raipur.

Sub: **Proposal for prospecting of coal for use of 1745.883 ha of forest land of Kente Extension coal block in favour of Rajasthan Rajya Vidyut Utpadan Nigam Limited for exploration of coal reserves by undertaking 153 boreholes of 4" dia in Suga District in the State of Chhattisgarh.**

Sir,
 I am directed to refer to the Government of Chhattisgarh's letter No. F-5-44/2017/10-2 dated 07.07.2017 on the subject mentioned above seeking prior approval of the Central Government under Section-2 of the Forest (Conservation) Act, 1980 and to say that the proposal has been examined by the Forest Advisory Committee constituted by the Central Government under Section-3 of the aforesaid Act.

After careful examination of the proposal of the State Government and on the basis of the recommendations of the Forest Advisory Committee, In-principle approval /Stage-1 Clearance of the Central Government is hereby granted for prospecting of coal for use of 1745.883 ha of forest land of Kente Extension coal block in favour of Rajasthan Rajya Vidyut Utpadan Nigam Limited for exploration of coal reserves by undertaking 153 boreholes of 4" dia in Suga District in the State of Chhattisgarh subject to the following conditions:

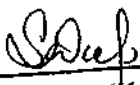
- (i) The User Agency shall be allowed exploratory drilling of a maximum of 153 bore holes of 4" diameter over 1745.883 ha of forest land.
- (ii) A biodiversity assessment study is to be conducted by state government through ICFRE Dehradun in consultation with Wildlife institute of India Dehradun for the whole Hasdeo- Arand coalfields comprising of Tara, Parsa, Parsa East, Kante to be funded by M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd (RVUNL). The study is to be awarded by State Government by associating the Indian Council of Forestry Research and Education (ICFRE), Dehradun and Wildlife Institute of India (WII) Dehradun and integrated wildlife management plan (IWMP) will be prepared and conservation area will be identified and mitigation measures will be recommended by the expert committee. The cost of study and cost of implementation of recommendations shall be borne by M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd (RRVUNL). The report will be submitted within two years.
- (iii) The permission for prospecting of coal in forest area does not assure any subsequent right to M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd (RRVUNL) to claim permission under section 2(ii) of FCA 1980 for mining of coal. Fresh proposal for diversion under section 2(ii) of FC Act for mining will be considered on merit based on the report of the expert committee so constituted to study the biodiversity in the area, by FAC on the

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recommendations of the State Government, existing guidelines and policy for coal mining and the standard procedure for diversion of forest land for coal mining shall be followed in such case.

- (iv) No tree/ vegetation shall be allowed to be removed /felled during prospecting. User agency shall give an undertaking that no forest area will be diverted for road.
- (v) Compensatory afforestation shall be raised over equal diverted forest land and at-least 1000 plants per hectare (6.12125 hectares x 1000 = 6200 plants) shall be planted over identified non- forest land (6.2 ha) in pits of size 0.6m x 0.6m x 0.6m filled with imported soils and manure with provision for ten years on subsequent maintenance. Identified non-forest land for CA has been certified to be suitable for bald hill plantation by the state government.
- (vi) 25% of revised CA cost will be deposited extra by the user agency for soil and moisture conservation (SMC) activities on the CA land.
- (vii) The non-forest land will be transferred in favour of forest department before the stage-II approval.
- (viii) The approval for prospecting shall be subject to the outcome of the Civil Appeal No. 4395 of 2014 in the matter of Rajasthan Rajya Vidyut Utpadan Nigam Ltd vs. Sudiep Shrivastava pending before the Hon'ble Supreme Court.
- (ix) The land identified for the purpose of CA shall be clearly depicted on a Survey of India top-sheet of 1:50,000 scale.
- (x) The non-forest land to be transferred and mutated in favour of the State Forest Department for raising Compensatory Afforestation shall be notified as reserved Forest under Section-4 or Protected Forest under Section-29 of the Indian Forest Act, 1927 or under the relevant Section(s) of the local Forest Act.
- (xi) The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation at the current wage rate in consultation with State Forest Department in the account of Ad-hoc CAMPA of the concerned State through online portal. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years.
- (xii) The activities to be undertaken by the user agency within the forest land for prospecting shall not result in felling of any tree;
- (xiii) The samples collected during the prospecting shall be used purely for investigation purposes and shall in no case be used for trade or commerce purpose;
- (xiv) To minimize disturbance to the wildlife, user agency shall take all possible measures to minimize noise during prospecting operations and halt the prospecting activities during night and during such periods in the day as may be advised by the concerned Chief Wildlife Warden, concern State Forest Department ;
- (xv) The State Forest Department shall deploy adequate staff to supervise the activities to be undertaken by the user agency to prevent any damage to the flora (especially the fresh regeneration), fauna and also to prevent felling of trees during drilling of holes and movement of equipment;
- (xvi) After completion of the prospecting all bore holes shall be completely filled up and the ground restored back to its original position ;
- (xvii) During transportation of Bore drilling Machine / rigs, no new road / permanent path in the forest area will be constructed.
- (xviii) The State Government and the user agency shall comply with any other condition that the concern Regional Office of this Ministry may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife; and
- (xix) The user agency and the State Government shall ensure compliance to provisions of the Guidelines dated 4th July, 2014 issued by the Ministry regarding drilling in the forest land.
- (xx) The State Government and user agency shall comply the provisions of the all Acts, Rules, Regulations, Guidelines, NGT order & Hon'ble Court Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project; and




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(xxi) This permission shall, in no way, confer any rights to the project proponents or any other agency for grant of approval under the Forest (Conservation) Act, 1980 for diversion of forest land for any other non-forestry use of the said forest land

After receipt of compliance report on fulfilment of the conditions mentioned above, the proposal shall be considered for final approval under Section-2 of the Forest (Conservation) Act, 1980. Transfer of forest land shall not be affected till final approval is granted by the Central Government in this regard.


Yours faithfully,


- 19.12.17
(Sandeep Sharma)

Assistant Inspector General of Forests (FC)

Copy to:-

1. The Principal Chief Conservator of Forests, Government of Chhattisgarh, Raipur.
2. The Addl. PCCF (Central), Regional Office, Nagpur
3. The Nodal Officer (FCA), O/o PCCF, Government of Chhattisgarh, Raipur.
4. User Agency.
5. Monitoring Cell of Forest Conservation, MoEF&CC, New Delhi.
6. Guard File.


- 19.12.17
(Sandeep Sharma)

Assistant Inspector General of Forests (FC)

o/c
R.P.
22/12/17

No. J-11015/03/2008-IA-II (M)
 Government of India
 Ministry of Environment, Forest and Climate Change
 IA-II (Coal Mining) Division

Indira Paryavaran Bhawan,
 Jorbagh Road, N Delhi-3
 Dated: 10th August, 2018

To,

The Managing Director,
 M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd,
 Vidyut Bhawan, Janpath, Joyti Nagar,
Jaipur - 302 005 (Rajasthan) (Email: fuel.rvun@gmail.com)

Sub: Expansion of Parsa East and Kanta Basan Opencast Coal Mine from 10 MTPA to 15 MTPA and Pit Head Coal Washery from 10 MTPA to 15 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd in total project area of 2682.856 ha located in Hasdeo-Arand Coalfields in District Sarguja (Chhattisgarh) - Environmental Clearance - reg.

Sir,

This has reference to your letter No.RVUN/ACE(Fuel) /Dy. CE(Fuel)/D 2617 dated 1st December, 2016 along with online proposal No. IA/CG/CMIN/22290/2014 dated 3rd December, 2016 and subsequent letters dated 23.01.2017, 30.01.2017, 14.03.2017, 24.05.2017, 30.05.2017, 03.07.2017, 25.07.2017, 12.04.2018, 18.04.2018 and 03.05.2018 on the above mentioned subject.

2. The Ministry of Environment, Forest and Climate Change has considered the proposal for grant of environmental clearance to the project for expansion of Parsa East and Kanta Basan Opencast Coal Mine from 10 MTPA to 15 MTPA and Pit Head Coal Washery from 10 MTPA to 15 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd in total project area of 2682.856 ha located in Hasdeo-Arand Coalfields in District Sarguja (Chhattisgarh).

3. The proposal was considered by the Expert Appraisal Committee (EAC) in the Ministry for Thermal & Coal Mining Sector in its 4th meeting held on 30-31 January, 2017, 11th meeting on 30-31 May, 2017 and 28th meeting held on 17-18 April, 2018. The details of the project, as per the documents submitted by the project proponent, and also as informed during the meetings, are reported to be as under:-

(i) The environment clearance for the Parsa East Kanta Basan OCP of 10 MTPA was accorded vide letter dated 21st December, 2011, which was further revalidated/amended vide letters dated 25th June, 2015 and 29th December, 2015.

(ii) The terms of reference (ToR) for the proposed expansion of the OCP and the washery from the present capacity of 10 MTPA to 15 MTPA, was granted by MoEFCC vide letter dated 10th September, 2014.

(iii) The latitude and longitude of the project site are 22° 47' 39" and 22° 51' 12" N and 82° 46' 38" and 82° 50' 51" E respectively.

(iv) Joint Venture: There is no joint venture



(v) Coal Linkage :

Sl. No.	Name of specified end use plant	Units	Capacity
1.	Chhabra TPP Unit -3 to 6, District- Baran, Rajasthan	2 x 250 MW 2 x 660 MW	1820 MW
2.	Kalisindh TPP Unit – 1 & 2, District- Jhalawar, Rajasthan	2 x 600 MW	1200 MW
3.	Suratgarh Supercritical TPP, Unit- 7 & 8, District- Shriganganagar, Rajasthan	2 x 660 MW	1320 MW

(vi) Employment generated/to be generated: About 1805 persons will get direct employment in various services till 5th year of mine operation (target achieving year), which will develop due to the project and the persons employed in the project

(vii) Benefits of the project:

- Coal shall be used for in power generation in Rajasthan, which would help in reducing gap in demand and production of electricity in the state.
- The basic requirement of the community will be strengthened by extending health care, educational facilities developed in the township to the community, providing drinking water to the villages affected, building/strengthening of existing roads in the area etc.
- Project will generate direct as well as indirect employment in the area

(viii) The land usage of the project area, both pre-mining and post mining, shall be as follows:

Pre-Mining:

S. No.	Land use	Within ML Area (ha)	Outside ML Area (ha)	TOTAL
1.	Agricultural land	701.786	Nil	701.786
2.	Wasteland			
3.	Grazing land			
4.	Settlements			
5.	Surface water			
6.	Forest land	1871.118	Nil	1871.118
7.	Others (Government Land)	109.952	Nil	109.952
	TOTAL	2682.856	Nil	2682.856

Post- Mining:

S. No.	Type	During Mining (ha)	End of Life (ha)	Land Use (ha)					Total
				Plantation Grass/ greenbelt	Water Body	Public Use	Agriculture land	Disman tied	
1.	External OB Dump	112.655	112.655	112.655	-	-	-	-	112.655
2.	Top soil Dump	5.000	5.000	5.000	-	-	-	-	5.000

3.	Excavation Area	2328.247		2127.555	260.692				2328.247
	(i) Backfilled area		2157.560						
	(ii) Excavated void		230.687						
4.	Road & Infrastructure	137.435	137.435	13.744	-	32.601	-	91.090	137.435
5.	Rationalization Area	39.518	39.518	35.931	-	3.588	-	-	39.518
	TOTAL	2682.856	2682.856	2294.884	260.692	36.189	-	91.090	2682.856

(ix) Total geological reserve is 516.40MT. The mineable reserve 452.46 MT, extractable reserve is 452.46 MT. The per cent of extraction would be 87.62%.

(x) The coal grade is F, stripping ratio 5.24 cum/tonne with an average gradient of 1 in 15. There will be three seams with the details as under:-

Seam	Units	Seam Thickness Maximum
Seam-VI	M	2.27
Seam-V	M	8.37
Seam-IV	M	9.72

(xi) Total estimated water requirement is 13,195 m³/day. The level of ground water ranges from 0.30 m to 8.20 m.

(xii) Method of mining: Overburden removal by shovel-dumper & coal mining by surface miner.

(xiii) There shall be two external OB dumps with quantity of 52.07 Mbcm in an area of 112.655 ha with height of 60 m above the surface level, and two internal dump with quantity of 2316.65 Mbcm in an area of 1059.092 ha.

(xiv) The final mine void would be in 230.687 ha with depth of 30 m, and the total quarry area is 2388.247 ha. Backfilled quarry area of 2127.555 ha shall be reclaimed with plantation. A void of 230.687 ha with depth 30 m which is proposed to be converted into a water body.

(xv) The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.

(xvi) The life of mine is 34 Years.

(xvii) Transportation: Coal transportation in pit by belt conveyor from in pit to pit head coal handling plant, Surface to Siding by belt conveyor to Pre-weigh Bin and loading at siding by SILO with inbuilt Rapid Loading System. Wagons while in motion hauled by loco.

(xviii) There is R & R involved. In Kente village 89 PAFs rehabilitated out of total 114 PAFs (increased by 23 nos. from base line data of 91) with monitory rehabilitation package & 1 employment to each family. Rehabilitation village has been developed with full facilities of electricity supply, roads with street lighting, piped water supply, school etc. Ghatbarra village with 203 PAFs will require relocation only after 15 years

(xix) Total capital cost of the project is Rs.2369 crores. CSR Cost Rs.10 Crore towards capital costs and Rs.5/T of coal as revenue expenditure (which shall be up scaled after adjusting for depreciation of the rupee). R&R Cost Rs. 82 Crore. Environmental Management Cost (capital cost

Rs.1460 Lakh annual recurring cost Rs. 350 Lakh.

(xx) Atem river is flowing at a distance of 2.7 km from Northern Boundary of the block. A seasonal nala namely Parsa nala flows on the South Eastern part of the block and discharge its water into Atem Nadi. No nala diversion is involved in the project.

(xxi) Ground water clearance has been obtained on 23rd September 2009,

(xxii) There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone. There are no endemic, endangered species having habitat in the core zone of the study area. The species observed in the core zone were of common occurrence, mostly common birds such as Munias, Wablers, Babblers bulbuls, Egrets and the commonly noted mammals were Porcupine, Mongoose, Indian hare and common fox. A wildlife conservation plan with an estimated cost of Rs. 22 Crore has been prepared by retired IFS officer Mr. P.C Agrahari, which was revised based on the comments of the director Wildlife Institute of India (WII), Dehradun. The same has been approved by Government of Chhattisgarh

(xxiii) Total forest area involved was earlier informed as 1898.328 ha (1654.109 ha of revenue forest land and 244.219 ha of forest land). For its diversion, stage-II forest clearance was granted by the Ministry vide letter dated 15th March 2012, which was revalidated on 12th April, 2018. As per the revised Mining Plan, total forest land is now reported to be 1871.118 ha.

(xxiv) Total afforestation plan shall be implemented covering an area of 2294.884 ha at the end of mining. Greenbelt over an area of 54.675 ha with density of tree plantation 2500 trees/ha.

(xxv) There are court cases/violation involved with the details as under:-

- Appeal No.73 of 2012 before the National Green Tribunal against the order dated 28th March, 2012 passed by the Forest Department, State of Chhattisgarh.
- NGT, vide judgment dated 24th March, 2014, set aside the order dated 23rd June, 2011 and the consequential order dated 28th March, 2012 passed by the Government of Chhattisgarh under section 2 of the Forest (Conservation) Act, 1980. Further, the case was remanded to MoEF with directions to seek fresh advice of FAC within reasonable time on all aspects of the proposal. NGT also directed suspension of all works, except the work of conservation of existing flora and fauna, till further orders are passed by MoEF.
- Aggrieved against the judgment passed by NGT, RVUNL preferred a civil appeal (CA No.4395 of 2014) before the Hon'ble Supreme Court of India.
- Vide order dated 28th April, 2014, the Hon'ble Court has stayed the direction in the impugned order whereby NGT had directed that all works commenced by the RVUNL pursuant to the order dated 28th March, 2012 passed by the State of Chhattisgarh under Section 2 of the Forest Conservation Act, 1980 shall stand suspended till further orders are passed by the Ministry of Environment and Forests.
- Writ Petition (C) No.1346/2016 titled Forest Right Committee Ghatbarra Vs Union of India & Ors before the Hon'ble High Court of Chhattisgarh, regarding Forest Rights of the Community over the forest land.

(xxvi) Public Hearing was held on 11th September 2016 which was organized by Chhattisgarh Environment Conservation Board (CECB) in village Basan, District Surguja (Chhattisgarh). About 1200 persons from surrounding villages attended the public hearing and expressed their views. The issues raised in the public hearing include mine discharge, arrangement of treatment of polluted water, transportation of coal, employment, culture and traditions, rehabilitation etc.

(xxvii) Mining Plan for 10 MTPA capacity was approved by Ministry of Coal vide letter No.13016/74/2006-CA-I dated 16th July, 2009. The revised Mining Plan for expansion project from 10 to 15 MTPA was accorded in principle approval on 3rd February, 2012. Mining Plan (first revision) of 15 MTPA was approved by MoC on 19th November, 2013. Mining Plan 15 MTPA

(second revision) was approved by MoC on 12th August, 2016 to accommodate FBC Power Plant within mine lease area as per EC condition. Mine closure plan is an integral part of mining plan. (xxviii) 10 MTPA pit top Jig Washery commissioned. Additional 5 MTPA Washery is proposed. Coal washery has been planned for yield of 77.5% of clean coal with an ash content of about 30% based on throughput quality of ROM coal. Salient features of the coal washery are as under:-

Description	Details		
Capacity	10 MTPA (Present Capacity)	5 MTPA (Additional Washery)	15 MTPA (Total Capacity After Expansion)
Hourly Throughout capacity	1700 TPH	800 TPH	2500 TPH
No. of Annual working Hours	6000 hrs	6000 hrs	6000 hrs
Washing Technology	Wet washing process	Wet washing process	Wet washing process
Plant Process	Wet process comprising of crushing, screening, washing and material handling		
Land Requirement	28.381 ha (no additional land requirement for expansion)		
Water Requirement	3750 m ³ /day	1950 m ³ /day	5700 m ³ /day
Source of Water	Mine discharge		
Power Requirement & source	10 MVA from existing 33kv Substation	15 MVA from 132 kv Sub-station (under construction)	

(xxix) The monitoring report on compliance status for the conditions stipulated in the existing environmental clearance dated 21st December, 2011 has been forwarded by the Regional Office, MoEFCC at Nagpur vide their letter No.3-3/2012(Env)/1080 dated 21st November 2016, based on the site visit carried out on 11th September, 2016.

4. The Expert Appraisal Committee in its 28th meeting held on 17-18 April, 2018 has recommended the project for grant of environmental clearance. Based on recommendations of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords environmental clearance to the **expansion of Parsa East and Kanta Basan Opencast Coal Mining project from 10 MTPA to 15 MTPA and Pit Head Coal Washery from 10 MTPA to 15 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd in a total area of 2682.856 ha located in Hasdeo-Arand Coalfields in District Sarguja (Chhattisgarh)**, under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the terms & conditions and environmental safeguards as below:-

- (i) All the conditions stipulated by the Ministry vide letter dated 12th April, 2018 for diversion of 1898.328 ha forest land shall be complied with.
- (ii) To control the production of dust at source, the crusher and in-pit belt conveyors shall be provided with mist type sprinklers.
- (iii) Mitigative measures shall be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient numbers of water sprinklers. Adequate corrective measures shall be undertaken to control dust emissions as presented before the Committee,

which would include mechanized sweeping, water sprinkling/mist spraying on haul roads and loading sites, long range misting/fogging arrangement, wind barrier wall and vertical greenery system, green belt, dust suppression arrangement at railway siding, etc.

- (iv) Persons of nearby villages shall be given training on livelihood and skill development to make them employable.
- (v) To ensure health and welfare of nearby villages, regular medical camps shall be organized at least once in six months.
- (vi) Thick green belt of 75 m width at the final boundary in the down wind direction of the project site shall be developed to mitigate/check the dust pollution.
- (vii) The maximum production from the coal washery at any given time shall not exceed the limit as prescribed in the EC.
- (viii) The project proponent shall obtain consent to establish from the State Pollution Control Boards of Chhattisgarh for the coal washery of 15 MTPA prior to commencement of the industrial operations.
- (ix) Transportation of raw coal, washed coal and the rejects shall be through rail.
- (x) The technology so chosen for the washery should conform to 'Zero Liquid Discharge'.
- (xi) Efforts shall be made for utilizing alternate sources of surface water, abandoned mines or else whatsoever and thus minimizing the dependability on a single source.
- (xii) Disposal of washery rejects shall be in accordance with the extant policy and guidelines, and environment friendly.
- (xiii) Total fresh water requirement shall be less than 1.5 cum/tonne of raw coal.

4.1 The grant of EC is further subject to compliance of the generic conditions as under:

(a) Mining

- (i) Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
- (ii) No change in mining method i.e OC to UG, calendar programme and scope of work shall be made without obtaining prior approval of the Ministry of Environment, Forest and Climate Change.
- (iii) Mining shall be carried out as per the approved mining plan(including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
- (iv) No mining shall be carried out in forest land without obtaining Forestry Clearance as per the provisions of the Forest (Conservation) Act, 1980 and also adhering to The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 read with provisions of Indian Forest Act, 1927.

(b) Coal beneficiation

- (i) Coal beneficiation practices shall be carried out under strict adherence to provisions of the Factories Act, 1957 and subordinate legislations made there-under.

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(ii) No change in coal beneficiation process and scope of work shall be made without obtaining prior approval of this Ministry. No change in the maximum quantum of raw material feed per annum against the approved washery capacity shall be made.

(iii) No ground water shall be used for coal washing unless otherwise permitted in writing by competent authority (CGWA) or MoEFCC. The make-up water requirement of washery should not exceed 1.5 m³/tonne of raw coal.

(c) Land reclamation and water conservation

(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 shall be submitted to Ministry of Environment, Forest and Climate Change/Regional Office (RO).

(ii) 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 with due approval of the concerned State/GoI Authority. The construction of embankment 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.

(iii) The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be handed over to the respective state government as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.

(iv) The entire excavated area, backfilling, external OB dumping (including top soil) 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-a-vis the post mining land use pattern shall be submitted to the Ministry of Environment, Forest and Climate Change/Regional Office on six monthly basis.

(v) The top soil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized for long. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. 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 of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office on six monthly basis.

(vi) An Integrated Surface Water Management Plan for the washery area up to its buffer zone considering the presence of any river/rivulet/pond/lake etc. with impact of coal washing activities on it, shall be prepared, submitted to MoEFCC and implemented.

(vii) Three tier greenbelt comprising of a mix of native species, of minimum 30 m width shall be developed all along the washery area to check fugitive dust emissions and to render aesthetic to neighbouring stakeholders. A 3-tier green belt comprising of a mix of native species or tree species with thick leaves shall be developed along vacant areas, storage yards, loading/transfer points and also along internal roads/main approach roads.

(viii) Coal stacking plan shall be prepared separately for raw coal, clean coal, middling and rejects.

(ix) Waste Water shall be effectively treated and recycled completely either for washery operations or maintenance of green belt around the plant.

(x) Rainwater harvesting in the washery premises shall be implemented for conservation and augmentation of ground water resources in consultation with Central Ground Water Board.

(xi) Fly ash shall be utilized for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of Fly Ash Notification S.O. 2804 (E) dated 3rd November, 2009 as amended from time to time. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.

(d) Emissions, effluents, and waste disposal

(i) 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 values of PM₁₀/PM_{2.5}) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.

(ii) Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area in a phased manner. The green belt comprising a mix of native species shall be developed all along the major approach/ coal transportation roads.

(iii) The transportation of coal shall be carried out as per the provisions and route proposed in the approved Mining Plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it 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.

(iv) Vehicular emissions 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.

(v) Coal stock pile/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 along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.

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(vi) Coal handling plant shall be operated with effective control measures viz. bag filters/water or mist sprinkling system etc to check fugitive emissions from crushing operations, conveyor system, transfer points, etc.

(vii) Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.

(viii) Catch/garland drains and siltation ponds of appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression measures and green belt development. Dimension of the retaining 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/water bodies.

(ix) Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Oil and grease trap shall be installed and maintained fully functional with effluents discharge adhering to the norms. Sewage treatment plant of adequate capacity shall be installed for treatment of domestic waste.

(x) Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.

(e) Illumination, noise & vibration

(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 & its RO on six-monthly basis.

(ii) Adequate measures shall be taken for control of noise levels below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/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.

(iii) Controlled blasting techniques shall be practiced in order to mitigate ground vibrations and fly rocks as per the guidelines prescribed by the DGMS.

(iv) The noise level survey shall be carried out as per the 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.

(f) Occupational health & safety

(i) The project proponent shall undertake occupational health survey for initial and periodical medical examination of the workers 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 workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any.

(ii) Personnel (including outsourcing employees) working in dusty areas shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.

(iii) Skill training as per safety norms specified by DGMS shall be provided to all workmen including the outsourcing employees to ensure high safety standards in mines.

(g) Ecosystem and biodiversity conservation

(i) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered 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.

(h) Public hearing, R&R and CSR

(i) 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 oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.

(ii) The project proponent shall ensure the expenditure towards socio-economic development in and around the mine, in every financial year in pursuance of the Corporate Social Responsibility Policy as per the provisions under Section 135 of the Companies Act, 2013

(iii) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.11 (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

(iv) The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the 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.

(i) Corporate environment responsibility

(i) The Company shall have a well laid down environment policy duly approved by Board of Directors. The environment 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 or forest norms/conditions. Also, the company shall have a defined system of reporting of non-compliances/violations of environmental norms to the Board of Directors and/or shareholders/stakeholders.

(ii) The project proponent shall comply with the provisions contained in this Ministry's OM dated 1st May, 2018, as applicable, regarding Corporate Environment Responsibility.

(iii) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions should be displayed on website of the Company.

(iv) A separate environmental management cell both at the project and company headquarter level, with suitable qualified personnel shall be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.

(v) Action plan for implementing EMP and environmental conditions 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.

(vi) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

(j) Statutory Obligations

(i) The environmental clearance shall be subject to orders of Hon'ble Supreme Court of India, Hon'ble High Court, NGT and any other Court of Law from time to time, and as applicable to the project.

(ii) This environmental clearance shall be subject to obtaining wildlife clearance, if applicable, from the Standing Committee of National Board for Wildlife.

(iii) The project proponent shall obtain Consent to Establish/Operate under the Air Act, 1981 and the Water Act, 1974 from the concerned State Pollution Control Board.

(iv) The project proponent shall obtain the necessary permission from the Central Ground Water Authority (CGWA).

(k) Monitoring of project

(i) Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular

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monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.

(ii) The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals 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.

(iii) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.

(iv) The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-IA.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.

(v) 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 operations. 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 a year, and the data thus collected shall be sent regularly to Ministry of Environment, Forest and Climate Change/Regional Office.

(vi) 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.

(vii) The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental conditions to the Ministry of Environment, Forest and Climate Change/Regional Office. For half yearly monitoring reports, the data should be monitored for the period of April to September and October to March of the financial years.

(viii) 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.

(I) Miscellaneous

(i) Efforts should be made to reduce energy consumption by conservation, efficiency improvements and use of renewable energy.

(ii) The project authorities shall inform to the Regional Office regarding commencement of mining operations.

(iii) A copy of the environmental clearance shall be marked to concerned Panchayat. A copy of the same shall also be sent to the concerned State Pollution Control Board, Regional Office,

District Industry Sector and Collector's Office/Tehsildar Office for information in public domain within 30 days.

(iv) The EC shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain.

(v) The project authorities shall advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of this clearance, informing that the project has been accorded environmental clearance and a copy of the same is available with the State Pollution Control Board and also at website of the Ministry.

(vi) The environmental statement for each financial year ending 31 March in Form-V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the Company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF&CC by e-mail. Concerns raised during public hearing.

(vii) The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules 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.

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.

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.

7. 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'.

8. 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.


9. 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.



10. 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.

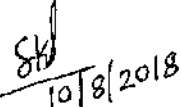
11. All recommendations of the Forest Advisory Committee in its meeting held on 25th January, 2018 while considering the proposal for diversion of 1898.328 ha of forest land involved under the project, and subsequently communicated vide the Ministry vide letter dated 12th April, 2018, shall be strictly adhered to by the project proponent.

12. This EC supersedes the earlier EC/revalidated/amendment granted vide letter dated 21st December, 2011, 25th June, 2015 & 29th December, 2015 respectively, and is subject to final outcome of the Civil Appeal No.4395 of 2014 pending in Hon'ble Supreme Court of India.


