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Ref No- EC/VL-CTPP/Env/2025-26/43 November 29, 2025

To
The Regional Officer (IRO)
Ministry of Environment, Forest & Climate Change
Integrated Regional Office, Aranya Bhawan
North Block, Sector-19
Nava Raipur, Atal Nagar (CG) 492002

Subject:

Submission of Six-monthly Compliance Report (April 2025 to September 2025) of M/s. Vedanta Limited, Chhattisgarh Thermal Power Plant, Village- Singhitarai, Tehsil-Dabhara, District-Sakti (CG).

Reference:

1. Environmental Clearance File No.: J-13012/ 07/ 2009-IA. II(T) (EC Identification # EC23A0601CG5872873N) dated 06.01.2024
2. Letter dated 30.09.2024, changing name of the Company in EC dated 06.01.2024 from Athena Chhattisgarh Power Limited to Vedanta Limited, Chhattisgarh Thermal Power Plant

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Dear Sir,

In compliance to the Environment Clearance File No.: J-13012/07/2009-IA. II(T) dated 06.01.2024 (EC Identification # EC23A0601CG5872873N) granted to M/s. Vedanta Limited, Chhattisgarh Thermal Power Plant, we hereby submit the Six-monthly compliance report along with supporting documents for the period April'2025 to September'2025 and the copy of the same is annexed as **Annexure-A**.

This is being submitted for your kind information and records please.

Thanking you,
For and on behalf of Vedanta Limited,
Chhattisgarh Thermal Power Plant

Surender Sharma
(Authorized Signatory)

Encl: as above

C/c: RO-CECB Bilaspur (CG)

Vedanta Limited, Chhattisgarh Thermal Power Plant
Site Office: Village-Singhitarai, Tehsil-Dabhara, District - Sakti, Chhattisgarh, Pin-495689
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SIX MONTHLY COMPLIANCE REPORT OF

M/s VEDANTA LIMITED, CHHATTISGARH THERMAL POWER PLANT

EC Identification # EC23A0601CG5872873N

Duration: April' 2025 to September' 2025

MoEF&CC - File No: J-13012/07/2009-IA.II(T) dated 06.01.2024 and Name Change Letter dated 30.09.2024

#	EC Conditions	Compliance Status
13	**General Conditions**	
a	The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC/SEIAA website where it is displayed.	Complied with. Advertisement about the grant of Environmental clearance has been released in 2 newspapers one of them being the vernacular language (The Pioneer English and in Haribhumi Hindi) on 09.01.2024. Copy of the Newspaper cutting is attached herewith as **Annexure-I**
b	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	Complied with. Project proponent has submitted copy of the Environmental Clearance at office of the local bodies including Dist. Collector and Gram Panchayat/s. Copy of acknowledgement is attached herewith as **Annexure-II.**
c	The project proponent shall have a well laid down environmental policy duly approved by the Board of Directors (in case of Company) or competent authority, duly prescribing 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.	Complied with. HSE Policy is in place. Copy is attached herewith as **Annexure-III.**

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d	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the project proponent (during construction phase) and authorized entity mandated with compliance of conditions (during operational phase) shall be prepared. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Six monthly progress of implementation of action plan shall be reported to the Ministry / Regional Office along with the Six-Monthly Compliance Report.	Complied with. Unit 1 (1*600 MW) has been operationalized during July 2025 and COD achieved. The latest status report of EMP for Unit 1 is attached as **Annexure-IV.**
e	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.	Noted.
f	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	Complied with. Company will extend full cooperation to the statutory authorities as and when required.
g	Any appeal against this 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.	Noted.
1	**Environment Management****	
i	Zero Liquid Discharge shall be ensured, and no waste/treated water shall be discharged outside the premises.	Complied with. Adequate capacity ETP and STPs have been installed and being operated to ensure ZLD.
ii	Peripheral Green belt (Three row plantation) with Miyawaki plantation technique of 15 m thickness along the plant boundary shall be developed with more than 90% survival rate of the plant species focusing on Ash Dyke area.	Complied with. Photographs of Miyawaki plantation are attached herewith as **Annexure-V.**
iii	Extensive green cover within 2 km range of the plant boundary shall be developed. An action plan in this regard to be prepared in consultation with CPCB/expert institution and submitted before Regional Office of the Ministry within 3 months.	Complied with. Action plan as approved by NIT Raipur has been submitted to MoEFCC vide our mail dated 06.04.2024 and 03.05.2024. Copy attached as **Annexure-VI.**
iv	24*7 online monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server. Stack monitoring shall be done through 24*7 online monitoring system.	Complied with. 4 nos of CAAQMS and CEMS for Unit-1 have been established. Photographs of CAAQMS attached as **Annexure-VII.**

v	Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as waste delivery points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system. Water Sprinkling on roads shall be done in every 6 hours in winter season and 3 hours in summer season of roads within 1 km range approaching the plant. A logbook shall be maintained for the activity and be in six-monthly compliance report.	Complied with. Dust extraction systems and water spray systems have been provided in CHP area. Water Sprinkling on roads is being carried out on regular intervals. Road sweeping machines have been deployed for frequent cleaning of roads and photographs of the same are attached as **Annexure-VIII**.
vi	LED display of air quality (Continuous Online monitoring) shall be installed on the roadside (within 1 km range) and nearby hotspots viz. residential colony, Schools, Hospitals. Maintenance of devices shall be done on regular basis.	Complied with. Display board has been installed at the main gate facing towards state highway and the photograph of the same is attached as **Annexure-IX.**
vii	Everyday cleaning of road/Paved roads within 1 km range of plant site shall be ensured throughout the year through vacuum based vehicle.	Complied with. Road sweeping machines have been deployed for frequent cleaning of roads. Kindly refer **Annexure-VIII** for the same.
viii	Environment Audit of plant shall be done annually, and report shall be submitted to regional office of the Ministry.	Unit 1 has been operationalized in FY26 (July 2025) as such the environment audit as per requirement will be carried out during FY26-27.
ix	Project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality / local bodies/ similar organization located within 50km radius of the proposed power project to minimize the water drawl from surface water bodies.	The Company has submitted a letter to explore the feasibility with the local bodies. Copy of the letter is attached as **Annexure-X**.
x	A detailed action plan regarding leachate handling shall be prepared and implemented in consultation with SPCB and the same shall be submitted to the Regional Office of the Ministry. Zero liquid discharge shall be adopted. Leachate shall be treated and reused. No treated leachate shall be discharged in any circumstances. Characteristics of Leachate and the treated leachate shall be monitored once in quarter and records shall be maintained.	No leachate is generated from the ash dyke areas since the dyke has been provided with HDPE liners. ZLD system has been adopted to recycle/ reuse the effluent generated within the premises.

xi	Oil and grease recovered from the treatment plant should be disposed only through authorized recyclers.	Oil and grease recovery system has been provided in ETP/ STP and shall be disposed of accordingly.
xii	Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.	Partnering with Serentica Renewables for feasibility assessment and implementation of solar power systems at plant and colony premises.
xiii	Fly ash handling shall be done strictly as per extent rules/regulations of the Ministry/CPCB issued from time to time including Ministry's Notification No. S.O.5481(E) dated 31st December, 2021. No coal shall be transported through road shall be allowed.	Complied with. In terms of Fly Ash Notification No. S.O.5481(E) dated 31st December 2021, the Company has tied up with a cement plant and also utilizing ash in abandoned mine pits/ quarry as per permission received from CECB. Copy of the PO with cement plant and permission obtained from CECB is attached as **Annexure-XI.**
xiv	Monitoring of surface water quality and Ground Water quality shall also be regularly conducted, and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.	Complied with. Copy of the latest Monitoring reports are attached herewith as **Annexure-XII.**
xv	A well designed rain-water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.	Complied with. Rain water harvesting ponds (3 nos) have been constructed with capacity to harvest 364500 KL of water per annum during monsoon.

xvi	No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/ operation of the power plant. A list of all small and large water bodies shall be prepared after physical survey within 10 km radius of the project. A detailed conservation plan for all these water bodies shall be prepared and submitted before the Regional Office of the Ministry within 3 months. Implementation status of conservation plan be submitted in 6 monthly compliance report.	Complied with. List of water bodies and conservation plan along with watershed development plan has been prepared and submitted to MoEFCC vide our mail dated 06.04.2024. Copy attached as **Annexure-XIII.**
xvii	Watershed development plan shall be prepared and implemented focusing on micro watershed development within 10 km radius of the project. Action taken report in this regard be submitted before regional office of the Ministry in 6 monthly compliance report.	Complied with. List of water bodies and conservation plan along with watershed development plan has been prepared and submitted to MoEFCC vide our mail dated 06.04.2024. Copy attached as **Annexure-XIII.**
xviii	A detailed ecological monitoring and survey covering forestry, fisheries, wildlife and its habitat shall be done once in two years to assess the impacts of project on the local environment and ecology. Monitoring report shall be uploaded on the Parivesh Portal and a copy of the same be submitted to the regional office of MoEF&CC.	Unit 1 (1*600 MW) has been operationalized during July 2025 and as such this survey will be carried out in FY26-27.
xix	For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.	Complied with. Adequate stack height as per CPCB regulation has been provided for the DG sets and acoustic enclosure provided for noise control. Photographs attached as **Annexure-XIV.**
xx	An Environmental Cell headed by the Environment Manger with postgraduate qualification in environmental science/environmental engineering, shall be created. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures.	Complied with. Copy of the organisation chart depicting environment cell is attached as Annexure-XV.
xxi	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.	Complied with. Firefighting system comprising of fire station equipped with fire tenders, fire hydrant system, first aid fire extinguishers and

		smoke detectors are in place. Photograph of fire station is attached as **Annexure-XVI**.
xxii	The energy sources for lighting purposes shall preferably be LED based.	Complied with. Most of the lighting system installed are LED based.
xxiii	Explore desulphurization from biotechnological method.	As per MoEF&CC notification dated 11.07.2025, the stack height of 275 mtr has been provided.
xxiv	No construction work of the project shall be started without obtaining Stage- II Forest Clearance.	Complied with. Stage-II forest clearance has been obtained vide MoEFCC letter # File No. 6-CHC-47/2014-HBO/1607 dated 26.03.2024. Copy attached as **Annexure-XVII**.
2	**Miscellaneous**	
2.1 i	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.	Complied with. Copy of CTE and CTO is attached as **Annexure-XVIII**.
ii	All necessary clearance from the concerned Authority, as may be applicable should be obtained prior to commencement of project or activity.	Complied with Necessary approvals like PESO, Factory License, Fire NOC and water withdrawal approval etc. have been obtained for operating the plant.
3	**Socio-economic**	
3.1 i	Public grievance redressal system shall be established under supervision of project head. The functioning of the system shall be reviewed every month.	Complied with. Grievance system has been put in place. Copy of the Grievance Mechanism SOP is attached as **Annexure-XIX**.
ii	A vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation, and conservation of water bodies within 5km radius of the project cover area, creation of sacred groves etc shall be prepared and submitted to the Regional Office of the Ministry within 6 months. Implementation status of the same shall be	Complied with. Vision document has been submitted to IRO-MoEFCC Raipur vide letter dated July 06, 2024. Copy attached as **Annexure-XX**.

	reported to the regional office in 6 monthly compliance report.	
iii	Epidemiological Study among population within 5 km radius of project cover area shall be carried out on regular interval (Once in two year) through independent agency. Necessary measures shall be taken as per findings of study in consultation with district administration. Action taken report shall be submitted to the Regional Office of the Ministry.	Unit 1 (1*600 MW) has been operationalized during July 2025, accordingly the study will be carried out in FY26-27.
iv	The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of Environmental Clearance for undertaking the CER activities, committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.	Complied with. Time bound action plan has been submitted to IRO-MoEFCC Raipur vide letter dated July 06, 2024. Copy attached as **Annexure-XXI.**
v	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied with. Copy of report (one sample) is attached as **Annexure-XXII.**
vi	A multi-specialty Hospital with 100 beds shall be established and managed by the PP to cater the need of population living within 10 km. The project affected families shall be given free of cost treatment.	Copy of the progress report is attached as **Annexure-XXIII.**
vii	A 10+2 Grade school with capacity of at least 500 students with well-equipped modern science practical lab, computer lab and other necessary infrastructure shall be established to provide education facilities in the area. The students from project affected families shall be given free of cost education.	Copy of the progress report is attached as **Annexure-XXIV.**
viii	The establishment of a robust grievance redressal mechanism to address concerns and complaints from local communities regarding the power plant's operations, environmental impacts, or social issues shall be developed. A Senior Officer shall review the functioning of the mechanism twice in a month.	Complied with. Grievance redressal mechanism is in place and the copy of the SOP is attached as **Annexure-XXV.**
1	**Statutory Compliances**	
1.1	The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws	Complied with Necessary approvals like PESO, Factory License, Fire NOC and water withdrawal approval etc. have been obtained for operating the plant.
1.2	The approval of the Competent Authority shall be obtained for structural safety of buildings due to	Complied with.

	earthquakes, adequacy of firefighting equipment etc. as per National Building Code including protection measures from lightening etc.	Structural stability of the plant premises including building and steel structures etc. has been carried out through a competent agency. Report is attached as **Annexure-XXVI**.
1.3	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.	Complied with. Stage-II forest clearance has been obtained vide MoEFCC letter # File No. 6-CHC-47/2014-HBO/1607 dated 26.03.2024. Copy attached as **Annexure-XVII**.
1.4	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.	Not Applicable.
1.5	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.	Complied with. Copy of CTE and CTO is attached as **Annexure-XVIII**.
1.6	The project proponent shall obtain the necessary permission for drawl of ground water / surface water required for the project from the competent authority.	Complied with. Copy of the Water withdrawal permission from WRD is attached as **Annexure-XXVII**.
1.7	A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.	Complied with. Copy of the certificate is attached as **Annexure XXVIII**.
1.8	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department shall be obtained, as applicable, by project proponents from the respective competent authorities.	Complied with. Statutory clearances have been obtained from Chief Controller of Explosives, Fire Department, Civil Aviation Department.
1.9	The provisions of the Solid Waste Management Rules, 2016, e-Waste (Management) Rules, 2016, and the Plastics Waste Management Rules, 2016, shall be followed.	Complied with.
1.10	The project proponent shall follow the ECBC/ ECBC-R prescribed by Bureau of Energy Efficiency, Ministry of Power strictly	Noted.
2	**Air Quality Monitoring and Preservation**	

2.1	Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.	Complied with.
2.2	A management plan shall be drawn up and implemented to contain the current exceedance in ambient air quality at the site.	Complied with.
2.3	The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5) covering upwind and downwind directions during the construction period	Complied with. Copy of the latest report attached as **Annexure-XXIX.**
2.4	Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.	Complied with. Adequate stack height as per CPCB regulation has been provided for the standby DG sets and acoustic enclosure provided for noise control.
2.5	Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3-meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site.	Complied with.
2.6	Sand, murram, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution.	Complied with.
2.7	Wet jet shall be provided for grinding and stone cutting.	Complied with.
2.8	Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.	Complied with.
2.9	All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Management Rules 2016.	Complied with.
2.1	The diesel generator sets to be used during construction phase shall be low sulphur diesel type and shall conform to Environmental (Protection) prescribed for air and noise emission standards.	Complied with.

2.11	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.	Complied with. Adequate stack height as per CPCB regulation has been provided for the standby DG sets and acoustic enclosure provided for noise control.
2.12	For indoor air quality the ventilation provisions as per National Building Code of India.	Noted.
3	**Water Quality Monitoring and Preservation**	
3.1	The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape, and other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water.	Complied with.
3.2	Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.	Complied with.
3.3	Total fresh water use shall not exceed the proposed requirement as provided in the project details.	Complied with.
3.4	The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.	Complied with.
3.5	A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.	Complied with. Water withdrawal permission has been obtained from WRD.
3.6	At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.	Complied with.
3.7	Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.	Complied with.

3.8	Use of water saving devices/fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc) for water conservation shall be incorporated in the building plan.	Complied with..
3.9	Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system to be done.	Complied with. Separate drainage system provided for grey and black water.
3.1	Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.	Complied with.
3.11	The local bye-law provisions on rain water harvesting should be followed. If local bye-law provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits/storage tanks shall be provided for ground water recharging as per the CGWB norms.	Complied with.
3.12	A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority.	Complied with. Rain water harvesting ponds (3 nos) have been constructed with capacity to harvest 364500 KL of water per annum during monsoon.
3.13	All recharges should be limited to shallow aquifer.	Noted.
3.14	No ground water shall be used during construction phase of the project.	Complied with.
3.15	Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering.	Noted.
3.16	Sewage shall be treated in the STP with tertiary treatment. The treated effluent from STP shall be recycled/re-used for flushing, AC make up water and gardening. As proposed, no treated water shall be disposed in to municipal drain.	Complied with. STPs of 150 KLD have been installed and treated sewage being used for horticulture and dust suppression.
3.17	No sewage or untreated effluent water would be discharged through storm water drains.	Complied with.
3.18	Onsite sewage treatment of capacity of treating 100% wastewater to be installed. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the Ministry before the project is commissioned for operation. Treated waste water	Complied with. Adequate capacity ETP and STPs have been installed and being operated to ensure ZLD.

	shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per statutory norms notified by Ministry of Environment, Forest and Climate Change. Natural treatment systems shall be promoted.	
3.19	Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.	Complied with. STP water quality monitoring results are attached as **Annexure-XXX**.
3.2	Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.	Complied with. Sludge from STP is being used as manure in horticulture.
4	**Noise Monitoring and Prevention**	
4.1	Ambient noise levels shall conform to residential area/commercial area/industrial area/silence zone both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.	Complied with. Noise monitoring results are attached as **Annexure-XXXI**.
4.2	Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.	Complied with. Noise monitoring results are attached as **Annexure-XXXI**.
4.3	Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.	Complied with. Adequate stack height as per CPCB regulation has been provided for the standby DG sets and acoustic enclosure provided for noise control.
5	**Energy Conservation Measures**	
5.1	Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC.	Noted.
5.2	Outdoor and common area lighting shall be LED.	Complied with. Most of the lighting system being used are LED based.
5.3	Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient	Noted.

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	building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.	
5.4	Energy conservation measures like installation of CFLs/ LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning.	Complied with. Most of the lighting system being used are LED based.
5.5	Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.	Partnering with Serentica Renewables for feasibility assessment and implementation of solar power systems at plant and colony premises.
6	**Waste Management**	
6.1	A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project shall be obtained.	The Company has submitted a to the local bodies. Copy of the letter is attached as **Annexure-XXXII**.
6.2	Disposal of muck during construction phase shall not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.	Noted.
6.3	Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials.	Complied with.
6.4	Organic waste compost/Vermiculture pit/Organic Waste Converter within the premises with a minimum capacity of 0.3 kg /person/day must be installed.	Complied with.
6.5	All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.	Complied with.
6.6	Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board	Noted.
6.7	Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials.	Complied with.

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6.8	Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016. Ready mixed concrete must be used in building construction.	Complied with.
6.9	Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Waste Management Rules, 2016.	Noted.
6.1	Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.	Noted.
7	**Green Cover**	
7.1	No tree can be felled/transplant unless exigencies demand. Where absolutely necessary, tree felling shall be with prior permission from the concerned regulatory authority. Old trees should be retained based on girth and age regulations as may be prescribed by the Forest Department. Plantations to be ensured species (cut) to species (planted).	Complied with.
7.2	A minimum of 1 tree for every 80 sqm of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and vide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.	Noted.
7.3	Where the trees need to be cut with prior permission from the concerned local Authority, compensatory plantation in the ratio of 1:10 (i.e. planting of 10 trees for every 1 tree that is cut) shall be done and maintained. Plantations to be ensured species (cut) to species (planted). Area for green belt development shall be provided as per the details provided in the project document.	Noted.
7.4	Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.	Complied with.
8	**Transport**	
8.1	A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic	Noted.

	criteria: a. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic. b. Traffic calming measures. c. Proper design of entry and exit points. d. Parking norms as per local regulation.	
	Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.	Complied with.
9		
9.1	A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.	Complied with. Copy of the traffic management study conducted by competent agency is attached as **Annexure XXXIII.**
10	**Human Health Issues**	
10.1	All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.	Complied with.
10.2	For indoor air quality the ventilation provisions as per National Building Code of India.	Complied with.
10.3	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Complied with.
10.4	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Complied with.
10.5	Occupational health surveillance of the workers shall be done on a regular basis.	Complied with.

10.6	A First Aid Room shall be provided in the project both during construction and operations of the project.	Complied with.
11	**Miscellaneous**	
11.1	The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEFCC/SEIAA website where it is displayed.	Complied with. Advertisement about the grant of Environmental clearance has been released in 2 newspapers one of them being the vernacular language (The Pioneer English and in Haribhumi Hindi) on 09.01.2024. Copy of the Newspaper cutting is attached herewith as **Annexure-I**.
11.2	Environmental Clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	Complied with. Project Proponent has submitted copy of the Environmental Clearance at office of the local bodies including Dist. Collector and Gram Panchayat/s. Copy of acknowledgement is attached herewith as **Annexure-II**.
11.3	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.	Complied with.
11.4	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.	Complied with.
11.5	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. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	Complied with. HSE Policy is in place. Copy is attached herewith as **Annexure-III.**
11.6	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel	Complied with.

	shall be set up under the control of senior Executive, who will directly report to the head of the organization.	Copy of the organisation chart depicting environment cell is attached as **Annexure-XV.**
11.7	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.	Complied with. Unit 1 (1*600 MW) has been operationalized during July 2025 and COD achieved. The latest status report of EMP for Unit 1 is attached as **Annexure-IV.**
11.8	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.	Unit 1 has been operationalized in FY26 (July 2025) as such the environment statement will be submitted during FY26-27.
11.9	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.	Noted.
11.1	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	Noted.
11.11	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during their presentation to the Expert Appraisal Committee.	Noted.
11.12	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change (MoEF&CC).	Noted.
11.13	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.	Noted.
11.14	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Noted.
11.15	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Noted.
11.16	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the	Noted.

	officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	
11.17	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.	Noted.
11.18	Any appeal against this 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.	Noted.
12	**Specific Conditions**	
12.1	The project proponent shall develop R&D facilities to develop their own technologies for propylene and polypropylene processing	Not applicable.

29.11.2025

Police Divyang Patel said.

A doctor has confirmed a bullet wound on Rai's head.



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Public Notice

The general public is hereby informed that the Ministry of Environment, Forest and Climate Change, GoI (MoEFCC) has accorded Environment Clearance (EC Identification No- **EC23A0601CG5872873N**) to M/s Athena Chhattisgarh Power Limited on **06.01.2024** for **2x600** MW Coal Based Thermal Power Plant at villages Singhitarai, Benipali, Odekera & Nimohi, Tehsil Dabhara, District Sakti (erstwhile Janjgir-Champa), Chhattisgarh, under the provisions of EIA Notification **2006**.

A copy of the same is available at MoEFCC website: **https://parivesh.nic.in**

For Athena Chhattisgarh Power Limited
Singhitarai, Dist-Sakti (CG)

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**Name & A
Borrower**

1. Mr. Aru
(Applicant/
Bhushan Sh
Q.No.B-170
Bhatgaon
District-Sur
School,Amb
2. Mrs.
(C O - A
W/O Mr.
Residing
Nagar,Jarh
Surajpur
School,Amb

1. MR. JIT
(APPLICAN
SATYADEC
RESIDING
SURYA A
NAGAR, M
DISTRICT-
490020
2. MRS.
(C O -
W/O MR.
RESIDING

ATTISGARH, WATER RESOURCES DEPARTMENT
OF THE CHIEF ENGINEER
NADI PROJECT, RAIPUR
(CHHATTISGARH)

EMENT TENDER NOTICE

मनहर, सामाजिक कार्यकर्ता हेमंत निराला, डॉ

जन सूचना

सर्वसाधारण को यह सूचित किया जाता है कि पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार ने एथेना छत्तीसगढ़ पावर लिमिटेड, ग्राम सिंघीतराई, बेनीपाली, ओडेकेरा एवं निमोही, तहसील डभरा, जिला सक्ती, (पूर्व में जांजगीर-चांपा) छत्तीसगढ़ के 2 गुणा 600 मेगावॉट कोयला आधारित तापीय विद्युत संयंत्र को दिनांक 6 जनवरी, 2024 को पर्यावरणीय स्वीकृत (EC identification No-EC23A0601CG5872873N) पर्यावरण प्रभाव आंकलन अधिसूचना 2006 के प्रावधानों के अधीन प्रदान की है।

तत्संबंधी प्रति पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय की वेबसाइट: https://parivesh.nic.in पर उपलब्ध है।

कृते /-
एथेना छत्तीसगढ़ पावर लिमिटेड
ग्राम-सिंघीतराई,
जिला-सक्ती (छ.ग.)

vedanta
transforming for good

Ref No: EC/ACPL/Env/2023-24/31

January 09, 2024

To

Sarpanch Mahoday

Gram panchayat – Nimohi

Tehsil – Dabhara, District- Sakti (CG)

Subject: Environmental Clearance dated 06.01.2024 granted to M/s Athena Chhattisgarh Power Limited, by MoEFCC.

Respected Madam/Sir,

With reference to the above mentioned subject, we hereby inform your good office that, the Ministry of Environment, Forest and Climate Change (MoEFCC) has accorded Environmental Clearance vide letter dated 06.01.2024 (EC Identification No- EC23A0601CG5872873N) to M/s Athena Chhattisgarh Power Limited, for 2x600 MW Coal Based Thermal Power Plant at villages Singhitarai, Benipali, Odekera & Nimohi, Tehsil Dabhara, District Sakti (erstwhile Janjgir-Champa), Chhattisgarh, under the provisions of EIA Notification, 2006. The copy of the Environmental Clearance (EC) is attached herewith for your kind reference please.

In compliance to the conditions of EC, we hereby request your good office for display of the same at notice board for 30 days from receipt of this letter.

This is for your kind information and needful in the matter please.

Thanks and Regards

[Authorized Signatory]

ATHENA CHHATTISGARH POWER LTD.,
2X600MW Singhitarai Thermal Power Project
Village-Singhitarai, Tehsil: Dabhara
Dist.: Sakti (C.G.) Pin-495689

13.01.2024

Athena Chhattisgarh Power Limited

Encl: a/a

O/C

vedanta
transforming for good

Ref No: EC/ACPL/Env/2023-24/28

January 08, 2024

To

The Collector and District Magistrate

District- Sakti (CG)

Subject: Environmental Clearance dated 06.01.2024 granted to M/s Athena Chhattisgarh Power Limited, by MoEFCC.

Respected Madam,

With reference to the above mentioned subject, we hereby inform your good office that, the Ministry of Environment, Forest and Climate Change (MoEFCC) has accorded Environmental Clearance vide letter dated 06.01.2024 (EC Identification No- EC23A0601CG5872873N) to M/s Athena Chhattisgarh Power Limited, for 2x600 MW Coal Based Thermal Power Plant at villages Singhitarai, Benipali, Odekera & Nimohi, Tehsil Dabhara, District Sakti (erstwhile Janjgir-Champa), Chhattisgarh, under the provisions of EIA Notification, 2006. The copy of the Environmental Clearance (EC) is attached herewith for your kind reference please.

In compliance to the conditions of EC, we hereby request your good office for display of the same at notice board for 30 days from receipt of this letter.

This is for your kind information and needful in the matter please.

Thanks and Regards

ATHENA CHHATTISGARH POWER LTD.,
2X600MW Singhitarai Thermal Power Project
Village:Singhitarai, Tehsil: Dabhara
Dist.: Sakti (C.G.) Pin-495695

G Venkat Reddy

[Authorized Signatory]

Athena Chhattisgarh Power Limited

Encl- a/a

C/c – 1. The SDM, Dabhara

2. The Gram Panchayat Singhitarai and Benipali

3. The Gram Panchayat Nimohi

4 The Gram Panchayat, Odekera

(Copy for information and further needful please)

Health, Safety & Environment Policy

Document No: VLCTPP/HSE/POL/HSE/V1.0

Purpose

Vedanta Limited- Chhattisgarh Thermal Power Plant (VLCTPP), is committed to establish a robust framework for managing Health, Safety, and Environmental (HSE) standards ensuring compliance, stakeholder engagement, and sustainable operations while striving for zero harm to people and the planet.

Scope and Objective

This policy applies to all operations, employees, business partners, suppliers, and consultants associated with VLCTPP. It covers the full operational lifecycle, from initiation to closure, adhering to the Vedanta Sustainability Framework (VSF). The objective is to drive excellence in HSE management by implementing world-class practices, promoting a positive safety culture, and ensuring environmental sustainability.

VLCTPP will:

- Comply with applicable national, regional, and local HSE regulations and statutory obligations. In the absence of specific legislation, industry best practices and standards will be adopted;
- Foster a positive HSE culture through effective communication, participation, and consultation with employees, business partners, and stakeholders;
- Develop robust processes for avoiding and preventing incidents, ensuring a safe and secure working environment;
- Establish and maintain comprehensive emergency action plans to mitigate potential risks effectively;
- Implement and enforce HSE Standard Operating Procedures for all operational activities;
- Provide regular health surveillance, risk-based exposure monitoring, and maintain systems for effective occupational health management;
- Ensure safe storage and handling of hazardous substances and have mitigation plans to prevent environmental and health impacts;
- Conserve natural resources by adopting sustainable and energy-efficient technologies and practices;
- Conduct reviews to identify risks, set HSE targets, and drive improvement through evaluation and innovation;
- Raise awareness and provide comprehensive training for employees and stakeholders to enhance HSE efficiency and effectiveness;
- Execute operations with a strong focus on minimizing emissions, achieving Zero Liquid Discharge and ensuring comprehensive waste management practices in alignment with sustainability goals;
- Regularly review and update of this policy to incorporate improvements, emerging best practices, and stakeholder feedback;



December 13, 2024

Devendra Kumar Patel
Chief Operating Officer- VLCTPP

EMP Implementation Status Report

S. No.	Particulars	Proposed EMP Cost (In Crore)	Actual expenses already incurred (In Crore)	Proposed additional measures and cost (In Crore)	Recurring Cost (In crore)	Implementation Status
1	ESP and Bag filters	150	168	-	12	Completed
2	Cooling Towers (IDCT I & II)	65	60	5	5.5	IDCT I Completed
3	Stack	-	63	-	0.5	Completed
4	ETP and STP	6	18	-	4	Completed
5	DE & DS System	3	4	-	1	Completed
6	Ash handling system	150	60	-	13	Completed
7	Greenbelt & Landscaping	3	4.6	-	1	Continuous
8	Environment Monitoring	-	0.84	-	0.5	Continuous
9	Ash Ponds	80	20	53	6	Completed
10	Fire Fighting system	24	20	4	3	Completed
11	Environment lab equipment	1	1	-	0.25	Completed
12	CEMS	6	-	6	1	Completed
13	DM plant waste treatment system	2	-	2.56	2.25	Completed

S. No.	Details	Amount to be required (In Crore)	Implementation Status
1.	Renewable energy source installation and commissioning (Solar - @4.5 Crore/MW for 40 MW	180	Ongoing
2.	Flue Gas Desulfurization System (Wet Technology @ 0.5 Cr/MW)	600	Not Applicable
3.	Balance Plantation including aftercare for 3 years	2	Continuous
4.	CAAQMS	2.5	Completed

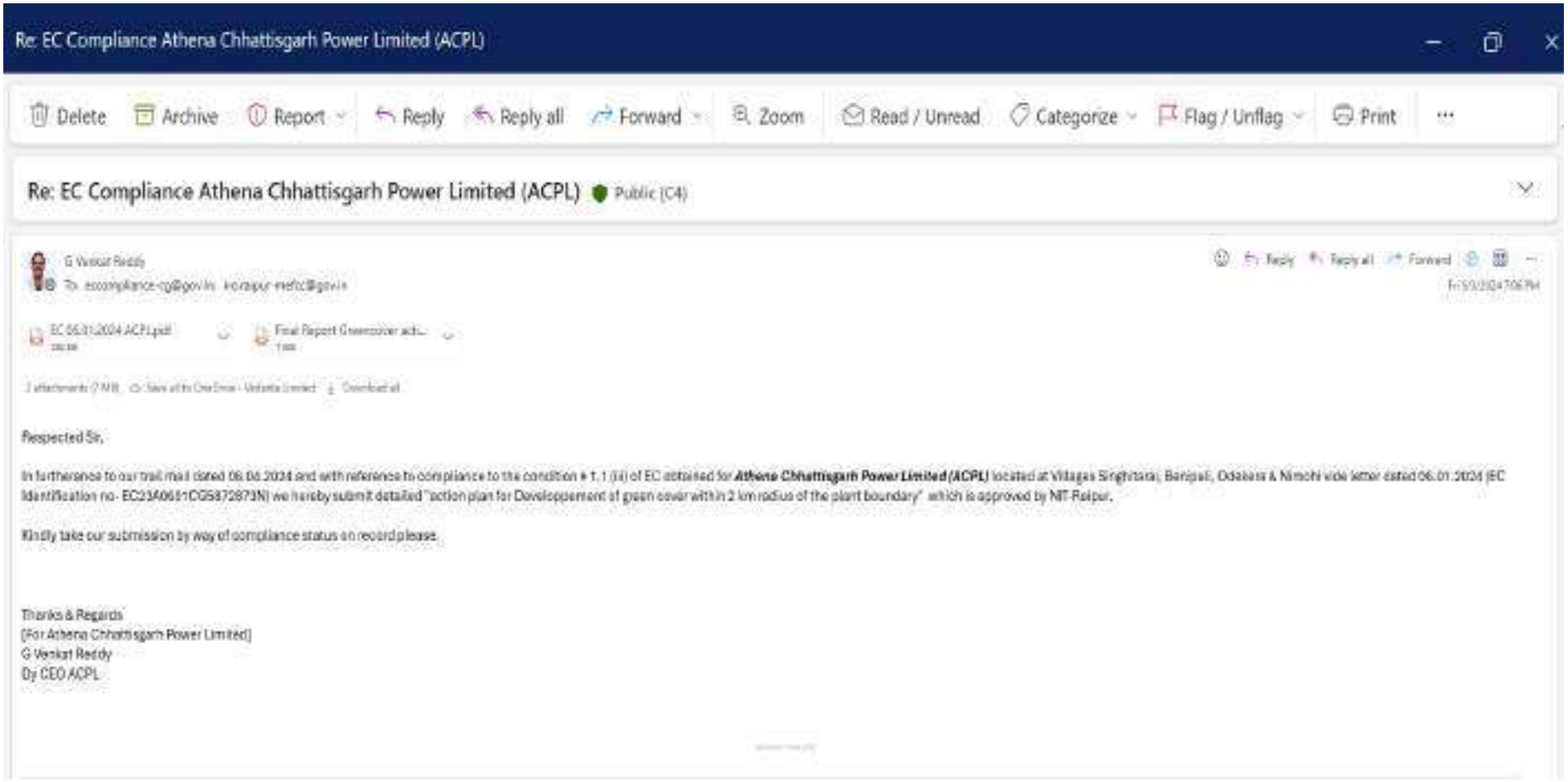
Sensitivity: Public (C4)

Photographs of Miyawaki Plantation





Sensitivity: Public (C4)



Re: EC Compliance Athena Chhattisgarh Power Limited (ACPL)

Delete | Archive | Report | Reply | Reply all | Forward | Zoom | Read / Unread | Categorize | Flag / Unflag | Print | ...

Re: EC Compliance Athena Chhattisgarh Power Limited (ACPL) Public (C4)

G Venkat Reddy
To: eccompliance-cg@gov.in; ro-raipur-mefcc@gov.in

Reply | Reply all | Forward

Fri 5/3/2024 7:06 PM

EC 06.01.2024 ACPL.pdf | Final Report Greencover acti...

2 attachments (7 KB) | Save all to OneDrive - Vedanta Limited | Download all

Respected Sir,

In furtherance to our mail mail dated 06.04.2024 and with reference to compliance to the condition # 1.1 (iii) of EC obtained for **Athena Chhattisgarh Power Limited (ACPL)** located at Villages Singhitarai, Baniyali, Odakara & Nimchi vide letter dated 06.01.2024 (EC Identification no- EC23A061CG5872873N) we hereby submit detailed "action plan for Developement of green cover within 2 km radius of the plant boundary" which is approved by NIT Raipur.

Kindly take our submission by way of compliance status on record please.

Thanks & Regards
(For Athena Chhattisgarh Power Limited)
G Venkat Reddy
Dy CEO ACPL

Re: EC Compliance Athena Chhattisgarh Power Limited (ACPL) Public (C4)

From: G Venkat Reddy
Sent: 06 April 2024 21:09
To: eccompliance-cg@gov.in <eccompliance-cg@gov.in>; ro.raipur-mefcc@gov.in <ro.raipur-mefcc@gov.in>
Subject: EC Compliance Athena Chhattisgarh Power Limited (ACPL)

Respected Sir,

We have obtained EC for ***Athena Chhattisgarh Power Limited (ACPL)*** located at Village Singhitarai, Baripali, Odeloara & Nimoshi vide letter dated 06.01.2024 [EC Identification no- EC23A0601CG5872675N] - Copy attached.

As a part of compliance to EC condition # xx and is [Under 1.1 Environmental Management] we are required to submit details / report within 3 months to your good office. Accordingly, please find herewith our submissions by way of compliance status as under:

Condition #	Condition	Compliance
1.1 (vi)	No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/ operation of the power plant. A list of all small and large water bodies shall be prepared after physical survey within 10 km radius of the project. A detailed conservation plan for all these water bodies shall be prepared and submitted before the Regional Office of the Ministry within 3 months. Implementation status of conservation plan be submitted in 6 monthly compliance report.	List of water bodies within 10 km radius of the project along with conservation plan is attached herewith as **Annexure-I**.
1.1 (x)	Extensive green cover within 2 km range of the plant boundary shall be developed. An action plan in this regard to be prepared in consultation with CPCB/expert institution and submitted before Regional Office of the Ministry within 3 months.	A detailed action plan is being prepared by a recognized Technical Institute and is in the final stage of review and will be submitted at the earliest.

You are hereby requested to kindly take our submissions by way of compliance status on record please.

Thanks & Regards
[For Athena Chhattisgarh Power Limited]
G Venkat Reddy
Dy CEO ACPL

Sensitivity: Public (C4)









4 Nos of CAAQMS at site

Sensitivity: Public (C4)

Photographs of Road Sweeping Machine





Sensitivity: Public (C4)

Photograph of Display Board



Sensitivity: Public (C4)

vedanta transforming for good | power

Ref. No: EC/ACPL/Env./2025-26/41 **November 21, 2025**

To

The Chief Municipal Officer
Nagar panchayat, Dabhra
District- Sakti (CG)

Subject: Regarding usage of STP treated sewage water at Vedanta Limited Chhattisgarh Thermal Power Plant located at village Singhitarai, tehsil Dabhara, district Sakti (CG) 495695

Reference: Environmental Clearance File No.: J-13012/ 07/ 2009-IA. II(T) (EC Identification # EC23A0601CG5872873N) dated 06.01.2024

Dear Sir,

With reference to the above-mentioned subject, we would like to submit that, Vedanta Limited- Chhattisgarh Thermal Power Plant (hereinafter referred as the ***"Company"***) is operating its thermal power plant at village: Singhitarai, tehsil: Dabhara, district: Sakti (CG) 495695 and has obtained all relevant regulatory permissions including Environmental Clearance and presently unit-1 (1 X 600 MW) has started its operation in the month of July'2025.

Further, Condition No. ix, under Environmental Management section of above-mentioned Environmental Clearance dated 06.01.2025 (Copy attached) granted by MoEF&CC state that :

Project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality / local bodies/ similar organization located within 50km radius of the proposed power project to minimize the water drawl from surface water bodies.

Accordingly, to comply with the requirement of the aforesaid condition, we herewith request your good office to kindly allow us to conduct a feasibility study to explore the usage of treated sewage water from the Sewage Treatment Plant installed at Dabhara Nagar Panchayat (if any) for usage of its water for our plant operations.

This letter is being submitted for your information and further needful in the matter please.

Thanking You,

For and on behalf of Vedanta Limited
Chhattisgarh Thermal Power Plant (CTPP)

Devendra Kumar Patel
(Chief Operating Officer)

कार्यालय नगरपंचायत दाभरा जिला-सक्ती (छ.ग.)
Received 22/11/25
Time- 11:35AM

Vedanta Limited- CTPP
Site Office: 2X600 MW Chhattisgarh Thermal Power Plant, Village-Singhitarai, Tehsil-Dabhara, District - Sakti, Chhattisgarh, Pin-495695
Registered Office: Vedanta Limited 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai 400093, Maharashtra, India
T +91 22 6643 4500 | F +91 22 6643 4530
CIN: U32096MH1965PLC291394

Agreement with Cement Industry for Fly Ash Utilization

VEDANTA LIMITED

Chhattisgarh Thermal Power Plant - Village Singhitarai Tehsil: Dabhara, District: Sakti, CHHATTISGARH-495695, INDIA

GSTIN: 22AACCS7101B1Z6

0000158482 SHREE CEMENT LIMITED | **PO Number : 3402001577**

Vendor Details	Purchase Order Details	Buyer Details
Vendor Code 158482	**Order No.** : 3402001577	**Buyer :** Nisha Prasad Shah
Vendor Name SHREE CEMENT LIMITED	**Date :** 17-Oct-25	**Contact :**9883856597
Email: sunil.joshi20@shreecement.com	**Order Type :** **Priority :** Normal	**Mail ID :**nisha.Shah@vedanta.co.in
Address: Shree Raipur Cement Plant, A Unit of Shree Cement Ltd SIMGA, BALODA BAZAR VILLAGE KHAPRADIH TEHSIL, BALODA BAZAR, CHHATTISGARH-493118, INDIA	**Version :** **Version Date :** 17-Oct-25	
GSTIN Number : 22AACCS8706G1Z1		

Header Text:

We are pleased to issue the order confirmation for Ash Evacuation from silo and at 2x600 MW Vedanta Limited Chhattisgarh Thermal Power Plant (CTPP)

Technical Approver's Name - Mr. Hari Krishna Bhanja

Contract Administrator – Mr Ashish Raghuwanshi

Lead Contract – Ms Nisha Prasad

Vedanta Limited Chhattisgarh Thermal Power Plant (VL CTPP) has a strong commitment to providing a safe and healthy workplace and protecting the environment, natural resources.

All your employees should demonstrate a commitment to VL CTPP zero accident philosophy. All your employees will be supplied with app ropriate personal protective equipment (e.g., safety helmet, safety glasses and other safety ppes) as per our safety department list and tools to allow them to perform their work safely, maintain equipment in good working condition, and operate equipment in accordance with the VL CTPP sop. Good house keeping should be maintained at all times.

VL CTPP safety rules and regulations to be followed strictly.

Item No	Material	HSN Code	Material Description	Order Qty	UOM	Delivery Date	Gross Price	Gross Value
00010			Ash Evacuation to Cement Industry	1	AU	30-Oct-27	[redacted]	[redacted]
						Discount %	0	0
						P & F %	0	0
						Freight		0
						CGST%	9	[redacted]
						SGST%	9	[redacted]
						IGST %	0	0

For internal reference

NOT ORIGINAL COPY

REGIONAL OFFICE
CHHATTISGARH ENVIRONMENT CONSERVATION BOARD,
T.V. TOWER ROAD, RAIGARH (C.G.)
Email id:croraigarh.cecb@gmail.com

No. 1790/RO/TS/CECB/2025 Raigarh, Date 14/10/25

To,

M/s Vedanta Limited Chhattisgarh Thermal Power Plant,
Village-Singhitarai, Tehsil-Dabhara,
District-Sakti (C.G.)

Subject :- Permission for filling in abandoned mines with pond ash/fly ash.

Ref.:-
1. CPCB Guidelines for disposal/utilization of fly ash for reclamation of Low lying Areas and in stowing of abandoned mines/Quarries.
2. MoEF & CC GOI O.M. No. 22-13/2019-I.A.III dated 28.08.2019.
3. MoEF & CC GOI notification no. SO 5481(E) dated 31.12.2021.
4. Head Office Fly Ash SOP Letter No. 8141 dated 11.12.2024.
5. Your Online Application No. 01505277814921 Dated 26.09.2025.

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With reference to the above, mentioned letter no 05 the office has examined the proposal in details submitted by you having areas khasra No.-143/1, 143/2, 170, 171/1, 171/2, 172/2, 174/1, 174/2, 174/4, 175/1, 176/1, 176/2, 177/1, 177/2, 180, 144/1, 144/2, 146/1, 146/2, 574/2, 581/2, 582/2, 595/3 & 597/2 total rakba-2.663 hect. in Village-Chhapora, Tehsil-Bilaigarh, District-Sarangarh-Bilaigarh (C.G.). Permission for filling in abandoned mines with pond ash/Fly Ash in areas **khasra No.-143/1, 143/2, 170, 171/1, 171/2, 172/2, 174/1, 174/2, 174/4, 175/1, 176/1, 176/2, 177/1, 177/2, 180, 144/1, 144/2, 146/1, 146/2, 574/2, 581/2, 582/2, 595/3 & 597/2 total rakba-2.663 hect. in Village-Chhapora, Tehsil-Bilaigarh, District-Sarangarh-Bilaigarh (C.G.) for quantity 3,00,000 MT** subject to the following terms & conditions.

Terms & Conditions:-

1. M/s Vedanta Limited Chhattisgarh Thermal Power Plant, 2X600 MW Power Plant at Village-Singhitarai, Tehsil-Dabhara, District-Sakti (C.G.) shall have to abide by the CPCB Guidelines for disposal/utilization of fly ash for reclamation of abandoned mines. Industry shall ensure compliance of MoEF & CC GOI O.M. No. 22-13/2019-IA. III Dated 28.08.2019 in case of violation, EC will be imposed to the industry.
2. This permission is valid for a period of 08 months from date of issue of this letter.
3. As per the Fly Ash notification by MOEF & CC dated 31.12.2021, it shall be the responsibility of the transporters of vehicle owner to deliver ash to authorized purchaser or user agency and if it is not complied, then an environmental compensation of Rs. 1500 per ton on such quantity as mis-delivered to unauthorized users or non-delivered to authorized users will be imposed besides prosecution of such non-compliant transporters by State Pollution Control Board (SPCB) of Pollution Control Committee (PCC).
4. Industry shall ensure transportation of Fly ash/Bottom ash through GPS system and geo-tagging enabled vehicle.
5. The Power Plant shall ensure that fly ash/bottom ash will be filled in areas areas khasra No.-143/1, 143/2, 170, 171/1, 171/2, 172/2, 174/1, 174/2, 174/4, 175/1, 176/1, 176/2, 177/1, 177/2, 180, 144/1, 144/2, 146/1, 146/2, 574/2, 581/2, 582/2, 595/3 & 597/2 total rakba-2.663 hect. in Village-Chhapora, Tehsil-Bilaigarh, District-Sarangarh-Bilaigarh (C.G.).
6. The transportation of fly ash/Bottom ash for filling low lying area need to be done by tankers/bulkers or mechanically designed covered trucks.

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7. Industry shall follow SOP dated 26.06.2024 regarding covering of vehicles with tarpaulin. In case of negligence/violation environmental compensation shall be levied.
8. Industry shall dispose off fly ash/bottom ash only upto current ground level, in case of violation, EC will be imposed to the industry.
9. Industry shall provide boundarywall at the periphery of permitted land to avoid flowage of fly ash in nearby areas.
10. Before filling the fly ash, the lower surface should be leveled and a layer of soil of about 300-500 mm should be laid. Thereafter, if the total height (compacted) of the fly ash to be filled is more than 05 m, then the fly ash should be put in alternate layers/stages, the height of each layer/stage should not be more than 5.0 m. Thereafter, a layer of soil should be laid over the above alternate layers, the height (compacted) of which should not be more than 300 mm. In this way, when the filling of fly ash is complete up to the upper surface, a layer of soil of 500 mm height (compacted) should be laid over it.
11. After completion of fly ash filling work in low lying area, Industry shall submit Work-Completion Certificate to Chhattisgarh Environment Conservation Board, Raigarh.
12. Industry shall submit details (quantity of fly ash & bill T of transportation) of fly ash transported to areas khasra No.-143/1, 143/2, 170, 171/1, 171/2, 172/2, 174/1, 174/2, 174/4, 175/1, 176/1, 176/2, 177/1, 177/2, 180, 144/1, 144/2, 146/1, 146/2, 574/2, 581/2, 582/2, 595/3 & 597/2 total rakba-2.663 hect. in Village-Chhapora, Tehsil-Bilaigarh, District-Sarangarh-Bilaigarh (C.G.). every 15 days.
13. Industry shall ensure proper wind breaking shield to avoid dust nuisance near by area.
14. Industry shall ensure display board near dumping site having information such as name of industry Khasra No., area quantity of fly ash granted etc.
15. Industry shall ensure complete fly ash disposal within the given time period or else environmental compensation will be levied on total permitted quantity of fly ash at the rate of 1500.00 Rupees/Ton (Fly Ash notification by MOEF & CC dated 31.12.2021).
16. M/s Vedanta Limited Chhattisgarh Thermal Power Plant, 2X600 MW Power Plant at Village-Singhitarai, Tehsil-Dabhara, District-Sakti (C.G.) shall have to abide by the guidelines of the Central Government/State Government regarding fly ash utilization issued from time to time.
17. The issuance of this permission does not convey and property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central/State laws or regulations.
18. The above permission shall be revoke, if any conditions are violated by M/s Vedanta Limited Chhattisgarh Thermal Power Plant, 2X600 MW Power Plant at Village-Singhitarai, Tehsil-Dabhara, District-Sakti (C.G.) with immediate effect.

This "Permission" is being issued only for the purpose of ash filling in abandoned mines of aforesaid Khasra Nos. mentions in above and this shall not be treated as consent under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act 1981.

Regional Officer
C.G. Environment Conservation Board,
Raigarh (C.G.)

Endt. No. /RO/TS/CECB/2025 Raigarh, Date .....

Copy To:- 1. The Member Secretary, C.G. Environment Conservation Board, Raipur (C.G.) for information pleases.
2. Collector District-Sarangarh-Bilaigarh (C.G.) for information please.
3. Regional Officer CECB, Near Pt. Dindayal Upadhyay Garden, Vyapar Vihar, Bilaspur, District-Bilaspur (C.G.) for iformation Please.

Regional Officer
C.G. Environment Conservation Board,
Raigarh (C.G.)

D:\Nayal\Toppo Madam\Fly Ash NOC And Letter\Fly Ash Eglas NOC\Sarangarh-Bilaigarh

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CIN No. U74220HR2011PTC085756

J. M. ENVIROLAB PVT. LTD.

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TEST REPORT

Sample Number:	JME/VL/W/001-005	Report No.:	JME/W/250826001-005
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Reporting Date:	02/09/2025
		Analysis Completion Date:	02/09/2025
		Analysis Start Date:	26/08/2025
		Receipt Date:	26/08/2025
Sample Description:	GROUND WATER	Sampling Date:	25/08/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Preservation:	Refrigerated
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Sample Quantity:	5.0 litre
Packing Status:	Temporary Sealed	Testing Protocol:	IS:3025 & APHA 24th Edition 2023
Parameter Required:	As per work order		

GROUND WATER ANALYSIS REPORT

S. No.	Parameters	Unit	Sampling Locations				
			Village- Nimohi	Village- Singhitarai	Village- Benipali	Village- Sukhda	Village- Odekera
1.	pH (at 25°C)	-	7.42	7.48	7.38	7.31	7.62
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)
3.	Turbidity	NTU	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)
4.	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	mg/l	390.0	226.5	306.2	450.4	325.01
7.	Calcium as Ca	mg/l	124.2	64.13	104.2	144.3	96.19
8.	Alkalinity as $CaCO_3$	mg/l	306.7	195.0	200.2	245.7	304.2
9.	Chloride as Cl	mg/l	134.90	62.04	96.78	152.2	85.78
10.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
11.	Magnesium as Mg	mg/l	19.46	15.81	10.94	21.89	20.67
12.	Total Dissolved Solids	mg/l	750.0	369.0	357.0	689.0	549.0
13.	Sulphate as SO_4	mg/l	75.12	31.21	29.56	52.31	53.45
14.	Fluoride as F	mg/l	0.57	0.32	0.61	0.64	0.64
15.	Nitrate as NO_3-N	mg/l	6.86	4.75	6.74	7.52	7.86
16.	Iron as Fe	mg/l	0.50	0.18	0.21	0.48	0.30
17.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
18.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)
19.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
20.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
21.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
22.	Chromium as Cr	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
23.	Zinc as Zn	mg/l	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
24.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
25.	Manganese as Mn	mg/l	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)
26.	Cadmium as Cd	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
27.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)
28.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
29.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
30.	Sodium as Na	mg/l	69.0	44.0	35.0	89.0	57.0
31.	Potassium as K	mg/l	8.0	2.0	5.0	10.0	4.0
32.	Phosphate as PO_4	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
33.	Nickel	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)
34.	Conductivity	µS/cm	998.0	498.0	728.0	1005.0	795.0
35.	Total Suspended Solid	mg/l	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)

Note: BDL – Below Detection Limit, DL- Detection Limit

Authorised Signatory

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Sita Ram Yadav

Note:
1. This test report pertains solely to the tested sample as received.
2. This report shall not be reproduced without in full.
3. Any discrepancies in this test report must be brought to our attention within 7 days from the date of issue.
4. The sample will be destroyed after the specified retention period unless prior instructions are received.
5. All disputes are subject to the exclusive jurisdiction of Gurugram only.

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End of Report

CIN No. U74220HR2011PTC039738

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TEST REPORT

Sample Number:	JME/VL/W/006-010	Report No.:	JME/W/250826006-010
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Reporting Date:	02/09/2025
		Analysis Completion Date:	02/09/2025
		Analysis Start Date:	26/08/2025
		Receipt Date:	26/08/2025
Sample Description:	GROUND WATER	Sampling Date:	25/08/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Preservation:	Refrigerated
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Sample Quantity:	5.0 litre
Packing Status:	Temporary Sealed	Protocol Used:	IS:3025 & APHA 24th Edition 2023
Parameter Required:	As per work order		

GROUND WATER ANALYSIS REPORT

S. No.	Parameters	Unit	Sampling Locations				
			Village- Kanakot	Village- Saraipali	Village- Arajhar	Village- Katharapali	Village- Bandhapali
1.	pH (at 25°C)	-	7.35	7.32	7.54	7.68	7.25
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)
3.	Turbidity	NTU	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)
4.	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	mg/l	425.2	310.4	335.2	409.8	274.6
7.	Calcium as Ca	mg/l	134.3	78.57	86.98	130.4	69.87
8.	Alkalinity as $CaCO_3$	mg/l	239.4	245.2	263.7	289.6	238.5
9.	Chloride as Cl	mg/l	151.1	124.8	160.4	105.6	78.58
10.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
11.	Magnesium as Mg	mg/l	21.89	27.75	28.68	20.45	24.33
12.	Total Dissolved Solids	mg/l	666.0	524.0	618.0	534.0	445.0
13.	Sulphate as SO_4	mg/l	49.87	30.24	43.64	35.42	38.56
14.	Fluoride as F	mg/l	0.59	0.41	0.82	0.80	0.85
15.	Nitrate as NO_3-N	mg/l	3.52	6.97	2.19	2.97	4.62
16.	Iron as Fe	mg/l	0.12	0.19	0.24	0.31	0.19
17.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
18.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)
19.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
20.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
21.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
22.	Chromium as Cr	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
23.	Zinc as Zn	mg/l	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
24.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
25.	Manganese as Mn	mg/l	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)
26.	Cadmium as Cd	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
27.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)
28.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
29.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
30.	Sodium as Na	mg/l	56.0	46.0	67.0	38.0	37.0
31.	Potassium as K	mg/l	12.0	2.0	10.0	5.0	5.0
32.	Phosphate as PO_4	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
33.	Nickel	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)
34.	Conductivity	µS/cm	1007.0	796.0	989.0	805.0	687.0
35.	Total Suspended Solid	mg/l	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)

Note: BDL – Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Shri Ram Yadav

Note:
1. This test report pertains solely to the tested sample as received.
2. This report shall not be reproduced without in full.
3. Any discrepancies in this test report must be brought to our attention within 7 days from the date of issue.
4. The sample will be destroyed after the specified retention period unless prior instructions are received.
5. All disputes are subject to the exclusive jurisdiction of Gurugram only.

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End of Report

CIN No. U74220HR2011PTC083796

J. M. ENVIROLAB PVT. LTD.

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TEST REPORT

Sample Number:	JME/VL/SW/001-005	Report No.:	JME/SW/250826001-005
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Reporting Date:	02/09/2025
		Analysis Completion Date:	02/09/2025
		Analysis Start Date:	26/08/2025
		Receipt Date:	26/08/2025
Sample Description:	SURFACE WATER	Sampling Date:	25/08/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Preservation:	Refrigerated
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Sample Quantity:	5.0 litre
Packing Status:	Temporary Sealed	Protocol Used:	IS:3025 & APHA 24th Edition 2023
Parameter Required:	As per work order		

SURFACE WATER ANALYSIS REPORT

S. No.	Parameters	Unit	Sample Locations				
			Water Reservoir Singhitaral No. 1	Water Reservoir Singhitaral No. 2	Pond Near Odekera Village	Pond Village-Singhitaral	Pond Near Panchayat Bhawan Village-Nimohi
1.	pH (at 25°C)	--	7.47	7.46	7.56	7.45	7.36
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)
3.	Turbidity	NTU	8.0	7.0	5.0	4.0	9.0
4.	Odour	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Total Hardness as $CaCO_3$	mg/l	124.5	158.5	72.51	142.4	85.96
6.	Calcium as Ca	mg/l	25.45	45.67	24.57	37.58	21.24
7.	Alkalinity as $CaCO_3$	mg/l	102.5	92.45	65.42	136.8	110.70
8.	Chloride as Cl	mg/l	45.24	39.87	31.25	82.57	77.18
9.	Residual free Chlorine	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
10.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
11.	Magnesium as Mg	mg/l	14.81	10.80	2.71	11.80	8.0
12.	Total Dissolved Solids	mg/l	268.0	297.0	160.0	296.0	312.0
13.	Sulphate as SO_4	mg/l	20.98	24.12	14.02	16.52	21.45
14.	Fluoride as F	mg/l	0.61	0.59	0.42	0.75	0.82
15.	Nitrate as NO_3	mg/l	4.97	4.52	1.32	3.48	2.11
16.	Iron as Fe	mg/l	0.20	0.34	0.09	0.16	0.15
17.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
18.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)
19.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
20.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
21.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
22.	Zinc as Zn	mg/l	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
23.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
24.	Manganese as Mn	mg/l	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)
25.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)
26.	Selenium as Se	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)
27.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
28.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
29.	Phosphate as Po_4	mg/l	0.09	0.03	0.19	0.05	0.12
30.	Total Suspended Solid	mg/l	20.0	10.5	6.2	8.9	24.0
31.	Biochemical Oxygen Demand	mg/l	8.0	4.3	9.1	6.4	13.0
32.	Chemical Oxygen Demand	mg/l	34.0	36.0	25.0	22.0	57.0
33.	Sodium as Na	mg/l	28.0	25.0	24.0	65.0	90.0
34.	Potassium as K	mg/l	2.0	5.0	4.0	10.0	10.0
35.	Conductivity	µs/cm	394.0	435.0	235.0	488.0	465.0
36.	Nickel	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)
37.	Dissolve Oxygen	mg/l	6.6	6.9	6.0	5.7	5.9

Note: BDL – Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Sita Ram Yadav

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End of Report

CIN No. U74220HR2011PTC085758

J.M. ENVIROLAB PVT. LTD.

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TEST REPORT

Sample Number:	JME/VL/SW/006-010	Report No.:	JME/SW/250826006-010
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Reporting Date:	02/09/2025
		Analysis Completion Date:	02/09/2025
		Analysis Start Date:	26/08/2025
		Receipt Date:	26/08/2025
Sample Description:	SURFACE WATER	Sampling Date:	25/08/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Preservation:	Refrigerated
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Sample Quantity:	5.0 litre
Packing Status:	Temporary Sealed	Protocol Used:	IS:3025 & APHA 24th Edition 2023
Parameter Required:	As per work order		

SURFACE WATER ANALYSIS REPORT

S. No.	Parameters	Unit	Sample Locations				
			Canal Near Plant Site- Upstream	Canal Near Plant Site- Down Stream	Nallah Near Ash Dyke- Upstream	Nallah Near Ash Dyke- Down Stream	Pond Village Kulba
1.	pH (at 25°C)	--	7.78	7.64	7.24	7.19	7.65
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)
3.	Turbidity	NTU	8.0	10.0	7.0	11.0	6.0
4.	Odour	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Total Hardness as $CaCO_3$	mg/l	215.4	237.5	159.6	175.4	79.54
6.	Calcium as Ca	mg/l	59.84	60.51	19.87	20.54	16.78
7.	Alkalinity as $CaCO_3$	mg/l	162.5	172.5	96.54	108.6	98.54
8.	Chloride as Cl	mg/l	99.87	102.4	22.62	21.54	20.54
9.	Residual free Chlorine	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
10.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
11.	Magnesium as Mg	mg/l	16.03	21.5	26.73	30.15	9.14
12.	Total Dissolved Solids	mg/l	382.0	392.0	195.0	208.0	170.0
13.	Sulphate as SO_4	mg/l	29.87	28.64	17.85	20.41	12.87
14.	Fluoride as F	mg/l	0.49	0.52	0.54	0.62	0.65
15.	Nitrate as NO_3	mg/l	6.42	7.54	5.24	4.25	2.49
16.	Iron as Fe	mg/l	0.21	0.15	0.21	0.21	0.28
17.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
18.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)
19.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
20.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
21.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
22.	Zinc as Zn	mg/l	BDL (DL 0.0005)	BDL (DL 0.0005)	BDL (DL 0.0005)	BDL (DL 0.0005)	BDL (DL 0.0005)
23.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
24.	Manganese as Mn	mg/l	BDL (DL 0.01)	BDL (DL 0.01)	BDL (DL 0.01)	BDL (DL 0.01)	BDL (DL 0.01)
25.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)
26.	Selenium as Se	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)
27.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
28.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
29.	Phosphate as Po_4	mg/l	0.05	0.09	0.17	0.24	0.05
30.	Total Suspended Solid	mg/l	9.6	12.8	10.8	20.5	12.1
31.	Biochemical Oxygen Demand	mg/l	4.8	6.1	8.2	9.2	5.1
32.	Chemical Oxygen Demand	mg/l	18.0	28.0	36.0	48.0	24.0
33.	Sodium as Na	mg/l	43.0	52.0	28.0	30.0	18.0
34.	Potassium as K	mg/l	13.0	15.0	3.0	5.0	5.0
35.	Conductivity	µs/cm	565.0	579.0	289.0	295.0	248.0
36.	Nickel	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)
37.	Dissolve Oxygen	mg/l	6.5	6.4	6.7	6.2	6.5

Note: BDL – Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Sita Ram Yadav

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End of Report

CIN No.: U74210HR2015PTC055736

J.M. ENVIROLAB PVT. LTD.

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TEST REPORT

Sample Number:	JME/VL/W/001-005	Report No.:	JME/W/250918001-005
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Reporting Date:	24/09/2025
		Analysis Completion Date:	24/09/2025
		Analysis Start Date:	18/09/2025
		Receipt Date:	18/09/2025
Sample Description:	GROUND WATER	Sampling Date:	16/09/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Preservation:	Refrigerated
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Sample Quantity:	5.0 litre
Packing Status:	Temporary Sealed	Testing Protocol:	IS:3025 & APHA 24th Edition 2023
Parameter Required:	As per work order		

GROUND WATER ANALYSIS REPORT

S. No.	Parameters	Unit	Sampling Locations				
			Village- Nimohi	Village- Singhitarai	Village- Benipali	Village- Sukhda	Village- Odekera
1.	pH (at 25°C)	-	7.42	7.48	7.38	7.31	7.62
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)
3.	Turbidity	NTU	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)
4.	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	mg/l	390.0	225.5	305.2	450.4	325.01
7.	Calcium as Ca	mg/l	124.2	64.13	104.2	144.3	96.19
8.	Alkalinity as $CaCO_3$	mg/l	308.7	195.0	200.2	245.7	304.2
9.	Chloride as Cl	mg/l	134.90	62.04	96.78	182.2	85.78
10.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
11.	Magnesium as Mg	mg/l	19.46	15.81	10.94	21.89	20.67
12.	Total Dissolved Solids	mg/l	750.0	369.0	357.0	689.0	549.0
13.	Sulphate as SO_4	mg/l	75.12	31.21	29.56	52.31	53.46
14.	Fluoride as F	mg/l	0.57	0.32	0.61	0.84	0.64
15.	Nitrate as NO_3-N	mg/l	6.86	4.75	6.74	7.52	7.86
16.	Iron as Fe	mg/l	0.50	0.18	0.21	0.48	0.30
17.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
18.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)
19.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
20.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
21.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
22.	Chromium as Cr	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
23.	Zinc as Zn	mg/l	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
24.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
25.	Manganese as Mn	mg/l	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)
26.	Cadmium as Cd	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
27.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)
28.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
29.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
30.	Sodium as Na	mg/l	69.0	44.0	35.0	89.0	57.0
31.	Potassium as K	mg/l	8.0	2.0	5.0	10.0	4.0
32.	Phosphate as PO_4	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
33.	Nickel	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)
34.	Conductivity	µS/cm	998.0	498.0	728.0	1005.0	795.0
35.	Total Suspended Solid	mg/l	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)

Note: BDL – Below Detection Limit, DL- Detection Limit

Checked by: Srishti Mehta

Reviewed & Authorized by: Rajkumar Yadav

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End of Report

CIN No.-U74220HR2011PTC039756

J. M. ENVIROLAB PVT. LTD.

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TEST REPORT

Sample Number:	JME/VL/W/006-010	Report No.:	JME/W/250918006-010
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Reporting Date:	24/09/2025
		Analysis Completion Date:	24/09/2025
		Analysis Start Date:	18/09/2025
		Receipt Date:	18/09/2025
Sample Description:	GROUND WATER	Sampling Date:	16/09/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Preservation:	Refrigerated
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Sample Quantity:	5.0 litre
Packing Status:	Temporary Sealed	Protocol Used:	IS:3025 & APHA 24th Edition 2023
Parameter Required:	As per work order		

GROUND WATER ANALYSIS REPORT

S. No.	Parameters	Unit	Sampling Locations				
			Village- Kanakot	Village- Saraipali	Village- Arajhar	Village- Katharapali	Village- Bandhapali
1.	pH (at 25°C)	-	7.35	7.32	7.54	7.66	7.25
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)
3.	Turbidity	NTU	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)
4.	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	mg/l	425.2	310.4	335.2	409.8	274.6
7.	Calcium as Ca	mg/l	134.3	78.57	86.98	130.4	69.87
8.	Alkalinity as $CaCO_3$	mg/l	239.4	245.2	263.7	289.6	238.5
9.	Chloride as Cl	mg/l	151.1	124.8	160.4	105.6	78.56
10.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
11.	Magnesium as Mg	mg/l	21.89	27.75	28.68	20.45	24.33
12.	Total Dissolved Solids	mg/l	668.0	524.0	618.0	534.0	445.0
13.	Sulphate as SO_4	mg/l	49.87	30.24	43.54	35.42	38.56
14.	Fluoride as F	mg/l	0.59	0.41	0.62	0.80	0.65
15.	Nitrate as NO_3-N	mg/l	3.52	6.97	2.19	2.97	4.62
16.	Iron as Fe	mg/l	0.12	0.19	0.24	0.31	0.19
17.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
18.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)
19.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
20.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
21.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
22.	Chromium as Cr	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
23.	Zinc as Zn	mg/l	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
24.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
25.	Manganese as Mn	mg/l	BDL (DL 0.06)	BDL (DL 0.06)	BDL (DL 0.06)	BDL (DL 0.06)	BDL (DL 0.06)
26.	Cadmium as Cd	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
27.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)
28.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
29.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
30.	Sodium as Na	mg/l	58.0	48.0	67.0	36.0	37.0
31.	Potassium as K	mg/l	12.0	2.0	10.0	5.0	5.0
32.	Phosphate as PO_4	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
33.	Nickel	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)
34.	Conductivity	µS/cm	1007.0	796.0	989.0	805.0	687.0
35.	Total Suspended Solid	mg/l	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)

Note: BDL – Below Detection Limit, DL- Detection Limit

Checked by
Srishti Mehta

Reviewed & Authorized by
Rajkumar Yadav

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End of Report

CIN No. U74220HR2018PTC080744

J.M. ENVIROLAB PVT. LTD.

