

**SUMMARY ENVIRONMENTAL IMPACT
ASSESSMENT REPORT**

COAL WASHERY

0.96 Million Tons Per Annum

At

Village – Khargahani-Patharra, Tehsil -Kota

District – Bilaspur, Chhattisgarh

By

M/s Mahavir Coal Washeries Pvt. Ltd.

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Summary Environmental Impact Assessment Report

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1.0 PROJECT DESCRIPTION

M/s Mahavir Coal Washeries Pvt. Ltd. proposes to install a 0.96 Million Tons Per Annum (MTPA) capacity coal washery at village Khargahani-Patharra, tehsil Kota, district Bilaspur, Chhattisgarh. Raw will be brought to the washery from nearby coal mines located in Korba area. Raw coal will be unloaded and washed. Clean coal and rejects will be loaded into trucks and sent to the respective consumers. The project cost is Rs. 22 Crores.

The proposed coal washery project falls under schedule 2 (a) Category B of the EIA Notification 14-9-2006. The surrounding villages/ habitation are Patharra: 0.7 km SSW, Khargahani: 1.5 km E, The main town is Kota: 4.5 km NNW, Bilaspur 20 km SSE. The nearest railway station is Kalmitar, 2.2 SSE. Nearest School is at Khargahana about 2.1 km. Nearest hospital is Khargahani, Tehsil Kota, District Bilaspur (C.G.) is Kragi Road 5.6 km. Arpa river is 4.0 km E away from the proposed project site in east direction. The Survey of India Toposheet (1: 50000 scale) showing the project site, roads, railway line, settlements, water bodies, forests, and water bodies in surrounding 10 km radius of the site. The site is bounded by coordinates Latitude 22°15'14.6"N Longitude 82°02'51.19"E

The washery will be established on 28.72 acres land owned by MCWPL. 36.28% of the land will be used for greenbelt development.

250 kl/day water will be required for the coal washery. Ground water will be used. Permission of CGWA will be obtained for taking groundwater. CGWA has categorized the area under Safe Category.

1500 MVA (1.2 MW) electricity will be required for the coal washery, which will be supplied by the Chhattisgarh State Electricity Board. 500 KVA DG set will be installed to meet emergency electricity requirement during power failure.

The washery site can be approachable from two sides; east and west. On the east side the Mangla (Bilaspur)-Turkadih - Khargahani – Bhainsajhar road is being widened and strengthened (12 m to 16 m wide, asphalted / concreted). Patharra village is connected to this new road by asphalted, 3.5 m wide, 1.5 km village road. This road crosses the Bilaspur - Anuppur railway line by

underpass. The other road from which the project site can be approached is the old Sakri (Bilaspur) - Kota State Highway, 12 m wide, asphalted. Patharra village is connected to this highway by 2 km long, 3.5 m wide road. The Bilaspur bypass road passes through Sakri.

MCWPL submitted application to SEAC for obtaining Environmental Clearance on 3rd March 2020. SEAC granted Standard Terms of Reference vide letter dated 31st October 2020 for conducting the EIA Study and submit the draft EIA report to Chhattisgarh Environment Conservation Board for conducting Public Hearing. The summary EIA in English and Hindi and the draft EIA report is submitted for conducting Public Hearing. The comments and suggestions received during the public consultation process will be incorporated in the final EIA Report. Final EIA Report will be submitted to SEAC for appraisal and grant of Environmental Clearance.

Heavy media cyclone technology has been selected for the coal washery project. Coal washery comprises unloading of raw coal, storing, handling, crushing, screening and coal washing in washery building (using water mixed with magnetite). The water after washing is treated in Effluent Treatment Plant. The treated water is recycled for coal washing. The washery will operate in 1 shift. 3200 tons per day of raw coal will be washed. 2560 tons per day (80%) of clean coal and 640 tons per day (20%) of rejects will be generated. No wastewater will be discharged outside the boundary of coal washery. Rejects will be sold to power plants located in nearby areas. Dust pollution will be controlled using water sprinkling and Bag Filters.

2.0 DESCRIPTION OF BASELINE ENVIRONMENT

Baseline data was generated during post-monsoon season from 1st October 2020 to 31st December 2020. 10 km area around the site was considered as study area. Data was generated by following the standard 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 in the study area. Ambient air, noise, groundwater, soil and surface water samples were collected from 8 locations and analysed. List of plants and animals present in the study area were collected from Forest Department. Data on demography,

occupation pattern, cropping pattern, infrastructure facilities of study area were collected from District Statistics Handbook and the Census records.

The predominant wind direction is from northwest direction towards southeast direction. Annual rainfall is high, about 1300 mm. Calm periods are more during night. PM_{2.5} values were found between 15.4 µg/m³ to 32.9 µg/m³. PM₁₀ was found between 21.2µg/m³ to 41.3 µg/m³. SO₂ was found between 4.1 µg/m³ to 5.9 µg/m³. NO₂ was found between 9.1 µg/m³ to 14.1 µg/m³.The maximum values are observed in Kota, which is an urbanized area. Ambient air quality of all the eight locations are meeting the national standards.

Day time noise level was found between 50.1 to 52.2 dB(A). Night time noise levels was found between 41.2 to 42.8 dB (A). The noise level meeting the national standards in all the eight locations.

Analysis results of ground water reveal the following:-

- pH varies from to 7.14 to 8.26
- Total Dissolved Solids varies from 382 to 576 mg/l.
- Total Hardness varies from 175 to 291 mg/l.
- Calcium varies from 45 to 79 mg/l
- Magnesium varies from 7.2 to 23 mg/l
- Chloride varies from 9 to 24.5 mg/l
- Fluoride varies from 0.72 to 0.83 mg/l
- Nitrates varies from 6.4 to 8.2 mg/l
- Sulphates varies from 13 to 31 mg/l
- Toxic Metals were not found in any samples
- Total coliform was not found in any samples

The groundwater quality meets the acceptable drinking water quality limit.