10/8/2018
(S. K. Srivastava)
Scientist E

Copy to:-

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi-1
2. The DG (Forest), MOEFCC, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi -3
3. The Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur
4. The Principal Chief Conservator of Forest and CWLW, Govt. of Chhattisgarh, Raipur
5. The APCCF, Ministry of Environment Forest and Climate Change, Regional Office (Western Central Zone), Ground Floor, East Wing, New Secretariat Building Civil Lines, Nagpur-1
6. The Chairman, Chhattisgarh State Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, Raipur (Chhattisgarh) - 492001
7. The Member Secretary, CPCB, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
8. The Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi
9. The District Collector, Sarguja, Government of Chhattisgarh
10. Monitoring File 11. Guard File 12. Record File


10/8/2018
(S. K. Srivastava)
Scientist E

2054

No.J-11015/03/2008-IA-II (M)

Government of India

Ministry of Environment, Forest and Climate Change

IA Division

Indira Paryavaran Bhawan,

Jorbagh Road, N Delhi-3

Dated: 24th July, 2019

To,

The Managing Director,
M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd,
Vidyut Bhawan, Janpath, Joyti Nagar,
Jaipur - 302 005 (Rajasthan) (Email: fuel.rvun@gmail.com)

Sub: Expansion of Parsa East and Kanta Basan Opencast Coal Mining project and Pit Head Coal Washery of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd located in Hasdeo-Arand Coalfields in District Surguja (Chhattisgarh) - Amendment in Environmental Clearance - reg.

Sir,

This has reference to your online proposal No. IA/CG/CMIN/22290/2014 dated 5th March, 2019 on the above mentioned subject.

2. The Ministry of Environment, Forest and Climate Change has granted environmental clearance vide letter dated 10th August, 2018 in favour of M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited to the expansion of Parsa East and Kanta Basan Opencast Coal Mining Project from 10 MTPA to 15 MTPA and Pit Head Coal Washery From 10 MTPA to 15 MTPA located in Hasdeo-Arand Coalfields in District Surguja (Chhattisgarh). One of the specific conditions stipulated therein at para 4(ix) reads as under:-

'Transportation of raw coal, washed coal and rejects shall be through rail'.

3. Now amendment has been sought to revise the above condition to exempt transportation of washery rejects by road in view of the constraints/limitations as below:-

(i) Washery Rejects generated from PEKB Coal Block are used by nearby Power Plants with inadequate coal linkage to supplement coal requirement, after proper blending with high GCV coal. Due to high ash content and low energy (GCV) output, economic viability of rejects depends more on the low transportation cost. As such, rejects are commercially suitable to industries located in closer vicinity to Mine/Washery. PEKB mine is located in the Surguja District of Chhattisgarh, which has no such industry to consume the washery rejects. Therefore, rejects are primarily sold to plants located in Bilaspur, Raipur, and Raigarh Districts of Chhattisgarh. Direct Railway connectivity to these power plants from PEKB mine is not available. Railway connectivity to these power plants from PEKB mine washery is via Anuppur on SECR rail section, which takes longer route as compared to road connectivity.

(ii) In view of limited usability and techno-economic viability rejects are sold to various power plants mostly of small capacity, located within a distance of 200 to 300 kilometers from Pit-head of PEKB mine/washery and are transported by the buyers to their respective plants by road only.

(iii) Besides significantly longer distances of plants by railway, transportation through Railways will require bridging the gap between respective railways sidings and the plants by road transportation. It will eventually enhance the cost of handling of cargo at both ends and thereby make the entire process complex and economically unviable for the customers of rejects.

(iv) Further, it may be noted that by railway route, total distances of some of plants enlisted in above table exceeds the maximum allowable limit of 500 km, stipulated in the Gazette Notification of MoEF. Therefore, major consumers including Jindal Power Ltd (single largest buyer) will not be able to take off rejects from PEKB Mine by railway.

(v) Transportation of rejects by road are being carried out by covered trucks with effective dust control measures e.g. regular water spraying on roads and any other conditions imposed by State Pollution Control Board.

(vi) Road transportation of rejects is unavoidable for evacuation of coal from PEKB washery. However, efforts shall be made to minimize the road transportation of rejects by constructing a wharf wall rail loading system to extent possible.

4. The proposal for amendment in environmental clearance was considered by the sectoral EAC in its meetings held on 24-25 April, 2019. The Committee expressed concerns over long distances involved (131-280 km) for transportation of washery rejects by road from the PEKB mine to various power plants and other potential users/customers in nearby areas, and desired to know about the habitation along the proposed road route, its condition and likely impact on air quality/safety due to the said transportation.


The Committee desired for formulation of comprehensive guidelines on disposal of washery rejects at the earliest within six months, finalised and duly approved by the Ministry of Coal, which would take care of all environmental concerns to ensure uniformity in all such cases.

Pending formulation and approval of the comprehensive guidelines, the Committee resolved that as an interim measure the concerned State Pollution Control Board may stipulate additional terms and conditions in the CTOs depending upon the coal transportation network, air quality and other environmental parameters, but at the same time complying with the National Ambient Air Quality Standards.

5. The Committee, while considering the matter in its meeting on 25th June, 2019, resolved that the proposed amendment in environmental clearance and/or the suggested stipulation of additional condition by the concerned SPCB as an interim measure, may be applicable for a period of one year or formulation of the approval of comprehensive guidelines on disposal of washery rejects by the Ministry of Coal, whichever is earlier.

6. Based on recommendations of the EAC, Ministry of Environment, Forest and Climate Change hereby accords approval for amendment in environmental clearance to the **expansion of Parsa East and Kanta Basan Opencast Coal Mining project from 10 MTPA to 15 MTPA and Pit Head Coal Washery from 10 MTPA to 15 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd in an area of 2682.856 ha located in Hasdeo-Arand Coalfields in District Sarguja (Chhattisgarh)**, under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars, **as stated in para 5 above.**

7. All other terms and conditions stipulated in the environmental clearance dated 10th August, 2018 shall remain unchanged


 24/7/2019
(S K Srivastava)
Scientist E

Copy to:-

3. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi-1
4. The DG (Forest), MOEFCC, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi -3

3. The Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur
4. The Principal Chief Conservator of Forest and CWLW, Govt. of Chhattisgarh, Raipur
5. The APCCF, Ministry of Environment Forest and Climate Change, Regional Office (Western Central Zone), Ground Floor, East Wing, New Secretariat Building Civil Lines, Nagpur-1
6. The Chairman, Chhattisgarh State Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, Raipur (Chhattisgarh) - 492001
7. The Member Secretary, CPCB, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
8. The Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi
9. The District Collector, Sarguja, Government of Chhattisgarh
10. Monitoring File 11. Guard File 12. Record File



F.No. J-11015/03/2008-IA.II (M)
 Government of India
 Ministry of Environment, Forest and Climate Change
 Impact Assessment Division

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

Dated: 11th August, 2020

OFFICE ORDER

Sub: Parsa East and Kanta Basan Opencast Coal Mine from 10 MTPA to 15 MTPA and Pit Head Coal Washery From 10 MTPA to 15 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd. located in Hasdeo-Arand Coalfields in District Surguja (Chhattisgarh)- reg. Show-cause Notice under Section 5 of E(P) Act, 1986.

WHEREAS, the Environmental Clearance (EC) for Parsa East and Kanta Basan Opencast Coal Mine Project of 10 MTPA and Pit Head Coal Washery of 10 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd, located in Hasdeo-Arand Coalfields in District Sarguja (Chhattisgarh) has been accorded by the Ministry on 21st December, 2011. Further Corrigendum dated 22nd June, 2012, modification dated 4th March, 2013 and revalidation dated 25th June, 2015 was given.

2. WHEREAS, specific condition No. (ii) of EC dated 21st December, 2011 stipulated that "The linked 4X135 MW FBC Power Plant shall be commissioned in 2-3 years".

3. WHEREAS, specific condition No. (ii) of EC dated 21st December, 2011 stipulated was amended on 29th December, 2015 and time period for commissioning the FBC was increased to 6-7 years. It quotes "*The linked 4X135 MW FBC Power Plant shall be commissioned in 6-7 years*".

4. WHEREAS, Expansion in favour of M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited to the expansion of Parsa East and Kanta Basan Opencast Coal Mining Project from 10 MTPA to 15 MTPA and Pit Head Coal Washery From 10 MTPA to 15 MTPA located in Hasdeo-Arand Coalfields in District Surguja (Chhattisgarh) of environmental clearance dated 10th August, 2018 granted by the Ministry.

5. WHEREAS, M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited requested for amendment in environmental clearance with regard to specific conditions 4(ix) as "Transportation of raw coal, washed coal and rejects shall be through rail".

Amended ..
 11.08.20

6. WHEREAS, EAC (Coal Mining) in its meeting held on 24-25th April, 2019 , while considering application observed that Pending formulation and approval of the comprehensive guidelines, the committee resolved that as an interim measure the concerned State Pollution Control Board may stipulate additional terms and conditions in the CTOs depending upon the coal transportation network, air quality and other environmental parameters, but at the same time complying with the National Ambient Air Quality Standards.

7. WHEREAS, EAC (Coal Mining) in its meeting held on 25th June, 2019 while considering earlier recommendation of its meeting dated 24-25th April, 2019 noted non-compliance of conditions stipulated in the earlier environmental clearance dated 21st December, 2011, amended on 29th December, 2015 regarding installation of FBC power plant for utilization of coal washery rejects, and desired that the Ministry may take parallel action on this regard as per the extant rules/guidelines.

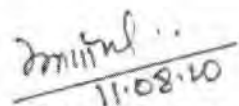
8. In the above context, your attention is drawn to provision of Section 5 of the Environment (Protection) Act, 1986 which is as reproduced below:

“For the avoidance of doubts, it is hereby declared that the power to issue directions under this section includes the power to direct-

- a. The closure, prohibition or regulation of any industry, operation or process; or
- b. Stoppage or regulation of the supply of electricity or water or any other service.”

9. **NOW, THEREFORE, you are directed to submit your response to why this Ministry shall not take action against you under the provisions of Environment (Protection) Act, 1986 for the non-compliance of the environmental conditions mentioned above. You are advised to submit your reply within 30 (thirty) days of the receipt of this Notice. In your response, it may also be clearly stated whether a hearing is required by the project proponent before a final order is passed by this Ministry. It may also be noted that if no response is received within 30 days, Ministry will be constrained to initiate action, as deemed fit and appropriate under the provision of Section 5 of the Environment (Protection) Act, 1986 and in the circumstances of the case with or without any further notice to the Project. Also, this show cause is without prejudice to any other legal action which may be taken against you**

This issues with the approval of the Competent Authority.


11.08.20
(Manoj Kumar Gangeya)
Director

Chairman & Managing Director
M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd.
(Govt. of Rajasthan Undertaking)
Vidyut Bhawan, Jyoti Nagar, Janpath, Jaipur -302005

Phone No. 0141-2740692; E-mail: cmd@rrvun.com

Copy to:

1. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
2. The Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur
3. The APCCF, Ministry of Environment, Forest and Climate Change, Regional Office (Western Central Zone), Ground Floor, East Wing, New Secretariat Building, Civil Lines, Nagpur (Maharashtra)
4. The Chairman, Chhattisgarh wState Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, Raipur - 492001 (Chhattisgarh).
5. Guard file/Monitoring file. 6. Website of MoEF&CC.

Manoj Kumar
11.08.20
(Manoj Kumar Gangeya)
Director

“विजनेस पोस्ट के अन्तर्गत डाक शुल्क के नगद भुगतान (विना डाक टिकट) के प्रेषण हेतु अनुमत. क्रमांक जी. 2-22-छत्तीसगढ़ गजट/38 सि. से. भिलाई, दिनांक 30-5-2001.”



पंजीयन क्रमांक
“छत्तीसगढ़/दुर्ग/09/2013-2015.”

छत्तीसगढ़ राजपत्र

प्राधिकार से प्रकाशित

क्रमांक 43]

रायपुर, शुक्रवार, दिनांक 22 अक्टूबर 2021—आश्विन 30, शक 1943

विषय—सूची

भाग 1.—(1) राज्य शासन के आदेश, (2) विभाग प्रमुखों के आदेश, (3) उच्च न्यायालय के आदेश और अधिसूचनाएं, (4) राज्य शासन के संकल्प, (5) भारत शासन के आदेश और अधिसूचनाएं, (6) निर्वाचन आयोग, भारत की अधिसूचनाएं, (7) लोक-भाषा परिशिष्ट.

भाग 2.—स्थानीय निकाय की अधिसूचनाएं.

भाग 3.—(1) विज्ञापन और विविध सूचनाएं, (2) सांख्यिकीय सूचनाएं.

भाग 4.—(क) (1) छत्तीसगढ़ विधेयक, (2) प्रवर समिति के प्रतिवेदन, (3) संसद में पुरःस्थापित विधेयक, (ख) (1) अध्यादेश, (2) छत्तीसगढ़ अधिनियम, (3) संसद के अधिनियम, (ग) (1) प्रारूप नियम, (2) अंतिम नियम.

भाग १

राज्य शासन के आदेश

सामान्य प्रशासन विभाग

मंत्रालय, महानदी भवन, नवा रायपुर, अटल नगर

नवा रायपुर, अटल नगर दिनांक 12 सितम्बर 2021

क्रमांक ई 1-01/2021/एक-2.—राज्य शासन एतद्वारा डॉ. कमलप्रोत सिंह, भा.प्र.से. (2002), सचिव, स्कूल शिक्षा विभाग तथा अतिरिक्त प्रभार सचिव, सामान्य प्रशासन विभाग, आयुक्त, लोक शिक्षण एवं मिशन संचालक, समग्र शिक्षा को केवल मिशन संचालक, समग्र शिक्षा के अतिरिक्त प्रभार से मुक्त करते हुए प्रभारी कृषि उत्पादन आयुक्त एवं सचिव, कृषि एवं किसान कल्याण तथा जैव प्रौद्योगिकी विभाग का अतिरिक्त प्रभार सौंपता है. शेष प्रभार यथावत रहेंगे.

छत्तीसगढ़ के राज्यपाल के नाम से तथा आदेशानुसार,
डॉ. डी. सिंह, सचिव.

वन एवं जलवायु परिवर्तन विभाग
मंत्रालय, महानदी भवन, नवा रायपुर, अटल नगर

नवा रायपुर, अटल नगर, दिनांक 7 अक्टूबर 2021

क्रमांक/एफ 8-6/2007/10-2.— जंगली हाथियों को उपयुक्त प्राकृतिक रहवास उपलब्ध कराने, मानव-हाथी द्वंद कम करने तथा बेहतर वन्यप्राणी प्रबंधन के उद्देश्य से छत्तीसगढ़ शासन एतद्वारा निम्न अनुसूची में दशायि अनुसार 'लेमरू हाथी रिजर्व' घोषित करता है :-

“अनुसूची”

जिला	कोरबा, सरगुजा, रायगढ़
परिक्षेत्र	कैदई, एतमानगर, उदयपुर, लखनपुर, कुदमुरा, पसरखेत, बात्को, लेमरू, बोरो, कापू, धरमजयगढ़
हाथी रिजर्व का नाम	लेमरू हाथी रिजर्व
क्षेत्रफल	199548.00 हेक्टेयर = 1995.48 वर्ग कि.मी.

सीमाएं

अ. क्र.	वनमंडल	उप वनमंडल	परिक्षेत्र	कक्ष क्रमांक	रकबा हे. में		सीमाएं
					वन भूमि	राजस्व भूमि	
1	2	3	4	5	6	7	8
1	कटघोरा	कटघोरा	कैदई	OA698, OA699, OA700, OA701, OA702, OA724, OA725, OA726, OA727, P355, P356, P357, P358, P359, P360, P361, P362, P363, P364, P365, P366, P367, P368, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P380, P381, P382, P383, P384, P385, P386, P387, P388,	26798.568	5492.714	उत्तर सीमा - इसदेव नदी एवं मनापी नाला का संगम जिसके दक्षिण में कटघोरा वनमण्डल के कक्ष क्रमांक 355 की उत्तरी सीमा एवं सूरजपुर वनमण्डल के कक्ष क्र. पी.1902 की दक्षिणी सीमा बनाता है, पूर्व की ओर बढ़ते हुए कटघोरा वनमण्डल के कैदई परिक्षेत्र के कक्ष क्र. पी. 356 की उत्तरी सीमा आगे पूर्व ओर कक्ष क्र. पी.357

अ. क्र.	वनमंडल	उप वनमंडल	परिक्षेत्र	कक्ष क्रमांक	रकबा हे. में		सीमाएं
					वन भूमि	राजस्व भूमि	
1	2	3	4	5	6	7	8
				P389, P390, P391, P392, P393, P394, P395, P396, P397, P398, P399, P400, P401, P402, P403, P404, P405, P406, P407, P408, P409, P410, P411, P412, P413, P414, P415, P416, P417, P418, P419, P420, P421, P422, P423, P424, P425, P426, P427, P428, P429, P430, P431, P432, P433, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452,			की उत्तरी सीमा लाईन बनाते हुए सुरजपुर एवं कटघोरा वनमण्डल की सीमा लाईन बनाता है आगे पूर्व की ओर बढ़ते हुए कक्ष क्र. पी.351, पी.358, पी. 359, पी.360, पी.361, से ओ.ए.724 की उत्तर पूर्व सीमा जो उदयपुर व केन्दई परिक्षेत्र की उभयनिष्ठ सीमा बनाते हुए नेशनल हाईवे को पार कर कक्ष क्र. पी.432, पी.433, पी.434, पी.440, पी.441, पी. 445, पी.446 उत्तरी सीमा बनाता है एवं कोरबा वनमण्डल के लेमरू परिक्षेत्र अंतर्गत कक्ष क्र. पी. 865 व पी.866 की उत्तरी सीमा, ओ.ए.1189 के उत्तर पूर्वी सीमा को स्पर्श करते हुए दक्षिण पूर्व की ओर कक्ष क्र. पी. 867 की पूर्वी सीमा लाईन बनाता है। आगे ग्राम मुनरी दादार की पूर्वी सीमा जो आगे ओ.ए. 1190 की उत्तरी सीमा लाईन को स्पर्श कर आगे दक्षिण पूर्व की ओर बढ़ते हुए कक्ष क्र. पी. 876 की उत्तर पूर्वी सीमा बनाते हुए पूर्व की ओर सरगुजा वनमंडल के उदयपुर परिक्षेत्र में प्रवेश कर कक्ष क्र. पी. 2151 की पश्चिमी छोर से शुरू होकर उत्तर एवं दक्षिण पूर्व की ओर कक्ष क्र. पी. 2162 के उत्तर पूर्वी किनारे को स्पर्श कर पूर्व की ओर बढ़ते हुए कक्ष क्र. पी. 2159, 2160 की पश्चिमी सीमा लाईन एवं 2161 की पश्चिम, उत्तर व पूर्वी सीमा बनाता है। तत्पश्चात् 2162 की उत्तर, पूर्व, दक्षिणी सीमा बनाते हुए दक्षिण की ओर पी. 2160 की पूर्वी सीमा बनाकर दक्षिण से पूर्व की ओर बढ़ते हुए कक्ष क्र. 2158 की उत्तरी सीमा लाईन बनाता है। पूर्व की ओर कक्ष क्र. 2183 की उत्तरी सीमा बनाकर उत्तर की ओर कक्ष क्र. 2182 की पश्चिम व उत्तरी सीमा एवं 2180 की उत्तर पूर्व सीमा बनाते हुए 2181 की उत्तरी सीमा लाईन को स्पर्श कर उत्तर पूर्व की ओर बढ़ता है एवं कक्ष क्र. पी. 2178 की उत्तरी
2	कटघोरा	कटघोरा	एतमानगर	OA753, P496, P497, P498, P499, P500, P501, P502, P503, P504, P505, P506, P507, P508, P509, P510, P511, P517, P519, P520, P521, P522, P523, P524, P525	6950.338	6707.333	
3	सरगुजा	उदयपुर	उदयपुर	P2151, P2152, P2153, P2154, P2155, P2156, P2157, P2158, P2159, P2160, P2161, P2162, P2177, P2178, P2180, P2181, P2182, P2183, P2184, P2185, P2192, P2193, P2194, P2195,	5381.351	0.000	
4	सरगुजा	उदयपुर	लखनपुर	P2206, P2207, P2208, P2209	856.320	0.000	
5	कोरबा	उत्तर कोरबा	कुदमुसा	OA1359, OA1360, OA1361, OA1362, OA1363, OA1364, OA1365, OA1366, OA1367, OA1368, OA1369, OA1370, OA1371, OA1372, OA1373, OA1374, OA1375, OA1376, OA1377, OA1378, OA1379, OA1380, OA1381, OA1382, OA1383, OA1384, OA1385, OA1386, OA1387, OA1388, OA1389, OA1390, OA1391, OA1392, OA1393, OA1394,	19549.649	7084.854	

अ. क्र.	वनमंडल	उप वनमंडल	परिक्षेत्र	कक्ष क्रमांक	रकबा हे. में		सीमाएं
					वन भूमि	राजस्व भूमि	
1	2	3	4	5	6	7	8
				OA1395, OA1396, OA1402, OA1403, OA1404, OA1405, OA1406, P1053, P1054, P1070, P1071, P1072, P1073, P1074, P1075, P1076, P1077, P1078, P1079, P1080, P1081, P1082, P1083, P1084, P1085, P1086, P1087, P1088, P1089, P1090, P1091, P1092, P1093, P1094, P1095, P1096, P1097, P1098, P1099, P1100, P1101, P1102, P1103, P1104, P1105, P1107, P1113, P1114, P1119			सीमा एवं दक्षिण की ओर बढ़ते हुए 2178 की पूर्वी सीमा लाईन बनाता है। 2177 की पूर्वी सीमा व खोरम गांव की सीमा को स्पर्श कर दक्षिण की ओर बढ़ते हुए पूर्वी व दक्षिणी सीमा लाईन बनाता है। कक्ष क्र. 2194, 2195 की पूर्वी व दक्षिणी सीमा बनाकर पूर्व की ओर बढ़ते हुए 2193 की उत्तरी सीमा बनाकर कोरबा वनमंडल के कुदमुरा परिक्षेत्र में प्रवेश करता है। कक्ष क्र. पी. 1077 की उत्तरी सीमा को स्पर्श कर पूर्व की ओर बढ़ते हुए कक्ष क्र. पी. 1078, 1079, 1080, 1081 की उत्तरी सीमा लाईन बनाते हुए धरमजयगढ़ वनमंडल के बोरो परिक्षेत्र में प्रवेश करता है। कक्ष क्र. 690 की पश्चिम सीमा से उत्तर की ओर बढ़कर 693 की पश्चिमी सीमा लाईन, 694, 696, 697 की पश्चिम सीमा लाईन एवं 698 की पश्चिमी सीमा लाईन बनाकर 699 को स्पर्श कर उत्तर की ओर बढ़ते हुए सरगुजा वनमंडल के लखनपुर परिक्षेत्र में प्रवेश करता है। कक्ष क्र. 2207 की पश्चिमी सीमा लाईन पी.2208, पी.2208 की उत्तर पश्चिम सीमा एवं कक्ष क्र. पी.2209 को विभाजित कर धरमजयगढ़ वनमंडल बोरो परिक्षेत्र के कक्ष क्र. 706, 707, 708 की उत्तरी सीमा एवं कापू परिक्षेत्र में कक्ष क्र. 1, 2, 6, 7, 8, 11, 12, 13, 15, 17, 18, 19 की उत्तरी सीमा लाईन बनाते हुए कक्ष क्र. 23 की उत्तर पूर्वी सीमा कक्ष क्र. 22 की पूर्वी सीमा व कक्ष क्र. 24 की उत्तरी सीमा बनाते हुए पूर्वी सीमा में प्रवेश करता है।
6	कोरबा	दक्षिण कोरबा	पसरखेत	OA1329, P1016, P1017, P1018, P1019, P1020, P1021, P1022, P1023, P1024, P1025, P1026, P1027, P1043, P1044, P1045, P1046, P1047, P1048, P1049, P1052, P1055, P1056, P1057, P1058, P1059, P1060, P1061, P1062, P1063, P1066, P1067, P1068, P1069, P1115, P1116	14157.449	170.718	पूर्वी सीमा - धरमजयगढ़ वनमंडल के कापू परिक्षेत्र के कक्ष क्र.51 पी. की पूर्वी एवं दक्षिणी सीमा कक्ष क्र. 50पी., 49पी., 48पी., 46पी., 47पी., 18 पी., 17पी., 16पी., 14पी. की दक्षिणी सीमा लाईन कक्ष क्र. 13 की दक्षिण पूर्वी सीमा कक्ष
7	कोरबा	उत्तर कोरबा	बालको	P919, P920, P921, P928, P933, P934, P935, P936, P937, P938, P939, P940, P941, P942, P943, P944, P945, P946, P950, P951, P954, P955, P956, P957, P958, P959, P960, P961, P964, P965, P966, P967, P968, P969, P970	14204.825	0.000	
8	कोरबा	उत्तर कोरबा	लेमरु	OA 1178, OA 1179, OA 1180, OA 1181, OA 1182, OA 1183, OA 1184, OA 1185, OA 1186, OA 1187, OA 1188, OA 1189, OA 1190, OA 1191,	45674.451	6790.601	

अ. क्र.	वनमंडल	उप वनमंडल	परिक्षेत्र	कक्ष क्रमांक	रकबा हे. में		सीमाएं
					वन भूमि	राजस्व भूमि	
1	2	3	4	5	6	7	8
				OA 1192, OA 1193, OA 1194, OA 1195, OA 1196, OA 1197, OA 1198, OA 1199, OA 1200, OA 1201, OA 1202, OA 1203, OA 1204, OA 1205, OA 1206, OA 1207, OA 1208, OA 1209, OA 1210, OA 1211, OA 1212, OA 1213, P801, P802, P803, P804, P805, P806, P807, P808, P809, P810, P811, P812, P813, P814, P815, P816, P817, P818, P819, P820, P821, P822, P823, P824, P825, P826, P827, P828, P829, P830, P831, P832, P835, P836, P837, P838, P839, P840, P841, P842, P843, P844, P845, P846, P847, P848, P849, P850, P851, P852, P853, P854, P855, P856, P857, P858, P859, P860, P861, P862, P863, P864, P865, P866, P867, P868, P869, P870, P871, P872, P873, P874, P875, P876, P877, P878, P879, P880, P881, P882, P883, P884, P885, P886, P887, P888, P889, P890, P891, P892, P893, P894, P895, P896, P897, P898, P899, P900, P901, P902, P903, P904, P905, P906, P907, P908, P909, P910, P911, P912, P913			25पी., 48पी., 44पी., 45पी.की पूर्वी सीमा कक्ष क्र. 43पी. की दक्षिणी सीमा तथा कक्ष क्र. 32, 33 की पूर्वी सीमा एवं कक्ष 34 की दक्षिण सीमा लाईन बोरे परिक्षेत्र के कक्ष क्र. 631 की पूर्वी सीमा लाईन कक्ष क्र 630पी. की उत्तरी भाग को विभाजित करते हुए पश्चिम दिशा में कक्ष क्र. 658, 657, 653, 651, 650 की दक्षिणी सीमा एवं 621 पी. 602,605 पश्चिमी सीमा धरमजयगढ़ परिक्षेत्र के कक्ष क्र. 475, 474, ओ.ए. 1382 को स्पर्श करते हुए 473 पी. के उत्तरी सीमा व राजस्व भूमि से होते हुए दक्षिण की ओर 458 पी. 457, 456 पी. की सीमा बनाते हुए माण्ड नदी तक दक्षिण सीमा की ओर चला जाता है। दक्षिणी सीमा - मांड नदी से पश्चिम की ओर बढ़ते हुए कक्ष क्र. 456 पी., 459पी. दक्षिणी सीमा बनाते हुए व 463 पी. पश्चिमी सीमा बनाकर कोरबा वन के कुदमुरा परिक्षेत्र में प्रवेश कर जाता है। तत्पश्चात्, पश्चिम की ओर बढ़ते हुए पी.1103, 1405पी दक्षिण सीमा व ओ.ए.1390, पी.1119 की दक्षिण, पूर्वी सीमा बनाते हुए पसरखेत परिक्षेत्र में प्रवेश करता है। कक्ष क्र. 1115, 1116 पूर्वी सीमा, 1068, 1067 की दक्षिण पूर्वी सीमा दक्षिण की ओर जाते हुए कक्ष क्र. 1066 को विभाजित करते हुए 1063, 1026, 1025 के दक्षिणी सीमा से उत्तर की जाते हुए कक्ष क्र. 1025 के पश्चिमी सीमा के साथ उत्तर की ओर जाकर पुनः पश्चिम की ओर जाते हुए कक्ष क्र. 1044 की दक्षिणी सीमा के बाद कक्ष क्र. 1043 के दक्षिणी एवं पश्चिमी सीमा से 1046 की दक्षिणी व पश्चिमी सीमा बनाता है तथा 1047 की पश्चिमी सीमा बनाकर पश्चिम की ओर बढ़ते हुए 1048 की दक्षिणी सीमा से पश्चिम की ओर बढ़ते हुए लेमरू परिक्षेत्र के 933 व 944 की दक्षिणी सीमा तथा दक्षिण की ओर बढ़ते हुए