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TEST REPORT

Sample Number:	JME/VL/SW/001-005	Report No.:	JME/SW/250918001-005
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Reporting Date:	24/09/2025
		Analysis Completion Date:	24/09/2025
		Analysis Start Date:	18/09/2025
		Receipt Date:	18/09/2025
Sample Description:	SURFACE WATER	Sampling Date:	16/09/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Preservation:	Refrigerated
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Sample Quantity:	5.0 litre
Packing Status:	Temporary Sealed	Protocol Used:	IS:3025 & APHA 24th Edition 2023
Parameter Required:	As per work order		

SURFACE WATER ANALYSIS REPORT

S. No.	Parameters	Unit	Sample Locations				
			Water Reservoir Singhitaral No. 1	Water Reservoir Singhitaral No. 2	Pond Near Odekera Village	Pond Village- Singhitaral	Pond Near Panchayat Bhawan Village- Nimohi
1.	pH (at 25°C)	--	7.47	7.48	7.56	7.45	7.36
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)
3.	Turbidity	NTU	8.0	7.0	5.0	4.0	9.0
4.	Odour	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Total Hardness as $CaCO_3$	mg/l	124.5	158.5	72.51	142.4	85.96
6.	Calcium as Ca	mg/l	25.45	45.67	24.57	37.58	21.24
7.	Alkalinity as $CaCO_3$	mg/l	102.5	92.45	65.42	136.8	110.70
8.	Chloride as Cl	mg/l	45.24	39.87	31.25	82.57	77.18
9.	Residual free Chlorine	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
10.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
11.	Magnesium as Mg	mg/l	14.81	10.80	2.71	11.80	8.0
12.	Total Dissolved Solids	mg/l	268.0	297.0	160.0	296.0	312.0
13.	Sulphate as SO_4	mg/l	20.98	24.12	14.02	16.52	21.45
14.	Fluoride as F	mg/l	0.61	0.59	0.42	0.75	0.82
15.	Nitrate as NO_3	mg/l	4.97	4.52	1.32	3.48	2.11
16.	Iron as Fe	mg/l	0.20	0.34	0.09	0.16	0.15
17.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
18.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)
19.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
20.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
21.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
22.	Zinc as Zn	mg/l	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
23.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
24.	Manganese as Mn	mg/l	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)	BDL (DL 0.08)
25.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)
26.	Selenium as Se	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)
27.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
28.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
29.	Phosphate as Po_4	mg/l	0.09	0.03	0.19	0.05	0.12
30.	Total Suspended Solid	mg/l	20.0	10.5	8.2	6.9	24.0
31.	Biochemical Oxygen Demand	mg/l	8.0	4.3	9.1	6.4	13.0
32.	Chemical Oxygen Demand	mg/l	34.0	36.0	25.0	22.0	57.0
33.	Sodium as Na	mg/l	26.0	25.0	24.0	65.0	90.0
34.	Potassium as K	mg/l	2.0	5.0	4.0	10.0	10.0
35.	Conductivity	µs/cm	394.0	435.0	235.0	488.0	466.0
36.	Nickel	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)
37.	Dissolve Oxygen	mg/l	6.6	6.9	6.0	5.7	5.9

Note: BDL – Below Detection Limit, DL- Detection Limit

Checked by
Srishti Mehta

Reviewed & Authorized by
Rajkumar Yadav

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Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517, Golf Course Ext. Road, Sector-61,Gurugram-122011(Haryana)

End of Report

CIN No.: U74120HR2011PTC081785

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TEST REPORT

Sample Number:	JME/VL/SW/006-010	Report No.:	JME/SW/250918006-010
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Reporting Date:	24/09/2025
		Analysis Completion Date:	24/09/2025
		Analysis Start Date:	18/09/2025
		Receipt Date:	18/09/2025
Sample Description:	SURFACE WATER	Sampling Date:	16/09/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Preservation:	Refrigerated
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Sample Quantity:	5.0 litre
Packing Status:	Temporary Sealed	Protocol Used:	IS:3025 & APHA 24th Edition 2023
Parameter Required:	As per work order		

SURFACE WATER ANALYSIS REPORT

S. No.	Parameters	Unit	Sample Locations				
			Canal Near Plant Site- Upstream	Canal Near Plant Site- Down Stream	Nallah Near Ash Dyke- Upstream	Nallah Near Ash Dyke- Down Stream	Pond Village Sukhda
1.	pH (at 25°C)	--	7.78	7.64	7.24	7.19	7.08
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)
3.	Turbidity	NTU	8.0	10.0	7.0	11.0	3.0
4.	Odour	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Total Hardness as $CaCO_3$	mg/l	215.4	237.5	189.6	175.4	84.24
6.	Calcium as Ca	mg/l	59.84	60.51	19.87	20.54	19.57
7.	Alkalinity as $CaCO_3$	mg/l	162.5	172.5	96.54	108.6	74.12
8.	Chloride as Cl	mg/l	99.87	102.4	22.62	21.54	21.78
9.	Residual free Chlorine	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.2)
10.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
11.	Magnesium as Mg	mg/l	16.03	21.5	26.73	30.15	8.61
12.	Total Dissolved Solids	mg/l	382.0	392.0	195.0	206.0	130.0
13.	Sulphate as SO_4	mg/l	29.87	28.64	17.85	20.41	9.47
14.	Fluoride as F	mg/l	0.49	0.52	0.54	0.62	0.52
15.	Nitrate as NO_3	mg/l	6.42	7.54	5.24	4.25	2.35
16.	Iron as Fe	mg/l	0.21	0.15	0.21	0.21	0.06
17.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
18.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)
19.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
20.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
21.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)
22.	Zinc as Zn	mg/l	BDL (DL 0.0005)	BDL (DL 0.0005)	BDL (DL 0.0005)	BDL (DL 0.0005)	BDL (DL 0.0005)
23.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)
24.	Manganese as Mn	mg/l	BDL (DL 0.01)	BDL (DL 0.01)	BDL (DL 0.01)	BDL (DL 0.01)	BDL (DL 0.01)
25.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)
26.	Selenium as Se	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)
27.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)
28.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)
29.	Phosphate as Po_4	mg/l	0.05	0.09	0.17	0.24	0.13
30.	Total Suspended Solid	mg/l	9.6	12.8	10.8	20.5	5.6
31.	Biochemical Oxygen Demand	mg/l	4.8	6.1	8.2	9.2	4.2
32	Chemical Oxygen Demand	mg/l	18.0	28.0	36.0	46.0	12.0
33.	Sodium as Na	mg/l	43.0	52.0	28.0	30.0	8.0
34	Potassium as K	mg/l	13.0	15.0	3.0	5.0	BDL (DL 1.0)
35.	Conductivity	µs/cm	565.0	579.0	289.0	295.0	210.0
36.	Nickel	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)
37.	Dissolve Oxygen	mg/l	6.5	6.4	6.7	6.2	7.0

Note: BDL – Below Detection Limit, DL- Detection Limit

Checked by: Srishti Mehta

Reviewed & Authorized by: Rajkumar Yadav

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Corporate Office
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End of Report

TEST REPORT

Sample Number:	JME/VL/W/01	Report No.:	JME/W/251016001
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	GROUND WATER	Analysis Start Date:	16/10/2025
Sample Location:	Village- Nimohi	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 29°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	IS 3025 (Part 11)	7.36	-	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025 (Part 4)	BDL (DL 1.0)	Hazen Unit	5	15
3.	Turbidity	IS 3025 (Part 10)	BDL (DL 1.0)	NTU	1	5
4.	Odour	IS 3025 (Part 5)	Agreeable	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part 8)	Agreeable	-	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	IS 3025 (Part 21)	395.0	mg/l	200	600
7.	Calcium as Ca	IS 3025 (Part 40)	125.4	mg/l	75	200
8.	Alkalinity as $CaCO_3$	IS 3025 (Part-23)	305.2	mg/l	200	600
9.	Chloride as Cl	IS 3025 (Part 32)	130.5	mg/l	250	1000
10.	Cyanide as CN	IS: 3025 (Part-27)	BDL (DL 0.02)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	IS 3025 (Part 46)	19.89	mg/l	30	100
12.	Total Dissolved Solids	IS 3025 (Part 16)	725.0	mg/l	500	2000
13.	Sulphate as SO_4	APHA 24th Edition 4500-SO4-E	73.65	mg/l	200	400
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.55	mg/l	1.0	1.5
15.	Nitrate Nitrogen as NO3	IS:3025 (Part-34) sec 1: Para 6.3, Cadmium reduction method	7.02	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (Part 53)	0.48	mg/l	1.0	No Relaxation
17.	Aluminium as Al	IS 3025 (Part 55)	BDL (DL 0.03)	mg/l	0.03	0.2
18.	Boron	IS 3025 (Part 57)	BDL (DL 0.20)	mg/l	0.5	2.4
19.	Phenols	APHA 24th Edition, 5530-Phenol-D, Direct Photometric	BDL (DL 0.001)	mg/l	0.001	0.002
20.	Anionic Surfactant	APHA 24th Edition, 5440 C	BDL (DL 0.02)	mg/l	0.2	1.0

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar

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TEST REPORT

Sample Number: **JME/VL/W/01** Report No.: **JME/W/251016001**

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l	-	-
22.	Chromium as Cr	IS 3025 (Part 52)	BDL (DL 0.002)	mg/l	0.05	No Relaxation
23.	Zinc as Zn	IS 3025 (Part 49)	BDL (DL 0.1)	mg/l	5	15
24.	Copper as Cu	IS 3025 (Part 42)	BDL (DL 0.02)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (Part 59)	BDL (DL 0.08)	mg/l	0.1	0.3
26.	Cadmium as Cd	IS 3025 (Part 41)	BDL (DL 0.002)	mg/l	0.003	No Relaxation
27.	Lead as Pb	IS 3025 (Part 47)	BDL (DL 0.008)	mg/l	0.01	No Relaxation
28.	Arsenic as As	IS 3025 (Part 37)	BDL (DL 0.002)	mg/l	0.01	No Relaxation
29.	Mercury as Hg	IS 3025 (Part 48)	BDL (DL 0.001)	mg/l	0.001	No Relaxation
30.	Sodium as Na	IS: 3025 (Part-45)	72.0	mg/l	-	-
31.	Potassium as K	IS: 3025 (Part-45)	10.0	mg/l	-	-
32.	Phosphate as PO_4	APHA 23rd Edition- 4500-P-C/D	BDL (DL 0.02)	mg/l	-	-
33.	Nickel	IS 3025 (Part 54)	BDL (DL 0.005)	mg/l	0.02	No Relaxation
34.	Conductivity	IS:3025 (Part 14)	986.0	µS/cm	-	-
35.	Total Suspended Solid	IS:3025 (Part-17)	BDL (DL 1.0)	mg/l	-	-

Note: BDL- Below Detection Limit, DL- Detection Limit

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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End of Report

CIN No. U74120HR2011PTC046716

J. M. ENVIROLAB PVT. LTD.

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TC-6921

TEST REPORT

Sample Number:	JME/VL/W/02	Report No.:	JME/W/251016002
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	GROUND WATER	Analysis Start Date:	16/10/2025
Sample Location:	Village- Singhitaral	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 29°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	IS 3025 (Part 11)	7.52	-	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025 (Part 4)	BDL (DL 1.0)	Hazen Unit	5	15
3.	Turbidity	IS 3025 (Part 10)	BDL (DL 1.0)	NTU	1	5
4.	Odour	IS 3025 (Part 5)	Agreeable	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part 8)	Agreeable	-	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	IS 3025 (Part 21)	230.2	mg/l	200	600
7.	Calcium as Ca	IS 3025 (Part 40)	67.56	mg/l	75	200
8.	Alkalinity as $CaCO_3$	IS 3025 (Part-23)	208.0	mg/l	200	600
9.	Chloride as Cl	IS 3025 (Part 32)	65.34	mg/l	250	1000
10.	Cyanide as CN	IS: 3025 (Part-27)	BDL (DL 0.02)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	IS 3025 (Part 46)	14.94	mg/l	30	100
12.	Total Dissolved Solids	IS 3025 (Part 16)	385.0	mg/l	500	2000
13.	Sulphate as SO_4	APHA 24th Edition 4500-SO4-E	32.54	mg/l	200	400
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.30	mg/l	1.0	1.5
15.	Nitrate Nitrogen as NO3	IS:3025 (Part-34) sec 1: Para 6.3, Cadmium reduction method	4.89	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (Part 53)	0.19	mg/l	1.0	No Relaxation
17.	Aluminium as Al	IS 3025 (Part 55)	BDL (DL 0.03)	mg/l	0.03	0.2
18.	Boron	IS 3025 (Part 57)	BDL (DL 0.20)	mg/l	0.5	2.4
19.	Phenols	APHA 24th Edition, 5530-Phenol-D, Direct Photometric	BDL (DL 0.001)	mg/l	0.001	0.002
20.	Anionic Surfactant	APHA 24th Edition, 5440 C	BDL (DL 0.02)	mg/l	0.2	1.0

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517, Golf Course Ext. Road, Sector-61,Gurugram-122011(Haryana)

TEST REPORT

Sample Number: **JME/VL/W/02** Report No.: **JME/W/251016002**

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l	-	-
22.	Chromium as Cr	IS 3025 (Part 52)	BDL (DL 0.002)	mg/l	0.05	No Relaxation
23.	Zinc as Zn	IS 3025 (Part 49)	BDL (DL 0.1)	mg/l	5	15
24.	Copper as Cu	IS 3025 (Part 42)	BDL (DL 0.02)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (Part 59)	BDL (DL 0.08)	mg/l	0.1	0.3
26.	Cadmium as Cd	IS 3025 (Part 41)	BDL (DL 0.002)	mg/l	0.003	No Relaxation
27.	Lead as Pb	IS 3025 (Part 47)	BDL (DL 0.008)	mg/l	0.01	No Relaxation
28.	Arsenic as As	IS 3025 (Part 37)	BDL (DL 0.002)	mg/l	0.01	No Relaxation
29.	Mercury as Hg	IS 3025 (Part 48)	BDL (DL 0.001)	mg/l	0.001	No Relaxation
30.	Sodium as Na	IS: 3025 (Part-45)	48.0	mg/l	-	-
31.	Potassium as K	IS: 3025 (Part-45)	2.0	mg/l	-	-
32.	Phosphate as PO_4	APHA 23rd Edition- 4500-P-C/D	BDL (DL 0.02)	mg/l	-	-
33.	Nickel	IS 3025 (Part 54)	BDL (DL 0.005)	mg/l	0.02	No Relaxation
34.	Conductivity	IS:3025 (Part 14)	508.0	µS/cm	-	-
35.	Total Suspended Solid	IS:3025 (Part-17)	BDL (DL 1.0)	mg/l	-	-

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar Yadav

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End of Report

CIN No. U74220HR2018PTC080748

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TC-6821

TEST REPORT

Sample Number:	JME/VL/W/03	Report No.:	JME/W/251016003
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	GROUND WATER	Analysis Start Date:	16/10/2025
Sample Location:	Village- Benipali	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 29°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	IS 3025 (Part 11)	7.45	-	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025 (Part 4)	BDL (DL 1.0)	Hazen Unit	5	15
3.	Turbidity	IS 3025 (Part 10)	BDL (DL 1.0)	NTU	1	5
4.	Odour	IS 3025 (Part 5)	Agreeable	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part 8)	Agreeable	-	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	IS 3025 (Part 21)	298.7	mg/l	200	600
7.	Calcium as Ca	IS 3025 (Part 40)	98.74	mg/l	75	200
8.	Alkalinity as $CaCO_3$	IS 3025 (Part-23)	195.6	mg/l	200	600
9.	Chloride as Cl	IS 3025 (Part 32)	91.25	mg/l	250	1000
10.	Cyanide as CN	IS: 3025 (Part-27)	BDL (DL 0.02)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	IS 3025 (Part 46)	12.67	mg/l	30	100
12.	Total Dissolved Solids	IS 3025 (Part 16)	464.0	mg/l	500	2000
13.	Sulphate as SO_4	APHA 24th Edition 4500-SO4-E	27.45	mg/l	200	400
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.58	mg/l	1.0	1.5
15.	Nitrate Nitrogen as NO3	IS:3025 (Part-34) sec 1: Para 6.3, Cadmium reduction method	6.15	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (Part 53)	0.20	mg/l	1.0	No Relaxation
17.	Aluminium as Al	IS 3025 (Part 55)	BDL (DL 0.03)	mg/l	0.03	0.2
18.	Boron	IS 3025 (Part 57)	BDL (DL 0.20)	mg/l	0.5	2.4
19.	Phenols	APHA 24th Edition, 5530-Phenol-D, Direct Photometric	BDL (DL 0.001)	mg/l	0.001	0.002
20.	Anionic Surfactant	APHA 24th Edition, 5440 C	BDL (DL 0.02)	mg/l	0.2	1.0

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar

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TEST REPORT

Sample Number: **JME/VL/W/03** Report No.: **JME/W/251016003**

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l	-	-
22.	Chromium as Cr	IS 3025 (Part 52)	BDL (DL 0.002)	mg/l	0.05	No Relaxation
23.	Zinc as Zn	IS 3025 (Part 49)	BDL (DL 0.1)	mg/l	5	15
24.	Copper as Cu	IS 3025 (Part 42)	BDL (DL 0.02)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (Part 59)	BDL (DL 0.08)	mg/l	0.1	0.3
26.	Cadmium as Cd	IS 3025 (Part 41)	BDL (DL 0.002)	mg/l	0.003	No Relaxation
27.	Lead as Pb	IS 3025 (Part 47)	BDL (DL 0.006)	mg/l	0.01	No Relaxation
28.	Arsenic as As	IS 3025 (Part 37)	BDL (DL 0.002)	mg/l	0.01	No Relaxation
29.	Mercury as Hg	IS 3025 (Part 48)	BDL (DL 0.001)	mg/l	0.001	No Relaxation
30.	Sodium as Na	IS: 3025 (Part-45)	32.0	mg/l	-	-
31.	Potassium as K	IS: 3025 (Part-45)	3.0	mg/l	-	-
32.	Phosphate as PO_4	APHA 23rd Edition- 4500-P-C/D	BDL (DL 0.02)	mg/l	-	-
33.	Nickel	IS 3025 (Part 54)	BDL (DL 0.005)	mg/l	0.02	No Relaxation
34.	Conductivity	IS:3025 (Part 14)	698.0	µS/cm	-	-
35.	Total Suspended Solid	IS:3025 (Part-17)	BDL (DL 1.0)	mg/l	-	-

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar Yadav

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End of Report

TEST REPORT

Sample Number:	JME/VL/W/04	Report No.:	JME/W/251016004
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	GROUND WATER	Analysis Start Date:	16/10/2025
Sample Location:	Village- Sukhda	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 29°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	IS 3025 (Part 11)	7.24	-	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025 (Part 4)	BDL (DL 1.0)	Hazen Unit	5	15
3.	Turbidity	IS 3025 (Part 10)	BDL (DL 1.0)	NTU	1	5
4.	Odour	IS 3025 (Part 5)	Agreeable	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part 8)	Agreeable	-	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	IS 3025 (Part 21)	460.4	mg/l	200	600
7.	Calcium as Ca	IS 3025 (Part 40)	147.7	mg/l	75	200
8.	Alkalinity as $CaCO_3$	IS 3025 (Part-23)	239.8	mg/l	200	600
9.	Chloride as Cl	IS 3025 (Part 32)	187.5	mg/l	250	1000
10.	Cyanide as CN	IS: 3025 (Part-27)	BDL (DL 0.02)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	IS 3025 (Part 46)	22.25	mg/l	30	100
12.	Total Dissolved Solids	IS 3025 (Part 16)	751.0	mg/l	500	2000
13.	Sulphate as SO_4	APHA 24th Edition 4500-SO4-E	55.41	mg/l	200	400
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.69	mg/l	1.0	1.5
15.	Nitrate Nitrogen as NO3	IS:3025 (Part-34) sec 1: Para 6.3. Cadmium reduction method	8.05	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (Part 53)	0.45	mg/l	1.0	No Relaxation
17.	Aluminium as Al	IS 3025 (Part 55)	BDL (DL 0.03)	mg/l	0.03	0.2
18.	Boron	IS 3025 (Part 57)	BDL (DL 0.20)	mg/l	0.5	2.4
19.	Phenols	APHA 24th Edition, 5530-Phenol-D, Direct Photometric	BDL (DL 0.001)	mg/l	0.001	0.002
20.	Anionic Surfactant	APHA 24th Edition, 5440 C	BDL (DL 0.02)	mg/l	0.2	1.0

Checked by
Abhishek Tiwari

J. M. ENVIROLAB PVT. LTD. Authorized Signatory

Reviewed & Authorized by
Rajkumar

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TEST REPORT

Sample Number: **JME/VL/W/04** Report No.: **JME/W/251016004**

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l	-	-
22.	Chromium as Cr	IS 3025 (Part 52)	BDL (DL 0.002)	mg/l	0.05	No Relaxation
23.	Zinc as Zn	IS 3025 (Part 49)	BDL (DL 0.1)	mg/l	5	15
24.	Copper as Cu	IS 3025 (Part 42)	BDL (DL 0.02)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (Part 59)	BDL (DL 0.08)	mg/l	0.1	0.3
26.	Cadmium as Cd	IS 3025 (Part 41)	BDL (DL 0.002)	mg/l	0.003	No Relaxation
27.	Lead as Pb	IS 3025 (Part 47)	BDL (DL 0.008)	mg/l	0.01	No Relaxation
28.	Arsenic as As	IS 3025 (Part 37)	BDL (DL 0.002)	mg/l	0.01	No Relaxation
29.	Mercury as Hg	IS 3025 (Part 48)	BDL (DL 0.001)	mg/l	0.001	No Relaxation
30.	Sodium as Na	IS: 3025 (Part-45)	95.0	mg/l	-	-
31.	Potassium as K	IS: 3025 (Part-45)	12.0	mg/l	-	-
32.	Phosphate as PO_4	APHA 23rd Edition- 4500-P-C/D	BDL (DL 0.02)	mg/l	-	-
33.	Nickel	IS 3025 (Part 54)	BDL (DL 0.005)	mg/l	0.02	No Relaxation
34.	Conductivity	IS:3025 (Part 14)	1102.0	µS/cm	-	-
35.	Total Suspended Solid	IS:3025 (Part-17)	BDL (DL 1.0)	mg/l	-	-

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar Yadav

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CIN No. :U74120HR2017PTC068758

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TC-6821

TEST REPORT

Sample Number:	JME/VL/W/05	Report No.:	JME/W/251016005
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	GROUND WATER	Analysis Start Date:	16/10/2025
Sample Location:	Village- Odekera	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 29°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	IS 3025 (Part 11)	7.58	-	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025 (Part 4)	BDL (DL 1.0)	Hazen Unit	5	15
3.	Turbidity	IS 3025 (Part 10)	BDL (DL 1.0)	NTU	1	5
4.	Odour	IS 3025 (Part 5)	Agreeable	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part 8)	Agreeable	-	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	IS 3025 (Part 21)	330.5	mg/l	200	600
7.	Calcium as Ca	IS 3025 (Part 40)	101.3	mg/l	75	200
8.	Alkalinity as $CaCO_3$	IS 3025 (Part-23)	308.7	mg/l	200	600
9.	Chloride as Cl	IS 3025 (Part 32)	90.54	mg/l	250	1000
10.	Cyanide as CN	IS: 3025 (Part-27)	BDL (DL 0.02)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	IS 3025 (Part 46)	18.84	mg/l	30	100
12.	Total Dissolved Solids	IS 3025 (Part 16)	551.0	mg/l	500	2000
13.	Sulphate as SO_4	APHA 24th Edition 4500-SO4-E	54.36	mg/l	200	400
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.62	mg/l	1.0	1.5
15.	Nitrate Nitrogen as NO3	IS:3025 (Part-34) sec 1: Para 6.3, Cadmium reduction method	7.95	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (Part 53)	0.32	mg/l	1.0	No Relaxation
17.	Aluminium as Al	IS 3025 (Part 55)	BDL (DL 0.03)	mg/l	0.03	0.2
18.	Boron	IS 3025 (Part 57)	BDL (DL 0.20)	mg/l	0.5	2.4
19.	Phenols	APHA 24th Edition, 5530-Phenol-D, Direct Photometric	BDL (DL 0.001)	mg/l	0.001	0.002
20.	Anionic Surfactant	APHA 24th Edition, 5440 C	BDL (DL 0.02)	mg/l	0.2	1.0

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/W/05** Report No.: **JME/W/251016005**

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l	-	-
22.	Chromium as Cr	IS 3025 (Part 52)	BDL (DL 0.002)	mg/l	0.05	No Relaxation
23.	Zinc as Zn	IS 3025 (Part 49)	BDL (DL 0.1)	mg/l	5	15
24.	Copper as Cu	IS 3025 (Part 42)	BDL (DL 0.02)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (Part 59)	BDL (DL 0.08)	mg/l	0.1	0.3
26.	Cadmium as Cd	IS 3025 (Part 41)	BDL (DL 0.002)	mg/l	0.003	No Relaxation
27.	Lead as Pb	IS 3025 (Part 47)	BDL (DL 0.008)	mg/l	0.01	No Relaxation
28.	Arsenic as As	IS 3025 (Part 37)	BDL (DL 0.002)	mg/l	0.01	No Relaxation
29.	Mercury as Hg	IS 3025 (Part 48)	BDL (DL 0.001)	mg/l	0.001	No Relaxation
30.	Sodium as Na	IS: 3025 (Part-45)	64.0	mg/l	-	-
31.	Potassium as K	IS: 3025 (Part-45)	4.0	mg/l	-	-
32.	Phosphate as PO_4	APHA 23rd Edition- 4500-P-C/D	BDL (DL 0.02)	mg/l	-	-
33.	Nickel	IS 3025 (Part 54)	BDL (DL 0.005)	mg/l	0.02	No Relaxation
34.	Conductivity	IS:3025 (Part 14)	810.0	µS/cm	-	-
35.	Total Suspended Solid	IS:3025 (Part-17)	BDL (DL 1.0)	mg/l	-	-

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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TC-6821

TEST REPORT

Sample Number:	JME/VL/W/06	Report No.:	JME/W/251016006
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	GROUND WATER	Analysis Start Date:	16/10/2025
Sample Location:	Village- Kanakot	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 29°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	IS 3025 (Part 11)	7.28	-	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025 (Part 4)	BDL (DL 1.0)	Hazen Unit	5	15
3.	Turbidity	IS 3025 (Part 10)	BDL (DL 1.0)	NTU	1	5
4.	Odour	IS 3025 (Part 5)	Agreeable	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part 8)	Agreeable	-	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	IS 3025 (Part 21)	400.2	mg/l	200	600
7.	Calcium as Ca	IS 3025 (Part 40)	130.7	mg/l	75	200
8.	Alkalinity as $CaCO_3$	IS 3025 (Part-23)	235.4	mg/l	200	600
9.	Chloride as Cl	IS 3025 (Part 32)	145.8	mg/l	250	1000
10.	Cyanide as CN	IS: 3025 (Part-27)	BDL (DL 0.02)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	IS 3025 (Part 46)	17.94	mg/l	30	100
12.	Total Dissolved Solids	IS 3025 (Part 16)	651.0	mg/l	500	2000
13.	Sulphate as SO_4	APHA 24th Edition 4500-SO4-E	48.54	mg/l	200	400
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.61	mg/l	1.0	1.5
15.	Nitrate Nitrogen as NO3	IS:3025 (Part-34) sec 1: Para 8.3, Cadmium reduction method	3.87	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (Part 53)	0.10	mg/l	1.0	No Relaxation
17.	Aluminium as Al	IS 3025 (Part 55)	BDL (DL 0.03)	mg/l	0.03	0.2
18.	Boron	IS 3025 (Part 57)	BDL (DL 0.20)	mg/l	0.5	2.4
19.	Phenols	APHA 24th Edition, 5530-Phenol-D, Direct Photometric	BDL (DL 0.001)	mg/l	0.001	0.002
20.	Anionic Surfectant	APHA 24th Edition, 5440 C	BDL (DL 0.02)	mg/l	0.2	1.0

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/W/06** Report No.: **JME/W/251016005**

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l	-	-
22.	Chromium as Cr	IS 3025 (Part 52)	BDL (DL 0.002)	mg/l	0.05	No Relaxation
23.	Zinc as Zn	IS 3025 (Part 49)	BDL (DL 0.1)	mg/l	5	15
24.	Copper as Cu	IS 3025 (Part 42)	BDL (DL 0.02)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (Part 59)	BDL (DL 0.08)	mg/l	0.1	0.3
26.	Cadmium as Cd	IS 3025 (Part 41)	BDL (DL 0.002)	mg/l	0.003	No Relaxation
27.	Lead as Pb	IS 3025 (Part 47)	BDL (DL 0.008)	mg/l	0.01	No Relaxation
28.	Arsenic as As	IS 3025 (Part 37)	BDL (DL 0.002)	mg/l	0.01	No Relaxation
29.	Mercury as Hg	IS 3025 (Part 48)	BDL (DL 0.001)	mg/l	0.001	No Relaxation
30.	Sodium as Na	IS: 3025 (Part-45)	55.0	mg/l	-	-
31.	Potassium as K	IS: 3025 (Part-45)	10.0	mg/l	-	-
32.	Phosphate as PO_4	APHA 23rd Edition- 4500-P-C/D	BDL (DL 0.02)	mg/l	-	-
33.	Nickel	IS 3025 (Part 54)	BDL (DL 0.005)	mg/l	0.02	No Relaxation
34.	Conductivity	IS:3025 (Part 14)	998.0	µS/cm	-	-
35.	Total Suspended Solid	IS:3025 (Part-17)	BDL (DL 1.0)	mg/l	-	-

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar Yadav

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End of Report

TEST REPORT

Sample Number:	JME/VL/W/07	Report No.:	JME/W/251016007
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	GROUND WATER	Analysis Start Date:	16/10/2025
Sample Location:	Village- Saraipali	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 29°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	IS 3025 (Part 11)	7.41	-	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025 (Part 4)	BDL (DL 1.0)	Hazen Unit	5	15
3.	Turbidity	IS 3025 (Part 10)	BDL (DL 1.0)	NTU	1	5
4.	Odour	IS 3025 (Part 5)	Agreeable	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part 8)	Agreeable	-	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	IS 3025 (Part 21)	315.4	mg/l	200	600
7.	Calcium as Ca	IS 3025 (Part 40)	84.62	mg/l	75	200
8.	Alkalinity as $CaCO_3$	IS 3025 (Part-23)	250.4	mg/l	200	600
9.	Chloride as Cl	IS 3025 (Part 32)	128.7	mg/l	250	1000
10.	Cyanide as CN	IS: 3025 (Part-27)	BDL (DL 0.02)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	IS 3025 (Part 46)	25.29	mg/l	30	100
12.	Total Dissolved Solids	IS 3025 (Part 16)	553.0	mg/l	500	2000
13.	Sulphate as SO_4	APHA 24th Edition 4500-SO4-E	32.41	mg/l	200	400
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.43	mg/l	1.0	1.5
15.	Nitrate Nitrogen as NO3	IS:3025 (Part-34) sec 1: Para 6.3, Cadmium reduction method	7.08	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (Part 53)	0.18	mg/l	1.0	No Relaxation
17.	Aluminium as Al	IS 3025 (Part 55)	BDL (DL 0.03)	mg/l	0.03	0.2
18.	Boron	IS 3025 (Part 57)	BDL (DL 0.20)	mg/l	0.5	2.4
19.	Phenols	APHA 24th Edition, 5530-Phenol-D, Direct Photometric	BDL (DL 0.001)	mg/l	0.001	0.002
20.	Anionic Surfactant	APHA 24th Edition, 5440 C	BDL (DL 0.02)	mg/l	0.2	1.0

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/W/07** Report No.: **JME/W/251016007**

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l	-	-
22.	Chromium as Cr	IS 3025 (Part 52)	BDL (DL 0.002)	mg/l	0.05	No Relaxation
23.	Zinc as Zn	IS 3025 (Part 49)	BDL (DL 0.1)	mg/l	5	15
24.	Copper as Cu	IS 3025 (Part 42)	BDL (DL 0.02)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (Part 59)	BDL (DL 0.08)	mg/l	0.1	0.3
26.	Cadmium as Cd	IS 3025 (Part 41)	BDL (DL 0.002)	mg/l	0.003	No Relaxation
27.	Lead as Pb	IS 3025 (Part 47)	BDL (DL 0.008)	mg/l	0.01	No Relaxation
28.	Arsenic as As	IS 3025 (Part 37)	BDL (DL 0.002)	mg/l	0.01	No Relaxation
29.	Mercury as Hg	IS 3025 (Part 48)	BDL (DL 0.001)	mg/l	0.001	No Relaxation
30.	Sodium as Na	IS: 3025 (Part-45)	49.0	mg/l	-	-
31.	Potassium as K	IS: 3025 (Part-45)	5.0	mg/l	-	-
32.	Phosphate as PO_4	APHA 23rd Edition- 4500-P-C/D	BDL (DL 0.02)	mg/l	-	-
33.	Nickel	IS 3025 (Part 54)	BDL (DL 0.005)	mg/l	0.02	No Relaxation
34.	Conductivity	IS:3025 (Part 14)	814.0	µS/cm	-	-
35.	Total Suspended Solid	IS:3025 (Part-17)	BDL (DL 1.0)	mg/l	-	-

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar Yadav

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End of Report

CIN No. U74120HR2018PTC080758

J. M. ENVIROLAB PVT. LTD.

30 years of success Recognized by CPCB under EP Act-1986, Certified by ISO-9001:2015, 14001:2015 & 45001:2018

TC-6821

TEST REPORT

Sample Number:	JME/VL/W/08	Report No.:	JME/W/251016008
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	GROUND WATER	Analysis Start Date:	16/10/2025
Sample Location:	Village- Arajhar	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 27°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	IS 3025 (Part 11)	7.49	-	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025 (Part 4)	BDL (DL 1.0)	Hazen Unit	5	15
3.	Turbidity	IS 3025 (Part 10)	BDL (DL 1.0)	NTU	1	5
4.	Odour	IS 3025 (Part 5)	Agreeable	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part 8)	Agreeable	-	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	IS 3025 (Part 21)	340.7	mg/l	200	600
7.	Calcium as Ca	IS 3025 (Part 40)	92.54	mg/l	75	200
8.	Alkalinity as $CaCO_3$	IS 3025 (Part-23)	258.6	mg/l	200	600
9.	Chloride as Cl	IS 3025 (Part 32)	165.4	mg/l	250	1000
10.	Cyanide as CN	IS: 3025 (Part-27)	BDL (DL 0.02)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	IS 3025 (Part 46)	26.64	mg/l	30	100
12.	Total Dissolved Solids	IS 3025 (Part 16)	662.0	mg/l	500	2000
13.	Sulphate as SO_4	APHA 24th Edition 4500-SO4-E	45.68	mg/l	200	400
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.64	mg/l	1.0	1.5
15.	Nitrate Nitrogen as NO3	IS:3025 (Part-34) sec 1: Para 6.3, Cadmium reduction method	2.29	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (Part 53)	0.22	mg/l	1.0	No Relaxation
17.	Aluminium as Al	IS 3025 (Part 55)	BDL (DL 0.03)	mg/l	0.03	0.2
18.	Boron	IS 3025 (Part 57)	BDL (DL 0.20)	mg/l	0.5	2.4
19.	Phenols	APHA 24th Edition, 5530-Phenol-D, Direct Photometric	BDL (DL 0.001)	mg/l	0.001	0.002
20.	Anionic Surfactant	APHA 24th Edition, 5440 C	BDL (DL 0.02)	mg/l	0.2	1.0

Checked by
Abhishek Tiwari

J. M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/W/08** Report No.: **JME/W/251016008**

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l	-	-
22.	Chromium as Cr	IS 3025 (Part 52)	BDL (DL 0.002)	mg/l	0.05	No Relaxation
23.	Zinc as Zn	IS 3025 (Part 49)	BDL (DL 0.1)	mg/l	5	15
24.	Copper as Cu	IS 3025 (Part 42)	BDL (DL 0.02)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (Part 59)	BDL (DL 0.08)	mg/l	0.1	0.3
26.	Cadmium as Cd	IS 3025 (Part 41)	BDL (DL 0.002)	mg/l	0.003	No Relaxation
27.	Lead as Pb	IS 3025 (Part 47)	BDL (DL 0.008)	mg/l	0.01	No Relaxation
28.	Arsenic as As	IS 3025 (Part 37)	BDL (DL 0.002)	mg/l	0.01	No Relaxation
29.	Mercury as Hg	IS 3025 (Part 48)	BDL (DL 0.001)	mg/l	0.001	No Relaxation
30.	Sodium as Na	IS: 3025 (Part-45)	72.0	mg/l	-	-
31.	Potassium as K	IS: 3025 (Part-45)	10.0	mg/l	-	-
32.	Phosphate as PO_4	APHA 23rd Edition- 4500-P-C/D	BDL (DL 0.02)	mg/l	-	-
33.	Nickel	IS 3025 (Part 54)	BDL (DL 0.005)	mg/l	0.02	No Relaxation
34.	Conductivity	IS:3025 (Part 14)	1005.0	µS/cm	-	-
35.	Total Suspended Solid	IS:3025 (Part-17)	BDL (DL 1.0)	mg/l	-	-

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar Yadav

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CIN No. : U74120HR2011PTC088758

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TC-6621

TEST REPORT

Sample Number:	JME/VL/W/09	Report No.:	JME/W/251016009
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	GROUND WATER	Analysis Start Date:	16/10/2025
Sample Location:	Village- Katharapali	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 27°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10600- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	IS 3025 (Part 11)	7.75	-	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025 (Part 4)	BDL (DL 1.0)	Hazen Unit	5	15
3.	Turbidity	IS 3025 (Part 10)	BDL (DL 1.0)	NTU	1	5
4.	Odour	IS 3025 (Part 5)	Agreeable	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part 8)	Agreeable	-	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	IS 3025 (Part 21)	405.5	mg/l	200	600
7.	Calcium as Ca	IS 3025 (Part 40)	125.6	mg/l	75	200
8.	Alkalinity as $CaCO_3$	IS 3025 (Part-23)	294.5	mg/l	200	600
9.	Chloride as Cl	IS 3025 (Part 32)	101.3	mg/l	250	1000
10.	Cyanide as CN	IS: 3025 (Part-27)	BDL (DL 0.02)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	IS 3025 (Part 46)	22.32	mg/l	30	100
12.	Total Dissolved Solids	IS 3025 (Part 16)	540.0	mg/l	500	2000
13.	Sulphate as SO_4	APHA 24th Edition 4500-SO4-E	34.51	mg/l	200	400
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.78	mg/l	1.0	1.5
15.	Nitrate Nitrogen as NO3	IS:3025 (Part-34) sec 1: Para 6.3, Cadmium reduction method	3.12	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (Part 53)	0.29	mg/l	1.0	No Relaxation
17.	Aluminium as Al	IS 3025 (Part 55)	BDL (DL 0.03)	mg/l	0.03	0.2
18.	Boron	IS 3025 (Part 57)	BDL (DL 0.20)	mg/l	0.5	2.4
19.	Phenols	APHA 24th Edition, 5530-Phenol-D, Direct Photometric	BDL (DL 0.001)	mg/l	0.001	0.002
20.	Anionic Surfactant	APHA 24th Edition, 5440 C	BDL (DL 0.02)	mg/l	0.2	1.0

Checked by
Abhishek Tiwari

ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/W/09** Report No.: **JME/W/251016009**

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l	-	-
22.	Chromium as Cr	IS 3025 (Part 52)	BDL (DL 0.002)	mg/l	0.05	No Relaxation
23.	Zinc as Zn	IS 3025 (Part 49)	BDL (DL 0.1)	mg/l	5	15
24.	Copper as Cu	IS 3025 (Part 42)	BDL (DL 0.02)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (Part 59)	BDL (DL 0.08)	mg/l	0.1	0.3
26.	Cadmium as Cd	IS 3025 (Part 41)	BDL (DL 0.002)	mg/l	0.003	No Relaxation
27.	Lead as Pb	IS 3025 (Part 47)	BDL (DL 0.008)	mg/l	0.01	No Relaxation
28.	Arsenic as As	IS 3025 (Part 37)	BDL (DL 0.002)	mg/l	0.01	No Relaxation
29.	Mercury as Hg	IS 3025 (Part 48)	BDL (DL 0.001)	mg/l	0.001	No Relaxation
30.	Sodium as Na	IS: 3025 (Part-45)	41.0	mg/l	-	-
31.	Potassium as K	IS: 3025 (Part-45)	8.0	mg/l	-	-
32.	Phosphate as PO_4	APHA 23rd Edition- 4500-P-C/D	BDL (DL 0.02)	mg/l	-	-
33.	Nickel	IS 3025 (Part 54)	BDL (DL 0.005)	mg/l	0.02	No Relaxation
34.	Conductivity	IS:3025 (Part 14)	795.0	µS/cm	-	-
35.	Total Suspended Solid	IS:3025 (Part-17)	BDL (DL 1.0)	mg/l	-	-

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

J. M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar

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CIN No.: U74220HR2011PTC088788

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TC-6821

TEST REPORT

Sample Number:	JME/VL/W/10	Report No.:	JME/W/251016010
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	GROUND WATER	Analysis Start Date:	16/10/2025
Sample Location:	Village- Bandhapali	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 28°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	IS 3025 (Part 11)	7.18	-	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025 (Part 4)	BDL (DL 1.0)	Hazen Unit	5	15
3.	Turbidity	IS 3025 (Part 10)	BDL (DL 1.0)	NTU	1	5
4.	Odour	IS 3025 (Part 5)	Agreeable	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part 8)	Agreeable	-	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	IS 3025 (Part 21)	270.5	mg/l	200	600
7.	Calcium as Ca	IS 3025 (Part 40)	65.45	mg/l	75	200
8.	Alkalinity as $CaCO_3$	IS 3025 (Part-23)	235.7	mg/l	200	600
9.	Chloride as Cl	IS 3025 (Part 32)	75.64	mg/l	250	1000
10.	Cyanide as CN	IS: 3025 (Part-27)	BDL (DL 0.02)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	IS 3025 (Part 46)	26.04	mg/l	30	100
12.	Total Dissolved Solids	IS 3025 (Part 16)	445.0	mg/l	500	2000
13.	Sulphate as SO_4	APHA 24th Edition 4500-SO4-E	36.56	mg/l	200	400
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.87	mg/l	1.0	1.5
15.	Nitrate Nitrogen as NO3	IS:3025 (Part-34) sec 1: Para 6.3, Cadmium reduction method	4.76	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (Part 53)	0.21	mg/l	1.0	No Relaxation
17.	Aluminium as Al	IS 3025 (Part 55)	BDL (DL 0.03)	mg/l	0.03	0.2
18.	Boron	IS 3025 (Part 57)	BDL (DL 0.20)	mg/l	0.5	2.4
19.	Phenols	APHA 24th Edition, 5530-Phenol-D, Direct Photometric	BDL (DL 0.001)	mg/l	0.001	0.002
20.	Anionic Surfactant	APHA 24th Edition, 5440 C	BDL (DL 0.02)	mg/l	0.2	1.0

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/W/10** Report No.: **JME/W/251016010**

S. No.	Parameters	Testing Protocol	Result	Unit	Specification as per IS 10500- 2012	
					Requirement (Acceptable Limit)	Permissible Limit In the Absence of Alternate Source
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l	-	-
22.	Chromium as Cr	IS 3025 (Part 52)	BDL (DL 0.002)	mg/l	0.05	No Relaxation
23.	Zinc as Zn	IS 3025 (Part 49)	BDL (DL 0.1)	mg/l	5	15
24.	Copper as Cu	IS 3025 (Part 42)	BDL (DL 0.02)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (Part 59)	BDL (DL 0.08)	mg/l	0.1	0.3
26.	Cadmium as Cd	IS 3025 (Part 41)	BDL (DL 0.002)	mg/l	0.003	No Relaxation
27.	Lead as Pb	IS 3025 (Part 47)	BDL (DL 0.008)	mg/l	0.01	No Relaxation
28.	Arsenic as As	IS 3025 (Part 37)	BDL (DL 0.002)	mg/l	0.01	No Relaxation
29.	Mercury as Hg	IS 3025 (Part 48)	BDL (DL 0.001)	mg/l	0.001	No Relaxation
30.	Sodium as Na	IS: 3025 (Part-45)	34.0	mg/l	-	-
31.	Potassium as K	IS: 3025 (Part-45)	5.0	mg/l	-	-
32.	Phosphate as PO_4	APHA 23rd Edition- 4500-P-C/D	BDL (DL 0.02)	mg/l	-	-
33.	Nickel	IS 3025 (Part 54)	BDL (DL 0.005)	mg/l	0.02	No Relaxation
34.	Conductivity	IS:3025 (Part 14)	654.0	µS/cm	-	-
35.	Total Suspended Solid	IS:3025 (Part-17)	BDL (DL 1.0)	mg/l	-	-

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar Yadav

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End of Report

TEST REPORT

Sample Number:	JME/VL/SW/01	Report No.:	JME/SW/251016001
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	SURFACE WATER	Analysis Start Date:	16/10/2025
Sample Location:	Water Reservoir Singhitarai No. 1	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 29°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	7.54	–
2.	Colour	IS:3025 (Part 4)	BDL (DL 1.0)	Hazen Unit
3.	Turbidity	IS:3025 (Part-10)	7.0	NTU
4.	Odour	IS:3025 (Part-5)	Agreeable	–
5.	Total Hardness as $CaCO_3$	IS:3025 (Part-21)	129.7	mg/l
6.	Calcium as Ca	IS:3025 (Part-40)	30.25	mg/l
7.	Alkalinity as $CaCO_3$	IS:3025 (Part-23)	109.8	mg/l
8.	Chloride as Cl	IS:3025 (Part-32)	50.21	mg/l
9.	Residual free Chlorine	IS:3025 (Part-26)	BDL (DL 0.02)	mg/l
10.	Cyanide as CN	IS:3025 (Part-27) Sec 1	BDL (DL 0.02)	mg/l
11.	Magnesium as Mg	IS:3025 (Part-46)	13.16	mg/l
12.	Total Dissolved Solids	IS:3025 (Part-16)	284.0	mg/l
13.	Sulphate as SO_4	APHA 24th Edition, 4500-SO4-E	21.12	mg/l
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.63	mg/l
15.	Nitrate Nitrogen as NO3	IS 3025 (Part 34) sec 1: Para 6.3, Cadmium reduction method	5.12	mg/l
16.	Iron as Fe	IS 3025 (Part 53)	0.18	mg/l
17.	Aluminium as Al	IS:3025 (Part-55)	BDL (DL 0.03)	mg/l
18.	Boron	IS:3025 (Part-57)	BDL (DL 0.20)	mg/l
19.	Phenols	APHA 24th Edition, 5530-Phenols-D, Direct Photometric	BDL (DL 0.001)	mg/l
20.	Anionic Surfactant	APHA 24th Edition, 5540 C	BDL (DL 0.02)	mg/l
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l
22.	Zinc as Zn	IS:3025 (Part-49)	BDL (DL 0.1)	mg/l

Checked by
Abhishek Tiwari

ENVIROLAB PVT. Authorized

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/SW/01** Report No.: **JME/SW/251016001**

S. No.	Parameters	Testing Protocol	Result	Unit
23.	Copper as Cu	IS:3025 (Part-42)	BDL (DL 0.02)	mg/l
24.	Manganese as Mn	IS:3025 (Part-59)	BDL (DL 0.08)	mg/l
25.	Lead as Pb	IS:3025 (Part-47)	BDL (DL 0.008)	mg/l
26.	Selenium as Se	IS:3025 (Part-56)	BDL (DL 0.005)	mg/l
27.	Arsenic as As	IS:3025 (Part-37)	BDL (DL 0.002)	mg/l
28.	Mercury as Hg	IS:3025 (Part-48)	BDL (DL 0.001)	mg/l
29.	Phosphate as Po_4	APHA 24th Edition, 4500-P-C/D	0.10	mg/l
30.	Total Suspended Solid	IS:3025 (Part-17)	24.0	mg/l
31.	Biochemical Oxygen Demand	Is:3025 (Part-44)	10.0	mg/l
32.	Chemical Oxygen Demand	IS:3025 (Part-58)	38.0	mg/l
33.	Sodium as Na	IS:3025 (Part-45)	32.0	mg/l
34.	Potassium as K	IS:3025 (Part-45)	5.0	mg/l
35.	Conductivity	APHA 24th Edition, 2510B	418.0	µs/cm
36.	Nickel	IS:3025 (Part-54)	BDL (DL 0.005)	mg/l
37.	Dissolve Oxygen	IS:3025 (Part-38)	6.5	mg/l

Note: BDL- Below Detection Limit, DL- Detection Limit

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TC-6821

TEST REPORT

Sample Number:	JME/VL/SW/02	Report No.:	JME/SW/251016002
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	SURFACE WATER	Analysis Start Date:	16/10/2025
Sample Location:	Water Reservoir Singhitaral No. 2	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 29°C; Cloudy Sky
Parameter Required:	As per work order	Sample Quantity:	Approx 5.0 litre
Sampling Protocol:	JMELPL/STOP/04		

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	7.40	–
2.	Colour	IS:3025 (Part 4)	BDL (DL 1.0)	Hazen Unit
3.	Turbidity	IS:3025 (Part-10)	8.0	NTU
4.	Odour	IS:3025 (Part-5)	Agreeable	–
5.	Total Hardness as $CaCO_3$	IS:3025 (Part-21)	162.4	mg/l
6.	Calcium as Ca	IS:3025 (Part-40)	50.14	mg/l
7.	Alkalinity as $CaCO_3$	IS:3025 (Part-23)	96.47	mg/l
8.	Chloride as Cl	IS:3025 (Part-32)	43.54	mg/l
9.	Residual free Chlorine	IS:3025 (Part-26)	BDL (DL 0.02)	mg/l
10.	Cyanide as CN	IS:3025 (Part-27) Sec 1	BDL (DL 0.02)	mg/l
11.	Magnesium as Mg	IS:3025 (Part-46)	9.04	mg/l
12.	Total Dissolved Solids	IS:3025 (Part-16)	297.0	mg/l
13.	Sulphate as SO_4	APHA 24th Edition, 4500-SO4-E	25.31	mg/l
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.61	mg/l
15.	Nitrate Nitrogen as NO3	IS 3025 (Part 34) sec 1: Para 6.3, Cadmium reduction method	4.87	mg/l
16.	Iron as Fe	IS 3025 (Part 53)	0.36	mg/l
17.	Aluminium as Al	IS:3025 (Part-55)	BDL (DL 0.03)	mg/l
18.	Boron	IS:3025 (Part-57)	BDL (DL 0.20)	mg/l
19.	Phenols	APHA 24th Edition, 5530-Phenols-D, Direct Photometric	BDL (DL 0.001)	mg/l
20.	Anionic Surfactant	APHA 24th Edition, 5540 C	BDL (DL 0.02)	mg/l
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l
22.	Zinc as Zn	IS:3025 (Part-49)	BDL (DL 0.1)	mg/l

Checked by
Abhishek Tiwari

M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/SW/02** Report No.: **JME/SW/251016002**

S. No.	Parameters	Testing Protocol	Result	Unit
23.	Copper as Cu	IS:3025 (Part-42)	BDL (DL 0.02)	mg/l
24.	Manganese as Mn	IS:3025 (Part-59)	BDL (DL 0.08)	mg/l
25.	Lead as Pb	IS:3025 (Part-47)	BDL (DL 0.008)	mg/l
26.	Selenium as Se	IS:3025 (Part-56)	BDL (DL 0.005)	mg/l
27.	Arsenic as As	IS:3025 (Part-37)	BDL (DL 0.002)	mg/l
28.	Mercury as Hg	IS:3025 (Part-48)	BDL (DL 0.001)	mg/l
29.	Phosphate as Po_4	APHA 24th Edition, 4500-P-C/D	BDL (DL 0.02)	mg/l
30.	Total Suspended Solid	IS:3025 (Part-17)	11.2	mg/l
31.	Biochemical Oxygen Demand	Is:3025 (Part-44)	9.0	mg/l
32.	Chemical Oxygen Demand	IS:3025 (Part-58)	40.0	mg/l
33.	Sodium as Na	IS:3025 (Part-45)	28.0	mg/l
34.	Potassium as K	IS:3025 (Part-45)	4.0	mg/l
35.	Conductivity	APHA 24th Edition, 2510B	445.0	µs/cm
36.	Nickel	IS:3025 (Part-54)	BDL (DL 0.005)	mg/l
37.	Dissolve Oxygen	IS:3025 (Part-38)	6.7	mg/l

Note: BDL- Below Detection Limit, DL- Detection Limit

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End of Report

TEST REPORT

Sample Number:	JME/VL/SW/03	Report No.:	JME/SW/251016003
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	SURFACE WATER	Analysis Start Date:	16/10/2025
Sample Location:	Pond Near Odekera Village	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 29°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	7.62	–
2.	Colour	IS:3025 (Part 4)	BDL (DL 1.0)	Hazen Unit
3.	Turbidity	IS:3025 (Part-10)	5.0	NTU
4.	Odour	IS:3025 (Part-5)	Agreeable	–
5.	Total Hardness as $CaCO_3$	IS:3025 (Part-21)	68.57	mg/l
6.	Calcium as Ca	IS:3025 (Part-40)	20.34	mg/l
7.	Alkalinity as $CaCO_3$	IS:3025 (Part-23)	69.44	mg/l
8.	Chloride as Cl	IS:3025 (Part-32)	29.47	mg/l
9.	Residual free Chlorine	IS:3025 (Part-26)	BDL (DL 0.02)	mg/l
10.	Cyanide as CN	IS:3025 (Part-27) Sec 1	BDL (DL 0.02)	mg/l
11.	Magnesium as Mg	IS:3025 (Part-46)	4.32	mg/l
12.	Total Dissolved Solids	IS:3025 (Part-16)	160.0	mg/l
13.	Sulphate as SO_4	APHA 24th Edition, 4500-SO4-E	13.69	mg/l
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.41	mg/l
15.	Nitrate Nitrogen as NO3	IS 3025 (Part 34) sec 1: Para 6.3, Cadmium reduction method	1.28	mg/l
16.	Iron as Fe	IS 3025 (Part 53)	0.07	mg/l
17.	Aluminium as Al	IS:3025 (Part-55)	BDL (DL 0.03)	mg/l
18.	Boron	IS:3025 (Part-57)	BDL (DL 0.20)	mg/l
19.	Phenols	APHA 24th Edition, 5530-Phenols-D, Direct Photometric	BDL (DL 0.001)	mg/l
20.	Anionic Surfactant	APHA 24th Edition, 5540 C	BDL (DL 0.02)	mg/l
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l
22.	Zinc as Zn	IS:3025 (Part-49)	BDL (DL 0.1)	mg/l

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/SW/03** Report No.: **JME/SW/251016003**

S. No.	Parameters	Testing Protocol	Result	Unit
23.	Copper as Cu	IS:3025 (Part-42)	BDL (DL 0.02)	mg/l
24.	Manganese as Mn	IS:3025 (Part-59)	BDL (DL 0.08)	mg/l
25.	Lead as Pb	IS:3025 (Part-47)	BDL (DL 0.008)	mg/l
26.	Selenium as Se	IS:3025 (Part-56)	BDL (DL 0.005)	mg/l
27.	Arsenic as As	IS:3025 (Part-37)	BDL (DL 0.002)	mg/l
28.	Mercury as Hg	IS:3025 (Part-48)	BDL (DL 0.001)	mg/l
29.	Phosphate as Po_4	APHA 24th Edition, 4500-P-C/D	0.17	mg/l
30.	Total Suspended Solid	IS:3025 (Part-17)	6.7	mg/l
31.	Biochemical Oxygen Demand	Is:3025 (Part-44)	7.2	mg/l
32.	Chemical Oxygen Demand	IS:3025 (Part-58)	21.0	mg/l
33.	Sodium as Na	IS:3025 (Part-45)	20.0	mg/l
34.	Potassium as K	IS:3025 (Part-45)	2.0	mg/l
35.	Conductivity	APHA 24th Edition, 2510B	229.0	µs/cm
36.	Nickel	IS:3025 (Part-54)	BDL (DL 0.005)	mg/l
37.	Dissolve Oxygen	IS:3025 (Part-38)	6.9	mg/l

Note: BDL- Below Detection Limit, DL- Detection Limit

J. M. ENVIROLAB PVT. LTD. Authorised Signatory

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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End of Report

TEST REPORT

Sample Number:	JME/VL/SW/04	Report No.:	JME/SW/251016004
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	SURFACE WATER	Analysis Start Date:	16/10/2025
Sample Location:	Pond Village- Singhitarai	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 29°C; Cloudy Sky
Parameter Required:	As per work order	Sample Quantity:	Approx 5.0 litre
Sampling Protocol:	JMELPL/STOP/04		

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	7.35	–
2.	Colour	IS:3025 (Part 4)	BDL (DL 1.0)	Hazen Unit
3.	Turbidity	IS:3025 (Part-10)	6.0	NTU
4.	Odour	IS:3025 (Part-5)	Agreeable	–
5.	Total Hardness as $CaCO_3$	IS:3025 (Part-21)	146.5	mg/l
6.	Calcium as Ca	IS:3025 (Part-40)	42.47	mg/l
7.	Alkalinity as $CaCO_3$	IS:3025 (Part-23)	138.9	mg/l
8.	Chloride as Cl	IS:3025 (Part-32)	85.56	mg/l
9.	Residual free Chlorine	IS:3025 (Part-26)	BDL (DL 0.02)	mg/l
10.	Cyanide as CN	IS:3025 (Part-27) Sec 1	BDL (DL 0.02)	mg/l
11.	Magnesium as Mg	IS:3025 (Part-46)	9.83	mg/l
12.	Total Dissolved Solids	IS:3025 (Part-16)	328.0	mg/l
13.	Sulphate as SO_4	APHA 24th Edition, 4500-SO4-E	16.97	mg/l
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.74	mg/l
15.	Nitrate Nitrogen as NO3	IS 3025 (Part 34) sec 1: Para 6.3, Cadmium reduction method	3.86	mg/l
16.	Iron as Fe	IS 3025 (Part 53)	0.14	mg/l
17.	Aluminium as Al	IS:3025 (Part-55)	BDL (DL 0.03)	mg/l
18.	Boron	IS:3025 (Part-57)	BDL (DL 0.20)	mg/l
19.	Phenols	APHA 24th Edition, 5530-Phenols-D, Direct Photometric	BDL (DL 0.001)	mg/l
20.	Anionic Surfactant	APHA 24th Edition, 5540 C	BDL (DL 0.02)	mg/l
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l
22.	Zinc as Zn	IS:3025 (Part-49)	BDL (DL 0.1)	mg/l

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar

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TEST REPORT

Sample Number: **JME/VL/SW/04** Report No.: **JME/SW/251016004**

S. No.	Parameters	Testing Protocol	Result	Unit
23.	Copper as Cu	IS:3025 (Part-42)	BDL (DL 0.02)	mg/l
24.	Manganese as Mn	IS:3025 (Part-59)	BDL (DL 0.08)	mg/l
25.	Lead as Pb	IS:3025 (Part-47)	BDL (DL 0.008)	mg/l
26.	Selenium as Se	IS:3025 (Part-56)	BDL (DL 0.005)	mg/l
27.	Arsenic as As	IS:3025 (Part-37)	BDL (DL 0.002)	mg/l
28.	Mercury as Hg	IS:3025 (Part-48)	BDL (DL 0.001)	mg/l
29.	Phosphate as Po_4	APHA 24th Edition, 4500-P-C/D	0.07	mg/l
30.	Total Suspended Solid	IS:3025 (Part-17)	7.4	mg/l
31.	Biochemical Oxygen Demand	Is:3025 (Part-44)	5.7	mg/l
32.	Chemical Oxygen Demand	IS:3025 (Part-58)	24.0	mg/l
33.	Sodium as Na	IS:3025 (Part-45)	69.0	mg/l
34.	Potassium as K	IS:3025 (Part-45)	8.0	mg/l
35.	Conductivity	APHA 24th Edition, 2510B	498.0	µs/cm
36.	Nickel	IS:3025 (Part-54)	BDL (DL 0.005)	mg/l
37.	Dissolve Oxygen	IS:3025 (Part-38)	6.0	mg/l

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
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CIN No.-U74220HR2021PTC095795

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TC-6821

TEST REPORT

Sample Number:	JME/VL/SW/05	Report No.:	JME/SW/251016005
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	SURFACE WATER	Analysis Start Date:	16/10/2025
Sample Location:	Pond Near Panchayat Bhawan Village- Nimohi	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 31°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	7.40	–
2.	Colour	IS:3025 (Part 4)	BDL (DL 1.0)	Hazen Unit
3.	Turbidity	IS:3025 (Part-10)	8.0	NTU
4.	Odour	IS:3025 (Part-5)	Agreeable	–
5.	Total Hardness as $CaCO_3$	IS:3025 (Part-21)	90.24	mg/l
6.	Calcium as Ca	IS:3025 (Part-40)	25.41	mg/l
7.	Alkalinity as $CaCO_3$	IS:3025 (Part-23)	116.5	mg/l
8.	Chloride as Cl	IS:3025 (Part-32)	79.54	mg/l
9.	Residual free Chlorine	IS:3025 (Part-26)	BDL (DL 0.02)	mg/l
10.	Cyanide as CN	IS:3025 (Part-27) Sec 1	BDL (DL 0.02)	mg/l
11.	Magnesium as Mg	IS:3025 (Part-46)	6.51	mg/l
12.	Total Dissolved Solids	IS:3025 (Part-16)	311.0	mg/l
13.	Sulphate as SO_4	APHA 24th Edition, 4500-SO4-E	22.01	mg/l
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.81	mg/l
15.	Nitrate Nitrogen as NO3	IS 3025 (Part 34) sec 1: Para 6.3, Cadmium reduction method	2.32	mg/l
16.	Iron as Fe	IS 3025 (Part 53)	0.16	mg/l
17.	Aluminium as Al	IS:3025 (Part-55)	BDL (DL 0.03)	mg/l
18.	Boron	IS:3025 (Part-57)	BDL (DL 0.20)	mg/l
19.	Phenols	APHA 24th Edition, 5530-Phenols-D, Direct Photometric	BDL (DL 0.001)	mg/l
20.	Anionic Surfactant	APHA 24th Edition, 5540 C	BDL (DL 0.02)	mg/l
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l
22.	Zinc as Zn	IS:3025 (Part-49)	BDL (DL 0.1)	mg/l

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/SW/05** Report No.: **JME/SW/251016005**

S. No.	Parameters	Testing Protocol	Result	Unit
23.	Copper as Cu	IS:3025 (Part-42)	BDL (DL 0.02)	mg/l
24.	Manganese as Mn	IS:3025 (Part-59)	BDL (DL 0.06)	mg/l
25.	Lead as Pb	IS:3025 (Part-47)	BDL (DL 0.008)	mg/l
26.	Selenium as Se	IS:3025 (Part-56)	BDL (DL 0.005)	mg/l
27.	Arsenic as As	IS:3025 (Part-37)	BDL (DL 0.002)	mg/l
28.	Mercury as Hg	IS:3025 (Part-48)	BDL (DL 0.001)	mg/l
29.	Phosphate as Po_4	APHA 24th Edition, 4500-P-C/D	0.14	mg/l
30.	Total Suspended Solid	IS:3025 (Part-17)	23.4	mg/l
31.	Biochemical Oxygen Demand	Is:3025 (Part-44)	12.0	mg/l
32.	Chemical Oxygen Demand	IS:3025 (Part-58)	53.0	mg/l
33.	Sodium as Na	IS:3025 (Part-45)	87.0	mg/l
34.	Potassium as K	IS:3025 (Part-45)	12.0	mg/l
35.	Conductivity	APHA 24th Edition, 2510B	456.0	µs/cm
36.	Nickel	IS:3025 (Part-54)	BDL (DL 0.005)	mg/l
37.	Dissolve Oxygen	IS:3025 (Part-38)	6.2	mg/l

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
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CIN No. U74120HR2018PTC080738

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TC-6821

TEST REPORT

Sample Number:	JME/VL/SW/06	Report No.:	JME/SW/251016006
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	SURFACE WATER	Analysis Start Date:	16/10/2025
Sample Location:	Canal Near Plant Site- Upstream	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 31°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	7.65	--
2.	Colour	IS:3025 (Part 4)	BDL (DL 1.0)	Hazen Unit
3.	Turbidity	IS:3025 (Part-10)	10.0	NTU
4.	Odour	IS:3025 (Part-5)	Agreeable	--
5.	Total Hardness as $CaCO_3$	IS:3025 (Part-21)	218.7	mg/l
6.	Calcium as Ca	IS:3025 (Part-40)	64.51	mg/l
7.	Alkalinity as $CaCO_3$	IS:3025 (Part-23)	165.4	mg/l
8.	Chloride as Cl	IS:3025 (Part-32)	103.4	mg/l
9.	Residual free Chlorine	IS:3025 (Part-26)	BDL (DL 0.02)	mg/l
10.	Cyanide as CN	IS:3025 (Part-27) Sec 1	BDL (DL 0.02)	mg/l
11.	Magnesium as Mg	IS:3025 (Part-46)	14.00	mg/l
12.	Total Dissolved Solids	IS:3025 (Part-16)	382.0	mg/l
13.	Sulphate as SO_4	APHA 24th Edition, 4500-SO4-E	30.45	mg/l
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.51	mg/l
15.	Nitrate Nitrogen as NO3	IS 3025 (Part 34) sec 1: Para 6.3, Cadmium reduction method	6.85	mg/l
16.	Iron as Fe	IS 3025 (Part 53)	0.19	mg/l
17.	Aluminium as Al	IS:3025 (Part-55)	BDL (DL 0.03)	mg/l
18.	Boron	IS:3025 (Part-57)	BDL (DL 0.20)	mg/l
19.	Phenols	APHA 24th Edition, 5530-Phenols-D, Direct Photometric	BDL (DL 0.001)	mg/l
20.	Anionic Surfactant	APHA 24th Edition, 5540 C	BDL (DL 0.02)	mg/l
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l
22.	Zinc as Zn	IS:3025 (Part-49)	BDL (DL 0.1)	mg/l

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/SW/06** Report No.: **JME/SW/251016006**

S. No.	Parameters	Testing Protocol	Result	Unit
23.	Copper as Cu	IS:3025 (Part-42)	BDL (DL 0.02)	mg/l
24.	Manganese as Mn	IS:3025 (Part-59)	BDL (DL 0.06)	mg/l
25.	Lead as Pb	IS:3025 (Part-47)	BDL (DL 0.008)	mg/l
26.	Selenium as Se	IS:3025 (Part-56)	BDL (DL 0.005)	mg/l
27.	Arsenic as As	IS:3025 (Part-37)	BDL (DL 0.002)	mg/l
28.	Mercury as Hg	IS:3025 (Part-48)	BDL (DL 0.001)	mg/l
29.	Phosphate as Po_4	APHA 24th Edition, 4500-P-C/D	0.06	mg/l
30.	Total Suspended Solid	IS:3025 (Part-17)	10.2	mg/l
31.	Biochemical Oxygen Demand	Is:3025 (Part-44)	5.7	mg/l
32.	Chemical Oxygen Demand	IS:3025 (Part-58)	24.0	mg/l
33.	Sodium as Na	IS:3025 (Part-45)	49.0	mg/l
34.	Potassium as K	IS:3025 (Part-45)	10.0	mg/l
35.	Conductivity	APHA 24th Edition, 2510B	597.0	µs/cm
36.	Nickel	IS:3025 (Part-54)	BDL (DL 0.005)	mg/l
37.	Dissolve Oxygen	IS:3025 (Part-38)	6.6	mg/l

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar Yadav

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TC-6321

TEST REPORT

Sample Number:	JME/VL/SW/07	Report No.:	JME/SW/251016007
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	SURFACE WATER	Analysis Start Date:	16/10/2025
Sample Location:	Canal Near Plant Site- Down Stream	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 31°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	7.52	--
2.	Colour	IS:3025 (Part 4)	BDL (DL 1.0)	Hazen Unit
3.	Turbidity	IS:3025 (Part-10)	12.0	NTU
4.	Odour	IS:3025 (Part-5)	Agreeable	--
5.	Total Hardness as $CaCO_3$	IS:3025 (Part-21)	241.2	mg/l
6.	Calcium as Ca	IS:3025 (Part-40)	65.24	mg/l
7.	Alkalinity as $CaCO_3$	IS:3025 (Part-23)	176.6	mg/l
8.	Chloride as Cl	IS:3025 (Part-32)	108.5	mg/l
9.	Residual free Chlorine	IS:3025 (Part-26)	BDL (DL 0.02)	mg/l
10.	Cyanide as CN	IS:3025 (Part-27) Sec 1	BDL (DL 0.02)	mg/l
11.	Magnesium as Mg	IS:3025 (Part-46)	19.02	mg/l
12.	Total Dissolved Solids	IS:3025 (Part-16)	411.0	mg/l
13.	Sulphate as SO_4	APHA 24th Edition, 4500-SO4-E	29.85	mg/l
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.54	mg/l
15.	Nitrate Nitrogen as NO3	IS 3025 (Part 34) sec 1: Para 6.3, Cadmium reduction method	7.86	mg/l
16.	Iron as Fe	IS 3025 (Part 53)	0.17	mg/l
17.	Aluminium as Al	IS:3025 (Part-55)	BDL (DL 0.03)	mg/l
18.	Boron	IS:3025 (Part-57)	BDL (DL 0.20)	mg/l
19.	Phenols	APHA 24th Edition, 5530-Phenols-D, Direct Photometric	BDL (DL 0.001)	mg/l
20.	Anionic Surfactant	APHA 24th Edition, 5540 C	BDL (DL 0.02)	mg/l
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l
22.	Zinc as Zn	IS:3025 (Part-49)	BDL (DL 0.1)	mg/l

Checked by
Abhishek Tiwari

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/SW/07** Report No.: **JME/SW/251016007**

S. No.	Parameters	Testing Protocol	Result	Unit
23.	Copper as Cu	IS:3025 (Part-42)	BDL (DL 0.02)	mg/l
24.	Manganese as Mn	IS:3025 (Part-59)	BDL (DL 0.08)	mg/l
25.	Lead as Pb	IS:3025 (Part-47)	BDL (DL 0.008)	mg/l
26.	Selenium as Se	IS:3025 (Part-56)	BDL (DL 0.005)	mg/l
27.	Arsenic as As	IS:3025 (Part-37)	BDL (DL 0.002)	mg/l
28.	Mercury as Hg	IS:3025 (Part-48)	BDL (DL 0.001)	mg/l
29.	Phosphate as Po_4	APHA 24th Edition, 4500-P-C/D	0.10	mg/l
30.	Total Suspended Solid	IS:3025 (Part-17)	13.4	mg/l
31.	Biochemical Oxygen Demand	Is:3025 (Part-44)	7.6	mg/l
32.	Chemical Oxygen Demand	IS:3025 (Part-58)	32.0	mg/l
33.	Sodium as Na	IS:3025 (Part-45)	56.0	mg/l
34.	Potassium as K	IS:3025 (Part-45)	18.0	mg/l
35.	Conductivity	APHA 24th Edition, 2510B	605.0	µs/cm
36.	Nickel	IS:3025 (Part-54)	BDL (DL 0.005)	mg/l
37.	Dissolve Oxygen	IS:3025 (Part-38)	6.7	mg/l

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Abhishek Tiwari

J.M. ENVIROLAB PVT. LTD. Authorized Signatory

Reviewed & Authorized by
Rajkumar Yadav

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TC-6821

TEST REPORT

Sample Number:	JME/VL/SW/08	Report No.:	JME/SW/251016008
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	SURFACE WATER	Analysis Start Date:	16/10/2025
Sample Location:	Nallah Near Ash Dyke- Upstream	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 27°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	7.15	–
2.	Colour	IS:3025 (Part 4)	BDL (DL 1.0)	Hazen Unit
3.	Turbidity	IS:3025 (Part-10)	7.0	NTU
4.	Odour	IS:3025 (Part-5)	Agreeable	–
5.	Total Hardness as $CaCO_3$	IS:3025 (Part-21)	155.2	mg/l
6.	Calcium as Ca	IS:3025 (Part-40)	14.63	mg/l
7.	Alkalinity as $CaCO_3$	IS:3025 (Part-23)	102.1	mg/l
8.	Chloride as Cl	IS:3025 (Part-32)	24.56	mg/l
9.	Residual free Chlorine	IS:3025 (Part-26)	BDL (DL 0.02)	mg/l
10.	Cyanide as CN	IS:3025 (Part-27) Sec 1	BDL (DL 0.02)	mg/l
11.	Magnesium as Mg	IS:3025 (Part-46)	28.84	mg/l
12.	Total Dissolved Solids	IS:3025 (Part-16)	190.0	mg/l
13.	Sulphate as SO_4	APHA 24th Edition, 4500-SO4-E	18.14	mg/l
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.52	mg/l
15.	Nitrate Nitrogen as NO3	IS 3025 (Part 34) sec 1: Para 6.3, Cadmium reduction method	5.87	mg/l
16.	Iron as Fe	IS 3025 (Part 53)	0.19	mg/l
17.	Aluminium as Al	IS:3025 (Part-55)	BDL (DL 0.03)	mg/l
18.	Boron	IS:3025 (Part-57)	BDL (DL 0.20)	mg/l
19.	Phenols	APHA 24th Edition, 5530-Phenols-D, Direct Photometric	BDL (DL 0.001)	mg/l
20.	Anionic Surfactant	APHA 24th Edition, 5540 C	BDL (DL 0.02)	mg/l
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l
22.	Zinc as Zn	IS:3025 (Part-49)	BDL (DL 0.1)	mg/l

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/SW/08** Report No.: **JME/SW/261016008**

S. No.	Parameters	Testing Protocol	Result	Unit
23.	Copper as Cu	IS:3025 (Part-42)	BDL (DL 0.02)	mg/l
24.	Manganese as Mn	IS:3025 (Part-59)	BDL (DL 0.06)	mg/l
25.	Lead as Pb	IS:3025 (Part-47)	BDL (DL 0.008)	mg/l
26.	Selenium as Se	IS:3025 (Part-56)	BDL (DL 0.005)	mg/l
27.	Arsenic as As	IS:3025 (Part-37)	BDL (DL 0.002)	mg/l
28.	Mercury as Hg	IS:3025 (Part-48)	BDL (DL 0.001)	mg/l
29.	Phosphate as Po_4	APHA 24th Edition, 4500-P-C/D	0.19	mg/l
30.	Total Suspended Solid	IS:3025 (Part-17)	11.0	mg/l
31.	Biochemical Oxygen Demand	Is:3025 (Part-44)	8.1	mg/l
32.	Chemical Oxygen Demand	IS:3025 (Part-58)	34.0	mg/l
33.	Sodium as Na	IS:3025 (Part-45)	31.0	mg/l
34.	Potassium as K	IS:3025 (Part-45)	2.0	mg/l
35.	Conductivity	APHA 24th Edition, 2510B	276.0	µs/cm
36.	Nickel	IS:3025 (Part-54)	BDL (DL 0.005)	mg/l
37.	Dissolve Oxygen	IS:3025 (Part-38)	6.6	mg/l

Note: BDL- Below Detection Limit, DL- Detection Limit

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

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CIN No. U74210HR2011PTC043736

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TC-6821

TEST REPORT

Sample Number:	JME/VL/SW/09	Report No.:	JME/SW/251016009
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	SURFACE WATER	Analysis Start Date:	16/10/2025
Sample Location:	Nallah Near Ash Dyke- Down Stream	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 27°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 5.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	7.21	–
2.	Colour	IS:3025 (Part 4)	BDL (DL 1.0)	Hazen Unit
3.	Turbidity	IS:3025 (Part-10)	9.0	NTU
4.	Odour	IS:3025 (Part-5)	Agreeable	–
5.	Total Hardness as $CaCO_3$	IS:3025 (Part-21)	180.4	mg/l
6.	Calcium as Ca	IS:3025 (Part-40)	25.31	mg/l
7.	Alkalinity as $CaCO_3$	IS:3025 (Part-23)	111.4	mg/l
8.	Chloride as Cl	IS:3025 (Part-32)	25.35	mg/l
9.	Residual free Chlorine	IS:3025 (Part-26)	BDL (DL 0.02)	mg/l
10.	Cyanide as CN	IS:3025 (Part-27) Sec 1	BDL (DL 0.02)	mg/l
11.	Magnesium as Mg	IS:3025 (Part-46)	26.48	mg/l
12.	Total Dissolved Solids	IS:3025 (Part-16)	220.0	mg/l
13.	Sulphate as SO_4	APHA 24th Edition, 4500-SO4-E	21.35	mg/l
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.64	mg/l
15.	Nitrate Nitrogen as NO3	IS 3025 (Part 34) sec 1: Para 6.3, Cadmium reduction method	4.32	mg/l
16.	Iron as Fe	IS 3025 (Part 53)	0.22	mg/l
17.	Aluminium as Al	IS:3025 (Part-55)	BDL (DL 0.03)	mg/l
18.	Boron	IS:3025 (Part-57)	BDL (DL 0.20)	mg/l
19.	Phenols	APHA 24th Edition, 5530-Phenols-D, Direct Photometric	BDL (DL 0.001)	mg/l
20.	Anionic Surfactant	APHA 24th Edition, 5540 C	BDL (DL 0.02)	mg/l
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l
22.	Zinc as Zn	IS:3025 (Part-49)	BDL (DL 0.1)	mg/l

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number: **JME/VL/SW/09** Report No.: **JME/SW/251016009**

S. No.	Parameters	Testing Protocol	Result	Unit
23.	Copper as Cu	IS:3025 (Part-42)	BDL (DL 0.02)	mg/l
24.	Manganese as Mn	IS:3025 (Part-59)	BDL (DL 0.08)	mg/l
25.	Lead as Pb	IS:3025 (Part-47)	BDL (DL 0.008)	mg/l
26.	Selenium as Se	IS:3025 (Part-56)	BDL (DL 0.005)	mg/l
27.	Arsenic as As	IS:3025 (Part-37)	BDL (DL 0.002)	mg/l
28.	Mercury as Hg	IS:3025 (Part-48)	BDL (DL 0.001)	mg/l
29.	Phosphate as Po_4	APHA 24th Edition, 4500-P-C/D	0.20	mg/l
30.	Total Suspended Solid	IS:3025 (Part-17)	20.1	mg/l
31.	Biochemical Oxygen Demand	Is:3025 (Part-44)	12.0	mg/l
32.	Chemical Oxygen Demand	IS:3025 (Part-58)	52.0	mg/l
33.	Sodium as Na	IS:3025 (Part-45)	35.0	mg/l
34.	Potassium as K	IS:3025 (Part-45)	5.0	mg/l
35.	Conductivity	APHA 24th Edition, 2510B	312.0	µs/cm
36.	Nickel	IS:3025 (Part-54)	BDL (DL 0.005)	mg/l
37.	Dissolve Oxygen	IS:3025 (Part-38)	6.4	mg/l

Note: BDL- Below Detection Limit, DL- Detection Limit

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TC-6821

TEST REPORT

Sample Number:	JME/VL/SW/10	Report No.:	JME/SW/251016010
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	SURFACE WATER	Analysis Start Date:	16/10/2025
Sample Location:	Pond Village Sukhda	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL TEAM	Preservation:	Refrigerated
Packing Status:	Temporary Sealed	Environmental Condition during Sampling:	Amb. Temp. 33°C; Cloudy Sky
Parameter Required:	As per work order		
Sampling Protocol:	JMELPL/STOP/04	Sample Quantity:	Approx 6.0 litre

TEST RESULTS

S. No.	Parameters	Testing Protocol	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	6.98	–
2.	Colour	IS:3025 (Part 4)	BDL (DL 1.0)	Hazen Unit
3.	Turbidity	IS:3025 (Part-10)	4.0	NTU
4.	Odour	IS:3025 (Part-5)	Agreeable	–
5.	Total Hardness as $CaCO_3$	IS:3025 (Part-21)	79.81	mg/l
6.	Calcium as Ca	IS:3025 (Part-40)	14.67	mg/l
7.	Alkalinity as $CaCO_3$	IS:3025 (Part-23)	78.45	mg/l
8.	Chloride as Cl	IS:3025 (Part-32)	18.68	mg/l
9.	Residual free Chlorine	IS:3025 (Part-26)	BDL (DL 0.2)	mg/l
10.	Cyanide as CN	IS:3025 (Part-27) Sec 1	BDL (DL 0.02)	mg/l
11.	Magnesium as Mg	IS:3025 (Part-46)	10.49	mg/l
12.	Total Dissolved Solids	IS:3025 (Part-16)	130.0	mg/l
13.	Sulphate as SO_4	APHA 24th Edition, 4500-SO4-E	9.87	mg/l
14.	Fluoride as F	APHA 24th Edition, 4500-F- D	0.48	mg/l
15.	Nitrate Nitrogen as NO3	IS 3025 (Part 34) sec 1: Para 6.3, Cadmium reduction method	2.47	mg/l
16.	Iron as Fe	IS 3025 (Part 53)	0.04	mg/l
17.	Aluminium as Al	IS:3025 (Part-55)	BDL (DL 0.03)	mg/l
18.	Boron	IS:3025 (Part-57)	BDL (DL 0.20)	mg/l
19.	Phenols	APHA 24th Edition, 5530-Phenols-D, Direct Photometric	BDL (DL 0.001)	mg/l
20.	Anionic Surfactant	APHA 24th Edition, 5540 C	BDL (DL 0.02)	mg/l
21.	Hexa Chromium as Cr^{+6}	IS: 3025 (Part-52)	BDL (DL 0.03)	mg/l
22.	Zinc as Zn	IS:3025 (Part-49)	BDL (DL 0.1)	mg/l

Checked by
Abhishek Tiwari

Reviewed & Authorized by
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TEST REPORT

Sample Number: **JME/VL/SW/10** Report No.: **JME/SW/251016010**

S. No.	Parameters	Testing Protocol	Result	Unit
23.	Copper as Cu	IS:3025 (Part-42)	BDL (DL 0.02)	mg/l
24.	Manganese as Mn	IS:3025 (Part-59)	BDL (DL 0.06)	mg/l
25.	Lead as Pb	IS:3025 (Part-47)	BDL (DL 0.008)	mg/l
26.	Selenium as Se	IS:3025 (Part-56)	BDL (DL 0.005)	mg/l
27.	Arsenic as As	IS:3025 (Part-37)	BDL (DL 0.002)	mg/l
28.	Mercury as Hg	IS:3025 (Part-48)	BDL (DL 0.001)	mg/l
29.	Phosphate as Po_4	APHA 24th Edition, 4500-P-C/D	0.10	mg/l
30.	Total Suspended Solid	IS:3025 (Part-17)	5.6	mg/l
31.	Biochemical Oxygen Demand	Is:3025 (Part-44)	3.6	mg/l
32.	Chemical Oxygen Demand	IS:3025 (Part-58)	15.0	mg/l
33.	Sodium as Na	IS:3025 (Part-45)	8.0	mg/l
34.	Potassium as K	IS:3025 (Part-45)	BDL (DL 1.0)	mg/l
35.	Conductivity	APHA 24th Edition, 2510B	202.0	µs/cm
36.	Nickel	IS:3025 (Part-54)	BDL (DL 0.005)	mg/l
37.	Dissolve Oxygen	IS:3025 (Part-38)	6.9	mg/l

Note: BDL- Below Detection Limit, DL- Detection Limit

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End of Report

Re: EC Compliance Athena Chhattisgarh Power Limited (ACPL) Public (C4)

From: G Venkat Reddy
Sent: 06 April 2024 21:09
To: eccompliance-cg@gov.in <eccompliance-cg@gov.in>; ro.raipur-mefcc@gov.in <ro.raipur-mefcc@gov.in>
Subject: EC Compliance Athena Chhattisgarh Power Limited (ACPL)

Respected Sir,

We have obtained EC for ***Athena Chhattisgarh Power Limited (ACPL)*** located at Villages Singhitarai, Baripali, Odelaora & Nimohi vide letter dated 06.01.2024 (EC Identification no- EC23A0601CG5873675N) - Copy attached.

As a part of compliance to EC condition # xvi and ii (Under 1.1 Environmental Management) we are required to submit details / report within 3 months to your good office. Accordingly, please find herewith our submissions by way of compliance status as under:

Condition #	Condition	Compliance
1.1 (xvi)	No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/ operation of the power plant. A list of all small and large water bodies shall be prepared after physical survey within 10 km radius of the project. A detailed conservation plan for all these water bodies shall be prepared and submitted before the Regional Office of the Ministry within 3 months. Implementation status of conservation plan be submitted in 6 monthly compliance report.	List of water bodies within 10 km radius of the project along with conservation plan is attached herewith as **Annexure-I**.
1.1 (ii)	Extensive green cover with in 2 km range of the plant boundary shall be developed. An action plan in this regard to be prepared in consultation with CPCB/expert institution and submitted before Regional Office of the Ministry within 3 months.	A detailed action plan is being prepared by a recognized Technical Institute and is in the final stage of review and will be submitted at the earliest.

You are hereby requested to kindly take our submissions by way of compliance status on record please.

Thanks & Regards
[For Athena Chhattisgarh Power Limited]
G Venkat Reddy
Dy CEO ACPL

राष्ट्रीय प्रौद्योगिकी संस्थान रायपुर
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No./NITRR/Appliedgeo/Cons/2023/09

Raipur, Date: 11/08/2023

To. G. Venkat Reddy
Dy. CEO
Athena Chhattisgarh Power Limited.

Sub: **Watershed management Action plan for ACPL site**

Dear Sir,

It is to informed that as per the requirement of TOR dated 10-05-2023 granted to M/S Athena Chhattisgarh Power Limited. Please find the Watershed Action Plan along this letter for further submission to concern authority. If any information, please contact Dr. Himanshu Govil, Assistant Professor, Department of Applied Geology, National Institute of Technology, Raipur (C.G.) 9415259765/9927337832/ hgovil.geo@nitrr.ac.in .

Thank You

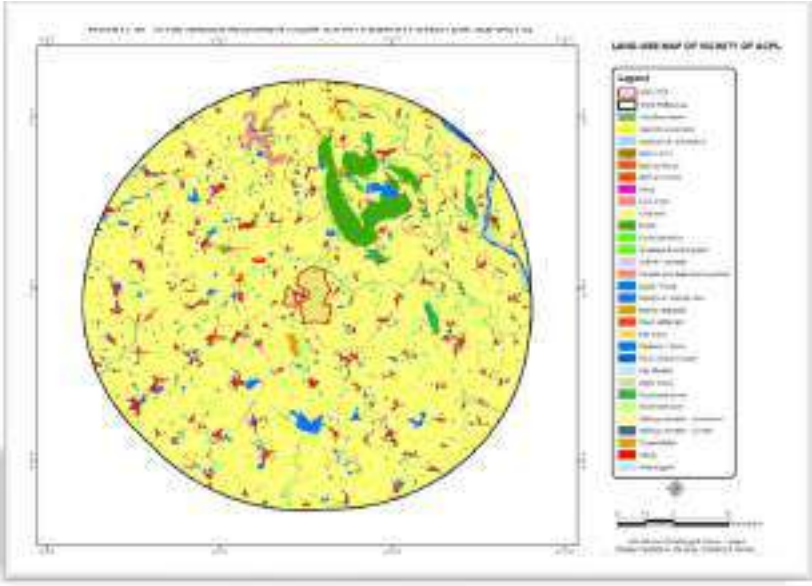
With kind Regards,

Department of Applied Geology
National Institute of Technology
GE Road Raipur (Chhattisgarh) 492010

Dr. Himanshu Govil

For Official use only

A WATERSHED ACTION PLAN AROUND ATHENA CHHATTISGARH POWER LIMITED SITUATED AT VILLAGE SINGHITARAI, BENIPALI, ODEKERA & NIMOHI, TEHSIL: DABHARA, DISTRICT: SAKTI (ERSTWHILE JANJGIR CHAMPA), CHHATTISGARH



Submitted by:

M/s Athena Chhattisgarh Power Limited

Prepared By:

DR. Himanshu Govil

Assistant Professor, Applied Geology

National Institute of Technology

Raipur

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Preamble

As per ToR no. J-13012/07/2009-IA. II (T) dated 10 may 2023, "An action plan shall be prepared for Water shed development within 10 km radius of the plant boundary in consultation with reputed government institution." Therefore, a detailed water shed development plan is being submitted along with the EIA.

