SUMMARY OF ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR PUBLIC HEARING

Greenfield Wet Type Coal Washery Project Based on Heavy Media Cyclone Technology of 2.6 MTPA

At

Village-Amli, Tehsil- Kota, District-Bilaspur, Sate- Chhattisgarh

Project Proponent :-

M/S Veeraj Earrthfusion Private Limited

Corporate Office: - 6035, 6th Floor, Currency Tower VIP Square, Raipur, Chhattisgarh-492001

Consultant :-

GRASS ROOTS RESEARCH & CREATION INDIA (P) LTD.
(QCI/NABET Accredition No. NABET/EIA/24-27/RA0354)
F-374 & 375, Sector-63, Noida, U.P.

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1.0 PROJECT DESCRIPTION

M/s Veeraj Earrthfusion Private Limited (VEPL) proposed to setup the facility of coal washery of capacity 2.6 MTPA.

The project site is located at Village-Amli, Tehsil-Kota, District–Bilaspur, Chhattisgarh. Connecting road is adjacent from project site in south direction. NH-45 is at 2.3 km in SSW direction. Kota Ratanpur road is at 1.1 km in South direction. SH-10 is at 4.7 km in WSW direction and NH-130 is at 12.8 km in ESE direction. The nearest railway station Kargi road which is located at about 1.0 km in South direction and nearest Airport is Bilasa Devi Kevat Airport, Bilaspur, which is situated at about 35 km in SSE and Kota Road Air Strip is situated at about 7.3 km in South direction. The nearest habitation from project site is Kota at 1.0 km in SW direction. Bilaspur city is at 14.5 km in west direction. Lamer Nala is at 2.0 km from the site. Arpa River is 3.4 km from project site in East direction. Bhaisajhar Dam is at 5.4 km in west direction, Chapi Nala is at 6.7 km in east direction. Ghongha Nadi is at 4.0 km in west direction, Ganjar Pahar PF is at 5km in west direction and Lormi RF is at 1.9 km in w direction. Kuajati RF is 3.5 km in east direction. Achanakmar Tiger reserve is 11 km in NW direction and it ESZ boundary at 5.9 km in NW direction. The location is in Seismic Zone-III.

Total land of the project is 9.71 ha. Total Land is private land and under the possession of M/s Veeraj Earrthfusion Private Limited. Conversion of land is under progress, out of 9.71 ha land, 6.699 ha land has been converted for industrial use. Conversion of remaining 3.011 ha land is under process.

84 persons will be employed directly in different area. About 66 persons will be indirect employed.

Water requirement for the proposed project is 490 KLD. Water will be sourced from ground water.

2.8 MW of electricity will be required for operation of proposed plant; which will be supplied by state grid.

Application was submitted for TOR vide proposal no. IA/CG/CMIN/509109/2024 dated 28th November 2024. Project was considered in 21st EAC (Coal Mining) Meeting dated 20th -21st Feb 2025 and subsequently ToR has been granted by Ministry of Environment, Forests and Climate Change (MoEF&CC) vide File No. IA-J-11015/77/2024-IA-II(M) dated

29.03.2025. Draft EIA/EMP is being prepared and will be submitted to CECB to conduct public hearing as per the norms.

The proposed project activity falls under the category of "Coal Washeries" and categorized as “Category-A” under project activity 2 (a) of EIA Notification 2006 & its amendment till date.

Coal washery comprises unloading of raw coal, storing, handling, crushing, screening and coal cleaning using water mixed with magnetite. No wastewater is being discharged outside from the coal washery. Bag Filters will be installed to control Dust from crusher and screens.

2.0 DESCRIPTION OF BASELINE ENVIRONMENT

Baseline data was generated during Post-Monsoon season from 1st October 2024 to 31st December 2024 in 10 km area around the site was considered as study area. Data was generated by following the standard/approved procedures of the Ministry of Environment Forests and Climate Change and the Central Pollution Control Board. Meteorological data on wind speed, wind direction, relative humidity and temperature was generated near the project site. Ambient air quality was generated at 8 locations. Noise levels were measured at 8 locations. Surface water quality was collected and analyzed at 8 locations; Groundwater quality was analyzed at 8 locations. Soil quality was analyzed at 5 locations. Data on plants and animals present in the study area was collected from the District Forest Department. Data on landuse, demography, occupation pattern, cropping pattern, infrastructure facilities were collected from District Statistics Handbook and the Tehsil records.

During the study period minimum temperature was recorded 13.1^{O}C and maximum temperature was recorded as 30.5^{O}C, Minimum humidity was recorded 48% and maximum Humidity was recorded as 68%. Dominant wind direction in the study period was from South to North during the study period. Average Wind Speed during study period is 2.4 m/s. Based on the wind direction and wind speed it is interpreted that maximum dispersion of air pollutant will be in SW direction during the study period.