अ. क्र.	वनमंडल	उप वनमंडल	परिक्षेत्र	कक्ष क्रमांक	रकबा हे. में		सीमाएं
					वन भूमि	राजस्व भूमि	
1	2	3	4	5	6	7	8
							<p>बालको परिक्षेत्र के 946 की पूर्वी व दक्षिणी सीमा बनाता है। कक्ष क्र. 950, 951 की दक्षिणी सीमा तथा उत्तर की ओर बढ़ते हुए 951 की पश्चिमी सीमा बनाता है।</p> <p>पश्चिम सीमा - बालको परिक्षेत्र के कक्ष क्र. 951 की पश्चिमी सीमा बनाते हुए उत्तर दिशा में 955 की दक्षिण पश्चिम किनारे को स्पर्श कर पश्चिम दिशा में मुड़ जाता है एवं 954, 961, 964 की दक्षिण सीमा लाईन बनाता है तथा उत्तर की ओर बढ़ते हुए 965, 966, 967 की पश्चिमी सीमा लाईन बनाते हुए 968 व 970 की पश्चिमी सीमा तथा 970 की उत्तरी सीमा लाईन के मध्य से उत्तर की ओर पी. 831 की पश्चिम सीमा लाईन बनाता है। तत्पश्चात् उत्तर की ओर बढ़ते हुए कक्ष क्र. पी. 829, 828 की पश्चिम सीमा से होकर पश्चिम की ओर बढ़कर पी.830 की दक्षिण सीमा बनाकर बांगो डेम को क्रॉस करते हुए कटघोरा वनमंडल के एतमानगर परिक्षेत्र में प्रवेश करता है। एतमानगर परिक्षेत्र के कक्ष क्र. पी. 505 की पूर्वी सीमा जो डेम का डूबान क्षेत्र है, स्पर्श कर दक्षिण की ओर बोड़ानाला गांव से होकर कक्ष क्र. पी. 525 की पूर्वी सीमा से होकर दक्षिण पश्चिम की ओर बालको परिक्षेत्र में प्रवेश करते हुए कक्ष क्र. पी. 921, 919 एवं 928 की उत्तरी सीमा से होकर पुनः पश्चिम की ओर कक्ष क्र. 928 की दक्षिणी पश्चिमी सीमा से दक्षिणी पश्चिमी सीमा एवं 920 की दक्षिणी सीमा से होकर पुनः एतमानगर परिक्षेत्र में प्रवेश करते हुए पी. 524 की पूर्वी, दक्षिणी एवं पश्चिमी सीमा बनाकर पी. 525 की पश्चिमी सीमा एवं 498 की दक्षिणी सीमा व 496 की दक्षिण पश्चिम सीमा लाईन एवं 497, 499, 500 की पश्चिमी सीमा</p>

अ. क्र.	वनमंडल	उप वनमंडल	परिक्षेत्र	कक्ष क्रमांक	रकबा हे. में		सीमाएं
					वन भूमि	राजस्व भूमि	
1	2	3	4	5	6	7	8
							लाईन बनाते हुए कक्ष क्र. 511 की पश्चिम व उत्तरी सीमा लाईन व उत्तरी सीमा के मध्य से उत्तर की ओर 510 एवं 517 की पश्चिमी सीमा लाईन से पश्चिम दिशा में ओ.ए. 753, 519, 520 की दक्षिणी सीमा लाईन बनाकर तथा 520 की पश्चिमी सीमा बनाते हुए उत्तर दिशा में बढ़ते हुए 521, 522, 523 की पश्चिमी सीमा बनाते हुए केन्द्रई परिक्षेत्र में प्रदेश बांगो डेम के डूबान क्षेत्र से होते हुए पी. 381 की पश्चिमी सीमा लाईन, पी. 377, 376 की पश्चिमी सीमा एवं 375 की उत्तर पश्चिम सीमा बनाकर कक्ष क्र. पी. 355 की पश्चिमी सीमा बनाते हुए उत्तरी सीमा से मिल जाता है।
9	धरमजयगढ़	धरमजयगढ़	बोरो	601P, 602, 604P, 605P, 606P, 607P, 608P, 609P, 610P, 611P, 612P, 613P, 614P, 615P, 616P, 617P, 618P, 619P, 620P, 621P, 622P, 623P, 631P, 632P, 634A, 635P, 636P, 637P, 638P, 639, 640, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708	17113.520	6207.292	
10	धरमजयगढ़	लैलूगा	कापू	1, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 2, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 3, 30, 31, 32, 33, 34, 36, 37, 38, 39P, 4, 40, 41P, 42, 43P, 44P, 45P, 46P, 47P, 48P, 49P, 5, 50P, 51P, 6, 7, 8, 9	10676.974	2616.386	

अ. क्र.	वनमंडल	उप वनमंडल	परिक्षेत्र	कक्ष क्रमांक	रकबा हे. में		सीमाएं
					वन भूमि	राजस्व भूमि	
1	2	3	4	5	6	7	8
11	धरमजयगढ़	धरमजयगढ़	धरमजयगढ़	456P, 457P, 458P, 459, 461P, 462P, 463, 464P, 466P, 473P, 474, 475	1857.325	1257.332	
कुल योग -					163220.769	36327.231	
महायोग -					199548.000		

छत्तीसगढ़ के राज्यपाल के नाम से तथा आदेशानुसार,
अभिषेक कुमार सिंह, उप-सचिव.

नवा रायपुर, अटल नगर, दिनांक 7 अक्टूबर 2021

क्रमांक/एफ 8-6/2007/10-2.— भारत सरकार के संविधान के अनुच्छेद 348 के खण्ड (3) के अनुसरण में वन एवं जलवायु परिवर्तन विभाग की अधिसूचना क्रमांक /एफ 8-6/2007/10-2 दिनांक 07-10-2021 का अंग्रेजी अनुवाद राज्यपाल के प्राधिकार से एतद्वारा प्रकाशित किया जाता है.

छत्तीसगढ़ के राज्यपाल के नाम से तथा आदेशानुसार,
अभिषेक कुमार सिंह, उप-सचिव.

Nava Raipur, Atal Nagar the 7th October 2021

No. F S-6/2007/10-2.—With a view to provide Natural Habitat for wild Elephants, Mitigate Human-Elephant Conflict and with the objective of Better Wildlife Management Practices, the Government of Chhattisgarh hereby declares "Lemru Elephant Reserve" as specified in the following schedule :—

SCHEDULE

District	Korba, Surguja, Raigarh
Forest Division	Korba, Katghora, Surguja, Dharamjaigarh
Forest Range	Kendai, Atmanagar, Udaipur, Lakhanpur, Kudmura, Pasarkhet, Balco, Lemru, Boro, Kapu, Dharamjaigarh
Name of Elephant Reserve	Lemru Elephant Reserve
Area	199548.00 Ha. = 1995.48 Sqkm

BOUNDARIES

SN.	DIVISION	SUB DIVISION	RANGE	COMPARTMENT NUMBER	AREA (in ha)		BOUNDARIES
					Forest Land	Revenue Land	
1	2	3	4	5	6	7	8
1	KATGHORA	KATGHORA	KENDAI	OA698, OA699, OA700, OA701, OA702, OA724, OA725, OA726, OA727, P355, P356, P357, P358, P359, P360, P361, P362, P363, P364, P365, P366, P367, P368, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P380, P381, P382, P383, P384, P385, P386, P387, P388, P389, P390, P391, P392, P393, P394, P395, P396, P397, P398, P399, P400, P401, P402, P403, P404, P405, P406, P407, P408, P409, P410, P411, P412, P413, P414, P415, P416, P417, P418, P419, P420, P421, P422, P423, P424, P425, P426, P427, P428, P429, P430, P431, P432, P433, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450,	26798.568	5492.714	Northern Boundary- Confluence of the Hasdeo River and Manashi Nala, makes northern boundary of comp no 355, Katghora division and Southern boundary of comp no P1902, Surguja division. Moving towards east it forms, boundary of compartment no P356 & P357 of Kendai range, Katghora division. Moving further east, Northeast boundary of compartment no. P357, P358, P359, P360, P361 and OA724 makes common boundary of Udaipur and Kendai ranges. It further crosses national highway and makes northern boundary of comp no P432, P433, P434, P439, P440, P441, P445 & P446. Forming northern boundary of Comp no. P865 and P866 of Lemru range Korba division, touches north boundary of OA1189, it further moves south-east and makes boundary of comp no. P867. It now proceeds to village Munari Dadar, touching eastern boundary of OA1190. Moving southeast it makes Northeast boundary of P876 and enters Udaipur range of Surguja Division. Now it proceeds from western end of comp no P2151, moves toward north and southeast direction, touching north-eastern end of comp P2152 and then moves further toward east

				P451, P452,			and making western boundary of comp no P2159, 2160 it forms west, north and eastern boundary of comp no 2161. Now it makes north, east, south boundary of comp no 2162 it moves south making eastern boundary of comp no 2160, moves towards east from south, and makes northern boundary of comp no 2156. In the east, making north boundary of comp no 2183, it moves toward north, making west and north boundary of comp no 2182 and north east boundary of comp no 2180, it further touches northern boundary of comp no 2181 and proceeds further north east direction. It further creates north boundary of comp no P2178, and moving toward south it create eastern boundary of comp no 2178. In the east, it touches eastern boundary of comp no 2177 and Khorram village and proceeds towards south and creates east and south boundary line. Further, it creates east and south boundary of comp no 2194, 2195 and proceeds eastward forming northern boundary of comp no 2193 and enters Kudmura range of Korba division. It further touches north boundary of comp no. P1077; creating northern boundary of comp no P1078, 1079, 1080 and 1081, it enters Boro range of Dharamjaigarh Division. From western boundary of comp no 690, it progresses toward comp no 693 and forms western boundary of it. Then it creates western boundary of comp no 698 and touching north boundary of comp no 699, it enters Lakhanpur range of Surguja division. It further divides comp no P2209 and making north boundary of comp no 706, 707, 708 of Boro range and comp no 1, 2, 6, 7, 8, 11, 12, 13, 15, 17, 18 and 19 of Kapu range Dharamjaigarh division and moves towards
2	KATGHORA	KATGHORA	ATMA-NAGAR	OA753, P496, P497, P498, P499, P500, P501, P502, P503, P504, P505, P506, P507, P508, P509, P510, P511, P517, P519, P520, P521, P522, P523, P524, P525	6950.338	6707.333	
3	SURGUJA	UDAIPUR	UDAIPUR	P2151, P2152, P2153, P2154, P2155, P2156, P2157, P2158, P2159, P2160, P2161, P2162, P2177, P2178, P2180, P2181, P2182, P2183, P2184, P2185, P2192, P2193, P2195,	5381.351	0.000	
4	SURGUJA	UDAIPUR	LAKHAN PUR	P2206, P2207, P2208, P2209	856.320	0.000	
5	KORBA	NORTH KORBA	KUDMURA	OA1359, OA1360, OA1361, OA1362, OA1363, OA1364, OA1365, OA1366, OA1367, OA1368, OA1369, OA1370, OA1371, OA1372, OA1373, OA1374, OA1375, OA1376, OA1377, OA1378, OA1379, OA1380, OA1381, OA1382, OA1383, OA1384, OA1385,	19549.649	7084.854	

				OA1386, OA1387, OA1388, OA1389, OA1390, OA1391, OA1392, OA1393, OA1394, OA1395, OA1396, OA1402, OA1403, OA1404, OA1405, OA1406, P1053, P1054, P1070, P1071, P1072, P1073, P1074, P1075, P1076, P1077, P1078, P1079, P1080, P1081, P1082, P1083, P1084, P1085, P1086, P1087, P1088, P1089, P1090, P1091, P1092, P1093, P1094, P1095, P1096, P1097, P1098, P1099, P1100, P1101, P1102, P1103, P1104, P1105, P1107, P1113, P1114, P1119			cast, making east boundary of comp no 22 and north boundary of comp no 24. Eastern Boundary - Lemru Elephant reserve boundary moves further towards East and South boundary of comp no 51P, South boundary of comp no 50P, 49P, 48P, 46P, 47P, 17P, 16P, 14P, South-East boundary of comp no 13, East boundary of 25, 45P, 44P, South boundary of comp no 43P and East boundary of comp no 32, 33 in Kapu Range of Dharamjaigath division and south boundary of comp no 34 of Kapu range, then divides north side of comp no 630P and moves South toward comp no 658, 657, 653, 651, 650 and south boundary of 621P touches east boundary of comp no 602, 605, 475, 474, OA1382, 1089, 473P and further moves toward south, making boundary of comp no 458P, 457P, 456P and meets near Mand river.
6	KORBA	SOUTH KORBA	PASARKHET	OA1329, P1016, P1017, P1018, P1019, P1020, P1021, P1022, P1023, P1024, P1025, P1026, P1027, P1043, P1044, P1045, P1046, P1047, P1048, P1049, P1052, P1055, P1056, P1057, P1058, P1059, P1060, P1061, P1062, P1063, P1066, P1067, P1068, P1069, P1115, P1116	14157.449	170.718	Southern Boundary - From Mand river it moves further West, making south boundary of comp no 456P and 459P and making western boundary of comp no 463P; it enters Kudmura range of Korba division. Moving further west, making south boundary of P1103, OA1405 and southeast boundary of comp no OA1390 and P1119; it enters Pasarkhet range. It further divides eastern boundary of comp no 1115, 1116 and southern boundary of 1068, 1067; moves further west making southern boundary of comp no 1063, 1026, 1025, 1044, 1043 and moves toward north and forming western boundary of comp no 1043, it proceeds toward west and makes southwest boundary of comp no 1043 and 1046. It further creates western boundary of comp no 1047 and proceeds more west forming southern
7	KORBA	NORTH KORBA	BALCO	P919, P920, P921, P928, P933, P934, P935, P936, P937, P938, P939, P940, P941, P942, P943, P944, P945, P946, P950, P951, P954, P955, P956, P957, P958,	14204.825	0.000	

				P959, P960, P961, P964, P965, P966, P967, P968, P969, P970			boundary of comp no 1048, southern boundary of comp no 933, 944 and moving toward south it creates east and south boundary of comp no 946. It further proceeds toward west and creates southern boundary of comp no 950, 951 and while moving towards north it creates southern and western boundary of comp no 951. Western Boundary- From comp no. 951, Balco range; it continues towards North, touching South-West boundary of comp no. 955 and moves toward West. Now it makes Southern boundary of comp no. 954, 961, 964 and while moving toward North it makes Western boundary of comp no. 965, 966, 967, Western boundary of comp no 968, 970 and North boundary of comp no 970 and makes Western boundary of comp no. P831. Then it moves towards north, touching southern boundary of P829, P828 while making southern boundary of comp no P830 and crossing Bango Dam; it enters Atmanagar Range of Katghora Division. On Eastern boundary of comp no P505 of Atmanagar Range (which is also submersion zone), it moves South via Bodanala village making Eastern boundary of comp no. P525 and enters balco range and moves towards south east along the northern boundary of 921, 919 and south Western boundary of P928 and continues along the south western boundary of 928 and 920 touching the tip of the southern boundary of P921 and moves and enters Atmanagar range and moves along the southern boundary of comp no. P524 and along western boundary of 524, 525 and forms the southern boundary of comp no. P498, southwest boundary of comp no. 496 and western boundary of comp no. 497, 499
8	KORBA	NORTH KORBA	LEMRU	OA 1178, OA 1179, OA 1180, OA 1181, OA 1182, OA 1183, OA 1184, OA 1185, OA 1186, OA 1187, OA 1188, OA 1189, OA 1190, OA 1191, OA 1192, OA 1193, OA 1194, OA 1195, OA 1196, OA 1197, OA 1198, OA 1199, OA 1200, OA 1201, OA 1202, OA 1203, OA 1204, OA 1205, OA 1206, OA 1207, OA 1208, OA 1209, OA 1210, OA 1211, OA 1212, OA1213, P801, P802, P803, P804, P805, P806, P807, P808, P809, P810, P811, P812, P813, P814, P815, P816, P817, P818, P819, P820, P821, P822, P823, P824, P825, P826, P827, P828, P829, P830, P831, P832, P835, P836, P837, P838, P839, P840, P841, P842, P843, P844, P845, P846, P847, P848, P849, P850, P851, P852, P853, P854, P855, P856, P857, P858, P859, P860, P861, P862, P863, P864, P865, P866, P867, P868, P869, P870, P871, P872, P873, P874, P875, P876, P877, P878, P879, P880, P881, P882, P883, P884, P885,	45674.451	6790.601	

				P886, P887, P888, P889, P890, P891, P892, P893, P894, P895, P896, P897, P898, P899, P900, P901, P902, P903, P904, P905, P906, P907, P908, P909, P910, P911, P912, P913			and 500. It continues west making west-north boundary of comp no. 511, making western boundary of comp no. 510 and 517, moves further west making southern boundary of comp no. 753, 519, 520 and touching west side of comp no. 520 it moves towards north. While progressing north, it makes western boundary of comp no. 521, 522, 523 and enters Kendai range meets with Sink zone of Bango Dam and forms western boundary of P381, P377, P376 and North-west boundary of comp no. 375 along Hasdeo river. It further moves toward north and making western boundary of comp no. P355, it finally meets the northern boundary at the confluence of Hasdeo river and Manashi nala.
9	DHARAM JAIGARH	DHARAM JAIGARH	BORO	601P, 602, 604P, 605P, 606P, 607P, 608P, 609P, 610P, 611P, 612P, 613P, 614P, 615P, 616P, 617P, 618P, 619P, 620P, 621P, 622P, 623P, 631P, 632P, 634A, 635P, 636P, 637P, 638P, 639, 640, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708	17113.520	6207.292	
10	DHARAM JAIGARH	LAILUNGA	KAPU	1, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 2, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 3, 30,	10676.974	2616.386	

				31, 32, 33, 34, 36, 37, 38, 39P, 4, 40, 41P, 42, 43P, 44P, 45P, 46P, 47P, 48P, 49P, 5, 50P, 51P, 6, 7, 8, 9			
11	DHARAM JAIGARH	DHARAM JAIGARH	DHARAM JAIGARH	456P, 457P, 458P, 459, 461P, 462P, 463, 464P, 466P, 473P, 474, 475	1857.325	1257.332	
Total -					163220.769	36327.231	
Grand Total -					199548.000		

By order and in the name of the Governor of Chhattisgarh,
ABHISHEK KUMAR SINGH, Deputy Secretary.

F. No. J-11015/03/2008-IA-11(M)

Annexure A-12

Government of India

Ministry of Environment, Forest & Climate Change
(Impact Assessment Division)

Indira Paryavaran Bhawan,
Jorbagh Road, N Delhi – 3
Email: lk.bokolia@nic.in Tel: 01124695363Dated: 23rd December, 2021

To,

The Managing Director,
M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd,
Vidyut Bhawan, Janpath, Joyti Nagar,
Jaipur - 302 005 (Rajasthan)
Email: fuel.rvun@gmail.com

Sub: Expansion of Parsa East and Kanta Basan Opencast Coal Mine from 10 MTPA to 15 MTPA and Pit Head Coal Washery from 10 MTPA to 15 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd. in total ML area of 2682.856 ha located in Hasdeo- Arand Coalfields in District Sarguja (Chhattisgarh)- For Amendment in Environment Clearance - reg.

Sir,

This has reference to your online proposal No. IA/CG/CMIN/22290/2014 dated 4th October, 2021, on the above mentioned subject.

2. The Ministry of Environment, Forest and Climate Change has granted Environmental Clearance (EC) vide letter dated 10th August, 2018 and amendment in EC dated 19th July, 2019. In favour of M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited to the expansion of Parsa East and Kanta Basan Opencast Coal Mining Project from 10 MTPA to 15 MTPA and Pit Head Coal Washery From 10 MTPA to 15 MTPA located in Hasdeo-Arand Coalfields in District Surguja (Chhattisgarh). The said EC stipulates one of the specific conditions no. 4(ix) as Transportation of raw coal, washed coal and the rejects shall be through rail

3. Now amendment has been sought to revise the above condition to exempt transportation of washery rejects by road / rail in view of the constraints/limitations. Project Proponent has submitted that due to limited use-ability of rejects and higher transportation cost due to longer railway route, the timely disposal of approved quantity of rejects is not feasible unless rejects are dispatched and utilized in more number of plants after appropriate blending with high GCV coal. But dispatch of rejects to any other prospective user plant is possible only by road transportation. Consequent to above, PP are unable to ensure seamless disposal of rejects to any nearby power plant which can use rejects through blending

and there is no feasibility of rail transport from PEKB mine. Needless to mention that it might result in accumulation of rejects at pit head washery of the mine and lead to environmental issue, if stock is not liquidated in time. Due to high ash content and low energy (GCV) output, economic viability of rejects depends more on the low transportation cost. As such, rejects are commercially suitable to industries located in closer vicinity to Mine/Washery. PEKB mine is located in the Surguja, Chhattishgarh, which has no such industry to consume the washery rejects. Therefore, rejects are primarily sold to plants located in Bilaspur, Raipur, and Raigarh Districts of Chhattisgarh. Direct Railway connectivity to these power plants from PEKB mine is not available. Railway connectivity to these power plants from PEKB mine washery is via Anuppur on SECR rail section, which takes longer route as compared to road connectivity.

3. The proposal for amendment in Environmental Clearance was considered by the sectoral EAC in its meeting held on 20th EAC held on 13-14 October, 2021 and 22nd EAC held on 17th November, 2021 through video conferencing. Based on recommendations of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords approval for amendment in Environmental Clearance to the Expansion of Parsa East and Kanta Basan Opencast Coal Mine from 10 MTPA to 15 MTPA and Pit Head Coal Washery from 10 MTPA to 15 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd. in total ML area of 2682.856 ha located in Hasdeo- Arand Coalfields in District Sarguja (Chhattisgarh), for a period of 3 years to transport 40% of rejects (i.e. 1.2 MTPA) upto distance of 275 km, under the provisions of EIA Notification, 2006 and its amendments therein and subsequent amendments/circulars, with following additional specific conditions to be followed:-

- (i) PP shall obtain CTO from the respective SPCB before commencement of the transportation of 40 % washery reject (1.2 MTPA peak) via road and 60 % of the washery reject by rail only for period of 3 years. State Pollution Control Board shall ensure adequate fleets size /transportation of reject (35-40 tons) through dedicated route of National Highway without following district/village road, not more than 275 kms from plant site.
- (ii) The trucks to be properly covered with tarpaulin sheet or with rigid covering with wheel washing facility to be provided at site before leaving for haul road.
- (iii) Project proponent shall acquire separate land parcel and making an artificial forest of about 5 ha only of Sal trees or any other native species, medicinal and herbal species (out of mine site) and plant and maintain it through dedicated contractor, which to be hired by company for implementation within 2 years. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer
- (iv) Road inside and at periphery of the washery plant shall be constructed of concrete only.
- (v) PP shall fund with adequate amount for maintenance of roads, proposed to be used for transportation
- (vi) PP should Install Wind breaker/shield arrangement along the railway siding and the approach roads or routes used for reaching the national highways for reducing the dust propagation in upwind direction.

- (vii) PP to install not less than 5 nos. of Fog canon (mist sprayer) having 100 mts water jet/throw length to reduce the impact of air pollution at dust generating sources mainly on haul road, OB dumping areas within 1 year.
- (viii) PP to install a continuous ambient air quality monitoring stations at suitable locations in vicinity of mine with consultation of SPCB. The real time data so generated shall be uploaded on company website. In addition, data should also be displayed digitally at entry and exit gate of mine lease area for public display.
- (ix) A third party assessment of EC compliance shall be under taken through reputed institute (like ICFRI/ NEERI/ IIT) or any other expert agency identified by the Ministry.
- (x) PP to install solar lights along the haul road used for transportation of coal to avoid the accidents at night with its maintenance. PP to 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.
- (xi) PP also to provide drinking water facilities like installation of RO with proper water supply pipe fittings to nearby rural areas and also to install hand pumps by seeking consent from panchayat of the villages located within the study area of 10 km radius buffer zone within two years
- (xii) PP shall install sand/aggregate segregation plant for suitable capacity to extract sand from existing mine and construction aggregate within 2 years of issue of this letter
- (xiii) PP should conduct epidemiology study to (analysis of the distribution, patterns and determinants of health and disease conditions in defined populations).
- (xiv) PP shall only use conveyer belt to transport coal from mine pit to washery. No Truck transportation shall be done.
- (xv) Surface runoff from Storage yard of coal, reject dumps shall be stored in settling tank and later treated before any usage and quality shall be check frequently.
- (xvi) PP to keep the record of the PUC vehicles used for road transportation of the rejects i.e no of trucks deployed each day for individual roads/ highways and with it validity of certification.
- (xvii) Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a 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 the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to the Regional Office of the MoEFCC.

6. All other conditions stipulated in the environmental clearance dated 10th August 2018 and dated 24th July, 2019 shall remain unchanged


(Lalit Bokolia)
Director

Copy to:-

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi-1
2. The Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur
3. The Chairman, Central Ground Water Authority, Ministry of Jal Shakti, Jamnagar House, 18/11, Man Singh Road Area, New Delhi, Delhi 110001
The Chairman, Chhattisgarh State Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, Raipur (Chhattisgarh) - 492001
4. The Member Secretary, CPCB, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
5. The District Collector, Sarguja, Government of Chhattisgarh
6. Monitoring File /Record File
7. PARIVESH Portal


(Lalit Bokolia)
Director

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

Indira ParyavaranBhawan,
Aliganj, Jor Bagh Road,
New Delhi: 110003
Dated: 02.02.2022

To

The Principal Secretary (Forests),
Government of Chhattisgarh,
Mahanadi Bhavan,
New Raipur, Chhattisgarh

Sub: Proposal for non-forestry use of 1898.328 ha of forest and (1654.109 ha of revenue forest land and 244.219 ha of notified forest land) in favour of Rajasthan Rajya Vidyut Utpadan Nigam Limited (RRVUNL), in Villages Parsa and Kete, Tehsil Udaipur, District Surguja, Chhattisgarh- grant of permission for mining over Phase-II area- reg.

Sir,

I am directed to refer to the State Government letter no. 5-04/2010/10-2 dated 22.02.2021 and Ministry of Coal, Government of India's letter No. 103/13/2015/NA dated 23.11.2021 on the above subject seeking approval of the Central Government for grant of approval for Phase-II mining operations in the balance area of 1136 ha of forest land in Parsa East and Kete Basan Coal Block and Government of Chhattisgarh's letter no. 5-17/2018/10-2 dated 8.10.2021 forwarding a copy of report on Biodiversity Assessment Study and to inform that proposal of the State Government has been considered by the Forest Advisory Committee constituted by the Central Government under Section - 3 of the aforesaid Act.

After careful examination of the proposal of the State Government and on the basis of the recommendations of the Forest Advisory Committee, and approval of the same by the competent authority of the MoEF&CC, New Delhi, the Central Government hereby accords approval for commencing Phase-II mining operation in the balance area of 1136 ha of forest land in respect of proposal involving non-forestry use of 1898.328 ha of forest and (1654.109 ha of revenue forest land and 244.219 ha of notified forest land) in favour of RRVUNL, in Villages Parsa and Kete, Tehsil Udaipur, District Surguja, Chhattisgarh subject to fulfilment of following conditions:

- i. The recommendation in the Biodiversity Assessment Report (BAR) have been made keeping in view the comprehensive scenario of current production levels, biotic interference, mitigating measures, etc vis-à-vis impact on surrounding resources. Therefore, no further changes in the Mining Plan vis-a-vis land use shall be effected by the user agency without the prior approval of Central Government.
- ii. The recommendations made in the BAR shall be incorporated into the Wildlife

2080

- Management Plan and the same shall be implemented by the State Forest Department at the project cost.
- iii. Quarterly site inspection on compliance of conditions shall mandatorily be done jointly by Ministry, IRO (Raipur) and State Forest Department and the observations/findings shall be submitted to Ministry.
 - iv. Grant of permission for mining operations in the Phase-II area of 1136 ha is subject to change as per the directions of Hon'ble Supreme Court, as may be directed in final decision, in Civil Appeal 4395 of 2014.
 - v. The user agency, in consultation with the State Forest Department, will strengthen the provision for appropriate financial outlay for the establishment and effective functioning of Rescue and Rehabilitation team to mitigate human-wildlife conflicts.
 - vi. The State Government and the user agency shall ensure that concerned orders/directions of Courts/Tribunals, relevant provisions of all concerned Acts, Rules, Regulations and Guidelines pertaining to this project, if any, for the time being in force, as applicable to the project.
 - vii. Biodiversity restoration should be integral part of mining site rehabilitation and User Agency should submit annual progress report on rehabilitation of mined up areas following best practices and afforestation measures to IRO for information and verification.
 - viii. State Government shall ensure that conditions stipulated in the Stage-II approval dated 15.03.2012 be complied with by the user agency; and
 - ix. Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as per the provisions made under the Act and Forest (Conservation) Rules.

Yours faithfully,

Sd/-

(Sandeep Sharma)

Assistant Inspector General of Forests

Copy to:

1. Principal Chief Conservator of Forest (PCCF), Aranya Bhavan, Sector 19, North Block, New Raipur- 492002 Chhattisgarh.
2. Regional Officer, Integrated Regional Office, MoEF&CC, Naya Raipur
3. Nodal Officer (FCA), Jail Road, Aranya Bhavan, Raipur.
4. User Agency
5. Monitoring Cell, Forest Conservation Division, MoEF&CC
6. Guard file

ENVIRONMENTAL
CLEARANCE

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

To,

The Superintendent Engineer (Fuel)
RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED
Room no. 120, Vidyut Bhawan, Janpath, Jyoti Nagar,
Jaipur,,Jaipur,Rajasthan-302005

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the Ministry vide proposal number IA/CG/CMIN/235298/2021 dated 12 Jan 2022. The particulars of the environmental clearance granted to the project are as below.