Watershed action plan (WAP) is a process for coordinating, documenting, and tracking strategies and activities to protect and improve Natural Resources. A watershed is an area that provides pathway to the surface or subsurface water flow to a given drainage system (stream, river, lake, or ocean). This area can vary from a few hectares to a million square kilometer. A watershed is not simply the hydrological unit but also determines the social, political and ecological entities, thereby playing a crucial role in food and livelihoods security, as well as social and economic well-being of people. Watershed development involves effective management of land and vegetation in order to conserve and improve the quality of water and also ensure its uniform supply. The approach aims to address the constraints on both ground and surface water, making WSD a comprehensive and sustainable solution to water conservation.

In order to assess the performance of various ongoing projects / programmes of watershed development, a series of evaluation studies have been conducted by ICAR (Indian Council of Agricultural Research) Institutes, State Agriculture Universities (SAUs), National Remote Sensing Agency (NRSA) etc. Besides, impact assessment studies were carried out by the Ministry of Agriculture, Ministry of Rural Development, Planning Commission, ICRISAT (International Crops Research Institute for the Semi-Arid Tropics) and the Technical Committee constituted by the Department of Land Resources (DoLR). These studies support the observation that in several watersheds, the implementation of the programme has been effective for natural resource conservation by increasing the productivity of the land, bringing additional area under agriculture, employment generation and social upliftment of beneficiaries living in the rural areas.

It is in this context that in coordination with the Planning Commission, an initiative was taken to formulate "Common Guidelines for Watershed Development Projects" in order to have a unified perspective by all ministries. These guidelines are therefore applicable to all watershed development projects in all Departments / Ministries of Government of India concerned with Watershed Development Projects. With reference to these guidelines following water shed development plan for the buffer zone is proposed.

Different components of a watershed development program include soil & water conservation, plantation, agronomical practices, livestock management, renewable energy and institutional development.

Some of the primary benefits of watershed development are as follows:

1. Conservation, up-gradation and utilization of natural endowments (land, water, vegetation, humans)
2. Integrated, low-cost and simple to adopt technology
3. Reduce inequalities between rain-fed and irrigated areas
4. Sustained water supply for domestic, agricultural and industrial needs
5. Poverty alleviation and livelihoods generation
6. Reduction in organic, inorganic and soil pollution
7. Small constructed reservoirs and other water impounding structures help controls floods

(Source: WOTR)

1. Introduction

1.1. Study area

The project area falls under the middle mahanadi middle sub-basin which is maped in georeferenced figure no 10. The Study area of 10 km fall under the watershed code no are C08MAM60, C08MAM63, C08MAM50, and C08MAM51. In watershed code C08MAL60, the first alphabet (C08MAM60) stands for the Water resource region which is 'Rivers draining into Bay of Bengal" for Mahanadi. Following 2 digits represents basin code (C08MAM60). Next three letters (C08MAM60) represent sub basin name which is followed by watershed number (C08MAM60).



The Mahanadi is the 8th largest basin having total catchment area of 139681.51* Sq.km which is nearly 4.28% of the total geographical area of the country. The geographical extent of the basin lies between 80°28' and 86°43' east longitudes and 19°8' and 23°32' north latitudes. It is physically bounded in the north by Central India hills, in the south and east by the Eastern Ghats and in the West by Maikala hill range. The basin is circular in shape with maximum length and width of 587 km and 400 km respectively.

The catchment area of the basin extends over major parts of Chhattisgarh and Odisha and comparatively smaller portions of Jharkhand, Maharashtra and Madhya Pradesh. The Mahanadi is a major river originating in Dhamtari district of Chhattisgarh and draining into Bay of Bengal. The total length of the river from origin to its outfall into the Bay of Bengal is 851 km. The Mahanadi basin is divided into 3 sub basins, namely upper, middle and lower Mahanadi.

The Average annual runoff of Mahanadi is 66.9 BCM. The basin receives uneven rainfall thus drought is prevalent in some districts. Total fourteen districts in the basin are covered under Drought prone area programme. Districts Jagatsinghpur, Puri and Kendraparha which are situated near coastal parts of Mahanadi face waterlogging problem.

There is total 278 Watersheds delineated under India-WRIS project in Mahanadi basin. Mahanadi lower sub basin comprises of largest number of watersheds. The number and size range of watershed under each sub-basin is given in table below

Sl. No.	Sub-basin	Area (Sq. Km.)	Size Range of Watershed (Sq.Km.)	No. of Watersheds
1	Mahanadi Lower Sub Basin	57958.88	320.05 - 1457.59	91
2	Mahanadi Middle Sub Basin	51895.91	301.22 - 902.46	88
3	Mahanadi Upper Sub Basin	29796.64	314.34 - 907.63	48

The preparation of Watershed Action plan is an integration of geospatial technology, Space application technologies and spatial and non-spatial data.

- The Height map of the Basin was downloaded from USGS SRTM data and the image was processed in GIS software to generate drainage and watershed according to the generated drainage.
- The generated basin was super imposed on the Georeferenced basin to compare the results.
- The Water shed maps of all the three subbasin was Georeferenced using GIS.
- The Study area was superimposed on these maps

1. Transformation of available thematic information on to the village level on Bhuvan portal and extract geo-referenced village map data.
2. Integration of thematic layers with socio-economic data for classification of area into specific composite land units on village level.

3. Preparation of appropriate action plan based on potential of composite land units and developmental needs of study area in based on available data.
4. Field visit to validate the recommended measures with respect to the ground situation and requirement of the local people.

5. Finalization of development plans based on field observation.

Available thematic information for preparation for water resource and land resources development plan.

- Land use / land cover map
- Groundwater potential map
- Soil map - depth, texture, erosion and land capability
- Slope map.
- High-resolution Satellite imaginary through Bhuvan portal.
- Lithology.
- Hydro geomorphology.

Area for development of water resources structure geospatial technology has been used in this process first identify the Land-use Land Cover based on high resolution satellite data and then identify the Potential area by different methods. To identify the proposed action plan an overlay method is used. Watershed Action plan covers the following planning component of the Study Area in sustainable development approach:

- Increase in vegetation/biomass in the district.
- More number of surface water bodies in district.
- Improvement in the soil moisture availability
- Reclamation of wastelands.
- Enhance recharge of aquifers and introduce sustainable water conservation practices.
- Promote extension activities relating to water harvesting, water management and crop alignment for farmers and grass root level field functionaries.

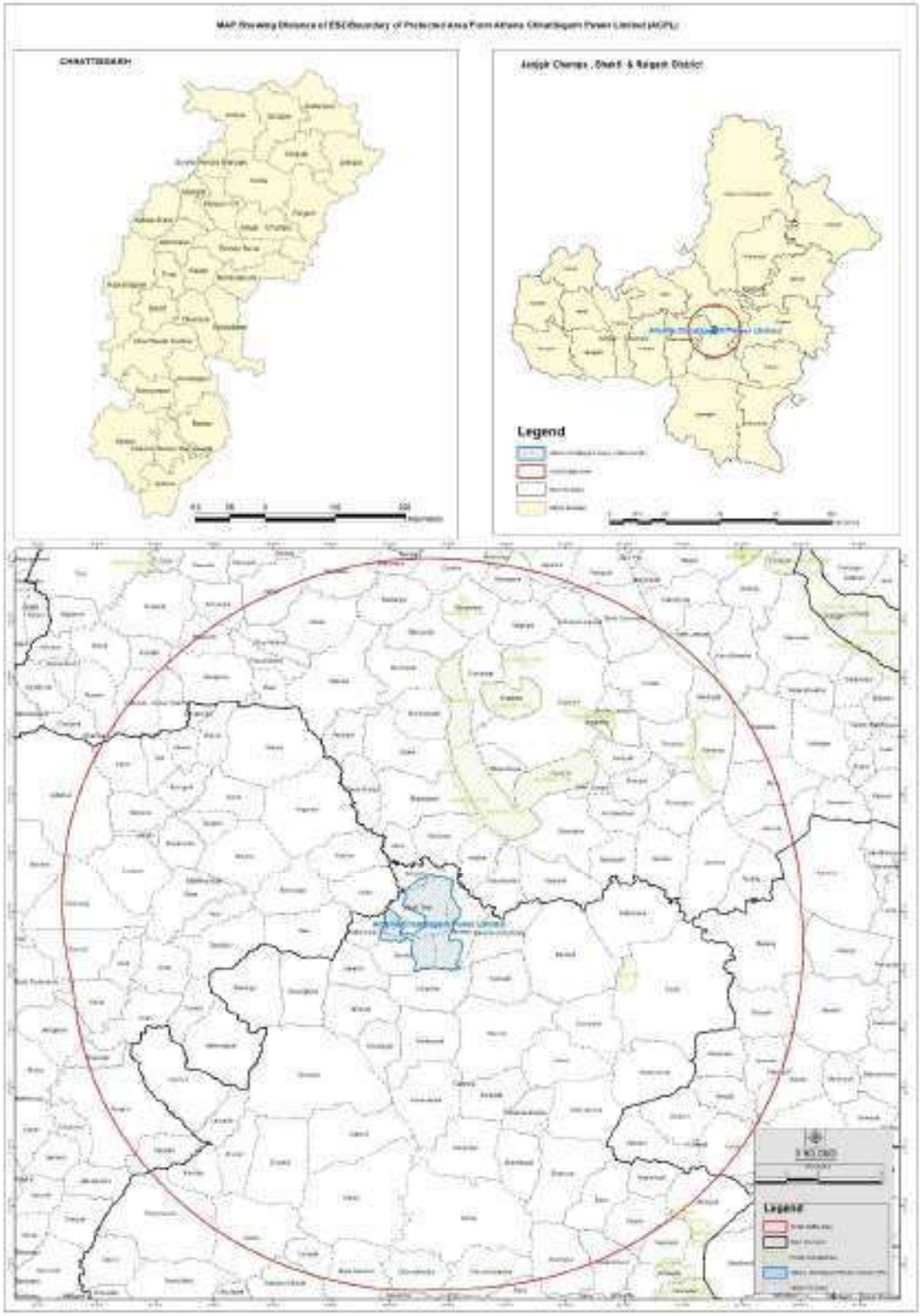
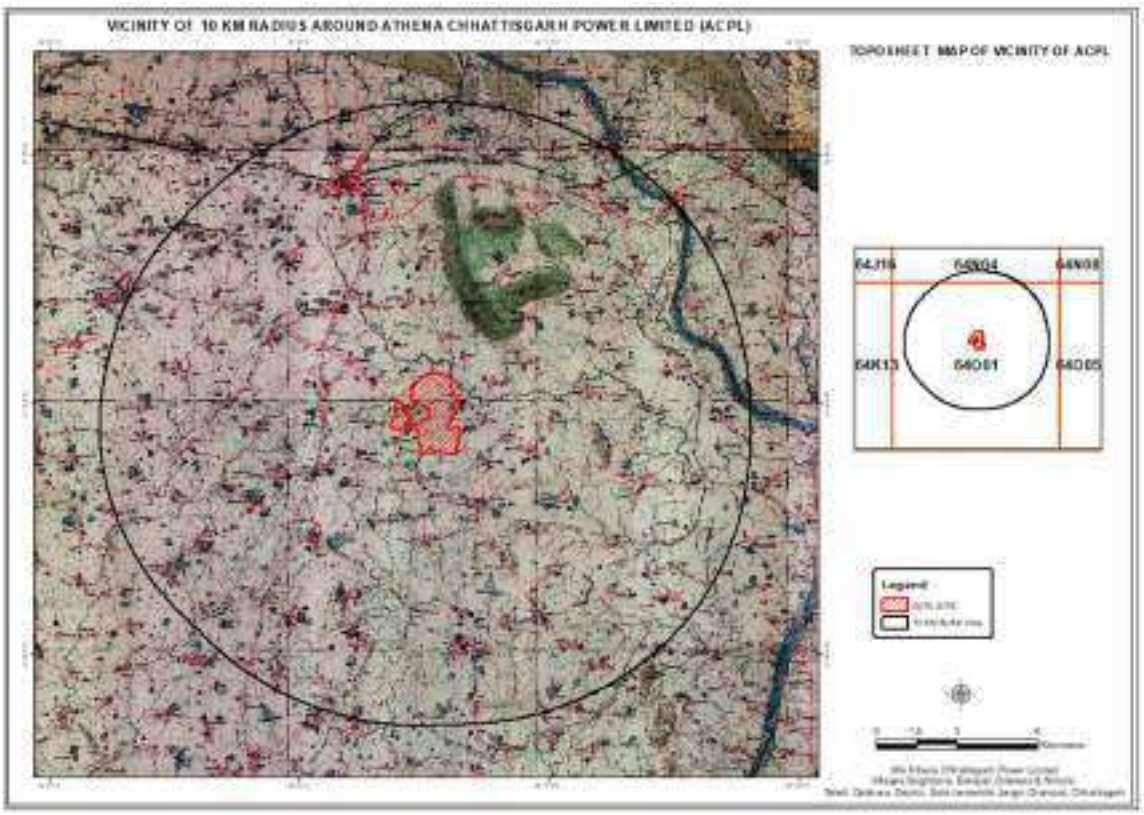


Figure 1-1 Regional Location of Prospecting License Area

1.2. Location of The Area –

The Study Area, which is situated in Shakti District of Dabhara Block and well connected through NH 49 from Bilaspur, Janjgir-Champa and Raigarh Districts, also connected with Rail Line of South-Eastern-Central Railway.



1.3. Demography

Table 1-1 Block Wise Total Population

Sl	District	Block	No of House Hold	Total Population
1	Sakti	Dabhra	17893	67902
2	Sakti	Malkharoda	9962	41626
3	Raigarh	Kharsia	19127	78886
4	Raigarh	Raigarh	2404	9501
		Total	49386	197915

Source: Census of India 2011

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Physiographically, area comprises undulating with high structural hills and valleys Figure 1-2. The maximum elevation in the area is ≈1100m & minimum elevation is ≈600m above MSL. The area receives average annual rainfall of ≈1250mm.

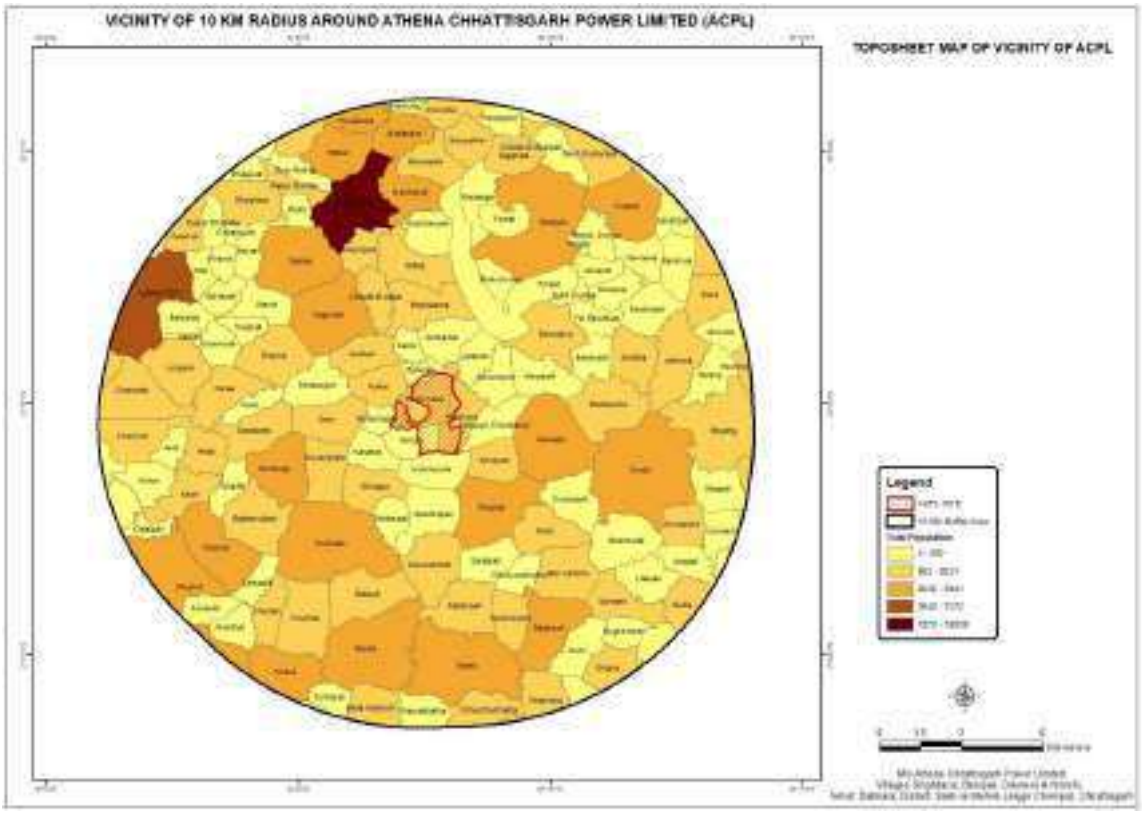


Figure 1-2 Physiographic ambiance with infrastructure around area

1.4. Agro-Ecology, Climate, Hydrology and Topography:

Agro-ecology is the study of ecological processes that operate in agricultural production systems. The prefix agro- refers to agriculture. Bringing ecological principles to bear in agroecosystems can suggest novel management approaches that will not be considered. Agroecology is the application of ecological concepts and methodological design for long-term enhancement and management of soil fertility and agriculture productivity. It provides a strategy to increase diversified agro-ecosystem. Therefore, it is benefiting the effect of the incorporation of plant and animal biodiversity, nutrient recycling; biomass creation and growth with natural resource systems based on legumes, trees, and incorporation of livestock. These all make the basis of a sustainable agriculture and aim to improve the food system and societal sustainability. The agroecology supports production of both a huge quantity and diversity of good quality of food, thread and medicinal crops, together with family utilization and the market for economic and nutritionally at-risk populations. Sustainable agricultural practices have to tackle the conservation of biodiversity, enhanced ecological functions, social tolerance, self- reliance, fairness, improved quality of life and economic productivity of crops and live- stock. Sustainability of agriculture critical from the food point of view and ecological security at the regional scale.

Table 1-8 Rainfall and Temparature in Area

Year	Rainfall (mm)		Temperature (^{0}C)	
	Average	No. of rainy days	Max.	Min.
2018-19	732	58	24.0	13.0
2019-20	733	64	26.0	14.0
2020-21	873	57	28.0	16.0
2021-22	1180	52	24.0	12.0
2022-23	1029	58	27.00	17.0

Table 1-2 Agro- Ecological Zone

Agro Ecological Zone Type	Month	Average Monthly Rainfall (mm)	No of Rainy Days (No)
Chhattisgarh/Mahanadi Basin Agro-eco region / Eastern plateau and hills region	January	13.7	1.3
	February	12.6	0.9
	March	20.1	1.5
	April	11.4	1
	May	28.4	2.1
	June	171.9	10
	July	273.3	25
	August	312.7	21
	September	163.1	15
	October	60.5	3
	November	4.5	4
	December	7.9	3

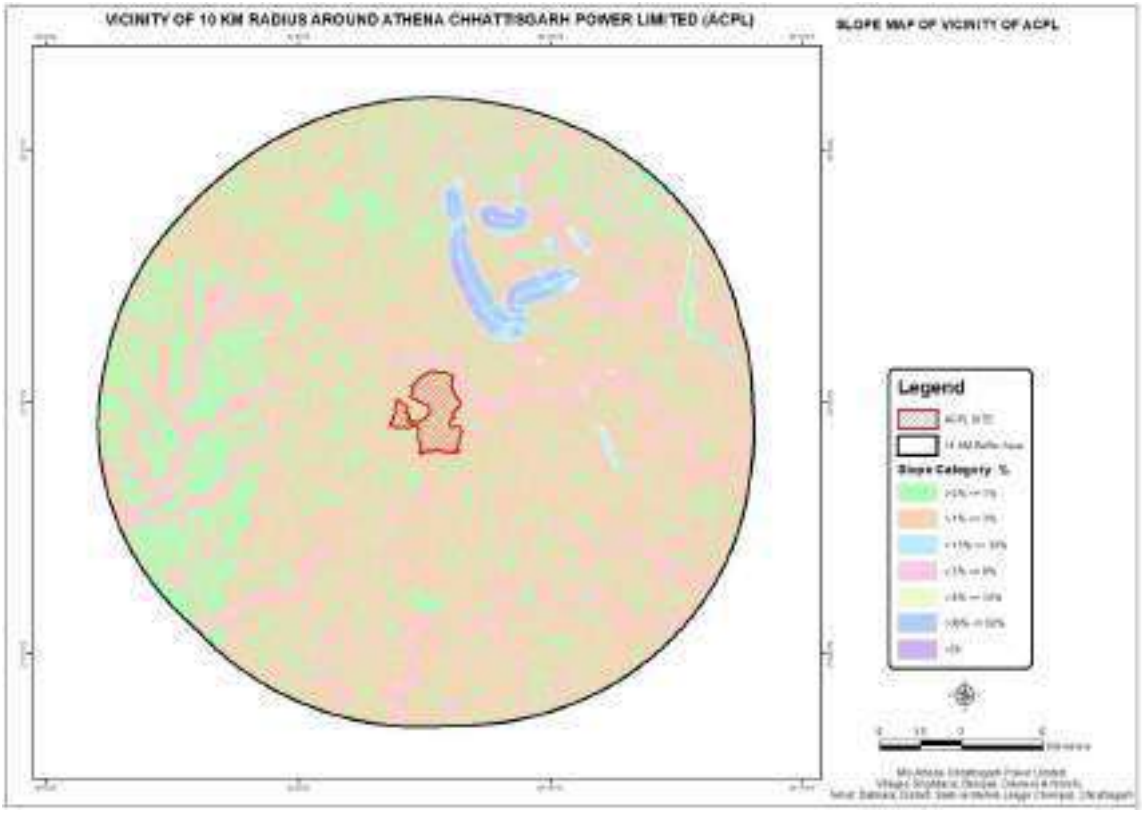
Source IMD &ICAR Department Raipur

1.5. Slope

Slope of land is also one of the important physiographic aspects influencing the landuse of an area. The effect of slope on agriculture may be both direct and indirect. The most obvious direct influence of slope is in the form of the restrained on cultivation and accessibility. The indirect effect of slope manifests itself in pedological and climatic modification including the position of water table, development of soils, air drainage, and relative freedom from frost. This classification gives information regarding slope percent classes in the study area. The general slope of the area in the northerly.

Table 1-3 Slope Category

Slope Category	Slope class
Nearly level	0-1 %
Very gently sloping	1-3 %
Gently sloping	3-8 %
Strongly sloping	8-15 %
Mod. steep to steep	15-35 %
Steep sloping	35-45 %
Very Steep sloping	>45 %



1.6. Geomorphology

Geomorphology is one of the critical theme information for all the application projects. Hence, the geomorphic maps proposed to be prepared would cater to the different resource information needs of the country like geo-environment, geo-engineering, geohazards, mineral and ground water exploration and also interdisciplinary themes like soil, land use / land cover and forest, etc. Geomorphology plays an important role in various fields of planning. One of the major themes is the irrigation development wherein the geomorphological guides are used as one of the indicator zone for site selection. The

understanding of subsurface geology is a primary requirement for planning exploration and exploitation strategies. The basement structure highs manifest itself on the surface as geomorphic anomaly like annular drainage pattern, radial pattern, sudden change in the river course etc.

Landforms of fluvial origin

The word fluvial is used in earth science to refer to processes and landforms produced by running water. As with other surficial processes, running water can either erode material from the earth's landscape, or deposit layers of sediment. The resulting landforms can be further classified as either erosional landforms or depositional landforms. The incredible power of running water in carving various erosional and depositional landforms is well known. Although the quantity of water in stream is small at one time during the course of the year, very large volumes of water moves through the channel and they form an important component in the hydrological cycle. The fluvial dissection of the landscape consists of valleys and their included channel ways organized into a system of connection known as a drainage network. Drainage networks display many types of quantitative regularity that are useful in analyzing both the fluvial systems and the terrains that they dissect. The following are some of the important landforms definition of fluvial origin.

Braided bar

A stream that divides into or follows an interlacing or tangled network of several, small, branching and reuniting shallow channels separated from each other by branch islands or channel bars, resembling in plan the strands of a complex braid. Such systems are generally believed to indicate the inability to carry its entire load such as an overloaded and aggrading stream flowing in a wide channel on a flood plain.

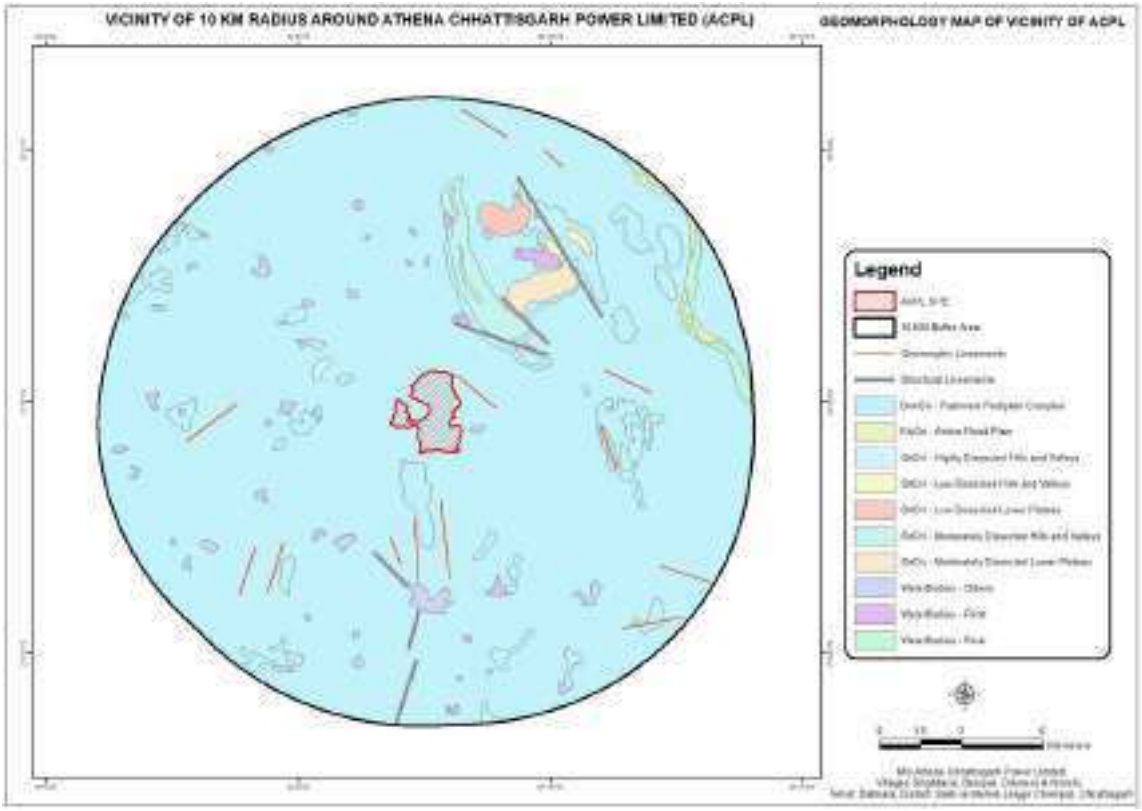


Figure 1-3 Geomorphology Map of Watershed Area

Source: NRSC (District GYAN data and ISRO BhuvanPortel

Landforms of Denudational Origin

Landform of denudational origin is formed where the denudation process dominates over the other process. Most of the landform resulting due to this process is the combined effect of mechanical and chemical weathering. Denudation is the process of removal of material by erosion and weathering. This has direct influence on the relief of the area especially in the reduction of relief to the base level. The agents are mostly water, ice and wind. The major factors affecting denudation are geology, climate, tectonics and anthropogenic effects. All rocks and minerals at or near surface are attacked by physical and chemical process. The effect of this process is not everywhere because of rocks varying resistance to change. As a result weathering and erosion yield number of landforms, which have typical shape and forms. Weathering is an essential part of the rock cycle. The parent material, or rock-weathered material is disaggregated to form smaller fragments and some of the minerals are dissolved and removed by the agent of water. This removal of material is erosionis accomplished by running water, wind, glacier etc. The weathering provides a raw

material for the sedimentary rock and soil. Important denudational landforms to be mapped are explained below.

Pediment

A broad, flat or gently sloping, rock floored erosion surface or plain of low relief, typically developed by sub aerial agents (including running water) in an arid or semiarid region at the base of an abrupt and receding mountain front or plateau escarpment, and underlain by bedrock (occasionally by older alluvial deposits) that may be bare but more often partly mantled with a and discontinuous veneer of alluvium derived from the upland masses and in transit across the surface.

Pediment-Inselberg Complex

The pediments dotted by numerous inselberg of small sizes, which makes it difficult to distinguish from the pediments. Hence, it is called as a complex of pediment and inselberg.

Pediplain

An extensive, multi-concave, rock cut erosion surface formed by the coalescence of two or more adjacent pediments representing the (the “pen plain”) mature stage of the erosion cycle.

Landform of structural origin

Landform of structural origin is related to structural aspect of the area. Most of the landforms under this class has genesis related to underlying structure. Structure plays an important role for reducing the resistance of rock, which manifests itself in different geomorphic forms. Some of the variation is minor and some are in mega scale. The mega scale forms have a dramatic effect on the genesis of landforms and hence mapping of such forms indirectly indicates the structural set up of the area. The mega scale structural features like fault and fold depending on its type plays an important role in genesis of structural landform. The influence of geologic structures on the development and appearance of landscapes is prominent. The influence of geologic structures ranges from large features, which exert a dominant influence on the form of an entire landscape, to small features, which affect an individual landform and the geomorphic processes operating on it. The structural control could be active structures whose form is directly impressed on the modern landscape or ancient structural features whose influence on a modern landscape is due primarily to differential erosion.

Dissected Structural Hills and Valleys

Hills and valleys, which are originated due to tectonic process and are highly dissected by the drainage lines. This can be further classified as highly, moderately and low dissection depending on the density of joints and drainage. Mostly this will interpreted from a planimetric satellite data and the classification is highly subjective.

Intrusive bodies (Lines) Basic Dyke

Intrusive features that are emplaced within the pre-existing fractures or where the fluid pressure is great enough for them to form their own fracture during emplacements. They are discordant bodies. The concordant equivalents are sill and mostly form sheet like plutons.

Fracture/Lineament

All linear features are to be interpreted from the image. The cultural features like road, railway line, high-tension lines etc. are to be excluded. The line segment may not be a single continuous line; rather it has to be shown as discontinuous line segments. Line segments from remote sensing data can be identified mainly based on their linear nature, presence of moisture, alignment of vegetation, alignment of ponds, straight stream segments, etc. However, interpretation of line segments is to be done in conjunction with other diagnostic criteria, such as channel offset, bank erosion and down-cutting of channel along lineament, warping and displacement of sediment layer, an branching of river course, abrupt change of river course, presence of dry channel in an active river course, channel rejuvenation and land subsidence, linear ridges, scarp surface, linear alignment of water bodies and straight channel segments.

Very small (magnitude) linear features frequently observed in the image. They correspond to minor faults, fractures, joints and bedding traces in the rock. Geomorphologically they are expressed as linear alignments of local depressions/ ponds and tonal changes in soil and vegetation. Large linear features. Adjacent/coincides with regional trends/ structural features. It cuts across various geomorphic units in both time and space.

1.7. Hydrogeomorphology

Hydrogeomorphology is an emerging scientific domain, mainly based on the concepts of other scientific areas related to geosciences (e.g., geomorphology, geology, remote sensing, hydrogeology, applied geophysics, soil and rock geotechnics, hydrology, topography,

climatology and natural hazards. It operates in an interdisciplinary field focused on the linkage between hydrologic processes with landforms or earth materials, the interaction of geomorphic processes relating surface water and groundwater regimen.

Soil

Soil is the mixture of minerals, organic matter, gases, liquids, and the countless organisms that together support life on Earth.

Soil is a major part of the natural environment, alongside air and water, and is vital to the existence of life on the planet. Soil is the result of the process of the gradual breakdown of rock - the solid geology that makes up the earth. As rock becomes broken down through a variety of processes, such as weathering and erosion, the particles become ground smaller and smaller. As a whole, soil is made of four constituents: mineral material, organic material, air and water. There are three main mineral parts to soil, ‘sand silt’ and ‘clay’. These parts give the soil its 'mineral texture'. In addition, as leaves and other organic material fall to the ground and decompose - there also forms an ‘organic’ layer. Soil scientists (or pedologists) use a series of sieves to separate out the constituent parts in order to characterise soil by texture class.

Many natural bodies, such as plants and animals, are discrete entities, which can be classified, and guidelines for their identification followed. Soils are much more difficult to identify and classify than these discrete bodies for two main reasons: (i) soil is more or less a continuum covering the land surface of the earth, not a set of discrete entities; and (ii) most of the soil is below ground and therefore not readily visible. Soils grade into one another across the landscape usually without sharp boundaries between one type of soil and another. Soil surveyors who make maps of soils have to use their skills in reading changes in the landscape coupled with auger borings in the soil to identify the nature of the soil.

There are several ways of classifying a soil, from the simple to the complex. A soil type may be as simple as ‘a sandy soil’ or ‘a clayey soil’ and this is often the perception of many land users, such as farmers or civil engineers, who see it as material they have to deal with to achieve an end result, such as the growing of a crop of wheat, or the building a road. Simple classifications tend to be of local and restricted relevance only. At the other end of the spectrum is the soil scientist who needs to understand how soils have formed, which types

occur where, and for what the different types of soil can be used. The soil scientist seeks a much broader understanding, with the aim of underpinning the use and preservation of this important natural resource, and this has manifested itself in a number of detailed soil classification systems worldwide.

Soils have many important functions. Perhaps the best appreciated is the function to support the growth of agricultural and horticultural crops. Soil is the mainstay of agriculture and horticulture, forming as it does the medium in which growth and ultimately the yield of food producing crops occurs. Farmers and gardeners have worked with their soils over many centuries to produce increasing amounts of food to keep pace with the needs of a burgeoning world population. The soil's natural cycles go a long way in ensuring that the soil can provide an adequate physical, chemical and biological medium for crop growth. The farmer and horticulturalist have also become skilled in managing soils so that these natural cycles can be added to as necessary to facilitate adequate soil support and increasing yield to enhance production.

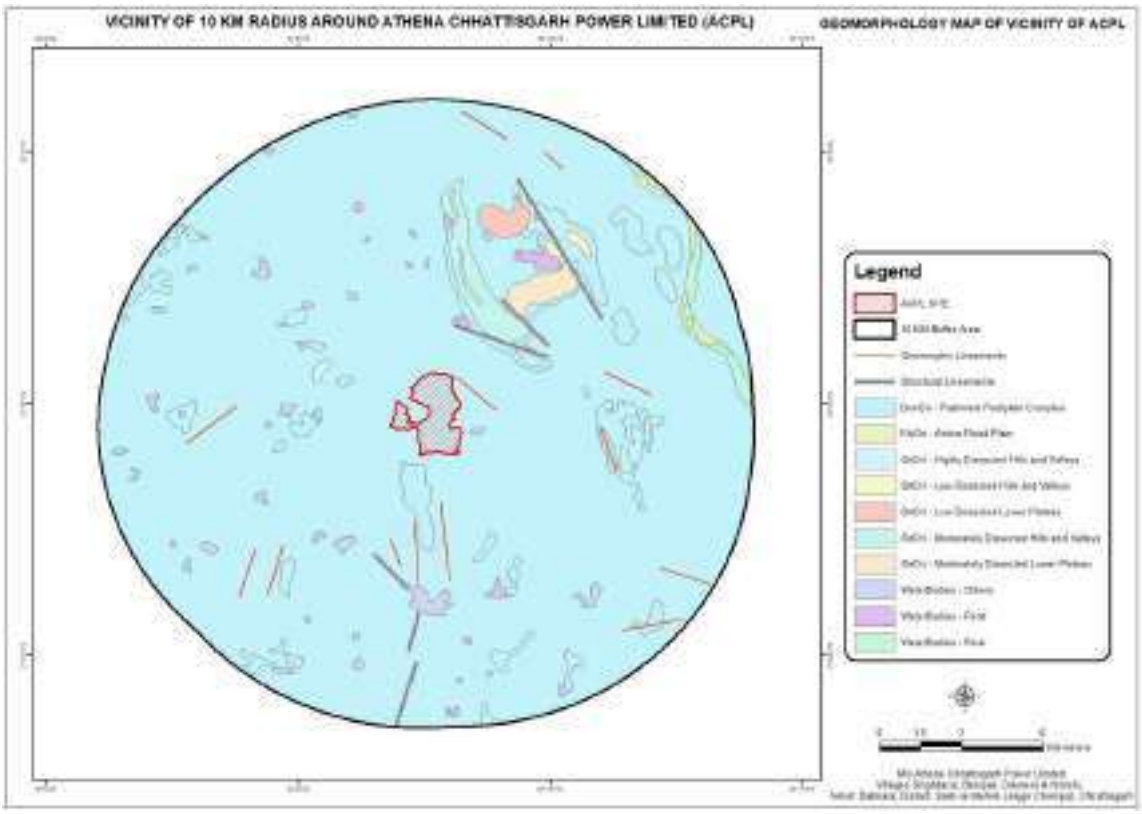


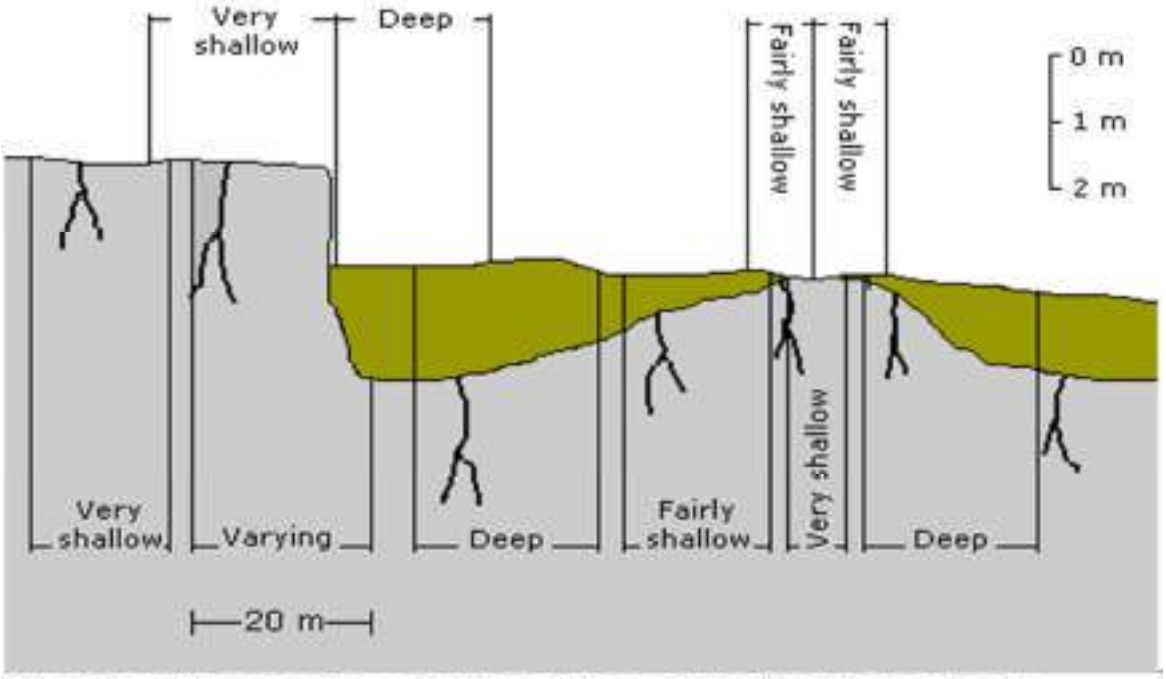
Table 1-4 Soil Type

Source: Agriculture Dept SREP 2014-2015

1.8. Soil depth

The mean depth of the soil layer within the sampling area is assessed by studying conditions in the terrain, both on the test area and in its immediate vicinity. The soil depth on the test area (humus layer + mineral soil) is specified as one of the following four classes:

Deep soil	Mean soil depth greater than 70 cm. Bedrock outcrop lacking in both the test area and its immediate vicinity with similar topography.
Fairly shallow soil	Mean soil depth 20-70 cm. Occasional visible bedrock outcrop present. If there is only one bedrock outcrop it must lie wholly or partly within the test area.
Very shallow soil	Mean soil depth less than 20 cm. Frequent occurrence of bedrock outcrop. At least one bedrock outcrop within the test area. The soil may be deep within small fissures in the bedrock.
Varying soil depth	Wide variation in soil depth within the test area due to broad crevasses in the bedrock, which occasionally emerges as outcrop at the surface.



Principle outline over how variable soil deep will be found in the terrain.

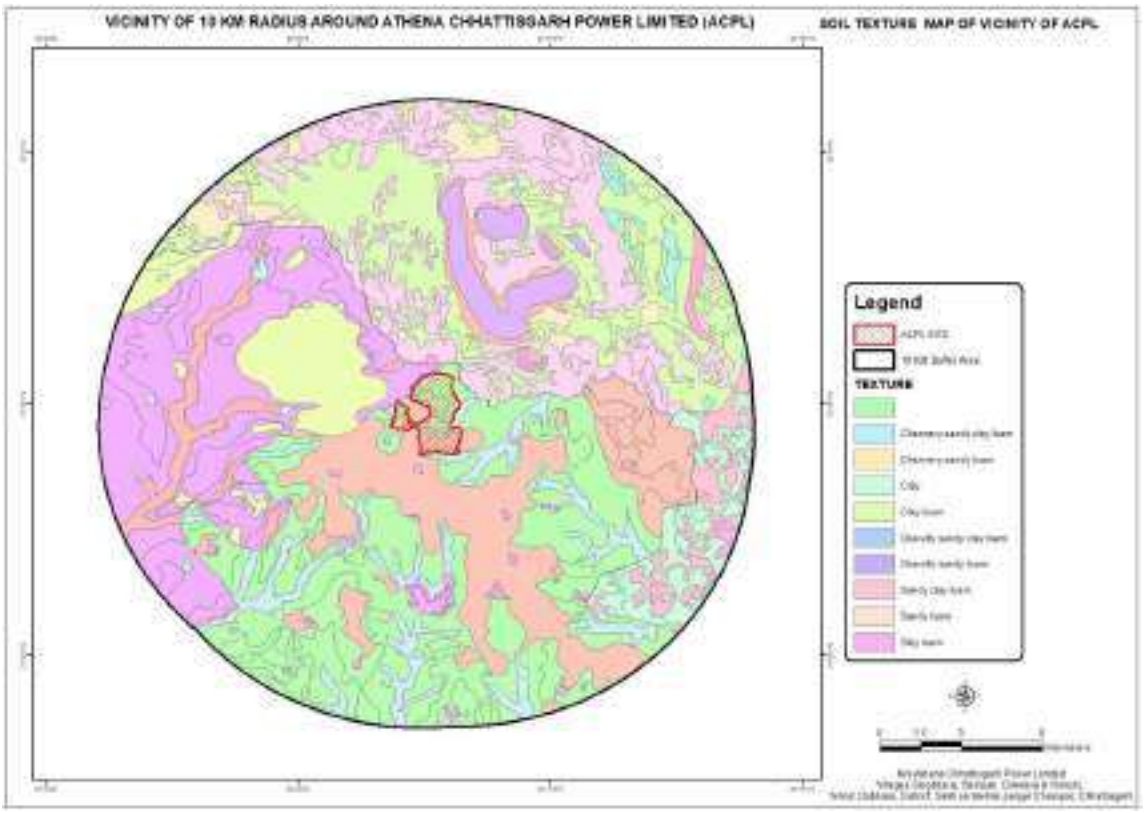
1.9. Soil Texture

Soil texture is a qualitative classification tool used in both the field and laboratory to determine classes for agricultural soils based on their physical texture. The classes are distinguished in the field by the "textural feel" which can be further clarified by separating the relative proportions of sand, silt and clay using grading sieves: The Particle-size distribution (PSD). The class is then used to determine crop suitability and to approximate the soils responses to environmental and management conditions such as drought or calcium (lime) requirements

Soil texture has an important role in nutrient management because it influences nutrient retention. For instance, finer textured soils tend to have greater ability to store soil nutrients.

In our discussion on soil mineral composition, we mentioned that the mineral particles of a soil are present in a wide range of size. Recall that the fine earth fraction includes all soil particles that are less than 2 mm. Soil particles within this fraction are further divided into the 3 separate size classes, which includes sand, silt, and clay. The size of sand particles range between 2.0 and 0.05 mm; silt, 0.05 mm and 0.002 mm; and clay, less than 0.002 mm. Notice that clay particles may be over one thousand times smaller than sand particles. This difference in size is largely due to the type of parent material and the degree of weathering. Sand particles are generally primary minerals that have not undergone much weathering. On the other hand, clay particles are secondary minerals that are the products of the weathering of primary minerals. As weathering continues, the soil particles break down and become smaller and smaller.

Soil texture is the relative proportions of sand, silt, or clay in a soil. The soil textural class is a grouping of soils based upon these relative proportions. Soils with the finest texture are called clay soils, while soils with the coarsest texture are called sands. However, a soil that has a relatively even mixture of sand, silt, and clay and exhibits the properties from each separate is called a loam. There are different types of loams, based upon which soil separate is most abundantly present. If the percentages of clay, silt, and sand in a soil are known (primarily through laboratory analysis), you may use the textural triangle to determine the texture class of your soil.



1.10. Soil Erosion

Soil Erosion is one form of soil degradation. Soil erosion is a naturally occurring process that affects all landforms. In agriculture, soil erosion refers to the wearing away of a field's topsoil by the natural physical forces of weather and wind or through forces associated with farming activities such as tillage.

Erosion, whether it is by water, wind or tillage, involves three distinct actions – soil detachment, movement and deposition. Topsoil, which is high in organic matter, fertility and soil life, is relocated elsewhere "on-site" where it builds up over time or is carried "off-site" where it fills in drainage channels. Soil erosion reduces cropland productivity and contributes to the pollution of adjacent watercourses, wetlands, and lakes.

Soil erosion can be a slow process that continues relatively unnoticed or can occur at an alarming rate, causing serious loss of topsoil. Soil compaction, low organic matter, loss of soil structure, poor internal drainage, salinisation, and soil acidity problems are other serious soil degradation conditions that can accelerate the soil erosion process. The greater the intensity and duration of a rainstorm, the higher the erosion potential. The impact of raindrops on the soil surface can break down soil aggregates and disperse the aggregate material. Lighter aggregate materials such as very fine sand, silt, clay and organic matter are easily

removed by the raindrop splash and runoff water; greater raindrop energy or runoff amounts are required to move larger sand and gravel particles.

Soil movement by rainfall (raindrop splash) is usually greatest and most noticeable during short-duration, high-intensity thunderstorms. Although the erosion caused by long-lasting and less-intense storms is not usually as spectacular or noticeable as that produced during thunderstorms, the amount of soil loss can be significant, especially when compounded over time.

1.11. LandUse

Concept of LandUse

Landuse is a function of four variables, land, water, air and man, each plays in its own role in composing its life history. Land constitutes its body, water runs through its veins like blood, air gives it oxygen and man acts as the dynamic actor to reflect its types, pattern and distribution. Land varies in altitudes, forms and expressions. Man has played his part on land to portray the different phases of his ties with it. The Homo sapiens moved from one topography to another where climate, flora and fauna also changed. He used land, flora and fauna to fit his limited wants. Men multiplied, their wants increased and become complex, the uses of land also increased, methods and technology also changed. Man was making his own map on the face of the earth to portray his link, adaptation, creation and destruction. Man has cleared the forest for shifting (Jhum) cultivation. He then used the land for large-scale farming, small-scale farming, intensive farming, mixed farming, dry farming, etc. He has used the land for one crop or another is a minor landuse problem, but to use each plot of land for the right cultivation under optimum conditions to obtain optimum yield is a significant problem. Man has learnt the use of grasslands, semi-arid and arid lands to his own advantage by applying improved methodology and utilisation of his accomplishments.

Over a period of time, basically geographic pattern of agricultural landuse are the outcome of concurrent interaction between the variable combinations of natural condition and human circumstances. Primarily, these are influenced by natural condition and thereafter affected by human circumstances because of their colonizing capability. The human circumstances are mainly responsible for dynamism in agriculture landuse or changing cropland occupancy. Therefore, efficient cropland occupancy, say cropping pattern, implies the most successful use of agriculture land, consequent upon development of irrigation facilities and application of modern methods of farm technology. The key to the most important aspect of landuse lies in the relation of population to land. The crux of the review,

therefore, refers to the study of the problems in use of land by man. According to R.H. Best, the term land use deals with the spatial aspects of human activities on the Land and with the way in which the land surface is adapted or could be adapted, to serve human needs. This leads one back to the village farm and farmer, to the fields, gardens, pastures, fallow land, and forest and to the isolated farmstead (Freeman, 1960). The land use shifts from agricultural uses to residential, industrial, transportation, and neighbourhood retail and service activities due to urbanization. A true nature of these dynamic qualities in land use emerges from a historical survey designed to reveal the successive development of inherent characteristics of land because 'some changes are short lived whereas others represent a more constant demand' (Jackson, 1963).

Land Use Classification

The conservation and development of land resource is in area needs special focus. It needs well thought and rational planning, which in turn depends upon minute observation of land use pattern. The aim of this study is clear visualization of local land environment. The intense and focused study of the details of land use puts us in a position to conserve the important elements of the nature, which otherwise lead in a direction of destruction and consequently threaten the social strata. The present study focuses mainly on dimension, which is very important from the sustainability point of view that is distribution of different groups of land use, i.e. their ratios in the region. Therefore, it becomes very complex and diversified to study all the groups available at micro-level, homogenous groups are generalized to reduce the number of groups, and these simplified groups of land use are called generalized land use classification.

World Land Use Classification mainly recognizes nine categories. These are Settlement and Associated Non Agricultural Land, Horticulture, Tree and Permanent Crops, Crop Land, Improved Permanent Pasture, Improved Grazing Land, Wood Land, Swamps and Marshes, Unproductive Land.

In India, a standard classification system is yet to develop. National Atlas and The land use classification presented by All India Soil and Land Use Survey 1970 is as follows:

1. Forest Land (F) F1 Without Canopy F2 Sparse Forest F3 General Forest F4 Fully Stocked Top Canopy

2. Cultivated land (CC) C1 Single Cropped C2 Double Cropped C3 Triple Cropped

3. Terraced Land (T) T1 Poorly Bounded Land T2 Poor Terracing Measures T3 Bench Terraces

4. Waste Land (W) W1 Fit for Cultivation W2 Unfit for Cultivation

5. Pasture Land (P) P Pasture and Grazing Land H Hay Land When the Grass Periodically Cut P1 With Young Shrubs P2 With Well Grows Shrubs T Thorny Lands and Heavy Canopy Shrubs.

Land use classification by Statistical Department of Government of India.

I. Geographical Area - Area calculated by Survey Department.

II. Reported Area (Statistical area related to land use)

1. Forest

2. Land not Available for Cultivation

a) Land Put to Non- Agricultural Use,

b) Barren and Uncultivable Land,

3. Other Uncultivable and excluding Fallow Land

a) Permanent Pastures and Other Grazing Land,

b) Miscellaneous Tree Crops and Gardens,

c) Culturable Waste Land.

4. Fallow Land a) Fallow Other than Current Fallow b) Current Fallow

5. Cultivated Land a) Net Sown Area, b) Area Sown More Than Once.

I. Net Irrigated Area.

II. Total Irrigated Area.

The analysis of land use in the present study is based on district statistical magazine, data available at block level and revenue office. Following categories of land use have been recognised in the study area. In the analysis of land use pattern study has been adopted at block level: Forest Cover, Barren and cultivable waste land, Current Fallow land, Other Fallow land, Barren & uncultivable Land, Land put to non-agricultural Use, Pastures and Grazing Land, Area under bush, forest & garden, Net area sown.

Built-Up Land

It is an area of human habitation developed due to non-agricultural use and that has a cover of buildings, transport and communication, utilities in association with water, vegetation and vacant lands. For delineating built – up land built up polygons interpreted under settlement.

Built-Up Area (Rural)

These are the lands used for human settlement and are of size comparatively less than the urban settlements of which more than 80% of the people are involved in the primary

activity of agriculture. All the agricultural villages covering 5 hectares area and more are included in this category. These are the built-up areas, smaller, mainly associated with agriculture and allied sectors and non-commercial activities with population size less than 5000, generally lack supporting facilities that are unique to urban areas like hospitals, industries (large and medium scale), institutional etc. They appear in dark bluish green in the core built-up area and bluish in the periphery size varies from small to big; irregular and discontinuous in appearance; can be seen in clusters con-contiguous or scattered.

Built-up Land (Urban)

All places with a municipality, corporation or cantonment or which are notified as town areas and all other places, which satisfy the criteria of a minimum population of 5000, at least 75 percent of whose male working population is non-agricultural and having a density of population of at least 400 per sq. km. are placed under this category (Census of India). It comprises areas of intensive use with much of the land covered by intensive use and covered by structures. It includes residential, recreational, public & semi-public, transportation, communication and isolated areas such as parks, playgrounds, open spaces and vegetated areas. Dantewara city area is classified in this class.

Agricultural Land

These are the lands primarily used for farming and for production of food, fibre, and other commercial and horticultural crops. It includes land under crops (irrigated and unirrigated, fallow, plantation etc.).

Cropland

These are the areas with standing crop as on the date of satellite overpass. Cropped areas appear in bright red to red in colour with varying shape and size in a contiguous to non-contiguous pattern. They are widely distributed in different terrains; prominently appear in the irrigated areas irrespective of the source of irrigation.

Forest

These are the areas bearing an association predominantly of trees and other vegetation types (within the notified forest boundaries) capable of producing timber and other forest produce. They comprise of thick and dense canopy of tall trees, which can be evergreen, semi evergreen or deciduous (moist/dry/thorn). Evergreen forest includes both coniferous and tropical broadleaved evergreen species and predominantly remains green throughout the year. Semi-evergreen is a forest type that includes a combination of evergreen and deciduous species with the former dominating the canopy cover. Deciduous forest types are of

predominantly composed of species, which shed their leaves once a year, especially during summer. They exhibit bright red to dark red in colour in varying sizes, smooth to medium texture depending on the crown density, contiguous to non-contiguous in pattern based on their location. The size can be irregular and discontinuous occupying medium relief mountain/hill slopes within the notified areas. Forest blank are the openings amidst forest areas, devoid of tree cover, observed as openings of assorted size and shapes as manifested on the imagery. They appear in light yellow to light brown in tone, generally small in size. They possess regular to irregular shape, scattered in the forested areas. Most of these areas are seen along hill tops/slopes midst forest areas. Forest blanks are also to be included in this category.

Dense/Closed

This category includes all the areas where the canopy cover/density is more than 40%.

Open/Degraded

This category includes all the forest areas where the canopy cover/density ranges between 10 – 40%.

Wastelands

Wasteland is described as degraded land which can be brought under vegetative cover with reasonable effort and which is currently underutilized and land which is deteriorating for lack of appropriate water and soil management or an account of natural causes. Wastelands can result from inherent / imposed disabilities such as by location, environment.

Dense Scrub

These areas possess shallow and skeletal soils, at times chemically degraded, extremes of slopes, severely eroded and lands subjected to excessive aridity with scrubs dominating the landscape. They have a tendency for intermixing with cropped areas .

Open Scrub

This category has a similar description as mentioned in the earlier class excepting that they possess sparse vegetation or devoid of scrub and have a thin soil cover.

Barren/Rocky/Stony Waste

These are rock exposures of varying lithology often barren and devoid of soil and vegetation cover. They occur amidst hill-forests as openings or as isolated exposures on plateau and plains. Such lands can be easily discriminated from other categories of wastelands because of their characteristic spectral response. They appear in greenish blue to yellow to brownish in colour depending on the rock type. They vary in size with irregular to

discontinuous shape with a linear to contiguous or dispersed pattern. They are located in steep isolated hillocks/hill slopes, crests, plateau and eroded plains associated with barren and exposed rocky/stony wastes, lateritic outcrops, mining and quarrying sites.

Water Bodies

This category comprises areas with surface water, either impounded in the form of ponds, lakes and reservoirs or flowing as streams, rivers, canals etc. These are seen clearly on the satellite image in blue to dark blue or cyan colour depending on the depth of water.

River /Stream/Canal

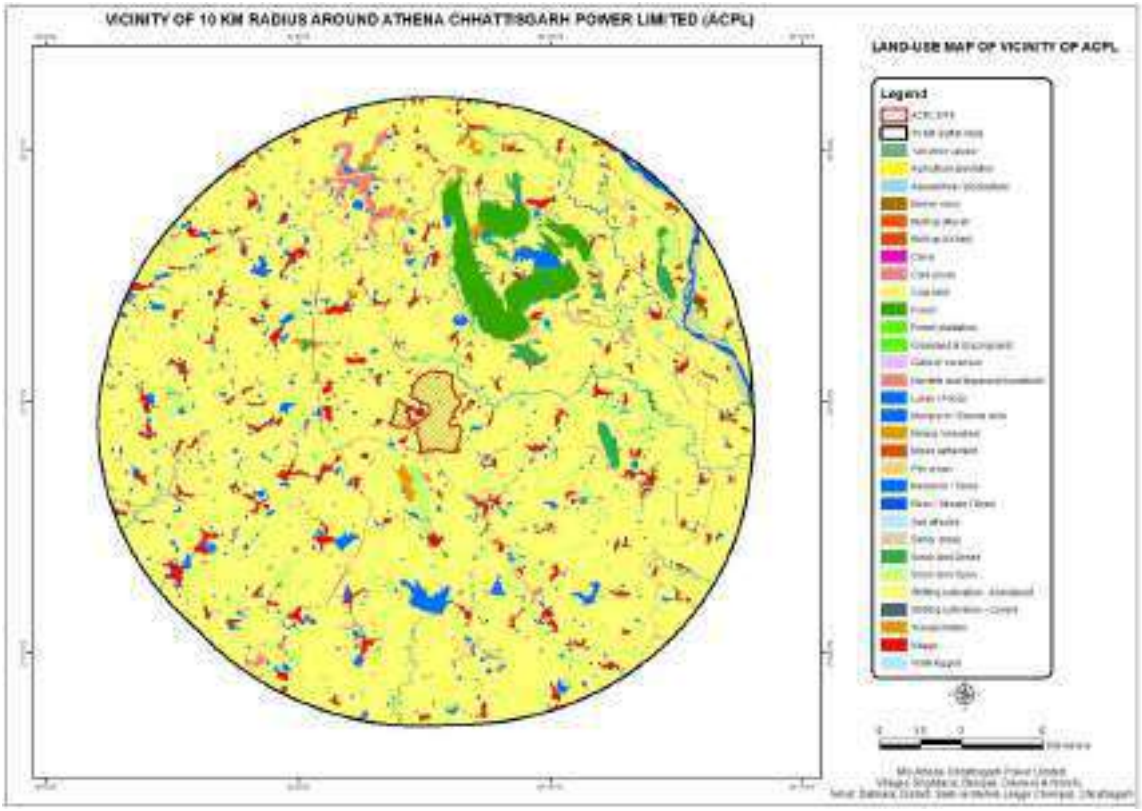
Rivers/streams are natural course of water flowing on the land surface along a definite channel/slope regularly or intermittently towards a sea in most cases or a lake or an inland basin in desert areas or a marsh or another river. Depending upon the nature of availability of water, rivers are sub-divided into perennial or seasonal. They appear in light to dark blue in colour, long, narrow to wide depending on the size of the river. They appear in contiguous, at times nonlinear pattern and associated with drainage pattern on hill slopes, flood plains or uplands, at times with vegetation along the banks.

Lakes / Ponds

These are accumulation of water in a depression of various sizes either natural or saline Lakes / ponds are those that retain water in them either for one season or throughout the year and usually not subject to extreme fluctuation in water level. Ponds are body of water limited in size, either natural or artificial, regular in shape, smaller in size than a lake, generally located near settlements.

Reservoir / Tanks

Reservoir is an artificial lake created by construction of a dam across the river specifically for irrigation, and water supply for domestic/industrial needs, flood control, etc., either singly or in combination. Tanks are small lakes of impounded water ways constructed on land surface for irrigation. They appear in light blue to dark blue depending on the depth from small to large sizes. They possess regular to irregular shape dispersed to linear, occupying lowlands, plains. They are associated with croplands, low lands and reservoirs surrounded by hills with or without vegetation.



1.12. Land Capability

Land capability classification is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period. Land capability classification is sub-divided into capability class and capability subclass nationally. Some states also use a capability unit. Land capability classification has value as a grouping of soils. National Resource Inventory information, Farmland Protection Policy Act, and many field office technical guides have been assembled according to these classes. The systemhas been adopted in many textbooks and has wide public acceptance. Some state legislation has used the system for various applications. All map unit components, including miscellaneous areas, are assigned a capability class and subclass.Land capability units can be used to differentiate subclasses at the discretion of the state. Capability class and subclass are assigned to map unit components in the national soil information system.

Classes and definitions:

Class I soils have slight limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or require moderateconservation practices.

Class III soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.

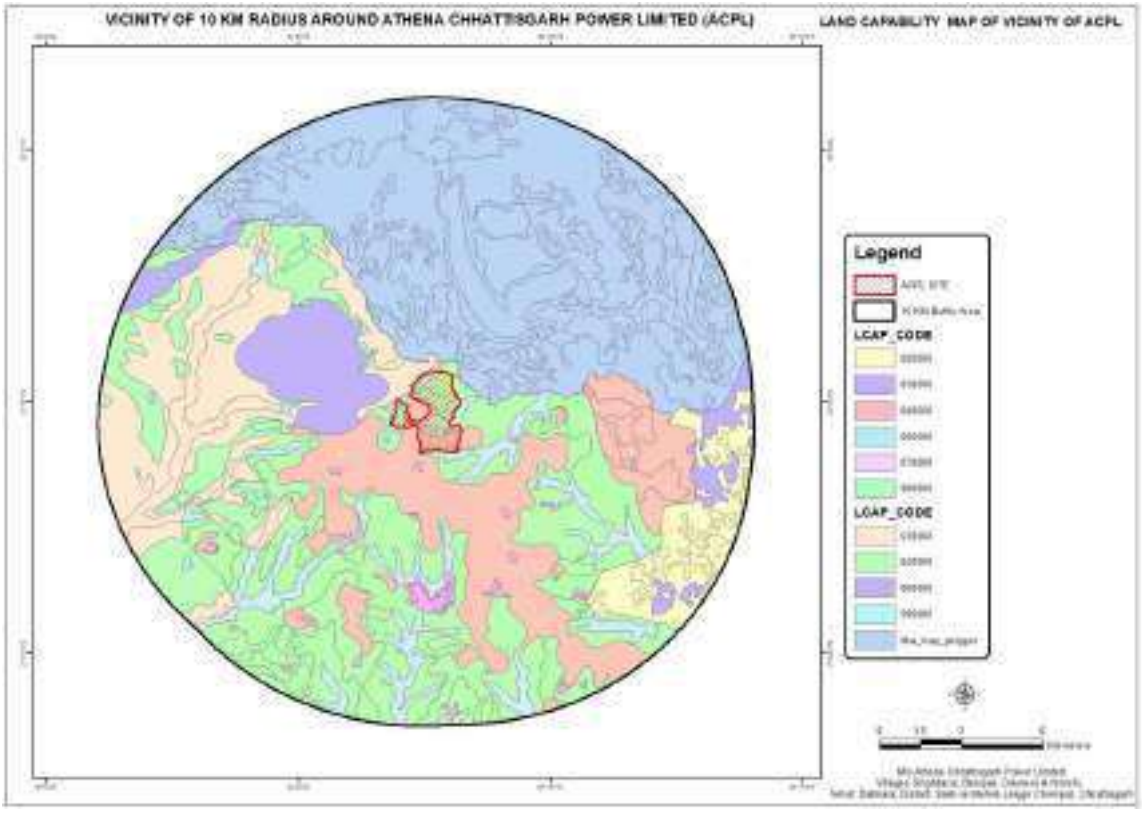
Class IV soils have very severe limitations that restrict the choice of plants or require very careful management, or both.

Class V soils have little or no hazard of erosion but have other limitations, impractical to remove, that limit their use mainly to pasture, range, forestland, or wildlife food and cover.

Class VI soils have severe limitationsthat make them generally unsuited to cultivation and that limit their use mainly to pasture, range, forestland, or wildlife food and cover.

Class VII soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife.

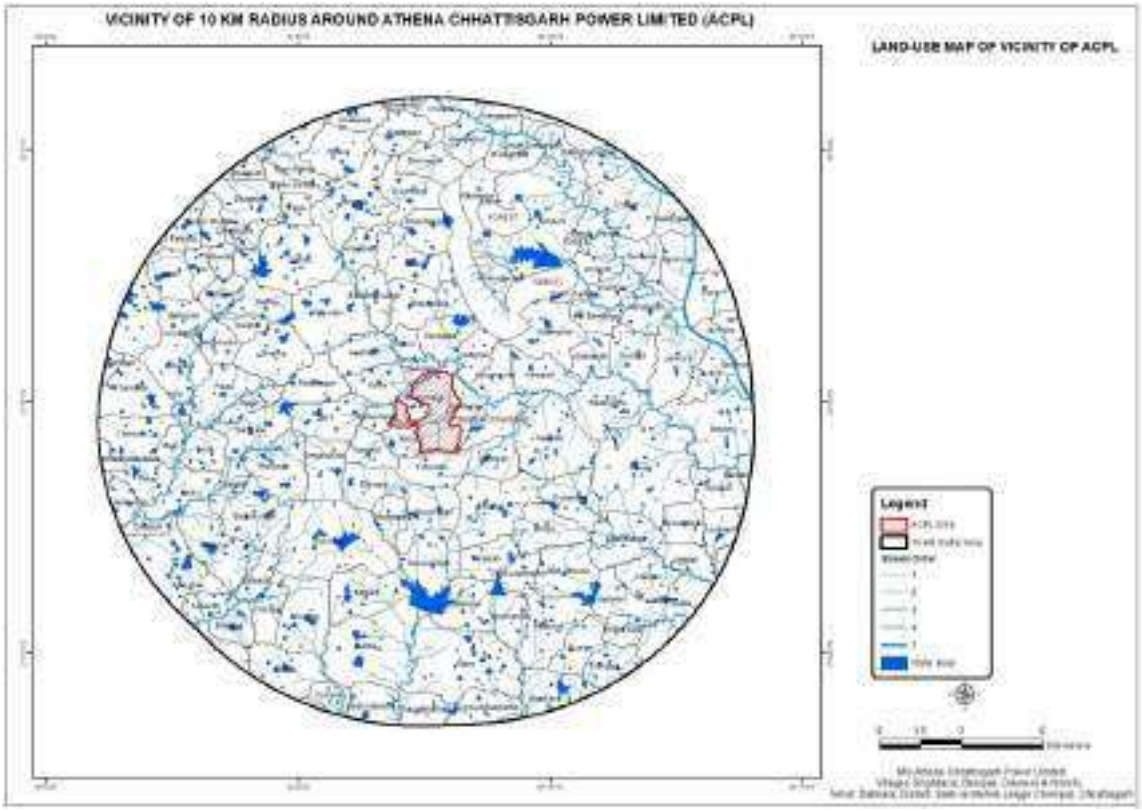
Class VIII soils and miscellaneous areas have limitations that preclude their use for commercial plant production and limit their use to recreation, wildlife, or water supply or for esthetic purposes.

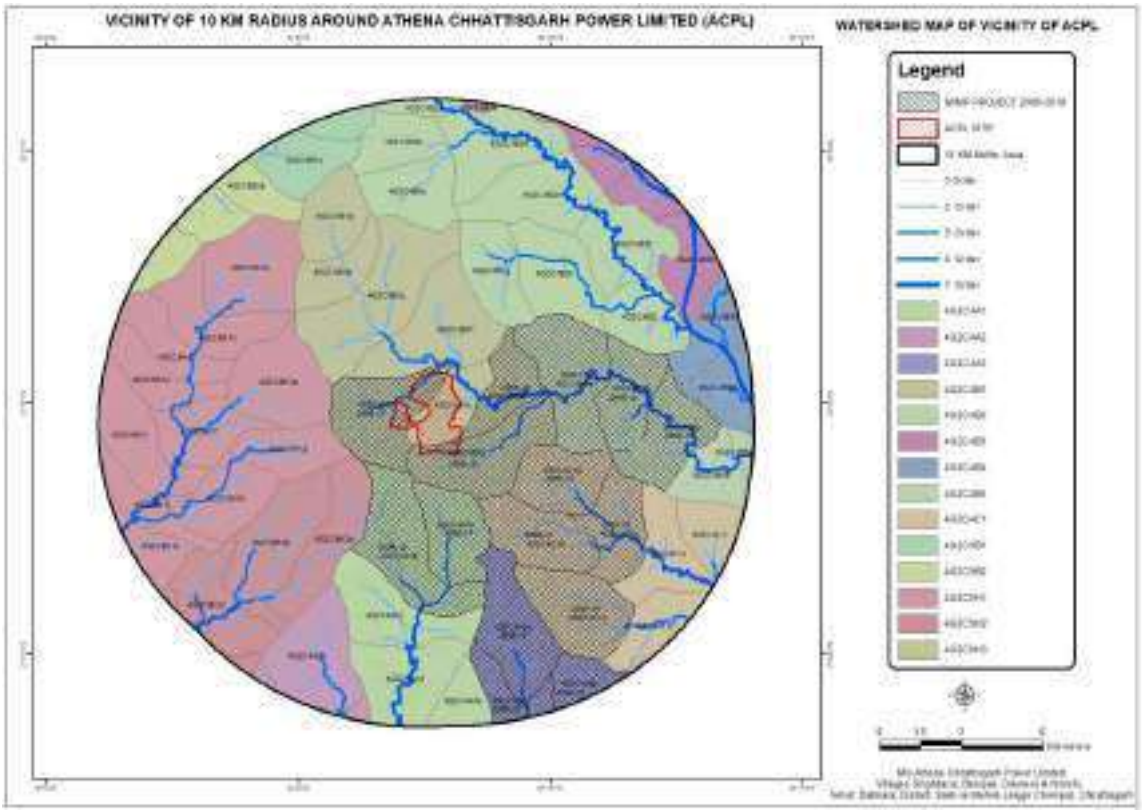


1.13. Drainage

In geomorphology, a drainage system is the pattern formed by the streams, rivers, and lakes in a particular drainage basin. They are governed by the topography of the land, whether a particular region is dominated by hard or soft rocks, and the gradient of the land. Geomorphologists and hydrologists often view streams as being part of drainage basins. A drainage basin is the topographic region from which a stream receives runoff, through flow, and groundwater flow. Drainage basins are divided from each other by topographic barriers called a watershed. A watershed represents all of the stream tributaries that flow to some location along the stream channel. The number, size, and shape of the drainage basins found in an area varies and the larger the topographic map.

The drainage length statistics based on Strahler method of drainage ordering as shown in figure below:




VICINITY OF 10 KM RADIUS AROUND ATHENA CHHATTISGARH POWER LIMITED (ACPL)
WATERSHED MAP OF VICINITY OF ACPL
Legend

2. Proposed Methodology

A complete watershed development plan for 10km buffer zone will include the following:

1. Watershed Assessment and Planning:

- Conduct a comprehensive assessment of the watershed, including hydrological features, water quality, soil erosion, and land use patterns.
- Engage with local communities, government agencies, and experts to identify specific challenges, needs, and opportunities for sustainable development.

2. Water Resource Management:

- Implement water conservation measures, such as rainwater harvesting systems, groundwater recharge initiatives, and efficient irrigation techniques.
- Develop or improve water storage and distribution infrastructure, including small-scale reservoirs, check dams, and water supply networks.

3. Sustainable Agriculture and Livelihoods:

- Promote sustainable agricultural practices, such as organic farming, agroforestry, and crop diversification.
- Provide training, technical assistance, and resources to farmers for adopting modern agricultural techniques, improving productivity, and enhancing market access.

4. Watershed Protection and Restoration:

- Implement measures to protect critical watershed areas, including forest conservation, afforestation, and soil erosion control.
- Conduct reforestation initiatives, develop green belts, and restore degraded lands to improve water retention and quality.

5. Community-based Water Management:

- Establish community-led water management committees or organizations to facilitate participatory decision-making, water allocation, and maintenance of water infrastructure.

- Strengthen local capacity through training programs on water management, maintenance, and monitoring.

6. Water Supply and Sanitation:

- Improve access to safe drinking water and sanitation facilities by constructing community water supply systems, hand pumps, water treatment plants, and sanitary toilets.
- Conduct regular water quality testing, promote hygiene practices, and provide education on sanitation and health.

7. Environmental Education and Awareness:

- Conduct workshops, awareness campaigns, and educational programs on watershed management, sustainable practices, and climate change adaptation.
- Develop informational materials, conduct school programs, and engage local communities in environmental conservation activities.

8. Monitoring and Evaluation:

- Establish a monitoring and evaluation framework to track the progress and impact of the watershed development plan.
- Regularly assess the effectiveness of interventions, collect data on water availability, agriculture productivity, and socio-economic indicators.Net Area Sown in Watershed Area District is 359910 Ha.Out of which 274471Ha. Area is either partially or totally,rain fed. Terrains, topography, forest area clearances, availability of skilled man power, approachability of sites, presence of left wing extremism, land slope, availability quality power, land acquisition issues, site availability are some of the various factors which are determining the irrigation strategy for specific areas.

Major crop in the district is Paddy crop, which consumes 1200 mm of water. If in place of paddy, crops like maize, Pulses and oilseeds are sown, for the same available water, cropped area can be increased to four times . Changing crop pattern will also improve soil fertility and reduces crop vulnerability to droughts and diseases.

In this regard, it may be mentioned that the water sector has very strong linkages with all other developmental activities. In view of fast changing development scenario, it is emphasized that the key priorities and identified strategies cannot be considered as static and firm. These need to be reviewed and improved upon from time to time. In this regard a

comprehensive "Strategic Plan for District Irrigation" has been prepared through geospatial approach:

2.1. Methodology

The following criteria have been followed for making decision on selecting suitable site for various water harvesting structures as per Integrated Mission for Sustainable Development (IMSD) guidelines.

Check dams

- The slope should be less than 15 percent.
- The land use may be barren, shrub land and riverbed.
- The infiltration rate of the soil should be less.
- The type of soil should be sandy clay loam.

Percolation tanks and nala bunds

- The slope should be less than 10 percent.
- The infiltration rate of the soil should be moderately high.
- The land use / cover may be barren or scrub land.
- The type of soil should be silt loam.

The suitability of WHS sites can be confirmed as the site is located on second and third order drainage and satisfies the conditions of land use, soil type and slope as per IMSD guidelines. Water harvesting structures are extremely important to conserve precious natural resources like, soil and water, which is depleting day by day at alarming rate.

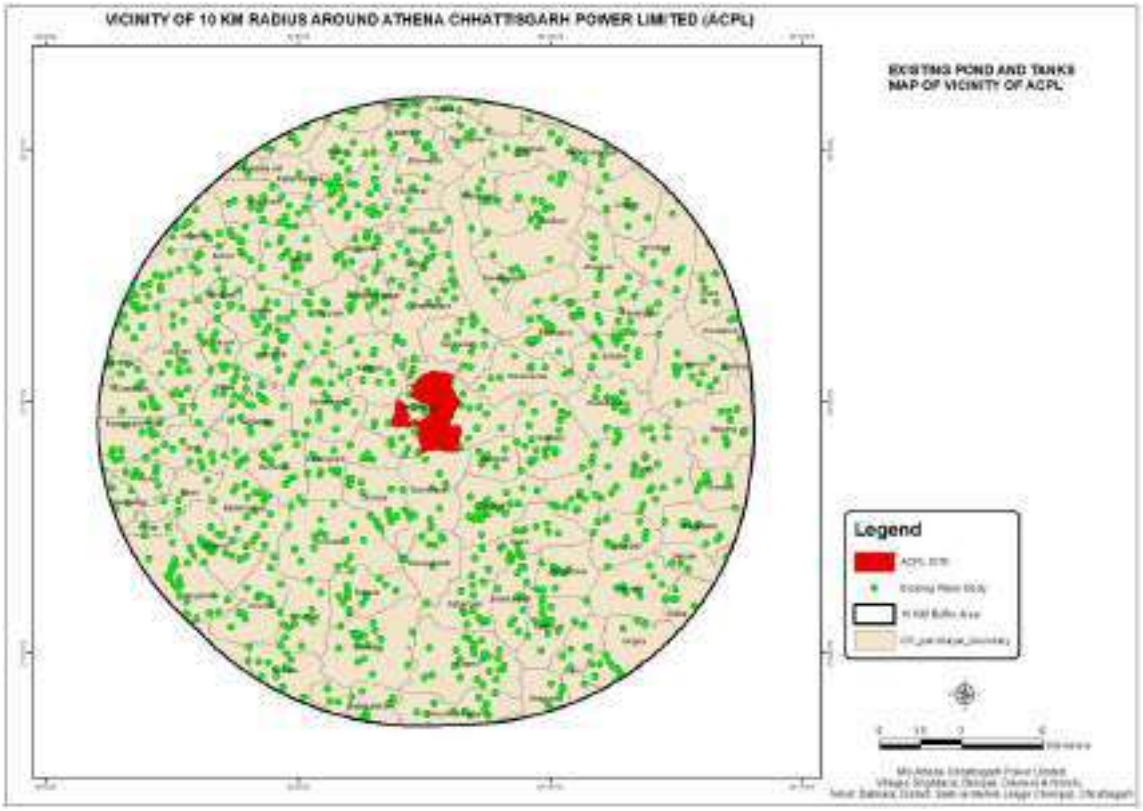


Figure 4 Existing Water Harvesting Structures in Study Area

Near about 1150 Ponds/Tanks already developed in the study area.