Summary of Ambient Air Quality

- PM_{10} = 56.8 – 97.1 µg/m^3

- $PM_{2.5}$ = 28.5 – 57.2 µg/m^3
- SO_2 = 4.8 – 9.9 µg/m^3
- NO_2 = 11.3 – 28.8 µg/m^3
- CO = 100 – 500 µg/m^3

The noise level study shows that the noise levels are meeting the acceptable norms. The noise level in area varies from 42.8 to 60.7 dBA during daytime and 35.4 to 52.6 dBA during the night time.

Summary of Ground Water Quality

- pH = 7.35 – 7.58
- Total dissolved solid = 260 to 490 mg/L
- Total hardness = 226-276 mg/L
- Total Alkalinity = 187-263 mg/L
- Iron = 0.17-0.29 mg/L
- Total coliform was not found in any samples

The groundwater quality meets the specification prescribed by BIS for drinking (IS:10500:2012)

Summary of Surface Water Quality

- pH = 7.23-8.02
- TDS = 215-725 mg/L.
- DO = 3.2-6.7 mg/L.
- COD = 8-24 mg/L.
- BOD = 2.5-7.5 mg/L.

Summary of Soil Quality

- pH :- 7.71 to 7.88
- Electrical Conductivity :- 173 to 187 µS/cm
- Sodium Absorption Ratio :- 0.64 to 0.70
- Cation Exchange Capacity :- 10.7 to 11.8 meq/100 gm
- Loss on ignition in terms of Organic matter :- 0.58 to 0.89 %.

The soils are medium in organic carbon status. The major nutrient such as Nitrogen, Phosphorus and Potassium level varied from 166.32 kg/ha to 208.50 kg/ha., 15.26 to 20.04 kg/ha and 304.34 to 394.87 kg/ha respectively. The micronutrients such as copper, zinc, boron and iron are minimum and sufficient for plantation.

Flora and Fauna: The study area (10 km radius) has following forests- viz. Lormi RF : 1.9 km towards W, Kuajati RF : 3.5 km towards E, Ganjar Pahar RF : 5.0 km towards W, Ratanpur PF : 5.7 km towards E, Ramchanda RF: 6.7 km towards E, Shivtarai PF : 7.0 km towards WNW, Urkhuri Pahari : 7.3 km towards WNW, Ranibachhali RF : 7.5 km towards NE, West Belgahna PF : 7.8 km towards N. and has following water bodies Lamer Nala:- 2.0 km towards East, Ghongha Reservoir/Dam :- 3.2 km towards West, Arpa River:- 3.4 km towards East, Sukhnai Nala :- 3.5 km towards WNW, Ghongha Nadi :- 4.0 km towards West, Bhaisajhar Dam :- 5.4 km towards West, Chapi Nala :- 6.7 km towards East, Salka Barrage/Dam : 7.0 km towards North and Baghaiha Nala : 9.7 km, West. Achanakmar Tiger reserve is 11 km in NW direction and it ESZ boundary at 5.9 km in NW direction.

There are total 77 floral species present in the study area out of which there are 67 tree species, 6 shrubs species and 4 grasses species in the study area.

Total 49 species of birds, 8 species of reptiles, 8 species of mammals, and 9 species of aquatic faunas have been seen in the study area. Apart from this, 5 species like Small Fox, Common Indian Krait, Indian Cobra, Russel's Viper and Wild Boar have been observed in the study area which is protected as Schedule -I in Wildlife Protection Act 1972.

According 50.40 percent are male, and the remaining 49.60 percent are female. The overall sex ratio in the study area has been worked out to 980 females per 1000 males.

3.0 ANTICIPATED ENVIRONMENTAL IMPACT & MITIGATION MEASURES

Coal Dust will be the main pollutant generated during coal handling and crushing cum screening process. Water sprinklers will be provided to reduce dust generation during coal handling. Wet dust suppression system will be installed to reduce the dust generation during coal crushing and screening. The crusher unit will be provided with dust extraction system and Bag Filter. All belt conveyors will be kept covered. Internal roads will be concreted.

Industrial vacuum cleaners will be used in workshops and other work areas. Mechanical road sweeping machines will be deployed for daily cleaning of all internal roads.

wastewater generated during coal washing will be treated in thickener. The water after treatment will be recycled for coal washing. Domestic sewage will be treated in STP.

Low noise emitting plant and machinery will be used. 33% land area will be developed as greenbelt. The noise level at plant boundary will be maintained below 70 dBA.

Rejects generated will be sent to nearby power plant.