1. EC Identification No.	EC22A006CG179259
2. File No.	J-11015/03/2008-IA-II(M)
3. Project Type	Expansion7
4. Category	A
5. Project/Activity including Schedule No.	2(a) Coal washeries
6. Name of Project	Parsa East and Kanta Basan Opencast Mine and Pit Head Coal Washery expansion from 15 MTPA to 21 MTPA
7. Name of Company/Organization	RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED
8. Location of Project	Chhattisgarh
9. TOR Date	N/A

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 14/02/2022

(e-signed)
Lalit Bokolia
Scientist F
IA - (Coal Mining sector)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH. Please quote identification number in all future correspondence.

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File No. J- 11015/03/2008-IA- 11(M)
 Government of India
 Ministry of Environment Forest and Climate Change
 (Impact Assessment Division)

Indira ParyavaranBhavan,
 JorBagh Road, New Delhi-110 003
 Email: lk.bokolia@nic.in Tel: 01124695363

Dated: 14th February, 2022

To,

Add Chief Engineer (Fuel)
 M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited
 Vidyut Bhawan, Janpath, Jyoti Nagar,
 Jaipur-302005 (Rajasthan)
 Email: fuel.rvun@gmail.com

Sub: Expansion of Parsa East and Kanta Basan (PEKB) Opencast Coal Mine from 15 MTPA to 18 MTPA in total ML area of 2682.856 ha of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd. located in villages Salhi, Hariharpur, Ghatbarra, Parsa, Kente, Parogiya and Basan, Tehsil Ambikapur, District Sarguja (Chhattisgarh)- For Environment Clearance under Ministry OM dated 15th September, 2017-reg.

Sir,

This has reference to your online proposal No. IA/CG/CMIN/235298/2021 dated 12th January, 2022 for grant of Environmental Clearance to the above project.

2. The Ministry of Environment, Forest and Climate Change has considered the application. It is noted that the proposal is for grant of Expansion of Parsa East and Kanta Basan Opencast Coal Mine from 15 MTPA to 18 MTPA in total ML area of 2682.856 ha of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd. located in villages Salhi, Hariharpur, Ghatbarra, Parsa, Kente, Parogiya and Basan, Tehsil Ambikapur, District Sarguja (Chhattisgarh).

The project/activity is covered under category 'A' of item 1(a) 'Mining of Minerals' the Schedule to the EIA Notification, 2006

3. The proposal was considered by the sectoral Expert Appraisal Committee (EAC) in its 25th EAC meeting held during 18 -20 January, 2022. The details of the proposal, as ascertained from the proposal documents and as revealed from the discussions held during the meetings, are given as under:

(i) The project area is covered under Survey of India Topo Sheet No. 64J/13 and is bounded by the geographical coordinates ranging from latitude 22° 47'39" to 22°51'12" N and longitude 82° 46'38" E to 82°50'51" E.

- (ii) Coal linkage of the project is proposed for captive use for various linked Thermal Power Plants.
- (iii) Joint venture cartel has been formed-Not applicable.
- (iv) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM dated 13th January, 2010 has imposed moratorium on grant of environment clearance.
- (v) Employment generation to 1805 persons will be provided from the project.
- (vi) The project is reported to be beneficial in terms of coal to be used in power generation in Rajasthan, which will help in reducing gap in demand and production of electricity in the state. Based on the requirement of the people of the project area, the development activities are being taken up. The basic requirement of the community is being strengthened by extending health care, educational facilities developed in the township to the community, providing drinking water to the villages affected, building/strengthening of existing roads in the area etc. Project is also generating direct as well as indirect employment in the area.
- (vii) Earlier, the environment clearance to the project was obtained under EIA Notification, 2006 vide Ministry's letter No. J-11015/120/2014-IA-II(M) dated 10th August 2018 for 15 MTPA in mine lease area of 2682.856 ha.
- (viii) Total mining lease area as per block allotment is 2767 ha and as per approved mining plan is 2682.856 ha Mining Plan (Including Progressive Mine Closure Plan) has been approved by Ministry of Coal on 12th August 2016.
- (ix) The land usage pattern of the project is as under

Pre-mining Land use detail (Area in ha)

S.N.	LANDUSE	Within ML Area	Outside ML Area (ha)	TOTAL
1.	Agricultural land, Tenancy & settlement etc.	701.786	Nil	701.786
2.	Forest land	1871.118	Nil	1871.118
3.	Others (Government Land)	109.952	Nil	109.952
	TOTAL	2682.856	Nil	2682.856

Post Mining:

Post Closure Land use status is furnished hereunder: (Area in ha)

S. N.	Type	During Mining (ha)	End of Life (ha)	Land Use (ha)					TOTAL
				Plantation Grass/greenbelt	Water Body	Public Use	Agriculture land	Disman tled	
1.	External OB Dump	112.655	112.655	112.655	-	-	-	-	112.655
2.	Topsoil Dump	5.000	5.000	5.000	-	-	-	-	5.000
3.	Excavation Area	2328.247		2127.555	260.692				2328.247
	(i) Backfilled area		2157.560						
	(ii) Excavated void		230.687						
4.	Road & Infrastructure area	137.435	137.435	13.744	-	32.601	-	91.090	137.435
5.	Rationalization Area	39.518	39.518	35.931	-	3.588	-	-	39.518
	TOTAL	2682.856	2682.856	2294.884	260.692	36.189	-	91.090	2682.856

- (x) Total geological reserve reported in the mine lease area is 516.40 Million Tonnes with 452.46 Million Tonnes mineable reserve. Out of total mineable reserve of 452.46 Million Tonnes, 452.46 MT are available for extraction. Percent of extraction is 87.62 %.
- (xi) Three (Seam-VI, Seam-V & Seam-IV) seams with thickness ranging from 2.27 m 9.72 m are workable. Average Grade of coal is F, stripping ratio 5.24 m³/T, while average gradient is 40 (1 in 15).
- (xii) Method of mining operations envisages by Opencast method with Overburden removal by shovel-dumper & coal mining by surface miner.
- (xiii) Life of mine will be 19 years.
- (xiv) The project has two external OB dumps in an area of 112.655 ha with 60 m height and 43.52 Mm³ of OB. Two internal OB dumps in an area of 2157.560 ha with 2325.20 Mm³ of OB is envisaged in the project.
- (xv) Total quarry area is 2388.247 ha out of which backfilling will be done in 2157.560 ha while final mine void will be created in an area of 230.687 ha with a depth of 30 m. Backfilled quarry area of 2127.555 ha shall be reclaimed with plantation. Final mine void will be converted into a water body.

- (xvi) Transportation of coal has been proposed by in mine pit head, from surface to siding by conveyor and at sidings by Railway.
- (xvii) Reclamation Plan in an area of 2294.884 ha, comprising of 112.655 ha of external dump, 2157.560 ha of internal dump and 54.675 ha of green belt including safety zone/rationalization area.
- (xviii) 1871.118 ha of forest land has been reported to be involved in the project. Approval under the Forest (Conservation) Act, 1980 for diversion of 1871.118 ha of forest land for non-forestry purposes has been obtained vide MoEF&CC letter F.no.8-31/2010-FC dated 15th March 2012.
- (xix) No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones fall within 10 km boundary of the project.
- (xx) The ground water level has been reported to be varying between Pre-monsoon- 3.50 to 8.20 m bgl to Post-monsoon- 0.30 to 3.20 m bgl.
- (xxi) Total water requirement for the project is 13,195 KLD.
- (xxii) NOC of the Central Ground Water Authority for has been obtained on 23rd September 2009.
- (xxiii) Public hearing- Present Application is for expansion of EC (15 to 21 MTPA) which does not attract PH, being applied under MoEF&CC's OM dated 15.09.2017. Last Public Hearing for the project of 15 MTPA capacity in an area of 2682.856 ha was conducted. on 11th September 2016 at Village- Basan, District Surguja, Chhattisgarh.
- (xxiv) Consent to Operate for the existing capacity of 15 MTPA was obtained from the State PCB on 01/12/2021 and is valid till 30/11/2024.
- (xxv) River/nalla is flowing 2.7 Km boundary from Northern Boundary of the block of lease. No nalla diversion is involved.
- (xxvi) Regular monitoring of ambient air quality is being carried out on fortnightly basis. The documented report is submitted to SPCB and also to MoEF&CC along with half yearly EC compliance report. In general, the results of ambient air quality monitoring data were found within prescribed limits except few aberrations which can be attributed to the specific local conditions during the day of sampling.
- (xxvii) Civil Appeal no(s). 4395 of 2014 Rajasthan Rajya Vidyut Utpadan Nigam Ltd vs Sudiep Shrivastava & Others pending before the Hon'ble Supreme Court of India
- (xxviii) Total cost of the project is Rs. 236900 lakhs. Cost of production is Rs. 1494 per tonne., R&R cost is Rs. 82 crores. Environment Management Cost is Rs. 1000 Lakh (Capital), Rs. 550 Lakh (Recurring).

4. The Expert Appraisal Committee (EAC) in its 25th EAC meeting held during 18-20 January, 2022 has recommended the project for grant of Environment Clearance (EC). Based on recommendations of the EAC, Ministry of Environment, Forest and Climate Change hereby accords approval for Environment Clearance (EC) for 20% (stage-1) Expansion under O.M. dated 15.09.2017 of Expansion of Parsa East and Kanta Basan (PEKB) Opencast Coal Mine from 15 MTPA to 18 MTPA in total ML area of 2682.856 ha of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd. located in villages Salhi, Hariharpur, Ghatbarra, Parsa, Kente, Parogiya and Basan, Tehsil Ambikapur, District Sarguja (Chhattisgarh), under 7 (ii) clause of EIA Notification, 2006 and subsequent amendments/circulars thereto subject to outcome of Civil Appeal no(s). 4395 of 2014 Rajasthan Rajya Vidyut Utpadan Nigam Ltd vs Sudiep Shrivastava & Others pending before the Hon'ble Supreme Court of India and the compliance of the following terms & conditions / specific conditions for environmental safeguards:-

- (i) PP shall obtain the Consent to Establish/Consent to Operate for 18 MTPA of mine production from SPCB prior to production.
- (ii) PP must comply with all the non-compliances or partially compliances as per the certified compliance report w.r.t EC conditions stipulated in EC dated 10th August 2018 and EC dated 21st December, 2011 and EC amendment dated 24th July, 2019, and furnish the detail of the compliance of EC conditions prescribed with amendment in EC vide letter dated 23rd December, 2021 in the six monthly compliance report of IRO and respective state pollution board.
- (iii) PP shall construct 3rd silo of 2000 Tonnes and commission by October, 2022 and onward no additional coal will be transported through road.
- (iv) Third party monitoring by reputed institution for air quality (including heavy metal analysis) shall be carried out at identified locations, both ambient and the process area, to arrive at impact of the proposed expansion at regular interval of 3 years.
- (v) PP must carry out the energy audit to reduce the energy demand including submission of time bound plan to install the solar power plants at suitable area.
- (vi) PP to obtain 5-star rating from Ministry of Coal.
- (vii) PP shall construct a multispecialty hospital of 100 beds for local people within 10 km buffer area of coal mine within 2 years of issue of this EC letter. Further, this hospital will accept Pradhan Mantri Jan Arogya Yojana for medical facilities to nearby villagers.
- (viii) PP shall make slope stabilization of the OB dump 2 of 82 ha and plantation of only Sal trees will be done within 2 years.
- (ix) Monitoring of Atem river and Tara stream shall be conducted quarterly for drinking water parameter including trace metals and data so generated submitted to CECB and Ministry's IRO Raipur.
- (x) PP shall submit river conservation plan of Atem river from independent expert and submit it to Ministry's IRO within one year and further implement the recommendation of this conservation plan with strict timeline. If feasible, river conservation plan shall be dovetailed with State's river conservation plan to supplement their efforts.

- (xi) PP shall explore to deploy CNG/LNG or electrical power run dumpers or equipment's for mining operations.
- (xii) PP shall implement Peripheral tree plantation with miyawaki method of 50 mts width within 2 years through independent expert.
- (xiii) PP shall install fixed fog cannon (mist sprayer) all along the haul road till CHP, Railway siding and OB Dump area and accordingly sufficient number of additional fog cannons (not less than 10 nos.) with 40 mts jet length shall be installed within 1 year. It should be ensured that air pollution level confirm to the standards prescribed by the MOEFCC/CPCB.
- (xiv) PP shall obtain No Objection Certificate (NOC) for extraction of Ground Water from Central Ground Water Authority for expansion capacity
- (xv) PP to provide bio toilets to the villages located within the study areas after consultation with gram panchayat or any other sanitation scheme as feasible within 2 years from the grant of this EC.
- (xvi) PP to install 1 more continuous ambient air quality monitoring stations at suitable locations preferably village side and with consultation of SPCB. The real time data so generated shall be uploaded on company website. In addition, data should also be displayed digitally at entry and exit gate of mine lease area for public display.
- (xvii) PP shall develop water harvesting pond near the villages of suitable area as suggested by Gram Panchayat.
- (xviii) Active OB Dump should not be kept barren/open and should be covered by temporary grass to avoid air born of particles
- (xix) Project Proponent shall obtain blasting permission from DGMS for conducting mining operation near villages and also explore deployment of rock breakers of suitable capacity in the project to avoid blasting very near to villages. There shall be no damages caused to habitation/structures due to blasting activity.
- (xx) PP should establish in house (at project site) environment laboratory for measurement of environment 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 Engineers, 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. The above said laboratory should be established and certified by NABL within one year of issue of this letter.



4.1 The grant of Environment Clearance (EC) is further subject to compliance of the Standard EC conditions as under:

(a) Statutory compliance

- (i) The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
- (ii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- (iii) The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule-I species in the study area).
- (iv) The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
- (v) The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
- (vi) Solid/hazardous waste generated in the mines needs to be addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016.

(b) Air quality monitoring and preservation

- (i) Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.
- (ii) The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals 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.

- (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 values of PM₁₀/PM_{2.5}) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.
- (iv) The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it 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.
- (v) Vehicular emissions 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.
- (vi) Coal stock pile/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 along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.
- (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.
- (c) Water quality monitoring and preservation**
- (i) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board.
- (ii) The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No.J-20012/1/2006-IA.11 (M) dated 27th May, 2009 issued by Ministry of 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 operations. 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 a year, and the data thus collected shall be sent regularly to MOEFCC/RO.

- (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.
- (v) Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.
- (vi) Catch and/or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining 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/water bodies.
- (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).
- (viii) Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards 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.
- (ix) The water pumped out from the mine, after siltation, shall be utilized for industrial purpose *viz.* watering the mine area, roads, green belt development *etc.* The drains shall be regularly desilted particularly after monsoon and maintained 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 with due approval of the concerned State/GoI Authority. The construction of embankment 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 prescribed by the law.

- (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 the state government.

(d) Noise and Vibration monitoring and prevention

- (i) Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/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.
- (ii) Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.
- (iii) The noise level survey shall be carried out as per the 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.

(e) Mining Plan

- (i) Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
- (ii) Mining shall be carried out as per the approved mining plan (including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
- (iii) No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.
- (iv) Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

(f) Land reclamation

- (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(MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).
- (ii) The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and

alive top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.

- (iii) The entire excavated area, backfilling, external OB dumping (including top soil) 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-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.
- (iv) Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize 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.
- (v) Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. 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 of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the 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 the 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.
- (g) Green Belt**
 - (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.
 - (ii) Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area 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 roads.

(h) Public hearing and Human health issues

Expansion of PEKB Opencast Mine M/s RVUNL

Page 11 of 15

- (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.
- (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.
- (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.
- (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 oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.
- (v) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

(i) Corporate Environment Responsibility

- (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.
- (iii) 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.
- (iv) 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.

(v) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

(j) Miscellaneous

(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.

(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.

(iii) The project proponent shall upload the status of compliance of the stipulated environment clearance 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, NO_x (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.

(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.

(vi) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

(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.

(viii) The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.

(ix) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.

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- (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.
 - (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.
 - (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.
 - (xiii) The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
 - (xiv) The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
 - (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.
 - (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 made their under 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.
5. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report as well as during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented by the EC in letter and spirit.
 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.
 7. Any appeal against this Environment Clearance (EC) 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.
 8. The coal company/project proponent shall be liable to pay the compensation against 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.

9. The concerned State Government shall ensure no mining operations to 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.
10. This Environment Clearance (EC) 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.
11. All the conditions stipulated in Environment Clearance vide Ministry's letter No. J-11015/120/2014-IA-II(M) dated 21st December, 2011 and 10th August 2018 and EC amendment dated 19th July, 2019 and 23rd December, 2021 shall also be complied.

This issues with the approval of the competent Authority


(Lalit Bokolia)
Director

Copy to: -

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi
2. The Secretary, Department of Environment & Forests, Government of Chattisgarh, Secretariat Raipur
3. The Deputy Director General of Forests (C), Ministry of Env., Forest and Climate Change, Integrated Regional Office, Aranya Bhawan, North Block, Sector-19 Naya Raipur, Atal Nagar, Chhattisgarh – 492002
4. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
5. The Chairman, Chhattisgarh State Environment Conservation Borad, - -Tilak Nagar, Shiv Mandir Chowk main Road, Avanti Vihar, Raipur Chhattisgarh 492001
6. The District Collector, Sarguja, Government of Chhattisgarh
7. Monitoring File /Record File
8. PARIVESH Portal


(Lalit Bokolia)
Director

ENVIRONMENTAL
CLEARANCE

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

To,

The Superintendent Engineer (Fuel)
RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED
Room no. 120, Vidyut Bhawan, Janpath, Jyoti Nagar,
Jaipur,,Surguja,Chhattisgarh-302005

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the Ministry vide proposal number IA/CG/CMIN/409149/2022 dated 05 Dec 2022. The particulars of the environmental clearance granted to the project are as below.

- | | |
|--|--|
| 1. EC Identification No. | EC23A006CG114785 |
| 2. File No. | J-11015/03/2008-IA-II(M) |
| 3. Project Type | Expansion |
| 4. Category | A |
| 5. Project/Activity including Schedule No. | 2(a) Coal washeries |
| 6. Name of Project | Proposed Expansion of Parsa East and Kanta Basan Pit Head Coal Washery from 15 MTPA to 21 MTPA at villages Salhi, Hariharpur, Parsa, Kente, Ghatbarra, Parogiya and Basan in Udaypur Tehsil, Surguja District, Chhattisgarh by M/ s Rajasthan Rajya Vidyut Utpadan Nigam Limited (RVUNL) over an area of 2682.856 ha |
| 7. Name of Company/Organization | RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED |
| 8. Location of Project | Chhattisgarh |
| 9. TOR Date | N/A |

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 12/07/2023

(e-signed)
Lalit Bokolia
Scientist F
IA - (Coal Mining sector)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH. Please quote identification number in all future correspondence.

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PARIVESH

(Pro-Active and Responsive Facilitation by Interactive,
and Virtuous Environment Single-Window Hub)



File No. J-11015/03/2008-IA. II (M)

Government of India

Ministry of Environment, Forest and Climate Change

(Impact Assessment Division)

Indira Paryavaran Bhawan,

Jorbagh Road, N Delhi – 3

Email: lk.bokolia@nic.in; Tel: 011-20819417**Dated: 12th July, 2023**

To,

The Managing Director,
M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd,
Vidyut Bhawan, Janpath, Joyti Nagar,
Jaipur - 302 005 (Rajasthan)
Email: fuel.rvun@gmail.com

Sub: Integrated project of Parsa East and Kanta Basan (PEKB) Opencast Coal Mine (Capacity 18 MTPA) with expansion in Pit Head Coal Washery from 15 MTPA to 18 MTPA in total mine lease area of 2682.856 ha of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd. located in villages Salhi, Hariharpur, Ghatbarra, Parsa, Kente, Parogiya and Basan, Tehsil Ambikapur, District Sarguja (Chhattisgarh) – Reconsideration of Environment Clearance for Coal Washery under Clause 7(ii) of Ministry OM dated 11th April, 2022 - reg.

Sir,

This has reference to your online proposal No. IA/CG/CMIN/409149/2022 dated 5th December, 2022 for grant of Environmental Clearance to the above project.

2. The Ministry of Environment, Forest and Climate Change has considered the application for expansion of Coal Washery from 15 to 18 MTPA. It is noted that the proposal is for grant of Environmental Clearance to the Integrated project of “Parsa East and Kanta Basan (PEKB) Opencast Coal Mine (Capacity 18 MTPA) with expansion in Pit Head Coal Washery from 15 MTPA to 18 MTPA in total mine lease area of 2682.856 ha of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd. located in villages Salhi, Hariharpur, Ghatbarra, Parsa, Kente, Parogiya and Basan, Tehsil Ambikapur, District Sarguja (Chhattisgarh)”.

The project/activity is covered under category ‘A’ of item1(a) & 2(a) ‘Mining of Minerals’ the Schedule to the EIA Notification, 2006

3. The proposal was considered by the sectoral Expert Appraisal Committee (EAC) in its 38th EAC meeting held during 14-15 December 2022 and in 41st Meeting on 13 -14 March, 2023 through video Conferencing. The details of the proposal, as ascertained from the proposal documents and as revealed from the discussions held during the meetings, are given as under:

- (i) The project area is covered under Survey of India Topo Sheet No. 64J/13 and is bounded by the geographical coordinates ranging from latitude 22° 50’11” N to 22°50’24” N and longitude 82° 48’46” E to 82°49’22” E.

- (ii) Coal linkage of the project is proposed for captive use for various linked Thermal Power Plants.
- (iii) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM dated 13th January, 2010 has imposed moratorium on grant of environment clearance.
- (iv) Employment generation to 2168 persons will be provided from the project.
- (v) The project is reported to be beneficial in terms of coal from this project will be used in power generation in Rajasthan, which will help in reducing gap in demand and production of electricity in the state. Based on the requirement of the people of the project area, the development activities are being taken up. The basic requirement of the community is being strengthened by extending health care, educational facilities developed in the township to the community, providing drinking water to the villages affected, building/strengthening of existing roads in the area etc. Project is also generating direct as well as indirect employment in the area.
- (vi) Environment clearance to the project was obtained under EIA Notification, 2006 vide Ministry's letter No. J-11015/120/2014-IA-II(M) dated 10.08.2018 for 15 MTPA in mine lease area of 2682.856 ha.
- (vii) Further, EC amendment was granted vide Ministry's letter dated 19.07.2019 and 23.12.2021. Subsequently, expansion in production capacity of coal mine from 15 MTPA to 18 MTPA obtained by PP on 14.02.2022.
- (viii) Total mining lease area as per block allotment is 2767 ha and as per approved mining plan is 2682.856 ha Mining Plan (Including Progressive Mine Closure Plan) has been approved by Ministry of Coal on 12th August 2016.
- (ix) The land usage pattern of the project is as follows:

Pre-mining:

S.N.	LANDUSE	Within ML Area (ha)	Outside ML Area (ha)	TOTAL (ha)
1.	Agricultural land, Tenancy &	701.786	Nil	701.786
2.	Forest land	1871.118	Nil	1871.118
3.	Others (Government Land)	109.952	Nil	109.952
	TOTAL	2682.856	Nil	2682.856

Post- Mining:

S. N.	Type	During Mining (ha)	End of Life (ha)	Land Use (ha)					
				Plantation Grass/ greenbelt	Water Body	Public Use	Agriculture land	Dismantled	TOTAL
1.	External OB Dump	112.655	112.655	112.655	-	-	-	-	112.655
2.	Topsoil Dump	5.0	5.000	5.000	-	-	-	-	5.000
3.	Excavation Area	2328.24		2127.555	260.692				2328.247
	(i) Backfilled area		2157.56						

	(ii) Excavated void		230.687						
4.	Road & Infrastructure area	137.435	137.435	13.744	-	32.601	-	91.090	137.435
5.	Rationalization Area	39.518	39.518	35.931	-	3.588	-	-	39.518
	TOTAL	2682.85	2682.856	2294.884	260.692	36.189	-	91.090	2682.856

Details of land requirement for mine and washery

Sl. No.	Particular	Land (ha)
A	Mining	
	Excavation area & barrier	2388.247
B	Infrastructure & OB dump area	
1	External dump	112.655
3	Infrastructure area	36.224
4	Coal evacuation route (Railway siding)	30.260
5	CHP & Washery	28.381
6	Reject Based TPP	42.570
7	Plantation area	3.990
8	Rationalization area	40.532
	Total (B)	294.609
	Grand total (A + B)	2682.856

- (x) Total geological reserve reported in the mine lease area is 516.40 Million Tonnes with 452.46 Million Tonnes mineable reserve. Out of total mineable reserve of 452.46 Million Tonnes, 452.46 MT are available for extraction. Percent of extraction is 87.62 %.
- (xi) Three (Seam-VI, Seam-V & Seam-IV) seams with thickness ranging from 2.27 m 9.72 m are workable. Average Grade of coal is F, stripping ratio 5.24 m³/T, while average gradient is 4⁰ (1 in 15).
- (xii) Method of mining operations envisages by opencast method with Overburden removal by shovel-dumper & coal mining by surface miner.
- (xiii) Coal Washery/Jig washing system and Heavy media cyclone system. 15 MTPA coal washery with modules of Jig washing system and Heavy media cyclone system. A modular washery of 5MTPA would be installed with wet washing process via heavy media cyclone system and remaining 1 MTPA coal would be processed through modifications in existing 5 MTPA DMC washery. 15 MTPA - Jig washing and Heavy media cyclone, 1 MTPA raw coal would be processed through modifications in existing 5 MTPA DMC washery.
- (xiv) Life of mine will be 19 years for 21 MTPA capacity.
- (xv) The project has two external OB dumps in an area of 112.655 ha with 60 m height and 43.52 Mm³ of OB. Two internal OB dumps in an area of 2157.560 ha with 2325.20 Mm³ of OB is envisaged in the project.
- (xvi) Total quarry area is 2388.247 ha out of which backfilling will be done in 2157.560 ha while final mine void will be created in an area of 230.687 ha with a depth of 30 m. Backfilled quarry area of 2127.555 ha shall be reclaimed with plantation. Final mine void will be

converted into a water body.

- (xvii) Transportation of coal has been proposed by in mine pit head, from surface to siding by conveyor and at sidings by Railway.
- (xviii) Reclamation Plan in an area of 2294.884 ha, comprising of 112.655 ha of external dump, 2157.560 ha of internal dump and 54.675 ha of green belt including safety zone/rationalization area.
- (xix). 1898.328 ha of forest land has been reported to be involved in the project. Approval under the Forest (Conservation) Act, 1980 for diversion of 1898.328 ha of forest land for non-forestry purposes has been obtained vide MoEF&CC letter F.no.8-31/2010-FC dated 15th March 2012.
- (xx).. No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones fall within 10 km boundary of the project.
- (xxi). The ground water level has been reported to be varying between Pre-monsoon-7.70 to 18.08 m bgl to Post-monsoon- 2.70 to 5.80 m bgl.
- (xxii) Total water requirement for the project is 13,195 KLD.
- (xxiii) NOC of the Central Ground Water Authority for has been obtained on 15th October 2022.
- (xxiv) Public hearing- Present Application is for expansion of EC (15 to 21 MTPA) which does not attract PH. Public Hearing for 15 MTPA capacity was conducted on 11th September 2016, Village- Basan, District Surguja, Chhattisgarh.
- (xxv) Consent to Operate for the existing capacity of 15 MTPA was obtained from the State PCB on 01/12/2021 and is valid till 30/11/2024.
- (xxvi) River/nalla is flowing 2.7 Km boundary from Northern Boundary of the block of lease. No nalla diversion is involved.
- (xxvii) Regular monitoring of ambient air quality is being carried out on fortnightly basis. The documented report is submitted to SPCB and also to MoEF&CC along with half yearly EC compliance report. In general, the results of ambient air quality monitoring data were found within prescribed limits except few aberrations which can be attributed to the specific local conditions during the day of sampling.
- (xxviii) Court cases pending area-
1. **Civil Appeal no(s). 4395 of 2014** Rajasthan Rajya Vidyut Utpadan Nigam Ltd vs Sudieep Shrivastava & Others pending before the **Hon'ble Supreme Court of India**
Case Status - Mr. Sudieep filed an appeal before the NGT Delhi, against order dated 28.03.2012 by the Forest Department, Chhattisgarh. Further against the judgment passed by NGT, RVUNL preferred a civil appeal (CA. no. 4395 of 2014) before the Hon'ble Supreme Court of India.
Orders/Directions - On 13.09.2022 both the matters were listed together and upon mentioning of Sudieep Shrivastava the Court issued notice to Ministry of Coal as a party in DK Soni matter. No direction was passed in FC matter.
 2. **Writ Petition No. 371 of 2019** Dinesh Kumar Soni Vs. Union of India & Others pending before the **Hon'ble Supreme Court of India**
Case Status - Writ Petition related to PEKB raising issues of
 (i) Formation of JV for MDO Operation is against coal block de-allocation judgement

(ii) washery rejects to private party is causing loss to RVUNL, and in turn, to the public of Rajasthan

(iii) Coal supplied by PEKB coal Block is at very high price than CIL price

(iv) EC dated 21st December 2011 is not being complied with.