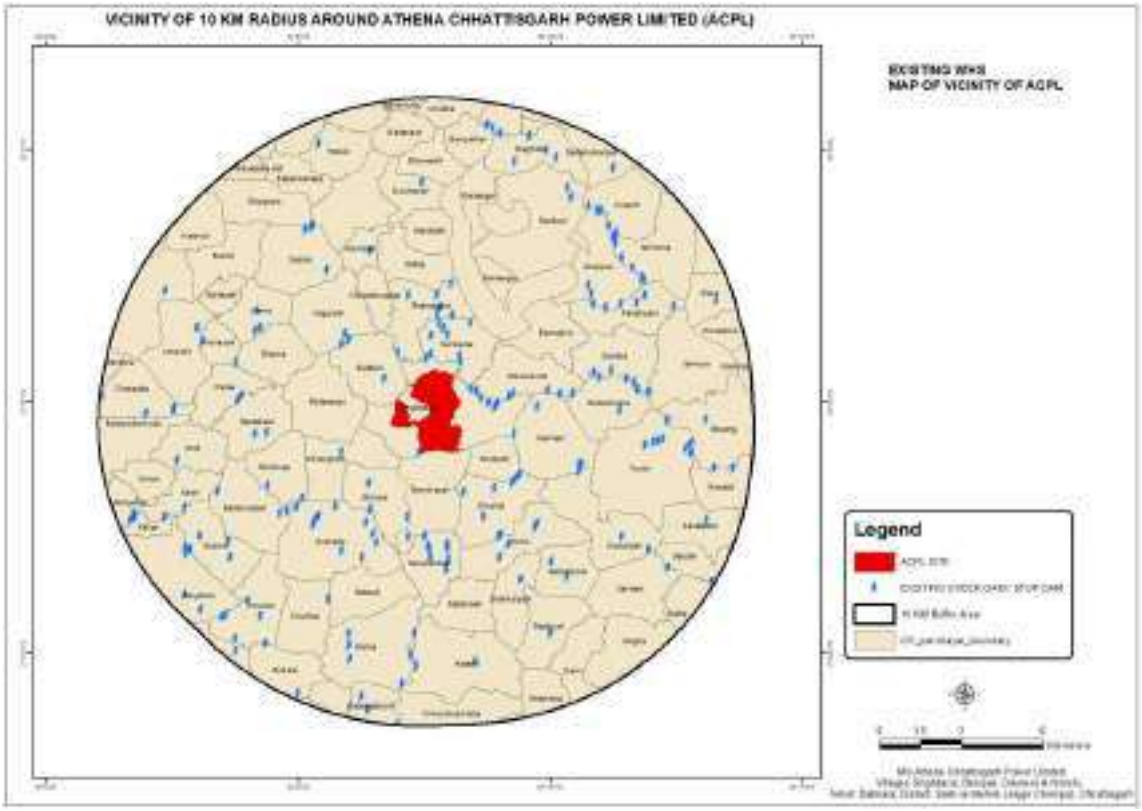


Figure 5 Existing Stop Dam/Check Dam in Study Area

Near about 20 Stop Dam/Check Dams already developed in the study area.

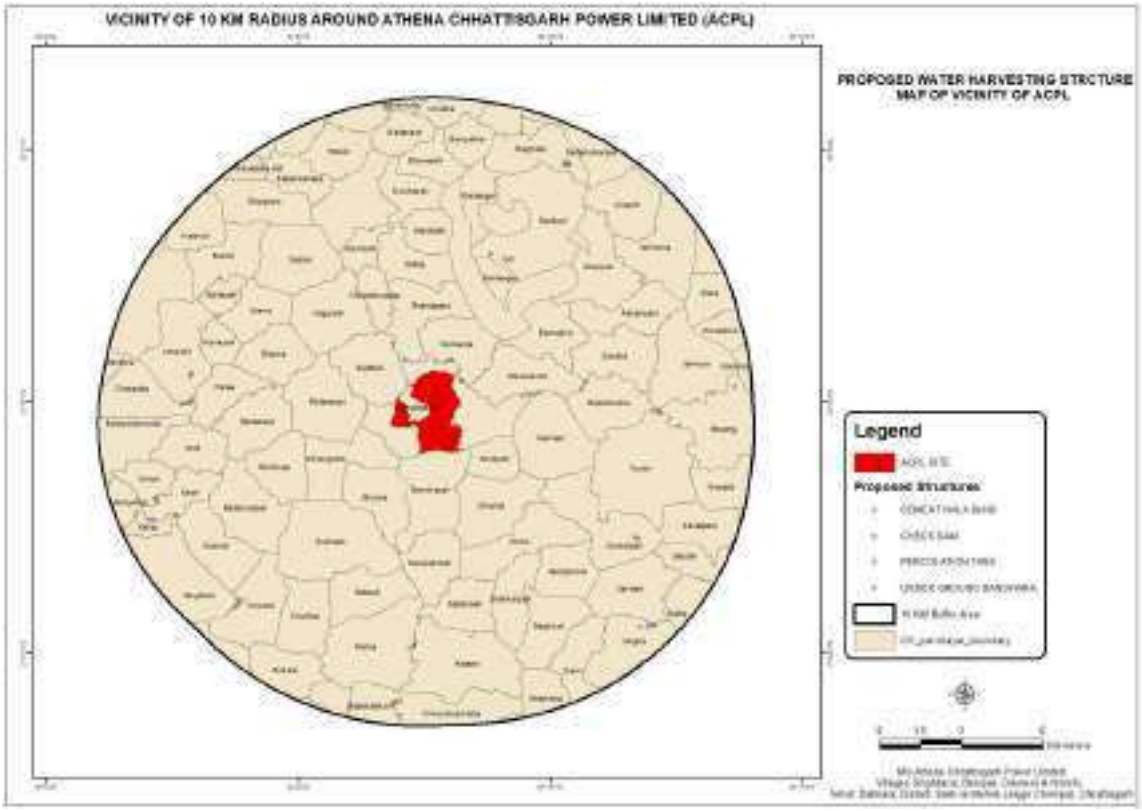


Figure 2-6 Proposed Action in Watershed Area

Near about 75 new water harvesting structures are proposed by the State Government in NARWA Mission and will be implemented by the convergence of MGNEREGA Act.
Based on the current situation and field observation some renovation required for enhancement of capacity of existing water bodies details attached as Annexure -4.

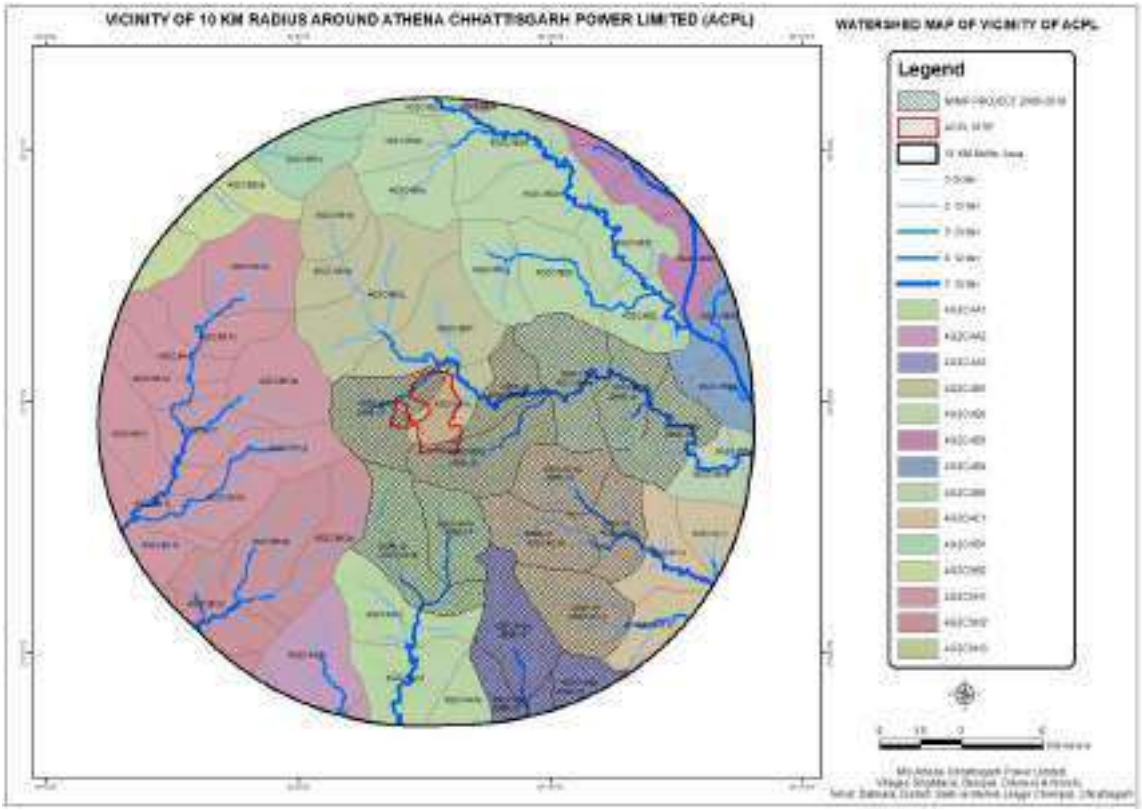


Figure 2-7 Sanctioned PMKSY (IWMP)

Source: NRSC (District GYAN data and ISRO BhuvanPortel

3. Summary & Conclusions

- As per ToR no. J-13012/07/2009-IA. II (T) dated 10 may 2023, "An action plan shall be prepared for Water shed development within 10 km radius of the plant boundary in consultation with reputed government institution." Therefore, a detailed water shed development plan is being submitted along with the EIA.
- An initiative was taken to formulate "Common Guidelines for Watershed Development Projects" in order to have a unified perspective by all ministries. These guidelines are therefore applicable to all watershed development projects in all Departments / Ministries of Government of India concerned with Watershed Development Projects.
- This site falls in the Mahanadi Basin. The Mahanadi is the 8th largest basin having total catchment area of 139681.51* Sq.km which is nearly 4.28% of the total geographical area of the country.
- The Mahanadi basin is divided into 3 sub basins, namely upper, middle and lower Mahanadi. There is total 278 Watersheds delineated under India-WRIS project in Mahanadi basin.
- The Study area of 10 km fall under the watershed code no are C08MAM60, C08MAM63, C08MAM50, and C08MAM51.
- Mand River is one of the major water bodies flowing in the study area. It is present in C08MAM60
- There is total 140 villages in the study area identified as per the Census Map. Higher elevation area is ideal for watershed development since they form a groundwater recharge potential zone. Therefore, based on the elevation of the locations, 11 villages are identified for practising watershed development plan.
- The watershed development plan in these villages will include Watershed Assessment and Planning, Water Resource Management, Sustainable Agriculture and Livelihoods, Watershed Protection and Restoration, Community-based Water Management, Water Supply and Sanitation, Environmental Education and Awareness and Monitoring and Evaluation.
- IWMP programme implemented in area for watershed and Natural Resource Management. Also near about 200 WHS/ WRS are created by the different departments under different planning schemes like IWMP, MGNREGA, PMKSY and RKVY. In spite of these structures few more water harvesting and recharge

structures are proposed for the sustainable development. These structures are also proposed in District Irrigation Plan and will be implemented BY "MGNREGA".

- As per current situation and analysis it is observed that some traditional water sources need to be improved, for which Rs 10 lakh will be required. (Annex-4) Which will be implanted by Athena Chhattisgarh Power Limited through the local Zila Panchayat Office/ Collector Office.
- Therefore, by implementing this watershed development plan the company would aim to increase overall watershed health, sustainable water resource management, and improved socio-economic conditions for the communities residing within the watershed area.

Annexure-1 Population Details

Sl.	District	Block Name	GP NAME	Village Name	No_HH	TOT_P	TOT_M	TOT_F	P_SC	P_ST	P_LIT	TOT_WORK_P
1	Janjgir - Champa	Malkharoda	CHARAUDA	Charouda	309	1532	764	768	159	159	1006	820
2	Janjgir - Champa	Malkharoda	BADEPADARMUDA	Charoudi	281	1081	517	564	299	20	620	608
3	Janjgir - Champa	Malkharoda	ANDI	Andi	206	774	384	390	759	0	472	485
4	Janjgir - Champa	Malkharoda	LIMGAON	Banjaree	167	662	329	333	173	0	444	425
5	Janjgir - Champa	Malkharoda	LIMGAON	Limgaon	317	1427	705	722	148	355	845	846
6	Janjgir - Champa	Malkharoda	BOKREL	Tata	71	260	125	135	94	59	183	147
7	Janjgir - Champa	Malkharoda	BOKREL	Khartal	56	208	102	106	61	0	163	110
8	Janjgir - Champa	Malkharoda	BOKREL	Chhatouna	72	238	123	115	46	0	165	68
9	Janjgir - Champa	Malkharoda	BOKREL	Bokrel	115	442	224	218	51	0	324	223
10	Janjgir - Champa	Malkharoda	SAPIYA	Sapiya	716	2865	1465	1400	696	127	1965	1212
11	Janjgir - Champa	Malkharoda	KARRAPALI	Karrapali	163	826	412	414	317	253	582	473
12	Janjgir - Champa	Malkharoda	JHARRA	Jharra	193	952	481	471	110	632	567	576
13	Janjgir - Champa	Malkharoda	JHARRA	Toulipali	162	642	310	332	495	38	416	411
14	Janjgir - Champa	Malkharoda	FAGURAM	Faguram	739	3177	1633	1544	1443	240	1951	1654
15	Janjgir - Champa	Malkharoda	KARRAPALI	Darimuda	175	787	397	390	0	543	463	475
16	Janjgir - Champa	Malkharoda	PARSA	Parsa	300	1165	561	604	41	379	769	587
17	Janjgir - Champa	Malkharoda	BHANTA	Bhanta	342	1404	714	690	251	396	973	874
18	Janjgir - Champa	Malkharoda	SARASKELA	Parsi	94	455	242	213	359	38	280	182
19	Janjgir - Champa	Malkharoda	SARASKELA	Saraskela	309	1251	636	615	962	35	739	581
20	Janjgir - Champa	Malkharoda	BADEMUDPAR	Tulsidih	160	568	285	283	529	0	321	375
21	Janjgir - Champa	Malkharoda	BADEMUDPAR	Bademudpar	437	1848	920	928	1117	68	1108	1051
22	Janjgir - Champa	Malkharoda	BODASAGAR	Bodasagar	193	830	413	417	149	66	549	527
23	Janjgir - Champa	Malkharoda	KUDHARI	Kudhari	301	1125	565	560	400	135	620	496
24	Janjgir - Champa	Malkharoda	BODASAGAR	Sero	292	1138	589	549	294	69	796	645
25	Janjgir - Champa	Malkharoda	KUDHARI	Kulba	229	1062	527	535	493	179	671	554
26	Janjgir - Champa	Malkharoda	KIRKAR	Kirkar	214	894	452	442	402	9	560	421
27	Janjgir - Champa	Malkharoda	ANDI	Anda	294	1168	572	596	770	27	713	622

Sl.	District	Block Name	GP NAME	Village Name	No_HH	TOT_P	TOT_M	TOT_F	P_SC	P_ST	P_LIT	TOT_WORK_P
28	Janjgir - Champa	Malkharoda	KIRARI	Kirari	285	1248	603	645	328	29	804	610
29	Janjgir - Champa	Malkharoda	KIRKAR	Dalalpali	96	405	185	220	376	0	248	246
30	Janjgir - Champa	Malkharoda	SINGHARA	Singhra	746	3198	1571	1627	1463	288	2033	1764
31	Janjgir - Champa	Malkharoda	SINGHARA	Parsadih	194	722	349	373	697	0	458	340
32	Janjgir - Champa	Malkharoda		Adbhar (NP)	1734	7272	3572	3700	1797	801	4701	3776
34	Janjgir - Champa	Dabhra	SINGHITARAI	Katharrapali	75	265	132	133	59	76	183	124
35	Janjgir - Champa	Dabhra	SINGHITARAI	Singhi Tarai	310	1054	519	535	284	205	709	352
36	Janjgir - Champa	Dabhra	SINGHITARAI	Benipali	84	333	173	160	75	214	219	224
37	Janjgir - Champa	Dabhra		Audekera	341	1224	584	640	311	803	699	456
38	Janjgir - Champa	Dabhra	SINGHITARAI	Nimuhi	191	664	326	338	76	72	476	253
39	Janjgir - Champa	Dabhra	DEVARGHATA	Kanakot	116	533	259	274	32	333	341	286
40	Janjgir - Champa	Dabhra	DEVARGHATA	Dewarghata	394	1489	724	765	529	14	943	795
41	Janjgir - Champa	Dabhra	GHIVARA	Ghiwara	341	1286	632	654	458	490	788	556
42	Janjgir - Champa	Dabhra	BANDHAPALI	Uchchpinda	178	624	309	315	145	19	380	238
43	Janjgir - Champa	Dabhra	BANDHAPALI	Bandhapali	213	784	394	390	434	48	484	429
44	Janjgir - Champa	Dabhra	GHIVARA	Dhobnipali	206	739	383	356	222	112	475	392
45	Janjgir - Champa	Dabhra	BARTUNGA	Bartunga	538	2149	1073	1076	1132	81	1366	959
46	Janjgir - Champa	Dabhra	SUKHADA	Sukhada	722	2909	1482	1427	185	335	1742	1509
47	Janjgir - Champa	Dabhra	KUSMUL	Kusmul	587	2498	1254	1244	1816	153	1383	1470
48	Janjgir - Champa	Dabhra	CHURTELI	Latiyadih	170	694	362	332	550	64	404	397
49	Janjgir - Champa	Dabhra	CHURTELI	Churteli	283	1047	513	534	373	227	654	501
50	Janjgir - Champa	Dabhra	CHURTELA	Churtela	514	1973	1018	955	701	120	1241	1235
51	Janjgir - Champa	Dabhra	KATAUD	Kataud	495	1847	909	938	95	62	1214	937
52	Janjgir - Champa	Dabhra	KANSA	Kansa	638	2486	1253	1233	496	144	1496	1451
53	Janjgir - Champa	Dabhra	CHURTELI	Kaudiya	159	536	251	285	530	1	346	331
54	Janjgir - Champa	Dabhra	FARASWANI	Pharasawani	678	2781	1343	1438	591	406	1694	1342
55	Janjgir - Champa	Dabhra	GOBARA	Gobra	540	2164	1068	1096	1056	406	1447	1237
56	Janjgir - Champa	Dabhra		Turkapali	162	638	322	316	25	0	404	353
57	Janjgir - Champa	Dabhra	BADEKATEKONI	Bade Katekoni	484	2031	1002	1029	622	40	1147	892

Sl.	District	Block Name	GP NAME	Village Name	No_HH	TOT_P	TOT_M	TOT_F	P_SC	P_ST	P_LIT	TOT_WORK_P
58	Janjgir - Champa	Dabhra		Saraipali (Chechang)	158	456	217	239	69	157	315	176
59	Janjgir - Champa	Dabhra	KANWALI	Kanwali	657	2499	1244	1255	232	1435	1537	1170
60	Janjgir - Champa	Dabhra	BADADARAHA	Badadarha	436	1634	857	777	187	276	1063	1076
61	Janjgir - Champa	Dabhra	TUNDRI	Tundri	1074	3810	1936	1874	327	1583	2458	1760
62	Janjgir - Champa	Dabhra	KENAPALI	Kenapali	323	1283	664	619	595	84	866	702
63	Janjgir - Champa	Dabhra	DHURKOT	Dhurkot	546	2378	1200	1178	1107	137	1438	1090
64	Janjgir - Champa	Dabhra	DUMARPALI	Dumarpali	277	866	448	418	162	151	625	312
65	Janjgir - Champa	Dabhra	DUMARPALI	Khairmuda	204	916	469	447	136	95	566	423
66	Janjgir - Champa	Dabhra	KOMO	Komi	281	1118	572	546	137	378	699	566
67	Janjgir - Champa	Dabhra	KEKARABHATH	Kekarabhath	380	1506	747	759	396	481	941	827
68	Janjgir - Champa	Dabhra	KOMO	Saraipali	194	711	361	350	53	196	473	301
69	Janjgir - Champa	Dabhra	KABARIPALI	Kabaripali	359	1261	651	610	375	201	803	717
70	Janjgir - Champa	Dabhra	SHANKARPALI	Dhekunabhatha	183	572	288	284	247	171	350	289
71	Janjgir - Champa	Dabhra	AKOLJAMORA	Akol Jamora	383	1584	780	804	478	688	915	826
72	Janjgir - Champa	Dabhra	SHANKARPALI	Shankarpali	272	1000	499	501	169	341	613	393
73	Janjgir - Champa	Dabhra	CHHUCHHUBHATHA	Dhaurabhatha	186	676	375	301	116	148	433	206
74	Janjgir - Champa	Dabhra	CHHUCHHUBHATHA	Chhuchhubhatha	280	1022	508	514	322	1	611	529
75	Janjgir - Champa	Dabhra	KOTAMI	Kotmi	1084	3941	1954	1987	699	972	2398	1733
76	Janjgir - Champa	Dabhra	BAGHOUD	Baghaud	587	2274	1107	1167	717	253	1545	940
77	Janjgir - Champa	Dabhra	DARRI	Darri	248	816	414	402	108	311	517	427
78	Janjgir - Champa	Dabhra	KHARKENA	Kharkena	482	1615	810	805	810	332	1050	645
79	Janjgir - Champa	Dabhra	GIRGIRA	Baghanipali	155	579	295	284	0	412	368	288
80	Janjgir - Champa	Dabhra	GIRGIRA	Bilaigarh	258	922	473	449	103	429	591	322
81	Janjgir - Champa	Dabhra	GIRGIRA	Girgira	311	1107	559	548	80	110	711	371
82	Janjgir - Champa	Dabhra	DARRI	Khaira Khurd	156	608	306	302	55	257	386	293
83	Raigarh	Raigarh	KACCHAR	Kachhar	475	1869	929	940	133	441	1128	655
84	Raigarh	Raigarh	BARPALI	Arsipali	171	687	348	339	82	123	481	217
85	Raigarh	Raigarh	NAWAPARA	Junwani	114	449	235	214	31	50	317	162
86	Raigarh	Raigarh	NAWAPARA	Nawapara	259	998	517	481	384	167	554	356

Sl.	District	Block Name	GP NAME	Village Name	No_HH	TOT_P	TOT_M	TOT_F	P_SC	P_ST	P_LIT	TOT_WORK_P
87	Raigarh	Raigarh	NANDALI	Baispali	206	740	377	363	106	217	513	212
88	Raigarh	Raigarh	SARWANI	Litaipali	134	647	340	307	112	79	433	245
89	Raigarh	Raigarh	SARWANI	Sarwani	258	1094	528	566	102	357	753	488
90	Raigarh	Raigarh	KULBA	Kulba	294	1101	530	571	59	551	748	504
91	Raigarh	Kharsia	CHODHA	Chondha	262	1149	615	534	140	665	827	456
92	Raigarh	Kharsia	PAMGARH	Pamgarh	258	1222	626	596	63	196	748	567
93	Raigarh	Kharsia	BANIPATHAR	Banipathar	291	1039	524	515	78	50	659	411
94	Raigarh	Kharsia	BHELWADIH	Bhelwadih	287	1139	564	575	30	28	751	596
95	Raigarh	Kharsia	MADANPUR	Madanpur	698	2704	1334	1370	605	386	1835	881
96	Raigarh	Kharsia	NAWAGAON	Nawagaon	219	778	386	392	82	301	557	476
97	Raigarh	Kharsia		Thusekela	616	2331	1160	1171	340	460	1604	856
98	Raigarh	Kharsia	BANSMUDA	Bansmuda	178	734	365	369	249	292	482	317
99	Raigarh	Kharsia	AURDA	Aurda	417	1531	747	784	548	89	1056	576
100	Raigarh	Kharsia		Nawapara	171	812	414	398	0	386	534	353
101	Raigarh	Kharsia	NAWAPARA EST	Bhagodih	103	520	255	265	0	108	346	288
102	Raigarh	Kharsia	GHAGHARA	Ghaghara	348	1354	661	693	164	20	873	601
103	Raigarh	Kharsia	HALAHULI	Dumar Bhantha	132	561	281	280	238	0	397	160
104	Raigarh	Kharsia	GHAGHARA	Makri	158	587	295	292	53	1	436	187
105	Raigarh	Kharsia	HALAHULI	Halahuli	376	1443	715	728	44	231	1002	512
106	Raigarh	Kharsia	ANJORIPALI	Anjoripali	300	1219	612	607	190	498	808	409
107	Raigarh	Kharsia	RATANMAHAKA	Gopi Mahka	158	668	336	332	149	26	533	183
108	Raigarh	Kharsia	TELIKOT	Telikot	736	3165	1569	1596	1067	164	2047	953
109	Raigarh	Kharsia	ANJORIPALI	Bramhanpali	214	909	451	458	40	330	610	335
110	Raigarh	Kharsia	MOUHAPALI	Mauhapali	698	2988	1511	1477	818	599	2026	1047
111	Raigarh	Kharsia	RATANMAHAKA	Ratan Mahka	359	1535	756	779	58	163	1029	473
112	Raigarh	Kharsia	SONBARSA	Adajhar	164	663	314	349	15	0	416	355
113	Raigarh	Kharsia	KARUMOUHA	Karpipali	202	712	351	361	73	21	481	264
114	Raigarh	Kharsia	BHAINAPARA	Kalmi	83	321	143	178	115	60	214	177
115	Raigarh	Kharsia	KARUMOUHA	Karumauha	162	666	330	336	152	175	448	267

Sl.	District	Block Name	GP NAME	Village Name	No_HH	TOT_P	TOT_M	TOT_F	P_SC	P_ST	P_LIT	TOT_WORK_P
116	Raigarh	Kharsia	GIDHA	Gidha	418	1872	917	955	203	535	1117	620
117	Raigarh	Kharsia	CHHOTEMUDPAR	Chhote Mudpar	426	1966	984	982	86	303	1287	996
118	Raigarh	Kharsia	BHAINAPARA	Bhainapara	394	1536	768	768	85	155	960	636
119	Raigarh	Kharsia	SONBARSA	Sonbarsa	190	789	392	397	187	381	456	274
120	Raigarh	Kharsia	KUNKUNI	Kunkuni	584	2258	1101	1157	390	1117	1394	700
121	Raigarh	Kharsia	KHAIRPALI	Kukri Jhariya	42	146	75	71	0	38	89	43
122	Raigarh	Kharsia	RAJGHATA	Chhote Dumarpali	248	831	413	418	285	200	548	380
123	Raigarh	Kharsia	BADEDUMARPALI	Bade Dumarpali	353	1404	677	727	213	270	997	672
124	Raigarh	Kharsia	BASNAJHAR	Basnajhar	361	1549	790	759	198	518	1043	634
125	Raigarh	Kharsia	RANISAGAR	Bhaluchuwa	60	250	127	123	34	124	162	86
126	Raigarh	Kharsia	RAJGHATA	Rajghata	266	1079	530	549	36	286	723	616
127	Raigarh	Kharsia	RANISAGAR	Ranisagar	203	845	420	425	70	173	556	261
128	Raigarh	Kharsia	CHAPLE	Chaple	715	2774	1377	1397	148	194	1888	807
129	Raigarh	Kharsia	KHAIRPALI	Bendo Jhariya	129	470	247	223	127	104	307	167
130	Raigarh	Kharsia	TEMTEMA	Sendripali	183	695	356	339	33	0	396	181
131	Raigarh	Kharsia	TEMTEMA	Temtema	154	537	275	262	51	107	380	183
132	Raigarh	Kharsia	TEMTEMA	Kanmura	126	467	244	223	10	104	339	202
133	Raigarh	Kharsia	KHAIRPALI	Amapali	83	318	150	168	0	109	200	91
134	Raigarh	Kharsia	KHAIRPALI	Khairpali	171	735	364	371	34	2	514	429
135	Raigarh	Kharsia	RAKSAPALI	Raksapali	307	1108	568	540	269	356	759	477
136	Raigarh	Kharsia	MURA	Mura	432	1485	744	741	53	233	1036	573
137	Raigarh	Kharsia	NAWAPARA	Jaimuda	177	638	315	323	91	130	397	220
138	Raigarh	Kharsia	PANDRIPANI	Ful Bandhiya	218	797	394	403	431	222	640	338
139	Raigarh	Kharsia	SONDKA	Basanpali	149	582	293	289	107	145	426	201
140	Raigarh	Kharsia	PANDRIPANI	Pandripani	211	823	420	403	139	181	558	320
141	Raigarh	Kharsia	SONDKA	Sondka	333	1115	557	558	251	90	805	325
142	Raigarh	Kharsia	JAIMURA	Jaimura	404	1398	691	707	207	275	960	358
143	Raigarh	Kharsia		Kharsia (M)	4006	18939	9750	9189	2219	784	14246	6599
145	Raigarh	Raigarh	BAYANG	Bayang	493	1916	994	922	314	496	1292	662

Sl.	District	Block Name	GP NAME	Village Name	No_HH	TOT_P	TOT_M	TOT_F	P_SC	P_ST	P_LIT	TOT_WORK_P
146	Raigarh	Kharsia	JAIMURA	Tayang	194	730	365	365	68	253	519	323

Annexure-2 Existing Check Dam/ Stop Dam

Sl.	District	Block	Village	Latitude	Longitude
1	Janjgir-Champa	Dabhra	Bade katekoni	21° 48' 23.154" N	83° 5' 59.475" E
2	Janjgir-Champa	Dabhra	Gandamor	21° 48' 28.637" N	83° 6' 51.555" E
3	Janjgir-Champa	Dabhra	Bade katekoni	21° 48' 34.571" N	83° 6' 56.232" E
4	Janjgir-Champa	Dabhra	Bade katekoni	21° 48' 52.918" N	83° 6' 22.739" E
5	Janjgir-Champa	Dabhra	Bade katekoni	21° 49' 9.269" N	83° 6' 14.902" E
6	Janjgir-Champa	Dabhra	Gobra	21° 49' 12.170" N	83° 4' 59.250" E
7	Janjgir-Champa	Dabhra	Kotmi	21° 49' 23.928" N	83° 7' 2.911" E
8	Janjgir-Champa	Dabhra	Kotmi	21° 49' 43.788" N	83° 7' 19.622" E
9	Janjgir-Champa	Dabhra	Kotmi	21° 49' 50.581" N	83° 8' 30.121" E
10	Janjgir-Champa	Dabhra	Kansa	21° 49' 52.912" N	83° 6' 0.443" E
11	Janjgir-Champa	Dabhra	Kotmi	21° 49' 57.739" N	83° 7' 14.055" E
12	Janjgir-Champa	Dabhra	Pharasawani	21° 50' 2.779" N	83° 3' 44.590" E
13	Janjgir-Champa	Dabhra	Kansa	21° 50' 9.482" N	83° 5' 59.934" E
14	Janjgir-Champa	Dabhra	Gobra	21° 50' 11.801" N	83° 4' 20.318" E
15	Janjgir-Champa	Dabhra	Kaudiya	21° 50' 17.049" N	83° 3' 43.917" E
16	Janjgir-Champa	Dabhra	Kansa	21° 50' 22.808" N	83° 5' 59.652" E
17	Janjgir-Champa	Dabhra	Kotmi	21° 50' 23.963" N	83° 7' 17.625" E
18	Janjgir-Champa	Dabhra	Baghaud	21° 50' 24.109" N	83° 10' 0.258" E
19	Janjgir-Champa	Malkharoda	Parsadih	21° 50' 42.837" N	83° 3' 28.470" E
20	Janjgir-Champa	Dabhra	Churteli	21° 50' 43.361" N	83° 4' 14.568" E
21	Janjgir-Champa	Dabhra	Kaudiya	21° 50' 45.691" N	83° 3' 33.611" E
22	Janjgir-Champa	Malkharoda	Parsadih	21° 50' 52.235" N	83° 3' 3.349" E
23	Janjgir-Champa	Dabhra	Latiyadih	21° 51' 2.815" N	83° 4' 0.036" E
24	Janjgir-Champa	Dabhra	Kataud	21° 51' 4.296" N	83° 5' 35.522" E
25	Janjgir-Champa	Malkharoda	Singhra	21° 51' 9.402" N	83° 2' 44.317" E
26	Raigarh	Raigarh	Arsipali	21° 51' 24.484" N	83° 13' 12.665" E
27	Janjgir-Champa	Dabhra	Dhekunabhatha	21° 51' 28.353" N	83° 9' 24.574" E

Sl.	District	Block	Village	Latitude	Longitude
28	Janjgir-Champa	Dabhra	Akol Jamora	21° 51' 30.220" N	83° 10' 19.385" E
29	Janjgir-Champa	Malkharoda	Singhra	21° 51' 38.753" N	83° 1' 52.680" E
30	Janjgir-Champa	Dabhra	Kekarabhath	21° 51' 39.837" N	83° 7' 56.022" E
31	Raigarh	Raigarh	Litaipali	21° 51' 42.029" N	83° 12' 19.659" E
32	Janjgir-Champa	Dabhra	Akol Jamora	21° 51' 48.752" N	83° 10' 0.669" E
33	Janjgir-Champa	Dabhra	Kekarabhath	21° 51' 51.764" N	83° 7' 57.953" E
34	Janjgir-Champa	Dabhra	Kekarabhath	21° 51' 53.193" N	83° 7' 36.679" E
35	Janjgir-Champa	Dabhra	Kusmul	21° 51' 54.242" N	83° 3' 38.695" E
36	Janjgir-Champa	Dabhra	Sukhada	21° 51' 54.292" N	83° 6' 15.758" E
37	Janjgir-Champa	Dabhra	Saraipali	21° 51' 54.513" N	83° 8' 59.469" E
38	Janjgir-Champa	Malkharoda	Singhra	21° 51' 58.885" N	83° 2' 45.941" E
39	Janjgir-Champa	Dabhra	Sukhada	21° 52' 2.061" N	83° 5' 51.187" E
40	Janjgir-Champa	Dabhra	Kekarabhath	21° 52' 3.183" N	83° 7' 36.344" E
41	Janjgir-Champa	Dabhra	Khairmunda	21° 52' 3.317" N	83° 11' 57.040" E
42	Janjgir-Champa	Dabhra	Kusmul	21° 52' 3.629" N	83° 2' 50.639" E
43	Janjgir-Champa	Dabhra	Kekarabhath	21° 52' 5.369" N	83° 7' 57.284" E
44	Janjgir-Champa	Malkharoda	Singhra	21° 52' 6.251" N	83° 2' 45.165" E
45	Janjgir-Champa	Dabhra	Kekarabhath	21° 52' 8.597" N	83° 7' 33.303" E
46	Janjgir-Champa	Dabhra	Saraipali	21° 52' 8.812" N	83° 9' 9.473" E
47	Janjgir-Champa	Dabhra	Kekarabhath	21° 52' 10.083" N	83° 7' 56.383" E
48	Janjgir-Champa	Dabhra	Sukhada	21° 52' 11.231" N	83° 6' 32.659" E
49	Janjgir-Champa	Dabhra	Kusmul	21° 52' 13.473" N	83° 3' 35.957" E
50	Janjgir-Champa	Dabhra	Bandhapali	21° 52' 18.121" N	83° 7' 10.362" E
51	Janjgir-Champa	Dabhra	Khairmunda	21° 52' 18.861" N	83° 11' 24.612" E
52	Janjgir-Champa	Dabhra	Kusmul	21° 52' 19.567" N	83° 3' 2.385" E
53	Janjgir-Champa	Dabhra	Dhurkot	21° 52' 20.029" N	83° 8' 58.042" E
54	Janjgir-Champa	Dabhra	Kekarabhath	21° 52' 20.129" N	83° 7' 30.076" E
55	Janjgir-Champa	Dabhra	Dhurkot	21° 52' 21.615" N	83° 9' 0.609" E
56	Janjgir-Champa	Dabhra	Sukhada	21° 52' 22.613" N	83° 6' 28.384" E

Sl.	District	Block	Village	Latitude	Longitude
57	Janjgir-Champa	Dabhra	Komo	21° 52' 29.636" N	83° 9' 41.426" E
58	Janjgir-Champa	Dabhra	Sukhada	21° 52' 32.157" N	83° 5' 17.118" E
59	Janjgir-Champa	Dabhra	Komo	21° 52' 34.690" N	83° 9' 44.605" E
60	Janjgir-Champa	Dabhra	Sukhada	21° 52' 35.159" N	83° 6' 20.681" E
61	Janjgir-Champa	Malkharoda	Dalalpali	21° 52' 37.221" N	83° 1' 38.939" E
62	Raigarh	Raigarh	Junwani	21° 52' 38.431" N	83° 13' 5.908" E
63	Janjgir-Champa	Dabhra	Sukhada	21° 52' 38.729" N	83° 5' 19.649" E
64	Janjgir-Champa	Malkharoda	Jamgahan	21° 52' 41.650" N	83° 1' 44.028" E
65	Janjgir-Champa	Dabhra	Dhurkot	21° 52' 41.732" N	83° 8' 39.862" E
66	Janjgir-Champa	Dabhra	Dhobnipali	21° 52' 42.070" N	83° 7' 9.688" E
67	Janjgir-Champa	Malkharoda	Kirari	21° 52' 42.165" N	83° 2' 20.257" E
68	Janjgir-Champa	Dabhra	Sukhada	21° 52' 43.667" N	83° 5' 23.483" E
69	Janjgir-Champa	Malkharoda	Kirari	21° 52' 46.364" N	83° 1' 43.450" E
70	Janjgir-Champa	Malkharoda	Bademudpar	21° 52' 46.421" N	83° 4' 37.843" E
71	Janjgir-Champa	Malkharoda	Bademudpar	21° 52' 49.177" N	83° 4' 45.693" E
72	Janjgir-Champa	Dabhra	Ghiwara	21° 52' 51.317" N	83° 6' 24.966" E
73	Janjgir-Champa	Dabhra	Kusmul	21° 52' 52.430" N	83° 2' 44.302" E
74	Janjgir-Champa	Dabhra	Sukhada	21° 52' 53.583" N	83° 4' 57.314" E
75	Janjgir-Champa	Dabhra	Sukhada	21° 52' 55.323" N	83° 5' 43.842" E
76	Janjgir-Champa	Dabhra	Sukhada	21° 53' 3.375" N	83° 5' 3.811" E
77	Janjgir-Champa	Dabhra	Dhurkot	21° 53' 11.848" N	83° 8' 16.511" E
78	Janjgir-Champa	Malkharoda	Tulsidih	21° 53' 12.479" N	83° 3' 23.709" E
79	Janjgir-Champa	Dabhra	Dhurkot	21° 53' 15.597" N	83° 8' 53.115" E
80	Janjgir-Champa	Dabhra	Bartunga	21° 53' 20.194" N	83° 4' 22.447" E
81	Janjgir-Champa	Dabhra	Ghiwara	21° 53' 22.528" N	83° 6' 24.068" E
82	Janjgir-Champa	Dabhra	Dhurkot	21° 53' 23.035" N	83° 9' 14.002" E
83	Janjgir-Champa	Dabhra	Dhurkot	21° 53' 27.213" N	83° 9' 18.219" E
84	Janjgir-Champa	Dabhra	Dhurkot	21° 53' 32.246" N	83° 9' 23.309" E
85	Janjgir-Champa	Dabhra	Kanwali	21° 53' 36.754" N	83° 10' 33.940" E

Sl.	District	Block	Village	Latitude	Longitude
86	Raigarh	Raigarh	Bayang	21° 53' 40.204" N	83° 13' 14.846" E
87	Raigarh	Raigarh	Baispali	21° 53' 40.537" N	83° 13' 37.000" E
88	Janjgir-Champa	Dabhra	Kanwali	21° 53' 43.831" N	83° 10' 36.780" E
89	Janjgir-Champa	Dabhra	Kanwali	21° 53' 45.574" N	83° 10' 34.474" E
90	Janjgir-Champa	Malkharoda	Andi	21° 53' 49.470" N	83° 2' 35.030" E
91	Raigarh	Raigarh	Bayang	21° 53' 57.701" N	83° 12' 47.851" E
92	Janjgir-Champa	Dabhra	Nimuhi	21° 53' 59.404" N	83° 7' 23.945" E
93	Janjgir-Champa	Dabhra	Dewarghata	21° 53' 59.454" N	83° 5' 50.637" E
94	Janjgir-Champa	Dabhra	Tundri	21° 54' 3.108" N	83° 12' 41.381" E
95	Janjgir-Champa	Dabhra	Tundri	21° 54' 8.001" N	83° 11' 52.693" E
96	Raigarh	Raigarh	Bayang	21° 54' 9.607" N	83° 12' 46.739" E
97	Janjgir-Champa	Dabhra	Odekera	21° 54' 11.171" N	83° 8' 7.152" E
98	Janjgir-Champa	Dabhra	Tundri	21° 54' 12.105" N	83° 12' 2.340" E
99	Janjgir-Champa	Dabhra	Tundri	21° 54' 12.904" N	83° 12' 8.163" E
100	Janjgir-Champa	Dabhra	Tundri	21° 54' 15.386" N	83° 12' 13.962" E
101	Janjgir-Champa	Malkharoda	Sarskele	21° 54' 20.388" N	83° 4' 8.257" E
102	Janjgir-Champa	Dabhra	Kanwali	21° 54' 21.055" N	83° 9' 16.125" E
103	Janjgir-Champa	Malkharoda	Sarskele	21° 54' 22.528" N	83° 4' 22.155" E
104	Janjgir-Champa	Dabhra	Tundri	21° 54' 37.614" N	83° 12' 18.622" E
105	Raigarh	Raigarh	Bayang	21° 54' 37.897" N	83° 13' 5.085" E
106	Janjgir-Champa	Malkharoda	Charouda	21° 54' 45.693" N	83° 1' 57.764" E
107	Janjgir-Champa	Dabhra	Badadarha	21° 54' 48.505" N	83° 11' 22.126" E
108	Janjgir-Champa	Malkharoda	Charouda	21° 54' 48.673" N	83° 2' 30.686" E
109	Janjgir-Champa	Malkharoda	Charouda	21° 54' 52.362" N	83° 2' 32.116" E
110	Janjgir-Champa	Dabhra	Saraipali (Chechang)	21° 54' 52.463" N	83° 8' 53.563" E
111	Janjgir-Champa	Dabhra	Kanwali	21° 54' 54.055" N	83° 9' 44.361" E
112	Raigarh	Kharsia	Karumauha	21° 54' 57.799" N	83° 8' 45.876" E
113	Janjgir-Champa	Dabhra	Saraipali (Chechang)	21° 54' 58.126" N	83° 8' 57.034" E
114	Janjgir-Champa	Malkharoda	Parsi	21° 55' 1.086" N	83° 3' 47.770" E

Sl.	District	Block	Village	Latitude	Longitude
115	Janjgir-Champa	Dabhra	Odekera	21° 55' 3.901" N	83° 8' 36.942" E
116	Janjgir-Champa	Dabhra	Saraipali (Chechang)	21° 55' 5.746" N	83° 9' 10.774" E
117	Janjgir-Champa	Malkharoda	Charouda	21° 55' 6.268" N	83° 1' 5.782" E
118	Janjgir-Champa	Malkharoda	Parsi	21° 55' 6.926" N	83° 3' 51.868" E
119	Raigarh	Kharsia	Karpipali	21° 55' 8.264" N	83° 10' 11.630" E
120	Raigarh	Kharsia	Karumauha	21° 55' 9.005" N	83° 9' 15.891" E
121	Janjgir-Champa	Dabhra	Badadarha	21° 55' 9.331" N	83° 10' 26.608" E
122	Raigarh	Kharsia	Sondka	21° 55' 10.640" N	83° 11' 56.932" E
123	Raigarh	Kharsia	Karpipali	21° 55' 12.189" N	83° 9' 57.074" E
124	Raigarh	Kharsia	Karumauha	21° 55' 12.933" N	83° 8' 32.034" E
125	Raigarh	Kharsia	Sondka	21° 55' 14.030" N	83° 11' 43.292" E
126	Raigarh	Kharsia	Karumauha	21° 55' 15.200" N	83° 8' 25.253" E
127	Janjgir-Champa	Dabhra	Singhi Tarai	21° 55' 16.505" N	83° 7' 20.450" E
128	Janjgir-Champa	Dabhra	Badadarha	21° 55' 22.589" N	83° 11' 39.118" E
129	Raigarh	Kharsia	Sondka	21° 55' 27.057" N	83° 11' 30.149" E
130	Janjgir-Champa	Malkharoda	Kulba	21° 55' 27.101" N	83° 6' 41.968" E
131	Janjgir-Champa	Dabhra	Badadarha	21° 55' 28.373" N	83° 10' 58.487" E
132	Janjgir-Champa	Dabhra	Benipali	21° 55' 33.412" N	83° 7' 41.852" E
133	Raigarh	Kharsia	Basanpali	21° 55' 34.075" N	83° 10' 51.499" E
134	Raigarh	Kharsia	Sondka	21° 55' 36.999" N	83° 11' 11.994" E
135	Raigarh	Kharsia	Adajhar	21° 55' 46.399" N	83° 8' 12.718" E
136	Janjgir-Champa	Malkharoda	Bhanta	21° 55' 47.275" N	83° 3' 45.651" E
137	Janjgir-Champa	Dabhra	Benipali	21° 55' 52.374" N	83° 7' 31.828" E
138	Raigarh	Kharsia	Adajhar	21° 55' 54.560" N	83° 8' 11.437" E
139	Raigarh	Kharsia	Sonbarsa	21° 55' 56.286" N	83° 7' 38.035" E
140	Raigarh	Kharsia	Kalmi	21° 55' 57.906" N	83° 6' 58.625" E
141	Janjgir-Champa	Malkharoda	Faguram	21° 56' 8.152" N	83° 5' 50.631" E
142	Janjgir-Champa	Malkharoda	Dariamuda	21° 56' 11.411" N	83° 3' 5.189" E
143	Janjgir-Champa	Malkharoda	Kudhari	21° 56' 13.767" N	83° 5' 58.642" E

Sl.	District	Block	Village	Latitude	Longitude
144	Raigarh	Kharsia	Sonbarsa	21° 56' 18.279" N	83° 7' 37.847" E
145	Raigarh	Kharsia	Sonbarsa	21° 56' 19.286" N	83° 7' 57.099" E
146	Janjgir-Champa	Malkharoda	Faguram	21° 56' 20.486" N	83° 5' 55.300" E
147	Janjgir-Champa	Malkharoda	Toulipali	21° 56' 23.787" N	83° 4' 8.045" E
148	Raigarh	Kharsia	Sonbarsa	21° 56' 27.013" N	83° 7' 52.512" E
149	Janjgir-Champa	Malkharoda	Toulipali	21° 56' 27.197" N	83° 4' 14.313" E
150	Janjgir-Champa	Malkharoda	Dariamuda	21° 56' 27.492" N	83° 2' 59.006" E
151	Raigarh	Kharsia	Sonbarsa	21° 56' 32.897" N	83° 7' 47.492" E
152	Raigarh	Kharsia	Sonbarsa	21° 56' 33.144" N	83° 8' 24.934" E
153	Raigarh	Kharsia	Sonbarsa	21° 56' 42.141" N	83° 8' 3.077" E
154	Raigarh	Kharsia	Bhainapara	21° 56' 43.973" N	83° 7' 44.789" E
155	Janjgir-Champa	Malkharoda	Jharra	21° 56' 47.938" N	83° 4' 10.484" E
156	Raigarh	Kharsia	Khairpali	21° 56' 51.570" N	83° 11' 6.152" E
157	Raigarh	Kharsia	Bhainapara	21° 56' 51.909" N	83° 7' 48.514" E
158	Raigarh	Kharsia	Pandripani	21° 56' 52.958" N	83° 12' 26.472" E
159	Raigarh	Kharsia	Khairpali	21° 56' 55.264" N	83° 10' 51.110" E
160	Raigarh	Kharsia	Pandripani	21° 56' 56.429" N	83° 11' 23.838" E
161	Raigarh	Kharsia	Pandripani	21° 56' 58.266" N	83° 11' 42.440" E
162	Raigarh	Kharsia	Mura	21° 57' 0.577" N	83° 13' 17.064" E
163	Raigarh	Kharsia	Pandripani	21° 57' 6.041" N	83° 11' 52.778" E
164	Raigarh	Kharsia	Bhainapara	21° 57' 6.269" N	83° 7' 10.973" E
165	Raigarh	Kharsia	Bhainapara	21° 57' 7.214" N	83° 7' 44.440" E
166	Raigarh	Kharsia	Khairpali	21° 57' 7.461" N	83° 10' 48.855" E
167	Janjgir-Champa	Malkharoda	Hardi	21° 57' 11.603" N	83° 2' 21.199" E
168	Raigarh	Kharsia	Khairpali	21° 57' 18.598" N	83° 10' 45.114" E
169	Raigarh	Kharsia	Bhainapara	21° 57' 19.851" N	83° 8' 1.589" E
170	Raigarh	Kharsia	Temtema	21° 57' 22.983" N	83° 11' 50.911" E
171	Raigarh	Kharsia	Khairpali	21° 57' 28.476" N	83° 11' 48.878" E
172	Janjgir-Champa	Malkharoda	Sapiya	21° 57' 36.505" N	83° 5' 33.623" E

Sl.	District	Block	Village	Latitude	Longitude
173	Raigarh	Kharsia	Temtema	21° 57' 38.941" N	83° 11' 37.884" E
174	Raigarh	Kharsia	Amapali	21° 57' 51.194" N	83° 11' 24.464" E
175	Raigarh	Kharsia	Anjoripali	21° 57' 59.901" N	83° 6' 25.092" E
176	Raigarh	Kharsia	Temtema	21° 58' 8.746" N	83° 11' 17.376" E
177	Raigarh	Kharsia	Temtema	21° 58' 15.288" N	83° 11' 15.184" E
178	Raigarh	Kharsia	Bendo Jhariya	21° 58' 19.859" N	83° 11' 17.763" E
179	Janjgir-Champa	Malkharoda	Sapiya	21° 58' 25.288" N	83° 5' 7.989" E
180	Janjgir-Champa	Malkharoda	Sapiya	21° 58' 28.491" N	83° 5' 17.069" E
181	Raigarh	Kharsia	Chaple	21° 58' 28.641" N	83° 11' 9.628" E
182	Janjgir-Champa	Malkharoda	Sapiya	21° 58' 28.942" N	83° 5' 14.737" E
183	Raigarh	Kharsia	Bendo Jhariya	21° 58' 46.233" N	83° 10' 59.641" E
184	Raigarh	Kharsia	Chaple	21° 58' 48.303" N	83° 10' 55.674" E
185	Raigarh	Kharsia	Bendo Jhariya	21° 58' 53.036" N	83° 10' 45.023" E
186	Raigarh	Kharsia	Kunkuni	21° 59' 2.629" N	83° 10' 24.368" E
187	Raigarh	Kharsia	Kunkuni	21° 59' 14.030" N	83° 10' 20.397" E
188	Raigarh	Kharsia	Mauhapali	21° 59' 20.723" N	83° 7' 27.234" E
189	Raigarh	Kharsia	Bade Dumarpali	21° 59' 37.479" N	83° 11' 15.135" E
190	Raigarh	Kharsia	Rajghata	21° 59' 45.579" N	83° 9' 17.607" E
191	Raigarh	Kharsia	Chhote Dumarpali	21° 59' 49.702" N	83° 10' 6.845" E
192	Raigarh	Kharsia	Chhote Dumarpali	21° 59' 58.500" N	83° 9' 54.700" E
193	Raigarh	Kharsia	Telikot	22° 0' 7.387" N	83° 5' 23.730" E
194	Raigarh	Kharsia	Pamgarh	22° 0' 16.052" N	83° 9' 34.352" E
195	Raigarh	Kharsia	Rajghata	22° 0' 19.444" N	83° 9' 0.349" E
196	Raigarh	Kharsia	Banipathar	22° 0' 24.695" N	83° 8' 50.841" E
197	Raigarh	Kharsia	Nawagaon	22° 0' 28.982" N	83° 8' 44.074" E
198	Raigarh	Kharsia	Adpathra	22° 1' 38.637" N	83° 9' 22.615" E