The existing truck movement pattern will not undergo any significant change due to this expansion. Fraction of the coal which is already transported by road from the coal mines of the region will be intercepted by the coal washery for washing. Appropriate traffic management plan will be implemented in consultation with the transport authorities.

4.0 ENVIRONMENTAL MONITORING PROGRAM

Environmental Management Cell (EMC) will be constituted to undertake routine environmental monitoring. Regular Monitoring will be done to ensure compliance with the prescribed laws and standards. The Head of EMC reports to the Plant Head. Qualified staff will be recruited in EMC. Environmental monitoring of ambient air, stack emission, fugitive dust emission, noise levels, groundwater quality, surface water quality and soils will be carried out as per norms. EMC is responsible for the following functions:-

Regular monitoring of:-

- Measuring fugitive emissions, measuring $PM_{2.5}$ and PM_{10} in work environment and report any abnormalities for initiating corrective and preventive actions.
- Measuring the ambient air quality at upwind and downwind direction of crusher, at plant boundary (3 locations, 120 degree to each other).
- Checking the wastewater quality (inlet and outlet water wastewater treatment plant).
- Checking the ground water quality near the coal storage area, and surrounding villages.
- Noise monitoring at plant boundary, nearest habitation, near highway, and work areas.
- Development and maintenance of greenbelt and greenery within the plant boundary.

5.0 ADDITIONAL STUDIES

Adequate fire mitigation measures will be ensured for handling fire in coal yard. Disaster Management Plan has been prepared to take care of public health and safety during any accident.

CER activities and public hearing commitment will be carried out over three-year period. This amount will be spent for making classrooms in local schools, providing teaching aids, making community centers, develop drinking water facility in nearby villages, making rainwater harvesting structures like anicuts and check dams in the area, developing infrastructure facilities and equipment in primary health centers and as per public hearing.

6.0 PROJECT BENEFITS

Coal washing improves the quality of poor grade coal to higher grade coal. During washing, the waste materials like muck present in poor grade coal is removed. High grade coal is required for steel making and cement making. Use of high-grade coal in thermal power plants improves the plant efficiency.

The demand for coal washery is growing due to following reasons:

- Depletion of good quality coal mines in India.
- Mechanized mining increases impurities in raw coal.
- Higher transportation cost makes it uneconomical to transport high ash coal.
- Meeting strict environmental requirement in regard to pollution prevention and control (by steel plants, power plants and cement plants).

During operation phase, 84 persons will be direct employment in different area. About 66 persons will be indirect employment. The preference will be given to local population for employment in the semi-skilled and unskilled category.

7.0 ENVIRONMENTAL MANAGEMENT PLAN

Environmental Management Plan for effective management of environmental impacts and ensuring overall protection of the environment through appropriate management procedures has been developed. In order to implement the recommended mitigation measures and institutionalize the EMP, budgetary provision of Rs.185 lakhs capital

expenditure has been made. Recurring annual expenditure will be Rs. 47.75 lakhs of the capital expenditure.

Environment Management Cell (EMC) will ensure that all air pollution control device, effluent treatment plants and water re-circulating systems function effectively. EMC will also supervise disposal of spent oil and lubricants and used batteries to the authorized vendors. Plantation will be started during the construction phase by following the guidelines issued by the Central Pollution Control Board. Schemes for resource conservation (raw materials, water, etc.), rainwater harvesting, and social forestry development will be taken up by EMC. Regular environmental awareness programs for the employees will be conducted.

Workers will be periodically subjected to health check-up. EMC will ensure cleanliness and industrial hygiene in the plant. EMC in association with the safety department will undertake full review of the potential hazard scenarios during plant commissioning. The review will ensure enforcement of the proposed safeguards for pollution abatement, resource conservation, accident prevention and waste minimization. The implementation of EMP would ensure that all elements of project comply with relevant environmental legislation throughout its life cycle.

8.0 CONSULTANTS

The consultant engaged for the preparation of the EIA/EMP for Expansion of Wet Type Coal Washery based on Heavy Media Cyclone is M/s GRC India Pvt. Ltd. GRC India is an ISO 9001:2015, 14001:2015 & ISO 45000:2018 certified pioneer environmental consultancy in India. It has been accredited by National Accreditation Board of Education & Training (NABET), Quality Council of India (QCI), which is the highest accreditation authority in India. The GRC India Pvt Ltd established a modern R&D Laboratory, which is compliant to IS/ISO 9001:2015, IS/ISO 14001:2015 and IS/ISO 45001:2018. All the project sampling and analysis with various studies are done by the GRC labs. Laboratory received accreditation from NABL which has been renewed as per procedure (current certificate no. TC-7501 valid till 25.04.25) and is recognized by MoEF&CC (Gazette Notification No. S.O. 388 (E) dated 10.02.2017).