Orders/Directions - The matter is tagged along with the CA No. 4395/2014 and on the last date of hearing i.e. 13.09.2022 Ministry of Coal is made a party for furnishing its response on the issue involved in the Writ Petition.

3. Appeal No. 185 of 2018 Sudiep Shrivastava vs Union of India & Ors. pending before **National Green Tribunal, New Delhi**

Case Status - The present appeal is filed challenging the Environment Clearance dated 10.08.2018 granted by MOEF for expansion of PEKB from 10 MTPA to 15 MTPA.

Orders/Directions - List after the decision of the Hon'ble Supreme Court in Civil Appeal No(s). 4395 of 2014. *Adjourned sine die*.

4. Writ Petition (C) No. 1346/2016 Forest Right Committee Ghatbarra vs Union of India & Ors. pending before **The Hon'ble High Court of Chhattisgarh**

Case Status - The present petition is filed to challenge the order dated 08.1.2016 passed by the District Level Forest Rights Committee (DLC) Sarguja, office of Collector (Tribal Welfare) Ambikapur, District Sarguja.

Orders/Directions - Pleadings are complete and the matter is at the stage of final hearing. No next date is fixed in the matter and shall come up for hearing in due course. Post completion of all pleadings, the court of Registrar-1 of Supreme Court has referred this matter to main bench on 23/11/2016 for final arguments. Presently case is pending before supreme courts after some hearings.

5. Writ Petition (C) No. 1346/2016 Forest Right Committee Ghatbarra vs Union of India & Ors. pending before **The Hon'ble High Court of Chhattisgarh**

Case Status - Matter is regarding Forest Rights of the Community over the forest land.

Orders/Directions - Pending on account of Adjourment.

(xxix) The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder. The coal production from the mine was started from the year 2013 onwards.

(xxx) Land acquisition is not involved for washery expansion, hence, no additional PAFs.

Total cost of the project is Rs. 2800 Crore. Cost of production is 1279 Per Metric Ton per tonne., R&R cost is Rs 82 crores. Environment Management Cost is Rs. 820 Lakh (Capital), Rs. 433 Lakh (Recurring)

4. The Expert Appraisal Committee in its 41st EAC Meeting held on 13 -14 March, 2023 through video conference has recommended the project for grant of Environment Clearance (EC). Based on recommendations of the EAC, Ministry of Environment, Forest and Climate Change hereby accords approval for Environment Clearance (EC) to **Integrated project of Parsa East and Kanta Basan (PEKB) Opencast Coal Mine (Capacity 18 MTPA) with expansion in Pit Head Coal Washery from 15 MTPA to 18 MTPA in total mine lease area of 2682.856 ha of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd. located in villages Salhi, Hariharpur,**

Ghatbarra, Parsa, Kente, Parogiya and Basan, Tehsil Ambikapur, District Sarguja (Chhattisgarh), as per OM dated 11th April, 2022, under Clause 7(ii) of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the following terms & conditions / specific conditions in addition to the standard environmental conditions notified by the Ministry as under :-

- (i) PP to comply the outcome/judgement of Hon'ble Supreme Court i.e. Civil Appeal no(s). 4395 of 2014, Writ Petition No. 371 of 2019, Appeal No. 185 of 2018 Writ Petition (C) No. 1346/2016 and Writ Petition (C) No. 1346/2016.
- (ii) PP to obtain the CTO for Coal washery capacity of 18 MTPA after grant of EC. As committed by PP, CTO shall also be granted to transport 90% of coal reject through railway siding after complying condition stipulated in amended EC dated 23.12.2021 regarding coal rejects transportation.
- (iii) PP to obtain the mine plan approval after companies Board's Resolution from the Ministry of Coal, as admissible for the proposed capacity.
- (iv) PP shall comply all the conditions stipulated by Ministry's EC dated 14.02.2022 and its amendment dated 23.12.2021 and complete the non-compliance within a year. Action Taken Report w.r.t 3rd Silo system, Installation of Solar plant, Construction of multispecialty hospital, bio toilets to villagers and plantation needs to be submitted within a year.
- (v) Thick green belt of 50 m width to be provided around the washery to mitigate/check the dust pollution. A 3-tier avenue plantation having 33% plantation of total area should also be developed along vacant areas, storage yards, loading/transfer points, and also along internal roads/main approach roads. A detailed action plan with budgetary provision should be submitted within 6 months to IRO. Areal images in this regard needs to be submitted in six monthly reports to IRO.
- (vi) The technology so chosen for ETP within washery should confirm to 'Zero Liquid Discharge'. No treated & untreated wastewater shall be discharged outside the boundaries of project area.
- (vii) Heavy metal content in raw coal, and washed coal shall be analyzed once in a year and records maintained thereof and it should be reported in IRO, report.
- (viii) PP to undertake the recruitment of a full-fledged qualified manpower with Environmental Engineer/Env. Science degree background in Environment Management Cell etc. at coal washery plant for compliance of EC conditions.
- (ix) PP shall develop 2 water harvesting pond in nearby villages of suitable area in consultation with Gram Panchayat within 1 year.
- (x) Solar street light to be installed with its proper maintenance along the road of incoming raw coal to avoid accident in nearby villages and a record must be furnished to IRO with six monthly compliances.
- (xi) PP shall install atleast 5 more numbers of fog cannon at periphery of the washery with enhanced capacity in order to suppress the dust.
- (xii) Raw coal, washed coal and rejects shall be stored in covered silos or in dome shaped storage facility. Fixed type high pressure sprinkler shall be installed in this storage yards.
- (xiii) No village road shall be used for transportation of coal and no road transport route shall be adopted, which is passing through any sensitive location such as schools, hospitals etc. PP shall take legal undertaking from its consumers accordingly.
- (xiv) PP must also carry out plantation drive (fruit bearing trees, local species etc) with its proper

maintenance in nearby villages by seeking consent of gram panchayat and villagers in coming monsoon and a proper record must be furnished to IRO with six monthly compliances.

- (xv) The PP must provide the workers proper PPE and must also trained them and a record of training must be furnished to IRO.
- (xvi) Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly.

4.1 The grant of Environment Clearance (EC) is further subject to compliance of the Standard EC conditions as under:

(a) Statutory compliance

- (i) The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
- (ii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- (iii) The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule-I species in the study area).
- (iv) The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
- (v) The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
- (vi) Solid/hazardous waste generated in the mines needs to be addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016.
- (vii) Coal beneficiation practices shall be carried out under strict adherence to provisions of the Factories Act, 1957 and subordinate legislations made there under.

(b) Air quality monitoring and preservation

- (i) Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological

data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.

- (ii) The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals 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.
- (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 values of PM₁₀/PM_{2.5}) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.
- (iv) The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it 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.
- (v) Vehicular emissions 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.
- (vi) Coal stock pile/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 along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.
- (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.
- (viii) All approach roads shall be black topped and internal roads shall be concreted. The roads shall be regularly cleaned. Coal transportation shall be carried out by covered trucks.
- (viii) Covered trucks shall be engaged for mineral transportation outside the washery upto the railway siding, shall be optimally loaded to avoid spillage en-route. Trucks shall be adequately maintained and emissions shall be below notified limits.

- (ix) Facilities for parking of trucks carrying raw material from linked mine shall be created within the unit.
- (x) Hoppers of the coal crushing unit and other washery units shall be fitted with high efficiency bag filters/mist spray water sprinkling system shall be installed and operated effectively at all times of operation to check fugitive emissions from crushing operations, transfer points of closed belt conveyor systems and from transportation roads.
- (xi) The raw coal, washed coal and coal wastes (rejects) shall be stacked properly at earmarked site (s) within stockyards fitted with wind breakers/shields. Adequate measures shall be taken to ensure that the stored mineral does not catch fire.
- (xii) The temporary reject sites should appropriate planned and designed to avoid air and water pollution from such sites.

(c) Water quality monitoring and preservation

- (i) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board.
- (ii) The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No.J-20012/1/2006-IA.11 (M) dated 27th May, 2009 issued by Ministry of 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 operations. 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 a year, and the data thus collected shall be sent regularly to MOEFCC/RO.
- (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.
- (v) Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.
- (vi) No ground water shall be used for coal washing unless otherwise permitted in writing by competent authority (CGWA) or MoEFCC. The make-up water requirement of washery should not exceed 1.5 m³/tonne of raw coal.
- (vi) Catch and/or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of

water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining 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/water bodies.

- (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).
- (viii) Industrial waste water generated from CHP, workshop and other waste water (from washery), shall be properly collected and treated so as to conform to the standards 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.
- (ix) The water pumped out from the mine, after siltation, shall be utilized for industrial purpose *viz.* watering the mine area, roads, green belt development *etc.* The drains shall be regularly desilted particularly after monsoon and maintained 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 with due approval of the concerned State/GoI Authority. The construction of embankment 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 prescribed by the law.
- (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 rivarine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.
- (xiii) An Integrated Surface Water Management Plan for the washery area up to its buffer zone considering the presence of any river/rivulet/pond/lake *etc.* with impact of coal washing activities on it, shall be prepared, submitted to MoEFCC and implemented.
- (xiv) Waste Water shall be effectively treated and recycled completely either for washery operations or maintenance of green belt around the plant.
- (xv) Rainwater harvesting in the washery premises shall be implemented for conservation and augmentation of ground water resources in consultation with Central Ground Water Board.

- (xvi) The project proponent shall not alter major water channels around the site. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the washery. The embankment constructed along the river/nallah boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side stabilised with plantation so as to withstand the peak water pressure preventing any chance of inundation.
- (xvii) Heavy metal content in raw coal and washed coal shall be analysed once in a year and records maintained thereof.
- (xviii) The rejects should preferably be utilized in FBC power plant or disposed off through sale for its gainful utilization. If the coal washery rejects are to be disposed off, it should be done in a safe and sustainable manner with adequate compaction and post closure arrangement to avoid water pollution due to leachate from rejects and surface run off from reject dumping sites.

(d) Noise and Vibration monitoring and prevention

- (i) Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/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.
- (ii) Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.
- (iii) The noise level survey shall be carried out as per the 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.

(e) Mining Plan

- (i) Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
- (ii) Mining shall be carried out as per the approved mining plan(including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
- (iii) No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.
- (iv) Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

(f) Land reclamation

- (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(MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).
- (ii) The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.
- (iii) The entire excavated area, backfilling, external OB dumping (including top soil) 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-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.
- (iv) Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize 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.
- (v) Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. 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 of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the 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 the 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.
- (g) Green Belt**
 - (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.

- (ii) Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area 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 roads.
- (iii) Three tier greenbelt comprising of a mix of native species, of minimum 30 m width shall be developed all along the washery area to check fugitive dust emissions and to render aesthetic to neighbouring stakeholders. A 3-tier green belt comprising of a mix of native species or tree species with thick leaves shall be developed along vacant areas, storage yards, loading/transfer points and also along internal roads/main approach roads.
- (iv) The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the 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.

(h) Public hearing and Human health issues

- (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 & its RO on six-monthly basis.
- (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.
- (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.
- (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 oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.
- (v) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

(i) Corporate Environment Responsibility

- (i) The company shall have a well laid down environmental policy duly approved 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.

- (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.
- (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.
- (iv) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

(j) Coal beneficiation

- (i) Coal stacking plan shall be prepared separately for raw coal, clean coal, middling and rejects.
- (ii) Efforts should be made to reduce energy consumption by conservation, efficiency improvements and use of renewable energy.


(k) Miscellaneous

- (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.
- (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.
- (iii) The project proponent shall upload the status of compliance of the stipulated environment clearance 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, NO_x (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.

- (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.
- (vi) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.
- (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.
- (viii) The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
- (ix) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- (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.
- (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.
- (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.
- (xiii) The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- (xiv) The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- (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.
- (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 made their under 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.

- (xvii) No change in coal beneficiation process and scope of work shall be made without obtaining prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC) with such conditions mentioned therein. No change in the maximum quantum of raw material feed per annum against the approved washery capacity shall be made.
5. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report as well as during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented by the EC in letter and spirit.
 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.
 7. Any appeal against this Environment Clearance (EC) 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.
 8. The coal company/project proponent shall be liable to pay the compensation against 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.
 9. The concerned State Government shall ensure no mining operations to 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.
 10. This Environment Clearance (EC) 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.
 11. All the conditions stipulated in Environment Clearance vide Ministry's letter No. J-11015/120/2014-IA-II(M) dated 21st December, 2011 and 10th August 2018 and EC amendment dated 19th July, 2019 and 23rd December, 2021 and EC dated 14.02.2022 should be complied.

This issues with the approval of the competent Authority


(Lalit Bokolia)
Director

Copy to: -

- 1 The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi-1
2. The Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur
3. The Chairman, Chhattisgarh State Environment Conservation Board, 1-Tilak Nagar, Shiv

Mandir Chowk, Main Road, Avanti Vihar, Raipur (Chhattisgarh) - 492001

4. The Chairman, Central Ground Water Authority, Jamnagar House, 18/11, Man Singh Road Area, New Delhi, Delhi 110001
6. The District Collector, Sarguja, Government of Chhattisgarh
7. Monitoring File /Record File
8. PARIVESH Portal



(Lalit Bokolia)
Director



सत्यमेव जयते

Government of India
Ministry of Environment, Forest and Climate Change
IA Division
(Coal Mining)



Minutes of 14TH EAC meeting meeting Coal Mining held from 05/08/2024 to 06/08/2024

Date: 20/08/2024

MoM ID:	EC/MOM/EAC/875383/7/2024	
Agenda ID:	EC/AGENDA/EAC/875383/7/2024	
Meeting Venue:	NARMADA HALL INDIRA PARYAVARAN BHAWAN MOEFCC NEW DELHI	
Meeting Mode:	Hybrid	
Date & Time:		
	05/08/2024	10:30 AM
		05:30 PM
	06/08/2024	10:30 AM
		05:30 PM

1. Opening remarks

At the outset, the Chairman welcomed the Expert members & other participants and requested to start the proceeding as per the agenda listed for this meeting. The list of Members who participated in the meeting is at **Annexure – V**. The Standard/Generic EC & ToR conditions shall be system generated through the PARIVESH Portal.

2. Confirmation of the minutes of previous meeting

Confirmation of the Minutes of the 13th Meeting of the EAC (Coal): The minutes of the 13th Meeting of the EAC (Coal) held during 1-2nd July, 2024 have been confirmed by the EAC.

3. Details of proposals considered by the committee

Day 1 -05/08/2024

3.1. Agenda Item No 1:**3.1.1. Details of the proposal**

Amalgamated Yekona I & II OC (Phase-I) by Western Coalfields Limited located at CHANDRAPUR, MAHARASHTRA	
Proposal For	Fresh EC

0.	Ministry of Environment, Forests and Climate Change (MoEF&CC) with such conditions mentioned therein. No change in the maximum quantum of raw material feed per annum against the approved washery capacity shall be made.
1 1.	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.
1 2.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
1 3.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
1 4.	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.
1 5.	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 Transboundary 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.
1 6.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
1 7.	Coal stacking plan shall be prepared separately for raw coal, clean coal, middling and rejects
1 8.	Efforts should be made to reduce energy consumption by conservation, efficiency improvements and use of renewable energy

3.3. Agenda Item No 3:

3.3.1. Details of the proposal

Proposed Expansion of Parsa East and Kanta Basan Pit Head Coal Washery from 15 MTPA to 21 MTPA at village Salhi, Hariharpur, Parsa, Kente, Ghatbarra, Parogiya and Basan in Udaypur Tehsil, Surguja District, Chhattisgarh by M/ s Rajasthan Rajya Vidyut Utpadan Nigam Limited (RVUNL) over an area of 2682.856 ha by RAJASTHAN RAJYA VIDHYUT UTPADAN NIGAM LTD located at SURGUJA, CHHATTISGARH			
Proposal For		Amendment in EC	
Proposal No	File No	Submission Date	Activity (Schedule Item)
IA/CG/CMIN/470630/2024	J-11015/03/2008-IA-II(M)	17/07/2024	Coal washeries (2(a))

3.3.2. Project Salient Features

14.5.1: The Proposal is for amendment in Environment Clearance granted to M/s. Rajasthan Rajya Vidyut Utpadan Nigam Limited vide letter no. J-11015/03/2008-IA.II (M) dated 12.07.2023 and 14.02.2022 granted to Integrated project of Parsa East and Kanta Basan Pit Head Coal Washery (area 2682.856 Ha having capacity 18 MTPA) located in villages – Ghatbarra, Salhi, Kedmaforest, Kete, Mahadevpara, Parsa, Hariharpur, district – Surguja, state – Chhattisgarh.

Details of the proposal, as ascertained from the proposal documents and as revealed from the discussion held during the meeting, are given as under:

14.5.2: The PP has now made an online application vide proposal no. IA/CG/CMIN/470630/2024 Dated 25.04.2024 for amendment of EC Specific condition no. xii of EC dated 12.07.2023 and Specific Condition no. vii of EC dated 14.02.2022. PP has submitted the following amendment along with justification:

Specific/General Conditions	Details of Conditions	Amendment Sought	Justification
Specific condition (xii) of EC dated 12.07.2023 for Coal Washery	Raw coal washed coal and rejects shall be stored in covered silos or in dome shaped storage facility. Fixed type-high pressure sprinkler shall be installed in this storage yards."	Exemption of the condition	<p>Ø The Storage area of Washed Coal, and Reject area is spread in approx. 40 Ha. and 42 Ha. respectively.</p> <p>Ø At present, handling of washed coal is done by 2 number of Stackers and Reclaimer in which the height of boom is 30 meters.</p> <p>Ø In order to comply with the EC condition and store the coal in a covered silo or dome, a structure of height 30 meter will need to be constructed which is technically unfeasible and not recommended from safety point of view.</p> <p>Ø The coal has a unique characteristic of Spontaneous Ignition, when it is stored in a closed atmosphere, hence covering the whole coal stock in a silo will lead to spontaneous heating, air pollution etc. hence from safety point of view, proposal of amendment is being sought.</p> <p>Ø Additionally, the Storage area of Washed coal, and Reject area is spread in approx. 40 Ha. and 42 Ha. Creation of dome in such a large area would be very challenging from construction point of view, the structure would be in a large area and therefore would not be stable and hence risky.</p> <p>Ø At present following is the process being adopted at the PEKB mines & washery right from mining of coal & washery to dis</p>

Specific/General Conditions	Details of Conditions	Amendment Sought	Justification
			<p>patch to end users:</p> <ul style="list-style-type: none"> • ROM Coal of 55000 Tonne/Day from mine is transported to In-pit conveyor at a distance of 0.8 Km to 3.39 Km (average). • ROM Coal is crushed at CHP from 100 mm to size -50 mm. • From CHP the crushed coal is transported to coal washery of 62000Tonne/Day capacity through conveyor belt with different routes of processing plant which is located at a distance of 01 Km. • Washed coal of 42600 Tonne/day is sent to Silo of 4000 Tonne /Hour capacity with the help of 02 Nos. of Stacker - Reclaimer of 4000 TPH capacity and other belt conveyor. • The same quantity of wash coal is loaded in rail wagons. • Reject coal generated as by-product of washery i.e. Jig washery & DMC washery which is 22.5 % (approx. 12400 Tonne/day) of ROM coal fed. <p>The Reject Coal is stacked in Reject yard of 42 Ha. As per the quantity of demand in market, it is shifted to WHARF within mine site and loaded into wagons.</p>
<p>Specific condition no. (vii) of EC dated 14.02.2022 for Coal Mine</p>	<p>PP shall construct a multispecialty hospital of 100 beds for local people within 10 km buffer area of coal mine within 2 years of issue of this EC letter. Further, this hospital will accept Pradhan Mantri Jan Arogya Yojana for medical facilities to nearby villagers."</p>	<p>Exemption/amendment of the condition.</p>	<p>The Project Proponent is proposing to get exemption of the EC Condition for the following reasons.</p> <ul style="list-style-type: none"> • Cost of construction of hospital would be around Rs.130 Crores. In addition to this, recurring annual operation and maintenance cost of 100 bed around Rs. +20 Crores will create huge financial burden to RVUN which is beyond the capacity of RVUN. RVUN is currently facing a severe

Specific/General Conditions	Details of Conditions	Amendment Sought	Justification
			<p>financial crisis which has impacted the ability to meet various financial obligations including pending payment against coal companies and railways.</p> <p>☛ RUVN is in a challenging position to undertake the construction of 100 bedded hospital. Additional financial burden would be onerous for RUVN.</p> <p>☛ RUVN is already spending Rs. 7.48/- per MT of coal at present for CSR as per the EC condition and has already incurred Rs. 5.31 crores over and above the mandated CSR for the year 2022-23.</p>

3.3.3. Deliberations by the committee in previous meetings

N/A

3.3.4. Deliberations by the EAC in current meetings

14.5.3: The EAC noted the following:

- i. MoEF&CC has accorded Environment clearance for the Integrated project Coal mine and Coal Washery project vide letter no. J-11015/03/2008-IA.II (M) dated 21.12.2011 for capacity of 10 MTPA in an area of 2711.034 Ha and corrigendum/amendments were issued vide letters dated 22.06.2012, 04.03.2013, 25.06.2015 & 29.12.2015. Subsequently, EC dated 10.08.2018 was granted for expansion in capacity from 10 MTPA to 15 MTPA with reduction in area to 2682.856 Ha. EC dated 10.08.2018 superseded all earlier granted EC's and its amendments in terms of Condition no. 12 of the said EC. Two amendments dated 24.07.2019 and 23.12.2022 for road transportation.
- ii. Later the Environment clearance was granted for capacity expansion of Parsa East and Kanta Basan Opencast Coal Mine from 15 MTPA to 18 MTPA vide Ministry's letter no. J-11015/03/2008-IA.II (M) dated 14.02.2022 and other EC was granted to Integrated project of Parsa East and Kanta Basan Open Cast Coal Mine with expansion in Pit head Coal Washery from 15 MTPA to 18 MTPA in total mine lease area of 2682.856 ha vide letter dated 12.07.2023.
- iii. The above projects have been implemented and already under operation.
- iv. As per the available records, the EAC noted that in all the existing ECs accorded to the project proponent several conditions have been prescribed by the Ministry with respect to occupational health, epidemiological study and health assessment in the vicinity of the project site. However, now the justification provided by the PP for seeking exemption from construction of 100 bedded hospital prescribed as a specific condition (vii) of the EC dated 14/02/2022 due to financial constraints is not acceptable and the same shall not be agreed upon. Further, PP failed to demonstrate the compliance made by them with respect of prescribed conditions related to the health aspects in the previous ECs.
- v. With respect to amendment sought by the PP Specific condition (xii) of EC dated 12.07.2023 for Coal Washery, PP shall submit separate amendment application through PARIVESH as the instant amendment application for the EC dated 14/02/2022.

14.5.4: Recommendations of the Committee

In view of the foregoing and after detailed deliberations, the EAC recommended *not to agree* upon with the request of project proponent regarding exemption from construction of 100 bedded hospital prescribed as justification from environmental health has not been given and further recommended to **return** the proposal in its present form.

3.3.5. Recommendation of EAC

Returned in present form

3.4. Agenda Item No 4:**3.4.1. Details of the proposal**

Panandhro Extension Lignite Mine by GMDC LAKHPAT & PUNHARAJPUR LIGNITE BLOCK located at KA CHCHH, GUJARAT			
Proposal For		Fresh ToR	
Proposal No	File No	Submission Date	Activity (Schedule Item)
IA/GJ/CMIN/482728/2024	IA-J-11011/304/2024-IA-II(M)	18/07/2024	Mining of minerals (1(a))

3.4.2. Project Salient Features

14.2.1: The present proposal is for grant of Terms of Reference (ToR) to Panandhro Extension Lignite Mine (area 879.3766 Ha having capacity 0.50 MTPA) located in villages –Baiyava, Dhedhdi, Fulra, Pranpar, Sub District – Lakhpat, District – Kachchh, State –Gujarat. M/s. Gujarat Mineral Development Corporation Ltd (GMDC) has made an application online vide proposal no IA/GJ/CMIN/482728/2024 dated 26/06/2024 along with the application in prescribed format (Form-I) and pre-feasibility report for undertaking a detailed EIA study as per the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at S. No. 1(a) Under Category “A” (> 500 Ha) of the schedule of the EIA Notification, 2006 and do not attract general condition, being appraised at Central Level. The Project is a Green Field Project.

Details of the proposal, as ascertained from the proposal documents and as revealed from the discussion held during the meeting, are given as under:

14.2.2: Environmental site settings

The project area is covered under Survey of India Topo-sheet No. 41A/09, 41A/10, 41A/13 and 41A/14 and is bounded by the geographical coordinates ranging from latitudes 23°43'3.1630"N to 23°45'0.0494"N and longitudes 68°44'46.2893"E to 68°47'29.7895"E. Project does not fall in the Critically Polluted Area (CPA) and Severely Polluted Area (SPA) as per CEPI Assessment, 2018.

14.2.3: Mining Lease: PP submitted the details of the mining lease as follows:

S. No.	Govt. Order/Notifications as the case may be	Area (ha)
1	Allotment order – 13016/26/2004-CA-I(Vol.VI)(Pt.)/CA-III, dated 10.08.2015	879.3766 (Project Area)
Grand Total		879.3766

14.2.4: **Mining Plan:** Approval of mine plan & mine closure plan for the project has been granted for (capacity 0.5 MTPA, Area 879.3766 ha area) vide letter no. Panandhro Extension Lignite Mine GJGU011/APP00286/2023 dated 23.07.2024

गजराज का आतंक • उदयपुर वन परिक्षेत्र कोटमी का मामला, रतजगा कर रहे लोग दो हाथियों ने बुजुर्ग को मार डाला आसपास के 20 गांवों में दहशत

भास्करन्यूज़ | उदयपुर

उदयपुर वन परिक्षेत्र के कोटमी गांव में सोमवार शाम हथी के हमले में वृद्ध की मौत के बाद आसपास के करीब 20 गांव में दहशत का माहौल है। लोग डर के साए में जीने को मजबूर हैं। कई किसानों ने हाथियों के डर से जंगल के किनारे के अपने खेतों में धान की रखवाली करना छोड़ दिया है, जिससे उनकी फसलों को जंगली सूअर के साथ हथी बर्बाद कर रहे हैं। इससे किसान परेशान हैं।

वहीं वृद्ध की मौत के बाद ग्रामीण गांव के बाहर ही आग जलाकर रतजगा कर रहे हैं, ताकि हथी फिर से न लौट आए। हाथियों ने इसी इलाके में एक दिन पहले फेंकूराम को मार दिया था। 60 वर्षीय फेंकूराम अपनी भतीजी के यहां रहता था। सोमवार शाम 4 बजे अपने घर से बस्ती के किराना दुकान में बीड़ी पीने गया था, लौटने में शाम हो गई। बस्ती से घर लौटने के दौरान बीच में कुछ दूरी पर सागवान के घने पड़े हैं। जैसे ही फेंकूराम वहां पहुंचा, सामने से दो हाथी आ धमके। हाथियों को देखकर फेंकूराम ने वहां से भागने की कोशिश की, लेकिन वह भाग नहीं पाया। एक हाथी ने उसे सूंड से उठाकर पटक दिया। कई बार पटकने के कारण ग्रामीण गंभीर रूप से घायल हो गया। इसके बाद एक हाथी ने जोर से चिंघाड़ लगाते हुए उसके आधे चेहरे को ही कुचल दिया, जिससे उसकी मौके पर ही मौत हो गई। वहीं हाथी के कुचलने से उसका आधा चेहरा बीच से फट गया था।



गांव में लोगों को हाथी से सतर्क रहने की समझाइश देती वन विभाग की टीम।

मृतक के परिजन को 25 हजार की सहायता

वन विभाग घटना के बाद मौके पहुंचकर शव को उदयपुर मरच्युरी में रखवाया और दूसरे दिन पीएम करवाकर परिजन के सुपुर्द किया। मंगलवार को उसका अंतिम संस्कार किया गया। इस दौरान सौरभ अग्रवाल के साथ वन विभाग के अधिकारी ने गांव पहुंचकर परिजन को आर्थिक सहायता राशि 25 हजार रुपए दी। एसडीओ विजेंद्र सिंह ठाकुर ने बताया हाथियों की हमले से मृत व्यक्ति के परिजन को शासन से 6 लाख रुपए दिए जाएंगे।

10 दिन में 5 घर तोड़े, 70 हेक्टेयर की फसल बर्बाद

पिछले 20 दिनों से 12 हाथियों का दल उदयपुर वन परिक्षेत्र के केटमा, शक्तिमुड़ा, जजगा के साथ मानपुर और दावा के जंगलों में घूम रहा है। एक सप्ताह पहले दल से दो हाथी बिछड़ गए हैं, जो अब ज्यादा आतंक मच रहे हैं। पिछले 10 दिनों में हाथियों ने सात से अधिक घर भी तोड़ दिए। साथ ही करीब 70 हेक्टेयर में लगी फसल को बर्बाद कर दिया।

हाथियों के गांव के करीब होने की सूचना नहीं दी गई

सरपंच तुलाराम ने बताया कि वह सीसी रोड बनवाकर देर शाम घर लौट रहा था। इस दौरान गांव के एक खेत में दोनों हाथी फसल खा रहे थे। लोगों को देख हाथियों ने दौड़ाया, तब सरपंच, प्रदीप व सरपंच के भाई सहित अन्य लोग जान बचाकर भागे। कुछ दूर में अचेत अवस्था में अर्धेड की लाश पड़ी हुई थी, जिसकी सूचना पर वन अमला मौके पहुंचा। वहीं मृतक फेंकूराम के भतीजे भोलेशंकर ने बताया कि हाथियों के कोटमी क्षेत्र में आने की सूचना गांव वालों को नहीं दी गई थी।



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Chhattisgarh: 3 Of A Family Injured in Elephant Attack in Surguja

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By ETV Bharat English Team
Published : Apr 14, 2024, 5:47 PM IST

The family had gone to collect 'mahua' fruits from a forest in Surguja district when an elephant attacked them. They were taken to the CHC for first-aid after which, they were referred to the district hospital.