Annexure -3 Existing Pond/Tank

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
1	Janjgir - Champa	Dabhra	Dhaurabhatha	0.608104	21° 48' 33.750" N	83° 7' 35.224" E
2	Janjgir - Champa	Dabhra	Reda	1.461057	21° 48' 37.283" N	83° 8' 58.006" E
3	Janjgir - Champa	Dabhra	Bade Katekoni	0.052612	21° 48' 39.964" N	83° 6' 17.091" E
4	Janjgir - Champa	Dabhra	Bade Katekoni	0.733479	21° 48' 40.513" N	83° 6' 13.797" E
5	Janjgir - Champa	Dabhra	Bade Katekoni	2.320871	21° 48' 45.383" N	83° 6' 16.761" E
6	Janjgir - Champa	Dabhra	Bade Katekoni	0.709882	21° 48' 45.494" N	83° 6' 21.072" E
7	Janjgir - Champa	Dabhra	Chhuchhubhatha	1.165192	21° 48' 46.096" N	83° 8' 24.513" E
8	Janjgir - Champa	Dabhra	Chhuchhubhatha	0.238237	21° 48' 45.892" N	83° 8' 45.691" E
9	Janjgir - Champa	Dabhra	Dhaurabhatha	0.411041	21° 48' 47.366" N	83° 7' 32.418" E
10	Janjgir - Champa	Dabhra	Bade Katekoni	2.147617	21° 48' 49.894" N	83° 6' 20.171" E
11	Janjgir - Champa	Dabhra	Dhaurabhatha	1.020555	21° 48' 50.464" N	83° 7' 20.148" E
12	Janjgir - Champa	Dabhra	Chhuchhubhatha	1.368309	21° 48' 49.485" N	83° 8' 42.486" E
13	Janjgir - Champa	Dabhra	Chhuchhubhatha	0.379262	21° 48' 50.868" N	83° 8' 17.685" E
14	Janjgir - Champa	Dabhra	Chhuchhubhatha	7.346423	21° 48' 53.023" N	83° 8' 3.607" E
15	Janjgir - Champa	Dabhra	Chhuchhubhatha	0.099077	21° 48' 53.351" N	83° 8' 41.848" E
16	Janjgir - Champa	Dabhra	Kharkena	1.158925	21° 48' 55.524" N	83° 9' 58.839" E
17	Janjgir - Champa	Dabhra	Bade Katekoni	0.74904	21° 49' 0.517" N	83° 6' 47.293" E
18	Janjgir - Champa	Dabhra	Dhaurabhatha	0.745199	21° 49' 0.506" N	83° 7' 40.848" E
19	Janjgir - Champa	Dabhra	Turkapali	0.912311	21° 49' 2.242" N	83° 5' 46.377" E
20	Janjgir - Champa	Dabhra	Chhuchhubhatha	0.335448	21° 49' 0.000" N	83° 8' 43.490" E
21	Janjgir - Champa	Dabhra	Kharkena	0.713629	21° 48' 59.685" N	83° 9' 55.831" E
22	Janjgir - Champa	Dabhra	Turkapali	0.476183	21° 49' 3.180" N	83° 5' 36.961" E
23	Janjgir - Champa	Dabhra	Gobra	0.206135	21° 49' 7.768" N	83° 5' 5.815" E
24	Janjgir - Champa	Dabhra	Bade Katekoni	0.797309	21° 49' 6.645" N	83° 6' 52.847" E
25	Janjgir - Champa	Dabhra	Bade Katekoni	1.285702	21° 49' 8.378" N	83° 6' 3.920" E
26	Janjgir - Champa	Dabhra	Chhuchhubhatha	1.774527	21° 49' 7.639" N	83° 8' 34.234" E
27	Janjgir - Champa	Dabhra	Gobra	0.877438	21° 49' 13.417" N	83° 4' 37.882" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
28	Janjgir - Champa	Dabhra	Chhuchhubhatha	0.476131	21° 49' 12.058" N	83° 8' 54.227" E
29	Janjgir - Champa	Dabhra	Bade Katekoni	0.218576	21° 49' 14.744" N	83° 6' 15.652" E
30	Janjgir - Champa	Dabhra	Kharkena	0.961455	21° 49' 11.778" N	83° 10' 11.436" E
31	Janjgir - Champa	Dabhra	Turkapali	0.550778	21° 49' 18.499" N	83° 5' 34.767" E
32	Janjgir - Champa	Dabhra	Gobra	0.47733	21° 49' 20.201" N	83° 4' 40.638" E
33	Janjgir - Champa	Dabhra	Kharkena	11.689238	21° 49' 20.040" N	83° 10' 13.697" E
34	Janjgir - Champa	Dabhra	Kotmi	0.303649	21° 49' 23.430" N	83° 8' 39.064" E
35	Janjgir - Champa	Dabhra	Kharkena	0.876469	21° 49' 23.580" N	83° 10' 0.531" E
36	Janjgir - Champa	Dabhra	Khaira Khurd	2.60209	21° 49' 23.894" N	83° 10' 40.185" E
37	Janjgir - Champa	Dabhra	Kotmi	0.738811	21° 49' 28.831" N	83° 8' 32.979" E
38	Janjgir - Champa	Dabhra	Kotmi	0.172714	21° 49' 28.890" N	83° 8' 55.432" E
39	Janjgir - Champa	Dabhra	Gobra	0.566929	21° 49' 33.141" N	83° 4' 15.671" E
40	Janjgir - Champa	Dabhra	Gobra	0.131638	21° 49' 32.971" N	83° 4' 33.916" E
41	Janjgir - Champa	Dabhra	Girgira	0.275707	21° 49' 27.910" N	83° 11' 17.819" E
42	Janjgir - Champa	Dabhra	Kotmi	0.492211	21° 49' 31.687" N	83° 7' 29.462" E
43	Janjgir - Champa	Dabhra	Kotmi	1.928178	21° 49' 31.330" N	83° 8' 12.042" E
44	Janjgir - Champa	Dabhra	Kansa	0.32066	21° 49' 35.013" N	83° 6' 28.111" E
45	Janjgir - Champa	Dabhra	Kotmi	0.356816	21° 49' 34.406" N	83° 7' 38.303" E
46	Janjgir - Champa	Dabhra	Girgira	0.769517	21° 49' 33.078" N	83° 10' 53.007" E
47	Janjgir - Champa	Dabhra	Gobra	1.800683	21° 49' 40.392" N	83° 4' 49.116" E
48	Janjgir - Champa	Dabhra	Girgira	0.243877	21° 49' 35.834" N	83° 11' 22.917" E
49	Janjgir - Champa	Dabhra	Gobra	2.928365	21° 49' 41.359" N	83° 4' 33.056" E
50	Janjgir - Champa	Dabhra	Kotmi	3.670534	21° 49' 39.076" N	83° 8' 46.502" E
51	Janjgir - Champa	Dabhra	Kotmi	0.171202	21° 49' 40.053" N	83° 9' 2.568" E
52	Janjgir - Champa	Dabhra	Kotmi	0.462342	21° 49' 40.514" N	83° 8' 58.891" E
53	Janjgir - Champa	Dabhra	Gobra	4.696009	21° 49' 43.864" N	83° 4' 43.932" E
54	Janjgir - Champa	Dabhra	Girgira	1.168729	21° 49' 42.396" N	83° 11' 19.972" E
55	Janjgir - Champa	Dabhra	Kotmi	0.617578	21° 49' 45.059" N	83° 8' 6.012" E
56	Janjgir - Champa	Dabhra	Darri	0.343248	21° 49' 43.538" N	83° 10' 23.632" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
57	Janjgir - Champa	Dabhra	Kansa	0.231321	21° 49' 46.437" N	83° 7' 9.930" E
58	Janjgir - Champa	Dabhra	Girgira	0.323236	21° 49' 43.311" N	83° 11' 14.885" E
59	Janjgir - Champa	Dabhra	Kotmi	1.60053	21° 49' 45.465" N	83° 9' 4.194" E
60	Janjgir - Champa	Dabhra	Gobra	1.578079	21° 49' 49.225" N	83° 4' 23.370" E
61	Janjgir - Champa	Dabhra	Gobra	0.197317	21° 49' 49.999" N	83° 4' 11.868" E
62	Janjgir - Champa	Dabhra	Pharasawani	0.879167	21° 49' 51.421" N	83° 3' 58.711" E
63	Janjgir - Champa	Dabhra	Kansa	9.437291	21° 49' 50.495" N	83° 6' 10.722" E
64	Janjgir - Champa	Dabhra	Girgira	0.645703	21° 49' 47.794" N	83° 10' 48.426" E
65	Janjgir - Champa	Dabhra	Girgira	1.320073	21° 49' 47.725" N	83° 10' 58.054" E
66	Janjgir - Champa	Dabhra	Gobra	0.899269	21° 49' 52.628" N	83° 4' 50.786" E
67	Janjgir - Champa	Dabhra	Kansa	0.239648	21° 49' 53.463" N	83° 6' 18.188" E
68	Janjgir - Champa	Dabhra	Girgira	1.076986	21° 49' 50.035" N	83° 11' 9.925" E
69	Janjgir - Champa	Dabhra	Kotmi	2.884642	21° 49' 52.749" N	83° 8' 38.857" E
70	Janjgir - Champa	Dabhra	Kotmi	0.51919	21° 49' 53.559" N	83° 8' 12.104" E
71	Janjgir - Champa	Dabhra	Kotmi	0.289757	21° 49' 54.663" N	83° 8' 57.880" E
72	Janjgir - Champa	Dabhra	Kotmi	1.613972	21° 49' 56.594" N	83° 8' 46.201" E
73	Janjgir - Champa	Dabhra	Gobra	0.352159	21° 50' 0.392" N	83° 4' 45.770" E
74	Janjgir - Champa	Dabhra	Darri	1.617079	21° 49' 56.793" N	83° 10' 13.884" E
75	Janjgir - Champa	Dabhra	Kotmi	1.443313	21° 49' 59.883" N	83° 8' 28.327" E
76	Janjgir - Champa	Dabhra	Girgira	1.200694	21° 49' 58.174" N	83° 11' 5.482" E
77	Janjgir - Champa	Dabhra	Kotmi	0.489871	21° 50' 0.503" N	83° 8' 41.444" E
78	Janjgir - Champa	Dabhra	Kotmi	0.616433	21° 50' 3.839" N	83° 8' 7.648" E
79	Janjgir - Champa	Dabhra	Kansa	1.334444	21° 50' 5.920" N	83° 5' 47.628" E
80	Janjgir - Champa	Dabhra	Kotmi	0.59987	21° 50' 4.024" N	83° 8' 59.454" E
81	Janjgir - Champa	Dabhra	Kansa	1.182052	21° 50' 5.904" N	83° 6' 35.657" E
82	Janjgir - Champa	Dabhra	Baghaud	0.861383	21° 50' 3.431" N	83° 9' 48.876" E
83	Janjgir - Champa	Dabhra	Kaudiya	1.022994	21° 50' 8.043" N	83° 4' 0.208" E
84	Janjgir - Champa	Dabhra	Kotmi	0.44262	21° 50' 6.546" N	83° 7' 35.431" E
85	Janjgir - Champa	Dabhra	Kotmi	1.752325	21° 50' 5.975" N	83° 8' 27.289" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
86	Janjgir - Champa	Dabhra	Darri	1.485652	21° 50' 5.139" N	83° 10' 23.823" E
87	Janjgir - Champa	Dabhra	Churtela	0.396247	21° 50' 9.644" N	83° 4' 38.432" E
88	Janjgir - Champa	Dabhra	Churtela	0.521144	21° 50' 9.339" N	83° 5' 2.982" E
89	Janjgir - Champa	Dabhra	Kansa	1.629934	21° 50' 9.005" N	83° 6' 9.699" E
90	Janjgir - Champa	Dabhra	Darri	1.322213	21° 50' 6.484" N	83° 10' 42.535" E
91	Janjgir - Champa	Dabhra	Kansa	0.20019	21° 50' 9.970" N	83° 6' 21.988" E
92	Janjgir - Champa	Dabhra	Darri	0.621375	21° 50' 7.179" N	83° 10' 46.833" E
93	Janjgir - Champa	Dabhra	Kotmi	0.5645	21° 50' 10.494" N	83° 8' 28.394" E
94	Janjgir - Champa	Dabhra	Churtela	1.532869	21° 50' 18.852" N	83° 4' 43.011" E
95	Janjgir - Champa	Dabhra	Kotmi	0.597218	21° 50' 15.860" N	83° 8' 37.355" E
96	Janjgir - Champa	Dabhra	Kansa	0.435948	21° 50' 17.709" N	83° 6' 37.711" E
97	Janjgir - Champa	Dabhra	Kotmi	3.316972	21° 50' 16.962" N	83° 8' 22.773" E
98	Janjgir - Champa	Dabhra	Kansa	1.618756	21° 50' 19.049" N	83° 6' 9.093" E
99	Janjgir - Champa	Dabhra	Kotmi	1.156123	21° 50' 18.910" N	83° 8' 18.181" E
100	Janjgir - Champa	Dabhra	Kansa	0.773661	21° 50' 20.838" N	83° 6' 13.319" E
101	Janjgir - Champa	Dabhra	Kansa	1.440521	21° 50' 21.501" N	83° 6' 18.359" E
102	Janjgir - Champa	Dabhra	Baghaud	0.302994	21° 50' 20.318" N	83° 9' 33.209" E
103	Janjgir - Champa	Dabhra	Kansa	1.272172	21° 50' 23.942" N	83° 6' 5.195" E
104	Janjgir - Champa	Dabhra	Kansa	2.119292	21° 50' 24.350" N	83° 6' 9.340" E
105	Janjgir - Champa	Dabhra	Kansa	0.547134	21° 50' 25.610" N	83° 7' 15.175" E
106	Janjgir - Champa	Dabhra	Baghaud	0.624679	21° 50' 23.632" N	83° 9' 56.711" E
107	Janjgir - Champa	Dabhra	Kansa	0.461847	21° 50' 26.854" N	83° 6' 31.320" E
108	Janjgir - Champa	Dabhra	Shankarpali	1.037387	21° 50' 26.768" N	83° 9' 21.157" E
109	Janjgir - Champa	Dabhra	Baghaud	0.396903	21° 50' 26.275" N	83° 10' 9.126" E
110	Janjgir - Champa	Dabhra	Kaudiya	6.072221	21° 50' 31.317" N	83° 3' 42.005" E
111	Janjgir - Champa	Dabhra	Churtela	1.735799	21° 50' 30.829" N	83° 4' 48.605" E
112	Janjgir - Champa	Dabhra	Kansa	0.194698	21° 50' 32.004" N	83° 5' 49.650" E
113	Janjgir - Champa	Malkharoda	Parsadih	0.438451	21° 50' 35.034" N	83° 2' 51.498" E
114	Janjgir - Champa	Dabhra	Churtela	0.982687	21° 50' 33.865" N	83° 4' 42.619" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
115	Janjgir - Champa	Dabhra	Churtela	1.867515	21° 50' 34.609" N	83° 4' 55.006" E
116	Janjgir - Champa	Dabhra	Baghanipali	0.494469	21° 50' 29.575" N	83° 11' 26.721" E
117	Janjgir - Champa	Dabhra	Kabaripali	1.339114	21° 50' 34.753" N	83° 8' 20.619" E
118	Janjgir - Champa	Dabhra	Darri	0.549525	21° 50' 33.033" N	83° 10' 39.242" E
119	Janjgir - Champa	Dabhra	Kansa	0.366425	21° 50' 36.566" N	83° 6' 28.570" E
120	Janjgir - Champa	Dabhra	Baghaud	0.134796	21° 50' 34.464" N	83° 9' 55.215" E
121	Janjgir - Champa	Dabhra	Churtela	4.027355	21° 50' 38.250" N	83° 5' 16.531" E
122	Janjgir - Champa	Dabhra	Shankarpali	0.070357	21° 50' 35.495" N	83° 9' 12.312" E
123	Janjgir - Champa	Dabhra	Kabaripali	0.803438	21° 50' 36.911" N	83° 8' 40.123" E
124	Janjgir - Champa	Dabhra	Baghanipali	0.360742	21° 50' 34.578" N	83° 11' 51.653" E
125	Janjgir - Champa	Dabhra	Baghaud	1.377101	21° 50' 36.317" N	83° 9' 50.359" E
126	Janjgir - Champa	Malkharoda	Parsadih	0.393386	21° 50' 42.069" N	83° 2' 57.968" E
127	Janjgir - Champa	Dabhra	Kaudiya	0.413564	21° 50' 41.433" N	83° 3' 56.328" E
128	Janjgir - Champa	Dabhra	Kabaripali	1.02068	21° 50' 38.923" N	83° 8' 44.160" E
129	Janjgir - Champa	Dabhra	Kabaripali	0.183464	21° 50' 39.671" N	83° 8' 36.868" E
130	Janjgir - Champa	Dabhra	Churtela	3.657675	21° 50' 42.520" N	83° 5' 9.941" E
131	Janjgir - Champa	Dabhra	Baghaud	0.977898	21° 50' 39.308" N	83° 9' 41.459" E
132	Janjgir - Champa	Dabhra	Baghaud	0.513724	21° 50' 39.011" N	83° 10' 28.902" E
133	Janjgir - Champa	Dabhra	Baghaud	1.245337	21° 50' 39.747" N	83° 10' 0.407" E
134	Janjgir - Champa	Dabhra	Churtela	1.255551	21° 50' 43.883" N	83° 4' 53.863" E
135	Janjgir - Champa	Dabhra	Baghaud	0.453295	21° 50' 40.101" N	83° 9' 53.246" E
136	Janjgir - Champa	Dabhra	Shankarpali	0.102916	21° 50' 40.919" N	83° 9' 16.326" E
137	Janjgir - Champa	Dabhra	Baghanipali	1.308702	21° 50' 39.891" N	83° 11' 43.312" E
138	Janjgir - Champa	Malkharoda	Parsadih	0.49698	21° 50' 47.352" N	83° 2' 46.361" E
139	Janjgir - Champa	Dabhra	Kabaripali	0.76876	21° 50' 43.049" N	83° 8' 34.801" E
140	Janjgir - Champa	Dabhra	Kaudiya	0.418686	21° 50' 46.634" N	83° 3' 54.662" E
141	Janjgir - Champa	Malkharoda	Parsadih	1.284108	21° 50' 47.384" N	83° 3' 13.803" E
142	Janjgir - Champa	Dabhra	Kaudiya	2.275188	21° 50' 48.494" N	83° 3' 49.405" E
143	Janjgir - Champa	Malkharoda	Parsadih	0.71448	21° 50' 49.552" N	83° 3' 24.809" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
144	Janjgir - Champa	Dabhra	Churteli	1.502438	21° 50' 49.717" N	83° 4' 37.219" E
145	Janjgir - Champa	Dabhra	Kataud	0.863206	21° 50' 48.763" N	83° 6' 0.596" E
146	Janjgir - Champa	Dabhra	Kabaripali	0.180939	21° 50' 48.991" N	83° 8' 16.898" E
147	Janjgir - Champa	Dabhra	Baghaud	0.280749	21° 50' 48.268" N	83° 9' 50.336" E
148	Janjgir - Champa	Dabhra	Kataud	0.372175	21° 50' 51.875" N	83° 6' 0.617" E
149	Janjgir - Champa	Dabhra	Churtela	0.286416	21° 50' 52.551" N	83° 5' 15.120" E
150	Janjgir - Champa	Dabhra	Kabaripali	0.424707	21° 50' 50.680" N	83° 8' 26.991" E
151	Janjgir - Champa	Dabhra	Kabaripali	0.73938	21° 50' 51.241" N	83° 8' 14.918" E
152	Janjgir - Champa	Dabhra	Shankarpali	1.549779	21° 50' 51.945" N	83° 9' 26.703" E
153	Janjgir - Champa	Dabhra	Baghaud	0.903269	21° 50' 55.310" N	83° 10' 0.702" E
154	Janjgir - Champa	Dabhra	Churteli	0.285812	21° 50' 59.632" N	83° 4' 27.528" E
155	Janjgir - Champa	Dabhra	Kataud	0.948877	21° 50' 59.395" N	83° 6' 15.742" E
156	Janjgir - Champa	Dabhra	Kataud	0.572721	21° 51' 0.259" N	83° 5' 52.615" E
157	Janjgir - Champa	Malkharoda	Parsadih	0.556841	21° 51' 2.920" N	83° 2' 46.908" E
158	Janjgir - Champa	Dabhra	Kekarabhath	106.563609	21° 51' 5.733" N	83° 7' 33.761" E
159	Janjgir - Champa	Dabhra	Baghaud	2.61967	21° 50' 58.536" N	83° 9' 50.008" E
160	Raigarh	Raigarh	Kulba	0.769082	21° 50' 56.484" N	83° 12' 50.785" E
161	Janjgir - Champa	Malkharoda	Parsadih	1.21984	21° 51' 5.105" N	83° 3' 35.665" E
162	Janjgir - Champa	Dabhra	Churteli	0.241753	21° 51' 5.783" N	83° 4' 25.397" E
163	Janjgir - Champa	Dabhra	Latiyadih	0.674925	21° 51' 6.984" N	83° 4' 10.384" E
164	Janjgir - Champa	Malkharoda	Singhra	0.94875	21° 51' 8.298" N	83° 2' 38.491" E
165	Janjgir - Champa	Dabhra	Kataud	4.354393	21° 51' 6.354" N	83° 5' 57.824" E
166	Janjgir - Champa	Dabhra	Kataud	0.642078	21° 51' 6.211" N	83° 6' 19.614" E
167	Janjgir - Champa	Malkharoda	Parsadih	1.073637	21° 51' 8.825" N	83° 3' 19.325" E
168	Raigarh	Raigarh	Sarwani	29.764876	21° 51' 10.757" N	83° 10' 45.677" E
169	Janjgir - Champa	Dabhra	Latiyadih	0.243075	21° 51' 9.243" N	83° 4' 11.782" E
170	Janjgir - Champa	Dabhra	Churteli	1.690492	21° 51' 9.222" N	83° 4' 15.651" E
171	Janjgir - Champa	Dabhra	Kataud	0.596338	21° 51' 8.580" N	83° 5' 47.413" E
172	Janjgir - Champa	Dabhra	Baghaud	0.540086	21° 51' 6.280" N	83° 9' 50.499" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
173	Janjgir - Champa	Dabhra	Kataud	0.740954	21° 51' 9.344" N	83° 6' 20.028" E
174	Raigarh	Raigarh	Kulba	3.360627	21° 51' 4.943" N	83° 12' 16.532" E
175	Raigarh	Raigarh	Kulba	0.829468	21° 51' 4.989" N	83° 12' 24.743" E
176	Janjgir - Champa	Dabhra	Shankarpali	0.248038	21° 51' 7.592" N	83° 9' 20.293" E
177	Raigarh	Raigarh	Kulba	0.635032	21° 51' 5.107" N	83° 12' 29.582" E
178	Janjgir - Champa	Dabhra	Shankarpali	1.369944	21° 51' 7.573" N	83° 9' 27.407" E
179	Janjgir - Champa	Dabhra	Kabaripali	1.26508	21° 51' 9.352" N	83° 8' 27.508" E
180	Janjgir - Champa	Dabhra	Churtela	0.146128	21° 51' 12.076" N	83° 5' 26.425" E
181	Raigarh	Raigarh	Sarwani	1.128722	21° 51' 8.584" N	83° 11' 46.628" E
182	Janjgir - Champa	Dabhra	Kataud	2.370615	21° 51' 14.360" N	83° 5' 57.887" E
183	Janjgir - Champa	Dabhra	Kataud	1.6489	21° 51' 14.669" N	83° 6' 56.048" E
184	Janjgir - Champa	Dabhra	Kabaripali	1.825184	21° 51' 13.079" N	83° 8' 12.753" E
185	Janjgir - Champa	Malkharoda	Singhra	0.7262	21° 51' 18.213" N	83° 2' 34.857" E
186	Raigarh	Raigarh	Sarwani	0.194436	21° 51' 12.431" N	83° 11' 28.517" E
187	Janjgir - Champa	Dabhra	Latiyadih	1.225816	21° 51' 18.264" N	83° 3' 58.180" E
188	Janjgir - Champa	Dabhra	Akol Jamora	0.247167	21° 51' 15.509" N	83° 9' 50.571" E
189	Janjgir - Champa	Malkharoda	Singhra	1.547268	21° 51' 21.098" N	83° 2' 39.959" E
190	Janjgir - Champa	Dabhra	Akol Jamora	0.4218	21° 51' 16.237" N	83° 9' 43.369" E
191	Janjgir - Champa	Malkharoda	Singhra	0.868219	21° 51' 22.143" N	83° 2' 31.310" E
192	Raigarh	Raigarh	Litaipali	0.421606	21° 51' 15.459" N	83° 11' 43.879" E
193	Janjgir - Champa	Dabhra	Dhekunabhatha	18.922689	21° 51' 17.691" N	83° 8' 56.912" E
194	Janjgir - Champa	Dabhra	Kataud	1.147573	21° 51' 20.321" N	83° 5' 57.468" E
195	Janjgir - Champa	Dabhra	Churteli	2.394638	21° 51' 22.085" N	83° 4' 37.525" E
196	Janjgir - Champa	Dabhra	Akol Jamora	1.019875	21° 51' 17.862" N	83° 10' 6.072" E
197	Raigarh	Raigarh	Kulba	0.636769	21° 51' 16.627" N	83° 12' 29.016" E
198	Janjgir - Champa	Dabhra	Kataud	0.56386	21° 51' 21.573" N	83° 6' 43.334" E
199	Raigarh	Raigarh	Sarwani	0.679786	21° 51' 18.528" N	83° 11' 19.259" E
200	Janjgir - Champa	Dabhra	Kabaripali	0.741546	21° 51' 21.868" N	83° 8' 26.821" E
201	Raigarh	Raigarh	Sarwani	1.415176	21° 51' 21.072" N	83° 11' 26.110" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
202	Janjgir - Champa	Dabhra	Churtela	0.109011	21° 51' 27.099" N	83° 5' 12.798" E
203	Janjgir - Champa	Dabhra	Kabaripali	0.220415	21° 51' 24.782" N	83° 8' 40.196" E
204	Raigarh	Raigarh	Litaipali	0.880552	21° 51' 22.038" N	83° 12' 12.164" E
205	Janjgir - Champa	Malkharoda	Singhra	0.581886	21° 51' 29.619" N	83° 2' 26.330" E
206	Janjgir - Champa	Malkharoda	Singhra	1.548715	21° 51' 30.188" N	83° 2' 36.549" E
207	Janjgir - Champa	Dabhra	Dhekunabhatha	0.530845	21° 51' 24.737" N	83° 9' 31.216" E
208	Janjgir - Champa	Dabhra	Kataud	0.447849	21° 51' 29.896" N	83° 6' 36.099" E
209	Janjgir - Champa	Malkharoda	Singhra	1.013493	21° 51' 33.307" N	83° 2' 23.743" E
210	Janjgir - Champa	Dabhra	Saraipali	0.918425	21° 51' 32.623" N	83° 8' 26.354" E
211	Janjgir - Champa	Malkharoda	Singhra	1.16813	21° 51' 37.553" N	83° 2' 28.175" E
212	Raigarh	Raigarh	Litaipali	1.115644	21° 51' 32.157" N	83° 12' 2.571" E
213	Janjgir - Champa	Dabhra	Dhekunabhatha	0.411766	21° 51' 35.114" N	83° 9' 20.562" E
214	Janjgir - Champa	Dabhra	Kataud	0.38926	21° 51' 37.681" N	83° 6' 2.902" E
215	Janjgir - Champa	Dabhra	Akol Jamora	1.369849	21° 51' 35.166" N	83° 10' 15.657" E
216	Janjgir - Champa	Dabhra	Akol Jamora	0.056605	21° 51' 35.473" N	83° 10' 4.140" E
217	Janjgir - Champa	Dabhra	Latiyadih	1.277352	21° 51' 41.729" N	83° 4' 26.272" E
218	Janjgir - Champa	Malkharoda	Singhra	0.263427	21° 51' 44.061" N	83° 2' 28.705" E
219	Janjgir - Champa	Dabhra	Akol Jamora	0.290012	21° 51' 38.684" N	83° 10' 9.641" E
220	Janjgir - Champa	Dabhra	Saraipali	0.162106	21° 51' 40.353" N	83° 8' 46.091" E
221	Janjgir - Champa	Malkharoda	Singhra	2.098139	21° 51' 45.568" N	83° 2' 33.794" E
222	Janjgir - Champa	Dabhra	Sukhada	0.60949	21° 51' 43.715" N	83° 5' 46.917" E
223	Janjgir - Champa	Dabhra	Akol Jamora	0.54766	21° 51' 40.605" N	83° 10' 21.180" E
224	Janjgir - Champa	Dabhra	Kekarabhath	0.691917	21° 51' 43.780" N	83° 7' 39.568" E
225	Janjgir - Champa	Malkharoda	Singhra	11.152353	21° 51' 47.768" N	83° 2' 47.081" E
226	Raigarh	Raigarh	Arsipali	0.995105	21° 51' 40.128" N	83° 12' 43.241" E
227	Janjgir - Champa	Dabhra	Dhekunabhatha	1.225491	21° 51' 42.943" N	83° 9' 29.005" E
228	Janjgir - Champa	Dabhra	Sukhada	0.283812	21° 51' 46.410" N	83° 5' 56.384" E
229	Janjgir - Champa	Dabhra	Kusmul	1.379127	21° 51' 48.692" N	83° 3' 7.006" E
230	Janjgir - Champa	Dabhra	Dhekunabhatha	0.257736	21° 51' 43.988" N	83° 9' 25.559" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
231	Janjgir - Champa	Dabhra	Akol Jamora	0.239124	21° 51' 43.977" N	83° 10' 2.939" E
232	Janjgir - Champa	Dabhra	Khairmuda	0.442757	21° 51' 43.824" N	83° 11' 8.597" E
233	Janjgir - Champa	Malkharoda	Singhra	1.423319	21° 51' 51.846" N	83° 2' 32.041" E
234	Janjgir - Champa	Dabhra	Sukhada	0.340263	21° 51' 50.058" N	83° 5' 2.324" E
235	Raigarh	Raigarh	Litaipali	0.908349	21° 51' 44.945" N	83° 11' 57.928" E
236	Janjgir - Champa	Malkharoda	Singhra	1.184711	21° 51' 53.057" N	83° 2' 1.466" E
237	Janjgir - Champa	Dabhra	Kusmul	0.204813	21° 51' 51.951" N	83° 3' 50.030" E
238	Janjgir - Champa	Dabhra	Akol Jamora	1.549455	21° 51' 47.969" N	83° 9' 49.593" E
239	Raigarh	Raigarh	Arsipali	0.276879	21° 51' 47.085" N	83° 12' 34.973" E
240	Raigarh	Raigarh	Arsipali	0.581905	21° 51' 47.992" N	83° 12' 23.867" E
241	Janjgir - Champa	Dabhra	Saraipali	0.518532	21° 51' 50.750" N	83° 9' 11.022" E
242	Janjgir - Champa	Dabhra	Kekarabhath	0.294374	21° 51' 52.605" N	83° 7' 2.960" E
243	Janjgir - Champa	Dabhra	Kekarabhath	0.391601	21° 51' 52.782" N	83° 7' 6.108" E
244	Janjgir - Champa	Dabhra	Latiyadih	0.247253	21° 51' 55.601" N	83° 4' 30.638" E
245	Janjgir - Champa	Dabhra	Kusmul	0.789524	21° 51' 56.181" N	83° 3' 57.143" E
246	Janjgir - Champa	Dabhra	Kusmul	0.090177	21° 51' 56.703" N	83° 3' 40.459" E
247	Janjgir - Champa	Dabhra	Sukhada	0.139883	21° 51' 55.409" N	83° 6' 1.475" E
248	Janjgir - Champa	Dabhra	Kusmul	0.669188	21° 51' 57.777" N	83° 2' 54.837" E
249	Janjgir - Champa	Dabhra	Saraipali	1.07614	21° 51' 53.660" N	83° 8' 29.640" E
250	Janjgir - Champa	Dabhra	Saraipali	3.131021	21° 51' 53.385" N	83° 9' 13.629" E
251	Janjgir - Champa	Dabhra	Kusmul	1.314474	21° 51' 58.964" N	83° 3' 32.430" E
252	Janjgir - Champa	Dabhra	Dhekunabhatha	1.343681	21° 51' 55.287" N	83° 9' 26.650" E
253	Janjgir - Champa	Dabhra	Kusmul	1.09267	21° 51' 59.869" N	83° 3' 16.357" E
254	Raigarh	Raigarh	Barpali	0.194289	21° 51' 54.455" N	83° 13' 29.219" E
255	Janjgir - Champa	Dabhra	Saraipali	1.600982	21° 51' 58.728" N	83° 9' 11.703" E
256	Janjgir - Champa	Dabhra	Kusmul	1.90567	21° 52' 4.103" N	83° 3' 13.591" E
257	Janjgir - Champa	Dabhra	Kusmul	2.115806	21° 52' 4.731" N	83° 3' 19.531" E
258	Janjgir - Champa	Dabhra	Saraipali	0.240131	21° 52' 0.487" N	83° 9' 21.789" E
259	Janjgir - Champa	Dabhra	Kusmul	0.132036	21° 52' 5.611" N	83° 2' 51.337" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
260	Janjgir - Champa	Dabhra	Sukhada	0.901954	21° 52' 4.315" N	83° 4' 54.576" E
261	Janjgir - Champa	Dabhra	Sukhada	1.613152	21° 52' 6.165" N	83° 5' 18.212" E
262	Janjgir - Champa	Dabhra	Kusmul	1.371776	21° 52' 7.820" N	83° 3' 9.169" E
263	Janjgir - Champa	Dabhra	Kusmul	2.987437	21° 52' 7.249" N	83° 3' 57.522" E
264	Janjgir - Champa	Dabhra	Saraipali	0.688386	21° 52' 4.796" N	83° 8' 38.246" E
265	Janjgir - Champa	Dabhra	Kusmul	3.132234	21° 52' 9.211" N	83° 3' 16.316" E
266	Janjgir - Champa	Malkharoda	Bademudpar	0.473769	21° 52' 9.394" N	83° 4' 19.276" E
267	Janjgir - Champa	Dabhra	Saraipali	0.226856	21° 52' 6.228" N	83° 9' 0.000" E
268	Janjgir - Champa	Dabhra	Kusmul	1.550418	21° 52' 10.870" N	83° 3' 4.965" E
269	Janjgir - Champa	Dabhra	Kusmul	0.580389	21° 52' 11.477" N	83° 3' 10.345" E
270	Janjgir - Champa	Malkharoda	Singhra	4.809358	21° 52' 9.095" N	83° 2' 32.175" E
271	Janjgir - Champa	Dabhra	Kekarabhath	0.211196	21° 52' 9.323" N	83° 7' 42.120" E
272	Janjgir - Champa	Dabhra	Saraipali	0.067114	21° 52' 8.362" N	83° 9' 3.656" E
273	Janjgir - Champa	Dabhra	Kekarabhath	1.054388	21° 52' 9.684" N	83° 7' 35.418" E
274	Janjgir - Champa	Dabhra	Khairmuda	0.08513	21° 52' 7.571" N	83° 11' 15.603" E
275	Janjgir - Champa	Dabhra	Kusmul	1.277366	21° 52' 14.079" N	83° 3' 41.593" E
276	Janjgir - Champa	Dabhra	Komi	0.787623	21° 52' 9.528" N	83° 9' 20.186" E
277	Janjgir - Champa	Dabhra	Khairmuda	0.597596	21° 52' 8.387" N	83° 11' 26.497" E
278	Janjgir - Champa	Malkharoda	Bademudpar	0.375752	21° 52' 14.483" N	83° 4' 5.554" E
279	Janjgir - Champa	Dabhra	Kusmul	0.146831	21° 52' 16.773" N	83° 3' 3.378" E
280	Janjgir - Champa	Dabhra	Sukhada	28.979975	21° 52' 14.665" N	83° 5' 55.393" E
281	Janjgir - Champa	Dabhra	Sukhada	0.235354	21° 52' 14.841" N	83° 6' 16.918" E
282	Raigarh	Raigarh	Junwani	0.890953	21° 52' 10.784" N	83° 13' 5.157" E
283	Janjgir - Champa	Dabhra	Khairmuda	0.639673	21° 52' 12.707" N	83° 11' 7.542" E
284	Janjgir - Champa	Malkharoda	Dalalpali	0.222687	21° 52' 20.706" N	83° 1' 56.235" E
285	Janjgir - Champa	Dabhra	Sukhada	1.853263	21° 52' 18.746" N	83° 5' 18.930" E
286	Janjgir - Champa	Dabhra	Kekarabhath	0.886707	21° 52' 17.008" N	83° 7' 51.932" E
287	Janjgir - Champa	Malkharoda	Bademudpar	1.212156	21° 52' 21.030" N	83° 4' 10.890" E
288	Janjgir - Champa	Dabhra	Kusmul	1.108334	21° 52' 21.862" N	83° 3' 28.427" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
289	Janjgir - Champa	Dabhra	Kekarabhath	1.23301	21° 52' 18.921" N	83° 7' 26.408" E
290	Janjgir - Champa	Dabhra	Kekarabhath	0.947454	21° 52' 18.730" N	83° 7' 48.888" E
291	Janjgir - Champa	Dabhra	Kusmul	0.176773	21° 52' 22.555" N	83° 3' 23.469" E
292	Janjgir - Champa	Dabhra	Sukhada	1.062342	21° 52' 21.831" N	83° 5' 30.982" E
293	Raigarh	Raigarh	Junwani	1.008834	21° 52' 15.826" N	83° 13' 18.082" E
294	Janjgir - Champa	Dabhra	Khairmuda	0.660683	21° 52' 17.730" N	83° 11' 30.051" E
295	Janjgir - Champa	Dabhra	Khairmuda	0.721439	21° 52' 17.601" N	83° 11' 52.871" E
296	Janjgir - Champa	Dabhra	Sukhada	4.044894	21° 52' 24.232" N	83° 5' 24.919" E
297	Janjgir - Champa	Dabhra	Dhurkot	1.538674	21° 52' 21.910" N	83° 8' 37.876" E
298	Janjgir - Champa	Dabhra	Komi	0.39104	21° 52' 22.904" N	83° 10' 8.755" E
299	Raigarh	Raigarh	Junwani	3.413446	21° 52' 20.555" N	83° 13' 21.547" E
300	Janjgir - Champa	Malkharoda	Bademudpar	1.805699	21° 52' 28.416" N	83° 3' 46.925" E
301	Janjgir - Champa	Dabhra	Komi	0.211329	21° 52' 24.869" N	83° 9' 57.820" E
302	Janjgir - Champa	Dabhra	Khairmuda	0.758888	21° 52' 24.311" N	83° 10' 50.887" E
303	Janjgir - Champa	Dabhra	Kusmul	0.700689	21° 52' 30.289" N	83° 3' 15.613" E
304	Janjgir - Champa	Dabhra	Komi	0.514926	21° 52' 25.806" N	83° 9' 24.552" E
305	Janjgir - Champa	Dabhra	Dhobnipali	0.171043	21° 52' 28.227" N	83° 6' 37.682" E
306	Janjgir - Champa	Malkharoda	Dalalpali	1.425949	21° 52' 31.818" N	83° 2' 24.670" E
307	Janjgir - Champa	Dabhra	Komi	0.45705	21° 52' 26.612" N	83° 9' 17.917" E
308	Janjgir - Champa	Dabhra	Khairmuda	0.185074	21° 52' 24.652" N	83° 11' 53.835" E
309	Janjgir - Champa	Dabhra	Komi	0.404164	21° 52' 27.208" N	83° 9' 29.497" E
310	Janjgir - Champa	Malkharoda	Dalalpali	0.759398	21° 52' 34.614" N	83° 1' 55.500" E
311	Janjgir - Champa	Dabhra	Sukhada	0.449957	21° 52' 32.622" N	83° 4' 47.870" E
312	Janjgir - Champa	Malkharoda	Bademudpar	0.141181	21° 52' 33.129" N	83° 4' 18.341" E
313	Janjgir - Champa	Dabhra	Bandhapali	0.19592	21° 52' 30.953" N	83° 7' 37.630" E
314	Janjgir - Champa	Dabhra	Sukhada	0.695421	21° 52' 32.809" N	83° 6' 4.582" E
315	Janjgir - Champa	Dabhra	Dhobnipali	0.99439	21° 52' 32.835" N	83° 6' 34.745" E
316	Raigarh	Raigarh	Nawapara	1.120376	21° 52' 28.709" N	83° 12' 51.902" E
317	Janjgir - Champa	Dabhra	Komi	1.355284	21° 52' 31.609" N	83° 9' 42.937" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
318	Janjgir - Champa	Dabhra	Dhobnipali	1.494799	21° 52' 36.964" N	83° 6' 31.590" E
319	Janjgir - Champa	Dabhra	Dhobnipali	0.258966	21° 52' 36.764" N	83° 6' 49.773" E
320	Janjgir - Champa	Dabhra	Komi	0.875561	21° 52' 34.821" N	83° 9' 55.476" E
321	Raigarh	Raigarh	Nawapara	0.538333	21° 52' 33.008" N	83° 12' 38.292" E
322	Janjgir - Champa	Dabhra	Sukhada	0.158978	21° 52' 39.062" N	83° 5' 26.488" E
323	Janjgir - Champa	Dabhra	Khairmuda	0.406054	21° 52' 35.969" N	83° 10' 56.019" E
324	Raigarh	Raigarh	Nawapara	1.214653	21° 52' 34.862" N	83° 12' 55.848" E
325	Janjgir - Champa	Dabhra	Bandhapali	1.264903	21° 52' 39.223" N	83° 7' 35.804" E
326	Janjgir - Champa	Dabhra	Dhurkot	1.15345	21° 52' 38.688" N	83° 8' 29.876" E
327	Raigarh	Raigarh	Nawapara	0.140632	21° 52' 35.719" N	83° 12' 42.974" E
328	Janjgir - Champa	Malkharoda	Bademudpar	1.380822	21° 52' 42.755" N	83° 3' 58.001" E
329	Janjgir - Champa	Dabhra	Dhurkot	0.32113	21° 52' 39.608" N	83° 8' 38.100" E
330	Raigarh	Raigarh	Nawapara	1.310891	21° 52' 36.944" N	83° 12' 15.615" E
331	Raigarh	Raigarh	Nawapara	0.570503	21° 52' 36.686" N	83° 12' 38.621" E
332	Janjgir - Champa	Dabhra	Khairmuda	1.347096	21° 52' 37.415" N	83° 11' 45.763" E
333	Janjgir - Champa	Dabhra	Bandhapali	0.300549	21° 52' 41.714" N	83° 7' 12.091" E
334	Janjgir - Champa	Dabhra	Dhobnipali	0.40063	21° 52' 43.045" N	83° 6' 56.942" E
335	Janjgir - Champa	Dabhra	Dhurkot	1.429529	21° 52' 42.526" N	83° 8' 22.788" E
336	Janjgir - Champa	Dabhra	Sukhada	0.065338	21° 52' 44.100" N	83° 6' 25.556" E
337	Janjgir - Champa	Malkharoda	Bademudpar	4.988241	21° 52' 47.147" N	83° 4' 25.666" E
338	Janjgir - Champa	Dabhra	Khairmuda	0.220038	21° 52' 41.550" N	83° 11' 6.894" E
339	Janjgir - Champa	Dabhra	Bandhapali	3.936541	21° 52' 44.546" N	83° 7' 17.827" E
340	Janjgir - Champa	Dabhra	Dhobnipali	0.124221	21° 52' 45.627" N	83° 6' 47.477" E
341	Janjgir - Champa	Dabhra	Dhurkot	0.553909	21° 52' 45.264" N	83° 8' 32.630" E
342	Janjgir - Champa	Malkharoda	Jamgahan	2.334415	21° 52' 50.745" N	83° 1' 21.820" E
343	Janjgir - Champa	Malkharoda	Bademudpar	0.772305	21° 52' 49.244" N	83° 4' 7.247" E
344	Janjgir - Champa	Dabhra	Dhurkot	0.281702	21° 52' 45.866" N	83° 8' 41.032" E
345	Janjgir - Champa	Malkharoda	Kirari	4.032999	21° 52' 50.617" N	83° 2' 36.515" E
346	Janjgir - Champa	Dabhra	Dhobnipali	0.633824	21° 52' 47.230" N	83° 7' 10.216" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
347	Janjgir - Champa	Dabhra	Dhurkot	0.095906	21° 52' 46.296" N	83° 8' 44.879" E
348	Janjgir - Champa	Dabhra	Dhurkot	3.003171	21° 52' 46.871" N	83° 9' 5.405" E
349	Janjgir - Champa	Dabhra	Dhobnipali	0.724925	21° 52' 49.942" N	83° 6' 46.638" E
350	Janjgir - Champa	Dabhra	Dhobnipali	0.803243	21° 52' 50.765" N	83° 7' 6.788" E
351	Janjgir - Champa	Dabhra	Dhurkot	1.085689	21° 52' 51.180" N	83° 9' 1.503" E
352	Janjgir - Champa	Malkharoda	Bademudpar	0.628584	21° 52' 54.730" N	83° 4' 51.094" E
353	Janjgir - Champa	Dabhra	Dumarpali	0.082953	21° 52' 50.402" N	83° 10' 30.552" E
354	Janjgir - Champa	Dabhra	Bandhapali	3.465392	21° 52' 52.646" N	83° 7' 47.227" E
355	Janjgir - Champa	Dabhra	Tundri	0.387894	21° 52' 49.673" N	83° 11' 47.248" E
356	Janjgir - Champa	Dabhra	Dhurkot	0.429054	21° 52' 52.333" N	83° 8' 58.495" E
357	Janjgir - Champa	Dabhra	Dumarpali	0.703122	21° 52' 51.659" N	83° 10' 32.573" E
358	Janjgir - Champa	Malkharoda	Jamgahan	1.680641	21° 52' 59.456" N	83° 1' 36.970" E
359	Janjgir - Champa	Dabhra	Dhurkot	0.299221	21° 52' 54.899" N	83° 8' 41.120" E
360	Janjgir - Champa	Dabhra	Dhurkot	1.870915	21° 52' 54.962" N	83° 8' 50.564" E
361	Janjgir - Champa	Dabhra	Dhurkot	1.385714	21° 52' 54.204" N	83° 8' 32.710" E
362	Janjgir - Champa	Malkharoda	Jamgahan	0.583314	21° 53' 0.644" N	83° 1' 14.478" E
363	Janjgir - Champa	Dabhra	Dumarpali	0.673296	21° 52' 54.179" N	83° 10' 17.387" E
364	Janjgir - Champa	Dabhra	Sukhada	0.518238	21° 52' 57.947" N	83° 5' 42.025" E
365	Janjgir - Champa	Dabhra	Sukhada	0.340936	21° 52' 58.996" N	83° 5' 5.763" E
366	Janjgir - Champa	Malkharoda	Kirari	0.60039	21° 53' 1.443" N	83° 2' 19.087" E
367	Janjgir - Champa	Dabhra	Dumarpali	1.47962	21° 52' 55.568" N	83° 10' 7.364" E
368	Janjgir - Champa	Malkharoda	Tulsidih	0.669206	21° 53' 1.962" N	83° 3' 18.300" E
369	Raigarh	Raigarh	Baispali	0.631963	21° 52' 53.971" N	83° 13' 39.815" E
370	Janjgir - Champa	Malkharoda	Kirari	1.301691	21° 53' 2.648" N	83° 2' 36.966" E
371	Janjgir - Champa	Dabhra	Dhurkot	1.951081	21° 52' 57.902" N	83° 9' 11.453" E
372	Janjgir - Champa	Dabhra	Dumarpali	6.153978	21° 52' 57.754" N	83° 9' 59.863" E
373	Janjgir - Champa	Malkharoda	Bademudpar	1.83055	21° 53' 2.267" N	83° 4' 19.038" E
374	Janjgir - Champa	Dabhra	Dhurkot	0.542105	21° 52' 58.571" N	83° 9' 21.035" E
375	Janjgir - Champa	Dabhra	Tundri	1.074377	21° 52' 57.066" N	83° 11' 50.187" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
376	Janjgir - Champa	Dabhra	Dhurkot	1.07802	21° 53' 0.432" N	83° 8' 42.359" E
377	Janjgir - Champa	Dabhra	Bartunga	0.375608	21° 53' 5.050" N	83° 5' 0.332" E
378	Janjgir - Champa	Malkharoda	Bademudpar	0.245698	21° 53' 6.089" N	83° 3' 58.984" E
379	Janjgir - Champa	Dabhra	Dhurkot	0.36819	21° 53' 3.513" N	83° 8' 45.298" E
380	Janjgir - Champa	Malkharoda	Bademudpar	1.310038	21° 53' 6.874" N	83° 4' 23.877" E
381	Janjgir - Champa	Dabhra	Dumarpali	0.071753	21° 53' 3.278" N	83° 10' 23.450" E
382	Janjgir - Champa	Dabhra	Dumarpali	4.81003	21° 53' 2.649" N	83° 10' 38.826" E
383	Janjgir - Champa	Dabhra	Tundri	0.200294	21° 53' 3.379" N	83° 12' 5.108" E
384	Janjgir - Champa	Dabhra	Dhurkot	1.036446	21° 53' 6.420" N	83° 8' 24.257" E
385	Janjgir - Champa	Malkharoda	Kirari	1.240828	21° 53' 11.628" N	83° 2' 42.113" E
386	Janjgir - Champa	Dabhra	Tundri	1.281105	21° 53' 5.281" N	83° 10' 59.721" E
387	Janjgir - Champa	Malkharoda	Bademudpar	5.859094	21° 53' 10.650" N	83° 4' 15.715" E
388	Janjgir - Champa	Malkharoda	Bademudpar	1.853082	21° 53' 11.365" N	83° 4' 8.305" E
389	Janjgir - Champa	Malkharoda	Jamgahan	1.814306	21° 53' 14.124" N	83° 1' 40.437" E
390	Janjgir - Champa	Malkharoda	Tulsidih	1.45308	21° 53' 13.187" N	83° 3' 42.457" E
391	Janjgir - Champa	Dabhra	Ghiwara	0.54293	21° 53' 11.527" N	83° 6' 16.301" E
392	Janjgir - Champa	Dabhra	Dumarpali	0.1876	21° 53' 8.772" N	83° 10' 33.644" E
393	Janjgir - Champa	Dabhra	Dumarpali	0.206434	21° 53' 8.806" N	83° 10' 54.406" E
394	Janjgir - Champa	Malkharoda	Jamgahan	1.666766	21° 53' 17.029" N	83° 1' 18.033" E
395	Janjgir - Champa	Dabhra	Dhurkot	0.215613	21° 53' 11.455" N	83° 9' 7.322" E
396	Janjgir - Champa	Dabhra	Dumarpali	0.242358	21° 53' 10.658" N	83° 10' 34.241" E
397	Janjgir - Champa	Dabhra	Tundri	0.103512	21° 53' 11.154" N	83° 11' 12.644" E
398	Janjgir - Champa	Dabhra	Ghiwara	1.834405	21° 53' 14.832" N	83° 7' 4.257" E
399	Janjgir - Champa	Dabhra	Dumarpali	0.130288	21° 53' 12.193" N	83° 10' 34.130" E
400	Janjgir - Champa	Dabhra	Ghiwara	0.086887	21° 53' 15.718" N	83° 6' 50.352" E
401	Janjgir - Champa	Malkharoda	Tulsidih	0.606639	21° 53' 18.620" N	83° 3' 44.825" E
402	Janjgir - Champa	Malkharoda	Kirkar	1.491267	21° 53' 19.871" N	83° 2' 12.721" E
403	Janjgir - Champa	Dabhra	Dhurkot	0.137232	21° 53' 14.488" N	83° 9' 43.665" E
404	Janjgir - Champa	Dabhra	Bandhapali	0.832001	21° 53' 16.628" N	83° 7' 39.234" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
405	Janjgir - Champa	Dabhra	Tundri	1.540796	21° 53' 14.326" N	83° 11' 57.267" E
406	Janjgir - Champa	Dabhra	Dhurkot	0.648955	21° 53' 16.849" N	83° 9' 26.901" E
407	Raigarh	Raigarh	Baispali	0.942294	21° 53' 14.364" N	83° 12' 54.722" E
408	Janjgir - Champa	Dabhra	Bartunga	4.276689	21° 53' 21.186" N	83° 4' 43.835" E
409	Janjgir - Champa	Malkharoda	Tulsidih	1.024067	21° 53' 21.912" N	83° 3' 56.074" E
410	Janjgir - Champa	Dabhra	Ghiwara	0.237456	21° 53' 20.548" N	83° 5' 59.864" E
411	Janjgir - Champa	Dabhra	Tundri	0.176636	21° 53' 17.207" N	83° 12' 14.044" E
412	Janjgir - Champa	Dabhra	Tundri	0.921621	21° 53' 17.575" N	83° 12' 0.948" E
413	Janjgir - Champa	Dabhra	Tundri	1.070616	21° 53' 18.338" N	83° 11' 17.872" E
414	Janjgir - Champa	Dabhra	Uchchpinda	0.550937	21° 53' 21.279" N	83° 7' 55.172" E
415	Janjgir - Champa	Dabhra	Ghiwara	2.259253	21° 53' 23.368" N	83° 6' 1.341" E
416	Janjgir - Champa	Dabhra	Ghiwara	0.095864	21° 53' 23.951" N	83° 6' 14.779" E
417	Janjgir - Champa	Malkharoda	Kirari	1.031113	21° 53' 26.486" N	83° 3' 11.329" E
418	Janjgir - Champa	Malkharoda	Kirkar	0.803706	21° 53' 30.331" N	83° 1' 43.682" E
419	Janjgir - Champa	Dabhra	Bartunga	0.371456	21° 53' 28.186" N	83° 4' 48.951" E
420	Raigarh	Raigarh	Baispali	1.360934	21° 53' 22.528" N	83° 12' 58.232" E
421	Janjgir - Champa	Dabhra	Ghiwara	0.143856	21° 53' 28.412" N	83° 5' 59.668" E
422	Janjgir - Champa	Dabhra	Ghiwara	1.240564	21° 53' 28.376" N	83° 6' 2.830" E
423	Janjgir - Champa	Dabhra	Bartunga	0.692532	21° 53' 29.423" N	83° 4' 54.202" E
424	Raigarh	Raigarh	Baispali	1.050018	21° 53' 23.379" N	83° 13' 4.026" E
425	Raigarh	Raigarh	Baispali	0.406898	21° 53' 23.016" N	83° 13' 32.557" E
426	Janjgir - Champa	Malkharoda	Kirkar	0.559955	21° 53' 32.242" N	83° 1' 51.880" E
427	Janjgir - Champa	Dabhra	Tundri	0.800786	21° 53' 25.283" N	83° 12' 32.142" E
428	Janjgir - Champa	Malkharoda	Kirkar	1.294355	21° 53' 35.567" N	83° 1' 34.616" E
429	Raigarh	Raigarh	Baispali	0.75328	21° 53' 26.631" N	83° 13' 8.469" E
430	Janjgir - Champa	Dabhra	Dewarghata	1.237667	21° 53' 32.941" N	83° 5' 24.934" E
431	Janjgir - Champa	Malkharoda	Kirkar	0.761473	21° 53' 35.469" N	83° 2' 9.733" E
432	Janjgir - Champa	Dabhra	Dumarpali	0.142627	21° 53' 29.740" N	83° 10' 45.763" E
433	Janjgir - Champa	Malkharoda	Bade Padarmuda	1.019753	21° 53' 37.734" N	83° 1' 8.143" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
434	Janjgir - Champa	Dabhra	Dewarghata	0.664546	21° 53' 34.384" N	83° 5' 45.517" E
435	Janjgir - Champa	Dabhra	Dewarghata	0.202724	21° 53' 34.887" N	83° 5' 10.317" E
436	Janjgir - Champa	Malkharoda	Kirkar	5.704894	21° 53' 37.871" N	83° 1' 45.388" E
437	Janjgir - Champa	Dabhra	Uchchpinda	1.548013	21° 53' 33.895" N	83° 7' 48.009" E
438	Janjgir - Champa	Dabhra	Dewarghata	0.406798	21° 53' 36.950" N	83° 5' 26.428" E
439	Raigarh	Raigarh	Baispali	0.446351	21° 53' 30.912" N	83° 13' 32.527" E
440	Janjgir - Champa	Dabhra	Tundri	0.814048	21° 53' 33.082" N	83° 11' 38.884" E
441	Janjgir - Champa	Dabhra	Tundri	0.5771	21° 53' 32.967" N	83° 11' 48.373" E
442	Raigarh	Raigarh	Baispali	0.046554	21° 53' 32.065" N	83° 13' 4.952" E
443	Janjgir - Champa	Dabhra	Dewarghata	3.013233	21° 53' 38.493" N	83° 5' 46.472" E
444	Janjgir - Champa	Dabhra	Dewarghata	1.078235	21° 53' 38.994" N	83° 5' 39.388" E
445	Janjgir - Champa	Malkharoda	Anda	1.079803	21° 53' 41.311" N	83° 3' 5.778" E
446	Janjgir - Champa	Malkharoda	Kirkar	0.95399	21° 53' 42.201" N	83° 2' 10.803" E
447	Janjgir - Champa	Dabhra	Kanwali	1.18559	21° 53' 38.231" N	83° 9' 24.785" E
448	Janjgir - Champa	Malkharoda	Tulsidih	1.325024	21° 53' 43.933" N	83° 3' 47.727" E
449	Janjgir - Champa	Dabhra	Tundri	0.737649	21° 53' 38.493" N	83° 11' 57.188" E
450	Janjgir - Champa	Dabhra	Bartunga	0.642021	21° 53' 44.134" N	83° 4' 43.421" E
451	Janjgir - Champa	Dabhra	Kenapali	0.807987	21° 53' 42.336" N	83° 8' 54.685" E
452	Janjgir - Champa	Dabhra	Kanwali	1.229141	21° 53' 41.434" N	83° 10' 37.747" E
453	Janjgir - Champa	Malkharoda	Anda	0.684821	21° 53' 47.825" N	83° 3' 3.167" E
454	Janjgir - Champa	Dabhra	Tundri	0.820715	21° 53' 42.428" N	83° 11' 7.943" E
455	Janjgir - Champa	Malkharoda	Anda	0.966355	21° 53' 49.009" N	83° 2' 50.265" E
456	Janjgir - Champa	Malkharoda	Bade Padarmuda	0.236544	21° 53' 50.371" N	83° 1' 21.398" E
457	Janjgir - Champa	Malkharoda	Anda	0.967657	21° 53' 48.947" N	83° 3' 18.210" E
458	Janjgir - Champa	Dabhra	Kenapali	0.31179	21° 53' 45.451" N	83° 8' 37.632" E
459	Janjgir - Champa	Dabhra	Bartunga	0.673714	21° 53' 49.317" N	83° 4' 27.011" E
460	Janjgir - Champa	Malkharoda	Charoudi	0.663864	21° 53' 51.795" N	83° 1' 28.236" E
461	Janjgir - Champa	Malkharoda	Tulsidih	0.84132	21° 53' 50.197" N	83° 3' 51.882" E
462	Janjgir - Champa	Dabhra	Tundri	5.524641	21° 53' 44.828" N	83° 11' 40.122" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
463	Janjgir - Champa	Dabhra	Tundri	0.454468	21° 53' 45.473" N	83° 12' 7.150" E
464	Janjgir - Champa	Dabhra	Kanwali	0.725984	21° 53' 47.546" N	83° 9' 36.026" E
465	Janjgir - Champa	Dabhra	Bartunga	0.678681	21° 53' 52.041" N	83° 3' 57.030" E
466	Janjgir - Champa	Malkharoda	Charoudi	0.323052	21° 53' 53.607" N	83° 1' 57.359" E
467	Janjgir - Champa	Dabhra	Kenapali	1.323896	21° 53' 48.967" N	83° 8' 39.400" E
468	Janjgir - Champa	Dabhra	Bartunga	1.476372	21° 53' 52.387" N	83° 4' 20.675" E
469	Janjgir - Champa	Dabhra	Dewarghata	0.249055	21° 53' 51.851" N	83° 5' 21.155" E
470	Janjgir - Champa	Dabhra	Kanakot	0.641269	21° 53' 51.395" N	83° 6' 28.967" E
471	Janjgir - Champa	Dabhra	Kanwali	1.096752	21° 53' 48.063" N	83° 10' 48.654" E
472	Janjgir - Champa	Dabhra	Uchchpinda	0.583499	21° 53' 50.787" N	83° 7' 30.961" E
473	Janjgir - Champa	Malkharoda	Bade Padarmuda	0.125148	21° 53' 55.770" N	83° 1' 16.158" E
474	Janjgir - Champa	Dabhra	Kanakot	0.321308	21° 53' 52.317" N	83° 6' 23.077" E
475	Janjgir - Champa	Dabhra	Kanakot	0.338135	21° 53' 52.602" N	83° 6' 15.924" E
476	Janjgir - Champa	Malkharoda	Bade Padarmuda	0.305672	21° 53' 57.168" N	83° 1' 2.406" E
477	Janjgir - Champa	Dabhra	Kanwali	1.071329	21° 53' 50.658" N	83° 9' 37.138" E
478	Janjgir - Champa	Malkharoda	Anda	0.228685	21° 53' 55.488" N	83° 3' 30.643" E
479	Janjgir - Champa	Dabhra	Kanwali	0.549182	21° 53' 51.591" N	83° 9' 41.061" E
480	Janjgir - Champa	Dabhra	Kenapali	2.331616	21° 53' 52.360" N	83° 8' 44.223" E
481	Janjgir - Champa	Dabhra	Bartunga	1.866009	21° 53' 57.020" N	83° 4' 17.291" E
482	Janjgir - Champa	Malkharoda	Anda	0.798822	21° 53' 57.969" N	83° 3' 16.339" E
483	Janjgir - Champa	Dabhra	Dewarghata	0.48003	21° 53' 56.887" N	83° 5' 16.551" E
484	Janjgir - Champa	Dabhra	Nimuhi	1.095967	21° 53' 55.716" N	83° 7' 6.323" E
485	Janjgir - Champa	Dabhra	Kanwali	1.576015	21° 53' 54.661" N	83° 9' 54.549" E
486	Janjgir - Champa	Dabhra	Kanwali	1.27238	21° 53' 54.316" N	83° 10' 50.463" E
487	Janjgir - Champa	Dabhra	Tundri	0.390208	21° 53' 53.205" N	83° 11' 52.294" E
488	Janjgir - Champa	Malkharoda	Andi	1.320094	21° 54' 1.042" N	83° 2' 8.386" E
489	Janjgir - Champa	Dabhra	Kanakot	1.057211	21° 53' 57.892" N	83° 6' 22.113" E
490	Janjgir - Champa	Dabhra	Kenapali	1.239281	21° 53' 56.121" N	83° 8' 44.542" E
491	Janjgir - Champa	Malkharoda	Charoudi	2.414282	21° 54' 1.952" N	83° 1' 28.389" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
492	Janjgir - Champa	Malkharoda	Charoudi	1.251865	21° 54' 2.293" N	83° 1' 18.606" E
493	Janjgir - Champa	Malkharoda	Saraskela	2.497782	21° 54' 1.175" N	83° 3' 44.379" E
494	Janjgir - Champa	Malkharoda	Anda	0.885825	21° 54' 1.860" N	83° 3' 0.281" E
495	Janjgir - Champa	Dabhra	Nimuhi	0.115766	21° 53' 58.589" N	83° 7' 22.277" E
496	Janjgir - Champa	Dabhra	Tundri	0.402574	21° 53' 55.230" N	83° 11' 52.736" E
497	Janjgir - Champa	Malkharoda	Andi	0.714003	21° 54' 3.512" N	83° 2' 29.963" E
498	Janjgir - Champa	Dabhra	Dewarghata	0.672945	21° 54' 2.127" N	83° 5' 41.959" E
499	Janjgir - Champa	Dabhra	Kanwali	1.209934	21° 53' 58.746" N	83° 10' 6.053" E
500	Janjgir - Champa	Dabhra	Kenapali	0.257026	21° 53' 59.954" N	83° 8' 34.304" E
501	Janjgir - Champa	Dabhra	Bartunga	0.786444	21° 54' 4.242" N	83° 4' 31.711" E
502	Janjgir - Champa	Dabhra	Kanwali	1.061527	21° 54' 1.536" N	83° 9' 42.890" E
503	Janjgir - Champa	Dabhra	Bartunga	0.779639	21° 54' 6.060" N	83° 4' 36.484" E
504	Janjgir - Champa	Dabhra	Nimuhi	0.581561	21° 54' 4.303" N	83° 7' 9.365" E
505	Janjgir - Champa	Malkharoda	Andi	0.676445	21° 54' 8.089" N	83° 2' 21.149" E
506	Janjgir - Champa	Dabhra	Kanwali	0.226352	21° 54' 2.352" N	83° 9' 53.465" E
507	Janjgir - Champa	Dabhra	Kenapali	0.618664	21° 54' 3.354" N	83° 9' 5.836" E
508	Janjgir - Champa	Dabhra	Kanwali	0.884041	21° 54' 2.780" N	83° 10' 5.839" E
509	Janjgir - Champa	Dabhra	Bartunga	2.013036	21° 54' 8.531" N	83° 4' 57.048" E
510	Janjgir - Champa	Dabhra	Saraipali (Chechang)	0.177322	21° 54' 6.040" N	83° 8' 12.933" E
511	Janjgir - Champa	Dabhra	Kanakot	0.557094	21° 54' 8.038" N	83° 6' 1.395" E
512	Janjgir - Champa	Dabhra	Kanwali	0.470112	21° 54' 5.514" N	83° 9' 56.586" E
513	Janjgir - Champa	Dabhra	Kanwali	0.410613	21° 54' 6.892" N	83° 9' 29.296" E
514	Janjgir - Champa	Dabhra	Nimuhi	2.948913	21° 54' 9.412" N	83° 6' 50.756" E
515	Janjgir - Champa	Malkharoda	Andi	1.158182	21° 54' 12.703" N	83° 2' 41.859" E
516	Janjgir - Champa	Dabhra	Kanwali	0.297374	21° 54' 7.668" N	83° 10' 51.653" E
517	Raigarh	Raigarh	Bayang	1.429232	21° 54' 7.523" N	83° 13' 29.783" E
518	Janjgir - Champa	Dabhra	Kanwali	0.250762	21° 54' 11.905" N	83° 9' 19.960" E
519	Janjgir - Champa	Dabhra	Nimuhi	0.608882	21° 54' 13.877" N	83° 6' 49.948" E
520	Janjgir - Champa	Dabhra	Tundri	3.928767	21° 54' 11.015" N	83° 11' 17.001" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
521	Janjgir - Champa	Malkharoda	Charoudi	0.667382	21° 54' 20.342" N	83° 2' 5.588" E
522	Janjgir - Champa	Dabhra	Nimuhi	0.185956	21° 54' 16.650" N	83° 7' 3.422" E
523	Janjgir - Champa	Malkharoda	Charoudi	1.548188	21° 54' 20.790" N	83° 2' 9.632" E
524	Janjgir - Champa	Malkharoda	Anda	0.158318	21° 54' 20.131" N	83° 3' 8.852" E
525	Janjgir - Champa	Dabhra	Kanwali	0.225981	21° 54' 15.203" N	83° 9' 37.415" E
526	Raigarh	Raigarh	Bayang	1.318776	21° 54' 12.193" N	83° 13' 29.744" E
527	Janjgir - Champa	Dabhra	Saraipali (Chechang)	0.542847	21° 54' 16.793" N	83° 8' 22.483" E
528	Janjgir - Champa	Malkharoda	Sero	0.533358	21° 54' 20.046" N	83° 5' 7.977" E
529	Janjgir - Champa	Dabhra	Kanwali	1.995587	21° 54' 16.544" N	83° 9' 58.621" E
530	Janjgir - Champa	Dabhra	Bartunga	0.699424	21° 54' 20.521" N	83° 4' 54.935" E
531	Raigarh	Raigarh	Bayang	0.146247	21° 54' 14.538" N	83° 13' 4.230" E
532	Janjgir - Champa	Malkharoda	Charoudi	0.945514	21° 54' 23.207" N	83° 1' 53.094" E
533	Janjgir - Champa	Dabhra	Tundri	0.957539	21° 54' 16.235" N	83° 12' 2.263" E
534	Janjgir - Champa	Malkharoda	Saraskela	1.172323	21° 54' 22.811" N	83° 4' 2.822" E
535	Janjgir - Champa	Dabhra	Tundri	0.133914	21° 54' 17.303" N	83° 12' 19.052" E
536	Janjgir - Champa	Malkharoda	Charoudi	0.527667	21° 54' 25.377" N	83° 2' 3.206" E
537	Janjgir - Champa	Dabhra	Tundri	0.491072	21° 54' 18.529" N	83° 11' 22.340" E
538	Raigarh	Raigarh	Bayang	0.557169	21° 54' 18.623" N	83° 13' 28.828" E
539	Janjgir - Champa	Dabhra	Nimuhi	1.000903	21° 54' 23.801" N	83° 7' 18.062" E
540	Janjgir - Champa	Malkharoda	Sero	0.931651	21° 54' 27.137" N	83° 5' 44.100" E
541	Janjgir - Champa	Malkharoda	Saraskela	0.996553	21° 54' 28.820" N	83° 4' 1.550" E
542	Janjgir - Champa	Malkharoda	Charoudi	0.461006	21° 54' 31.180" N	83° 1' 33.547" E
543	Janjgir - Champa	Dabhra	Tundri	0.553744	21° 54' 24.118" N	83° 11' 19.209" E
544	Raigarh	Raigarh	Bayang	0.107443	21° 54' 22.850" N	83° 13' 49.264" E
545	Janjgir - Champa	Dabhra	Kanwali	1.526723	21° 54' 25.862" N	83° 10' 10.121" E
546	Janjgir - Champa	Dabhra	Saraipali (Chechang)	5.885962	21° 54' 28.255" N	83° 8' 31.708" E
547	Janjgir - Champa	Dabhra	Tundri	0.917889	21° 54' 26.290" N	83° 11' 50.422" E
548	Janjgir - Champa	Dabhra	Katharrapali	1.186022	21° 54' 30.922" N	83° 6' 29.724" E
549	Janjgir - Champa	Dabhra	Saraipali (Chechang)	0.192914	21° 54' 29.130" N	83° 9' 1.227" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
550	Raigarh	Raigarh	Bayang	0.229327	21° 54' 25.991" N	83° 13' 51.258" E
551	Janjgir - Champa	Malkharoda	Saraskela	2.681474	21° 54' 33.516" N	83° 4' 25.389" E
552	Janjgir - Champa	Dabhra	Tundri	0.79845	21° 54' 27.915" N	83° 11' 59.194" E
553	Janjgir - Champa	Malkharoda	Parsa	0.340497	21° 54' 34.956" N	83° 3' 0.240" E
554	Janjgir - Champa	Malkharoda	Charoudi	0.161755	21° 54' 35.767" N	83° 2' 15.039" E
555	Janjgir - Champa	Dabhra	Badadarha	2.474053	21° 54' 29.021" N	83° 11' 6.695" E
556	Janjgir - Champa	Malkharoda	Saraskela	1.19795	21° 54' 34.950" N	83° 4' 20.381" E
557	Janjgir - Champa	Dabhra	Kanwali	0.721776	21° 54' 31.299" N	83° 9' 34.143" E
558	Janjgir - Champa	Malkharoda	Charoudi	3.32386	21° 54' 37.475" N	83° 2' 1.476" E
559	Janjgir - Champa	Dabhra	Tundri	0.216301	21° 54' 29.684" N	83° 12' 18.858" E
560	Janjgir - Champa	Dabhra	Katharrapali	0.951171	21° 54' 34.334" N	83° 6' 46.935" E
561	Janjgir - Champa	Malkharoda	Sero	2.150115	21° 54' 36.149" N	83° 5' 10.159" E
562	Janjgir - Champa	Dabhra	Singhi Tarai	1.418489	21° 54' 34.712" N	83° 7' 17.852" E
563	Janjgir - Champa	Malkharoda	Parsi	0.541736	21° 54' 37.629" N	83° 3' 39.022" E
564	Janjgir - Champa	Dabhra	Katharrapali	0.160495	21° 54' 35.719" N	83° 6' 30.489" E
565	Janjgir - Champa	Dabhra	Singhi Tarai	0.216457	21° 54' 36.969" N	83° 7' 39.668" E
566	Janjgir - Champa	Malkharoda	Sero	0.429646	21° 54' 38.740" N	83° 5' 24.151" E
567	Janjgir - Champa	Malkharoda	Saraskela	0.861272	21° 54' 41.083" N	83° 3' 50.809" E
568	Janjgir - Champa	Dabhra	Kanwali	0.108426	21° 54' 37.781" N	83° 10' 11.474" E
569	Raigarh	Raigarh	Bayang	0.361838	21° 54' 38.204" N	83° 13' 33.873" E
570	Janjgir - Champa	Malkharoda	Charouda	1.069389	21° 54' 48.898" N	83° 1' 29.204" E
571	Janjgir - Champa	Malkharoda	Charouda	4.191351	21° 54' 48.569" N	83° 2' 40.585" E
572	Janjgir - Champa	Malkharoda	Sero	5.925079	21° 54' 46.819" N	83° 5' 23.064" E
573	Janjgir - Champa	Malkharoda	Sero	1.795513	21° 54' 47.021" N	83° 6' 6.476" E
574	Janjgir - Champa	Dabhra	Saraipali (Chechang)	0.597816	21° 54' 45.092" N	83° 8' 43.502" E
575	Janjgir - Champa	Dabhra	Kanwali	1.746646	21° 54' 44.264" N	83° 10' 19.358" E
576	Janjgir - Champa	Dabhra	Singhi Tarai	0.633491	21° 54' 46.725" N	83° 7' 30.622" E
577	Janjgir - Champa	Malkharoda	Charouda	0.541217	21° 54' 53.056" N	83° 2' 11.859" E
578	Janjgir - Champa	Malkharoda	Charouda	0.804159	21° 54' 53.355" N	83° 2' 7.422" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
579	Janjgir - Champa	Dabhra	Kanwali	1.097108	21° 54' 48.284" N	83° 9' 40.810" E
580	Janjgir - Champa	Malkharoda	Charouda	0.555098	21° 54' 53.868" N	83° 2' 41.447" E
581	Janjgir - Champa	Malkharoda	Charouda	0.594525	21° 54' 54.458" N	83° 1' 55.170" E
582	Janjgir - Champa	Dabhra	Kanwali	0.240704	21° 54' 48.206" N	83° 10' 13.508" E
583	Janjgir - Champa	Malkharoda	Sero	0.936729	21° 54' 51.717" N	83° 5' 45.989" E
584	Janjgir - Champa	Malkharoda	Charouda	1.560621	21° 54' 54.768" N	83° 2' 54.810" E
585	Janjgir - Champa	Dabhra	Badadarha	1.481942	21° 54' 48.976" N	83° 11' 25.163" E
586	Janjgir - Champa	Dabhra	Badadarha	1.124243	21° 54' 48.934" N	83° 11' 31.080" E
587	Janjgir - Champa	Malkharoda	Saraskela	15.201921	21° 54' 53.797" N	83° 4' 45.687" E
588	Raigarh	Raigarh	Bayang	1.250999	21° 54' 47.536" N	83° 13' 23.057" E
589	Raigarh	Raigarh	Bayang	1.567001	21° 54' 47.654" N	83° 13' 31.798" E
590	Janjgir - Champa	Malkharoda	Parsi	0.711748	21° 54' 55.234" N	83° 4' 4.477" E
591	Janjgir - Champa	Malkharoda	Charouda	0.195192	21° 54' 56.958" N	83° 1' 52.991" E
592	Janjgir - Champa	Dabhra	Audekera	1.31509	21° 54' 52.228" N	83° 8' 23.818" E
593	Janjgir - Champa	Malkharoda	Parsa	0.465566	21° 54' 56.384" N	83° 3' 40.933" E
594	Janjgir - Champa	Malkharoda	Parsi	0.371298	21° 54' 56.857" N	83° 3' 57.787" E
595	Janjgir - Champa	Dabhra	Singhi Tarai	1.568469	21° 54' 54.438" N	83° 7' 15.975" E
596	Janjgir - Champa	Dabhra	Audekera	1.310746	21° 54' 53.467" N	83° 8' 35.355" E
597	Janjgir - Champa	Malkharoda	Charouda	3.151193	21° 54' 59.181" N	83° 2' 5.142" E
598	Janjgir - Champa	Dabhra	Audekera	0.304846	21° 54' 54.987" N	83° 8' 13.908" E
599	Janjgir - Champa	Dabhra	Singhi Tarai	1.582729	21° 54' 55.853" N	83° 7' 25.893" E
600	Raigarh	Raigarh	Bayang	1.798522	21° 54' 51.190" N	83° 13' 42.084" E
601	Janjgir - Champa	Dabhra	Badadarha	0.871122	21° 54' 53.568" N	83° 11' 16.679" E
602	Janjgir - Champa	Malkharoda	Sero	0.13006	21° 54' 58.422" N	83° 5' 56.350" E
603	Janjgir - Champa	Malkharoda	Parsi	0.350479	21° 55' 0.251" N	83° 4' 21.111" E
604	Janjgir - Champa	Malkharoda	Sero	0.780374	21° 55' 0.073" N	83° 5' 57.305" E
605	Janjgir - Champa	Dabhra	Kanwali	0.231123	21° 54' 57.554" N	83° 10' 4.211" E
606	Janjgir - Champa	Dabhra	Saraipali (Chechang)	1.622581	21° 54' 58.252" N	83° 9' 25.451" E
607	Janjgir - Champa	Dabhra	Singhi Tarai	0.72635	21° 55' 0.008" N	83° 7' 47.223" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
608	Raigarh	Raigarh	Bayang	0.361392	21° 54' 57.196" N	83° 12' 32.243" E
609	Janjgir - Champa	Malkharoda	Bodasagar	1.198386	21° 55' 2.660" N	83° 5' 35.256" E
610	Janjgir - Champa	Malkharoda	Parsi	0.372658	21° 55' 4.401" N	83° 4' 16.133" E
611	Janjgir - Champa	Malkharoda	Charouda	5.897178	21° 55' 6.101" N	83° 2' 3.557" E
612	Janjgir - Champa	Malkharoda	Parsa	0.327433	21° 55' 5.178" N	83° 3' 51.328" E
613	Janjgir - Champa	Dabhra	Badadarha	0.712465	21° 55' 0.314" N	83° 11' 20.639" E
614	Janjgir - Champa	Malkharoda	Limgaon	1.469294	21° 55' 8.976" N	83° 2' 28.731" E
615	Janjgir - Champa	Malkharoda	Parsa	0.414387	21° 55' 7.817" N	83° 3' 43.649" E
616	Janjgir - Champa	Malkharoda	Limgaon	0.827857	21° 55' 8.782" N	83° 2' 38.861" E
617	Janjgir - Champa	Malkharoda	Parsi	1.133549	21° 55' 7.709" N	83° 4' 13.201" E
618	Janjgir - Champa	Malkharoda	Parsa	3.085606	21° 55' 8.926" N	83° 3' 30.111" E
619	Janjgir - Champa	Malkharoda	Parsa	0.417342	21° 55' 10.352" N	83° 3' 19.865" E
620	Janjgir - Champa	Dabhra	Badadarha	0.425804	21° 55' 4.756" N	83° 11' 15.649" E
621	Janjgir - Champa	Dabhra	Singhi Tarai	0.115861	21° 55' 8.101" N	83° 7' 12.399" E
622	Janjgir - Champa	Malkharoda	Limgaon	0.587228	21° 55' 11.636" N	83° 2' 33.953" E
623	Janjgir - Champa	Malkharoda	Bodasagar	0.672938	21° 55' 9.502" N	83° 5' 31.379" E
624	Janjgir - Champa	Dabhra	Badadarha	1.219765	21° 55' 5.419" N	83° 11' 7.298" E
625	Janjgir - Champa	Dabhra	Badadarha	0.659443	21° 55' 5.973" N	83° 10' 53.496" E
626	Janjgir - Champa	Dabhra	Audekera	0.207745	21° 55' 9.293" N	83° 8' 15.799" E
627	Janjgir - Champa	Malkharoda	Limgaon	1.318867	21° 55' 16.033" N	83° 2' 48.900" E
628	Janjgir - Champa	Malkharoda	Parsa	0.257912	21° 55' 15.535" N	83° 3' 30.705" E
629	Janjgir - Champa	Malkharoda	Parsa	0.404377	21° 55' 15.521" N	83° 3' 57.080" E
630	Janjgir - Champa	Malkharoda	Charouda	3.156284	21° 55' 18.535" N	83° 1' 16.107" E
631	Janjgir - Champa	Malkharoda	Charouda	1.466172	21° 55' 18.002" N	83° 1' 47.546" E
632	Janjgir - Champa	Dabhra	Badadarha	0.539317	21° 55' 11.012" N	83° 11' 25.695" E
633	Raigarh	Kharsia	Karumauha	1.388874	21° 55' 17.118" N	83° 8' 38.525" E
634	Janjgir - Champa	Malkharoda	Parsa	0.919093	21° 55' 20.669" N	83° 4' 15.169" E
635	Janjgir - Champa	Malkharoda	Charouda	1.182493	21° 55' 22.524" N	83° 1' 53.084" E
636	Janjgir - Champa	Dabhra	Badadarha	0.101035	21° 55' 16.592" N	83° 10' 55.613" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
637	Janjgir - Champa	Malkharoda	Bodasagar	0.154539	21° 55' 21.823" N	83° 5' 38.101" E
638	Janjgir - Champa	Malkharoda	Bodasagar	2.726681	21° 55' 22.809" N	83° 4' 51.937" E
639	Janjgir - Champa	Malkharoda	Bodasagar	0.68332	21° 55' 22.729" N	83° 5' 25.865" E
640	Janjgir - Champa	Malkharoda	Kulba	0.40334	21° 55' 22.084" N	83° 6' 51.526" E
641	Janjgir - Champa	Malkharoda	Parsa	0.421678	21° 55' 25.265" N	83° 3' 42.536" E
642	Raigarh	Kharsia	Tayang	0.466833	21° 55' 18.160" N	83° 13' 9.756" E
643	Janjgir - Champa	Malkharoda	Bodasagar	0.723682	21° 55' 24.519" N	83° 5' 16.979" E
644	Janjgir - Champa	Malkharoda	Kulba	1.352652	21° 55' 23.585" N	83° 6' 35.565" E
645	Janjgir - Champa	Malkharoda	Bodasagar	0.660766	21° 55' 24.799" N	83° 5' 21.633" E
646	Janjgir - Champa	Malkharoda	Parsa	0.192078	21° 55' 27.464" N	83° 3' 56.911" E
647	Janjgir - Champa	Malkharoda	Kulba	1.417994	21° 55' 26.091" N	83° 6' 16.292" E
648	Raigarh	Kharsia	Tayang	0.539356	21° 55' 21.271" N	83° 12' 56.976" E
649	Janjgir - Champa	Malkharoda	Bodasagar	0.54029	21° 55' 29.299" N	83° 5' 51.146" E
650	Janjgir - Champa	Malkharoda	Parsa	0.326522	21° 55' 31.406" N	83° 3' 45.836" E
651	Janjgir - Champa	Malkharoda	Bodasagar	1.229589	21° 55' 30.611" N	83° 4' 53.876" E
652	Janjgir - Champa	Malkharoda	Charouda	2.111769	21° 55' 34.324" N	83° 1' 27.422" E
653	Raigarh	Kharsia	Karumauha	1.070884	21° 55' 28.193" N	83° 8' 49.565" E
654	Raigarh	Kharsia	Karumauha	0.527216	21° 55' 28.819" N	83° 8' 59.891" E
655	Janjgir - Champa	Malkharoda	Limgaon	0.627553	21° 55' 34.155" N	83° 2' 16.506" E
656	Raigarh	Kharsia	Tayang	1.316939	21° 55' 25.628" N	83° 13' 17.673" E
657	Janjgir - Champa	Dabhra	Singhi Tarai	1.102322	21° 55' 30.178" N	83° 7' 46.429" E
658	Janjgir - Champa	Malkharoda	Limgaon	1.575767	21° 55' 34.632" N	83° 2' 38.617" E
659	Janjgir - Champa	Dabhra	Benipali	0.142982	21° 55' 31.585" N	83° 7' 12.726" E
660	Janjgir - Champa	Malkharoda	Limgaon	0.557103	21° 55' 36.984" N	83° 2' 49.462" E
661	Raigarh	Kharsia	Tayang	0.635745	21° 55' 29.673" N	83° 12' 48.930" E
662	Janjgir - Champa	Malkharoda	Limgaon	0.786151	21° 55' 37.137" N	83° 3' 14.501" E
663	Janjgir - Champa	Malkharoda	Kudhari	0.904963	21° 55' 35.484" N	83° 5' 59.692" E
664	Janjgir - Champa	Malkharoda	Kulba	1.632117	21° 55' 35.208" N	83° 6' 46.806" E
665	Janjgir - Champa	Malkharoda	Charouda	0.323124	21° 55' 39.266" N	83° 1' 48.242" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
666	Raigarh	Kharsia	Karpipali	0.520204	21° 55' 33.122" N	83° 10' 17.429" E
667	Janjgir - Champa	Malkharoda	Parsa	0.501243	21° 55' 38.527" N	83° 3' 30.274" E
668	Janjgir - Champa	Malkharoda	Limgaon	0.504651	21° 55' 39.544" N	83° 2' 37.030" E
669	Raigarh	Kharsia	Jaimura	0.766568	21° 55' 31.965" N	83° 12' 29.398" E
670	Janjgir - Champa	Malkharoda	Bhanta	0.228327	21° 55' 38.151" N	83° 4' 35.562" E
671	Janjgir - Champa	Malkharoda	Kulba	1.538202	21° 55' 37.834" N	83° 6' 25.815" E
672	Raigarh	Kharsia	Karpipali	0.100281	21° 55' 35.268" N	83° 10' 23.336" E
673	Janjgir - Champa	Malkharoda	Parsa	0.808795	21° 55' 40.450" N	83° 3' 46.185" E
674	Raigarh	Kharsia	Tayang	0.442598	21° 55' 33.946" N	83° 13' 0.536" E
675	Janjgir - Champa	Malkharoda	Bandora	1.700959	21° 55' 43.223" N	83° 1' 14.946" E
676	Janjgir - Champa	Malkharoda	Kudhari	0.219801	21° 55' 39.648" N	83° 6' 19.395" E
677	Janjgir - Champa	Dabhra	Benipali	0.323462	21° 55' 39.227" N	83° 7' 16.082" E
678	Janjgir - Champa	Malkharoda	Charouda	0.876323	21° 55' 44.451" N	83° 1' 36.370" E
679	Janjgir - Champa	Malkharoda	Parsa	0.206484	21° 55' 43.079" N	83° 3' 34.133" E
680	Janjgir - Champa	Malkharoda	Parsa	1.277957	21° 55' 43.801" N	83° 3' 28.144" E
681	Raigarh	Kharsia	Jaimura	1.320681	21° 55' 36.941" N	83° 12' 29.371" E
682	Janjgir - Champa	Dabhra	Benipali	0.462612	21° 55' 41.828" N	83° 7' 3.077" E
683	Janjgir - Champa	Malkharoda	Bhanta	0.128452	21° 55' 43.639" N	83° 4' 58.618" E
684	Janjgir - Champa	Malkharoda	Limgaon	1.796002	21° 55' 45.653" N	83° 2' 25.298" E
685	Raigarh	Kharsia	Karpipali	1.655484	21° 55' 40.235" N	83° 9' 35.736" E
686	Raigarh	Kharsia	Adajhar	0.454938	21° 55' 41.392" N	83° 8' 24.755" E
687	Janjgir - Champa	Malkharoda	Kudhari	0.325243	21° 55' 44.436" N	83° 5' 38.946" E
688	Raigarh	Kharsia	Karpipali	0.558083	21° 55' 41.150" N	83° 9' 53.750" E
689	Raigarh	Kharsia	Adajhar	0.940636	21° 55' 42.739" N	83° 8' 16.644" E
690	Raigarh	Kharsia	Basanpali	1.525624	21° 55' 41.274" N	83° 10' 48.563" E
691	Janjgir - Champa	Malkharoda	Limgaon	1.367997	21° 55' 47.746" N	83° 2' 43.787" E
692	Raigarh	Kharsia	Jaimura	0.075286	21° 55' 40.478" N	83° 12' 32.671" E
693	Janjgir - Champa	Malkharoda	Bhanta	0.400185	21° 55' 46.691" N	83° 5' 4.290" E
694	Raigarh	Kharsia	Karpipali	0.366497	21° 55' 43.354" N	83° 9' 37.141" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
695	Raigarh	Kharsia	Tayang	0.183882	21° 55' 41.003" N	83° 13' 27.619" E
696	Raigarh	Kharsia	Jaimura	0.694603	21° 55' 42.020" N	83° 12' 28.382" E
697	Janjgir - Champa	Malkharoda	Limgaon	1.189838	21° 55' 50.201" N	83° 2' 38.388" E
698	Raigarh	Kharsia	Sondka	1.545821	21° 55' 43.891" N	83° 11' 31.058" E
699	Janjgir - Champa	Malkharoda	Bandora	0.779237	21° 55' 51.799" N	83° 1' 14.631" E
700	Raigarh	Kharsia	Jaimura	0.136782	21° 55' 43.312" N	83° 12' 45.204" E
701	Janjgir - Champa	Malkharoda	Bhanta	0.360171	21° 55' 52.062" N	83° 4' 33.079" E
702	Raigarh	Kharsia	Kalmi	1.037135	21° 55' 51.919" N	83° 7' 17.593" E
703	Janjgir - Champa	Malkharoda	Bhanta	0.752785	21° 55' 55.545" N	83° 4' 11.868" E
704	Janjgir - Champa	Malkharoda	Bhanta	0.077954	21° 55' 56.116" N	83° 4' 17.197" E
705	Janjgir - Champa	Malkharoda	Kudhari	1.009268	21° 55' 56.712" N	83° 6' 28.287" E
706	Raigarh	Kharsia	Basanpali	0.151716	21° 55' 53.438" N	83° 10' 51.845" E
707	Raigarh	Kharsia	Karpipali	3.376714	21° 55' 54.777" N	83° 9' 17.081" E
708	Janjgir - Champa	Malkharoda	Kudhari	1.135169	21° 55' 57.329" N	83° 6' 8.755" E
709	Raigarh	Kharsia	Tayang	0.52285	21° 55' 51.948" N	83° 13' 12.323" E
710	Janjgir - Champa	Malkharoda	Faguram	0.666187	21° 55' 58.283" N	83° 5' 29.588" E
711	Raigarh	Kharsia	Sondka	0.75108	21° 55' 53.500" N	83° 11' 44.098" E
712	Janjgir - Champa	Malkharoda	Darimuda	0.772487	21° 56' 0.222" N	83° 3' 20.672" E
713	Janjgir - Champa	Malkharoda	Darimuda	1.297409	21° 56' 0.465" N	83° 3' 35.274" E
714	Janjgir - Champa	Malkharoda	Bhanta	0.999011	21° 56' 0.847" N	83° 4' 34.273" E
715	Raigarh	Kharsia	Adajhar	0.367563	21° 55' 58.682" N	83° 8' 25.074" E
716	Janjgir - Champa	Malkharoda	Kudhari	3.253683	21° 56' 1.198" N	83° 6' 30.397" E
717	Janjgir - Champa	Malkharoda	Bandora	1.166036	21° 56' 5.932" N	83° 1' 14.138" E
718	Raigarh	Kharsia	Jaimura	0.995808	21° 55' 57.721" N	83° 12' 31.097" E
719	Raigarh	Kharsia	Basnajhar	0.233391	21° 55' 59.736" N	83° 10' 9.988" E
720	Janjgir - Champa	Malkharoda	Darimuda	1.347748	21° 56' 5.293" N	83° 3' 17.780" E
721	Raigarh	Kharsia	Sondka	0.849697	21° 55' 59.891" N	83° 11' 44.463" E
722	Raigarh	Kharsia	Sonbarsa	0.700976	21° 56' 2.949" N	83° 8' 5.815" E
723	Janjgir - Champa	Malkharoda	Bhanta	0.570889	21° 56' 6.376" N	83° 4' 20.651" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
724	Janjgir - Champa	Malkharoda	Limgaon	0.413409	21° 56' 7.820" N	83° 2' 33.916" E
725	Janjgir - Champa	Malkharoda	Bhanta	0.73155	21° 56' 5.999" N	83° 5' 9.754" E
726	Janjgir - Champa	Malkharoda	Darimuda	0.24658	21° 56' 9.885" N	83° 3' 7.257" E
727	Raigarh	Kharsia	Adajhar	0.228721	21° 56' 6.610" N	83° 8' 27.653" E
728	Raigarh	Kharsia	Sondka	0.319815	21° 56' 4.202" N	83° 11' 30.408" E
729	Janjgir - Champa	Malkharoda	Faguram	1.19984	21° 56' 9.540" N	83° 5' 33.044" E
730	Raigarh	Kharsia	Adajhar	0.58212	21° 56' 7.704" N	83° 8' 41.348" E
731	Raigarh	Kharsia	Kalmi	1.619631	21° 56' 10.146" N	83° 7' 3.858" E
732	Janjgir - Champa	Malkharoda	Bhanta	1.604983	21° 56' 12.283" N	83° 4' 40.517" E
733	Raigarh	Kharsia	Basanpali	0.773586	21° 56' 7.640" N	83° 10' 59.254" E
734	Janjgir - Champa	Malkharoda	Kudhari	0.396789	21° 56' 12.326" N	83° 6' 1.147" E
735	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.495954	21° 56' 15.675" N	83° 1' 43.878" E
736	Raigarh	Kharsia	Basnajhar	0.427176	21° 56' 9.960" N	83° 9' 38.368" E
737	Raigarh	Kharsia	Basnajhar	0.218515	21° 56' 10.650" N	83° 9' 35.260" E
738	Janjgir - Champa	Malkharoda	Darimuda	1.121146	21° 56' 15.564" N	83° 3' 18.084" E
739	Raigarh	Kharsia	Sondka	0.865707	21° 56' 10.050" N	83° 11' 18.518" E
740	Raigarh	Kharsia	Kalmi	0.831494	21° 56' 13.630" N	83° 6' 56.444" E
741	Raigarh	Kharsia	Basnajhar	0.180883	21° 56' 11.620" N	83° 9' 38.353" E
742	Raigarh	Kharsia	Basnajhar	0.101831	21° 56' 12.040" N	83° 9' 33.142" E
743	Raigarh	Kharsia	Basnajhar	0.263216	21° 56' 12.637" N	83° 9' 41.291" E
744	Janjgir - Champa	Malkharoda	Sanjari	0.942441	21° 56' 17.956" N	83° 3' 1.090" E
745	Janjgir - Champa	Malkharoda	Bhanta	1.385187	21° 56' 17.129" N	83° 4' 38.623" E
746	Raigarh	Kharsia	Basnajhar	0.717646	21° 56' 13.684" N	83° 9' 36.244" E
747	Raigarh	Kharsia	Basanpali	2.234394	21° 56' 12.682" N	83° 10' 55.759" E
748	Janjgir - Champa	Malkharoda	Bhanta	2.812085	21° 56' 17.810" N	83° 4' 44.595" E
749	Raigarh	Kharsia	Basnajhar	0.620506	21° 56' 14.439" N	83° 9' 44.179" E
750	Raigarh	Kharsia	Kalmi	0.114835	21° 56' 16.727" N	83° 6' 56.577" E
751	Raigarh	Kharsia	Sonbarsa	0.350931	21° 56' 17.866" N	83° 7' 56.582" E
752	Raigarh	Kharsia	Sondka	0.182307	21° 56' 15.160" N	83° 11' 23.122" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
753	Janjgir - Champa	Malkharoda	Darimuda	0.33719	21° 56' 22.295" N	83° 3' 21.286" E
754	Janjgir - Champa	Malkharoda	Bhanta	1.617965	21° 56' 21.863" N	83° 4' 19.702" E
755	Raigarh	Kharsia	Basanpali	0.191395	21° 56' 16.988" N	83° 10' 52.185" E
756	Raigarh	Kharsia	Jaimuda	0.831376	21° 56' 14.732" N	83° 13' 46.193" E
757	Raigarh	Kharsia	Sondka	0.217791	21° 56' 17.389" N	83° 11' 15.004" E
758	Janjgir - Champa	Malkharoda	Bhanta	1.171424	21° 56' 25.275" N	83° 4' 34.181" E
759	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.769569	21° 56' 27.779" N	83° 1' 35.072" E
760	Janjgir - Champa	Malkharoda	Faguram	0.098319	21° 56' 25.521" N	83° 5' 36.323" E
761	Raigarh	Kharsia	Sonbarsa	1.018544	21° 56' 23.657" N	83° 8' 10.106" E
762	Raigarh	Kharsia	Sondka	0.106724	21° 56' 21.350" N	83° 11' 23.078" E
763	Raigarh	Kharsia	Jaimura	0.198925	21° 56' 21.020" N	83° 12' 8.982" E
764	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.419125	21° 56' 29.231" N	83° 1' 52.761" E
765	Raigarh	Kharsia	Sondka	0.883465	21° 56' 21.766" N	83° 11' 38.297" E
766	Raigarh	Kharsia	Adajhar	1.395543	21° 56' 24.178" N	83° 8' 41.459" E
767	Janjgir - Champa	Malkharoda	Bhanta	0.888057	21° 56' 27.946" N	83° 4' 23.902" E
768	Raigarh	Kharsia	Basnajhar	0.64045	21° 56' 24.112" N	83° 10' 0.877" E
769	Raigarh	Kharsia	Sondka	0.121544	21° 56' 23.298" N	83° 11' 30.307" E
770	Janjgir - Champa	Malkharoda	Banjaree	1.815517	21° 56' 31.013" N	83° 2' 30.182" E
771	Janjgir - Champa	Malkharoda	Toulipali	0.838162	21° 56' 31.990" N	83° 4' 10.401" E
772	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.374983	21° 56' 34.241" N	83° 1' 26.342" E
773	Raigarh	Kharsia	Basnajhar	1.039509	21° 56' 28.297" N	83° 9' 55.758" E
774	Raigarh	Kharsia	Basnajhar	0.252621	21° 56' 29.638" N	83° 10' 1.132" E
775	Janjgir - Champa	Malkharoda	Banjaree	0.664405	21° 56' 36.233" N	83° 2' 42.378" E
776	Raigarh	Kharsia	Sonbarsa	0.267281	21° 56' 31.941" N	83° 8' 26.952" E
777	Janjgir - Champa	Malkharoda	Toulipali	0.729336	21° 56' 38.090" N	83° 3' 23.071" E
778	Raigarh	Kharsia	Basnajhar	5.066104	21° 56' 34.705" N	83° 9' 55.501" E
779	Janjgir - Champa	Malkharoda	Jharra	0.225029	21° 56' 38.539" N	83° 4' 36.836" E
780	Raigarh	Kharsia	Sonbarsa	15.743332	21° 56' 36.649" N	83° 8' 12.927" E
781	Janjgir - Champa	Malkharoda	Jharra	11.650656	21° 56' 38.602" N	83° 4' 45.799" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
782	Janjgir - Champa	Malkharoda	Toulipali	0.261496	21° 56' 39.894" N	83° 4' 6.080" E
783	Raigarh	Kharsia	Ful Bandhiya	0.302445	21° 56' 34.732" N	83° 10' 59.185" E
784	Raigarh	Kharsia	Sonbarsa	0.844263	21° 56' 37.255" N	83° 8' 29.125" E
785	Janjgir - Champa	Malkharoda	Adbhar (NP)	4.506715	21° 56' 43.450" N	83° 1' 30.570" E
786	Raigarh	Kharsia	Pandripani	1.722303	21° 56' 35.699" N	83° 11' 35.006" E
787	Janjgir - Champa	Malkharoda	Toulipali	1.534673	21° 56' 41.528" N	83° 4' 16.705" E
788	Janjgir - Champa	Malkharoda	Banjaree	0.413645	21° 56' 42.989" N	83° 2' 30.254" E
789	Raigarh	Kharsia	Basnajhar	0.450483	21° 56' 37.748" N	83° 9' 35.743" E
790	Raigarh	Kharsia	Ful Bandhiya	1.037625	21° 56' 36.583" N	83° 11' 20.597" E
791	Raigarh	Kharsia	Basnajhar	0.485111	21° 56' 39.769" N	83° 9' 47.583" E
792	Raigarh	Kharsia	Jaimuda	1.845621	21° 56' 37.555" N	83° 13' 33.865" E
793	Raigarh	Kharsia	Bhainapara	0.712875	21° 56' 42.174" N	83° 8' 26.955" E
794	Janjgir - Champa	Malkharoda	Faguram	1.266279	21° 56' 45.227" N	83° 5' 14.521" E
795	Raigarh	Kharsia	Ful Bandhiya	0.256274	21° 56' 41.938" N	83° 10' 27.548" E
796	Janjgir - Champa	Malkharoda	Faguram	0.358523	21° 56' 46.384" N	83° 4' 53.739" E
797	Janjgir - Champa	Malkharoda	Faguram	1.445351	21° 56' 46.105" N	83° 5' 25.745" E
798	Raigarh	Kharsia	Jaimuda	0.135507	21° 56' 39.655" N	83° 13' 40.030" E
799	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.745013	21° 56' 48.909" N	83° 1' 48.992" E
800	Raigarh	Kharsia	Ful Bandhiya	0.453407	21° 56' 42.310" N	83° 10' 56.292" E
801	Raigarh	Kharsia	Ful Bandhiya	0.478684	21° 56' 43.517" N	83° 10' 37.015" E
802	Raigarh	Kharsia	Ful Bandhiya	0.936012	21° 56' 43.569" N	83° 10' 34.089" E
803	Raigarh	Kharsia	Chhote Mudpar	0.794065	21° 56' 47.458" N	83° 6' 41.524" E
804	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.838233	21° 56' 51.166" N	83° 1' 57.171" E
805	Janjgir - Champa	Malkharoda	Faguram	1.390302	21° 56' 49.071" N	83° 6' 1.233" E
806	Janjgir - Champa	Malkharoda	Jharra	0.708822	21° 56' 51.176" N	83° 3' 52.539" E
807	Janjgir - Champa	Malkharoda	Banjaree	10.586526	21° 56' 53.294" N	83° 2' 11.436" E
808	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.296465	21° 56' 53.354" N	83° 1' 47.862" E
809	Janjgir - Champa	Malkharoda	Jharra	1.249814	21° 56' 51.464" N	83° 4' 20.363" E
810	Raigarh	Kharsia	Pandripani	1.078971	21° 56' 45.760" N	83° 11' 58.581" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
811	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.791234	21° 56' 54.941" N	83° 1' 44.054" E
812	Raigarh	Kharsia	Ful Bandhiya	0.692247	21° 56' 48.634" N	83° 10' 34.462" E
813	Janjgir - Champa	Malkharoda	Karrapali	0.425639	21° 56' 54.449" N	83° 3' 23.178" E
814	Raigarh	Kharsia	Ful Bandhiya	1.283808	21° 56' 48.638" N	83° 11' 23.777" E
815	Janjgir - Champa	Malkharoda	Banjaree	0.651518	21° 56' 55.824" N	83° 2' 42.393" E
816	Janjgir - Champa	Malkharoda	Faguram	1.334041	21° 56' 53.771" N	83° 5' 59.624" E
817	Janjgir - Champa	Malkharoda	Karrapali	1.163565	21° 56' 55.683" N	83° 3' 38.333" E
818	Raigarh	Kharsia	Chhote Mudpar	0.560513	21° 56' 53.739" N	83° 6' 23.885" E
819	Raigarh	Kharsia	Bhainapara	1.381655	21° 56' 53.864" N	83° 7' 12.281" E
820	Raigarh	Kharsia	Pandripani	1.504388	21° 56' 50.227" N	83° 11' 58.001" E
821	Janjgir - Champa	Malkharoda	Faguram	1.140719	21° 56' 55.677" N	83° 6' 3.918" E
822	Janjgir - Champa	Malkharoda	Adbhar (NP)	2.87306	21° 56' 59.799" N	83° 1' 38.718" E
823	Janjgir - Champa	Malkharoda	Faguram	1.890024	21° 56' 57.356" N	83° 5' 13.216" E
824	Janjgir - Champa	Malkharoda	Faguram	0.953363	21° 56' 57.188" N	83° 5' 33.244" E
825	Janjgir - Champa	Malkharoda	Jharra	0.260604	21° 56' 58.202" N	83° 4' 34.568" E
826	Janjgir - Champa	Malkharoda	Faguram	2.961335	21° 56' 58.477" N	83° 5' 7.673" E
827	Raigarh	Kharsia	Chhote Mudpar	0.741167	21° 56' 58.608" N	83° 6' 31.451" E
828	Janjgir - Champa	Malkharoda	Banjaree	0.555789	21° 57' 1.458" N	83° 3' 0.030" E
829	Raigarh	Kharsia	Bhainapara	1.045979	21° 56' 58.230" N	83° 7' 34.728" E
830	Janjgir - Champa	Malkharoda	Jharra	0.814351	21° 57' 0.689" N	83° 4' 22.840" E
831	Janjgir - Champa	Malkharoda	Faguram	2.951024	21° 57' 0.968" N	83° 5' 31.266" E
832	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.910464	21° 57' 4.144" N	83° 1' 35.198" E
833	Raigarh	Kharsia	Ful Bandhiya	0.130031	21° 56' 58.313" N	83° 10' 25.351" E
834	Raigarh	Kharsia	Kukri Jhariya	0.259743	21° 56' 58.463" N	83° 10' 20.593" E
835	Raigarh	Kharsia	Pandripani	0.930537	21° 56' 57.121" N	83° 12' 7.873" E
836	Raigarh	Kharsia	Basnajhar	1.605564	21° 56' 59.181" N	83° 9' 43.399" E
837	Raigarh	Kharsia	Bhainapara	0.319445	21° 57' 1.013" N	83° 7' 45.742" E
838	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.313216	21° 57' 5.891" N	83° 2' 0.219" E
839	Raigarh	Kharsia	Ful Bandhiya	0.174811	21° 56' 59.793" N	83° 10' 22.569" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
840	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.959001	21° 57' 6.701" N	83° 1' 45.417" E
841	Raigarh	Kharsia	Chhote Mudpar	1.354478	21° 57' 3.616" N	83° 6' 31.215" E
842	Raigarh	Kharsia	Bhainapara	0.195838	21° 57' 2.861" N	83° 8' 5.952" E
843	Raigarh	Kharsia	Mura	0.098147	21° 56' 58.892" N	83° 13' 17.413" E
844	Janjgir - Champa	Malkharoda	Faguram	0.350091	21° 57' 4.805" N	83° 6' 7.435" E
845	Janjgir - Champa	Malkharoda	Karrapali	1.966088	21° 57' 7.551" N	83° 3' 32.270" E
846	Janjgir - Champa	Malkharoda	Adbhar (NP)	3.38397	21° 57' 8.555" N	83° 1' 39.129" E
847	Raigarh	Kharsia	Chhote Mudpar	0.158238	21° 57' 4.906" N	83° 6' 42.476" E
848	Raigarh	Kharsia	Mura	0.148267	21° 57' 0.156" N	83° 13' 2.697" E
849	Raigarh	Kharsia	Kukri Jhariya	3.446619	21° 57' 4.114" N	83° 10' 5.291" E
850	Janjgir - Champa	Malkharoda	Faguram	0.658503	21° 57' 7.201" N	83° 6' 0.396" E
851	Janjgir - Champa	Malkharoda	Karrapali	2.375086	21° 57' 9.354" N	83° 3' 14.432" E
852	Janjgir - Champa	Malkharoda	Faguram	0.802432	21° 57' 9.793" N	83° 5' 13.475" E
853	Raigarh	Kharsia	Pandripani	0.97218	21° 57' 5.421" N	83° 11' 40.577" E
854	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.577368	21° 57' 12.918" N	83° 2' 15.462" E
855	Raigarh	Kharsia	Chhote Mudpar	2.175523	21° 57' 9.841" N	83° 6' 31.649" E
856	Janjgir - Champa	Malkharoda	Karrapali	0.329352	21° 57' 12.626" N	83° 3' 48.028" E
857	Raigarh	Kharsia	Khairpali	1.157318	21° 57' 7.350" N	83° 10' 54.138" E
858	Raigarh	Kharsia	Chhote Mudpar	0.281967	21° 57' 12.054" N	83° 6' 21.787" E
859	Janjgir - Champa	Malkharoda	Karrapali	0.315905	21° 57' 14.352" N	83° 3' 30.497" E
860	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.567032	21° 57' 15.878" N	83° 1' 40.488" E
861	Raigarh	Kharsia	Khairpali	1.096132	21° 57' 9.782" N	83° 11' 19.618" E
862	Raigarh	Kharsia	Bhainapara	1.512024	21° 57' 13.042" N	83° 7' 18.032" E
863	Raigarh	Kharsia	Bhainapara	0.580711	21° 57' 12.665" N	83° 7' 54.106" E
864	Janjgir - Champa	Malkharoda	Adbhar (NP)	1.162676	21° 57' 17.363" N	83° 1' 55.008" E
865	Raigarh	Kharsia	Bhaluchuwa	1.095369	21° 57' 12.635" N	83° 8' 52.359" E
866	Janjgir - Champa	Malkharoda	Jharra	0.453287	21° 57' 16.364" N	83° 4' 15.083" E
867	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.582299	21° 57' 17.972" N	83° 2' 15.153" E
868	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.239137	21° 57' 20.107" N	83° 2' 2.464" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
869	Raigarh	Kharsia	Bhainapara	1.516357	21° 57' 17.344" N	83° 7' 2.067" E
870	Raigarh	Kharsia	Kanmura	0.332516	21° 57' 13.200" N	83° 12' 29.400" E
871	Janjgir - Champa	Malkharoda	Adbhar (NP)	1.286036	21° 57' 21.830" N	83° 1' 41.635" E
872	Raigarh	Kharsia	Khairpali	1.333852	21° 57' 14.520" N	83° 11' 26.980" E
873	Raigarh	Kharsia	Bhainapara	0.874843	21° 57' 19.313" N	83° 8' 5.127" E
874	Janjgir - Champa	Malkharoda	Sapiya	0.718545	21° 57' 22.037" N	83° 4' 57.342" E
875	Raigarh	Kharsia	Mura	1.800276	21° 57' 16.220" N	83° 13' 3.745" E
876	Janjgir - Champa	Malkharoda	Khartal	1.320223	21° 57' 24.180" N	83° 3' 31.005" E
877	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.705208	21° 57' 27.128" N	83° 1' 43.572" E
878	Raigarh	Kharsia	Gidha	0.421181	21° 57' 25.196" N	83° 6' 50.766" E
879	Janjgir - Champa	Malkharoda	Adbhar (NP)	7.428623	21° 57' 29.075" N	83° 2' 16.799" E
880	Raigarh	Kharsia	Bhaluchuwa	0.179359	21° 57' 23.997" N	83° 9' 4.691" E
881	Raigarh	Kharsia	Pandripani	1.20522	21° 57' 21.943" N	83° 12' 8.942" E
882	Raigarh	Kharsia	Chhote Mudpar	1.275637	21° 57' 27.038" N	83° 6' 16.549" E
883	Raigarh	Kharsia	Gidha	0.363248	21° 57' 25.983" N	83° 8' 2.270" E
884	Janjgir - Champa	Malkharoda	Sapiya	1.142384	21° 57' 28.610" N	83° 4' 44.351" E
885	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.628292	21° 57' 30.856" N	83° 2' 9.959" E
886	Janjgir - Champa	Malkharoda	Adbhar (NP)	1.060421	21° 57' 31.506" N	83° 2' 26.928" E
887	Raigarh	Kharsia	Amapali	1.028663	21° 57' 25.460" N	83° 10' 58.137" E
888	Raigarh	Kharsia	Bhaluchuwa	0.224711	21° 57' 28.115" N	83° 9' 1.700" E
889	Raigarh	Kharsia	Kunkuni	1.083148	21° 57' 28.707" N	83° 9' 25.960" E
890	Raigarh	Kharsia	Mura	0.457731	21° 57' 25.890" N	83° 13' 0.091" E
891	Raigarh	Kharsia	Gidha	2.318765	21° 57' 30.677" N	83° 7' 18.720" E
892	Janjgir - Champa	Malkharoda	Tata	0.565651	21° 57' 35.159" N	83° 2' 59.879" E
893	Raigarh	Kharsia	Khairpali	0.465828	21° 57' 28.627" N	83° 11' 32.698" E
894	Raigarh	Kharsia	Kunkuni	0.601111	21° 57' 31.794" N	83° 9' 25.536" E
895	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.603231	21° 57' 37.393" N	83° 2' 37.691" E
896	Raigarh	Kharsia	Chhote Mudpar	0.501511	21° 57' 34.487" N	83° 6' 30.745" E
897	Janjgir - Champa	Malkharoda	Khartal	0.261975	21° 57' 38.537" N	83° 3' 23.608" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
898	Janjgir - Champa	Malkharoda	Sapiya	0.698678	21° 57' 37.525" N	83° 4' 53.878" E
899	Raigarh	Kharsia	Amapali	1.044526	21° 57' 33.708" N	83° 10' 59.210" E
900	Raigarh	Kharsia	Mura	0.575568	21° 57' 32.113" N	83° 13' 16.797" E
901	Janjgir - Champa	Malkharoda	Sapiya	25.667684	21° 57' 39.515" N	83° 4' 15.357" E
902	Raigarh	Kharsia	Gidha	0.912781	21° 57' 37.217" N	83° 8' 1.913" E
903	Janjgir - Champa	Malkharoda	Tata	3.665909	21° 57' 41.198" N	83° 2' 52.954" E
904	Janjgir - Champa	Malkharoda	Sapiya	1.18421	21° 57' 39.857" N	83° 5' 2.670" E
905	Raigarh	Kharsia	Kanmura	0.116277	21° 57' 34.395" N	83° 12' 32.428" E
906	Raigarh	Kharsia	Kunkuni	0.332232	21° 57' 37.072" N	83° 9' 13.965" E
907	Raigarh	Kharsia	Gidha	0.487905	21° 57' 38.788" N	83° 7' 28.685" E
908	Raigarh	Kharsia	Kunkuni	0.760161	21° 57' 39.137" N	83° 9' 19.798" E
909	Raigarh	Kharsia	Gidha	1.55169	21° 57' 41.876" N	83° 7' 29.504" E
910	Raigarh	Kharsia	Kanmura	0.491525	21° 57' 38.837" N	83° 12' 36.550" E
911	Raigarh	Kharsia	Anjoripali	1.276386	21° 57' 44.840" N	83° 5' 53.806" E
912	Raigarh	Kharsia	Gidha	0.137008	21° 57' 44.374" N	83° 6' 35.981" E
913	Janjgir - Champa	Malkharoda	Sapiya	1.446609	21° 57' 45.833" N	83° 4' 54.452" E
914	Raigarh	Kharsia	Anjoripali	1.023417	21° 57' 47.231" N	83° 6' 3.075" E
915	Janjgir - Champa	Malkharoda	Bokrel	0.496922	21° 57' 49.009" N	83° 4' 3.192" E
916	Raigarh	Kharsia	Gidha	5.738277	21° 57' 46.909" N	83° 7' 12.794" E
917	Raigarh	Kharsia	Temtema	0.53056	21° 57' 44.543" N	83° 12' 2.676" E
918	Janjgir - Champa	Malkharoda	Sapiya	0.589163	21° 57' 49.675" N	83° 5' 44.263" E
919	Janjgir - Champa	Malkharoda	Tata	0.759407	21° 57' 52.033" N	83° 2' 57.778" E
920	Raigarh	Kharsia	Gidha	3.679063	21° 57' 49.305" N	83° 7' 33.100" E
921	Janjgir - Champa	Malkharoda	Sapiya	0.480555	21° 57' 51.977" N	83° 5' 0.216" E
922	Janjgir - Champa	Malkharoda	Sapiya	1.292427	21° 57' 52.389" N	83° 4' 39.061" E
923	Janjgir - Champa	Malkharoda	Sapiya	0.363336	21° 57' 52.788" N	83° 5' 45.099" E
924	Janjgir - Champa	Malkharoda	Tata	1.044543	21° 57' 55.125" N	83° 3' 3.449" E
925	Raigarh	Kharsia	Kunkuni	81.221064	21° 57' 52.246" N	83° 9' 44.347" E
926	Janjgir - Champa	Malkharoda	Sapiya	0.723693	21° 57' 53.822" N	83° 5' 11.281" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
927	Raigarh	Kharsia	Gidha	0.424734	21° 57' 52.681" N	83° 6' 53.231" E
928	Janjgir - Champa	Malkharoda	Bokrel	2.197699	21° 57' 55.198" N	83° 3' 55.231" E
929	Raigarh	Kharsia	Gidha	0.389889	21° 57' 53.174" N	83° 7' 38.614" E
930	Janjgir - Champa	Malkharoda	Sapiya	0.7752	21° 57' 55.389" N	83° 5' 0.265" E
931	Raigarh	Kharsia	Amapali	0.850527	21° 57' 51.305" N	83° 10' 50.701" E
932	Raigarh	Kharsia	Anjoripali	1.300001	21° 57' 55.534" N	83° 5' 51.212" E
933	Raigarh	Kharsia	Gidha	0.640135	21° 57' 54.277" N	83° 7' 58.600" E
934	Janjgir - Champa	Malkharoda	Sapiya	1.624987	21° 57' 56.766" N	83° 4' 44.858" E
935	Janjgir - Champa	Malkharoda	Bokrel	0.509966	21° 57' 58.482" N	83° 3' 50.998" E
936	Janjgir - Champa	Malkharoda	Adbhar (NP)	0.488679	21° 57' 59.665" N	83° 2' 27.959" E
937	Raigarh	Kharsia	Kunkuni	0.15555	21° 57' 54.983" N	83° 8' 52.003" E
938	Janjgir - Champa	Malkharoda	Sapiya	1.069655	21° 57' 59.570" N	83° 4' 47.165" E
939	Raigarh	Kharsia	Gidha	0.11966	21° 57' 58.514" N	83° 7' 9.183" E
940	Raigarh	Kharsia	Temtema	1.851747	21° 57' 55.132" N	83° 11' 48.161" E
941	Raigarh	Kharsia	Anjoripali	1.085048	21° 58' 1.297" N	83° 6' 10.389" E
942	Janjgir - Champa	Malkharoda	Khartal	1.559579	21° 58' 5.683" N	83° 3' 25.645" E
943	Raigarh	Kharsia	Kanmura	1.074297	21° 57' 59.275" N	83° 12' 16.448" E
944	Raigarh	Kharsia	Anjoripali	1.327508	21° 58' 4.282" N	83° 6' 29.508" E
945	Raigarh	Kharsia	Bramhanpali	1.40888	21° 58' 3.983" N	83° 7' 39.240" E
946	Janjgir - Champa	Malkharoda	Sapiya	0.860205	21° 58' 6.695" N	83° 4' 22.946" E
947	Raigarh	Kharsia	Bendo Jhariya	0.188976	21° 58' 4.042" N	83° 10' 52.387" E
948	Janjgir - Champa	Malkharoda	Bokrel	1.379687	21° 58' 10.155" N	83° 3' 52.559" E
949	Raigarh	Kharsia	Gidha	0.476583	21° 58' 7.915" N	83° 6' 59.595" E
950	Janjgir - Champa	Malkharoda	Sapiya	1.514637	21° 58' 10.054" N	83° 4' 37.351" E
951	Janjgir - Champa	Malkharoda	Bokrel	0.495521	21° 58' 13.413" N	83° 3' 48.826" E
952	Raigarh	Kharsia	Gidha	0.183279	21° 58' 11.417" N	83° 6' 34.937" E
953	Raigarh	Kharsia	Dumar Bhantha	0.984708	21° 58' 14.361" N	83° 3' 12.873" E
954	Janjgir - Champa	Malkharoda	Sapiya	4.825224	21° 58' 13.222" N	83° 5' 8.846" E
955	Raigarh	Kharsia	Bramhanpali	0.421246	21° 58' 11.789" N	83° 7' 31.848" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
956	Raigarh	Kharsia	Halahuli	1.03381	21° 58' 16.767" N	83° 2' 29.029" E
957	Janjgir - Champa	Malkharoda	Sapiya	1.515651	21° 58' 15.194" N	83° 4' 39.448" E
958	Raigarh	Kharsia	Anjoripali	0.294717	21° 58' 14.187" N	83° 6' 7.491" E
959	Raigarh	Kharsia	Raksapali	0.183758	21° 58' 8.677" N	83° 13' 8.003" E
960	Janjgir - Champa	Malkharoda	Chhatouna	0.659113	21° 58' 16.791" N	83° 3' 40.580" E
961	Raigarh	Kharsia	Anjoripali	1.392944	21° 58' 14.868" N	83° 6' 20.385" E
962	Raigarh	Kharsia	Halahuli	1.149333	21° 58' 17.694" N	83° 2' 50.698" E
963	Raigarh	Kharsia	Anjoripali	0.194764	21° 58' 16.160" N	83° 6' 32.405" E
964	Raigarh	Kharsia	Dumar Bhantha	6.266718	21° 58' 19.733" N	83° 3' 6.791" E
965	Raigarh	Kharsia	Anjoripali	1.106162	21° 58' 17.597" N	83° 6' 21.258" E
966	Raigarh	Kharsia	Dumar Bhantha	0.34254	21° 58' 20.194" N	83° 3' 25.406" E
967	Raigarh	Kharsia	Bendo Jhariya	0.570437	21° 58' 15.732" N	83° 10' 52.756" E
968	Raigarh	Kharsia	Bendo Jhariya	1.141477	21° 58' 17.638" N	83° 10' 47.243" E
969	Janjgir - Champa	Malkharoda	Chhatouna	1.047205	21° 58' 23.225" N	83° 3' 38.250" E
970	Raigarh	Kharsia	Anjoripali	0.206008	21° 58' 21.445" N	83° 6' 21.179" E
971	Raigarh	Kharsia	Ranisagar	4.921928	21° 58' 20.312" N	83° 8' 43.221" E
972	Raigarh	Kharsia	Bramhanpali	4.7886	21° 58' 23.098" N	83° 7' 14.886" E
973	Raigarh	Kharsia	Halahuli	0.367074	21° 58' 26.948" N	83° 2' 33.548" E
974	Janjgir - Champa	Malkharoda	Chhatouna	0.930367	21° 58' 28.163" N	83° 3' 56.524" E
975	Raigarh	Kharsia	Halahuli	3.107689	21° 58' 29.100" N	83° 2' 43.366" E
976	Janjgir - Champa	Malkharoda	Sapiya	1.06808	21° 58' 28.476" N	83° 4' 48.680" E
977	Janjgir - Champa	Malkharoda	Sapiya	0.991053	21° 58' 28.908" N	83° 4' 56.334" E
978	Raigarh	Kharsia	Halahuli	0.755217	21° 58' 31.420" N	83° 2' 32.576" E
979	Raigarh	Kharsia	Ranisagar	0.315549	21° 58' 27.077" N	83° 8' 25.791" E
980	Raigarh	Kharsia	Kunkuni	0.556688	21° 58' 28.112" N	83° 9' 44.591" E
981	Raigarh	Kharsia	Halahuli	2.814354	21° 58' 34.044" N	83° 2' 49.030" E
982	Raigarh	Kharsia	Makri	0.824839	21° 58' 33.162" N	83° 4' 35.952" E
983	Raigarh	Kharsia	Bramhanpali	2.236267	21° 58' 31.080" N	83° 7' 40.184" E
984	Raigarh	Kharsia	Makri	0.306096	21° 58' 34.128" N	83° 4' 42.925" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
985	Raigarh	Kharsia	Chaple	0.687685	21° 58' 29.495" N	83° 11' 31.897" E
986	Raigarh	Kharsia	Ghaghara	0.504054	21° 58' 36.670" N	83° 4' 16.956" E
987	Raigarh	Kharsia	Bramhanpali	11.809828	21° 58' 35.946" N	83° 7' 57.234" E
988	Raigarh	Kharsia	Halahuli	0.442133	21° 58' 40.896" N	83° 2' 38.343" E
989	Raigarh	Kharsia	Ghaghara	2.182829	21° 58' 40.803" N	83° 4' 43.941" E
990	Raigarh	Kharsia	Kunkuni	0.379435	21° 58' 37.237" N	83° 9' 36.729" E
991	Raigarh	Kharsia	Kharsia (M)	2.048149	21° 58' 40.153" N	83° 5' 57.698" E
992	Raigarh	Kharsia	Kunkuni	0.483077	21° 58' 37.597" N	83° 9' 47.418" E
993	Raigarh	Kharsia	Makri	1.002238	21° 58' 44.108" N	83° 5' 0.273" E
994	Raigarh	Kharsia	Kharsia (M)	0.586715	21° 58' 42.616" N	83° 6' 27.826" E
995	Raigarh	Kharsia	Chaple	0.584044	21° 58' 38.989" N	83° 11' 56.163" E
996	Raigarh	Kharsia	Kharsia (M)	0.378922	21° 58' 44.112" N	83° 5' 58.222" E
997	Raigarh	Kharsia	Kharsia (M)	0.979475	21° 58' 43.920" N	83° 6' 35.471" E
998	Raigarh	Kharsia	Kunkuni	5.042578	21° 58' 43.763" N	83° 9' 43.698" E
999	Raigarh	Kharsia	Halahuli	0.525045	21° 58' 49.195" N	83° 2' 57.692" E
1000	Raigarh	Kharsia	Kharsia (M)	0.571115	21° 58' 47.243" N	83° 5' 38.255" E
1001	Raigarh	Kharsia	Ghaghara	2.456242	21° 58' 49.136" N	83° 4' 13.270" E
1002	Raigarh	Kharsia	Kharsia (M)	1.254429	21° 58' 47.892" N	83° 6' 22.211" E
1003	Raigarh	Kharsia	Sendripali	0.735172	21° 58' 44.131" N	83° 12' 25.729" E
1004	Raigarh	Kharsia	Ghaghara	0.673223	21° 58' 51.088" N	83° 4' 3.315" E
1005	Raigarh	Kharsia	Makri	0.366928	21° 58' 50.419" N	83° 5' 7.772" E
1006	Raigarh	Kharsia	Mauhapali	0.192516	21° 58' 49.263" N	83° 7' 4.458" E
1007	Raigarh	Kharsia	Kharsia (M)	0.50912	21° 58' 51.681" N	83° 6' 29.266" E
1008	Raigarh	Kharsia	Ghaghara	0.916114	21° 58' 53.727" N	83° 4' 15.053" E
1009	Raigarh	Kharsia	Kunkuni	0.508196	21° 58' 49.533" N	83° 9' 53.621" E
1010	Raigarh	Kharsia	Kharsia (M)	0.30708	21° 58' 52.026" N	83° 6' 44.530" E
1011	Raigarh	Kharsia	Makri	1.677889	21° 58' 53.855" N	83° 4' 48.356" E
1012	Raigarh	Kharsia	Chaple	0.845992	21° 58' 50.048" N	83° 11' 6.972" E
1013	Raigarh	Kharsia	Ghaghara	1.081609	21° 58' 56.054" N	83° 3' 36.526" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
1014	Raigarh	Kharsia	Kunkuni	0.506041	21° 58' 50.804" N	83° 9' 59.247" E
1015	Raigarh	Kharsia	Kharsia (M)	1.474192	21° 58' 54.858" N	83° 5' 48.539" E
1016	Raigarh	Kharsia	Kharsia (M)	10.258071	21° 58' 54.617" N	83° 6' 10.422" E
1017	Raigarh	Kharsia	Chaple	2.574479	21° 58' 50.974" N	83° 11' 38.142" E
1018	Raigarh	Kharsia	Ghaghara	0.139502	21° 58' 59.181" N	83° 3' 43.341" E
1019	Raigarh	Kharsia	Chaple	0.495807	21° 58' 53.786" N	83° 11' 31.270" E
1020	Raigarh	Kharsia	Ghaghara	0.555611	21° 59' 0.835" N	83° 4' 1.957" E
1021	Raigarh	Kharsia	Kharsia (M)	0.444167	21° 59' 0.726" N	83° 5' 53.573" E
1022	Raigarh	Kharsia	Mauhapali	2.298539	21° 59' 0.000" N	83° 7' 11.776" E
1023	Raigarh	Kharsia	Kunkuni	0.191446	21° 58' 58.376" N	83° 9' 50.220" E
1024	Raigarh	Kharsia	Ranisagar	0.748431	21° 58' 59.553" N	83° 8' 47.036" E
1025	Raigarh	Kharsia	Kunkuni	0.902823	21° 58' 59.347" N	83° 8' 56.462" E
1026	Raigarh	Kharsia	Ranisagar	0.844749	21° 58' 59.873" N	83° 8' 38.455" E
1027	Raigarh	Kharsia	Ghaghara	0.717938	21° 59' 3.376" N	83° 4' 39.258" E
1028	Raigarh	Kharsia	Kunkuni	0.301273	21° 59' 0.084" N	83° 9' 40.297" E
1029	Raigarh	Kharsia	Ratan Mahka	0.571557	21° 59' 3.855" N	83° 5' 12.513" E
1030	Raigarh	Kharsia	Ghaghara	1.378367	21° 59' 4.720" N	83° 4' 18.141" E
1031	Raigarh	Kharsia	Chaple	0.641304	21° 58' 59.499" N	83° 11' 31.155" E
1032	Raigarh	Kharsia	Kharsia (M)	1.203163	21° 59' 4.278" N	83° 5' 53.250" E
1033	Raigarh	Kharsia	Kunkuni	3.615915	21° 59' 3.552" N	83° 9' 21.472" E
1034	Raigarh	Kharsia	Kharsia (M)	1.946795	21° 59' 7.131" N	83° 5' 37.902" E
1035	Raigarh	Kharsia	Kharsia (M)	2.147388	21° 59' 7.599" N	83° 6' 24.564" E
1036	Raigarh	Kharsia	Ranisagar	0.553654	21° 59' 7.542" N	83° 8' 20.620" E
1037	Raigarh	Kharsia	Kharsia (M)	0.178592	21° 59' 9.808" N	83° 5' 41.426" E
1038	Raigarh	Kharsia	Kharsia (M)	1.559831	21° 59' 13.122" N	83° 5' 40.464" E
1039	Raigarh	Kharsia	Chaple	1.192558	21° 59' 9.929" N	83° 10' 58.431" E
1040	Raigarh	Kharsia	Kharsia (M)	0.582938	21° 59' 15.111" N	83° 5' 50.202" E
1041	Raigarh	Kharsia	Ghaghara	0.812011	21° 59' 16.163" N	83° 4' 28.862" E
1042	Raigarh	Kharsia	Kharsia (M)	2.337798	21° 59' 15.105" N	83° 6' 32.744" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
1043	Raigarh	Kharsia	Ranisagar	1.269253	21° 59' 13.885" N	83° 8' 34.431" E
1044	Raigarh	Kharsia	Mauhapali	0.638506	21° 59' 14.984" N	83° 7' 15.986" E
1045	Raigarh	Kharsia	Kharsia (M)	1.681658	21° 59' 18.387" N	83° 6' 7.610" E
1046	Raigarh	Kharsia	Ratan Mahka	0.796702	21° 59' 19.607" N	83° 5' 15.914" E
1047	Raigarh	Kharsia	Gopi Mahka	0.377462	21° 59' 19.421" N	83° 5' 36.658" E
1048	Raigarh	Kharsia	Gopi Mahka	1.069048	21° 59' 20.331" N	83° 5' 33.185" E
1049	Raigarh	Kharsia	Kharsia (M)	0.940127	21° 59' 20.336" N	83° 6' 0.706" E
1050	Raigarh	Kharsia	Kharsia (M)	0.290611	21° 59' 20.955" N	83° 5' 44.521" E
1051	Raigarh	Kharsia	Gopi Mahka	1.164208	21° 59' 23.081" N	83° 5' 16.041" E
1052	Raigarh	Kharsia	Kunkuni	1.616429	21° 59' 19.995" N	83° 10' 10.299" E
1053	Raigarh	Kharsia	Mauhapali	1.850796	21° 59' 23.649" N	83° 6' 59.259" E
1054	Raigarh	Kharsia	Kharsia (M)	0.881135	21° 59' 25.321" N	83° 6' 29.758" E
1055	Raigarh	Kharsia	Ranisagar	0.459159	21° 59' 23.772" N	83° 8' 38.814" E
1056	Raigarh	Kharsia	Bhelwadih	0.213793	21° 59' 27.004" N	83° 7' 32.779" E
1057	Raigarh	Kharsia	Telikot	0.242109	21° 59' 28.616" N	83° 5' 45.571" E
1058	Raigarh	Kharsia	Kunkuni	0.337724	21° 59' 26.002" N	83° 10' 0.867" E
1059	Raigarh	Kharsia	Bhagodih	0.590308	21° 59' 31.533" N	83° 3' 59.027" E
1060	Raigarh	Kharsia	Gopi Mahka	0.733136	21° 59' 32.345" N	83° 5' 0.764" E
1061	Raigarh	Kharsia	Kunkuni	0.170557	21° 59' 28.965" N	83° 10' 15.953" E
1062	Raigarh	Kharsia	Bade Dumarpali	1.155862	21° 59' 28.519" N	83° 11' 5.653" E
1063	Raigarh	Kharsia	Kunkuni	0.21747	21° 59' 29.317" N	83° 10' 12.329" E
1064	Raigarh	Kharsia	Telikot	5.608531	21° 59' 36.503" N	83° 5' 59.052" E
1065	Raigarh	Kharsia	Bhagodih	0.82974	21° 59' 40.854" N	83° 3' 53.724" E
1066	Raigarh	Kharsia	Kharsia (M)	1.125742	21° 59' 39.172" N	83° 6' 31.835" E
1067	Raigarh	Kharsia	Bhagodih	1.773295	21° 59' 46.814" N	83° 3' 55.856" E
1068	Raigarh	Kharsia	Telikot	1.349759	21° 59' 45.760" N	83° 5' 50.943" E
1069	Raigarh	Kharsia	Bade Dumarpali	1.217142	21° 59' 43.337" N	83° 10' 59.958" E
1070	Raigarh	Kharsia	Bade Dumarpali	0.366512	21° 59' 46.103" N	83° 10' 40.340" E
1071	Raigarh	Kharsia	Telikot	0.996527	21° 59' 52.159" N	83° 5' 40.989" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
1072	Raigarh	Kharsia	Chhote Dumarpali	0.104994	21° 59' 49.713" N	83° 10' 29.411" E
1073	Raigarh	Kharsia	Telikot	0.564939	21° 59' 55.220" N	83° 5' 58.056" E
1074	Raigarh	Kharsia	Bhelwadih	0.242274	21° 59' 54.201" N	83° 7' 39.921" E
1075	Raigarh	Kharsia	Telikot	0.509304	21° 59' 55.786" N	83° 6' 19.065" E
1076	Raigarh	Kharsia	Kharsia (M)	0.749163	21° 59' 56.084" N	83° 6' 29.540" E
1077	Raigarh	Kharsia	Bade Dumarpali	1.144198	21° 59' 53.278" N	83° 11' 1.225" E
1078	Raigarh	Kharsia	Rajghata	1.246813	21° 59' 55.084" N	83° 8' 52.010" E
1079	Raigarh	Kharsia	Rajghata	0.145211	21° 59' 55.743" N	83° 9' 20.277" E
1080	Raigarh	Kharsia	Telikot	0.605052	21° 59' 58.942" N	83° 5' 44.365" E
1081	Raigarh	Kharsia	Nawapara	2.048936	22° 0' 0.129" N	83° 4' 26.447" E
1082	Raigarh	Kharsia	Rajghata	0.257258	21° 59' 56.704" N	83° 9' 31.407" E
1083	Raigarh	Kharsia	Rajghata	0.451357	21° 59' 57.148" N	83° 9' 22.594" E
1084	Raigarh	Kharsia	Nawapara	0.84461	22° 0' 1.812" N	83° 4' 20.973" E
1085	Raigarh	Kharsia	Rajghata	0.198734	21° 59' 57.929" N	83° 9' 24.701" E
1086	Raigarh	Kharsia	Madanpur	1.005896	22° 0' 0.114" N	83° 6' 52.122" E
1087	Raigarh	Kharsia	Rajghata	0.919469	21° 59' 58.659" N	83° 9' 27.761" E
1088	Raigarh	Kharsia	Telikot	0.692157	22° 0' 1.970" N	83° 5' 44.556" E
1089	Raigarh	Kharsia	Chhote Dumarpali	0.548013	21° 59' 58.489" N	83° 10' 24.524" E
1090	Raigarh	Kharsia	Bhelwadih	0.254464	22° 0' 2.353" N	83° 7' 30.147" E
1091	Raigarh	Kharsia	Rajghata	0.343081	22° 0' 1.689" N	83° 9' 7.026" E
1092	Raigarh	Kharsia	Bhelwadih	0.534066	22° 0' 4.104" N	83° 7' 35.166" E
1093	Raigarh	Kharsia	Bhelwadih	0.740065	22° 0' 4.733" N	83° 7' 31.913" E
1094	Raigarh	Kharsia	Madanpur	0.88885	22° 0' 5.901" N	83° 6' 54.585" E
1095	Raigarh	Kharsia	Aurda	0.558642	22° 0' 7.964" N	83° 4' 57.261" E
1096	Raigarh	Kharsia	Banipathar	0.363549	22° 0' 6.264" N	83° 8' 9.154" E
1097	Raigarh	Kharsia	Telikot	0.284111	22° 0' 8.492" N	83° 6' 5.116" E
1098	Raigarh	Kharsia	Bade Dumarpali	0.427374	22° 0' 4.943" N	83° 11' 6.642" E
1099	Raigarh	Kharsia	Madanpur	0.26788	22° 0' 10.892" N	83° 7' 20.993" E
1100	Raigarh	Kharsia	Chhote Dumarpali	1.055103	22° 0' 8.837" N	83° 10' 9.381" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
1101	Raigarh	Kharsia	Aurda	0.379833	22° 0' 14.081" N	83° 4' 50.248" E
1102	Raigarh	Kharsia	Bade Dumarpali	0.35619	22° 0' 9.438" N	83° 11' 8.177" E
1103	Raigarh	Kharsia	Chhote Dumarpali	0.545039	22° 0' 11.994" N	83° 10' 10.930" E
1104	Raigarh	Kharsia	Aurda	0.70994	22° 0' 16.434" N	83° 4' 52.155" E
1105	Raigarh	Kharsia	Madanpur	3.249714	22° 0' 15.668" N	83° 6' 47.542" E
1106	Raigarh	Kharsia	Banipathar	1.222999	22° 0' 18.108" N	83° 8' 21.615" E
1107	Raigarh	Kharsia	Madanpur	0.207434	22° 0' 20.082" N	83° 7' 17.687" E
1108	Raigarh	Kharsia	Chhote Dumarpali	0.157247	22° 0' 20.285" N	83° 10' 0.485" E
1109	Raigarh	Kharsia	Banipathar	0.211561	22° 0' 21.948" N	83° 8' 27.458" E
1110	Raigarh	Kharsia	Banipathar	0.775007	22° 0' 22.533" N	83° 8' 45.785" E
1111	Raigarh	Kharsia	Aurda	1.011933	22° 0' 26.886" N	83° 5' 6.846" E
1112	Raigarh	Kharsia	Aurda	1.117318	22° 0' 28.054" N	83° 5' 1.775" E
1113	Raigarh	Kharsia	Thusekela	0.835472	22° 0' 28.060" N	83° 5' 53.673" E
1114	Raigarh	Kharsia	Banipathar	1.604837	22° 0' 29.195" N	83° 8' 11.015" E
1115	Raigarh	Kharsia	Aurda	0.275816	22° 0' 38.623" N	83° 5' 33.938" E
1116	Raigarh	Kharsia	Pamgarh	0.172279	22° 0' 36.621" N	83° 9' 34.639" E
1117	Raigarh	Kharsia	Madanpur	0.488611	22° 0' 40.463" N	83° 7' 19.542" E
1118	Raigarh	Kharsia	Madanpur	1.058296	22° 0' 44.229" N	83° 6' 58.345" E
1119	Raigarh	Kharsia	Thusekela	2.475101	22° 0' 45.941" N	83° 6' 7.628" E
1120	Raigarh	Kharsia	Thusekela	3.808287	22° 0' 46.225" N	83° 5' 59.730" E
1121	Raigarh	Kharsia	Thusekela	0.997576	22° 0' 48.324" N	83° 6' 4.106" E
1122	Raigarh	Kharsia	Chondha	0.525908	22° 0' 47.645" N	83° 8' 11.762" E
1123	Raigarh	Kharsia	Chondha	0.227056	22° 0' 48.570" N	83° 7' 53.443" E
1124	Raigarh	Kharsia	Chondha	0.408015	22° 0' 49.764" N	83° 7' 59.857" E
1125	Raigarh	Kharsia	Bansmuda	0.589597	22° 0' 52.936" N	83° 7' 4.708" E
1126	Raigarh	Kharsia	Bansmuda	0.49486	22° 0' 55.584" N	83° 7' 5.696" E
1127	Raigarh	Kharsia	Nawagaon	0.726114	22° 0' 54.122" N	83° 9' 10.263" E
1128	Raigarh	Kharsia	Chondha	0.764423	22° 0' 55.955" N	83° 8' 32.352" E
1129	Raigarh	Kharsia	Bansmuda	0.145135	22° 0' 58.077" N	83° 7' 22.894" E