Analysis results of surface water reveal the following:-

- pH varies from to 7.18 to 7.51
- Dissolved Oxygen varies from 4.6 to 7.1 mg/l
- BOD varies from 1.6 to 2.7 mg/l
- COD varies from 7 to 11 mg/l
- Total Dissolved Solids varies from 164 to 424 mg/l
- Total coliform varies from 85 to 485 MPN/100 mg/l

The surface water quality meets the 'C Class Best Designated Use' of CPCB, which is fit for drinking after conventional treatment.

Soils of study area are sandy loam by nature. Specific Conductivity and pH is in normal range. Organic matter content is sufficient. The concentration of Nitrogen, Phosphorus and Potassium were medium. The soils of study area are fit for paddy cultivation.

No national park or wildlife sanctuary orbiosphere reserve is present in the study area. No endangered species of flora and fauna is found in the study area. No migratory corridor of wild animals is present in the study area.

The study area is mostly rural. Kota is the major city located on the north side. The literacy rate is good. Most of the people are engaged in agriculture. The study area have satisfactory infrastructure facilities (roads, railway, schools, community centres and hospitals).

3.0 ANTICIPATED ENVIRONMENTAL IMPACT & MITIGATION MEASURES

Coal Dust is generated during coal handling, crushing and screening. Water sprinklers will be used to reduce dust generation. The crusher unit will be provided with dust extraction system and Bag Filter. All belt conveyors will be covered. Internal roads shall be concreted. Mechanical road sweeping machines will be deployed for daily cleaning of all internal roads. Rain gun will be deployed near the coal unloading area. Boundary wall of 3 m height will be developed around the coal washery and stock yards. Nylon screen of 3 m height will be provided over the boundary wall to minimize the spread of fugitive dust.

Entire wastewater generated after coal washing will be treated in Effluent Treatment Plant. The water after treatment will be recycled for coal washing. Domestic wastewater from washroom, toilets and canteen will be treated in Sewage Treatment Plant. Treated water will be used for gardening purpose.

Low noise emitting plant and machinery will be selected. 36.28% land area will be developed as greenbelt. The noise level at plant boundary will be maintained below 70 dBA.

Coal washing will produce rejects which will be sold to power plants in nearby areas.

The daily truck movement will be 125 trucks (30 tons capacity). Parking place has been provided inside the plant. Appropriate traffic management plan will be implemented in consultation with the transport authorities, so that smooth traffic flow happens after the project.

Rainwater harvesting will be done inside plant premises and the water will be used for coal washing during the rainy days.

Greenbelt will be developed in 10.42 Acres (36.28% of the total area). 15 m wide green belt will be developed, as per space available. Three tier greenbelt will be developed, tall trees in last row, short trees in middle rows and ground hugging shrubs in first row. Tree density will be 600-610 trees per acre. Locally available plant species has been selected pongamia, peltaforum, kadamba, semal, alstonia, kaner, amaltas, gulmohor, hibiscus, chandni, mango, neem, amla, ficus, ashok, kachnar, jacaranda, etc.

4.0 ENVIRONMENTAL MONITORING PROGRAM

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

Regular monitoring of:-

- Measuring fugitive coal dust emissions upwind and downwind direction of crusher, and measuring PM₁₀ in work environment and report any abnormalities for initiating corrective and preventive actions.
- Measuring the ambient air quality inside plant and at upwind and downwind direction of plant (3 locations, 120 degree to each other).
- Checking the wastewater quality (inlet and outlet water ETP and STP).
- Checking the ground water quality near the coal storage area, and surrounding villages.
- Water quality of Arpa River at upstream and downstream of site and village ponds.

- 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

Fire protection measures like fixed water sprinklers connected to water reservoir with pump will be provided around the coal yard. Mobile rain gun will be deployed. Disaster Management Plan will be prepared to take care during any accident.

Rs. 22 lakhs have been earmarked for Corporate Environment Responsibility. This amount will be spent for developing infrastructure facilities in schools, community centres and hospitals of surrounding villages. The details will be provided in final EIA report after obtaining the comments of the Public during Public Hearing.

6.0 PROJECT BENEFITS

In Korba coalfields the coal mined is poor grade coal. Coal washing improves the quality of poor grade coal to higher grade coal. During washing, the waste materials like shale, dust and stones are removed. High grade coal is required for steel making and cement making. Use of high grade coal in thermal power plants improves the efficiency of power plant.

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 pollution control standards (by steel, power and cement plants).

About 100 persons will be employed for 12 months during the construction period. 60 people will be directly employed during the operation of coal washery. About 25 people will get indirect employment. The company will employ local people for plant construction and operation.

7.0 ENVIRONMENTAL MANAGEMENT PLAN

Environmental Management Plan for effective implementation and management of pollution mitigation measures has been provided. In order to implement the recommended mitigation measures and EMP, budgetary provision of Rs. 230 lakhs as capital expenditure and Rs.64 lakhs as annual expenditure has been provided.

Environment Management Cell (EMC) will ensure that all air pollution control device, effluent treatment plant, sewage treatment plant 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, groundwater recharge 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 as per standard norms. The management will ensure cleanliness and hygiene in the plant. EMC in association with the safety department will undertake full review of the potential hazard scenarios during plant commissioning. The management will ensure enforcement of the proposed safeguards for pollution abatement, resource conservation, accident prevention and waste minimization.