Chhattisgarh: 3 Of A Family Injured in Elephant Attack in Surguja

Surguja (Chhattisgarh): Three members of a family, including an eight-month-old girl were injured in an elephant attack when they had gone to collect 'mahua' fruits in Udaipur forest area of Chhattisgarh's Surguja district on Sunday, police said.

The child has suffered internal injuries while the woman and the man suffered injuries on chest and waist respectively. All are currently undergoing treatment at the district hospital.

The incident took place in Fatehpur area of Udaipur forest early this morning. The family was collecting mahua when an elephant attacked them. The incident has triggered panic in the area.

According to the forest department officials, two elephants have been roaming in the forest range of Udaipur after getting separated from their herd for the last one week. One of the two elephants went towards Lakhanpur forest area and the other towards Tara Premnagar forest via Fatehpur.

On receiving information about the incident, Ranger Kamlesh Rai went to CHC Udaipur where the injured were being treatment. The three were later referred to the district hospital. The forest personnel have been continuously advising the villagers not to go towards the forest.

Surguja, Korba, Raigarh, Surajpur, Mahasamund, Gariaband, Dhamtari, Balod, Balrampur and Kanker districts have been frequently witnessing elephant attacks.

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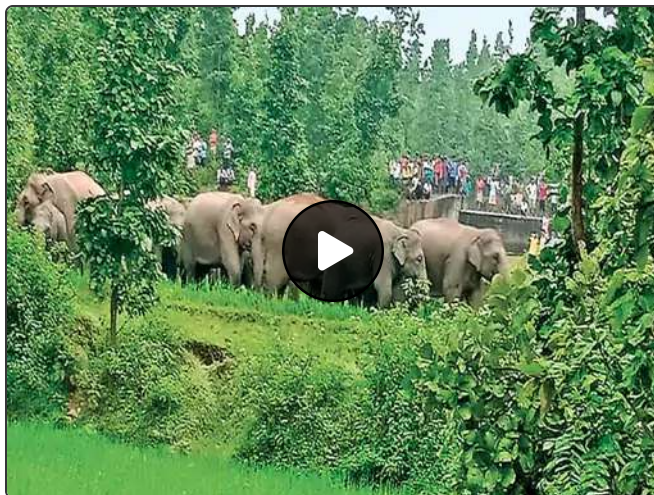
Hindi News / Local / Chhattisgarh / Ambikapur / 11

Elephants Reached Udaipur Area, Alert In Six Villages In Surguja

उदयपुर इलाके में पहुंचे 11 हाथी, 6 गांवों में अलर्ट: हाथियों ने 3 घरों में की तोड़फोड़, रात में ही जान बचाकर भागे लोग

सरगुजा

10 दिन पहले



उदयपुर वन परिक्षेत्र में पहुंचा हाथियों का दल



भारत VS बांग्लादेश
 376-10 (911) 33-9 (44.1)

बांग्लादेश 243 रनो से पीछे

पिछले कदम

दैनिक भास्कर



होम



वीडियो



सर्च

वेब

स्टोरीज



पेई



विदेश



बिजनेस



राशिफल



टेक -

ऑटो



फेक न्यूज

एक्सपोज़



ओपिनियन



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मैगजीन



लाइफ -

साइंस



यूटिलिटी

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छत्तीसगढ़ के सूरजपुर के प्रेमनगर वन परिक्षेत्र से 11 हाथियों का दल उदयपुर वन परिक्षेत्र में पहुंच गया है। हाथियों ने सोमवार रात लक्ष्मणगढ़ में 3 घरों को तोड़ दिया। गांव के लोगों ने भागकर अपनी जान बचाई। हाथियों ने कई एकड़ में लगे धान की फसल को भी नुकसान पहुंचाया है। वन विभाग लगातार हाथियों पर निगरानी रख रहा है। ग्रामीणों को जंगल की ओर न जाने की सलाह दी गई है।

जानकारी के मुताबिक, सूरजपुर के प्रेमनगर वन परिक्षेत्र से 11 हाथी रविवार रात डोई, कोटमी होते हुए उदयपुर वन परिक्षेत्र में घुस गए। सोमवार को हाथी उदयपुर वन परिक्षेत्र में दावा के जंगल में डटे रहे। बीती रात 11 हाथियों का दल लक्ष्मणगढ़ पहुंच गया।



तीन घरों को हाथियों ने तोड़ा

पिडबैक नं

आज का राशिफल मेष



मेष | Aries

पॉजिटिव- पढ़ाई कर रहे युवाओं को मेहनत के मनचाहे नतीजे हासिल होंगे। उनका हौसला और आत्मविश्वास बढ़ेगा। जरूरतमंद दोस्त की मदद करनी पड़ सकती है। ऐसा करके आपको मानसिक

और पढ़ें

तेंदूटेकरा निवासी अमावस्या के पूरे मकान को हाथियों ने तोड़ दिया है। जिससे वह बेघर हो गया है। हाथी घर में रखा अनाज भी खा गए हैं। रात को हाथियों के घुस आने से गांव में अफरा-तफरी की स्थिति बन गई। लोगों ने घरों से भागकर अपनी जान बचाई।

आसपास के गांवों में मुनादी

हाथी उदयपुर वन परिक्षेत्र के करम-कटरा जंगल पहुंच गए हैं, जो हाथियों के रहवास के लिए सुरक्षित माना जाता है। वनविभाग का अमला हाथियों पर लगातार निगरानी रख रहा है। ग्रामीणों को करम कटरा जंगल में न जाने की सलाह दी है। अब तक हाथियों ने उदयपुर वन परिक्षेत्र में किसानों के करीब 8 एकड़ में लगी धान की फसल को नुकसान पहुंचाया है।

हाथियों के विचरण को देखते हुए लक्ष्मणगढ़, सुखरी, मोहनपुर, महेशपुर, सायर, सुखरीभंडार के लोगों को सतर्क किया गया है। हाथियों द्वारा पहुंचाए गए नुकसान का आंकलन किया जा रहा है।



निगरानी में लगे वनविभाग के कर्मी।

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होम



वीडियो



सर्च

वेब

स्टोरीज



ई.पे

डिप्टी रेंजर चंद्रभान सिंह ने बताया कि, वन विभाग की टीम मुआवजा प्रकरण तैयार कर रही है। वन विभाग की सतत निगरानी से हाथियों के दल को जंगल की ओर खदेड़ा गया। वन विभाग द्वारा केदमा सड़क से आने-जाने वाले राहगीरों को सतर्क किया जा रहा है, ताकि जनहानि न हो।

खबरें और भी हैं...

सूरजपुर के अशफाक ने लोगों से जमा कराए करोड़ों रुपये: सूरजपुर में पैसे दोगुना करने का झांसा देकर कराया निवेश, 30 लाख ठगी की FIR दर्ज



अंबिकापुर (सरगुजा)

शेयर

राहुल गांधी के खिलाफ सरगुजा में FIR: BJP नेता बोले- देश में जाति, धर्म के आधार पर नेता प्रतिपक्ष की विभाजनकारी मानसिकता है



अंबिकापुर (सरगुजा)

शेयर

कोरियर सर्विस से कैश व सामान लेकर चोर फरार

अंबिकापुर (सरगुजा)

शेयर

यात्रियों को लेकर जनकपुर जा रही वैन खमरोद में पलटी



अंबिकापुर (सरगुजा)

शेयर



-  टॉप
-  न्यूज़
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Hindi News / Local / Chhattisgarh / Ambikapur / Elephant Crushes Villager In Udaipur, Ambikapur

हाथी ने उदयपुर में ग्रामीण को कुचला: 6 घंटे में हाथियों के हमले में गई 2 लोगों की जान; मृतक की नहीं हो सकी शिनाख्त

सरगुजा 8 महीने पहले



बाड़ी में पड़ा मिला ग्रामीण का शव।



भारत vs बांग्लादेश
376-10 (9112) vs 4-9 (46..)

बांग्लादेश 232 रनो से पीछे

पिचबैक में



विदेश



बिजनेस



राशिफल



टेक -

ऑटो



फेक न्यूज

एक्सपोज़



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यूटिलिटी

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सरगुजा जिले के उदयपुर अंतर्गत ग्राम पतरापारा में हाथियों ने एक ग्रामीण को कुचलकर मार डाला। उदयपुर वन परिक्षेत्र में 9 हाथियों का दल पिछले 25 दिनों से विचरण कर रहा है। वन अमले ने इलाके को रात में ही खाली करा दिया था। मृतक की शिनाख्त नहीं हो पाई है।

हाथियों ने सरगुजा जिले में 6 घंटे के अंदर 2 ग्रामीणों को मौत के घाट उतार दिया है। बतौली क्षेत्र में बीती शाम लोनर हाथी ने एक ग्रामीण को मार डाला था। जानकारी के मुताबिक, उदयपुर वन परिक्षेत्र में विचरण कर रहा दल बीती शाम उदयपुर ग्राम पंचायत के पतरापारा के पास पहुंच गया। प्रशिक्षु डीएफओ अक्षय भोसले की टीम हाथियों की निगरानी में लगी थी।

हाथियों की मौजूदगी को देखते हुए वन विभाग ने मुनादी कराकर इलाके के घरों को खाली करा दिया और लोगों को सुरक्षित स्थान पर भेज दिया। हाथी रात को पतरापारा में घुसे थे। सुबह जब लोग नुकसान का जायजा लेने गए, तो आखिरी घर के पास एक ग्रामीण का क्षत-विक्षत शव मिला।

फोटो: सं

आज का राशिफल मेष



मेष | Aries

पॉजिटिव- पढ़ाई कर रहे युवाओं को मेहनत के मनचाहे नतीजे हासिल होंगे। उनका हौसला और आत्मविश्वास बढ़ेगा। जरूरतमंद दोस्त की मदद करनी पड़ सकती है। ऐसा करके आपको मानसिक

और पढ़ें



मौके पर पहुंचा वन अमला।

गुरुवार रात 11 से 12 बजे के बीच की घटना

वन विभाग के अधिकारियों के अनुसार, हाथी गुरुवार रात 11 बजे के आसपास करमकठरा के जंगल से निकलकर पतरापारा पहुंचे थे। हाथियों ने पतरापारा के घासीराम की बाड़ी में लगे आलू और अरहर की फसल को नुकसान पहुंचाया।

घासीराम के घर से थोड़ी दूर बाड़ी के पास ही अज्ञात ग्रामीण का क्षत-विक्षत शव मिला है। अज्ञात ग्रामीण कहां से आया, इसकी जानकारी नहीं मिल पा रही है। पतरापारा के आधा दर्जन घरों से लोगों को हटा लिया गया था।

पास के जंगल में डटे हैं हाथी

देर रात उत्पात मचाने के बाद हाथी वापस करमकठरा जंगल में चले गए हैं। इलाके में हाथियों की मौजूदगी से ग्रामीण दहशत में हैं। 22 दिसंबर के बाद से हाथियों ने इलाके के 4 घरों को तोड़ दिया है और फसलों को नुकसान पहुंचाया है।

6 घंटे में गई 2 लोगों की जान

सरगुजा में हाथियों का उत्पात लगातार जारी है। 33 हाथियों का दल अंबिकापुर मुख्यालय के पास के इलाके में डटा हुआ है। बुधवार की रात जशपुर के

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हाथा ने 40 वर्षीय शिवचरण को कुचल दिया है।

शिवचरण की मानसिक स्थिति ठीक नहीं थी और वह हाथी के पास पहुंच गया था। लोनर हाथी अब भी सरगुजा के सीतापुर रेंज में मौजूद है।

खबरें और भी हैं...

सीतापुर वन परिक्षेत्र में हाथी ने ग्रामीण को मार डाला: जशपुर से बीती रात सरगुजा में घुसा, अंबिकापुर में हाथियों को भगाने की कोशिश



अंबिकापुर (सरगुजा)

शेयर

हनुमान मंदिर से निकाली भव्य अक्षत कलश यात्रा



अंबिकापुर (सरगुजा)

शेयर

छत्तीसगढ़ में 536 KM की होगी भारत जोड़ो न्याय यात्रा: रायगढ़, अंबिकापुर समेत 7 जिले कवर करेंगे राहुल गांधी; हसदेव भी जा सकते हैं



छत्तीसगढ़

शेयर

बेटे ने मां की साड़ी का फंदा बनाकर लगाई फांसी: सुसाइड नोट में लिखा- अपनी मर्जी से उठा रहा कदम



11 हाथियों ने फसल रौंदी, 5 गांव दहशत में

भास्करन्यूज़ | उदयपुर

रविवार रात 10 बजे 11 हाथियों का दल उदयपुर रेंज में पहुंचकर दावा जंगल में डेरा जमा लिया है। इसी बीच 7 किसानों की चार एकड़ में लगी धान की फसल बर्बाद कर दिया।

कोरिया जिले से एक सप्ताह पहले प्रेमनगर जंगल से 11 हाथियों का दल उदयपुर जंगल पहुंचा है। रविवार रात 10 बजे उदयपुर रेंज के फुलचूही होते हुए डोई, कोटमी, दावा जंगल में देर शाम तक मौजूद रहे। इस बीच फुलचूही गांव के सुखल और बुधन व कोटमी के धनजीत, बहदुर, ईश्वर, बुधराम सहित अन्य एक व्यक्ति की धान की फसल हाथियों ने रौंद डाली। इन दिनों धान की फसल की बाली निकल रही है, जिसकी क्षति होने पर दोबारा पौधा संभल पाना मुश्किल है।



हाथियों की वजह से हुए नुकसान की जानकारी लेते वन कर्मचारी।

क्षतिपूर्ति देने रिपोर्ट तैयार कर रहा विभाग, मुनादी भी

हाथियों की सूचना मिलने के बाद 5 से अधिक गांव के लोग पूरी रात नहीं सोए, क्योंकि पहले भी हाथियों ने इलाके में पहुंचकर लोगों की कई घरों को क्षतिग्रस्त किया है। वहीं जान-माल की हानि की आशंका से लोग रतजगा कर रात काटते रहे। वनकर्मी विष्णु पैकरा ने बताया 11 हाथियों का दल आने की सूचना मिलने के बाद गांव-गांव पहुंच लोगों को सतर्क किया गया है। सात लोगों की चार एकड़ की धान की फसल

बर्बाद हुई है, जिसकी मौका जांच कर क्षतिपूर्ति देने की रिपोर्ट तैयार की जा रही है। इधर, फसल के खराब होने से किसानों में प्रशासन से मुआवजे की मांग की है। वन अमला हाथियों के आने की सूचना पर टीम गठित कर गजराज वाहन के साथरन से फुलचूही, डोई, कोटमी, दावा, नारायणपुर सहित आसपास के गांव में मुनादी कर लोगों को सतर्क कर रहे हैं। पूरी रात चलकर हाथियों का दल जंगल के रास्ते से दावा पहुंचा।

हाथियों ने दर्जनों गांव की नींद उड़ाई

समस्या ● भय के माहौल में जी रहे लोग, फसलों को पहुंचा रहे नुकसान

नईदुनिया न्यूज, उदयपुर : वन परिक्षेत्र उदयपुर में 12 हाथियों के दल ने 20 दिनों से क्षेत्र के दर्जनों गांव के ग्रामीणों की नींद उड़ा दी है। करमकटरा जंगल में डंटे हाथियों ने लोगों के आवागमन को भी बाधित कर दिया है। फसलों को तो नुकसान पहुंच ही रहा है। भय के माहौल में लोगों को जीना पड़ रहा है। हाथियों ने इस क्षेत्र की बड़ी आबादी के जीवन शैली को बदल दिया है। हाथियों का यह दल उदयपुर के करीब रामनगर व फुनगी के आसपास पहुंच गया है जिससे उदयपुर ब्लाक मुख्यालय के आसपास रहने वाले लोगों में भी दहशत का वातावरण निर्मित हो गया है। कई दिनों से वन विभाग का अमला व निगरानी दल नहीं सोया है। पूरे दिन अलग-अलग टीम हाथियों की निगरानी में लगा है रात में भी निगरानी दल सड़कों पर नजर आता है। ग्रामीणों को सचेत किया जा रहा है किंतु भय से बाहर लोग नहीं निकल पा रहे हैं।

मंगलवार की रात ग्राम रामनगर में हाथियों का दल शाम सात बजे कलेश्वरपारा के नजदीक पहुंचा और खेत में लगी धान व अन्य फसलों को नुकसान पहुंचाना शुरू किया। अंधेरे में हाथी आने की सूचना पर ग्रामीण टार्च, मोबाइल लेकर अपनी खेती बचाने दौड़ पड़े। चारों तरफ से ग्रामीणों का झुंड लाइट की रोशनी देखकर झुंझलाहट में इधर से उधर दौड़ना, फसलों को रौंदना शुरू कर दिया। हाथियों को भगाने कोई पटाखा का उपयोग कर रहा तो कोई गुलेल चला रहा था। इसी बीच उग्र होकर हाथी लोगों को दौड़ाने लगते थे। वन अमला की 15 से 20 लोगों की टीम प्रतिदिन दो वाहनों से अलग अलग चौक



सड़क पर हाथियों का दल ● नईदुनिया



निगरानी करते दल से चर्चा करते जनप्रतिनिधि ● नईदुनिया

चौराहों पर बेरिकेटिंग, सड़क बंद कर ग्रामीणों को सुरक्षित स्थानों पर पहुंचाने की कोशिश करते हुए नजर आए। हाथियों के नजदीक नहीं जाने, हाथियों को नहीं छेड़ने की समझाइश देते रहे पर

लोग बात मानने को तैयार ही नहीं हुए। सभी हाथियों के आस पास टार्च लेकर दौड़ते रहे। इसी बीच एक दर्जन से अधिक किसानों की फसलों को हाथियों ने रौंद डाला।

इन गांव के लोग भय में जी रहे उदयपुर क्षेत्र के ग्राम लक्ष्मणगढ़, सानीबरी, सुखरी भंडार, सायर, कुमडेवा, बिछलघाटी, मुड़ापारा, ससाकालो, मोहनपुर, मानपुर, रामनगर फुनगी के लोग भय और दहशत में जीने मजबूर हैं। कई दिनों से यहाँ के लोग चैन की नींद सो नहीं पा रहे। शम डलते समस्या और भी बढ़ जाती है। कब किस क्षेत्र में हाथी आ जाए पता नहीं।

लक्ष्मणगढ़ और जजगी में लगाया बैरियर

रात में लोगों के आवागमन को रोकने वन विभाग की टीम ने लक्ष्मणगढ़ हनुमान मंदिर के समीप व दूसरे हिस्से पर जजगी में सड़क को बैरियर लगाकर बंद कर दिया है ताकि शाम से रात तक लोग इस मार्ग पर आवागमन न कर सकें। बुधवार की शाम को पांच बजे यहाँ अफरातफरी मच गई थी। जंगल के रास्ते दोपहिया सवारों को आने जाने से रोका जा रहा था। वन विभाग की टीम दोनों बैरियर पर तैनात है। लोगों को शाम ढलने के बाद देर रात तक इस मार्ग में आना जाना बंद करने समझाइए दे रहे हैं।

पहुंचे जनप्रतिनिधि, ली जानकारी

बुधवार की शाम लक्ष्मणगढ़ मोड़ पर क्षेत्र के जिला पंचायत सदस्य राजनाथ सिंह व सिद्धार्थ सिंहदेव पहुंचे। वन विभाग के अधिकारी कर्मचारियों से हाथियों के लोकेशन सहित ग्रामीणों के सुरक्षात्मक उपाय को लेकर जानकारी ली। जनप्रतिनिधियों ने भी ग्रामीणों को रात में इस मार्ग पर काम से कम आवाजाही करने की समझाइए दी है।

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By : अमितेश पांडे, अम्बिकापुर | Updated at : 30 Sep 2022 12:46 PM (IST)



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Chhattisgarh News: छत्तीसगढ़ में सरगुजा (Surguja) जिले के उदयपुर इलाके में हाथियों का उत्पात थमने का नाम नहीं ले रहा है. उदयपुर वन परिक्षेत्र के अंतर्गत अलग-अलग गांव में 11 हाथियों का दल लगातार विचरण कर रहा है. इस दौरान हाथी किसानों की फसलों को नुकसान पहुंचा रहे हैं. इसके अलावा कुछ घरों को भी तोड़ दिया है. दकअसल 20 सितंबर से 11 हाथियों का दल सूरजपुर जिले के प्रेमनगर वन परिक्षेत्र से सरगुजा जिले के उदयपुर वन परिक्षेत्र में आया हुआ है. जो महेशपुर, मानपुर, शायर, कुमडेवा, उपकापारा, लक्ष्मीगढ़, सानीबर्बा, सुखरी भंडार, फूनगी सहित अन्य गांव के जंगल में विचरण कर रहा है.

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क्षतिग्रस्त कर दिया. शासकीय उद्यान झिरमिटी के परिसर पर भी काफी उत्पात मचाया है. केला के पौधों को खा गए, साथ ही प्लास्टिक में लगाए गए छोटे-छोटे पौधों को भी नुकसान पहुंचाया है. जिमीकंद इत्यादि फसलों को भी नुकसान हुआ है, फेन्सिंग कार को भी तोड़ा दिया है.

ग्रामीणों में आक्रोश

बता दें कि इन दिनों उदयपुर इलाके में हसदेव अरण्य के जंगल में कोल खदान के लिए पेड़ों की कटाई जा रही है. पेड़ कटाई को लेकर ग्रामीणों के विरोध को देखते हुए 4 हजार से ज्यादा पुलिस जवान जंगल में तैनात किए गए हैं. इसमें वन विभाग के अधिकारी भी शामिल हैं. ऐसे में हाथी प्रभावित गांव के ग्रामीण इस बात को लेकर चिंतित हैं कि वन विभाग के अधिकारी पेड़ कटवाने में व्यस्त हैं, तो हाथियों से उनकी सुरक्षा कौन करेगा? उदयपुर क्षेत्र में गांव के साथ ब्लॉक मुख्यालय के लोग भी हाथियों के दहशत में हैं. पहले से ही वन विभाग की टीम हाथियों को खदेड़ने में नाकाम रही है और इन दिनों हाथियों का उत्पात कुछ ज्यादा ही बढ़ गया है. वन विभाग के अधिकारी कोल ब्लॉक में पेड़ कटवाने के लिए भिड़े हुए हैं. इससे जंगल के आसपास की कई बस्तियों में हाथियों का खतरा लगातार बना हुआ है.

यह भी पढ़ें:

Chhattisgarh: शराब तस्करी मामले में BJP नेता की गिरफ्तारी पर छत्तीसगढ़ की सियासत गर्म, पार्टी ने क्या कहा?

Bilaspur News: बिलासपुर पुलिस रात में चला रही विशेष अभियान, जांच में बरामद किया 20 लाख कैश और पिस्टल

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By **Manoj Kumar Tiwari**

Edited By: **Manoj Kumar Tiwari**

Publish Date: Thu, 28 Sep 2023 01:20:02 PM (IST)

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अंबिकापुर। सरगुजा जिले के उदयपुर वन परिक्षेत्र के कुमडेवा जंगल में हाथियों के हमले से ग्रामीण की मौत हो गई। गुरुवार सुबह जंगल में उसका क्षत-विक्षत शव मिला। मृतक की पहचान टापू मझवार कुमडेवा के रूप में की गई है। हाथी देखने के चक्कर में यह हादसा हुआ है। 11 हाथियों का दल पिछले 20 दिनों से उदयपुर वन क्षेत्र में विचरण कर रहा है। वन अमले की सक्रियता के कारण अभी तक जनहानि की घटनाएं नहीं हुई थी।

बुधवार की शाम को हाथियों का दल कुमडेवा जंगल किनारे धान के खेतों में पहुंच गया था। हाथियों को देखने के लिए महिला और बच्चे सहित ग्रामीण जंगल के दो से तीन किलोमीटर भीतर घुस गए थे। वन विभाग की टीम लगातार ग्रामीणों को सतर्क कर रही थी। रातभर धान की फसल खाकर तथा पैरों से कुचल हाथियों का दल नजदीक के जंगल में चला गया था।



Chhattisgarh Weather Today: छत्तीसगढ़ को आज से मिलेगा बारिश का बोनस, रायपुर समेत कई ज



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देर रात तक वन विभाग की टीम भी आसपास ही लोगों की समझाइश देने में लगा था। सुबह लोग जंगल गए तो हादसे की जानकारी मिली। ग्रामीण का शव जंगल के भीतर पड़ा हुआ था। हाथियों के हमले से मृतक के शरीर का अंग भंग हो गया था। हाथियों ने उसे बुरी तरह से कुचल दिया था।

तत्काल सूचना पर वन विभाग के अधिकारी-कर्मचारी भी घटनास्थल पहुंच गए थे। इस हादसे को वन अमला की समझाइश को नजरअंदाज करने के कारण माना जा रहा है। जंगली हाथियों को देखने तथा फोटो और वीडियो के लिए लोग लगातार उनके पीछे जा रहे थे।

रात को इस क्षेत्र में वन अधिकारियों-कर्मचारियों की भी उपस्थिति थी लेकिन किसी को घटना का पता नहीं था। 20 दिनों से हाथी क्षेत्र में है। समय-समय पर जंगली हाथी उदयपुर-केदमा मुख्य मार्ग पर भी आ जाते हैं। हाथियों के हमले से पिछले दिनों मोटरसाइकिल सवार दंपती बाल-बाल बच गए थे। जंगली हाथियों ने एक मिनी ट्रक को क्षतिग्रस्त कर दिया गया था। चालक व श्रमिक जान बचाकर भाग निकले थे। जंगली हाथियों ने अभी तक 100 एकड़ से अधिक धान की फसल को भी नष्ट किया है।

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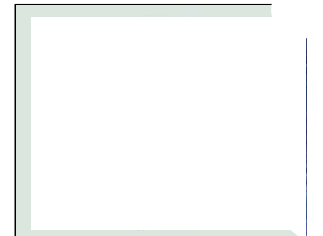


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Civil Lines, Nagpur - 440001
apccfcentral-ngp-mef@gov.in

F. No: 3-3/2012 (Env) / 1080
To

Dated: 21st November, 2016

The Scientist 'E'
IA Division (Coal Mining),
Ministry of Environment, Forest & Climate Change
Vayu Wing, 3rd Floor, Indira Paryavaran Bhawan,
Allganj, Jorbagh Road,
New Delhi-110003

(Kind Attention: Shri S. K. Srivastava)

Sub: A report on the status of compliance of conditions stipulated in the environment clearance dated 21.12.2011 read with letter dated 4.03.2013 accorded to Rajasthan Rajya Vidyut Utpadan Nigam Ltd. for Parsa East & Kanta Basan Open Cast Coal Mine (10 MTPA) and pit head Coal Washery (10 MTPA) in the State of Chhattisgarh – regarding.

Ref: Project proponent's letter no. RVUN/ACE(FUEL)/Dy. CE(Fuel)/D. 1310 dated 22.06.2016

Sir,

I am directed to refer to the above subject and letter under reference above wherein the project proponent has requested this office to issue a certificate on the monitoring of the compliance of conditions stipulated in Environment Clearance dated 21.12.2011 read with letter dated 4.03.2013 to Rajasthan Rajya Vidyut Utpadan Nigam Ltd. for Parsa East & Kanta Basan Open Cast Coal Mine (10 MTPA) and pit head Coal Washery (10 MTPA) in the State of Chhattisgarh and to say that monitoring of the conditions stipulated in the EC was carried out by the undersigned on 11.09.2016. A monitoring report in the matter is enclosed. Following observations were made during the site inspection:

- i. Specific Conditions no. (i) to (iii), (v), (vii) to (ix), (xiv), (xvi) to (xxiii), (xxv), (xxvii) to (xxxiii), (xxxv) and all general conditions are being complied with by the Project proponent in accordance with the stipulations made in the environment clearance towards the conservation, protection and development of environment in their premises.
- ii. Following specific conditions were observed to be complied with partially by the PP:
 - a) Condition no. (x) as proper benching of the dump was not observed to maintain the required degree of slope
 - b) Condition no. (xi) as the management and capacity of catch drains and siltation ponds observed to be insufficient to arrest the silt generated from their lease especially during rainy season.
 - c) Condition no. (xii) as the garland drains around the dumps and roads needs to be managed effectively as the same were observed to be insufficient to arrest silt and sediments from of soil from the mining lease.
 - d) Condition no. (xiii) as the measures taken by the PP further needs to be strengthen as the same were observed to be inefficient to check run-off and siltation
 - e) Condition no. (xv) as establishment of wind breakers/shields needs to be strengthened by the PP in the area.