Sl.	District Name	Block Name	Village Name	Area in Ha	Latitude	Longitude
1130	Raigarh	Kharsia	Bansmuda	0.323052	22° 0' 58.955" N	83° 7' 15.470" E
1131	Raigarh	Kharsia	Chondha	0.403189	22° 0' 59.872" N	83° 8' 25.824" E
1132	Raigarh	Kharsia	Chondha	0.256838	22° 1' 1.546" N	83° 7' 44.061" E

Annexure-4 Planned WHS By Panchayat Department

Sl.	Proposed Structure	Longitude	Latitude	Convergence Department
1	UNDER GROUND BANDHARA	83° 6' 52.714" E	21° 56' 10.197" N	Panchayat (MGNEREGA)
2	CEMENT NALA BUND	83° 7' 43.646" E	21° 55' 47.890" N	Panchayat (MGNEREGA)
3	CEMENT NALA BUND	83° 2' 52.734" E	21° 55' 35.068" N	Panchayat (MGNEREGA)
4	CEMENT NALA BUND	83° 2' 51.712" E	21° 55' 31.175" N	Panchayat (MGNEREGA)
5	CEMENT NALA BUND	83° 2' 51.002" E	21° 55' 29.814" N	Panchayat (MGNEREGA)
6	CEMENT NALA BUND	83° 6' 57.962" E	21° 55' 4.278" N	Panchayat (MGNEREGA)
7	CEMENT NALA BUND	83° 2' 52.235" E	21° 55' 2.743" N	Panchayat (MGNEREGA)
8	CEMENT NALA BUND	83° 2' 49.820" E	21° 54' 59.159" N	Panchayat (MGNEREGA)
9	CEMENT NALA BUND	83° 2' 46.669" E	21° 54' 58.200" N	Panchayat (MGNEREGA)
10	CEMENT NALA BUND	83° 2' 42.944" E	21° 54' 58.062" N	Panchayat (MGNEREGA)
11	CEMENT NALA BUND	83° 2' 41.241" E	21° 54' 57.390" N	Panchayat (MGNEREGA)
12	PERCOLATION TANK	83° 2' 10.856" E	21° 53' 6.209" N	Panchayat (MGNEREGA)
13	PERCOLATION TANK	83° 2' 8.825" E	21° 53' 5.403" N	Panchayat (MGNEREGA)
14	PERCOLATION TANK	83° 2' 12.168" E	21° 53' 0.291" N	Panchayat (MGNEREGA)
15	CEMENT NALA BUND	83° 2' 33.948" E	21° 52' 44.598" N	Panchayat (MGNEREGA)
16	CEMENT NALA BUND	83° 2' 36.000" E	21° 52' 44.130" N	Panchayat (MGNEREGA)
17	CEMENT NALA BUND	83° 2' 6.970" E	21° 52' 39.642" N	Panchayat (MGNEREGA)
18	CEMENT NALA BUND	83° 2' 6.217" E	21° 52' 39.644" N	Panchayat (MGNEREGA)
19	CEMENT NALA BUND	83° 2' 2.416" E	21° 52' 39.367" N	Panchayat (MGNEREGA)
20	PERCOLATION TANK	83° 1' 30.227" E	21° 52' 26.477" N	Panchayat (MGNEREGA)
21	CEMENT NALA BUND	83° 3' 48.202" E	21° 51' 0.479" N	Panchayat (MGNEREGA)
22	CEMENT NALA BUND	83° 3' 48.288" E	21° 51' 0.377" N	Panchayat (MGNEREGA)
23	PERCOLATION TANK	83° 3' 47.883" E	21° 51' 0.140" N	Panchayat (MGNEREGA)
24	PERCOLATION TANK	83° 3' 47.236" E	21° 50' 58.640" N	Panchayat (MGNEREGA)
25	PERCOLATION TANK	83° 3' 43.221" E	21° 50' 56.191" N	Panchayat (MGNEREGA)

26	PERCOLATION TANK	83° 10' 16.834" E	21° 59' 46.063" N	Panchayat (MGNEREGA)
27	PERCOLATION TANK	83° 10' 21.113" E	21° 59' 45.095" N	Panchayat (MGNEREGA)
28	PERCOLATION TANK	83° 10' 22.529" E	21° 59' 42.659" N	Panchayat (MGNEREGA)
29	PERCOLATION TANK	83° 10' 16.471" E	21° 59' 41.594" N	Panchayat (MGNEREGA)
30	PERCOLATION TANK	83° 10' 22.140" E	21° 59' 40.624" N	Panchayat (MGNEREGA)
31	CHECK DAM	83° 8' 48.105" E	21° 57' 56.194" N	Panchayat (MGNEREGA)
32	CHECK DAM	83° 9' 13.599" E	21° 57' 50.343" N	Panchayat (MGNEREGA)
33	CHECK DAM	83° 9' 5.141" E	21° 57' 50.248" N	Panchayat (MGNEREGA)
34	CHECK DAM	83° 9' 7.759" E	21° 57' 48.458" N	Panchayat (MGNEREGA)
35	CHECK DAM	83° 9' 13.257" E	21° 57' 48.658" N	Panchayat (MGNEREGA)
36	CEMENT NALA BUND	83° 13' 39.770" E	21° 55' 18.026" N	Panchayat (MGNEREGA)
37	CEMENT NALA BUND	83° 13' 39.793" E	21° 55' 18.026" N	Panchayat (MGNEREGA)
38	PERCOLATION TANK	83° 8' 2.663" E	21° 55' 50.031" N	Panchayat (MGNEREGA)
39	PERCOLATION TANK	83° 8' 0.019" E	21° 55' 49.316" N	Panchayat (MGNEREGA)
40	PERCOLATION TANK	83° 7' 54.356" E	21° 55' 47.215" N	Panchayat (MGNEREGA)
41	PERCOLATION TANK	83° 8' 14.141" E	21° 55' 25.503" N	Panchayat (MGNEREGA)
42	PERCOLATION TANK	83° 8' 13.587" E	21° 55' 25.204" N	Panchayat (MGNEREGA)
43	CEMENT NALA BUND	83° 7' 30.529" E	21° 55' 25.800" N	Panchayat (MGNEREGA)
44	PERCOLATION TANK	83° 10' 42.247" E	21° 55' 22.983" N	Panchayat (MGNEREGA)
45	PERCOLATION TANK	83° 10' 40.901" E	21° 55' 22.322" N	Panchayat (MGNEREGA)
46	PERCOLATION TANK	83° 10' 37.502" E	21° 55' 14.665" N	Panchayat (MGNEREGA)
47	PERCOLATION TANK	83° 9' 47.024" E	21° 55' 11.104" N	Panchayat (MGNEREGA)
48	PERCOLATION TANK	83° 9' 41.254" E	21° 55' 9.407" N	Panchayat (MGNEREGA)
49	PERCOLATION TANK	83° 9' 34.581" E	21° 55' 9.023" N	Panchayat (MGNEREGA)
50	PERCOLATION TANK	83° 9' 26.914" E	21° 55' 5.965" N	Panchayat (MGNEREGA)
51	PERCOLATION TANK	83° 12' 5.480" E	21° 54' 49.987" N	Panchayat (MGNEREGA)
52	PERCOLATION TANK	83° 12' 2.657" E	21° 54' 49.244" N	Panchayat (MGNEREGA)
53	PERCOLATION TANK	83° 12' 9.378" E	21° 54' 48.708" N	Panchayat (MGNEREGA)
54	PERCOLATION TANK	83° 12' 11.138" E	21° 54' 46.081" N	Panchayat (MGNEREGA)
55	PERCOLATION TANK	83° 12' 11.952" E	21° 54' 45.301" N	Panchayat (MGNEREGA)

56	PERCOLATION TANK	83° 12' 33.308" E	21° 54' 31.085" N	Panchayat (MGNEREGA)
57	UNDER GROUND BANDHARA	83° 11' 40.502" E	21° 52' 17.989" N	Panchayat (MGNEREGA)
58	PERCOLATION TANK	83° 11' 44.468" E	21° 52' 16.411" N	Panchayat (MGNEREGA)
59	CEMENT NALA BUND	83° 3' 47.205" E	21° 51' 4.849" N	Panchayat (MGNEREGA)
60	PERCOLATION TANK	83° 3' 46.154" E	21° 50' 55.748" N	Panchayat (MGNEREGA)
61	PERCOLATION TANK	83° 3' 42.381" E	21° 50' 54.234" N	Panchayat (MGNEREGA)
62	PERCOLATION TANK	83° 7' 21.743" E	21° 50' 42.720" N	Panchayat (MGNEREGA)
63	CEMENT NALA BUND	83° 12' 2.629" E	21° 50' 34.320" N	Panchayat (MGNEREGA)
64	CEMENT NALA BUND	83° 11' 57.755" E	21° 50' 33.895" N	Panchayat (MGNEREGA)
65	CEMENT NALA BUND	83° 12' 4.336" E	21° 50' 33.528" N	Panchayat (MGNEREGA)
66	CEMENT NALA BUND	83° 11' 55.911" E	21° 50' 32.365" N	Panchayat (MGNEREGA)
67	CEMENT NALA BUND	83° 11' 46.406" E	21° 50' 32.514" N	Panchayat (MGNEREGA)
68	PERCOLATION TANK	83° 7' 18.747" E	21° 50' 12.883" N	Panchayat (MGNEREGA)
69	PERCOLATION TANK	83° 7' 17.211" E	21° 50' 9.323" N	Panchayat (MGNEREGA)
70	PERCOLATION TANK	83° 7' 15.969" E	21° 50' 8.471" N	Panchayat (MGNEREGA)
71	PERCOLATION TANK	83° 6' 56.304" E	21° 49' 3.197" N	Panchayat (MGNEREGA)
72	PERCOLATION TANK	83° 7' 0.137" E	21° 49' 2.304" N	Panchayat (MGNEREGA)
73	PERCOLATION TANK	83° 6' 54.342" E	21° 49' 2.260" N	Panchayat (MGNEREGA)
74	PERCOLATION TANK	83° 6' 52.734" E	21° 49' 1.544" N	Panchayat (MGNEREGA)
75	PERCOLATION TANK	83° 6' 59.133" E	21° 48' 46.758" N	Panchayat (MGNEREGA)
76	Renovation of Existing	83° 10' 40.185" E	21° 49' 23.894" N	ACPL
77	Renovation of Existing	83° 4' 33.056" E	21° 49' 41.359" N	ACPL
78	Renovation of Existing	83° 8' 38.857" E	21° 49' 52.749" N	ACPL
79	Renovation of Existing	83° 9' 50.008" E	21° 50' 58.536" N	ACPL
80	Renovation of Existing	83° 3' 44.379" E	21° 54' 1.175" N	ACPL
81	Renovation of Existing	83° 6' 50.756" E	21° 54' 9.412" N	ACPL
82	Renovation of Existing	83° 4' 25.389" E	21° 54' 33.516" N	ACPL
83	Renovation of Existing	83° 11' 6.695" E	21° 54' 29.021" N	ACPL
84	Renovation of Existing	83° 4' 51.937" E	21° 55' 22.809" N	ACPL
85	Renovation of Existing	83° 4' 44.595" E	21° 56' 17.810" N	ACPL

86	Renovation of Existing	83° 1' 38.718" E	21° 56' 59.799" N	ACPL
87	Renovation of Existing	83° 5' 31.266" E	21° 57' 0.968" N	ACPL
88	Renovation of Existing	83° 2' 49.030" E	21° 58' 34.044" N	ACPL
89	Renovation of Existing	83° 4' 13.270" E	21° 58' 49.136" N	ACPL
90	Renovation of Existing	83° 11' 38.142" E	21° 58' 50.974" N	ACPL
91	Renovation of Existing	83° 6' 7.628" E	22° 0' 45.941" N	ACPL

Photographs of DG Sets with Adequate Stack Height and Acoustic Enclosure



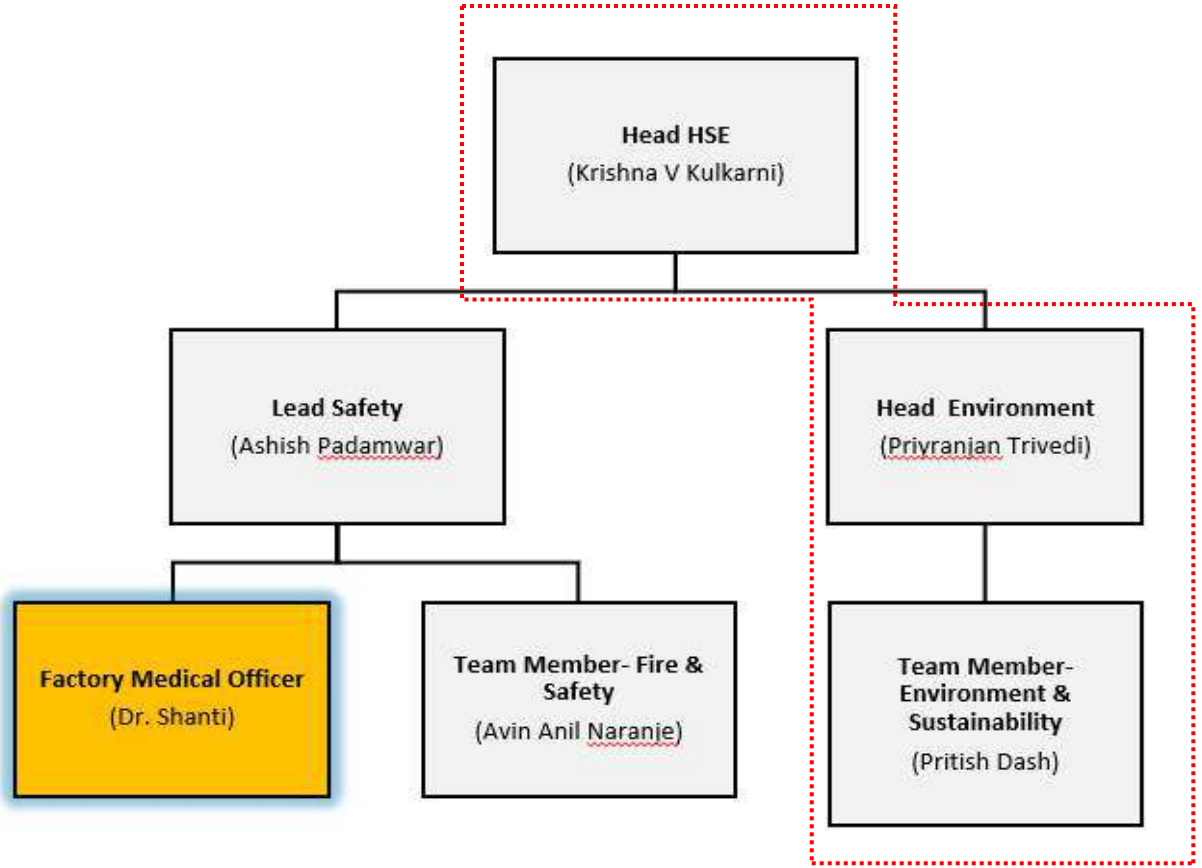


Sensitivity: Public (C4)

VLCTPP Environment Cell

CTPP (HSE)

vedanta transforming for good | power



Particulars	Count
Total Positions	6
Direct	5
Indirect	1
Vacant	0
Women	0
Joining in progress	0

Direct TPC

Sensitivity: Public [C4]

Fire Station & Fire Fighting Equipment Photographs







Sensitivity: Public (C4)

भारत सरकार
पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय
उप – कार्यालय,
अरण्य भवन, नार्थब्लॉक,
सेक्टर–19, नवारायपुर, अटलनगर
छत्तीसगढ़ – 492002
ईमेल–iro.raipur-mefcc@gov.in



GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FORESTS & CLIMATE CHANGE
SUB -OFFICE
ARANYA BHAWAN, NORTH BLOCK, SECTOR-19, NAVA RAIPUR, ATAL NAGAR, CHHATTISGARH – 492002 Email – iro.raipur-mefcc@gov.in

File No. 6-CHC-47/2014-HBO/1607 **Date: - 26/03/2024**

To,

Principal Secretary (Forests),
Government of Chhattisgarh,
Forest Department, Mantralaya,
Mahanadi Bhavan, Nava Raipur,Atal Nagar (CG).

Sub: Diversion of 15.710 ha Revenue Forest land for establishment of 2 X 600 Megawatt Coal based Thermal Power Plant in Village — Singhitarai, Ondekera & Benipali in favour of Vice President M/s Athena Chhattisgarh Power Project Limited in Janjgir — Champa District of Chhattisgarh. - regarding

Sir,

Kindly refer to the letter no. F-5-19/2014/10-2 dated 08/08/2014 of the State Government of Chhattisgarh, on the above subject seeking prior approval of the Central Government under Section -2 of the Forest (Conservation) Act, 1980. It is to say that after examination of the proposal of the State Government, 'In-principle' approval was accorded by the Central Government vide its letter dated 28/05/2015. The State Government of Chhattisgarh has now submitted a report on the compliance of conditions stipulated in the 'in-principle' approval and requested for final approval of the proposal.

In this connection, it is informed that on the basis of compliance report submitted by the Government of Chhattisgarh vide letter no. Krmank/ F-5-19/2014/10-2 dated 25.08.2023 and additional information was submitted by the State Government vide letter no. Krmank/ F-5-19/2014/10-2 dated 11.03.2024. On the recommendation by the State Government, the Central Government hereby accords **"Final /Stage-II Approval"** under Section- 2 (i) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for diversion of 15.710 ha Revenue Forest land for establishment of 2 X 600 Megawatt Coal based Thermal Power Plant in Village— Singhitarai, Ondekera & Benipali in favour of Vice President M/s Athena Chhattisgarh Power Project Limited in Janjgir — Champa District of Chhattisgarh, which is subject to the fulfilment of the following conditions:

i. Legal status of the diverted forest land shall remain unchanged;
ii. The forest land shall not be used for any purpose other than that specified in the proposal;
iii. **Compensatory Afforestation:**
   a. Compensatory afforestation shall be taken up by the Forest Department over 16.90 ha. of non - forest land in Patwari Halka no. 00049, Khasrah no. 344, 345, 346, 347, 348, 351/1,2 and 3, 352, 353, 354, 355, 356, 357, 358, 359/1, and 486/345 (total Khashra is 17) land is located at village- Lalitpur, Tehsil- Basna Dist Mahasamund (CG). (Area 16.90 ha mutation Revenue Case No. 202306121400034-A) at the cost of User Agency. As far as possible, a mixture of local indigenous species along with 10% RET

species shall be planted and monoculture of any species shall be avoided. The User agency shall make necessary facility/ construction in the area to meet the water requirement for plantation and for wild animals throughout the year;

b. The non-forest land which has been transferred and mutated in favour of the State Forest Department for the purpose of compensatory afforestation shall be declared 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 State Forest Act. The Nodal Officer, Forest (Conservation) Act, 1980 may report compliance within a period of six (6) months from the date of grant of final approval and send a copy of the original notification declaring the non-forest land under Section 4 or Section 29 of the Indian Forest Act, 1927, or under the relevant section of the State Forest Act as the case may be, to this Office for information and record;

iv. The cost of Compensatory Afforestation at the prevailing wage rates as per compensatory afforestation scheme and the cost of survey, demarcation and erection of permanent pillars if required on the CA land shall be deposited in advance with the Forest Department by the project authority. The CA will be maintained for 10 years. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years;

v. **NPV:**

a) Additional amount of the NPV of the diverted forest land, if any, becoming due after finalization of the same by the Hon'ble Supreme Court of India on receipt of the report from the Expert Committee, shall be charged by the State Government from the User Agency. The User Agency shall furnish an undertaking to this effect;

vi. No tree cutting shall be permitted in the diverted forest land;

vii. All the funds received from the user agency under the project shall be transferred/ deposited to CAMPA fund only through e-portai *(https://parivesh.nic.in/);*

viii. The State Government of Chhattisgarh/ Nodal Officer (FCA), Forest Department of Chhattisgarh shall ensure settlement of rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (No. 2 of 2007) before issuing an order for handing over of forest land to the User Agency as per Rule- 11 sub-rule (7) of the Van (Sanrakshan Evam Samvardhan) Rules, 2023 dated 29.11.2023;

ix. The boundary of the diverted forest land, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing and distance from pillar to pillar;

x. User Agency shall obtain Environmental Clearance as per the provisions of the Environmental (Protection) Act, 1986, if applicable;

xi. User agency in consultation with the State Forest Department shall create and maintain alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project. Bird nests artificially made out of eco-friendly materials shall be used in the area, including forest area and human settlements, adjoining the forest area being diverted for the project;

xii. The user agency will defray the cost of removal of 118 trees in the area that fall in diversion. However only the required and minimum number of trees will be felled;

xiii. Soil conservation measures, if required should be taken up by the user agency for which fund should be provided as per the current rate of works;

xiv. No labour camp shall be established on the forest land;

xv. The User Agency shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas;

xvi. The layout plan of the proposal shall not be changed without the prior approval of the Central Government;

xvii. No additional or new path will be constructed inside the forest area for transportation of construction materials for execution of the project work;

xviii. The period of diversion under this approval shall be co-terminus with the period of lease to be granted in favour of the user agency or the project life, whichever is less;

xix. The forest land proposed to be diverted shall under no circumstances be transferred to any other agencies, department or person without prior approval of Govt. of India;

xx. Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as per the MoEF&CC Guideline F. No. 11- 42/2017-FC dt 29/01/2018;

xxi. Any other condition that the Ministry of Environment, Forests & Climate Change may stipulate from time to time in the interest of conservation, protection and development of forests & wildlife;

xxii. The compliance report shall be uploaded on e-portal (https://parivesh.nic.in/).

This issues with the approval of the Competent Authority.

Yours faithfully,

26/3/24

Chaturbhuja Behera, IFS,
Inspector General of Forests.

Copy to:-

1. The Inspector General of Forests (RoHQ), Ministry of Environment, Forest and Climate Change, Indira ParyavaranBhawan, Jorbagh Road, Aliganj, New Delhi- 110003.
2. The PCCF (HoFF), Government of Chhattisgarh, AranyaBhawan, Sector-19, Nava Raipur, C.G
3. The Addl. PCCF & Nodal Officer (FCA), Government of Chhattisgarh, Aryan Bhawan, Nawa Raipur, Chhattisgarh.
4. User agency.
5. Guard file

26/3/24

Chaturbhuja Behera, IFS,
Inspector General of Forests.

CHHATTISGARH ENVIRONMENT CONSERVATION BOARD
Paryavas Bhawan, North Block, Sector - 19,
Nava Raipur Atal Nagar, District-Raipur (C.G.)
e-mail - hocecb@gmail.com

No. 8164/TS/CECB/2025 Nava Raipur Atal Nagar, Raipur, dated:15/10/2025

To,

M/s Vedanta Limited
Chhattisgarh Thermal Power Plant
(Formerly known as M/s Athena Chhattisgarh Power Limited),
Village- Singhitarai, Odekera, Nimohi and Benipali,
Tehsil - Dabhra, District - Sakti (CG).

Sub: Extension of the validity of consent to operate for Coal Based Thermal Power Plant (1 x 600 Megawatt Unit - I) - 600 Megawatt issued under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981.

Ref: -
1. "Permission to Establish" for Coal Based Thermal Power Plant – 2x600 Megawatt vide letter no. 1078/TS/CECB/2024 Nava Raipur Atal Nagar, Dated: 09/05/2024.
2. Consent to Operate of the Board issued under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 11933/TS/CECB/2025 Nava Raipur Atal Nagar, Dated: 18/03/2025 for Trial/Commissioning Operation Activities (Acid Cleaning, Steam Blowing, Safety Valve Setting, Stabilization of Combustion Parameters for TG Commissioning, Steam Quality Monitoring and Synchronization of the TG) through Oil (LDO) firing only (without any coal firing) for Thermal Power Plant (1 x 600 Megawatt Unit - I) - 600 Megawatt.
3. Consent issued under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 1054/TS/CECB/2025 Nava Raipur Atal Nagar, dated: 28/04/2025 ~~for period up-to 18/11/2024~~ for Coal Based Thermal Power Plant (1 x 600 Megawatt Unit - I) - 600 Megawatt.
4. Your online application dated: 29/08/2025 and subsequent correspondence ending dated: 07/10/2025 (online application no. 20195203).

----:oo:----

Chhattisgarh Environment Conservation Board had granted "Permission to Establish" vide letter no. 1078/TS/CECB/2024 Nava Raipur Atal Nagar, Dated: 09/05/2024 for Coal Based Thermal Power Plant – 2x600 Megawatt at Village- Singhitarai, Odekera, Nimohi and Benipali, Tehsil - Dabhra, District - Sakti (C.G.).

Further, Chhattisgarh Environment Conservation Board, Raipur granted consent to operate under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide this office letter no. 11933/TS/CECB/2025 Nava Raipur Atal Nagar, Dated: 18/03/2025 for Trial/Commissioning Operation Activities (Acid Cleaning, Steam Blowing, Safety Valve Setting, Stabilization of Combustion Parameters for TG Commissioning, Steam Quality Monitoring and Synchronization of the TG) through Oil (LDO) firing only (without any coal firing) for Thermal Power Plant (1 x 600 Megawatt Unit - I) - 600 Megawatt.

Further, Chhattisgarh Environment Conservation Board, Raipur granted consent to operate under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide this office letter no. 1054/TS/CECB/2025 Nava Raipur Atal Nagar, dated: 28/04/2025 ~~for period up-to 18/11/2024~~ for Coal Based Thermal Power Plant (1 x 600 Megawatt Unit - I) - 600 Megawatt for period up-to 27/10/2025.

Now industry has requested to extend the validity of consent to operate for Coal Based Thermal Power Plant (1 x 600 Megawatt Unit - I) - 600 Megawatt issued under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 for further period through application dated: 29/08/2025 and subsequent correspondence ending dated: 07/10/2025 (online application no. 20195203)

Regional Officer, Chhattisgarh Environment Conservation Board, Bilaspur has informed that industry has provided effluent treatment arrangement and air pollution control systems and recommended for extension of validity of the consent to operate.

The facts submitted by the industry have been examined. After careful consideration of the facts & materials in record and in view of the above, the validity period of consent to operate for Coal Based Thermal Power Plant (1 x 600 Megawatt Unit - I) - 600 Megawatt issued under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 are hereby extended up to 28/02/2026, subject to the fulfillment of the terms and conditions incorporated in the consent letter no. 1054/TS/CECB/2025 Nava Raipur Atal Nagar, dated: 28/04/2025 and additional conditions mentioned below: -

(A) Water (Prevention and Control of Pollution) Act, 1974

(1) Industry shall provide adequate facility for proper treatment of industrial and domestic effluent. Effluent treatment plant (ETP) of adequate capacity shall be installed for treatment of industrial waste water generated. Sewage treatment plants (STPs) of adequate capacity shall be installed for treatment of domestic waste water generated from plant/colony (if any) premises. Sewage treatment plant (STP) of adequate capacity shall be installed for treatment of domestic waste water generated in coal handling area. All the effluent treatment system shall be kept in good running condition all the time and failure (if any), shall be immediately rectified without delay; otherwise, similar alternate arrangement shall be made. Industry shall ensure the treated effluent quality within standard prescribed by Chhattisgarh Environment Conservation Board, Nava Raipur Atal Nagar, Raipur. Chhattisgarh

Environment Conservation Board may further stipulate stringent limit depending upon environmental conditions.

(2) Industry shall make arrangements like installation of digital water meter separately for underground as well as surface water, reuse of non potable water etc. as per NGT order dated 15/11/2022 on OA no. 392/2022 for use of water.

(3) Industry shall ensure 100% utilization of fly ash, bottom ash and legacy ash (unutilized accumulated ash) as per provisions of notification dated 31/12/2021 (as amended upto date) issued by MoEF & CC regarding utilization of ash.

(4) Industry shall take effective steps for safe disposal of solid wastes and sludges. Oil and grease recovered from the treatment plants shall be disposed only through authorized recyclers. Industry shall comply with Hazardous and other waste (Management and Transboundary Movement) Rules, 2016. The provisions of solid waste management rules 2016, E-waste (management) rules 2016 and the plastic waste management rules 2016 shall be followed.

(5) All the internal roads shall be made pucca. Good housekeeping practices shall be adopted by the industry.

(6) Industry shall set up railway line/siding to transport coal by rail before March, 2027. Industry shall follow SOP issued vide order dated 26/06/2024 regarding transportation of fuel/raw materials/wastes through tarpaulin covered vehicles.

(7) A thick green belt of broad leaf local species shall be developed all along the periphery of project premises. As far as possible maximum area of open spaces shall be utilized for plantation purposes. industry shall also ensure plantation as per environmental clearance. Minimum one tree for every 80 sqm of land shall be planted and maintained. The existing tree shall be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, board leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping. Peripheral green belt (Three row plantation) with Miyawaki plantation technique of 15m thickness along the plant boundary shall be developed with more than 90% survival rate of the plant species focusing on ash dyke area.

(8) Industry shall enhance the rainwater-harvesting structures within the premises.

(9) Industry shall submit Environment Statement to this Board as per provision of the Environment (Protection) Amendment Rule, 1993 for the previous year ending 31st March on or before 30th September every year.

(B) <u>Air (Prevention and Control of Pollution) Act, 1981</u>

(1) Industry shall provide adequate air pollution control arrangements at all point and non point sources. Industry shall provide Electro Static Precipitator (ESP) and bag house of adequate capacity & high

efficiency with boiler and chimney of 275 meter height for control of air pollution. Suitable & effective air pollution control equipments shall be installed for the control of emission from processes/operations and for the control of emission during the handling & transportation of raw materials etc. Industry shall install suitable & effective air pollution control equipments at all transfer points, junction points etc. also. All the conveying system, transfer point, junction point etc. shall be covered. Industry shall install dust extraction and dust suppression system to control of fugitive dust emission. Adequate provision shall be made for sprinkling of water at strategic locations for ensuring dust/fly ash does not get air borne. Adequate dust extraction system followed by bag filters/cyclones and water spray system in dusty areas such as waste delivery points, transfer areas and other vulnerable dusty areas shall be provided. For controlling fugitive dust emission, regular sprinkling of water on roads and other vulnerable areas of the plant shall be ensured. The emission of air pollutants from any point source as per the guidelines and notification issued by MoEF&CC. Chhattisgarh Environment Conservation Board may further stringent above emission limit depending upon environmental conditions. Industry shall provide proper space provision for further retrofitting of air pollution control systems in case of further stringent of emission limit by Chhattisgarh Environment Conservation Board. Industry shall also comply the standards prescribed in Environment (Protection) Rules, 1986 (as amended from time to time) for Thermal Power Plants.

(2) Industry shall ensure compliance of dust and gaseous emission as per standard prescribed by MoEF&CC as amended up to date. Industry shall strive to achieve particulate matter emission below 30 mg /Nm3 as ensured by industry vide letter dated 04/01/2025.

(3) All air pollution control systems shall be kept in good running conditions all the time and failure (if any), shall be immediately rectified without delay otherwise same alternate arrangement shall be made. In the event of any failure of any pollution control system adopted by the industry, the respective production unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.

(4) All the internal roads shall be made pucca. Good housekeeping practices shall be adopted by the industry.

(5) Industry shall set up railway line/siding to transport coal by rail before March, 2027. Industry shall follow SOP issued vide order dated 26/06/2024 regarding transportation of fuel/raw materials/wastes through tarpaulin covered vehicles.

(6) Industry shall ensure 100% utilization of fly ash, bottom ash and legacy ash (unutilized accumulated ash) as per provisions of notification dated 31/12/2021 (as amended upto date) issued by MoEF & CC regarding utilization of ash.

(7) Industry shall take effective steps for safe disposal of solid wastes and sludges. Oil and grease recovered from the treatment plants shall be disposed only through authorized recyclers. Industry shall comply with Hazardous and other waste (Management and Transboundary Movement) Rules, 2016. The provisions of solid waste management

rules 2016, E-waste (management) rules 2016 and the plastic waste management rules 2016 shall be followed.

(8) A thick green belt of broad leaf local species shall be developed all along the periphery of project premises. As far as possible maximum area of open spaces shall be utilized for plantation purposes. Industry shall also ensure plantation as per environmental clearance. Minimum one tree for every 80 sqm of land shall be planted and maintained. The existing tree shall be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, board leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping. Peripheral green belt (Three row plantation) with Miyawaki plantation technique of 15m thickness along the plant boundary shall be developed with more than 90% survival rate of the plant species focusing on ash dyke area.

(9) Industry shall submit Environment Statement to this Board as per provision of the Environment (Protection) Amendment Rule, 1993 for the previous year ending 31st March on or before 30th September every year.

The other terms and conditions mentioned in consent letter issued under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 1054/TS/CECB/2025 Nava Raipur Atal Nagar, dated: 28/04/2025 shall remain unchanged. Please keep this letter along with original consent letters.

Please acknowledge the receipt of this letter.

For & on behalf of
Chhattisgarh Environmental Conservation Board

Member Secretary
Chhattisgarh Environment Conservation Board
Nava Raipur Atal Nagar, Raipur (C.G.)

Endt. No.8165/TS/CECB/2025 Nava Raipur Atal Nagar, dated:15/10/2025

Copy to: -

Regional Officer, Regional Office, Chhattisgarh Environment Conservation Board, Bilaspur (C.G.). Please ensure compliance and report, if any condition/conditions are violated by the industry.

Signature Not Verified
Sd/-
Member Secre
Chhattisgarh Environmental Conservation Board
Nava Raipur Atal Nagar, Raipur (C.G.)

Digitally Signed by :Rajat Agrawal, IFS
Date: 2025.10.17 17:15:51 IST

CHHATTISGARH ENVIRONMENT CONSERVATION BOARD

Paryavas Bhawan, North Block, Sector - 19,
Nava Raipur Atal Nagar, District - Raipur (C.G.)
E-mail - hocecb@gmail.com

No.11933/TS/CECB/2025 Nava Raipur Atal Nagar, Dated:18/03/2025

To,

M/s Vedanta Limited
Chhattisgarh Thermal Power Plant
(Formerly known as M/s Athena Chhattisgarh Power Limited),
Village- Singhitarai, Odekera, Nimohi and Benipali,
Tehsil - Dabhra, District - Sakti (CG)

Sub.:- Grant of Consent of the Board under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981.

Ref.:- 1. "Permission to Establish" for Coal Based Thermal Power Plant – 2x600 Megawatt vide letter no. 1078/TS/CECB/2024 Nava Raipur Atal Nagar, Dated: 09/05/2024.

2. Your online application dated: 07/11/2024 and subsequent corresponding ending dated: 07/03/2025 (online application no. 17254961).

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With reference to your above application, consents under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 are hereby granted for Trial/Commissioning Operation Activities (Acid Cleaning, Steam Blowing, Safety Valve Setting, Stabilization of Combustion Parameters for TG Commissioning, Steam Quality Monitoring and Synchronization of the TG) through Oil (LDO) firing only (without any coal firing) for a period of three months starting from the date of issue of this letter, subject to the fulfillment of the terms and conditions annexed hereto as **PART 'A' & 'B'** respectively.

These consents are valid for: -

Item	Capacity
Thermal Power Plant (1 x 600 Megawatt Unit - I)	600 Megawatt (Six Hundred Megawatt)

Please acknowledge the receipt of this letter.

For & on behalf of
Chhattisgarh Environment Conservation Board

Member Secretary
Chhattisgarh Environment Conservation Board
Nava Raipur Atal Nagar, District - Raipur (C.G.)

Endt. No.11934/TS/CECB/2025 Nava Raipur Atal Nagar, Dated:18/03/2025

Copy to:-

Regional Officer, Regional Office, Chhattisgarh Environment Conservation Board, Raipur (C.G.). Please ensure compliance and report, if any condition/conditions are violated by the industry.

Sd/-
Member Secretary
Chhattisgarh Environment Conservation Board
Nava Raipur Atal Nagar, District - Raipur (C.G.)

PART-A

CONSENT LETTER

Sub: Grant of Consent to M/s Vedanta Limited (Formerly known as M/s Athena Chhattisgarh Power Limited) for the discharge of effluent under section 25 of the Water (Prevention & Control of Pollution) Act, 1974.

Ref: Online application dated: 07/11/2024 and subsequent corresponding ending dated: 07/03/2025 (online application no. 17254961) of M/s Vedanta Limited (Formerly known as M/s Athena Chhattisgarh Power Limited) (Expiry Date – After three months starting from the date of issue of this letter. This consent is only for Trial/Commissioning Operation Activities without any coal firing).

1. With reference to the above application for consent to discharge effluent into the natural water courses under the Water (Prevention & Control of Pollution) Act, 1974, here-in-after referred to as the Act M/s Vedanta Limited (Formerly known as M/s Athena Chhattisgarh Power Limited) by the State Board to discharge its industrial and other effluents arising out of their premises into the local stream/river/well in accordance with the general and special conditions as mentioned in the Annexure.

2. This consent shall be valid for a period three months starting from the date of issue of this letter. This consent is only for Trial/Commissioning Operation Activities without any coal firing.

3. These consents are valid for: -

Item	Capacity
Thermal Power Plant (1 x 600 Megawatt Unit - I)	600 Megawatt (Six Hundred Megawatt)

For & on behalf of
Chhattisgarh Environment Conservation Board

Sd/-
Member Secretary
Chhattisgarh Environment Conservation Board
Nava Raipur Atal Nagar, District - Raipur (C.G.)

Seal
Enclosure: Annexure

(I)
ANNEXURE

M/s Vedanta Limited (Formerly known as M/s Athena Chhattisgarh Power Limited)
Location of Factory: Village- Singhitarai, Odekera, Nimohi and Benipali, **Tehsil - Dabhra, District - Sakti (CG)**

Vide consent no. 29/NI/Raipur/CECB/2025 Dated: 18/03/2025

A. GENERAL CONDITIONS: -

1. All discharges authorized shall be consistent with terms and conditions of this Consent Facility expansions, production increases or process Modifications which result in new or increased discharges of pollutants must be reported by submission of a new Consent, application or if such new, or increased discharge does not violate the effluent limitations specified in the Consent, by submission to the Board details of such new or increased discharges of pollutants in which case the consent may be modified to specify effluent limitations for any pollutants not identified and limited here in the discharge of any pollutant more frequently than or at a level in excess of that identified and authorized by the Consent shall constitute a violation of the terms and conditions of the Consent.

2. After notice and opportunity for the hearing, this consent may be modified, suspended or revoked by the Board in whole or in part during its term for cause including, but not limited to the following: -

   (a) Violation of any terms and conditions of this Consent.
   (b) Obtaining this Consent by misrepresentation of failure to disclose fully all relevant facts.
   (c) A change in any condition that requires temporary or permanent reduction or elimination of the authorized discharge.

3. Not withstanding para(2) above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established for a toxic pollutant which is present in the discharge authorized here in and such standard or prohibition is more stringent than any limitation upon such pollutant in this Consent the Consent shall be revised or modified in accordance with the toxic effluent standard or prohibition that the Board may consider and the applicant shall be so notified.

4. The applicant shall allow the staff of Chhattisgarh Environment Conservation Board and/or their authorized representative, upon the Presentation of credentials:

(a) To enter upon the applicant's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this Consent.

(b) To have access to and copy at reasonable time any records required to be kept under the terms and conditions of this Consent.

(c) To inspect at reasonable time any monitoring equipment or monitoring method required in this Consent; or

(d) To sample at reasonable time any discharge of pollutants.

5. The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities of system installed or used by him to achieve compliance with the terms and conditions of this Consent.

6. The issuance of this Consent does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State or local laws or regulation.