R. G. 10

- f) Condition no. (xxiv) as PP need to expedite its afforestation drive in accordance with the provisions stipulated in the condition.
- g) Condition no. (xxxiv) as the PP has not submitted satellite image indicating the land use of the mine.
- h) Condition no. xxxvi) as no team has been observed for the implementation of the Wildlife Management Plan.
- iii. The following conditions were observed to be not complied with by the PP:
- a) Condition no. (iv) as after the expiry of initial period of 3 years, still the transportation upto Ramanujn Nager is still undertaken by road.
- b) Condition No. (vi) as the transportation of coal from the mine pit to the surface and to CHP is being undertaken by trucks and not closed conveyor belt.
- c) Condition no. (xxvi) as even after lapse of a period of more than 3 years, the process for the implementation of the provisions of the said plan has not been initiated by the State Government/PP.
- iv. The PP has also mentioned that following two cases are pending against Parsa East & Kanta Basan Opencast Coal Mine Project (10 MTPA) & Pit Head Coal Washery (10 MTPA). The same are as follows-
- a) Rajasthan Rajya Vidyut Utpadan Nigam Ltd. Vs Sudiep Srivastava & Ors- Civil Appeal No. 4395 of 2014 pending before The Hon'ble Supreme Court of India
- b) Forest Right Committee Ghatbarra vs Union of India & Ors. Writ Petition (C) No. 1346/2016 pending before The Hon'ble High Court of Chhattisgarh till date.
- v. The PP has also informed that there are no show cause notices issued by Chhattisgarh Environment Conservation Board or pending against Parsa East & Kanta Basan Opencast Coal Mine Project (10 MTPA) & Pit Head Coal Washery (10 MTPA) till date.

This issues with the approval of the Addl. PCCF (Central), Regional Office (West Central Zone) MoEF&CC, Nagpur.

Encl: as above

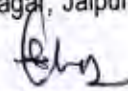
Yours faithfully,



Charan Jeet Singh
Scientist 'C'

Copy to:

1. Director RO HQ, Ministry of Environment, Forest & Climate Change, Government of India, 1st Floor Agni Wing, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi- 110 003.
2. Member Secretary, State Level Environment Impact Assessment Authority & Secretary, Housing and Environment Department, Government of Chhattisgarh, Mantralay Mahanadi Bhavan, New Raipur, Chhattisgarh
3. Director (Monitoring Cell), Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Aliganj, Jorbagh Road, New Delhi-110003
- ✓ 4. Rajasthan Rajya Vidyut Utpadan Nigam Limited, Vidyut Bhawan, Janpath, Jyoti Nagar, Jaipur - 302 005 Rajasthan.
5. Guard File.


Charan Jeet Singh
Scientist 'C'

Oct,
2021

2141

ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PLAN

**PROPOSED EXPANSION OF PARSA EAST AND KANTA BASAN OPENCAST MINE AND
PIT HEAD COAL WASHERY FROM 15 MTPA TO 21 MTPA AT UDAYPUR TEHSIL,
SURGUJA DISTRICT, CHHATTISGARH OVER AN AREA OF 2682.856 HA**

**VILLAGES: SALHI, HARIHARPUR, PARSA, KENTE, GHATBARRA, PAROGIYA AND BASAN
TEHSIL: UDAYPUR, DISTRICT: SURGUJA, CHHATTISGARH**

STUDY PERIOD: MARCH TO MAY 2021

[The proposed project is listed under Schedule 1(a) & 2 (a) under the Schedule of EIA Notification, 2006 and categorized as Category-A.]

PROJECT PROPONENT

**M/S RAJASTHAN RAJYA VIDYUT UTPADAN
NIGAM LIMITED (RVUNL)
VIDYUT BHAWAN, JANPATH, JYOTI NAGAR, JAIPUR**

ENVIRONMENT CONSULTANT

VARDAN ENVIRONET

(QCI/NABET ACCREDITED NO. NABET/EIA/1922/RA0166)

PLOT NO.: 82 A, SECTOR-5, IMT MANESAR, GURUGRAM- 122052, HARYANA

E-mail: mining@vardanenvironet.com

Contact: +91 9899651342, +91 9810355569



TABLE-1.5
DETAILS OF ENVIRONMENTAL SETTING

Sr. No.	Particulars	Details	
1	Location	North central part of Hasdeo-Arand coalfield	
A	Village	Core Zone is covered in the following villages 1. Salhi 2. Hariharpur 3. Parsa 4. Kente 5. Ghatbara 6. Parogiya 7. Basan	
B	Tehsil	Udaypur	
C	District	Surguja	
D	State	Chhattisgarh	
E	Coordinates	Latitude	Longitude
	Coal Mine Block	A-22° 51' 12" N B-22° 47' 37.50" N C-22° 49' 56.25" N D-22° 48' 56" N	A-82° 47' 23" E B-82° 49' 29.03" E C-82° 50' 50.32" E D-82° 46' 38" E
	Coal Washery	22° 50' 11"/22° 50' 24" N	82° 48' 46"/82° 49' 22" E
2	Elevation	505 m to 569 m	
3	Land use for the mine	Total area of the mine is 2682.856 ha Forest area – 1871.118 ha (70.0%) Agricultural Land – 701.786 ha (26%) Govt. land – 109.952 ha (4%)	
4	Coal washery land use with in the ML area	28.381 ha	
5	Nearest major town	Ambikapur (70 km, NE)	
6	Nearest highway	SH-2A Bilaspur-Ambikapur (5 km, NW)	
7	Nearest railway station	Bishrampur (62 km, NW)	
8	Nearest major airport	Raipur (290 km, SW)	
9	Nearest tourist places	Nil within 15 km radius from ML boundary	
10	Defence installations	Nil within 15 km radius from ML boundary	
11	Archaeologically listed important place	Nil within 15 km radius from ML boundary	
12	Ecological sensitive zones	No National Parks, Wildlife sanctuaries, Wildlife corridors, Tiger reserves, Elephant reserves and Biosphere Reserves exist within 25 km radius from the ML boundary	
13	Reserved/Protected forest	Phatepur, P.F.	Within M.L. area
		Matringa, P.F.	Within M.L. area
		Pidiya, R.F.	1.6 km, W
		Janardhanpur, P.F.	2.3 km, NW
		Tara East, P.F.	2.8 km, W
		Shivnagar, P.F.	3.7 km, N
		Paturiya, P.F.	4.0 km, SSW
		Putter, P.F.	4.5 km, ENE
		Chakeri, P.F.	5.1 km, ENE
		Murgaon, P.F.	6.0 km, N
		Dhajag, P.F.	7.4 km, W
		Kotmi, P.F.	7.8 km, NNE
		Pendrakhi, P.F.	8.1 km, SE
		Ramgarh, P.F.	8.2 km, NE
		Chandenagar P.F.	8.9 km, NNW
Chirwan P.F.	9.2 km, N		
Bhandargaon, P.F.	9.9 km, NNE		

Sr. No.	Particulars	Details
14	Nearest streams/Rivers	Atem Nadi- (2.7 km, N)
15	Other Industries / Mines	Nil in 10 km radius
16	Coal user locations	Motipura Choki, Chhabra, Distt-Baran (Rajasthan)
		Village-Undal, Tehsil-Jhalraptan, Distt-Jhalawar (Rajasthan)
		Thukrana, Tehsil-Suratgarh, Distt-Shriganganagar (Rajasthan)
17	Socio-economic factors	No additional Resettlement and Rehabilitation issues are involved.
18	Seismic zone	Zone-II as per IS-1893 (Part-1)-2002

The villages located in / immediate peripheries of the block are given in Table-1.6. Kente village is located on the west central part of the block and comprises two clusters of hamlets viz. Mahadevpara and Banapara. It is sparsely populated.

TABLE-1.6
VILLAGES LOCATED IN / IMMEDIATE PERIPHERY OF THE BLOCK

Sr. No.	Name	Distance and Direction w.r.t Mining Site	
1	Salhi	1.6	NW
2	Hariharpur	0.3	NW
3	Parsa	0.2	N
4	Kanta	Mine Lease	
5	Ghatbarra	Mine Lease	
6	Parogiya	3.0	SE
7	Basan	2.0	E

Stage-wise Land Use Pattern of ML Area

The present landuse pattern of ML area is shown in Table-2.6. The details of year wise land use and reclamation of mine lease area is given in Table-2.7.

TABLE-2.6
DETAILS OF PRESENT LAND USE PATTERN

Sr. No.	Particular	Forest	Government	Private	Total
A	Mining				
1	Excavation area & barrier	1704.744	104.262	579.241	2388.247
B	Infrastructure & OB Dump Area				
1	External dump	58.502	3.919	50.234	112.655
2	Infrastructure	24.242	0.018	11.964	36.224
3	Coal evacuation route	21.690	0.102	8.468	30.260
4	CHP & washery	12.127	0.000	16.254	28.381
5	Reject based thermal power project	29.090	0.140	13.340	42.570
6	Plantation area	3.973	0.011	0.002	3.990
4	Rationalization area	16.751	1.499	22.282	40.532
	TOTAL (B)	166.374	5.690	122.545	294.609
	Grand Total (A + B)	1871.118	109.952	701.786	2682.856

Source: Mine Plan

TABLE-2.7
YEAR WISE LAND USE AND RECLAMATION

All Values in ha

Sr. No	Land Use	Present	10 th Year	19 th Year / Conceptual
1	Topsoil dump	-	Nil	Nil
2	Waste External dump	112.655	112.655	112.655
3	Excavation area	825.639	1,949.06	2,388.25
4	For infrastructure	107.175	107.175	107.175
5	coal evacuation route	30.26	30.26	30.26
6	Rationalization	40.533	40.533	40.533
7	Undisturbed area	2182.257	439.462	0
8	Colony and plantation area	3.986	3.986	3.986
	Grand Total	2682.856	2682.856	2682.856
9	Reclamation (backfilled)	586.87	1,565.35	2,157.56

Source: Mine Plan

Sr. No	Phytoplankton	Zooplankton
4	<i>Cyclotella</i> sp.	<i>Cyclops</i> sp.
5	<i>Cymbella cymbiformis</i>	<i>Cypris</i> sp.
6	<i>Nitzshia</i> sp.	<i>Keratella tropica</i>
7	<i>Pinnularia</i> sp.	--
8	<i>Synedra</i> sp.	--
9	<i>Spinulina</i> sp.	<i>Pseudo diaptomus</i> sp.

3.9.8 Conclusion

From the primary survey and as per forest department records and review of literature, there are no sanctuaries, national parks, biosphere reserves in the study area.

In the buffer zone of the study area, there are few Schedule-I species which are recorded in the study area such as Indian elephant, peafowl, jungle cat, and sloth bear. Rest of the species is recorded in the following Schedules of II, III, IV and V of Indian Wildlife (Protection) Act, 1972, amongst mammals and reptiles.

Migrant birds of belonging to raptor species such as eagle species and kites are listed in the Schedule -I of the Indian Wildlife (Protection), Act 1972 apart from *Pavo cristatus* – peafowl are confined in the Schedule-I.

Among reptilian species *Python molurus* (Indian rock python) in the study area are confined in the Schedule I, and remaining belongs to Schedule-II, IV of the Indian Wildlife (Protection), Act, 1972.

Apparently, there is no endangered botanical flora in the study area as per the Botanical Survey of India records.

3.10 Demography and Socioeconomics

The demographic and socio-economic conditions prevailing in the 10 km radius of the proposed expansion project boundary at Parsa Village, Ambikapur, Surajpur tehsils in Surguja district and Katghora tehsil in Korba district of Chhattisgarh is analyzed and presented in this section.

The expansion project **doesn't have any rehabilitation** and resettlement issues as it is planned to be established within the existing mine and plant site for which land acquisition has already completed. But the project proponent is committed to take up the socio-economic development initiatives not only to minimize the negative impact on the population but also to improve the socio-economic status of population living in 10 km radius of the plant as its sustained effort as part of corporate social responsibility.

3.10.1 Methodology Adopted for the Study

The methodology adopted for the study mainly includes review of published secondary data and primary field survey (District Census Statistical Handbooks-2011 and Primary Census Abstract of Census-2011) with respect to population, sex ratio, average household size, density of population, social stratification, literacy rate and occupational structure for 10 km radius study area. A project

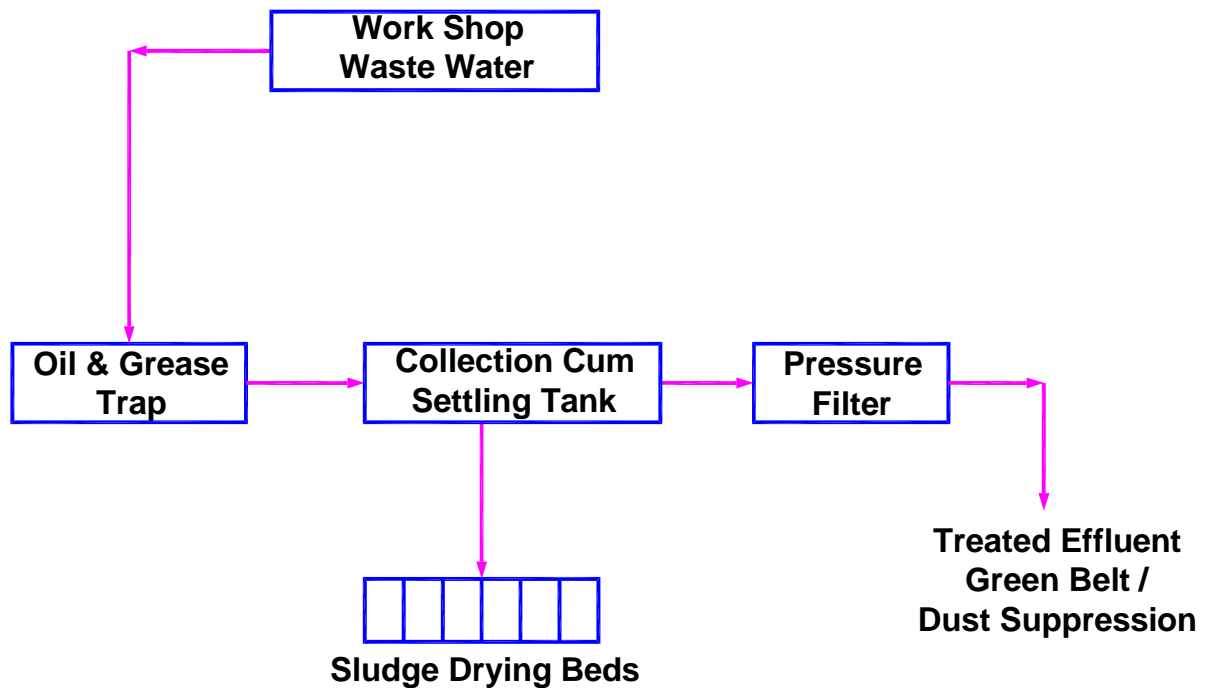


FIGURE-4.14
SCHEMATIC DIAGRAM OF EFFLUENT TREATMENT PLANT

4.5.4 Soil Conservation Measures

Topsoil will be properly stacked at earmarked dump site with adequate measures. It will be used for growing plants along the fringes of the site roads and reclamation of external dump and backfilled area. The topsoil stockpiles will be low height not exceeding 6 m and will be grassed to retain fertility. Besides this topsoil stacks there will be temporary stacks near the excavation area and area to be reclaimed which will be made use of for concurrent laying without bringing the topsoil to the soil stack near the OB dump.

4.5.5 Wildlife Conservation Plan (WCP)

A comprehensive study has been carried out by Institute of Forest Management (IIFM), Bhopal on Flora and Fauna of the study area and Mr. P.C. Agrahari, developed a wildlife conservation plan is given in Annexure-XIV.

- Cost Calculation for the plan

The cost of wildlife conservation plan is given in Table-4.22.

TABLE 4.22
COST OF WILDLIFE CONSERVATION PLAN FOR
PARSA EAST AND KANTA BASAN OPENCAST COAL MINE PROJECT

Sr. No.	Items of the work	Approx. Cost (In Crores)
1	(a) Survey & preparation of plan	0.20
	(b) Creation of forest resources in peripheral area buffer zone line fodder fuel wood and MFP by identifying the suitable area for respective plantations	0.05
	(c) Survey and identification of wetland in proposed area	0.10
	(d) Survey and study on broodery of proposed site	0.05
	(e) Habitat survey for the respective project site	0.05
	(f) Survey and identification of reptiles, birds, butterfly, insects available in the project site	0.10
	(g) Survey of medicinal plants and their identification in proposed project site.	0.10
2	Protection work in Core Area (i.e. fencing of boundaries. Fencing of fields and villages as per requirement	1.50
3	Fire protection works	1.50
4	Protection from grazing and illicit felling	1.00
5	Empowering people for protection, eco-development works etc.	1.00
	(a) Construction of office building for joint forest management committees come meeting hall	0.50
	(b) Construction of rescue centers for mitigation human wildlife conflict with trained personals	0.50
	(c) Provision for compensation to loss of crop, property human life and life and injury by wildlife for entire plan period	1.50
6	Soil & moisture conservation works	2.00
7	Weed management under guidance of expert scientist are experience forester.	2.00
8	Management & development of grasslands by planting of local species of grasses which are found in the area	1.50
9	Management of identified wetland for better wildlife habitat formation	0.05
10	Physio chemical properties of wetland in the initial, mid and end of the project for the respective project site.	0.05
11	Conservation of the floral diversity, creation of biodiversity parks for creation of gene pool	2.00
12	Protection of the habitats of geomorphological origin and their conservation	0.50
13	Conservation of the riparian zones	1.00
14	Habitat improvement in the elephant corridor area. Protection of crop and property in the affected villages training and miscellaneous other activities.	2.50
15	Research and monitoring and evaluation	0.75
16	Miscellaneous works (proposed by field officers and approved by the C.F)	1.50
	Total	22.0 Crores

Sep,
2022

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FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PLAN

PARSA EAST AND KANTA BASAN PIT HEAD COAL
WASHERY FROM 15 MTPA TO 21 MTPA
CAPACITY OVER AN AREA OF 2682.856 HA.

VILLAGE: SALHI, HARIHARPUR, PARSAS, KENTE, GHATBARRA, PAROGIYA AND
BASAN IN UDAYPUR TEHSIL, SURGUJA DISTRICT, CHHATTISGARH.

STUDY PERIOD: MARCH TO MAY, 2022

[The proposed project is listed under Schedule 2 (a) Coal Washery under the Schedule of EIA
Notification, 2006 and categorized as Category A]

PROJECT PROPONENT

M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited (RVUNL)

VIDYUT BHAWAN, JANPATH, JYOTI NAGAR, JAIPUR

ENVIRONMENT CONSULTANT

VARDAN ENVIRONET

(QCI/NABET ACCREDITED NO. NABET/EIA/2023/SA0158)

PLOT NO.: 82 A, SECTOR-5, IMT MANESAR, GURUGRAM- 122052, HARYANA

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Document No.: 2022_VM_002_FINAL EIA



39" & 22°51' 12" N and Longitude 82° 46' 38" & 82° 50' 51" E. The index map and study area of the project is shown in Figure-1.3 and Figure-1.4 respectively. Coal washery expansion from 15 to 21 MTPA is proposed by augmenting existing coal washery of 15 MTPA as well as establishment of additional washing modules within existing premises having latitude 22° 50' 11" & 22° 50' 24" N and longitude 82° 48' 46" & 82° 49' 22" E.

1.3.4 Environmental Setting of the Project

Parsa East and Kanta Basan blocks are located in Salhi, Hariharpur, Parsa, Kente, Ghatbara, Parogiya and Basan villages, Udaypur tehsil/taluka, Surguja district, Chhattisgarh State. The proposed coal washery plant (additional 6 MTPA) is located within the proposed coal mine premises. The details of environmental setting are given in Table-1.5.

Table 1-5 DETAILS OF ENVIRONMENTAL SETTING

Sr. No.	Particulars	Details	
1	Location	North central part of Hasdeo-Arand coalfield	
A	Village	Core Zone is covered in the following villages 1. Salhi 2. Hariharpur 3. Parsa 4. Kente 5. Ghatbara 6. Parogiya 7. Basan	
B	Tehsil	Udaypur	
C	District	Surguja	
D	State	Chhattisgarh	
E	Coordinates	Latitude	Longitude
	Coal Mine Block	A-22° 51' 12" N B-22° 47' 37.50" N C-22° 49' 56.25" N D-22° 48' 56" N	A-82° 47' 23" E B-82° 49' 29.03" E C-82° 50' 50.32" E D-82° 46' 38" E
	Coal Washery	22° 50' 11"/22° 50' 24" N	82° 48' 46"/82° 49' 22" E
2	Elevation	505 m to 569 m	
3	Land use for the mine	Total area of the mine is 2682.856 ha Forest area – 1871.118 ha (70.0%) Agricultural Land – 701.786 ha (26%) Govt. land – 109.952 ha (4%)	
4	Coal washery land use with in the ML area	28.381 ha	
5	Nearest major town	Ambikapur (70 km, NE)	
6	Nearest highway	SH-2A Bilaspur-Ambikapur (5 km, NW)	
7	Nearest railway station	Bishrampur (62 km, NW)	
8	Nearest major airport	Raipur (290 km, SW)	
9	Nearest tourist places	Nil within 15 km radius from ML boundary	
10	Defence installations	Nil within 15 km radius from ML boundary	
11	Archaeologically listed important place	Nil within 15 km radius from ML boundary	
12	Ecological sensitive zones	No National Parks, Wildlife sanctuaries, Wildlife corridors, Tiger reserves, Elephant reserves and Biosphere Reserves exist within 25 km radius from the ML boundary	
13	Reserved/Protected Forest	Phatepur, P.F.	Within M.L. area
		Matringa, P.F.	Within M.L. area

Sr. No.	Particulars	Details	
		Pidiya, R.F.	1.6 km, W
		Janardhanpur, P.F.	2.3 km, NW
		Tara East, P.F.	2.8 km, W
		Shivnagar, P.F.	3.7 km, N
		Paturiya, P.F.	4.0 km, SSW
		Putter, P.F.	4.5 km, ENE
		Chakeri, P.F.	5.1 km, ENE
		Murgaon, P.F.	6.0 km, N
		Dhajag, P.F.	7.4 km, W
		Kotmi, P.F.	7.8 km, NNE
		Pendrakhi, P.F.	8.1 km, SE
		Ramgarh, P.F.	8.2 km, NE
		Chandenagar P.F.	8.9 km, NNW
		Chirwan P.F.	9.2 km, N
		Bhandargaon, P.F.	9.9 km, NNE
14	Nearest streams/Rivers	Atem Nadi- (2.7 km, N)	
15	Other Industries / Mines	Nil in 10 km radius	
16	Coal user locations	Motipura Choki, Chhabra, Distt-Baran (Rajasthan) Village-Undal, Tehsil-Jhalrapatan, Distt-Jhalawar (Rajasthan) Thukrana, Tehsil-Suratgarh, Distt-Shriganganagar (Rajasthan)	
17	Socio-economic factors	No additional Resettlement and Rehabilitation issues are involved.	
18	Seismic zone	Zone-II as per IS-1893 (Part-1)-2002	

The villages located in / immediate peripheries of the block are given in Table-1.6. Kente village is located on the west central part of the block and comprises two clusters of hamlets viz. Mahadevpara and Banapara. It is sparsely populated.

Table 1-6 VILLAGES LOCATED IN / IMMEDIATE PERIPHERY OF THE BLOCK

Sr. No.	Name	Distance and Direction w.r.t Mining Site	
1	Salhi	1.6	NW
2	Hariharpur	0.3	NW
3	Parsa	0.2	N
4	Kanta	Mine Lease	
5	Ghatbarra	Mine Lease	
6	Parogiya	3.0	SE
7	Basan	2.0	E

Sr. No.	Particular	Total (in Ha) (15 MTPA)	Total (in Ha) (21 MTPA)
	Total (B)	294.609	294.609
	GRAND TOTAL (A + B)	2682.856	2682.856

Source: Mine Plan

The total area of 2682.856 ha includes 1871.118 ha of forest land, 109.952 ha of Government land and 701.786 ha of tenancy land. There are 7 villages falling in Parsa East and Kanta Basan coal block. Details of land (village wise) which has been acquired for Parsa East and Kanta Basan opencast project and total land of each village are given in Table-2.5.

Table 2.5: VILLAGE WISE LAND USE PATTERN

Name of the Village	Total Area (ha)	Land use pattern (ha)						Total Land (in ha)
		Forest Land			Govt Land	Tenancy Land		
		Revenue Forest		Protected Forests		Adiwasi	Non Adiwasi	
		Chhote Jhhar ka Jungle	Bade Jhhar ka Jungle					
Salhi	1171.00	14.165	-	34.820	14.288	23.973	1.092	88.338
Hariharpur	441.00	2.768	19.321	110.156	10.187	34.815	0.735	177.942
Parsa	1266.00	50.378	8.542	138.036	18.320	100.398	12.533	328.207
Kente	1284.00	83.380	0.782	505.928	14.890	194.387	0.089	799.456
Ghatbarra	2447.00	61.660	0.611	706.783	52.256	212.217	121.547	1155.085
Parogiya	3956.00	-	-	128.130	-	-	-	128.130
Basan	1519.00	-	-	5.698	-	-	-	5.698
Total		212.351	29.256	1629.551	109.941	565.79	135.996	2682.856

Source: Mine Plan

Land Use Pattern of ML Area including Coal Washery

The present land use pattern of ML area is shown in Table-2.6.

Table 2.6: DETAILS OF PRESENT LAND USE PATTERN

Sr. No.	Particular	Forest	Government	Private	Total
A	Mining				
1	Excavation area & barrier	1704.744	104.262	579.241	2388.247
B	Infrastructure & OB Dump Area				
1	External dump	58.502	3.919	50.234	112.655
2	Infrastructure	24.242	0.018	11.964	36.224
3	Coal evacuation route	21.690	0.102	8.468	30.260
4	CHP & washery	12.127	0.000	16.254	28.381
5	Reject based thermal power project	29.090	0.140	13.340	42.570
6	Plantation area	3.973	0.011	0.002	3.990
4	Rationalization area	16.751	1.499	22.282	40.532
	TOTAL (B)	166.374	5.690	122.545	294.609
	Grand Total (A + B)	1871.118	109.952	701.786	2682.856

Source: Mine Plan

Table 3.34 LIST OF PLANKTON RECORDED DURING STUDY PERIOD

Sr. No	Phytoplankton	Zooplankton
1	<i>Actinastrum</i> sp.	<i>Amoeba</i> sp.
2	<i>Anabaena</i> sp.	<i>Brachionus</i> sp.
3	<i>Coelatrum</i> sp.	<i>Cerio daphnia</i> sp.
4	<i>Cyclotella</i> sp.	<i>Cyclops</i> sp.
5	<i>Cymbella cymbiformis</i>	<i>Cypris</i> sp.
6	<i>Nitzshia</i> sp.	<i>Keratella tropica</i>
7	<i>Pinnularia</i> sp.	--
8	<i>Synedra</i> sp.	--
9	<i>Spinulina</i> sp.	<i>Pseudo diaptomus</i> sp.

3.9.8 Conclusion

From the primary survey and as per forest department records and review of literature, there are no sanctuaries, national parks, biosphere reserves in the study area.

In the buffer zone of the study area, there are few Schedule-I species which are recorded in the study area such as Indian elephant, peafowl, jungle cat, and sloth bear. Rest of the species is recorded in the following Schedules of II, III, IV and V of Indian Wildlife (Protection) Act, 1972, amongst mammals and reptiles.

Migrant birds of belonging to raptor species such as eagle species and kites are listed in the Schedule -I of the Indian Wildlife (Protection), Act 1972 apart from *Pavo cristatus* – peafowl are confined in the Schedule-I.

Among reptilian species *Python molurus* (Indian rock python) in the study area are confined in the Schedule I, and remaining belongs to Schedule-II, IV of the Indian Wildlife (Protection), Act, 1972.

Apparently, there is no endangered botanical flora in the study area as per the Botanical Survey of India records.

3.10 Demography and Socioeconomics

The demographic and socio-economic conditions prevailing in the 10 km radius of the proposed expansion project boundary at Parsa Village, Ambikapur, Surajpur tehsils in Surguja district and Katghora tehsil in Korba district of Chhattisgarh is analyzed and presented in this section.

The expansion project doesn't have any rehabilitation and resettlement issues as it is planned to be established within the existing mine and plant site for which land acquisition has already completed. But the project proponent is committed to take up the socio-economic development initiatives not only to minimize the negative impact on the population but also to improve the socio-economic status of population living in 10 km radius of the plant as its sustained effort as part of corporate social responsibility.

- The worked-out slopes will be stabilized by planting appropriate shrub/grass species on the slopes.
- The mine water will be regularly tested for presence of any undesirable elements and appropriate measures will be taken in case any element is found exceeding the limits; and
- Seepage water and rainwater collected in the open pits will be pumped out and discharged with natural drainage system after de-silting in settling ponds.

➤ **Ground Water Pollution Control Measures**

- The domestic sewage from the canteen and toilets will be routed to septic tanks followed by soak pits. The domestic wastewater from the colony will be treated in sewage treatment plant and used for horticulture.
- Regular monitoring of water levels and quality in the existing open wells and bore well in the vicinity will be carried out both with reference to area spread and time intervals to study the hydrology of the area. If found necessary, additional observation wells will be sunk for monitoring the water table levels and quality around the mine representing both upstream and downstream conditions.

4.5.3 Wildlife Conservation Plan (WCP)

A comprehensive study has been carried out by Institute of Forest Management (IIFM), Bhopal on Flora and Fauna of the study area and Mr. P.C. Agrahari, developed a wildlife conservation plan is given in Annexure- XV.

➤ Cost Calculation for the plan

The cost of wildlife conservation plan is given in Table-4.14.

Table 4.14 COST OF WILDLIFE CONSERVATION PLAN FOR PARSA EAST AND KANTA BASAN OPENCAST COAL MINE PROJECT

Sr. No.	Items of the work	Approx. Cost (In Crores)
1	(a) Survey & preparation of plan	0.20
	(b) Creation of forest resources in peripheral area buffer zone line fodder fuel wood and MFP by identifying the suitable area for respective plantations	0.05
	(c) Survey and identification of wetland in proposed area	0.10
	(d) Survey and study on broodery of proposed site	0.05
	(e) Habitat survey for the respective project site	0.05
	(f) Survey and identification of reptiles, birds, butterfly, insects available in the project site	0.10
	(g) Survey of medicinal plants and their identification in proposed project site.	0.10
2	Protection work in Core Area (i.e. fencing of boundaries. Fencing of fields and	1.50

Sr. No.	Items of the work	Approx. Cost (In Crores)
	villages as per requirement	
3	Fire protection works	1.50
4	Protection from grazing and illicit felling	1.00
5	Empowering people for protection, eco-development works etc.	1.00
	(a) Construction of office building for joint forest management committees come meeting hall	0.50
	(b) Construction of rescue centers for mitigation human wildlife conflict with trained personals	0.50
	(c) Provision for compensation to loss of crop, property human life and life and injury by wildlife for entire plan period	1.50
6	Soil & moisture conservation works	2.00
7	Weed management under guidance of expert scientist are experience forester.	2.00
8	Management & development of grasslands by planting of local species of grasses which are found in the area	1.50
9	Management of identified wetland for better wildlife habitat formation	0.05
10	Physio chemical properties of wetland in the initial, mid and end of the project for the respective project site.	0.05
11	Conservation of the floral diversity, creation of biodiversity parks for creation of gene pool	2.00
12	Protection of the habitats of geomorphological origin and their conservation	0.50
13	Conservation of the riparian zones	1.00
14	Habitat improvement in the elephant corridor area. Protection of crop and property in the affected villages training and miscellaneous other activities.	2.50
15	Research and monitoring and evaluation	0.75
16	Miscellaneous works (proposed by field officers and approved by the C.F)	1.50
	Total	22.0 Crores

4.5.4 Afforestation Programme and Conservation Strategies for Flora

A comprehensive study has been carried out by Institute of Forest Management (IIFM), Bhopal on Flora and Fauna of the study area and developed a wildlife conservation plan. The conservation strategies for flora of the report are given below.

➤ **Site Preparation**

Site preparation will include (a) collection and conservation of the topsoil (b) backfilling with the overburden (c) collection, spreading and mixing of organic matter and (d) spreading topsoil.

भारतसरकार
पर्यावरणवन एवंजलवायुपरिवर्तनमंत्रालय
एकीकृत क्षेत्रीय कार्यालय,
अरण्य भवन, नार्थब्लॉक,
सेक्टर-19, नयारायपुर, अटलनगर
छत्तीसगढ़ - 492002
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GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FORESTS &
CLIMATE CHANGE
INTEGRATED REGIONAL OFFICE
ARANYA BHAWAN, NORTH BLOCK, SECTOR-19,
NAYA RAIPUR, ATAL NAGAR, CHHATTISGARH - 492002
Email - iro.raipur-mefcc@gov.in

पत्र सं. EC-866/RON/2018-NGP / 483

दिनांक: 19/01/2022

सेवा में,

The Managing Director,
Rajasthan Rajya Vidyut Utpadan Nigam Ltd,
Vidyut Bhawan, Janpath Joyti Nagar,
Jaipur-302005(Rajasthan)
Email: fuel.rvun@gmail.com

विषय : Certified copy of compliance status report of EC stipulations -reg.

- सन्दर्भ: 1. Letter no. J-11015/03/2008-IA. II(M) dated 10th August, 2018
2. Through E-mail dated 18.10.2021

महोदय,

With reference to the above, I am directed to enclose herewith certified copy of the Monitoring Report providing status of compliance of environment clearance stipulations in accordance with MoEF& CC, New Delhi's Circular No. J-11015/03/2008-IA. II (M) dated 10.08.2018 as received vide email from R. S. Agrawal, mentioned above.

This issues with approval of the Regional Officer, Integrated Regional Office, Raipur.

Following observations have been made during visit: -

- Project authorities are directed to take the necessary measures as per mining plan/EIA/EMP for stabilization of OB dump 2(82 ha approx.) and ATR in this regard shall be submitted to this office (**Land reclamation and water conservation - V**)
- Project authorities are directed to undertake 3 tier plantation as per the stipulation condition and ATR in this regard shall be submitted to this office (**Land reclamation and water conservation - VII**).
- On the day of monitoring, it has been observed that no fly ash is being utilized for the stabilization of OB dumps as per SOP issued by CPCB (**Land reclamation and water conservation - XI**).
- Project authorities are directed to submit the Ambient air quality report w.r.t heavy metals as per stipulated condition and the reports of the same shall be submitted to this office (**Monitoring of project - II**)
- Project authorities are directed to submit the water quality reports of at the upstream and downstream of water bodies to his office as per stipulated condition (**Monitoring of project - VI**).
- On the day of monitoring, it was observed that coal rejects have been transported through Rail. It was informed that some percentage of the rejects has been sent to Raipur Energy Limited, Raipur, Chhattisgarh and some percentage of the rejects has been sent to M/s.

MIS POWER, MAANYA PRADESH. However, the PP did not provide the exact quantity of reject are being sent to the both the units. PA has been directed to submit the quantity (in MT) was sent to the M/s. Raipur Energyn Ltd from the FY 2018-19 to till date to this office.

- vii. Project authorities are directed to submit the efforts made to reduce energy consumption by conservation, efficiency improvements and use of renewable energy to this office (Miscellaneous-I)

Encl: As stated

भवदीय,

(डॉ. मासुद्दोज आदिराजु)
वैज्ञानिक 'सी'

Copy to:

- i. The Member Secretary, IA Division (Coal Mining), Ministry of Environment Forest & Climate Change, Indira Paryavaran Bhawan, Aliganj, Jorbagh Road New Delhi-110 003 (Email: lk.bokolia@nic.in)
- ii. Addl. Director (Monitoring Cell), Ministry of Environment Forest & Climate Change, Indira Paryavaran Bhawan, Aliganj, Jorbagh Road New Delhi-110003 (Email: shruti.rai@nic.in)

वैज्ञानिक 'सी'

Monitoring Report
On
The Status of Compliance of Environmental Clearance Stipulations
Expansion of Parsa East and KantaBasan Opencast Coal Mine from 10
MTPA to 15 MTPA and Pit Head Coal Washery from 10 MTPA to 15 MTPA
of M/s Rajasthan Rajya Vidyut Utpadan Nigam ltd in total project area of
2682.856 ha, located in Hasdeo-Arand Coalfields in District Sarguja
(Chhattisgarh)- Environment Clearance regarding.

1. Contents:

1. Project details
2. Present status
3. Site pictures
4. Condition wise compliance status
5. General remarks

1	Project type	1(a) Mining
2	Name of the Project	Expansion of Parsa East and KantaBasan Opencast Coal Mine from 10 MTPA to 15 MTPA and Pit Head Coal Washery from 10 MTPA to 15 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam ltd in total project area of 2682.856 ha, located in Hasdeo-Arand Coalfields in District Sarguja (Chhattisgarh)- Environment Clearance regarding.
3	Clearance letter(s)/OM No. & date	F. No. J-11015/03/2008-IA-II (M), dated 10.08.2018.
4	Location	District Sarguja (Chhattisgarh)
5	Address of Correspondence	The Managing Director Rajasthan Rajya vidyutUtpadan Nigam Ltd. Vidyut Bhawan, Janpath, Joyti Nagar, Jaipur-302005(Rajasthan) Email: fuel.rvun@gmail.com
6	Date of Monitoring	17.11.2021

2. Present Status:

a) Chronology of EC and its Amendments:

- i. The MoEF&CC has accorded Environmental Clearance expansion of Parsa East &Kanta Basan Opencast Coal Mine Project (10 MTPA)and Pit Head Coal Washery (10 MTPA) of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd., located in Hasdeo-Arand Coalfields, in villages Parsa, Kanta, Basan, Salhi, Hariharpur, Ghatbara, Parogiya, Tehsil Udaypur, District-Surguja, Chhattisgarh vide letter no J-11015/03/2008-IA-II (M), dated 21/12/2011.
- ii. The MoEF&CC accorded Corrigendum to Parsa East and Kanta Basan Opencast Coal Mine Project (10 MTPA) and Pit Head Coal Washery (10 MTPA) of M/s Rajasthan

- Rajya Vidyut Utpadan Nigam Ltd., located in Hasdeo-Arand Coalfields, in villages Parsa, Kanta, Basan, Salhi, Hariharpur, Ghatbara, Parogiya, Tehsil Udaypur, Distsarguja, Chhattisgarh vide letter no J-11015/03/2008-IA.II(M) dated 22/06/2012
- iii. The MoEF&CC has accorded Corrigendum to Parsa East and Kanta Basan Opencast Mine (10 MTPA) and Coal Washery (10 MTPA) of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd., of Hasdeo-Arand Coalfields, in Tehsil Udaipur, DistSarguja, Chhattisgarh-Permission to set up an interim washery of 2 MTPA capacity based on Barrel washing technology for washing initial production vide letter no J-11015/03/2008-IA. II (M) dated 04/03/2013
 - iv. The MoEF&CC has accorded Revalidation of Environmental Clearance of Parsa East and Kanta Basan Opencast Coal Mine Project (10 MTPA) and Pit Head Coal Washery (10 MTPA) in a total project area of 2711.034 ha; located in Hasdeo-Arand Coalfields, in villages Parsa, Kanta, Basan, Salhi, Hariharpur, Ghatbara, Parogiya, Tehsil Udaypur, Distsarguja Chhattisgarh to M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd vide letter no J-11015/03/2008-IA.II (M) dated 25/06/2015
 - v. EC amendment for Parsa East and Kanta Basan Opencast Coal Mine Project of 10 MTPA and Pit Head Coal Washery of 10 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd, located in hasdeo-Arand Coalfields in District Sarguja (Chhattisgarh) vide letter no J-11015/03/2008.IA.II(M) dated 29/12/2015
 - vi. The MoEF&CC has accorded Environmental Clearance expansion of Parsa East &Kanta Basan Opencast Coal Mine from 10 MTPA to 15 MTPA and expansion of Pit Head Coal Washery from 10 MTPA to 15 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd. (RVUNL), in total project area of 2682.856 ha located in Hasdeo-Arand Coalfields in District-Surguja, Chhattisgarh vide letter no J-11015/03/2008-IA-II (M), dated 10.08.2018.
 - vii. EC amendment for Parsa East and Kanta Basan Opencast Coal Mine Project and Pit Head Coal Washery of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd, located in Hasdeo-Arand Coalfields in District Sarguja (Chhattisgarh) vide letter no J-11015/03/2008.IA.II(M) dated 24/07/2019

b) Consent to Establish (CTE):

- i. CTE was obtained from CECB, Raipur to establish for expansion of Parsa East &Kanta Basan Open Cast Coal Mine from 10.0 MillionTonnes/Annum to 15.0 Million Tonnes/Annum and Pit Head Coal Washery from 10.0 Million Tonnes/Annum to 15.0 Million Tonnes/Annum with vide letter No. 5119/TS/CECB/2018 dated 17.09.2018.

c) Consent to Operate (CTO):

- i. Renewal of the Consent to Operate was obtained from CECB, Raipur for Mining and Washing of Coal with capacity of 15.0 MTPA with vide letter No. 6567/TS/CECB/2018, Nava Raipur, Atal Nagar, Raipur, dated 10.12.2018.

- ii. Renewal of the Consent to Operate was obtained from CECB, Raipur for Mining and Washing of Coal with capacity of 15.0 MTPA with vide letter No. 7802/TS/CECB/2019, Nava Raipur, Atal Nagar, Raipur, dated 02.12.2019 valid up to 30.11.2020.
 - iii. Renewal of the Consent to Operate was obtained from CECB, Raipur for Mining and Washing of Coal with capacity of 15.0 MTPA with vide letter No. 6191/TS/CECB/2020, Nava Raipur, Atal Nagar, Raipur, dated 14.10.2020 valid up to 30.11.2021.
- d) PA has provided the details of show-cause notices issued by the MoEFCC /CPCB/CECB in the last three years. (**Annexure-1**) MoEFCC has issued Show Cause notice with vide letter No J-11015/03/2008- IA.II (M) dated 11.08.2020 and *it was stated that as per specific condition (ii) of EC dated 21st December, 2011 stipulated was amended on 29th December, 20154 and time period for commission the FBC was increased to 6-7 years. It quotes "The linked 4*135 MW FBC Power plant shall be commissioned in 6-7 years"*. **On the day of monitoring, it was observed that no FBC power plant was installed.**
- e) PA has provided the details of court cases in any court of law against the unit. (**Annexure-2**)
- f) **On the day of monitoring, it was observed that coal rejects have been transported through Rail. It was informed that some percentage of the rejects has been sent to Raipur Energyn Limited, Raipur, Chhattisgarh and some percentage of the rejects has been sent to M/s. MB Power, Madhya Pradesh. However, the PP didn't provide the exact quantity of Reject are being sent to the both the units.**

2160

भारत सरकार
पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय
एकीकृत क्षेत्रीय कार्यालय,
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GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FORESTS &
CLIMATE CHANGE
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NAYA RAIPUR, ATAL NAGAR, CHHATTISGARH - 492002
Email - iro.raipur-mefcc@gov.in

पत्र सं. 3-32/2014(ENV)/1206
सेवा में,

दिनांक: 20/01/2023

The Managing Director,
Rajasthan Rajya Vidyut Utpadan Nigam Ltd,
Vidyut Bhawan, Janpath Joyti Nagar,
Jaipur-302005(Rajasthan)
Email: fuel.rvun@gmail.com

विषय : Certified copy of compliance status report of EC stipulations -reg.

सन्दर्भ: 1. F. No. J-11015/03/2008-IA-II (M), dated 10.08.2018 and its amendments.
2. Your letter no. RVUN/ACE(Fuel)/D.4612, dated 20.12.2022.

महोदय,

With reference to the above, I am directed to enclose herewith certified copy of the Monitoring Report providing status of compliance of environment clearance stipulations in accordance with MoEF& CC, New Delhi's Circular F.No. IA3-22/10/2022-IA.III[E 177258] dated 08.06.2022 as received vide letter from M/s RVUN PEKB Opencast Coal Mine Project, mentioned above.

Following observations have been made during visit: -

- i. It was informed by the PP that they have applied for CTE for 18 MTPA to CECB with application ID 9365583 dated 18.04.2022, however it is still in progress. PA has been informed that at present the mining operation were commenced as per the earlier Consent to Operate obtained from CECB form Mining and washing of coal of 15 MTPA.
- ii. Project authorities are directed to submit the progressive compliance of the construction work of 3rd silo of 2000 T to this office on quarterly basis (Specific Condition – III).
- iii. Project authorities are directed to submit the progress of installation of 9 MW capacity solar plant to this office on quarterly basis (Specific Condition – V).
- iv. Project authorities are directed to submit the compliance of the construction of the multispecialty hospital as per stipulated condition on quarterly basis to this office (Specific Condition – VII).
- v. Project authorities are directed to install the fixed fog cannon as per the stipulated condition and compliance of the same shall be submitted to this office (Specific Condition – XIII).
- vi. Project authorities are directed to provide the bio toilets to the villages located within the study area as per the stipulated condition and compliance of the same shall be submitted to this office (Specific Condition – XV).
- vii. Project authorities are directed to expedite the matter with State Forest Department, Govt of Chhattisgarh and its implementation status shall be submitted to this office (Green Belt – I).
- viii. It was informed that 100 % washed coal and 90% reject coal is being transported through rail mode only. PP has obtained the permission from MoEFCC for transportation of reject coal through road mode for three years vide MoEFCC latter dated 23.12.2021.

This issues with the approval of the IGF(Central) vide diary No. 3588 dated 20/01/2023.

Encl: As stated

भवदीय,

(डॉ. श्रुतिराज आदिराज)
वैज्ञानिक 'डी'

Copy to:

- i. The Member Secretary, IA Division (Coal Mining), Ministry of Environment Forest & Climate Change, Indira Paryavaran Bhawan, Aliganj, Jorbagh Road New Delhi-110 003
- ii. Addl. Director (Monitoring Cell), Ministry of Environment Forest & Climate Change, Indira Paryavaran Bhawan, Aliganj, Jorbagh Road New Delhi-110003 (Email: shruti.rai@nic.in)

वैज्ञानिक 'डी'

2162

The Status of Compliance of Expansion of Parsa east and Kant Basen (PEKB) Opencast Coal Mine from 15 MTPA to 18 MTPA in total ML area of 2682.856 ha of M/s. Rajasthan Rajya Vidyut Utpadan Nigam Ltd.Environmental Clearance- regarding.

Contents:

1. Project details
2. Present status
3. Site pictures
4. Condition wise compliance status
5. General remarks

1	Project type	
2	Name of the Project	Expansion of Parsa east and Kant Basen (PEKB) Opencast Coal Mine from 15 MTPA to 18 MTPA in total ML area of 2682.856 ha of M/s. Rajasthan Rajya Vidyut Utpadan Nigam Ltd.Environmental Clearance- regarding.
3	Clearance letter(s)/OM No. & date	J-11015/03/2008-IA-11 (M) dated 14 th February, 2022
4	Locations	Village-Parsa, Udaipur Tehsil, District Surguja, Chhattisgarh.
5	Address of Correspondence	Parsa East & Kanta Basan Coal Mine Project & Pit Head Coal Washery (15 MTPA)Village-Parsa, Udaipur Tehsil, District Surguja, Chhattisgarh.
6	Date of Monitoring	17.01.2023

2. Present Status:

a. Chronology of EC and its Amendments:

- i. Environment Clearance (EC) letter no. J-11015/03/2008-IA-II (M) dated 21st December 2011.
- ii. EC Corrigendum letter no. J-11015/03/2008-IA.II (M) dated 2nd June, 2012.
- iii. EC amendment (permission to set up interim washery) letter No. J-11015/03/2008-IA.II (M) dated 4th March, 2013.
- iv. EC revalidation letter no. J-11015/03/2008-IA.II (M) dated 25th June, 2015.
- v. EC amendment letter no. J-11015/03/2008-IA.II (M) dated 29th December, 2015.
- vi. EC for Expansion of Parsa East and Kanta Basan Opencast Coal Mine from 10 MTPA to 15 MTPA and Pit Head Coal Washery from 10 MTPA to 15 MTPA letter no. No. J-11 015/03/2008-IA-11 (M) dated 10th August 2018. (This EC has superseded all the earlier EC/revalidated/amendment granted as per condition no. 12).
- vii. EC Amendment letter no. No. J-11 015/03/2008-IA-11 (M) dated 24th July 2019 (*This EC expired*).
- viii. EC amendment letter issued vide letter no. No. J-11 015/03/2008-IA-11 (M) Dated 23rd December 2021 (*amendment for road transportation of reject*)
- ix. Environmental Clearance for expansion of PEKB Mine from 15 MTPA to 18 MTPA (ROM) granted by MoEF&CC 14th February 2022.

b. Chronology of Consent to Establish (CTE):

CTE was obtained from CECB, Raipur to establish for expansion of Parsa East &Kanta Basan Open Cast Coal Mine from 10.0 MillionTonnes/Annum to 15.0 Million Tonnes/Annum and Pit Head Coal Washery from 10.0 Million Tonnes/Annum to 15.0 Million Tonnes/Annum with vide letter No. 5119/TS/CECB/2018 dated 17.09.2018.

c. Consent to Operate (CTO):

- i. Renewal of the Consent to Operate was obtained from CECB, Raipur for Mining and Washing of Coal with capacity of 15.0 MTPA with vide letter No. 6567/TS/CECB/2018, Nava Raipur, Atal Nagar, Raipur, dated 10.12.2018.
- ii. Renewal of the Consent to Operate was obtained from CECB, Raipur for Mining and Washing of Coal with capacity of 15.0 MTPA with vide letter No. 5986/TS/CECB/2021, Nava Raipur, Atal Nagar, Raipur, dated 25.11.2021 valid up to 30.11.2024.
- iii. Amendment in Consent to Operate was obtained from CECB, Raipur for Mining and Washing of Coal with capacity of 15.0 MTPA with vide letter No. 438/TS/CECB/2022, Nava Raipur, Atal Nagar, Raipur, dated 21.04.2022 valid up to 3 years.

3. Site Pictures



Fig.1. RO water plant installed at Sahli Village as per MoEFCC amendment dated 23.12.2021.



Fig.2. View of one of the class room in the Adani Vidya Mandir under CSR.



Fig.3. View of Garland drains at toe of the OB dump Number 1.



Fig.4. Additional AAQMS at Shivr Nagar village as per MoEFCC letter dated 14.02.2022



Fig.5. View of one of the settling tank.



Fig.6. 3 - Tire plantation along the rail siding road.



Fig.15 View of Satellite based automatic slope stability radar.

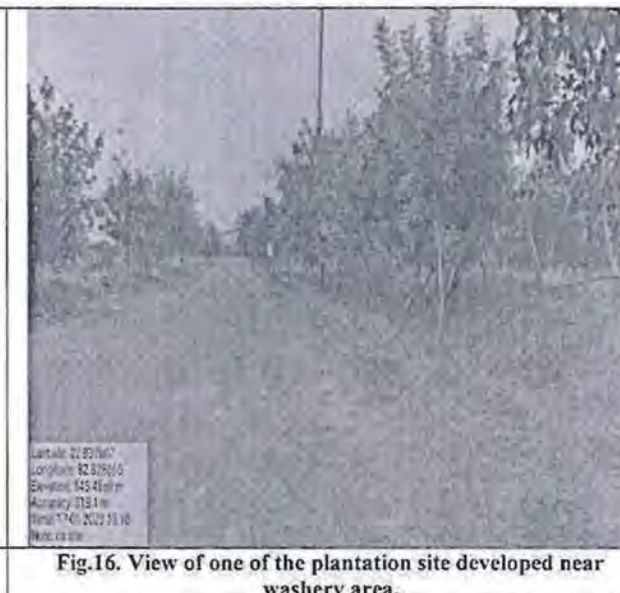


Fig.16. View of one of the plantation site developed near washery area.

4. Condition wise compliance status

A	SPECIFIC CONDITIONS
i.	<p>PP shall obtain the Consent to Establish/Consent to Operate for 18 MTP A of mine production from SPCB prior to production.</p> <p>Status of Compliance: It was informed by the PP that they have applied for CTE for 18 MTPA to CECB with application ID 9365583 dated 18.04.2022, however it is still in progress. PA informed that at present the mining operation were commenced as per the earlier Consent to Operate obtained from CECB form Mining and washing of coal of 15 MTPA.</p>
ii.	<p>PP must comply with all the non-compliances or partially compliances as per the certified compliance report w.r.t EC conditions stipulated in EC dated 10th August 2018 and EC dated 21st December, 2011 and EC amendment dated 24th July, 2019, and furnish the detail of the compliance of EC conditions prescribed with amendment in EC vide letter dated 23rd December, 2021 in the six monthly compliance report of IRO and respective state pollution board.</p> <p>Status of Compliance: Complied with respect to site visit. The updated status of the non/partial compliances reported by this office vide letter dated 19.01.2022 is annexed as Annexure- A.</p>
iii.	<p>PP shall construct 3rd silo of 2000 Tonnes and commission by October 2022 and onward no additional coal will be transported through road.</p> <p>Status of Compliance: Partially Complied with respect to site visit. It has been observed that construction work of 3rd silo of 2000 Tonnes is in under process and PP informed that commissioning of the same will be completed by July, 2023. PA has been asked to submit the progressive compliance of the construction work of 3rd silo of 2000 T to this office on quarterly basis.</p>
iv.	<p>Third party monitoring by reputed instituted for air quality (including heavy metal analysis) shall be carried out at identified locations, both ambient and the process area, to arrive at impact of the proposed expansion at regular interval of 3 years.</p> <p>Status of Compliance: Complied with respect to site visit. PP has submitted that ambient Air Quality Monitoring & work zone monitoring reports done by NABL accredited agency along with heavy metal analysis to this office, the same have been analysed and all the parameters are within the standard limits.</p>
v.	<p>PP must carry out the energy audit to reduce the energy demand including submission of time</p>

	<p>bound plan to install the solar power plants in the buffer area.</p> <p>Status of Compliance: Complied with respect to site visit. PP has submitted the Energy audit report conducted by Elion Technologies & Consulting Pvt Ltd in October-21 and report of the same is submitted to this office. It was also informed that CREDA approval is in under process for 9 MW (AC) capacity Solar plant. Work Order for construction & commissioning of solar power plant is under final stage. PA has been asked to submit the progress of installation of 9 MW capacity solar plant to this office on quarterly basis.</p>
vi.	<p>PP to obtain 5-star rating from Ministry of Coal.</p> <p>Status of Compliance: Complied with respect to site visit. PP has submitted the 5- star rating certificate obtained from MoC.</p>
vii.	<p>PP shall construct a multispecialty hospital of 100 beds for local people within 10 km buffer area of coal mine within 2 years of issue of this EC letter. Further, this hospital will accept Pradhan Mantri Jan Arogya Yojana for medical facilities to nearby villagers.</p> <p>Status of Compliance: Partially Complied with respect to site visit. It was informed that PP has submitted the application to District Collector, Sarguja for allotment of 4 Ha land for construction hospital as per the stipulated condition. PA has been asked to submit the compliance of the construction of the multispecialty hospital as per stipulated condition on quarterly basis to this office.</p>
viii.	<p>PP shall make slope stabilization of the OB dump 2 of 82 ha and plantation of only Sal trees will be done within 2 years.</p> <p>Status of Compliance: Being Complied with respect to site visit. On the day of monitoring, it has been observed that plantation of sal tree is being undertaking on OB dump no 2. It was informed that 18647 sal trees have been planted covering an area of 7.46 Ha from march, 2022 to till date.</p>
ix.	<p>Monitoring of Atem River and Tara stream shall be conducted quarterly for drinking water parameter including trace metals and data so generated submitted to CECB and Ministry's IRO Raipur.</p> <p>Status of Compliance: Being Complied with respect to site visit. PP has submitted the monitoring report w.r.t atem river and tara stream for drinking water parameter including trace metals from NABL accredited lab to this office. The monitoring reports have been analysed and it was observed that all the parameters are within the prescribed standard limits.</p>
x.	<p>PP shall submit river conservation plan of Atem river from independent expert and submit it to Ministry's IRO within one year and further implement the recommendation of this conservation plan with strict timeline. If feasible, river conservation plan shall be dovetailed with State's river conservation plan to supplement their efforts.</p> <p>Status of Compliance: Complied with respect to site visit. PP has submitted the report of conservation plan of Atem from NABL accredited agency to this office. It was informed that the recommendations of the conservation plan are already implemented.</p>
xi.	<p>PP shall explore to deploy CNG/LNG or electrical power run dumpers or equipment's for mining operations.</p> <p>Status of Compliance: It was informed that PP has explored to use CNG/LNG or electrical power run dumpers or equipment's for mining operations. However, it was informed that no such dumpers are available in the domestic market.</p>
xii.	<p>PP shall implement Peripheral tree plantation with Miyawaki method of 50 mts width within 2 years through independent expert.</p> <p>Status of Compliance: Complied with respect to site visit. It was observed that safety zone of 7.5m width with thickness plantation has already beer implemented except in the south west direction as the mine is progressive in that direction. It was</p>