7. The Consent does not authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any water course.

8. The specific effluent limitations and other pollution controls applicable to the discharge permitted here in are set forth below as specific conditions. Also set forth below are self-monitoring and reporting requirements. Unless otherwise specified, the applicant shall submit duplicate original copies of all reports to the Chhattisgarh Environment Conservation Board. Except for data determined to be confidential all such reports shall be available for public inspection at the office of the Chhattisgarh Environment Conservation Board. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provide for in section 42 of the Act.

B. SPECIAL CONDITIONS: -

1. Initial Effluent limitation during the period beginning on the effective date of this consent and lasting until one calendar year discharge from outfalls shall be limited and monitored by the applicant as specified below: -

(a) The following shall be limited by the applicant as specified.

S.No.	Effluent Characteristics	Discharge Limitation		Monitoring Requirements	
		Average	Maximum	Frequency of	Type of

		Mg/l	Kg/Day	Mg/l	Kg/Day	Measurement	Sample

Daily/Weekly/Monthly/Tri-monthly.

Grab/ 24 Hours Composite

In Addition to above discharge shall be limited and monitored as specified below:

S.No.	Effluent Characteristics	Discharge Limitation				Monitoring Requirements	
		Average		Maximum		Frequency of Measurement*	Type of Sample ✝
		Mg/l	Kg/Day	Mg/l	Kg/Day		

Daily/Weekly/Monthly/Tri-monthly.
Grab/ 24 Hours Composite

For the purpose of this sub-section, the daily average discharge is the total discharge by weight during the calendar month divided by he number of days in month the production or commercial facility was operating for the purpose of the sub-section the daily maximum discharge means the total discharge by weight during any calendar day.

(b) The pH shall not be less than 5.5 or greater than 9.0

2. Final effluent Limitation: - During the period beginning from 1st day of month of commissioning of the industry and lasting until the date of expiration of this Consent, discharge from the outfalls shall be limited and monitored by the applicant as specified below:-

(a) The following shall be limited and monitored by the applicant as specified.

S. No.	Effluent Characteristics	Discharge Limitation				Monitoring Requirements	
		Average		Maximum		Frequency of Measurement*	Type of Sample ✝
		Mg/l	Kg/Day	Mg/l	Kg/Day		
1	B.O.D.	--	--		-	Monthly	24 hours Composite
2	C.O.D.	--	--		-		
3	S.S.	--	--		-		
	pH 5.5 to 9.0					Daily	Grab

	Flow : Nil Cum/Day (Industrial and Domestic)		

* Daily/Weekly/Monthly/Tri-monthly.

† Grab/ 24 Hours Composite

Additional, outfalls shall be monitored as follows:

(i) Flow, Temperature and Total solids: One per month

(ii) Grab Samples Maximum discharge temperature above upstream receiving water shall be in accordance with the standard of ISI at. 40^0C.

(iii) Uniform as per IS| 2490 at 40^0C.

The temperature shall be monitored once per month of each outfall. For the purpose of the sub-section the daily average is the total discharge by weight during calendar month divided by the number of days in month that the production or commercial facility was operating for the purpose of this sub-section, the daily maximum discharge means the total discharge by weight during any calendar day.

(b) The pH shall not be less than 5.5 or greater than 9.0 for outfalls. The samples are taken as monthly, grab samples.

3. Schedule of Compliance for effluent Limitation:-The applicant shall achieve compliance with the effluent limitation: specified above for discharge from outfalls in accordance with the following schedule:

(i) Report of Progress : Monthly

(ii) Completion of final plans by ……

(iii) Award of contract of other commitment of financing ……..

(iv) Commencement of construction by ……...

(v) Report of construction progress ……

(vi) Completion of construction by ……..

(vii) Attainment of operational level by ……

Please see on page no 11 to 14

(b) The applicant shall submit to the Consent issuing Authority the required report of progress or where a specific action is required in (a) above to be taken by a certain date a written notice of compliance or non-compliance with each of the above scheduled dates, post marked not later than 14 days following each elapsed date. Each notice of compliance shall include the following: -

(1) A short description of the non-compliance.

(2) A description of any action taken or proposed by the applicant to comply with the elapsed scheduled requirement without further delay.

(3) An estimate of any factor which tend to explain or mitigate the non-compliance, and

(4) An estimate of the date, the applicant will comply with the elapsed scheduled requirement and assessment of the possibility that the applicant will meet the next scheduled requirement time.

4. Compilation of monitoring Data

(a) Samples and measurements taken to meet the monitoring requirements specified above shall be representative of the volume and nature of monitored discharge.

(b) Following promulgation of guidelines establishing test procedures for the analysis of pollutants, all sampling and analytical methods used to meet monitoring requirements specified above shall conform to such guidelines. Unless otherwise specified sampling and analytical methods shall conform to the latest edition of the Indian Standard specifications and where it is not specified the guidelines as per standard methods for the examination of Water & Waste Water 13th Edition of the American Public Health Association, New York U.S.A. shall be used.

(c) The applicant shall take samples and measurement to meet the monthly requirements specified above at the location indicated below:

POINT OF SAMPLING

(i) Outfalls of waste.
(ii) 100 meters from point of confluence, down stream to river or lake.

5. Recording of Monitoring activities and Results:

(a) The applicant shall make and maintain records of all information resulting from monitoring activities by this Consent.

(b) The applicant shall record for each measurement of sample taken pursuant to the requirements of this Consent the following information:

(1) The date, exact place and time of sampling
(2) The dates on which analysis was performed.
(3) Who performed the analysis?
(4) The analytical techniques or methods used and
(5) The result of all required analysis.

(c) If applicant monitors any pollutant more frequently as is required by this Consent he shall include the results of such monitoring in the calculation and reporting of values required in

the discharge monitoring reports which may be prescribed by the Board, such increased frequency shall be indicated on the Discharge Monitoring Report form.

(d) The applicant shall retain for a minimum of 3 years all records of monitoring activities and result including all records of calibration and maintenance of instrumentation and original strip chart regarding continuous monitoring instrumentation. The period of retention shall be the extent during the course of any unresolved litigation regarding the discharge of pollutants by the applicant or when requested by the Central or State Board.

6. Reporting of Monitoring Results:

(a) Monitoring information required by this Consent shall be summarized and reported by submitting a Discharge Monitoring Report form duly filled in and signed, to the Board's office at the following address:
CHHATTISGARH ENVIRONMENT CONSERVATION BOARD
Paryavas Bhawan, North Block, Sector - 19,
Nava Raipur Atal Nagar, District - Raipur (C.G.)

(b) Each submitted Discharge Monitoring Report shall be signed as follows:

(i) If submitted by Corporation by a Principal Executive Officer of at least the level of Vice-President or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the discharge Monitoring Report originates,

(ii) If submitted by a partnership firm, by a general partner.

(iii) If submitted by a sole proprietor, the proprietor,

(iv) If submitted by a Municipal, State or Central Government or other public enterprises, by a Principal Executive Officer, ranking elected official commanding officer, or other duly authorized employee.

(c) All information submitted on the Discharge Monitoring From shall be based upon measurements and sampling carried out during the three previous calendar months. The first Discharge Monitoring Report shall be submitted for a period ending 60 days from issuance. Thereafter reporting period shall end on the last date of each month. The applicant shall submit a Discharge Monitoring Report post marked no later than 28th day of the month following each completed reporting period.

7. Limitation of Discharge of Oil Hazardous Substance in harmful quantities: The applicant shall not discharge oil in quantities defined as harmful in regulations. In addition the applicant shall not discharge hazardous substance into natural water course in quantities defined as harmful in regulations promulgated by the Board. Nothing in this Consent shall be deemed to preclude the

institution of any legal action nor relieve the applicant from any responsibilities, liabilities, or penalties to which the applicant is or may be subject to clauses.

8. Limitation of visible Floating Solids and Foam: During the period beginning date of issuance and lasting until the date of expiration of this Consent the applicant shall not discharge floating solids or visible foam.

9. Disposal of Collected Solids:
   a) Intake Water Treatment: Solid Sludge's, dirt, silt or other pollutant separated from or resulting from treatment of intake or supply waters prior to use by the applicant shall be disposed off in such a manner as to prevent any pollutant from such materials from entering any such water Any live fish or other animals collected or trapped as a result of intake water screening or treatment may be returned to water,

   b) Waste water Treatment, Solid sludge's, filter backwash or other pollutant removed from or resulting from treatment or control of waste waster shall be disposed of in such a manner as to prevent any pollutants from such materials from entering natural water.

10. Non-compliance with Effluent Limitations:
   (a) If for any reason the applicant does not comply with or will be unable to comply with or will be unable to comply with any daily maximum effluent limitations specified in this Consent the applicant shall immediately notify the Consent issuing authority or his designee by telephone No. 0771-2512220 and provide the Consent issuing Authority with the following information in writing within 5 days of such notification:

      i) Cause of non-compliance.
      ii) A description of the non-complying discharge including its impact upon the receiving water.
      iii) Anticipated time, of non compliance is expected to continue or if such condition has been corrected, the duration of non-compliance.
      iv) Steps taken by the applicant to reduce and eliminate the non-complying discharge and;
      v) Steps to be taken by the applicant to prevent recurrence of conditions of non compliance.

   (b) The applicant shall take all responsible steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this Consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

(c) Nothing in this Consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance, whether or not such non-compliance is due to factors beyond his control such as equipment break down electric power failure, accident or natural disaster.

Limitation of Batch Discharge.

SPECIAL CONDITIONS

11. Provision for Electric Power Failure: The applicant shall either-
    (a) No later than …… certify in writing to the consent issuing authority that applicant has installed or provided for an alternative electric power source sufficient to operate all facilities utilized by the applicant to maintain compliance with the terms and conditions of the Consent or.
    (b) No later than 30 days after the effective date of his Consent, certify in writing to the consent issuing authority that upon the reduction, loss, or failure of one or more of the primary sources of electric power to any facilities utilized by the applicant to maintain compliance with the terms and conditions of his consent, the applicant shall halt, reduce or otherwise Control production and/or all discharges in order to maintain compliance with the terms & conditions of this Consent.

12. Prohibition of By pass of Treatment Facilities: The diversion or by-pass of any discharge from facility utilized by the applicant to maintain compliance with the terms and conditions of this Consent is prohibited except:

    (i) Where unavoidable to prevent loss of life severe property damage, or
    (ii) Where excessive storm drainage or run off would damage any facilities necessary for compliance with the terms and conditions of this Consent. The applicant shall immediately notify the consent issuing authorities in writing of each such diversion or by-pass in accordance with the procedure specified above for reporting non-compliance.

13. Spill Prevention and Containment Plan: Within 90 days of the effective date of the Consent the applicant shall prepare and submit to the consent issuing authority; a Spill Prevention; Containment and Countermeasure Plan for the facility covered by this Consent. Such plan shall include the following information and procedures relating to the prevention of spills and unauthorized discharges or oil and hazardous substances;

    (a) A description of a reporting system to be used to notify immediately persons responsible for management of a facility and appropriate State and Central authorities;

(b) A description of equipment or facilities (including overall facility) for the prevention, containment of spills and unauthorized discharge;

(c) A list of all oil and hazardous materials used processed or stored at the facility including the normal quantity maintained on the premises for each listed material;

(d) A brief description of any spills or unauthorized discharge which occurred during the 36 months period preceding the effective date of this Consent and subsequent measures taken by the applicant or reduce the possibility of further spills or unauthorized discharges; and.

(e) An implementation schedule for additional equipment or facilities which might be required for sub para (b) above but which are not yet operational.

SPECIAL CONDITIONS

1. This consent is only for Trial/Commissioning Operation Activities (Acid Cleaning, Steam Blowing, Safety Valve Setting, Stabilization of Combustion Parameters for TG Commissioning, Steam Quality Monitoring and Synchronization of the TG) through Oil (LDO) firing only (without any coal firing). Industry shall not use coal for steam generation during Trial/Commissioning Operation Activities of power plant under any circumstances. Industry shall separately inform the Chhattisgarh Environment Conservation Board for use of coal and permission/consent shall be obtained prior to such use, failing which; this consent to operate shall be treated as null & void and shall be considered as violation and subjected to legal action as per law.
2. Industry shall comply with all the terms and conditions of Environmental Clearance given by Ministry of Environment, Forest and Climate Change, Government of India vide letter dated: 06/01/2024.
3. The permission/consent for coal firing shall be granted after installation of Flue Gas De-sulphurization Plant (FGD) to ensure SO_2 emission less than 100 mg/Nm^3 or Ministry of Environment, Forest and Climate Change, Government of India, New Delhi issue any amendment notification/direction in future under Environment (Protection) Rules, 1986 (as amended from time to time) regarding time limit for installation of FGD for thermal power plants installed from 01/01/2017. No any permission/consent for coal firing shall be granted without installation FGD of adequate capacity or any amendment notification/direction by MoEF&CC in this regard.
4. Industry shall provide adequate facility for proper treatment of industrial and domestic effluent. Effluent treatment plant (ETP) of adequate capacity shall be installed for treatment of industrial waste water generated. Sewage treatment plants (STPs) of adequate capacity shall be installed for treatment of domestic waste water generated from plant/colony (if any) premises. Sewage treatment plant (STP) of adequate capacity shall be installed for treatment of domestic waste water generated in coal handling area within three months. All the effluent treatment system shall be kept in good running condition all the time and failure (if any), shall be immediately rectified without delay; otherwise, similar alternate arrangement shall be made. Industry shall ensure the treated effluent quality within standard prescribed by Chhattisgarh Environment Conservation Board, Nava Raipur Atal Nagar, Raipur. Chhattisgarh Environment Conservation Board may further stipulate stringent limit depending upon environmental conditions.
5. Any liquid effluent what so ever generated from industrial activities including ash dyke (if any) shall not be discharged into the river or any surface water bodies under any circumstances, and it shall be reused wholly (after proper treatment within plant premises) in the process/plantation, dust suppression etc. The treated domestic effluent shall be used for plantation purpose after proper disinfection within premises. No effluent shall be discharged outside of the plant premises under any circumstance. No sewage or untreated effluent shall be discharged through storm water drains. Treated/un-treated effluent collection pond shall be lined suitably to prevent seepage into ground for avoiding ground water contamination. Industry shall make proper arrangements of suitable drains/pipe networks to ensure adequate flow for

utilization of treated effluent inside the premises. The concept of zero discharge shall be maintained all the time.

6. Industry shall obtain necessary permission for drawl of ground water/surface water required for the project from the competent authorities without delay. Industry shall use stored water in the reservoir(s) of their premises till permission for supply of surface water is obtained. Industry shall submit copy of permission for supply of surface water from Water Resources Department, Government of Chhattisgarh within three months. Industry shall make arrangements like installation of digital water meter separately for underground as well as surface water, reuse of non potable water etc. as per NGT order dated 15/11/2022 on OA no. 392/2022 for use of water.

7. Closed circuit cooling system shall be provided in the power plant and minimum water drawl for makeup purposes shall be ensured. Industry shall comply the standards prescribed in Environment (Protection) Rules, 1986 (as amended from time to time) for Thermal Power Plants with respect to provision of cooling towers, specific water consumption, zero waste water discharged etc.

8. Industry shall install online systems for continuous monitoring of effluent quality/quantity as per CPCB guidelines for relevant parameters (like pH, Flow, Temperature, BOD/COD etc.) and shall be connected to CECB/CPCB server. Industry shall also install flow meter. Industry shall submit monitoring report of effluent regularly to Regional Office, Chhattisgarh Environment Conservation Board, Bilaspur and Head Office, Chhattisgarh Environment Conservation Board, Nava Raipur Atal Nagar. Calibration and validation of data shall be carried out of all CEQMS and industry shall ensure availability of real time data in CECB/CPCB server.

9. No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/trial/commissioning operation activities of the power plant.

10. Industry shall install separate electric metering arrangements with time totalizer for the running of pollution control devices. These arrangements shall be made in such a fashion that any non-functioning of pollution control device/devices shall immediately stop the electric supply to the production unit/fuel supply system and shall remain tripped till the pollution control device/devices are made functional again/rectified to achieve the desired efficiency. The record of electric consumption for running the pollution control equipments shall be submitted to Regional Office, Chhattisgarh Environment Conservation Board, Bilaspur and Head Office, Chhattisgarh Environment Conservation Board, Nava Raipur Atal Nagar every month. A separate log - book shall be maintained for this purpose.

11. Industry shall ensure impervious lining at ash pond with suitable leachate collection systems without delay.

12. Industry shall take effective steps for safe disposal of solid wastes and sludges. Oil and grease recovered from the treatment plants shall be disposed only through authorized recyclers. Industry shall obtain authorization from Board under Hazardous and other waste (Management and Transboundary Movement) Rules, 2016. The provisions of solid waste management rules 2016, E-waste (management) rules 2016 and the plastic waste management rules 2016 shall be followed.

13. Industry shall set up railway line/siding to transport coal by rail before March, 2027. Industry shall follow SOP issued vide order dated 26/06/2024 regarding transportation of fuel/raw materials/wastes through tarpaulin covered vehicles. As per environmental clearance condition, a detailed traffic management and traffic decongestion plant shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development Department and the P.W.D./competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.

14. All the internal roads shall be made pucca within three months. Good housekeeping practices shall be adopted by the industry.

15. A thick green belt of broad leaf local species shall be developed all along the periphery of project premises. As far as possible maximum area of open spaces shall be utilized for plantation purposes. Industry shall develop green belt in at-least 33% of the total plant area within three months and industry shall also ensure plantation as per environmental clearance. Minimum one tree for every 80 sqm of land shall be planted and maintained. The existing tree shall be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, board leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping. Peripheral green belt (Three row plantation) with Miyawaki plantation technique of 15m thickness along the plant boundary shall be developed with more than 90% survival rate of the plant species focusing on ash dyke area.

16. Industry shall use fly ash brick, fly ash blocks or fly ash based products in their construction / repairing activities.

17. Industry shall provide garland drains with appropriate check dams all along the solid wastes, dust / ash storage areas etc. to avoid any possibility of erosion during rain. Garland drain (size, gradient & 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 project site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains. Industry shall provide adequate collection and treatment arrangement for proper management of storm water. The surface run-off shall be de-silted through a series of check dams and drains. Storm water flowing over plant premises shall not be allowed to join any nearby nallah or any river. The treated storm water shall be used either in process or for land application.

18. Industry shall adopt rainwater-harvesting technique in the project area and residential area (if any) for recharge of ground water. Industry shall develop rainwater-harvesting structures to harvest the rainwater for utilization in the lean season as well as to recharge the ground water table within three months.

19. Industry shall submit Environment Statement to this Board as per provision of Environment (Protection) amendment Rule, 1993 for the previous year ending 31st March on or before 30th September every year.

20. Industry shall establish an environmental management cell to carryout function relating to environmental management under the supervision of senior executive who will directly report to the head of organization. A full-fledged laboratory with qualified technical/scientific staffs to monitor the influent, effluent, ground water, surface water, soil etc. shall be provided.

21. Necessary fund shall be provided for implementation of the above conditions and for environmental safeguards. The funds earmarked for environmental protection measures shall be kept in separate account and not diverted for any other purpose.

22. Industry shall obtain all necessary statutory clearances/licenses/permissions from concerned Central Government/State Government Departments, Boards, Bodies and Corporations etc. before trial/commissioning operation activities. Industry shall follow direction issued by Central Government/State Government, Central Pollution Control Board/Chhattisgarh Environment Conservation Board from time to time regarding control of water pollution and for environmental conservation.

23. The issuance of "Consent to Operate" for trial/commissioning operation activities does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State or local laws or regulations.

24. Any change in production capacity, process/operation, raw materials/fuel used etc. shall be intimated to the Board. For any enhancement of the above prior permission of the Board shall be obtained.

25. Board reserves the right to amend/cancel any of the above conditions, stringent the effluent limits stipulated above and add new conditions as and when deemed necessary in the interest of environmental protection, change in the project profile or non-satisfactory implementation of the stipulated conditions etc.

26. If industry fails to comply with the condition as per the timeline given, the bank guarantee submitted by the industry will be forfeited.

This consent and the authorization to discharge shall be expired after three months starting from the date of issue of this letter. This consent is only for Trial/Commissioning Operation Activities. The applicant shall not discharge after the date of expiration. The applicant shall submit such information forms and fees as required by the Board not later than 60 days prior to the date of expiry.

For & on behalf of
Chhattisgarh Environment Conservation Board

Sd/-
Member Secretary
Chhattisgarh Environment Conservation Board
Nava Raipur Atal Nagar, District – Raipur (C.G.)

Part-B

CONSENT LETTER

Sub: Grant of Consent to M/s Vedanta Limited (Formerly known as M/s Athena Chhattisgarh Power Limited) for emission under section 21 of the Air (Prevention & Control of Pollution) Act, 1981.

Ref: Online application dated: 07/11/2024 and subsequent corresponding ending dated: 07/03/2025 (online application no. 17254961) of M/s Vedanta Limited (Formerly known as M/s Athena Chhattisgarh Power Limited) (Expiry Date – After three months starting from the date of issue of this letter. This consent is only for Trial/Commissioning Operation Activities without any coal firing).

1. With reference to the above application, consent under the Air (Prevention & Control of Pollution) Act, 1981 to M/s Vedanta Limited (Formerly known as M/s Athena Chhattisgarh Power Limited) is hereby granted by the State Board in accordance with the terms and conditions as mentioned below.

2. This consent shall be valid for a period three months starting from the date of issue of this letter. This consent is only for Trial/Commissioning Operation Activities without any coal firing.

   These consents are valid for:-

Item	Capacity
Thermal Power Plant (1 x 600 Megawatt Unit - I)	600 Megawatt (Six Hundred Megawatt)

Terms & Conditions: -

1. This consent is only for Trial/Commissioning Operation Activities (Acid Cleaning, Steam Blowing, Safety Valve Setting, Stabilization of Combustion Parameters for TG Commissioning, Steam Quality Monitoring and Synchronization of the TG) through Oil (LDO) firing only (without any coal firing). Industry shall not use coal for steam generation during Trial/Commissioning Operation Activities of power plant under any circumstances. Industry shall separately inform the Chhattisgarh Environment Conservation Board for use of coal and permission/consent shall be obtained prior to such use, failing which; this consent to operate shall be treated as null & void and shall be considered as violation and subjected to legal action as per law.
2. Industry shall comply with all the terms and conditions of Environmental Clearance given by Ministry of Environment, Forest and Climate Change, Government of India vide letter dated: 06/01/2024.
3. The permission/consent for coal firing shall be granted after installation of Flue Gas De-sulphurization Plant (FGD) to ensure SO_2 emission less than 100 mg/Nm^3 or Ministry of Environment, Forest and Climate Change, Government of India, New Delhi issue any amendment notification/direction in future under Environment (Protection) Rules, 1986 (as amended from time to time) regarding time limit for installation of FGD for thermal power plants installed from 01/01/2017. No any permission/consent for coal firing shall be granted without installation FGD of adequate capacity or any amendment notification/direction by MoEF&CC in this regard.

4. Industry shall provide adequate air pollution control arrangements at all point and non point sources. Industry shall provide Electro Static Precipitator (ESP) and bag house of adequate capacity & high efficiency with boiler and chimney of 275 meter height for control of air pollution. Suitable & effective air pollution control equipments shall be installed for the control of emission from processes/operations and for the control of emission during the handling & transportation of raw materials etc. Industry shall install suitable & effective air pollution control equipments at all transfer points, junction points etc. also. All the conveying system, transfer point, junction point etc. shall be covered. Industry shall install dust extraction and dust suppression system to control of fugitive dust emission. Adequate provision shall be made for sprinkling of water at strategic locations for ensuring dust/fly ash does not get air borne. Adequate dust extraction system followed by bag filters/cyclones and water spray system in dusty areas such as waste delivery points, transfer areas and other vulnerable dusty areas shall be provided. For controlling fugitive dust emission, regular sprinkling of water on roads and other vulnerable areas of the plant shall be ensured. The emission of air pollutants from any point source shall not exceed the following limit: -

Particulate Matter	30 mg/Nm^3 (Thirty Milligram Per Normal Cubic Meter)
Sulphur Dioxide (SO_2)	100 mg/Nm^3
Oxides of Nitrogen (NOx)	100 mg/Nm^3
Mercury (Hg)	0.03 mg/Nm^3

Chhattisgarh Environment Conservation Board may further stringent above emission limit depending upon environmental conditions. Industry shall provide proper space provision for further retrofitting of air pollution control systems in case of further stringent of emission limit by Chhattisgarh Environment Conservation Board. Industry shall also comply the standards prescribed in Environment (Protection) Rules, 1986 (as amended from time to time) for Thermal Power Plants.

5. Industry shall install Flue Gas De-sulphurization Plant (FGD) of adequate capacity to ensure SO_2 emission less than 100 mg/Nm^3 before start of any coal firing. Industry shall also provide Low NOx burners/selective catalytic reactor to ensure NOx emission less than 100 mg/Nm^3 before start of Trial/Commissioning Operation Activities.

6. All air pollution control systems shall be kept in good running conditions all the time and failure (if any), shall be immediately rectified without delay otherwise same alternate arrangement shall be made. In the event of any failure of any pollution control system adopted by the industry, the respective production unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.

7. Industry shall ensure regular running of online continuous stack emission monitoring systems (OCEMS) with calibration facility in all the stack(s) for monitoring of Particulate Matter, Sulphur Dioxide (SO_2), Oxides of Nitrogen (NOx) and Mercury (Hg). Online continuous ambient air quality monitoring system (OCAAQMS) for monitoring of pollutants level in the ambient air shall be installed within three months. Adequate number of continuous

ambient air quality monitoring stations (not less than four) in the core zone as well as buffer zone for PM_{10}, $PM_{2.5}$, CO, NOx and SO_2 etc. shall be set-up in the down wind direction as well as where maximum ground level concentrations are anticipated in consultation with Regional Office, Chhattisgarh Environment Conservation Board, Bilaspur. Monitoring net-work shall be designed taking into account the environmentally and ecologically sensitive targets, land use pattern, location of the stack(s), meteorological conditions and topographic features including existing ambient air quality data. The data so collected shall be properly analyzed and submitted to the Ministry of Environment, Forest & Climate Change, Government of India, Head Office, Chhattisgarh Environment Conservation Board, Nava Raipur Atal Nagar and Regional Office, Chhattisgarh Environment Conservation Board, Bilaspur every six months. Calibration and validation of data shall be carried out of all OCEMS/OCAAQMS and industry shall ensure availability of real time data in CECB/CPCB server.

8. For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution. Low sulphur diesel shall be used.

9. Industry shall install separate electric metering arrangements with time totalizer for the running of pollution control devices. These arrangements shall be made in such a fashion that any non-functioning of pollution control device/devices shall immediately stop the electric supply to the production unit/fuel supply system and shall remain tripped till the pollution control device/devices are made functional again/rectified to achieve the desired efficiency. The record of electric consumption for running the pollution control equipments shall be submitted to Regional Office, Chhattisgarh Environment Conservation Board, Bilaspur and Head Office, Chhattisgarh Environment Conservation Board, Nava Raipur Atal Nagar every month. A separate log - book shall be maintained for this purpose.

10. Industry shall take effective steps for safe disposal of solid wastes and sludges. Oil and grease recovered from the treatment plants shall be disposed only through authorized recyclers. Industry shall obtain authorization from Board under Hazardous and other waste (Management and Transboundary Movement) Rules, 2016. The provisions of solid waste management rules 2016, E-waste (management) rules 2016 and the plastic waste management rules 2016 shall be followed.

11. Industry shall set up railway line/siding to transport coal by rail before March, 2027. Industry shall follow SOP issued vide order dated 26/06/2024 regarding transportation of fuel/raw materials/wastes through tarpaulin covered vehicles. As per environmental clearance condition, a detailed traffic management and traffic decongestion plant shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development Department and the P.W.D./competent authority for road augmentation

and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.

12. All the internal roads shall be made pucca within three months. Good housekeeping practices shall be adopted by the industry.

13. Industry shall take proper action to control the noise pollution. Industry shall install appropriate noise barriers /control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation to control the noise. Earplugs shall be provided to the employee working in the area of generator halls and other high noise areas. The noise level shall not exceed the limits 75 dB (A) during the daytime and 70 dB (A) during the night-time within the factory premises. Industry shall take adequate measures for control of noise level below 85 dB (A) in the work environment.

14. A thick green belt of broad leaf local species shall be developed all along the periphery of project premises. As far as possible maximum area of open spaces shall be utilized for plantation purposes. Industry shall develop green belt in at-least 33% of the total plant area within three months and industry shall also ensure plantation as per environmental clearance. Minimum one tree for every 80 sqm of land shall be planted and maintained. The existing tree shall be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, board leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping. Peripheral green belt (Three row plantation) with Miyawaki plantation technique of 15m thickness along the plant boundary shall be developed with more than 90% survival rate of the plant species focusing on ash dyke area.

15. Industry shall use fly ash brick, fly ash blocks or fly ash based products in their construction / repairing activities.

16. Industry shall submit Environment Statement to this Board as per provision of Environment (Protection) amendment Rule, 1993 for the previous year ending 31st March on or before 30th September every year.

17. Industry shall establish an environmental management cell to carryout function relating to environmental management under the supervision of senior executive who is directly report to the head of organization. A full-fledged laboratory with qualified technical/scientific staffs to monitor the air pollutants emission and ambient air quality etc. shall be provided.

18. Necessary fund shall be provided for implementation of the above conditions and for environmental safeguards. The funds earmarked for environmental protection measures shall be kept in separate account and not diverted for any other purpose.

19. Industry shall obtain all necessary statutory clearances/licenses/permissions from concerned Central Government/State Government Departments, Boards, Bodies and Corporations etc before trial/commissioning operation activities. Industry shall follow direction issued by Central Government/State Government, Central Pollution Control Board/Chhattisgarh Environment Conservation Board from time to time regarding control of air pollution and for environmental conservation.

20. The issuance of “Consent to Operate” for trial/commissioning operation activities does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State or local laws or regulations.
21. Any change in production capacity, process/operation, raw materials/fuel used etc. shall be intimated to the Board. For any enhancement of the above prior permission of the Board shall be obtained.
22. Board reserves the right to amend/cancel any of the above conditions, stringent the emission limits stipulated above and add new conditions as and when deemed necessary in the interest of environmental protection, change in the project profile or non-satisfactory implementation of the stipulated conditions etc.
23. If industry fails to comply with the condition as per the timeline given, the bank guarantee submitted by the industry will be forfeited.

This consent is valid for the stated period and has to be renewed before expiry. Online application with annual license fee in this regard shall reach the office 02 months before the expiry of this consent.

For & on behalf of
Chhattisgarh Environment Conservation Board

Sd/-
Member Secretary
Chhattisgarh Environment Conservation Board
Nava Raipur Atal Nagar, District – Raipur (C.G.)

Signature valid

Digitally Signed by :P. Arun Prasad MS

Date: 2025.03.19 12:36:20 IST

NI-32/Bilaspur/24
Date: - 09/05/2024

CHHATTISGARH ENVIRONMENT CONSERVATION BOARD

Paryawas Bhawan, Sector – 19,
Nava Raipur Atal Nagar, District- Raipur (C.G.) – 492 002
E-mail-hocecb@gmail.com

No. 1078/TS/CECB/2024 Nava Raipur Atal Nagar, Dated: 09/05/2024

To,

M/s Athena Chhattisgarh Power Limited,
Villages - Singhitarai, Odekara, Benipali and Nimohi,
Tehsil - Dabhara,
District - Sakti (C.G.)

Sub: "Permission to Establish" for Coal Based Thermal Power Plant - 2x600 MW of M/s Athena Chhattisgarh Power Limited at Villages - Singhitarai, Odekara, Benipali and Nimohi, Tehsil - Dabhara, District - Sakti (C.G.).

Ref: -
1. Environmental Clearance issued by Ministry of Environment, Forest and Climate Change, Government of India vide letter no. J-13012/07/2009-IA-II (T), dated: 06/01/2024.
2. Your online application no. 14024341, dated: 23/11/2023 and subsequent correspondence ending dated: 24/03/2024.

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Without prejudice to the powers of this Board under the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981 and without reducing your responsibilities under the said Acts and after going through your proposal for achieving the effluent and gaseous emission standards, it is to inform you that this Board grants you permission only for establishment of Coal Based Thermal Power Plant - 2x600 MW at Villages - Singhitarai, Odekara, Benipali and Nimohi, Tehsil - Dabhara, District - Sakti (C.G.), subject to fulfillment of the following terms and conditions.

Terms & Conditions: -

1) Industry shall comply with all the terms and conditions of Environmental Clearance given by Ministry of Environment, Forest and Climate Change, Government of India vide letter dated: 06/01/2024.

2) Industry shall provide adequate facility for proper treatment of industrial and domestic effluent. Effluent treatment plant (E.T.P.) of adequate capacity shall be installed for treatment of industrial waste water generated. Sewage treatment plant (S.T.P.) of adequate capacity shall be installed for treatment of domestic waste water generated. Industry shall ensure that the treated effluent quality meet the standards prescribed by Board published in Gazette Notification dated 25.03.88. No effluent shall be

discharged outside of the plant premises under any circumstance. Treated / un-treated effluent collection pond shall be lined suitably to prevent seepage into ground for avoiding ground water contamination. No sewage or untreated effluent water would be discharged through storm water drains. All the effluent treatment system shall be kept in good running condition all the time and failure (if any), shall be immediately rectified without delay; otherwise, similar alternate arrangement shall be made. Industry shall ensure the treated effluent quality within standard prescribed by Chhattisgarh Environment Conservation Board, Nava Raipur Atal Nagar, Raipur. The major parameters of treated effluent shall conform the limits as follows :-

S. No.	Parameters	Limits
1.	pH	5.5 - 9.0
2.	Suspended Solids	100 Milligram per Liter
3.	BOD	30 Milligram per Liter
4.	COD	250 Milligram per Liter
5.	Oil and Grease	10 Milligram per Liter

Chhattisgarh Environment Conservation Board may further stipulate stringent limit depending upon environmental conditions.

3) Any liquid effluent what so ever generated from industrial activities including ash dyke shall not be discharged into the river or any surface water bodies under any circumstances, and it shall be reused wholly in the process/plantation, dust suppression in coal handling plant, makeup water in ash handling plant etc. All the industrial effluent including ash dyke effluent generated shall be re-circulated/reused after proper treatment. Industry shall provide sewage treatment plant of adequate capacity for treatment of domestic effluent generated from township. The un-treated/treated domestic effluent shall not be discharged into the river or any surface water bodies. The treated domestic effluent shall be used for plantation purpose after proper disinfections. Industry shall make proper arrangements of suitable drains/pipe networks to ensure adequate flow for utilization of treated effluent inside the premises. The concept of zero discharge shall be maintained all the time.

4) Industry shall make arrangements like installation of digital water meter separately for under ground as well as surface water, reuse of non potable water etc. as per NGT order dated 15/11/2022 on OA no. 392/2022 for use of water.

5) Industry shall install online continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time; And connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories. Project proponent shall ensure the treated effluent quality within standard prescribed by Ministry of Environment, Forest and Climate Change, Government of India. Industrial wastewater shall conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and December, 1993 or as amended form time to time.

6) The closed circuit cooling device shall be provided in the power plant and minimum water drawl for makeup purposes shall be ensured.

7) Oil and grease recovered from the treatment plant shall be disposed only through authorized recyclers.

8) No Water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/operation of the power plant.

9) Industry shall obtain the necessary permission for drawl of ground water/surface water required for the project from the competent authority.

10) Industry shall provide adequate air pollution control arrangements at all point and non point sources. Industry shall install Electro Static Precipitator (E.S.P.) and bag house of adequate capacity and high efficiency with both boilers and twin flue common chimney of 275 meter height for control of air pollution. Suitable & effective air pollution control equipments shall be installed for the control of emission from processes/ operations and for the control of emission during the handling & transportation of raw materials/coal, fly ash/bottom ash etc. Industry shall install suitable & effective air pollution control equipments at all transfer points, junction points etc., also. All the conveying system, transfer point, junction point etc. shall be covered. Industry shall install dust extraction and dust suppression system at coal handling plant for control of fugitive emission. Adequate provision shall be made for sprinkling of water at strategic locations for ensuring fly ash does not get air borne. For controlling fugitive dust, regular sprinkling of water in coal handling and other vulnerable areas of the plant shall be ensured. The emission of pollutants from any point source shall not exceed the following limit: -

Particulate Matter	30 mg/Nm^3 (Thirty Milligram per Normal Cubic Meter)
Sulphur Dioxide ***(SO_2)***	100 mg/Nm^3
Oxides of Nitrogen (NOx)	100 mg/Nm^3
Mercury (Hg)	0.03 mg/Nm^3

Chhattisgarh Environment Conservation Board may further stringent particulate matter emission limit depending upon environmental conditions. Industry shall provide proper space provision for further retrofitting of air pollution control systems in case of further stringent of particulate matter emission limit by Chhattisgarh Environment Conservation Board. Industry shall follow SO_2, NOx, mercury and toxic heavy metals emission standard for coal-based power plant developed by Ministry of Environment, Forest & Climate Change, Government of India.

11) Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as waste delivery points, transfer areas and other vulnerable dusty areas shall be provided. Water sprinkling on roads shall be done regularly.

12) All air pollution control systems shall be kept in good running conditions all the time and failure (if any), shall be immediately rectified without delay otherwise same alternate arrangement shall be made. In the event of any

failure of any pollution control system adopted by the industry, the respective production unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.

13) Industry shall install stack of height as per formulae H=14(Q) 0.3 (Where Q is emission rate of SO2 in Kg/hr and H is stack height in meters) or as per guidelines/notification of Ministry of Environment, Forest & Climate Change, Government of India/Central Pollution Control Board based on micro meteorological data or 275 meters (which ever will be more) with arrangement of stack monitoring shall be provided for power plant boilers. The height of other stacks (if any) shall not be less than 30 meters.

14) The quality of coal used by the industry shall conform to the standards prescribed by Ministry of Environment, Forest & Climate Change, Government of India/ Central Government/Central Pollution Control Board/State Government/ Chhattisgarh Environment Conservation Board. Industry shall follow provisions of notification issued by Ministry of Environment, Forest & Climate Change, Government of India regarding use of beneficiated coal. Industry shall also follow provisions of Charter on Corporate Responsibility for Environmental Protection issued by Government of India in this regard.

15) Industry shall follow the provisions given in Ministry of Environment, Forest & Climate Change, Government of India notification dated 07.12.2015 regarding thermal power plant.

16) 24x7 online monitoring system for ambient air quality shall be established with its connectivity with CECB and CPCB server. Stack monitoring shall be done through 24x7 online monitoring system.

17) Continuous monitoring system for monitoring of pollutants levels both in the ambient and the stack (On-Line Opacity Meter) shall be installed. Adequate number of permanent ambient air quality monitoring stations (not less than four) in the core zone as well as buffer zone for SPM, RPM, CO, NOx and SO2 shall be set-up in the down wind direction as well as where maximum ground level concentrations are anticipated in consultation with the Board. Monitoring net-work shall be designed taking into account the environmentally and ecologically sensitive targets, land use pattern, location of the stacks, meteorological conditions and topographic features including existing ambient air quality data. The data so collected shall be properly analyzed and submitted to the Ministry of Environment, Forest & Climate Change, Government of India and Chhattisgarh Environment Conservation Board every six months.

18) Space provision for installation of flue gas de-sulphurization plant (FGD) shall be made so that the same could be installed, if required from environmental angle. Due to commissioning of the power generation units, if 98 percentile values for SO2 (based on actual monitored field data) in the ambient air of nearby areas exceed the prescribed permissible limit for respective sensitive areas, rural, residential and other areas; industry shall install flue gas de-sulphurization units before commissioning of the plant.

19) For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution. Low sulphur diesel shall be used.

20) Industry shall install separate electric metering arrangements with time totalizer for the running of pollution control devices. These arrangements shall be made in such a fashion that any non-functioning of pollution control device/devices shall immediately stop the electric supply to the production unit/fuel supply system and shall remain tripped till the pollution control device/devices are made functional again/rectified to achieve the desired efficiency. The record of electric consumption for running the pollution control equipments shall be submitted to Board regularly every month. A separate log - book shall be maintained for this purpose.

21) Industry shall incorporate total ash utilization as integral part of the project. Industry shall install dry fly ash extraction system so that ash generated during the power generation, collected in dry form and it shall be utilized 100% for other beneficial uses such as brick/block/products making, road construction, cement making, abandoned mines filling and low lying area filling, ash dyke height raising etc. as per guidelines/notification of Ministry of Environment, Forest & Climate Change, Government of India /Central Government/ Central Pollution Control Board/State Government/ Chhattisgarh Environment Conservation Board. Industry shall provide silos of adequate capacity with pneumatic/automatic arrangement of dry fly ash withdrawal to avoid dust emissions for dry collection and withdrawal of fly ash generated to facilitate the use of fly ash for different beneficial purposes such as brick/block/products making, road construction, cement making, etc. Industry shall also use fly ash/bottom ash/pond ash based products for the construction activities. Industry shall comply with the notification issued for coal based thermal power plant by MoEF&CC dated 31/12/2021 (as amended).

22) Fly ash shall be collected pneumatically in silos of adequate capacity and used by cement and brick manufactures for further utilizations. Unutilized fly ash and bottom ash shall be disposed in the form of High Concentration Slurry in the ash pond as per the proposal submitted. Ash pond area shall be provided with impervious lining with suitable leachate collection systems to avoid any leaching of contaminants into underground water table/surface water. Liquid effluent what so ever generated from ash dyke shall not be discharged into the river or any surface water bodies under any circumstances, and it shall be reused wholly in the process/plantation. Industry shall provide suitable drainage systems around the coal stockyard. Ash shall be collected in the ash dyke in such a fashion that sufficient depth of water over surface of the ash shall be maintained all the time to avoid emission of ash. Water sprinklers shall also be provided to control the ash emission from dyke area. The ash dyke shall be so designed and strengthened to ensure safe guard against breaching. The ash stored in the ash pond shall be disposed off at interval of every three months. Proposed ash dyke shall be constructed away as far as possible from the nearby residential area/villages.

23) Industry shall follow the guidelines, notification etc. for utilization of fly ash/bottom ash/pond ash issued by Ministry of Environment, Forest & Climate Change, Government of India/Central Government/Central Pollution Control Board/ State Government/Chhattisgarh Environment Conservation Board from time to time. Industry shall abide by the decisions taken by Ministry of Environment, Forest & Climate Change, Government of India/Central Government/ Central Pollution Control Board/State Government/Chhattisgarh Environment Conservation Board from time to

time regarding use of fly ash/bottom ash/pond ash. Industry shall also follow provisions of Charter on Corporate Responsibility for Environmental Protection issued by Government of India in this regard.

24) Industry shall take effective steps for safe disposal of solid wastes and sludges. Industry shall obtain authorization from Board under Hazardous and other waste (Management and Transboundary Movement) Rules, 2016. The provisions of solid waste management rules 2016, e-waste (management) rules 2016 and the plastic waste management rules 2016 shall be followed.

25) All the internal roads shall be made pucca. Good house keeping practices shall be adopted by the industry.

26) Industry shall take proper action to control the noise pollution. Industry shall install appropriate noise barriers /control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation to control the noise. Earplugs shall be provided to the employee working in the area of generator halls and other high noise areas. The noise level shall not exceed the limits 75 dB (A) during the daytime and 70 dB (A) during the nighttime within the factory premises. Industry shall take adequate measures for control of noise level below 85 dB (A) in the work environment.

27) Industry shall provide appropriate arrangements to avoid air pollution, water pollution, noise pollution etc. during construction phase and during transportation of plants/machineries/equipments/ construction materials etc. to the site for 2 x 600 MW Power Plant. For controlling fugitive dust during transportation and construction works, regular sprinkling of water in village roads and other vulnerable areas of the plant shall also be ensured. The emission from vehicles engaged for transportation of plants/machineries/ equipments/construction materials etc. to the site shall be ensured within prescribed vehicle emission norms.

28) Industry shall submit technical details (drawing, design criteria, design, treatment capacity and efficiency etc.) and copy of work orders of effluent treatment plant and air pollution control equipments to be installed for 2 x 600 MW Power Plant. The construction of effluent treatment plant and installation of air pollution control equipments shall be taken up simultaneously with other civil/mechanical works of Power Plant.

29) Regular monitoring of surface and ground water quality including heavy metals shall be undertaken around ash dyke and the project area to ascertain the change in the water quality, if any, due to leaching of contaminants from disposal area/project area. Result and data collected shall be analyzed to ascertain the status of water quality and findings shall be submitted to the Board.

30) A thick green belt of broad leaf local species shall be developed along the periphery of the project premises. As far as possible maximum area of open spaces shall be utilized for plantation purposes. Industry shall develop green belt in at-least 33% of the total land area.

31) Peripheral Green belt (Three row plantation) with Miyawaki plantation technique of 15m thickness along the plant boundary shall be developed with more than 90% survival rate of the plant species focusing on Ash Dyke area.

32) A minimum of 1 tree for every 80 sqm of land should be planted and maintained. The existing tree will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, board leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.

33) Industry shall provide garland drains with appropriate check dams all along the coal, solid wastes, dust / ash storage areas etc. to avoid any possibility of erosion during rain. Garland drain (size, gradient & 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 project site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains. Industry shall provide adequate collection and treatment arrangement for proper management of storm water. The surface run-off shall be de-silted through a series of check dams and drains. Storm water flowing over plant premises shall not be allowed to join any nearby nallah or any river. The treated storm water shall be used either in process or for land application.

34) Industry shall adopt rainwater-harvesting technique in the project area and residential area (if any) for recharge of ground water. The rain harvesting technique shall be incorporated right from the design stage of all structures. Industry shall develop rainwater-harvesting structures to harvest the rainwater for utilization in the lean season as well as to recharge the ground water table.

35) Industry shall establish an environmental management cell to carryout function relating to environmental management under the supervision of senior executive who will directly report to the head of organization. A full-fledged laboratory with qualified technical/scientific staffs shall be provided to monitor the influent, effluent, ground water, surface water, soil, stack emission and ambient air quality etc.

36) Industry shall provide necessary funds in the project for implementation of the above mentioned conditions, conditions to be stipulated in 'Consent to Establish/Consent to Operate' of the Chhattisgarh Environment Conservation Board, Environmental Clearance of Ministry of Environment, Forest & Climate Change Government of India and for environmental up-gradation/protection. The funds earmarked for environmental protection measures shall be kept in separate account and not diverted for any other purpose. Year wise expenditure shall be reported to the Ministry of Environment and Forest, Government of India and Chhattisgarh Environment Conservation Board.

37) Industry shall abide by the other provisions of Charter on Corporate Responsibility for Environmental Protection issued by Government of India

38) Industry shall follow the terms & conditions to be incorporated in consent to operate under the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981.

39) Industry shall not claim any right on the basis of the “Permission to Establish” granted of the Board. The issuance of ‘Permission to Establish' does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property

or any invasion of personal rights, nor any infringement of Central, State or local laws or regulations.

40) This permission to establish shall be valid for the period of five years effective from the date of issue of this letter. This permission to establish shall be treated as cancelled in case; no construction activity has been started on the site regarding establishment of the plant during this period. Chhattisgarh Environment Conservation Board reserves the right to extend the validity period / not to extend the validity period / cancel / withdraw the permission to establish of the plant, based on the construction activities carried out on the site regarding establishment of the plant.

41) Any change in capacity, project profile etc. shall be intimated to the Board and prior permission of the Board shall be obtained for the same.

42) Board may amend / cancel any of the conditions, stringent the effluent / emission limit and add new conditions as and when deemed necessary in the interest of environmental protection, change in the project profile or non-satisfactory implementation of the stipulated conditions etc.

The consent (for operation) as required under the Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981 shall be granted after fulfillment of all the conditions mentioned above. For this purpose Industry shall have to make an application to this Board in the prescribed proforma. The applicant shall not without valid consent (for operation) of the Board bring into use any out let for the discharge of effluent and particulate matter/gaseous emission.

For & on behalf of
Chhattisgarh Environment Conservation Board

Member Secretary
Chhattisgarh Environment Conservation Board
Nava Raipur Atal Nagar, Raipur (C.G.)

Endt. No.1079/TS/CECB/2024 Nava Raipur Atal Nagar, Dated: 09/05/2024

Copy to: -

1. Chief Engineer (Commercial), Chhattisgarh State Electricity Distribution Company Limited, Bilaspur, for information and necessary action please. The power shall be released only after submission of the copy of **"Consent to Operate"** issued by Chhattisgarh Environment Conservation Board, Raipur.
2. Regional Officer, Regional Office, Chhattisgarh Environment Conservation Board, Bilaspur.

Signature Not Verified

Digitally Signed by :P Arun Prasad MS

Sd/-
Member Secretary
Chhattisgarh Environment Conservation Board
Nava Raipur Atal Nagar, Raipur (C.G.)

Date: 2024.05.11 11:34:00 IST

Grievance Mechanism

Social Performance Manager (SPM), VLCTPP: Mr. Kapil Malhotra
Community Liaison Officer (CLO), VLCTPP: Mr. Deepak Kumar Vishwakarma

Amendment History and Record

Date	Revision Number	Revision History
20/08/2024	00	Initial Draft

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Sensitivity: Internal (C3)

Objective

This Standard Operating Procedure (SOP) for grievance redressal is applicable to Vedanta Limited Chhattisgarh Thermal Power Plant (VLCTPP) across its operational lifecycle. The SOP serves as a guiding framework for cultivating robust and trust-based relationships with stakeholders. It underscores the pivotal role of external stakeholder engagement in fostering enduring relationships that underpin our business operations and secure the social license to operate. The absence of such relationships could expose any business to significant risks, including the possibility of abrupt suspension or closure.

The primary objective of this SOP is to establish the mechanisms necessary to facilitate the seamless implementation of VLCTPP Grievance Redressal process.

The Grievance Redressal SOP delineates the prescribed procedures to be followed when handling written or verbal complaints/grievances concerning VLCTPP's operations. This structured process is designed to ensure that complaints/grievances are addressed with cultural sensitivity, respect, timeliness, and uniformity. By doing so, it aims to nurture confidence and foster positive relationships between VLCTPP and its local stakeholders. The SOP is consistently evolving to adapt to its specific nature of its business and context of its operations.

The consistently evolving grievance mechanism is driven by the following objectives:

- Reinforce the existing grievance handling mechanism, streamlining the reporting and resolution of stakeholder grievances.
- Foster transparent and robust stakeholder relations by facilitating open communication.
- Proactively identify potential issues, conflicts, and opportunities.
- Adhere to a well-defined grievance redressal process encompassing identification, documentation, acknowledgment, assessment, allocation, investigation, resolution, review, and closure of all grievances.
- Augment social capital and/or elevate service quality for the community.
- Ensure that the grievance mechanism process is easily comprehensible to those who are lodging a grievance.

Scope

This Standard Operating Procedure (SOP) is exclusively designed for the utilization of VLCTPP. Its purpose is to delineate the procedure for recognizing, documenting, and addressing grievances, including the stipulated timeframes for resolving complaints concerning VLCTPP's sustainability performance.

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Principle Outcomes & Expectations

The community grievance mechanism is a structured process aimed at receiving, assessing, and resolving project-related grievances originating from affected communities. This mechanism is specifically tailored to prioritize the concerns of local communities impacted by the project or operation. Its formulation is rooted in adherence to a set of effectiveness criteria, aligned with international best practices:

- The business must follow a defined grievance redressal process to identify, record, acknowledge, assess & assign, investigate, resolve, and close all grievances.
- The grievance redressal process must be understood by those lodging a grievance.
- The Grievance Mechanism (GM) shall protect the identity, legal and human rights of the grievance holder and associated persons.
- Grievances must be investigated and resolved in consultation with grievance holder and shall be gender inclusive.
- The GM must be accessible to all external stakeholders and sensitive to the cultural norms of the directly impacted, indigenous and vulnerable stakeholder groups.
- All grievances must be attempted to be resolved within 30 days from identification. If not possible, the Community Liaison Officer (CLO) must update the Social Performance Manager (SPM) and the grievance holder with bimonthly progress.
- A grievance may only be rejected after the investigation has established that there has not been any impact on the grievance holder due to the business activities or its related persons.
- CLO must record, assess, and assign the grievance to the concerned department for investigation and resolution.
- Human Rights related grievances must be directly assigned to the location head for investigation and closure.
- An acknowledgement receipt must be shared with the grievance holder within 24 hours of recording the grievance.
- Grievance (rejected or resolved) shall be considered closed after the CLO has shared a closure report and grievance holder's feedback is obtained on GM process experience and outcome.
- The SPM must monitor quarterly performance of the GM against the principle outcome & expectations and share findings with the location head, Social Performance Steering Committee (SPSC) and Corporate HSES.
- The SBU director or Project Head shall ensure the effective implementation of this standard through the SPM and CLO.

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Grievance Handling Framework

VLCTPP diligently adheres to the framework outlined below for effectively managing and resolving grievances, encompassing both employee and external stakeholder concerns.

Local concerns over the impact of VLCTPP can be expressed in the form of a complaint both formally or informally and can encompass relatively minor concerns as well as more entrenched, serious, or long-term issues which may be described as grievances. In both cases it is important to have robust and credible local mechanisms to systematically handle and resolve any complaints that might arise from both real and perceived impacts in order that they do not escalate and present a risk to operations. If well-handled, an effective grievance mechanism can foster positive relationships and trust with employees and external stakeholders. To manage internal and external grievances effectively, VLCTPP must comply with the following:

- The grievance mechanism for employees shall remain separate from public grievance mechanisms.
- In the first instance and in order to avoid, wherever possible, a situation where a grievance occurs, VLCTPP shall ensure proactive stakeholder engagement practices as described in the Stakeholder Engagement Plan (SEP) developed for VLCTPP.
- Grievance mechanisms shall acknowledge and address concerns over both real and perceived impacts in the same way and with the same level or care.
- Grievance mechanisms shall address even minor complaints, both formal and informal to avoid escalation into serious grievances.
- Grievance mechanisms shall be established as early as possible in the project cycle and at all Operations.
- Grievance mechanisms shall follow a transparent and easily understandable process.
- All grievance mechanisms shall be readily accessible, culturally appropriate, and proactively communicated to employees and other external stakeholders as appropriate.
- No grievance mechanisms shall impede access to or seek to take the place of legal remedies, in case all the options are already exhausted.
- The mechanism should not impede access to or substitute mechanisms provided through or rights to collective agreements.
- The organisational structures and roles and responsibilities shall be established in order to resource and support grievance mechanisms for both employees and other external stakeholders.
- Arrangements shall also be implemented to ensure conformance to the requirements of the IFC Performance Standards.

Sensitivity: Internal (C3)

The key International Finance Corporation (IFC) provisions are summarised as follows:

- **Performance Standard 1** - *Assessment and Management of Social and Environmental Risks and Impacts*-This includes establishing a grievance mechanism directed to receive and facilitate resolution of Affected Communities concerns and grievances about VLCTPP's environmental and social performance. The grievance mechanism should be scaled to the risks and adverse impacts of the project and have Affected Communities as its primary user. It should address concerns promptly, using an understandable and transparent process that is culturally appropriate and readily accessible, and at no cost and without retribution to the party that originated the issue or concern. The mechanism should not impede access to judicial or administrative remedies. VLCTPP will inform the Affected Communities about the mechanism in the course of the stakeholder engagement process.

- **Performance Standard 2**-*Labour and Working Conditions*-The relevant objectives of this standard are to ensure Vedanta provides a grievance mechanism for workers (and their organizations, where they exist) to raise reasonable workplace concerns, to respond to communities' concerns related to projects and where there are Affected Communities, establish a grievance mechanism directed to receive and facilitate resolution of the Affected Communities concerns and grievances about the clients environmental and social performance.

Definition

Definitions of key terms used in this document are shown in the following table.

Term	Definition
Affected Party	Stakeholders who are affected by the company or operation, both positively and negatively. Within this it is possible to distinguish between those that are directly affected and indirectly affected by the company or operation.
Communication	Dialogue between VLCTPP and affected or interested parties. Communication is exchanging (giving and receiving) information. Communication enables VLCTPP to convey the aspects, risks, and opportunities of their operations, and to receive information from a range of stakeholder's concerns, questions and suggestions shared in response.

Term	Definition
Consultation	Consultation is not the same as communication although both are two-way processes. Consultation is purposeful and deliberately seeks input from stakeholders to shape relations and the development of VLCTPP's programmes. It involves the business, key individuals, organisations, and groups affected by or interested in the development and outcomes of the issue/process being discussed. The aim is to ensure mutual understanding and for all parties to be able to manage decisions that have a potential to affect all concerned. A good consultation process needs to be supported by a strong communication programme.
Grievance	A concern, complaint or feeling of resentment raised by any stakeholder either affected or interested in VLCTPP's operations. Both concerns and complaints can result from either real or perceived impacts of a company's operations.
Incident	An event or chain of events which caused or could have caused injury, illness, loss of assets or potential or actual damage to relationships or reputation.
Interested Party	Persons or groups who, although not affected by the VLCTPP's operations, have an interest in or influence over VLCTPP and its operations. This might include welfare organisations, non-government organisations, local businesses, and political groups.
Operation(s)	A location or activity that is operated by the Company and is part of the VLCTPP. Locations could include mines, refineries, ports or transportation activities, wind farms, oil and gas development sites, offices including corporate head offices and research and development facilities.
Records of Records of communication/ consultation	Records of Records of communication / consultation may include key e-mails, letters, newsletters, memorandums, complaints, opportunities for improvement, records of distribution/attendance, records of formal and informal meetings and records of commitments. Refer to Employee Consultation & Participation and Stakeholder Engagement Technical Standards.
Stakeholder	Persons or groups that are directly or indirectly affected by a project as well as those that may have interests in a project and/or the ability to influence its outcome, either positively or negatively. This can refer to shareholders, lenders, employees, communities, industry, governments and interested third parties.

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Term	Definition
Stakeholder engagement	An umbrella term encompassing a range of activities and interactions between VLCTPP and stakeholders over the life of a project that are designated to promote transparent, accountable, positive, and mutually beneficial working relationships. Stakeholder engagement includes stakeholder identification and analysis, information disclosure, communication, problem/conflict anticipation and prevention, ongoing consultation, formation of partnerships, construction of grievance resolution mechanisms, negotiated problem solving, employee involvement in project monitoring, regular reporting forums and procedures, and other related management activities.
Vedanta Company	A subsidiary of Vedanta Group either fully or majority owned that has its own management structure (e.g. Hindustan Zinc Limited, Vedanta Aluminium Limited, Sterlite Industries limited, etc.)
Vulnerable Groups	Individuals or groups within the project area of influence who could experience adverse impacts more severely than others based on their vulnerable or disadvantaged status. This vulnerability may be due to an individual's or group's race, sex, language, religion, political, or other opinion, national or social origin, property, birth, or other status. In addition, other factors should be considered such as gender, ethnicity, culture, sickness, physical or mental disability, poverty or economic disadvantage, and dependence on unique natural resources.

Categories of Grievances

To enhance the precision of the Grievance Redressal Mechanism and the approaches to resolution, VLCTPP has undertaken the task of identifying potential grievance types associated with the project. This categorization is informed by VLCTPP's comprehension of the business context, the operational phases, and the diverse stakeholders involved.

VLCTPP recognizes that stakeholders, given their unique profiles and interests in the project, may harbour distinct concerns or grievances necessitating tailored redressal strategies. Considering this, VLCTPP has broadly classified grievances into two categories, as outlined below:

Internal Grievances

- Grievances originating from employees, encompassing both direct and indirect staff, including workers employed through contractors and truck drivers.

Sensitivity: Internal (C3)

External Grievances

- Community grievances stemming from transportation and traffic issues.
- Community grievances linked to environmental pollution.
- Grievances associated with the impact on community health.
- Community grievances concerning development, CSR initiatives, community expectations, and related matters.

Internal Grievance Redressal Mechanisms

A grievance mechanism shall be established to allow for ongoing opportunities to receive and facilitate the resolution of concerns and grievances from employees. This mechanism shall be designed to ensure that:

- Grievances are addressed promptly, using an understandable and transparent system.
- Comments, suggestions, and complaints are received, logged, followed up and signed off in an appropriate manner.
- Grievances are registered and documented, and resolutions are found in partnership with the employee(s)
- The grievance process is objective and protects the identity of the person raising the issue (as necessary)
- Employees raising grievances are treated with respect and not subject to discrimination or disciplinary procedures.
- If a reasonable rejection of the complaint is required, a full explanation will be provided to the complainant.
- If complaints cannot be resolved through the grievance mechanism, it may be necessary that complainants have recourse to other forms of redress e.g. judicial or administrative channels for dispute resolution available in the country of operation.
- The outcome is appropriately communicated.

External Stakeholder Grievance Mechanisms

When a complaint, dispute or grievance does arise, in order that VLCTPP operations respond effectively and in a timely manner, a robust grievance mechanism shall be put in place for every operation using the following criteria:

- The grievance mechanism shall allow for the widest possible understanding of complaints or grievances, covering any subject which is deemed important by stakeholders, and will ensure that all types of complaints and grievances are handled in the same way and with the same level of robustness and integrity.

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- The grievance mechanism shall be scaled to the potential risk and adverse impacts to affected and interested stakeholders. This will be dictated by a risk assessment and stakeholder identification analysis discussed in the Stakeholder Engagement Technical Standard.
- VLCTPP shall proactively inform affected communities and wider stakeholders of the details of the grievance mechanism in the course of its community and stakeholder engagement activities as described in the Stakeholder Engagement Technical Standard.
- The grievance mechanism shall be clear and accessible to all segments of communities including vulnerable groups, those differentially or disproportionately affected and wider stakeholders at no cost to them.
- VLCTPP will respond to any stakeholder concerns or grievances promptly and thoroughly in all cases.
- Communities and where appropriate respected third parties shall be involved in designing, communicating and implementing the grievance mechanism using culturally appropriate and agreed ways of communication and remedy.
- The grievance mechanism will protect those who use it, will never result in any kind of retribution and will not impede access to other remedies or alternative recourse e.g. judicial or administrative channels for dispute resolution available in the country of operation.
- The mechanism shall allow for different ways of making complaints and shall define a clear and transparent process for resolving complaints including regular updates for complainants.
- To mitigate perceptions that resolutions unfairly benefit the company, in almost all cases, face-to-face discussions with complainants and community members should be sought with the aim of finding resolutions in partnership and increasing ownership of solutions.
- Any outcomes should be transparently communicated whilst protecting the identity of those involved wherever necessary or requested.
- Responses to serious concerns or grievances shall be decided by a cross-departmental committee rather than by a single individual.
- If a reasonable rejection of the complaint is required, a full explanation shall be provided to the complainant.
- A complaint or grievance shall be regarded as a company 'Incident' and will be recorded, tracked, investigated, where necessary, and communicated appropriately across the business in order that lessons can be learnt to avoid future risks to the business.
- The operation-level mechanism shall feed into a group-level procedure so that maximum transparency of operational grievances is assured, and the group can maintain oversight and implement organisational responses where necessary.

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Addressable Grievance Types

The following categories of grievances will be duly attended to and resolved in accordance with the established procedure:

- Community grievances
- Labour-related concerns
- Contractor-related issues
- Environmental matters
- Employee grievances
- Grievances linked to human rights
- Any other concerns or grievances pertaining to the company

Grievance Redressal Process Overview

Upon receipt of a grievance, the Chief Liaison Officer (CLO) promptly issues an acknowledgment receipt within 24 hours. The CLO then meticulously records, assesses, and assigns the grievance to the relevant department for thorough investigation and resolution.

All grievances are diligently addressed with an aim to achieve resolution within 30 days from identification. If resolution within this timeframe is impractical, the CLO ensures regular updates to both the Social Performance Manager (SPM) and the grievance holder, providing progress reports bi-monthly.

In cases where an investigation reveals no discernible impact on the grievance holder due to business activities or associated individuals, the grievance may be rejected.

Specifically, human rights grievances are expedited by assigning them directly to the location head for swift investigation and closure.

A grievance, whether rejected or resolved, is officially closed once the CLO shares a comprehensive closure report. The closure process includes soliciting feedback from the grievance holder, assessing their experience with the Grievance Mechanism process, and evaluating the overall outcome.

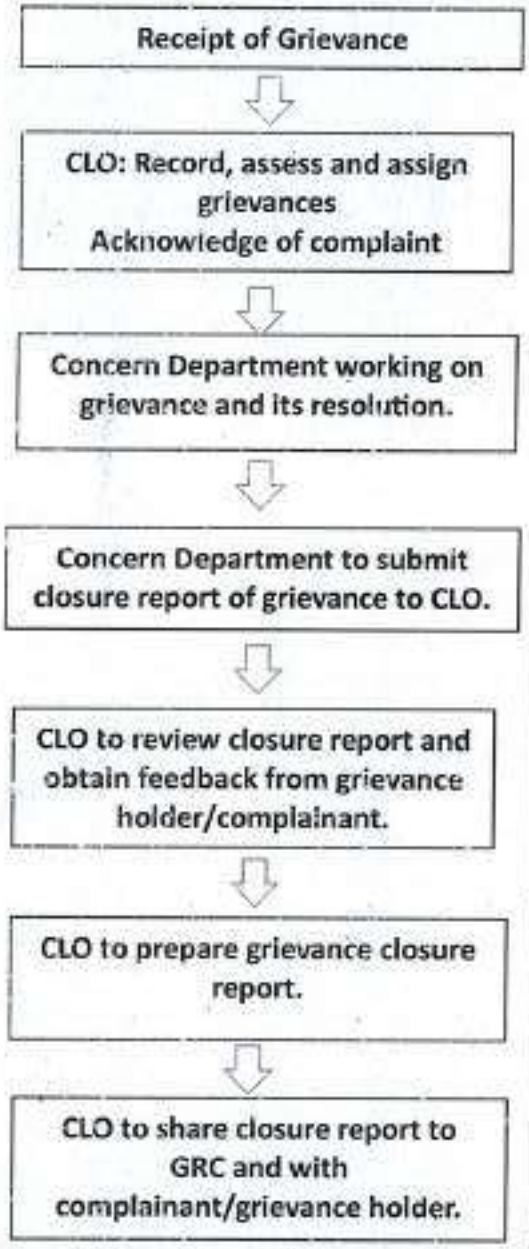
The Social Performance Manager (SPM) takes on the responsibility of quarterly performance monitoring of the Grievance Mechanism. The findings, including insights into principle outcomes and expectations, are then communicated to the location head, Social Performance Steering Committee (SPSC), and Corporate Health, Safety, Environment, and Security (HSES). This ensures a continuous improvement cycle and upholds the highest standards in addressing grievances.

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COO VLCTPP shall ensure the effective implementation of this standard through the SPM and CLO.

Grievance Management System-Process Diagram



Day 1: Registration of grievance

Day 2: (a) CLO to record, assess and assign the grievance to the concerned department for investigation and resolution.

(b) CLO to issue acknowledgement receipt to complainant within 24 hrs.

Day 3: Concerned Department start working on grievance.

Day24: Concerned Department to submit closure report of grievance to CLO

Day 25-27: CLO to review closure report and to obtain grievance holder feedback.

Day 28: CLO to prepare grievance closure report.

Day 29: CLO shall share the closure report to Grievance Redressal Committee (GRC) and complainant/grievance holder.

Day 30: All grievances must be attempted to be resolved within 30 days from identification. If not possible, CLO must update SPM, GRC and the grievance holder with bimonthly progress.

Prepared By	Reviewed By	Approved By	Issued By
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Grievance Redressal Committee

VLCTPP understands that the Vedanta Technical Standards requires that VLCTPP shall in the first place avoid complaints wherever possible. However, in a situation where a grievance does occur, the project shall ensure proactive stakeholder engagement practices as described in the Stakeholder Engagement Technical Standard and the stakeholder engagement plan.

In keeping with this, VLCTPP has put in place a Grievance Redressal Mechanism which requires continuous monitoring and review on a regular basis. Through this process of review, VLCTPP aims to identify trends and key areas of concern as well as their sources through a casual analysis. Apart from this, to reduce the number of grievances received, VLCTPP is also exploring the option of undertaking periodic studies to help identify broader project level impacts and their mitigation measures. This would be aimed at reducing the number of grievances received in the first place by addressing the issue in its early stages itself.

At VLCTPP, following will constitute the Grievance Redressal Committee member. The Grievance Redressal Committee shall meet on monthly basis or on need basis as communicated by CLO/SPM. The quorum for the meetings shall be considered complete with presence of minimum 8 members from the committee.

Grievance Redressal Committee of VLCTPP

Sl. No.	Name	Department	Role
1.	Mr. D.K. Patel	COO	Chairman
2.	Mr. Kapil Malhotra	CHRO	Social Performance Manager
3.	Mr. K.V. Kulkarni	Head-HSE	Member
4.	Mr. Mayank Patangiwar	CCO	Member
5.	Mr. Surender Sharma	Head-Legal	Member
6.	Mr. Anil Agrawal	CFO	Member
7.	Mr. Sujit Basa	Head-C&I	Member
8.	Mr. Ashish Padamwar	Head-Safety	Member
9.	Mr. Rishi Verma	Head-Admn.	Member
10.	Mr. Prem Chandra Jha	Head-Security	Member
11.	Mr. Shailendra Kumar Pandey	Head-IR	Coordinator
12.	Mr. Bharat Bhushan Joshi	Head External Affairs	Member
13.	Mr. Deepak Kumar Vishwakarma	CC&CSR	Community Liaison Officer

Prepared By	Reviewed By	Approved By	Issued By
Date : 20.8.2024	Date : 21/08/24	Date : 21/8/24	Date : 21/8/24

Vedanta : Internal (C2)

Review Mechanism of Grievance:

The Grievance Redressal Committee shall meet on monthly basis to review the Grievances received versus resolved. The Grievance Redressal Committee shall also review the grievances pending for redressal. Community Liaison Officer (CLO) shall circulate the MIS on monthly basis to VLCTPP EXCO.

Communication

1. An acknowledgement receipt must be shared with the grievance holder within 24 hours of recording the grievance.
2. Grievances resolved / shall be consider closed only after CLO has to share the closure report to the Grievance holder and obtained feedback within 30 days of identification of the grievance.

Documentation

Grievance related following data will be maintained for recording and review-

- Grievance register
- Grievance manual in local language signed off by COO, VLCTPP made available to all (internal and external stakeholders)
- Reports of annual workshops conducted for VLCTPP employees and Business partners on Grievance Redressal Mechanism
- Quarterly and Annual Grievance mechanism performance review to be shared and signed off by Grievance Redressal Committee and COO, VLCTPP.
- Minutes of Grievance Redressal Committee meetings
- MIS reports maintained by CLO
- Closure report along with feedback from the complainant

Prepared By	Reviewed By	Approved By	Issued By
Date : 20.8.2024	Date : 21/08/24	Date : 21/8/24	Date : 21/8/24

Sensitivity: Internal (C3)

Matrix of Grievance Redressal

Target	Grievance Collection System	Timeline for resolution
Employees	Email : power.grievance.vlctpp@vedanta.co.in	30 Days
Contact labours/Contractors	Drop their complaint in drop box placed at security gate	30 days
District Administration	Letters	30 Days
Community	Drop their complaint in drop box placed at security gate, submit a letter	30 Days

Annual Training of Grievance Redressal Mechanism

Employees and business partners will be trained with an annual refresher on their duty to identify and report grievances to CLO, Project teams shall be trained on the aspects of communication, Grievance Redressal Mechanism (GM) process and the cultural norms of stakeholders.

Prepared By	Reviewed By	Approved By	Issued By
Date : 20.8.2024	Date : 21/8/24	Date : 21/8/24	Date : 21/8/24

Sensitivity: Internal (C3)

Annexure-1

Grievance Registration Form

Vedanta Limited Chhattisgarh Thermal Power Plant (2x600 MW Thermal Power Plant) Singhitarai, Chhattisgarh – 495695		
Application No.		Date:
Details of Complainant Address:	Name	
	Name of Father/Husband	
	Contact No.	
	Mail id	
Subject		
Grievance in Brief		
Remarks		

Signature of Complainant

Acknowledgement for Grievance Registration Form

Application No.	
Name	
Address/Village	
Date of Acknowledgement	

Signature of Chief Liaison Officer, VLCTPP

Prepared By	Reviewed By	Approved By	Issued By
Date : 20.8.2024	Date : 21/08/24	Date : 21/8/24	Date : 21/8/24

Sensitivity: Internal (C3)

Annexure-2

Grievance Management System

Sl.No.	Complainant Name	Application No.	Address and contact details of concerned person	Details of grievance received	Concerned department	Date of grievance received	Date of assignment to concerned deptt.	Date of resolution	Status	Remarks

Prepared By	Reviewed By	Approved By	Issued By
Date : 20.8.2024	Date : 21/08/24	Date : 21/8/24	Date : 21/8/24

Sensitivity: Internal (C3)

Annexure- II

Vision Statement

Our vision is to be a leading, diversified natural resource company providing superior returns to our stakeholders. We will meet our vision by delivering high quality assets and low-cost operations, with sustainable development at the core of all that we do.

Our group core purpose & values:

- Trust
- Entrepreneurship
- Innovation
- Excellence
- Integrity
- Care
- Respect

Vision

Sustainable development of communities in and around our operation by enabling and partnering for optimum growth.

In order to transform the vision of Vedanta into reality, following specific programmes are envisaged at the unit:

- Company is committed to community development activities in the surrounding areas through its CER / CSR programs, involving Health Care Facilities, Education Facilities, Women Empowerment, Skill Development for local employable youth, Partnering with Government programs for social development, Construction of necessary infra facilities, Supporting in Sport and Cultural activities etc.
- Installation and Commissioning of pollution control systems / devices for air pollution, water pollution and noise pollution control measures.
- Proper management of wastes including Fly ash as per the applicable Laws / Acts / Rules / Guidelines.
- Implementing Zero Liquid Discharge (ZLD) System for effective recycling and reuse of effluents.

Vedanta Limited – Unit : Athena
Site Office: Village-Singhitarai, Tehsil-Dabhara, District - Sakti, Chhattisgarh, Pin-495695
Registered Office: Vedanta Limited 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai 400093, Maharashtra, India
T +91 22 6643 4500 I F +91 22 6643 4530
CIN: L13209MH1965PLC291394

Sensitivity: Public (C4)

- Compliance to Environmental Norms and Standards as applicable to the organization.
- Surveillance of all important environmental parameters on a continuous basis and apply corrective measures.
- Greenbelt / Green cover development in and around the project as per the compliance requirement and beyond.
- Conservation of waterbodies within 5 km radius of the plant as per requirement of watershed management plan.
- Creation / conservation of the sacred groves within 5 km area of the project as per requirement of stakeholders.

We, as a committed corporate, will develop and implement policies viz. Health Safety and Environment, Stakeholder Engagement & CSR, Water, Energy & Carbon, Human Rights etc. during the course of operation of the plant as per requirement.

Thanking you,

For and on behalf of Vedanta Limited,

[Unit: 2x600 MW Thermal Power Plant, Singhitarai
(Erstwhile known as Athena Chhattisgarh Power Limited)]



G Venkat Reddy
(Authorized Signatory)

Vedanta Limited – Unit : Athena
Site Office: Village-Singhitarai, Tehsil-Dabhara, District - Sakti, Chhattisgarh, Pin-495695
Registered Office: Vedanta Limited 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai 400093, Maharashtra, India
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CIN: L13209MH1965PLC291394

Sensitivity: Public (C4)

Ref. No: EC/ACPL/Env./2024-25/06 **July 06, 2024**

To
The Regional Officer (IRO)
Ministry of Environment, Forest & Climate Change
Integrated Regional Office, Aranya Bhawan
North Block, Sector-19 ,
Nava Raipur, Atal Nagar (CG) 492002

Subject:
Submission of Compliance to EC conditions {Condition # 1 (xv), 3.1(ii) & 3.1 (iv)} within six months of grant of EC for 2 x 600 MW Coal based Thermal Power Plant of M/s. Athena Chhattisgarh Power Limited (**now amalgamated with Vedanta Limited**), at Villages: Singhitarai, Odekera, Benipali and Nimohi, Tehsil: Dabhara, District: Sakti (CG) 495695

Reference:
Environmental Clearance File No.: J-13012/ 07/ 2009-IA. II(T) (EC Identification # EC23A0601CG5872873N) dated 06.01.2024

Dear Sir,

With reference to the above, we are herewith submitting compliance to EC conditions {Condition # 1 (xv), 3.1(ii) & 3.1 (iv)} as under:

Condition #	EC Condition	Compliance status
1 (xv)	A well designed rain-water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.	Details of rain-water Harvesting system (Established and Proposed) is attached herewith as **Annexure-I.**
3.1 (ii)	A vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation, and conservation of water bodies within 5km radius of	Vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation, and conservation of water bodies within 5km radius of the project cover area, creation

Sensitivity: Public (C4)

	the project cover area, creation of sacred groves etc shall be prepared and submitted to the Regional Office of the Ministry within 6 months. Implementation status of the same shall be reported to the regional office in 6 monthly compliance report.	of sacred groves etc is attached herewith as **Annexure-II.**
3.1 (iv)	The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of Environmental Clearance for undertaking the CER activities, committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.	Timebound action plan committed to EAC is in place and same is attached herewith as **Annexure-III.**

We hope that the above is in line with the requirements under the referred Environment Clearance.

Thanking you,

For and on behalf of Vedanta Limited,

[Unit: 2x600 MW Thermal Power Plant, Singhitarai
(Erstwhile known as Athena Chhattisgarh Power Limited)]



G Venkat Reddy
(Authorized Signatory)

Encl: as above

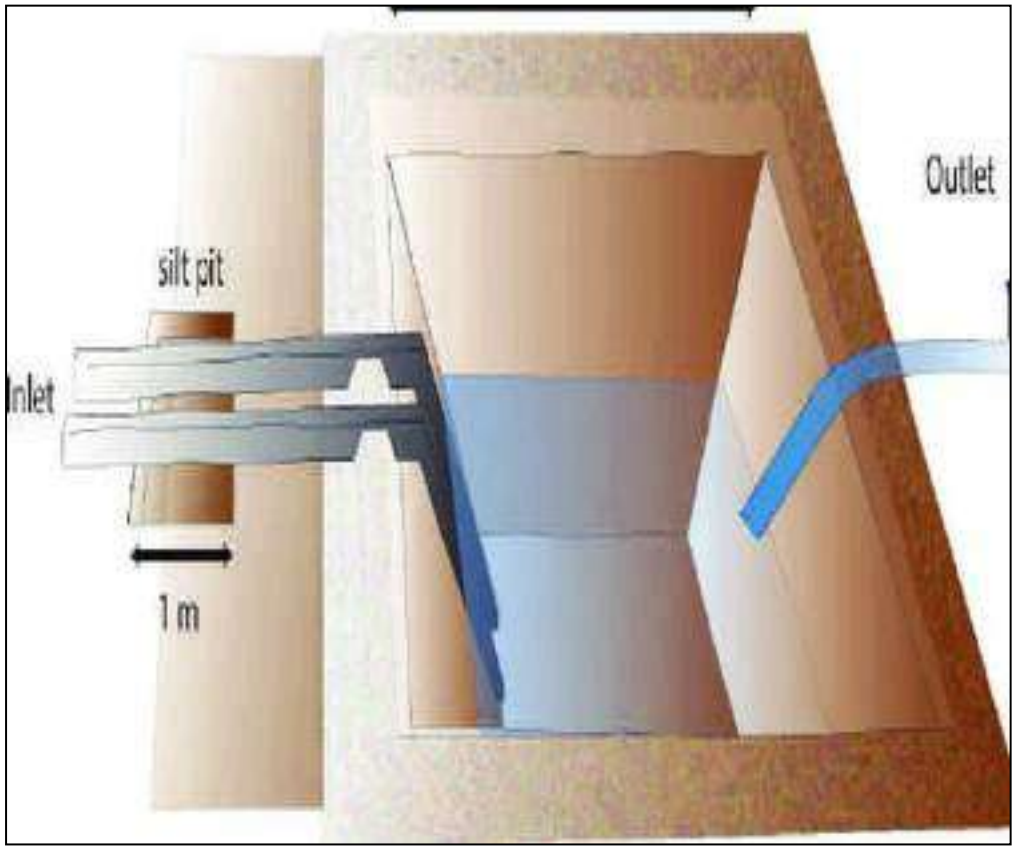
Vedanta Limited – Unit : Athena
Site Office: Village-Singhitarai, Tehsil-Dabhara, District - Sakti, Chhattisgarh, Pin-495695
Registered Office: Vedanta Limited 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai 400093, Maharashtra, India
T +91 22 6643 4500 I F +91 22 6643 4530
CIN: L13209MH1965PLC291394

Sensitivity: Public (C4)

Rain Water Harvesting System

The basic principle of Rainwater harvesting systems is to channelize rainwater from a catchment surface (roof or other raised solid surface), through a distribution system (gutters, downspouts and pipes) and then into storage tank.

S. No.	Particulars	m3/annum	m3/Day
1.	Total Surface Water Requirement	2,96,58,440	81,256
2.	Total Runoff Generated inside the Plant premises	1993632.7 *	5462*
3.	Net Rainwater Harvesting capacity inside the Project Site	3,64,500	998.63
	Percentage of generated runoff which will be harvested	**18.28 %**	



*Total runoff Generated inside the plant premises excluding raw water reservoir & storage ponds

Summarization of Rainfall Run-off within Plant Premise

5Annual Runoff available for Rainwater Harvesting					
S.No	**Land Use Type**	**Area (Sqm)**	**Average Annual Rainfall (m)****	**Runoff Coefficient**	**Quantity of Rainfall Runoff (Cum/annum)**
1	Roof-top	1427418.34	1.23	0.85	1492365.9
2	Road and Paved	178490.65	1.23	0.65	142703.3
3	Open unpaved area	577626.84	1.23	0.2	142096.20
4	Raw water reservoir & Storage ponds	518200	1.23	1	637386
5	Greenbelt	1173264.61	1.23	0.15	216467.3
6	Railway (inside premises)	132700.47	1.23	0	0
	Total	**4007700.91**			**2631018.7**

*The average annual rainfall of Janjgir-Champa district for 10 years (2012 to 2021) is 1226.16 mm, which is round off here as 1.23 m for ease of data calculations.

**total runoff from rooftop area is 1492365.9 cum/annum, which will be available for collection in storage ponds

Summary of Rainwater harvesting Storage Ponds

S. No.	Particular	Storage Pond 1	Storage Pond 2	Storage Pond 3	Total
1.	Dimensions of Ponds	210 X 50 X 4	210 X 50 X 4	150 X 50 X 5	
2.	Area (Sq. m)	10500	10500	7500	28500
3.	Total Capacity of Storage Ponds (m3)	42000	42000	37500	121500
4.	Number of fill season	3	3	3	3
5.	Capacity of Rainwater Water Accommodations (M3/Annum)	126000	126000	112500	364500

Annexure- II

Vision Statement

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- Respect

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- Installation and Commissioning of pollution control systems / devices for air pollution, water pollution and noise pollution control measures.
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Sensitivity: Public (C4)

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We, as a committed corporate, will develop and implement policies viz. Health Safety and Environment, Stakeholder Engagement & CSR, Water, Energy & Carbon, Human Rights etc. during the course of operation of the plant as per requirement.

Thanking you,

For and on behalf of Vedanta Limited,

[Unit: 2x600 MW Thermal Power Plant, Singhitarai
(Erstwhile known as Athena Chhattisgarh Power Limited)]



G Venkat Reddy
(Authorized Signatory)

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Site Office: Village-Singhitarai, Tehsil-Dabhara, District - Sakti, Chhattisgarh, Pin-495695
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Sensitivity: Public (C4)

Revised Socio - Economic Development Plan for 2x600 MW Coal Based Thermal Power Plant

At villages Singhitarai, Benipali, Odekera & Nimohi, Tehsil Dabhara, District Sakti, Chhattisgarh

Table 1

Total Budget for Socio-Economic Development Activities To Be Carried Out in the nearby area of the plant site

S.No	Socio-Economic Development Activities To Be Carried Out	Budget
1.	**To address issues raised in public Notice: Rs. 3.79 Cr**	
A.	Education	0.62
B.	Health	0.70
C.	Infrastructure	1.62
D.	Sustainable livelihood	0.85
2.	**Long term Plan: Rs. 5.1 Cr.**	
A.	Need assessment Study	0.3
B.	Education	0.6
C.	Health	0.96
D.	Infrastructure	1.60
E.	Sustainable livelihood	1.41
F.	Audit	0.20
G.	Developmental activities at Govt School, Odekera	0.20
3.	**Major Projects: Rs. 10 Cr.**	
A.	English Medium School	5
B.	Health Centre	5
Grand Total		**19 Crore**

Note: The above plan will be implemented by March, 2028.

Detailed breakup of Socio-Economic Development Activities to Be Carried Out as per issues raised in response of the Public Notice is given as under:

Table 2

Socio-Economic Development Activities to Be Carried Out as per issues raised in response of the Public Notice by ACPL In Nearby Villages

Sl. No.	Name of the activity	Year wise budget (Rs. Lacs)		Total (Rs. Lacs)
		FY24	FY25	
A	**Education**			
1	School Uniform & Support Material-2 pair uniform, 1 pair shoes, 1 school bag, 1 set stationery item in Singhitarai, Nimohi and Odekera	0	5	5
2	Scholarship distribution to meritorious students.	0	5	5
3	Library facilities will be provided	0	6	6
4	Furniture and Sports equipments like, Table, Chairs, Indoor / ootdoor sports kit like Football, vollyball, cricket, Badminton, Skipping Rope, carrom board, Chess will be provided.	5	15	20
5	Village level inter school and cultural meet will be organized/ partenered with the govt programsA.	3	3	6
6	Renovation of anganwadees and Schools in terms of repairs and additional facilities wherever required.	10	10	20
		Sub Total		**62**
B	**Health and Family Welfare**			
1	Mobile health van	12	24	36
2	Awareness programmes on Menstrual Health Management, TB, HIV	3	6	9
3	Maternal and child health and nutrition	10	15	25
		Sub Total		70
C	**Community Rural Infrastructure**			
1	Street Lights - 500 Units (Will be increased on need basis)	6	**6**	**12**
2	Water supply through pipeline in adjacent villages and as per requirement.	10	**15**	**25**
3	Community Halls- 5 No.	25	**100**	**125**
		Sub Total		**162**
D	**Sustainable Livelihood**			

Sl. No.	Name of the activity	Year wise budget (Rs. Lacs)		Total (Rs. Lacs)
		FY24	FY25	
1	Women Empowerment through training of vocational courses like tailoring, beauty parlour, SHG Formation etc in adjacent villages - 500 beneficiaries to begin with,	10	**15**	**25**
2	Livestock vaccination and treatment - 1000 livestock's	0	**10**	**10**
3	Farm based interventions like training on multi cropping, Millet cultivation, provision of agri equipments/seeds, Watershed management through Rain Water Harvesting and Construction of check dams etc in adjacent villages -500 farmers to begin with.	10	**40**	**50**
		Sub Total		**85**
		Grand Total		**379**

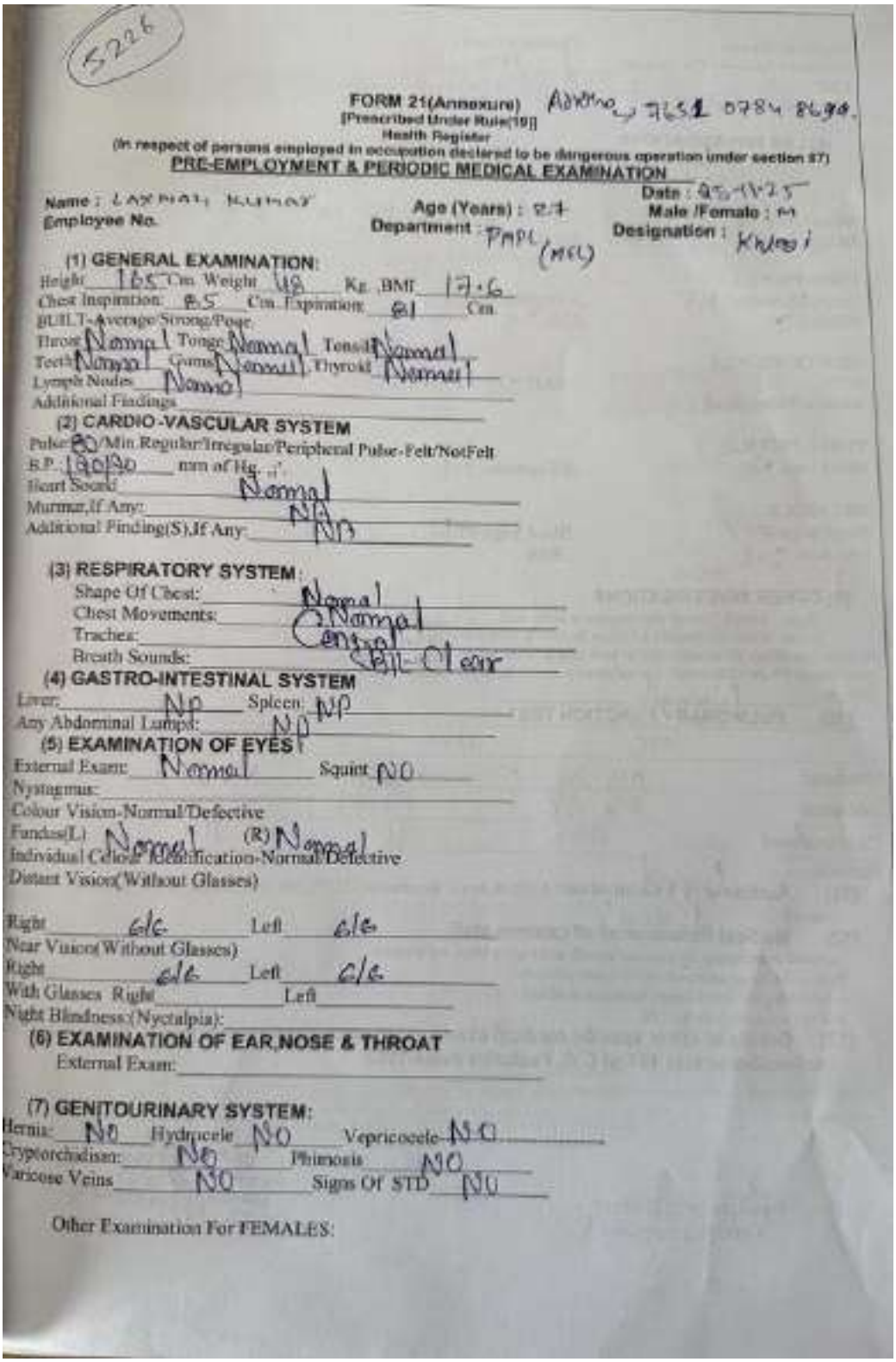
Table 3

Socio-Economic Development Activities to Be Carried Out By ACPL In Govt School, Odekera

S.No.	Infrastructural and other facilities proposed at Govt School Odekera	Budget (Lakhs)
1.	Renovation of toilets (Girls and boys) and providing septic tank	2
2.	Improving plumbing and civil work for drainage of water (runoff)	1
3.	Improvising drinking water facilities	2
4.	Renovation of Aanganwadi room and toilet	5
5.	Plantation along the periphery of school premises	5
6.	Dust protection net for windows	5
	Total	**20 Lakhs**

-=-=-=-=-=-

Occupational Health Surveillance Sample Report



5226

FORM 21(Annexure) Aadhar no. 7651 0784 8690.
[Prescribed Under Rule(19)]
Health Register
(In respect of persons employed in occupation declared to be dangerous operation under section 87)
PRE-EMPLOYMENT & PERIODIC MEDICAL EXAMINATION

Name : LAXMAN KUMAR
Employee No.
Age (Years) : 27
Department : PMPL (MEL)
Date : 25-11-25
Male /Female : M
Designation : Khalasi

(1) GENERAL EXAMINATION:
Height 165 Cm. Weight 48 Kg. BMI 17.6
Chest Inspiration: 85 Cm. Expiration 81 Cm.
BUILT-Average/Strong/Poor
Throat Normal Tonge Normal Tonsil Normal
Teeth Normal Gums Normal Thyroid Normal
Lymph Nodes Normal
Additional Findings

(2) CARDIO-VASCULAR SYSTEM
Pulse 80 /Min.Regular/Irregular/Peripheral Pulse-Felt/NotFelt
B.P. 130/90 mm of Hg.
Heart Sound Normal
Murmur,If Any: NA
Additional Finding(S),If Any: NP

(3) RESPIRATORY SYSTEM:
Shape Of Chest: Normal
Chest Movements: Normal
Trachea: Central
Breath Sounds: Bil Clear

(4) GASTRO-INTESTINAL SYSTEM
Liver: NP Spleen: NP
Any Abdominal Lumps: NO

(5) EXAMINATION OF EYES
External Exam: Normal Squint NO
Nystagmus:
Colour Vision-Normal/Defective
Fundus(L) Normal (R) Normal
Individual Colour Identification-Normal/Defective
Distant Vision(Without Glasses)

Right c/c Left c/c
Near Vision(Without Glasses)
Right c/c Left c/c
With Glasses Right Left
Night Blindness(Nyctalpia):

(6) EXAMINATION OF EAR,NOSE & THROAT
External Exam:

(7) GENITOURINARY SYSTEM:
Hernia: NO Hydrocele NO Vepricocele NO
Cryptorchadism: NO Phimosis NO
Varicose Veins NO Signs Of STD NO

Other Examination For FEMALES:

Sensitivity: Public (C4)

VLCTPP CER Overview (Hospital)



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Proposed CER (Health)- 10 Bedded Primary Health Care:

Infra Based Cost and approval details:

Activity	Person to Approach	Status/Timeline
Land Identification, NOC from gram Panchayat	Sarpanch	Completed
NOC for change of Land use	Dept of Revenue	December
Approval of PHC layout	CMO	December
NOC from Chhattisgarh Pollution Control Board for bio waste disposal	CPCB	December
NOC for fire Safety	Fire Safety Department	January
Electricity Supply	Electricity Board	January
X-Ray/Ultrasound etc. (If required)	Atomic energy Department	January

Deployment of Business Partners for operating PHC:

Activity	Person to Approach	Status/Timeline
Appointment of Manpower- • 2 Doctors • 1 Pharmacist • 1 Lab Assistant • 1 Housekeeping • 1 Supervisor	Business Partner	February
Approval from CMO for manpower (qualification, etc)	Business Partner	February
Lab Setup and Consumables.	Business Partner	February
Medicine Stock (Convergence with District Health Department)	Business Partner, CMO	February

VLCTPP CER Overview



DESH KI ZAROORATON KE LIYE

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OIL & GAS | ZINC, LEAD & SILVER | ALUMINIUM | COPPER | IRON, STEEL & FERRO ALLOYS | NICKEL | POWER | ELECTRONICS | DISPLAY GLASS

CER (Education)-Renovation of Existing Infrastructure in Singhitarai:

Corporate Environment Responsibility directs CTPP to construct and operate an English medium school till grade 12th

↓

CTPP Settled for: Construction and operation of English Medium primary School (till grade 5th)

↓

Current Proposed Plan(based on community/govt consultation)- Singhitarai has an abandoned additional building which can be used for the purpose of Intercollege

Proposed CER (Education)-Renovation of Existing Infrastructure in Singhitarai:

Infra Work:

S.NO	Work to be Done	Responsibility
1	Painting	Civil Department
2	Installation of Furniture	
3	Smart Class	
4	Computer Lab	
5	Science Lab	

Required Approval:

S.No	Person to Approach	Timeline
1	Discussion with District Education Officer	December (1st exploratory meeting on 24th nov'25)
1	NOC from Collector	TBD
2	Professional Partner to operate school	TBD

Abandoned Building Singhitarai:



Grievance Mechanism

Social Performance Manager (SPM), VLCTPP: Mr. Kapil Malhotra
Community Liaison Officer (CLO), VLCTPP: Mr. Deepak Kumar Vishwakarma

Amendment History and Record

Date	Revision Number	Revision History
20/08/2024	00	Initial Draft
12/02/2025	01	Grievance collection e-mail id is updated

Prepared By	Reviewed By	Approved By	Issued By
Date : 12-02-2025	Date : 12-02-2025	Date : 15/02/25	Date : 15-02-25

Sensitivity: Internal (C3)

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Prepared By	Reviewed By	Approved By	Issued By
Date : 12-02-2025	Date : 12-02-2025	Date : 15-02-2025	Date : 15-02-25

Sensitivity: Internal (C2)

Objective

This Standard Operating Procedure (SOP) for grievance redressal is applicable to Vedanta Limited Chhattisgarh Thermal Power Plant (VLCTPP) across its operational lifecycle. The SOP serves as a guiding framework for cultivating robust and trust-based relationships with stakeholders. It underscores the pivotal role of external stakeholder engagement in fostering enduring relationships that underpin our business operations and secure the social license to operate. The absence of such relationships could expose any business to significant risks, including the possibility of abrupt suspension or closure.

The primary objective of this SOP is to establish the mechanisms necessary to facilitate the seamless implementation of VLCTPP Grievance Redressal process.

The Grievance Redressal SOP delineates the prescribed procedures to be followed when handling written or verbal complaints/grievances concerning VLCTPP's operations. This structured process is designed to ensure that complaints/grievances are addressed with cultural sensitivity, respect, timeliness, and uniformity. By doing so, it aims to nurture confidence and foster positive relationships between VLCTPP and its local stakeholders. The SOP is consistently evolving to adapt to its specific nature of its business and context of its operations.

The consistently evolving grievance mechanism is driven by the following objectives:

- Reinforce the existing grievance handling mechanism, streamlining the reporting and resolution of stakeholder grievances.
- Foster transparent and robust stakeholder relations by facilitating open communication.
- Proactively identify potential issues, conflicts, and opportunities.
- Adhere to a well-defined grievance redressal process encompassing identification, documentation, acknowledgment, assessment, allocation, investigation, resolution, review, and closure of all grievances.
- Augment social capital and/or elevate service quality for the community.
- Ensure that the grievance mechanism process is easily comprehensible to those who are lodging a grievance.

Scope

This Standard Operating Procedure (SOP) is exclusively designed for the utilization of VLCTPP. Its purpose is to delineate the procedure for recognizing, documenting, and addressing grievances, including the stipulated timeframes for resolving complaints concerning VLCTPP's sustainability performance.

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Principle Outcomes & Expectations

The community grievance mechanism is a structured process aimed at receiving, assessing, and resolving project-related grievances originating from affected communities. This mechanism is specifically tailored to prioritize the concerns of local communities impacted by the project or operation. Its formulation is rooted in adherence to a set of effectiveness criteria, aligned with international best practices:

- The business must follow a defined grievance redressal process to identify, record, acknowledge, assess & assign, investigate, resolve, and close all grievances.
- The grievance redressal process must be understood by those lodging a grievance.
- The Grievance Mechanism (GM) shall protect the identity, legal and human rights of the grievance holder and associated persons.
- Grievances must be investigated and resolved in consultation with grievance holder and shall be gender inclusive.
- The GM must be accessible to all external stakeholders and sensitive to the cultural norms of the directly impacted, indigenous and vulnerable stakeholder groups.
- All grievances must be attempted to be resolved within 30 days from identification. If not possible, the Community Liaison Officer (CLO) must update the Social Performance Manager (SPM) and the grievance holder with bimonthly progress.
- A grievance may only be rejected after the investigation has established that there has not been any impact on the grievance holder due to the business activities or its related persons.
- CLO must record, assess, and assign the grievance to the concerned department for investigation and resolution.
- Human Rights related grievances must be directly assigned to the location head for investigation and closure.
- An acknowledgement receipt must be shared with the grievance holder within 24 hours of recording the grievance.
- Grievance (rejected or resolved) shall be considered closed after the CLO has shared a closure report and grievance holder's feedback is obtained on GM process experience and outcome.
- The SPM must monitor quarterly performance of the GM against the principle outcome & expectations and share findings with the location head, Social Performance Steering Committee (SPSC) and Corporate HSES.
- The SBU director or Project Head shall ensure the effective implementation of this standard through the SPM and CLO.

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Grievance Handling Framework

VLCTPP diligently adheres to the framework outlined below for effectively managing and resolving grievances, encompassing both employee and external stakeholder concerns.

Local concerns over the impact of VLCTPP can be expressed in the form of a complaint both formally or informally and can encompass relatively minor concerns as well as more entrenched, serious, or long-term issues which may be described as grievances. In both cases it is important to have robust and credible local mechanisms to systematically handle and resolve any complaints that might arise from both real and perceived impacts in order that they do not escalate and present a risk to operations. If well-handled, an effective grievance mechanism can foster positive relationships and trust with employees and external stakeholders. To manage internal and external grievances effectively, VLCTPP must comply with the following:

- The grievance mechanism for employees shall remain separate from public grievance mechanisms.
- In the first instance and in order to avoid, wherever possible, a situation where a grievance occurs, VLCTPP shall ensure proactive stakeholder engagement practices as described in the Stakeholder Engagement Plan (SEP) developed for VLCTPP.
- Grievance mechanisms shall acknowledge and address concerns over both real and perceived impacts in the same way and with the same level or care.
- Grievance mechanisms shall address even minor complaints, both formal and informal to avoid escalation into serious grievances.
- Grievance mechanisms shall be established as early as possible in the project cycle and at all Operations.
- Grievance mechanisms shall follow a transparent and easily understandable process.
- All grievance mechanisms shall be readily accessible, culturally appropriate, and proactively communicated to employees and other external stakeholders as appropriate.
- No grievance mechanisms shall impede access to or seek to take the place of legal remedies, in case all the options are already exhausted.
- The mechanism should not impede access to or substitute mechanisms provided through or rights to collective agreements.
- The organisational structures and roles and responsibilities shall be established in order to resource and support grievance mechanisms for both employees and other external stakeholders.
- Arrangements shall also be implemented to ensure conformance to the requirements of the IFC Performance Standards.

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The key International Finance Corporation (IFC) provisions are summarised as follows:

- **Performance Standard 1** - *Assessment and Management of Social and Environmental Risks and Impacts*-This includes establishing a grievance mechanism directed to receive and facilitate resolution of Affected Communities concerns and grievances about VLCTPP's environmental and social performance. The grievance mechanism should be scaled to the risks and adverse impacts of the project and have Affected Communities as its primary user. It should address concerns promptly, using an understandable and transparent process that is culturally appropriate and readily accessible, and at no cost and without retribution to the party that originated the issue or concern. The mechanism should not impede access to judicial or administrative remedies. VLCTPP will inform the Affected Communities about the mechanism in the course of the stakeholder engagement process.

- **Performance Standard 2**-*Labour and Working Conditions*-The relevant objectives of this standard are to ensure Vedanta provides a grievance mechanism for workers (and their organizations, where they exist) to raise reasonable workplace concerns, to respond to communities' concerns related to projects and where there are Affected Communities, establish a grievance mechanism directed to receive and facilitate resolution of the Affected Communities concerns and grievances about the clients environmental and social performance.

Definition

Definitions of key terms used in this document are shown in the following table.

Term	Definition
Affected Party	Stakeholders who are affected by the company or operation, both positively and negatively. Within this it is possible to distinguish between those that are directly affected and indirectly affected by the company or operation.
Communication	Dialogue between VLCTPP and affected or interested parties. Communication is exchanging (giving and receiving) information. Communication enables VLCTPP to convey the aspects, risks, and opportunities of their operations, and to receive information from a range of stakeholder's concerns, questions and suggestions shared in response.

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Term	Definition
Consultation	Consultation is not the same as communication although both are two-way processes. Consultation is purposeful and deliberately seeks input from stakeholders to shape relations and the development of VLCTPP's programmes. It involves the business, key individuals, organisations, and groups affected by or interested in the development and outcomes of the issue/process being discussed. The aim is to ensure mutual understanding and for all parties to be able to manage decisions that have a potential to affect all concerned. A good consultation process needs to be supported by a strong communication programme.
Grievance	A concern, complaint or feeling of resentment raised by any stakeholder either affected or interested in VLCTPP's operations. Both concerns and complaints can result from either real or perceived impacts of a company's operations.
Incident	An event or chain of events which caused or could have caused injury, illness, loss of assets or potential or actual damage to relationships or reputation.
Interested Party	Persons or groups who, although not affected by the VLCTPP's operations, have an interest in or influence over VLCTPP and its operations. This might include welfare organisations, non-government organisations, local businesses, and political groups.
Operation(s)	A location or activity that is operated by the Company and is part of the VLCTPP. Locations could include mines, refineries, ports or transportation activities, wind farms, oil and gas development sites, offices including corporate head offices and research and development facilities.
Records of Records of communication/ consultation	Records of Records of communication / consultation may include key e-mails, letters, newsletters, memorandums, complaints, opportunities for improvement, records of distribution/attendance, records of formal and informal meetings and records of commitments. Refer to Employee Consultation & Participation and Stakeholder Engagement Technical Standards.
Stakeholder	Persons or groups that are directly or indirectly affected by a project as well as those that may have interests in a project and/or the ability to influence its outcome, either positively or negatively. This can refer to shareholders, lenders, employees, communities, industry, governments and interested third parties.

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Term	Definition
Stakeholder engagement	An umbrella term encompassing a range of activities and interactions between VLCTPP and stakeholders over the life of a project that are designated to promote transparent, accountable, positive, and mutually beneficial working relationships. Stakeholder engagement includes stakeholder identification and analysis, information disclosure, communication, problem/conflict anticipation and prevention, ongoing consultation, formation of partnerships, construction of grievance resolution mechanisms, negotiated problem solving, employee involvement in project monitoring, regular reporting forums and procedures, and other related management activities.
Vedanta Company	A subsidiary of Vedanta Group either fully or majority owned that has its own management structure (e.g. Hindustan Zinc Limited, Vedanta Aluminium Limited, Sterlite Industries limited, etc.)
Vulnerable Groups	Individuals or groups within the project area of influence who could experience adverse impacts more severely than others based on their vulnerable or disadvantaged status. This vulnerability may be due to an individual's or group's race, sex, language, religion, political, or other opinion, national or social origin, property, birth, or other status. In addition, other factors should be considered such as gender, ethnicity, culture, sickness, physical or mental disability, poverty or economic disadvantage, and dependence on unique natural resources.

Categories of Grievances

To enhance the precision of the Grievance Redressal Mechanism and the approaches to resolution, VLCTPP has undertaken the task of identifying potential grievance types associated with the project. This categorization is informed by VLCTPP's comprehension of the business context, the operational phases, and the diverse stakeholders involved.

VLCTPP recognizes that stakeholders, given their unique profiles and interests in the project, may harbour distinct concerns or grievances necessitating tailored redressal strategies. Considering this, VLCTPP has broadly classified grievances into two categories, as outlined below:

Internal Grievances

- Grievances originating from employees, encompassing both direct and indirect staff, including workers employed through contractors and truck drivers.

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External Grievances

- Community grievances stemming from transportation and traffic issues.
- Community grievances linked to environmental pollution.
- Grievances associated with the impact on community health.
- Community grievances concerning development, CSR initiatives, community expectations, and related matters.

Internal Grievance Redressal Mechanisms

A grievance mechanism shall be established to allow for ongoing opportunities to receive and facilitate the resolution of concerns and grievances from employees. This mechanism shall be designed to ensure that:

- Grievances are addressed promptly, using an understandable and transparent system.
- Comments, suggestions, and complaints are received, logged, followed up and signed off in an appropriate manner.
- Grievances are registered and documented, and resolutions are found in partnership with the employee(s)
- The grievance process is objective and protects the identity of the person raising the issue (as necessary)
- Employees raising grievances are treated with respect and not subject to discrimination or disciplinary procedures.
- If a reasonable rejection of the complaint is required, a full explanation will be provided to the complainant.
- If complaints cannot be resolved through the grievance mechanism, it may be necessary that complainants have recourse to other forms of redress e.g. judicial or administrative channels for dispute resolution available in the country of operation.
- The outcome is appropriately communicated.

External Stakeholder Grievance Mechanisms

When a complaint, dispute or grievance does arise, in order that VLCTPP operations respond effectively and in a timely manner, a robust grievance mechanism shall be put in place for every operation using the following criteria:

- The grievance mechanism shall allow for the widest possible understanding of complaints or grievances, covering any subject which is deemed important by stakeholders, and will ensure that all types of complaints and grievances are handled in the same way and with the same level of robustness and integrity.

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- The grievance mechanism shall be scaled to the potential risk and adverse impacts to affected and interested stakeholders. This will be dictated by a risk assessment and stakeholder identification analysis discussed in the Stakeholder Engagement Technical Standard.
- VLCTPP shall proactively inform affected communities and wider stakeholders of the details of the grievance mechanism in the course of its community and stakeholder engagement activities as described in the Stakeholder Engagement Technical Standard.
- The grievance mechanism shall be clear and accessible to all segments of communities including vulnerable groups, those differentially or disproportionately affected and wider stakeholders at no cost to them.
- VLCTPP will respond to any stakeholder concerns or grievances promptly and thoroughly in all cases.
- Communities and where appropriate respected third parties shall be involved in designing, communicating and implementing the grievance mechanism using culturally appropriate and agreed ways of communication and remedy.
- The grievance mechanism will protect those who use it, will never result in any kind of retribution and will not impede access to other remedies or alternative recourse e.g. judicial or administrative channels for dispute resolution available in the country of operation.
- The mechanism shall allow for different ways of making complaints and shall define a clear and transparent process for resolving complaints including regular updates for complainants.
- To mitigate perceptions that resolutions unfairly benefit the company, in almost all cases, face-to-face discussions with complainants and community members should be sought with the aim of finding resolutions in partnership and increasing ownership of solutions.
- Any outcomes should be transparently communicated whilst protecting the identity of those involved wherever necessary or requested.
- Responses to serious concerns or grievances shall be decided by a cross-departmental committee rather than by a single individual.
- If a reasonable rejection of the complaint is required, a full explanation shall be provided to the complainant.
- A complaint or grievance shall be regarded as a company 'Incident' and will be recorded, tracked, investigated, where necessary, and communicated appropriately across the business in order that lessons can be learnt to avoid future risks to the business.
- The operation-level mechanism shall feed into a group-level procedure so that maximum transparency of operational grievances is assured, and the group can maintain oversight and implement organisational responses where necessary.

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Addressable Grievance Types

The following categories of grievances will be duly attended to and resolved in accordance with the established procedure:

- Community grievances
- Labour-related concerns
- Contractor-related issues
- Environmental matters
- Employee grievances
- Grievances linked to human rights
- Any other concerns or grievances pertaining to the company

Grievance Redressal Process Overview

Upon receipt of a grievance, the Chief Liaison Officer (CLO) promptly issues an acknowledgment receipt within 24 hours. The CLO then meticulously records, assesses, and assigns the grievance to the relevant department for thorough investigation and resolution.

All grievances are diligently addressed with an aim to achieve resolution within 30 days from identification. If resolution within this timeframe is impractical, the CLO ensures regular updates to both the Social Performance Manager (SPM) and the grievance holder, providing progress reports bi-monthly.

In cases where an investigation reveals no discernible impact on the grievance holder due to business activities or associated individuals, the grievance may be rejected.

Specifically, human rights grievances are expedited by assigning them directly to the location head for swift investigation and closure.

A grievance, whether rejected or resolved, is officially closed once the CLO shares a comprehensive closure report. The closure process includes soliciting feedback from the grievance holder, assessing their experience with the Grievance Mechanism process, and evaluating the overall outcome.

The Social Performance Manager (SPM) takes on the responsibility of quarterly performance monitoring of the Grievance Mechanism. The findings, including insights into principle outcomes and expectations, are then communicated to the location head, Social Performance Steering Committee (SPSC), and Corporate Health, Safety, Environment, and Security (HSES). This ensures a continuous improvement cycle and upholds the highest standards in addressing grievances.

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COO VLCTPP shall ensure the effective implementation of this standard through the SPM and CLO.

Grievance Management System-Process Diagram

Receipt of Grievance

⇩

CLO: Record, assess and assign grievances
Acknowledge of complaint

⇩

Concern Department working on grievance and its resolution.

⇩

Concern Department to submit closure report of grievance to CLO.

⇩

CLO to review closure report and obtain feedback from grievance holder/complainant.

⇩

CLO to prepare grievance closure report.

⇩

CLO to share closure report to GRC and with complainant/grievance holder.

Day 1: Registration of grievance

Day 2: (a) CLO to record, assess and assign the grievance to the concerned department for investigation and resolution.

(b) CLO to issue acknowledgement receipt to complainant within 24 hrs.

Day 3: Concerned Department start working on grievance.

Day24: Concerned Department to submit closure report of grievance to CLO

Day 25-27: CLO to review closure report and to obtain grievance holder feedback.

Day 28: CLO to prepare grievance closure report.

Day 29: CLO shall share the closure report to Grievance Redressal Committee (GRC) and complainant/grievance holder.

Day 30: All grievances must be attempted to be resolved within 30 days from identification. If not possible, CLO must update SPM, GRC and the grievance holder with bimonthly progress.

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Grievance Redressal Committee

VLCTPP understands that the Vedanta Technical Standards requires that VLCTPP shall in the first place avoid complaints wherever possible. However, in a situation where a grievance does occur, the project shall ensure proactive stakeholder engagement practices as described in the Stakeholder Engagement Technical Standard and the stakeholder engagement plan.

In keeping with this, VLCTPP has put in place a Grievance Redressal Mechanism which requires continuous monitoring and review on a regular basis. Through this process of review, VLCTPP aims to identify trends and key areas of concern as well as their sources through a casual analysis. Apart from this, to reduce the number of grievances received, VLCTPP is also exploring the option of undertaking periodic studies to help identify broader project level impacts and their mitigation measures. This would be aimed at reducing the number of grievances received in the first place by addressing the issue in its early stages itself.

At VLCTPP, following will constitute the Grievance Redressal Committee member. The Grievance Redressal Committee shall meet on monthly basis or on need basis as communicated by CLO/SPM. The quorum for the meetings shall be considered complete with presence of minimum 8 members from the committee.

Grievance Redressal Committee of VLCTPP

Sl. No.	Name	Department	Role
1.	Mr. D.K. Patel	COO	Chairman
2.	Mr. Kapil Malhotra	CHRO	Social Performance Manager
3.	Mr. K.V. Kulkarni	Head-HSE	Member
4.	Mr. Mayank Patangiwar	CCO	Member
5.	Mr. Surender Sharma	Head-Legal	Member
6.	Mr. Anil Agrawal	CFO	Member
7.	Mr. Sujit Basa	Head-C&I	Member
8.	Mr. Ashish Padamwar	Head-Safety	Member
9.	Mr. Rishi Verma	Head-Admn.	Member
10.	Mr. Prem Chandra Jha	Head-Security	Member
11.	Mr. Shailendra Kumar Pandey	Head-IR	Coordinator
12.	Mr. Bharat Bhushan Joshi	Head External Affairs	Member
13.	Mr. Deepak Kumar Vishwakarma	CC&CSR	Community Liaison Officer

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Review Mechanism of Grievance:

The Grievance Redressal Committee shall meet on monthly basis to review the Grievances received versus resolved. The Grievance Redressal Committee shall also review the grievances pending for redressal. Community Liaison Officer (CLO) shall circulate the MIS on monthly basis to VLCTPP EXCO.

Communication

1. An acknowledgement receipt must be shared with the grievance holder within 24 hours of recording the grievance.
2. Grievances resolved / shall be consider closed only after CLO has to share the closure report to the Grievance holder and obtained feedback within 30 days of identification of the grievance.

Documentation

Grievance related following data will be maintained for recording and review-

- Grievance register
- Grievance manual in local language signed off by COO, VLCTPP made available to all (internal and external stakeholders)
- Reports of annual workshops conducted for VLCTPP employees and Business partners on Grievance Redressal Mechanism
- Quarterly and Annual Grievance mechanism performance review to be shared and signed off by Grievance Redressal Committee and COO, VLCTPP.
- Minutes of Grievance Redressal Committee meetings
- MIS reports maintained by CLO
- Closure report along with feedback from the complainant

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Matrix of Grievance Redressal

Target	Grievance Collection System	Timeline for resolution
Employees	Email : ctpp.grievance@vedanta.co.in	30 Days
Contact labours/Contractors	Drop their complaint in drop box placed at security gate	30 days
District Administration	Letters	30 Days
Community	Drop their complaint in drop box placed at security gate, submit a letter	30 Days

Annual Training of Grievance Redressal Mechanism

Employees and business partners will be trained with an annual refresher on their duty to identify and report grievances to CLO, Project teams shall be trained on the aspects of communication, Grievance Redressal Mechanism (GM) process and the cultural norms of stakeholders.

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Annexure-1

Grievance Registration Form

Vedanta Limited Chhattisgarh Thermal Power Plant (2x600 MW Thermal Power Plant) Singhitarai, Chhattisgarh – 495695		
Application No.		Date:
Details of Complainant Address:	Name	
	Name of Father/Husband	
	Contact No.	
	Mail id	
Subject		
Grievance in Brief		
Remarks		

Signature of Complainant

Acknowledgement for Grievance Registration Form

Application No.	
Name	
Address/Village	
Date of Acknowledgement	

Signature of Chief Liaison Officer, VLCTPP

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Annexure-2

Grievance Management System

Sl.No.	Complainant Name	Application No.	Address and contact details of concerned person	Details of grievance received	Concerned department	Date of grievance received	Date of assignment to concerned deptt.	Date of resolution	Status	Remarks

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Conclusion - Recommendation - Repair Scheme

- The overall in-situ strength of the concrete falls into the M35-M50 grade, which is a structural grade of concrete.
- Concrete surfaces have no surface hardness problems, according to IS 516 (Part-5/Sec-4):2020. Concrete is monolithic and blistering-free.
- Localized patches of present concrete exhibit a doubtful density index, rendering it permeable and necessitating protection from external moisture ingress; otherwise, concrete density is comparatively higher, and around 94% of concrete's quality index is satisfactory.
- The RCC member is sufficient to protect the reinforcement and meets the minimum requirements of IS Standards Code 456:2000, clauses 26.4.3 and 21.2.
- The presence of all the deterioration agents is not above their threshold values. It can be concluded that structures are not in the deterioration period.
- So, concrete quality can restrict the movement of corrosive ions to pass through the concrete up to reinforcements unless the concrete surface is moist.
- MPT test results indicate that welding joints are intact, and the steel members have no sub-surface micro or minor cracks due to operational loading or overstress.
- MPT and UT flaws show the same pattern of the quality index of welding. It can be concluded that there are no cracks in the steel members' surface or subsurface.
- The steel section thickness has not changed yet. The minor variation in the section thickness is due to localized oxidation of the steel members or standard deviation in the machine data.



CORTEX

Recommendation

- Joint crack treatment at locations where cracks have developed between masonry and RCC members due to the incompatibility of the materials.
- Re-casting of the shear cracked walls showing structural cracks or differential settlements.
- Dampness treatment of the wall from where moisture comes from the roof leakage or capillary action.
- Anti-corrosive coating of the steel members and replacement of the corroded steel members where section loss is more than 20%.
- Carbon fiber wrapping and concrete grouting will be required in the hopper area where the previous repair was ineffective.
- Grouting of the honeycombed or voided concrete
- Stitching of the cracks in the masonry wall, which are more than 5 mm in its size.
- Productive coating over the concrete surface needs to be done.



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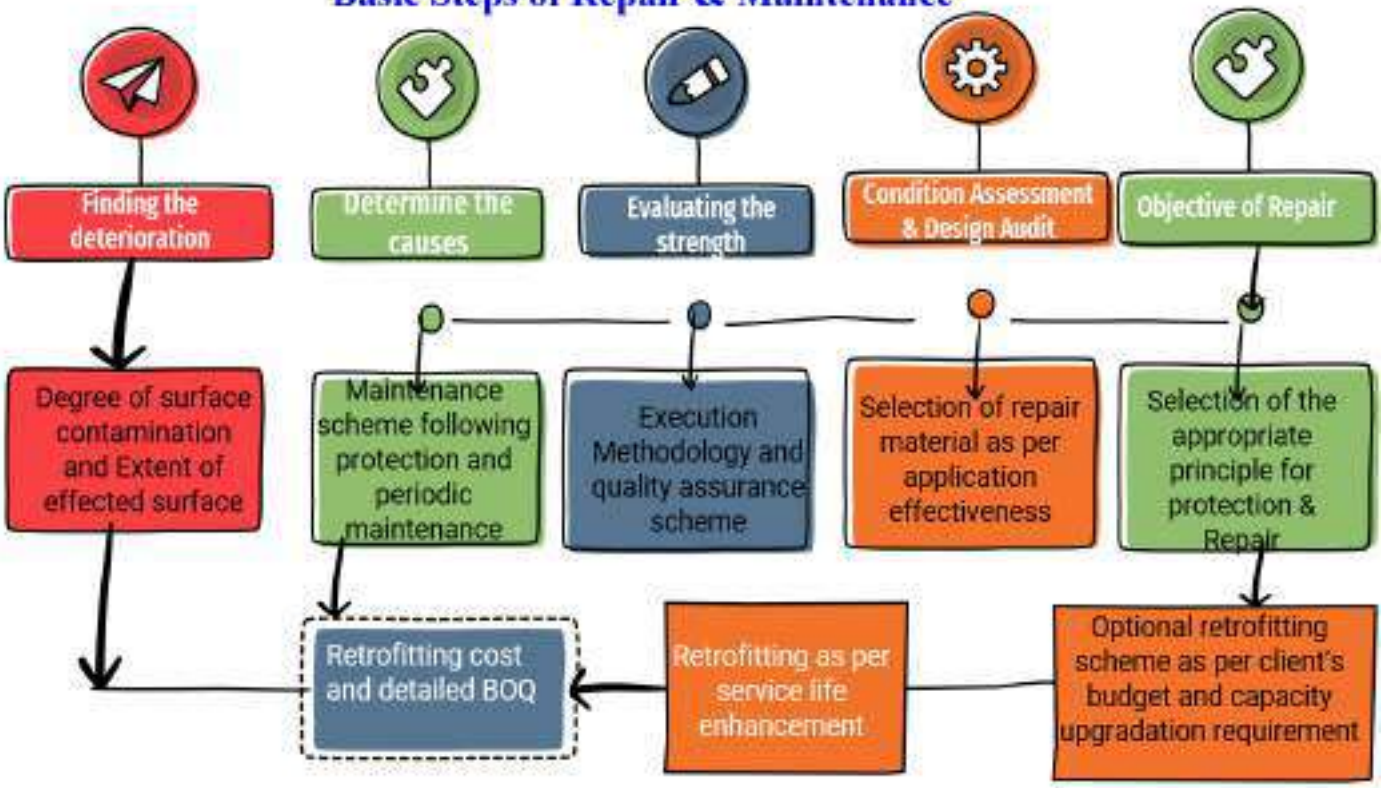
Vulnerability Order and Urgency of Repair

		Repair Priority	Vulnerability Index	Repair Scheme
Joint Crack b/w RCC & masonry		Low	Non-Structure issue & Joint Treatment	Repair Scheme-1 Joint Treatment
Settlement Crack		High	Structure issue & Demolition of masonry wall & Recasting of new wall	Repair Scheme-2 Recasting of new wall
Plaster Crack & Seepage Effect External Plaster		Low	Non-structure issue due to irregular maintenance, Dampness Treatment	Repair Scheme-3 Dampness treatment
Coating loss of steel members		Medium	Non-structure issue due to irregular maintenance, maybe structure issue in the future if repair is ignored, Recoating of the surface	Repair Scheme-4 Anticorrosive Coating for Steel member

Seepage & Cracks		High	Structure issues & Structure strengthening are required along with the waterproofing treatment.	Repair Scheme-5+6 CFRP application & grouting
Low cover depth & Honeycombing		High	Low cover depth & Honeycombing, Injection grouting & structure strengthening	Repair Scheme-6 Grouting
Vertical Cracks		High	Vertical crack due to differential Settlement, Crack stitching is required	Repair Scheme-7 crack stitching.
Dampness & Seepage from Roof		Medium	Leakage from roof & dampness on wall, Waterproofing on roof joint treatment	Repair Scheme-8 Waterproofing Of roof
Low cover depth & Honeycombing		Low	Construction issue, protective coating along the injection grouting	Repair Scheme-9 Corrosion Inhibitor

Algee Deposition on Plaster		Medium	Improper damage & Overflow of water, Dampness treatment	Repair Scheme-3 Dampness Treatment
Corrosive Area & Expose to moisture.		Low	Durability issue needed Anticorrosive coating	Repair Scheme-9 corrosion inhibitor
Coating thickness & loss of section		High	Structure issue, Recoating & Replacement of damaged steel member	Repair Scheme-4 Anticorrosive Coating for Steel member & member replacement

Basic Steps of Repair & Maintenance



Executive Summary and Summarized Recommendation - Vedanta RCC Buildings

SL.NO.	STRUCTURE NAME	DSITRESS FOUND	TYPE OF REPAIR	REPAIR SCHEME	DURABILITY OF REPAIR	IMMEDIATE THREAT	FIT OR UNFIT FOR OPERATION
DM +Pre Treatment Plant + ETP							
1	Acid Alkaline Unloading Area and Neutralization Pit	Seepage, Coating Lost, Vegetation	Seepage and dampness treatment	Repair Scheme 6	5 Years	No	Structurally fit for operation.
2	Clarified/Filtered Water Storage Tank	Seepage, Crack	Seepage and dampness treatment	Repair Scheme 7	6 Years	No	Structurally fit for operation.
3	DM Plant	Seepage, Crack, Joint Crack	Seepage and dampness treatment	Repair Scheme 8	7 Years	No	Structurally fit for operation.
4	Effluent Tretament Area	Seepage	Seepage and dampness treatment	Repair Scheme 8	7 Years	No	Structurally fit for operation.
Security, Site and Admin Area							
5	Admin Building	Seepage, Crack, Joint Crack	Wall crack stitching and corrosion inhibitor	Repair scheme 11 and 5	5 Years	No	Structurally fit for operation.
Ahp compressor house , bottom ash slurry pump house , ash water pump house							
6	Ahp compressor house , bottom ash slurry pump house , ash water pump house	Joint Crack, Seepage, Crack, Honeycombing	Damnpess treatment	Repair Scheme -6	4-5 Years	No	Structurally fit for operation.
Boiler + Turbine + ESP + Chimney							
7	ASH COM. RM & ESP CONTROL BUILDING	Joint Crack, Crack	Dampness treatment , corrosion inhibitor and patch repair , wall crack stitching	Repair Scheme -6-5-3-11	4-5 Years	No	Structurally fit for operation.
8	Buffer Hopper Tower	Corrosion	Superficial routine maintenance.	Repair Scheme 7	10 years	No	Structurally fit for operation.
9	Bunker Area Switchgear Room	Seepage, Plaster Crack, Crack	Superficial routine maintenance.	Repair Scheme 7	10 years	No	Structurally fit for operation.
10	Chimney	Crack	Superficial routine maintenance.	Repair Scheme 7	10 years	No	Structurally fit for operation.
11	DG SET	Seepage	Superficial routine maintenance.	Repair Scheme 7	10 years	No	Structurally fit for operation.
12	Mechanical and Electrical Maintenace Building	Seepage,Crack	Superficial routine maintenance.	Repair Scheme 7	10 years	No	Structurally fit for operation.
Ash Handling Area							
13	Ash Silo	Spalling, Crack, Honeycombing	Joint treatment and cement grouting	Repair Scheme 1	4-5 Years	No	Structurally unfit for operation.
14	HCSD Pump House	Seepage, Joint crack, Plaster crack, Crack	Joint treatment and cement grouting	Repair Scheme 2	4-5 Years	No	Structurally unfit for operation.
15	Hydro bin	Honeycombing	Joint treatment and cement grouting	Repair Scheme 2	4-5 Years	No	Structurally unfit for operation.
16	Surge Tank	Honeycombing	Joint treatment and cement grouting	Repair Scheme 2	4-5 Years	No	Structurally unfit for operation.
17	Settling Tank	Honeycombing	Joint treatment and cement grouting	Repair Scheme 2	4-5 Years	No	Structurally unfit for operation.
Coal Handling Area							
18	CHP Control Room	Seepage, Crack	Dampness treatment and corrosion inhibitor	Repair scheme- 6-5	4-5 Years	No	Structurally fit for operation.
19	Pump and Compressor House	Seepage	Dampness treatment and corrosion inhibitor	Repair scheme- 6-5	4-5 Years	No	Structurally fit for operation.
20	Track Hopper + Control Room	Seepage, Crack, Joint Crack	Dampness treatment and corrosion inhibitor	Repair scheme- 6-5	4-5 Years	No	Structurally fit for operation.
21	Wagon Trippler+Control Room	Joint crack, Crack, Plaster crack, Corrosion & Coating Lost, Seepage, Honeycombing	Dampness treatment and corrosion inhibitor	Repair scheme- 6-6	4-5 Years	No	Structurally fit for operation.

CW Pump House + Cooling Tower							
22	Cooling Tower	Seepage, Crack, Vegetation, Honeycombing, Joint Crack,	Dampness treatment , corrosion inhibitor and patch repair	Repair Scheme -6-5-3	4-5 Years	Yes	Structurally unfit for operation.
23	IDCT Switchgear 1	Seepage	Dampness treatment and corrosion inhibitor	Repair scheme- 6-5	4-5 Years	No	Structurally fit for operation.
24	IDCT Switchgear 2	Joint Crack, Seepage, Honeycombing	Dampness treatment	Repair scheme- 6	4-5 Years	No	Structurally fit for operation.
25	CWPH	Seepage, Crack, Joint crack	Dampness treatment - patch repair	Repair scheme- 6-3	4-5 Years	No	Structurally fit for operation.
Switchyard Area							
26	Switchyard Control Room	Seepage, Joint crack	Dampness treatment and patch repair	Repair scheme- 6-3	4-5 Years	No	Structurally fit for operation.
Fire Station+Ambulance Parking+First Aid Center							
27	Fire Station+Ambulance Parking+First Aid Center	Seepage, crack, joint crack	Superficial routine maintenance.	Repair Scheme 7	5 Years	No	Structurally fit for operation.
Mirauni							
28	Mirauni Pump House	Crack, Spalling, Seepage, Joint Crack	Patch Repair	Repair Scheme 4	4-5 Years	No	Structurally fit for operation.
Reservoir Area							
29	Reservoir+Raw Water Pump House	Joint crack,Seepage, Corrosion & Coating Lose, Crack & Honeycombing	Leakage sealing by Grouting	Repair 2	4-5 Years	No	Structurally fit for operation.
Visitor room & visitor parking							
30	Visitor room & visitor parking	Seepage, crack, Nut bolt corrosion	Patch Repair	Repair Scheme 5	4-5 Years	No	Structurally fit for operation.

Executive Summary and Summarized Recommendation - Steel Structure

SL.NO.	STRUCTURE NAME	DSITRESS FOUND	TYPE OF REPAIR	REPAIR SCHEME	DURABILITY OF REPAIR	IMMEDIATE THREAT	FIT OR UNFIT FOR OPERATION
Boiler + Turbine + ESP + Chimney							
1	Aux boiler	Steel Corrosion & Coating Lose	Dampness Treatment - Drainage and outlet- painting and routine	Repair Scheme 5- 10- 8-7	4-5 Years	No	Structurally fit for operation.
2	Boiler I	Column Corrosion, Nut bolt corrosion	Superficial routine maintenance.	Repair Scheme 8	Mor than 10 years	No	Structurally fit for operation.
3	Boiler II	Nut bolt corrosion, Coating Lose	Corrosion Inhibitor	Repair Scheme 5	4-5 Years	No	Structurally fit for operation.
4	ESP II	Steel Corrosion	Superficial routine maintenance.	Repair Scheme 8	More than 10 Years	No	Structurally fit for operation.
5	ESP I	Steel Corrosion	Dampness Treatment - Corrosion Inhibitor	Repair Scheme 5-6	4-5 Years	No	Structurally fit for operation.
6	Station Compressor House	Nut bolt corrosion, Coating Lose	Corrosion Inhibitor	Repair Scheme 5	4-5 Years	No	Structurally fit for operation.
7	TG Building + CCR Area	Steel Corrosion, crack	Corrosion Inhibitor	Repair Scheme 6	4-5 Years	No	Structurally fit for operation.
8	TP 5	Nut bolt corrosion, Coating Lose	Corrosion Inhibitor	Repair Scheme 7	4-5 Years	No	Structurally fit for operation.
9	TP 6	Nut bolt corrosion, Coating Lose	Corrosion Inhibitor	Repair Scheme 8	4-5 Years	No	Structurally fit for operation.
10	TP 7	Nut bolt corrosion, Coating Lose	Corrosion Inhibitor	Repair Scheme 9	4-5 Years	No	Structurally fit for operation.
11	TP 8	Nut bolt corrosion, Coating Lose	Corrosion Inhibitor	Repair Scheme 10	4-5 Years	No	Structurally fit for operation.
12	TP 9	Nut bolt corrosion	Corrosion Inhibitor	Repair Scheme 10	4-5 Years	No	Structurally fit for operation.
13	Workshop	Crack, Nut bolt corrosion	Corrosion Inhibitor	Repair Scheme 10	4-5 Years	No	Structurally fit for operation.
CW Pump House + Cooling Tower							
14	CW Chlorination Building	Steel Corrosion & Coating Lose	Superficial routine maintenance.	Repair Scheme 8	More than 10 Years	Yes	Structurally unfit for operation.
Coal Handling Area							
15	TP3	Steel Corrosion & Coating Lose	Dampness Treatment	Repair Scheme 6	4-5 Years	Yes	Structurally unfit for operation.
16	TP4	Steel Corrosion & Coating Lose	Dampness Treatment	Repair Scheme 6	4-5 Years	No	Structurally fit for operation.
Security, Site and Admin Area							
17	Canteen	Seepage, Crack	Dampness Treatment	Repair Scheme 6	4-5 Years	No	Structurally fit for operation.
18	DEC Site Office	Steel Corrosion & Coating Lose, Seepage	Dampness Treatment	Repair Scheme 6	4-5 Years	No	Structurally fit for operation.
19	Dozer Shed	Coating Lose & Corrosion	Dampness Treatment	Repair Scheme 6	4-5 Years	No	Structurally fit for operation.
20	Parking Shed	Coating Lose & Corrosion	Dampness Treatment	Repair Scheme 6	4-5 Years	No	Structurally fit for operation.
21	Security Barrack + Dormitory	Seepage, Plaster crack, Joint crack	Dampness Treatment	Repair Scheme 6	4-5 Years	No	Structurally fit for operation.
22	Security Office + Gate Complex	Seepage, Crack, Joint crack	Dampness Treatment	Repair Scheme 6	4-5 Years	No	Structurally fit for operation.
23	Site Office	Seepage, Crack	Dampness Treatment	Repair Scheme 6	4-5 Years	No	Structurally fit for operation.
24	Storage Shed	Crack	Dampness Treatment	Repair Scheme 7	4-5 Years	No	Structurally fit for operation.
DM +Pre Treatment Plant + ETP							
25	DM Tank	Coating Lose & Corrosion, Vegetation	Dampness Treatment	Repair Scheme 6	4-5 Years	No	Structurally fit for operation.
Fuel Oil							
26	Fuel Oil Storgae Area	Coating Lose & Corrosion	Dampness Treatment	Repair Scheme 6	4-5 Years	No	Structurally fit for operation.
27	Fuel Oil Pump House	Corrosion	Dampness Treatment	Repair Scheme 6	4-5 Years	No	Structurally fit for operation.
Semi Closed Stores							
28	Semi Closed Stores	Coating Lose & Corrosion	Dampness Treatment	Repair Scheme 7	4-5 Years	No	Structurally fit for operation.

छत्तीसगढ़ शासन
जल संसाधन विभाग
मंत्रालय
महानदी भवन, नवा रायपुर–अटल नगर

क्र..... /PROJ/2022/2025-WRD/एफ–4–57/एस–2/31/औजप्र/07, दिनांक /11/2025

प्रति,

मुख्य अभियंता,
हसदेव कछार,
जल संसाधन विभाग,
बिलासपुर (छ.ग.)

विषयः– मेसर्स वेदांता लिमिटेड, (पूर्व में–मेसर्स अथेना छत्तीसगढ़ पावर लि.) के जिला–सक्ती, तहसील–डभरा, ग्राम–सिंघीतराई के निकट स्थापित 1200 (2X600) मेगावाट छत्तीसगढ़ थर्मल पॉवर प्लांट हेतु महानदी/मिरौनी बैराज से आबंटित संशोधित 28 मि.घ.मी. वार्षिक जल को चरणवार प्रदाय करने की अनुमति ।

संदर्भः–
1. शासन का पत्र क्रमांक–1998–1999/एफ–4–57/एस–2/31/औजप्र/07, दिनांक 01.05.2025.
2. प्र.अ. का पत्र क्र.–3451377/औजप्र/छ.ग./025/7820–7821, दि. 11.08.2025.
3. संस्थान का पत्र क्र.–VEDL/ENV/WRD 2025-26/07, दिनांक 13.10.2025.

छ.ग. राज्य में औद्योगिक संस्थानों को चरणवार (Phase wise) जल आबंटन/प्रदाय हेतु निर्धारित विभागीय नीति के अनुपालन में, मेसर्स वेदांता लिमिटेड, (पूर्व में–मेसर्स अथेना छत्तीसगढ़ पावर लि.) के जिला–सक्ती, तहसील–डभरा, ग्राम–सिंघीतराई के निकट स्थापित 1200 (2x600) मेगावाट छत्तीसगढ़ थर्मल पॉवर प्लांट हेतु महानदी/मिरौनी बैराज से आबंटित संशोधित 28 मि.घ.मी. वार्षिक जल को चरणवार प्रदाय करने की अनुमति निम्नलिखित शर्तों पर प्रदान की जाती है :–

1. संस्थान को प्रकरण में निम्नानुसार चरणवार जल प्रदाय किया जायेगा :–

स. क्र.	चरण की संख्या	चरण की अवधि	वांछित जल की मात्रा	
			चरण हेतु	कुल
1	प्रथम चरण	17.10.2025 या शासन के चरणबद्ध जल प्रदाय स्वीकृति आदेश को अनुबंध में चस्पा करने की तिथि (जो भी तिथि बाद में हो वह लागु होगी) से 16.04.2026 या शासन के चरणबद्ध जल प्रदाय स्वीकृति आदेश को अनुबंध में चस्पा करने की तिथि से 06 माह तक	15.00 मि.घ.मी.	15.00 मि.घ.मी.
2	द्वितीय चरण	17.04.2026 या शासन के चरणबद्ध जल प्रदाय स्वीकृति आदेश को अनुबंध में चस्पा करने की तिथि (जो भी तिथि बाद में हो वह लागु होगी) से 16.10.2026 या शासन के चरणबद्ध जल प्रदाय स्वीकृति आदेश को अनुबंध में चस्पा करने की तिथि से 12 माह तक	01.00 मि.घ.मी.	16.00 मि.घ.मी.
3	तृतीय चरण	17.10.2026 या शासन के चरणबद्ध जल प्रदाय स्वीकृति आदेश को अनुबंध में चस्पा करने की तिथि (जो भी तिथि बाद में हो वह लागु होगी) से 16.04.2027 या शासन के चरणबद्ध जल प्रदाय स्वीकृति आदेश को अनुबंध में चस्पा करने की तिथि से 18 माह तक	01.00 मि.घ.मी.	17.00 मि.घ.मी.
4	चतुर्थ चरण	17.04.2027 या शासन के चरणबद्ध जल प्रदाय स्वीकृति आदेश को अनुबंध में चस्पा करने की तिथि से 18 माह बाद की तिथि (जो भी तिथि बाद में हो वह लागु होगी) से अंत तक	11.00 मि.घ.मी.	28.00 मि.घ.मी.

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Office of the Superintending Engineer
W.R.C. Dn., Janjgir-Champa
Received 2025
Sr.No.
Ent.
Date

2. विषयांतर्गत संस्थान को चरणवार (Phase wise) जल आबंटन/प्रदाय हेतु निर्धारित अवधि किसी भी स्थिति में अपरिवर्तनीय होगी।

3. प्रकरण में विभाग के साथ दिनांक 17.06.2025 को निष्पादित अनुबंध की कंडिका क्र.–2 के अनुसार वार्षिक आबंटित जल की कम से कम 90 प्रतिशत मात्रा के जलकर भुगतान के स्थान पर, प्रकरण में चरणवार (Phase Wise) निर्धारित अवधि अनुसार उस अवधि हेतु नियत जल उपयोग की मात्रा की कम से कम 90 प्रतिशत मात्रा के जल–कर का भुगतान करना अनिवार्य होगा।

4. प्रकरण में चरणवार विशेष कमिटमेंट चार्जेस का भुगतान, संस्थान द्वारा पृथक से देय होगा। चरणवार विशेष कमिटमेंट चार्ज की गणना, कुल आबंटित जल की मात्रा में से उस चरण तक आबंटित जल की मात्रा के समायोजन उपरांत शेष जल की मात्रा पर देय जल कर राशि का दो प्रतिशत वार्षिक के अनुसार उस चरण की अवधि हेतु की जावेगी।

5. शासन द्वारा स्वीकृत जल आबंटन आदेश के अनुसार संस्थान को कम से कम 30 दिन की जल आवश्यकता के अनुरूप जल संग्रहण हेतु अपने संयंत्र परिक्षेत्र में बैलेंसिंग रिजरवायर का निर्माण किया जाना अनिवार्य होगा।

6. छ.ग. शासन, जल संसाधन विभाग, मंत्रालय के आदेश दिनांक 16.09.2014 द्वारा राज्य में औद्योगिक संस्थानों को चरणवार (Phase wise) जल आबंटन/प्रदाय हेतु विभागीय नीति का निर्धारण किया गया है, जिसमें दिये गये निर्देशों/शर्तो का संस्थान द्वारा पालन करना अनिवार्य होगा।

7. प्रकरण मे चरणबद्ध जल प्रदाय, इस अनुमति–पत्र के जारी होने पश्चात, उसे अनुबंध दिनांक 17.06.2025 में चस्पा करने की तिथि से लागु होगा।

8. प्रकरण में शासन द्वारा पूर्व में जारी जल आबंटन आदेशों में लिखित शर्ते यथावत् लागू रहेंगी।

सहपत्र :– शून्य।

सही.

(गोरे लाल भूआर्य)
अवर सचिव
छत्तीसगढ़ शासन
जल संसाधन विभाग
मंत्रालय, नवा रायपुर

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पृ.क्र. 4816 / PROJ/2022/2025-WRD/एफ–4–57 / एस–2 / 31 / औजप्र / 07, दिनांक 07 / 11 / 2025

प्रतिलिपि :–

1. प्रमुख अभियंता, जल संसाधन विभाग, शिवनाथ भवन, नवा रायपुर की ओर संदर्भित पत्रों (संस्थान के संदर्भित पत्र क्र.–3 की छायाप्रति संलग्न है) के परिप्रेक्ष्य में सूचनार्थ अग्रेषित।
2. अधीक्षण अभियंता, जल संसाधन मण्डल, रायगढ़ एवं
3. कार्यपालन अभियंता, जल संसाधन संभाग जांजगीर, मुख्यालय–चांपा (छ.ग.), की ओर संदर्भित पत्रों (संस्थान के संदर्भित पत्र क्र.–3 की छायाप्रति संलग्न है) के परिप्रेक्ष्य में सूचनार्थ एवं आवश्यक कार्यवाही हेतु अग्रेषित।
4. उप सचिव, छत्तीसगढ़ शासन, ऊर्जा विभाग, मंत्रालय, नवा रायपुर को उनके पत्र क्र.–1250 / एफ 27 / 01 / 13 / 2 / 2014, दिनांक 20.05.2025 एवं संस्थान के संदर्भित पत्र दिनांक 13.10.2025 (सुलभ संदर्भ हेतु छायाप्रति संलग्न है) के परिप्रेक्ष्य में सूचनार्थ अग्रषित।
5. मुख्य प्रचालन अधिकारी, वेदांता लिमिटेड, छत्तीसगढ़ थर्मल पॉवर प्लांट, 2 X 600 मे.वा. थर्मल पॉवर प्लांट, ग्राम–सिघीतराई, तहसील–डभरा, जिला–सक्ती, (छ.ग.) की ओर उनके संदर्भित पत्र दिनांक 13.10.2025 के परिप्रेक्ष्य में सूचनार्थ एवं आवश्यक कार्यवाही हेतु अग्रेषित।

सहपत्र:– उपरोक्तानुसार।

Digitally signed by
GORE LAL BHUARYA
Date: 07-11-2025
12:40:11

अवर सचिव
छत्तीसगढ़ शासन
जल संसाधन विभाग
मंत्रालय, नवा रायपुर

ग्रिड-इंडिया GRID-INDIA
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
GRID CONTROLLER OF INDIA LIMITED
(A Government of India Enterprise)
(formerly Power System Operation Corporation Limited (POSOCO))
पश्चिम क्षेत्रीय भार प्रेषण केन्द्र / Western Regional Load Despatch Centre
कार्यालय : एफ–3, एम. आई. डी. सी. क्षेत्र, मरोल, अंधेरी (पूर्व), मुंबई–400093
Office : F-3, M.I.D.C. Area, Marol, Andheri (East), Mumbai- 400093
CIN : U40105DL2009GOI188682, Website : www.wrldc.in, E-mail : wrldc@grid-india.in, Tel: 022 28202690, Fax: 022 28235434, 28202630

Grant of Start-up Power by RLDC

Approval Number: WRLDC/Start up/Vedanta Power/71 **Date: 27/03/2025**

To
Sh. Devendra Kumar Patel,
Director Project,
Vedanta Limited,
2x600MW, Thermal Power Project
Village – Singhitarai, Tehsil - Dabhara,
Dist – Sakti, Chhattisgarh 495695.

Sub: Grant of Start-up power through Deviation Settlement Mechanism
Ref.

1. Your Application dated. 06.08.24 for grant of start-up power
2. Your email dtd.05.08.24 containing SLD, Scheme for drawl etc.
3. Our previous start up power grant letter WRLDC/Start up/Vedanta Power/70 dated 29.08.2025
4. Your Application dated 21.03.2025 for extension of drawl of start-up power

Sir,

With reference to your application, Ref. No: VEDL/PROJ/WRLDC/25-26/001 dated 21.03.2025 for extension of drawl of start-up power, permission is hereby accorded to draw start-up power under Deviation Settlement Mechanism as per following details:

Name of the Generating Station : Vedanta Limited.
Unit Number : 1
Unit Size : 600 MW
Details of Start-up power granted :

Sl. No.	From date	To date	Start-up power in MW granted	Remarks
1	01-04-2025	30-06-2025	25	Commissioning of Drives and Unit Light up

Please note that any request regarding extension/revision beyond the stipulated period of this approval shall be made to RLDC at least two months in advance of the completion of the stipulated period as per clause 19(3) of IEGC 2023 and amendments thereof.

Please adhere to all the guidelines regarding drawl of start-up power as prescribed in section 19 of IEGC 2023 (relevant extracts from the Regulation are attached for reference as Annexure) and NLDC FTE&I Procedure.

Yours Sincerely

(Tushar R. Mohapatra)
General Manager (MO/RA)

Copy to: 1) Member Secretary, WRPC, Mumbai 2) Chief Engineer, SLDC- Chhattisgarh

vedanta
transforming for good | power

Ref. No: VEDL/PROJ/WRLDC/25-26/001 21th March, 2025

To,
The Sr. Dy. General Manager
MO/RA,
Grid Controller of India Limited

Kind Attention: Mr. Tushar R. Mohapatra

Subject: Request for extension of startup power from 01.04.2025 to 30.06.2025

Reference: 1. WRLDC/Startup/ Vedanta Power/ 70 dated 29.08.2024

Dear Sir,

With reference to the above subject, we kindly request an extension of our startup power approval for quantum 25MW from 01.04.2025 to 30.06.2025, as the work related to our permanent connectivity is still under progress.

We are closely coordinating with the concerned agencies (i.e. PowerGrid), and the work is expected to be completed shortly.

We request your kind support in approving the extension of startup power until 30.06.2025.

Thank you for your support and consideration.

For and on behalf of Vedanta Limited

Devendra Kumar Patel

(Chief Operating Officer)

Vedanta Limited – Unit : Athena
Site Office: Village-Singhitarai, Tehsil-Dabhara, District - Sakti, Chhattisgarh, Pin-495695
Registered Office: Vedanta Limited 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai 400093, Maharashtra, India
T +91 22 6643 4500 | F +91 22 6643 4530
CIN: L13209MH1965PLC291394

Sensitivity: Internal (C1)

vedanta power

Application form for seeking Startup power

Reference number	: VEDL/PROJ/WRLDC/25-26/001
Date	: 21/03/2025
Name of the Generating Station	: 2x600 MW Vedanta Limited CTPP
Unit number (for which start-up power Required)	: Unit #1
Unit size	: 600 MW
Details of Connectivity granted	: Final Grant Connectivity Letter 2200000328

Details of Startup power requirement

Sl. No.	Intended From date	Intended To date	Requirement of Power in MW	Details of Activities	Remarks
1	01/04/2025	30/06/2025	25 MW	Commissioning of Drives and Unit Light-up	

For and on behalf of Vedanta Limited

Devendra Kumar Patel
(Director Projects)

Vedanta Limited

Vedanta Limited – Unit : Athena
Site Office : Village Hirri, Tehsil-Dhamtari, District - Sitni, Chhattisgarh, Pin-493663
Registered Office : Vedanta Limited, Vedanta, 1st Floor, 'C' Wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai 400093, Maharashtra, India
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CIN : L13209MH1965PLC291394

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TEST REPORT

Name & Address of Unit:	**M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh**	Report No.:	**JME/A/250806707**
		Date of Reporting:	**04/09/2025**
		Monitoring Period:	**August, 2025**
		Protocol Used:	**IS-5182**
Sample Description:	**AMBIENT AIR QUALITY MONITORING**	Instrument Used for Sampling:	**RDS & FPS**
Sample Collected By:	**JMELPL Team**	Sampling Location:	**Water Reservoir Area Near Boundary Wall (Village- Singhitaral)**
Client Representative:	**Mr. Priyranjan Trivedi (Head- Env.)**		

TEST RESULTS

NAAQS	PARAMETERS											
	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)	NO_2 (µg/m³)	SO_2 (µg/m³)	Ozone (µg/m³)	Lead (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Arsenic (ng/m³)	Nickel (ng/m³)
Monitoring Date												
04/08/2025 to 05/08/2025	21.9	45.8	13.8	5.4	17.5	BDL (DL 0.02)	0.51	22.9	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
07/08/2025 to 08/08/2025	16.4	36.0	12.9	4.7	16.4	BDL (DL 0.02)	BDL (DL 0.50)	20.4	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
11/08/2025 to 12/08/2025	22.8	48.1	15.6	7.1	19.8	BDL (DL 0.02)	0.53	24.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
14/08/2025 to 15/08/2025	28.8	57.4	17.1	9.4	21.7	BDL (DL 0.02)	0.55	27.0	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
18/08/2025 to 19/08/2025	23.2	44.6	14.3	7.6	18.2	BDL (DL 0.02)	BDL (DL 0.50)	22.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
21/08/2025 to 22/08/2025	14.5	31.3	11.8	4.3	15.5	BDL (DL 0.02)	BDL (DL 0.50)	18.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
25/08/2025 to 26/08/2025	17.8	42.7	14.2	6.5	18.0	BDL (DL 0.02)	BDL (DL 0.50)	22.4	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
28/08/2025 to 29/08/2025	20.6	49.1	15.5	7.2	19.7	BDL (DL 0.02)	0.54	26.5	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
Testing Method	IS:5182, (Part-24)	IS:5182, (Part-23)	IS: 5182, (Part-6)	IS: 5182, (Part-2) sec I	IS: 5182, (Part-9)	IS: 5182, (Part-22)	IS: 5182, (Part-10)	IS: 5182, (Part-25)	IS:5182, (Part-11)	IS:5182, (Part-12)	JMELFL/ST OP/03	IS: 5182, (Part-26)
NAAQS	60 (24 Hourly)	100 (24 Hourly)	80 (24 Hourly)	80 (24 Hourly	180 (1 hourly)	1 (24 hourly)	4 (1 hourly)	400 (24 hourly)	5 (Annual)	1 (Annual)	6 (Annual)	20 (Annual)

Note: NAAQS-National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)] [Part-II sec-3(i)] 18.11.2009.

Abbreviations:

PM2.5- Particulate Matter 2.5
PM10- Particulate Matter 10
NO2- Nitrogen Dioxide
SO2- Sulphur Dioxide
CO- Carbon Monoxide
NH3- Ammonia
C6H6- Benzene
BaP- Benzo(a)Pyrene
BDL-Below Detection Limit
DL- Detection Limit

Checked by
Deepak Singh Yadav

Authorised Signatory

Reviewed & Authorized by
Ram Yadav

Note:
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End of Report

CIN No. U74220HR2011PTC089234

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TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/A/250806708
		Date of Reporting:	04/09/2025
		Monitoring Period:	August, 2025
		Protocol Used:	IS-5182
Sample Description:	AMBIENT AIR QUALITY MONITORING	Instrument Used for Sampling:	RDS & FPS
Sample Collected By:	JMELPL Team	Sampling Location:	Near Fire Station
Client Representative:	Mr. Priyranjan Trivedi (Head- Env.)		

TEST RESULTS

NAAQS	PARAMETERS											
	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)	NO_2 (µg/m³)	SO_2 (µg/m³)	Ozone (µg/m³)	Lead (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Arsenic (ng/m³)	Nickel (ng/m³)
Monitoring Date												
04/08/2025 to 05/08/2025	29.3	53.5	18.1	7.2	23.0	BDL (DL 0.02)	0.55	28.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
07/08/2025 to 08/08/2025	21.6	41.9	15.6	6.5	19.8	BDL (DL 0.02)	BDL (DL 0.50)	24.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
11/08/2025 to 12/08/2025	25.4	52.0	19.6	8.1	24.9	BDL (DL 0.02)	0.57	31.0	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
14/08/2025 to 15/08/2025	31.5	63.4	22.2	11.1	28.2	BDL (DL 0.02)	0.61	35.1	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
18/08/2025 to 19/08/2025	26.6	51.2	19.9	7.2	25.3	BDL (DL 0.02)	0.52	31.4	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
21/08/2025 to 22/08/2025	16.6	36.0	15.2	5.4	19.3	BDL (DL 0.02)	BDL (DL 0.50)	24.0	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
25/08/2025 to 26/08/2025	19.7	44.5	18.4	8.7	23.4	BDL (DL 0.02)	BDL (DL 0.50)	29.1	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
28/08/2025 to 29/08/2025	26.5	53.0	19.2	9.3	24.4	BDL (DL 0.02)	0.53	30.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
Testing Method	IS:5182, (Part-24)	IS:5182, (Part-23)	IS: 5182, (Part-6)	IS: 5182, (Part-2) sec 1	IS: 5182, (Part-9)	IS: 5182, (Part-22)	IS: 5182, (Part-10)	IS: 5182, (Part-25)	IS:5182, (Part-11)	IS:5182, (Part-12)	JMELPL/STOP/03	IS: 5182, (Part-26)
NAAQS	60 (24 Hourly)	100 (24 Hourly)	80 (24 Hourly)	80 (24 Hourly	180 (1 hourly)	1 (24 hourly)	4 (1 hourly)	400 (24 hourly)	5 (Annual)	1 (Annual)	6 (Annual)	20 (Annual)

Note: NAAQS-National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (38)] [Part-II sec.-3(i)] 18.11.2009.

Abbreviations:

PM2.5- Particulate Matter 2.5
PM10- Particulate Matter 10
NO2- Nitrogen Dioxide
SO2- Sulphur Dioxide
CO- Carbon Monoxide
NH3- Ammonia
C6H6- Benzene
BaP- Benzo(a)Pyrene-
BDL-Below Detection Limit
DL- Detection Limit

Checked by
Deepak Singh Yadav

Reviewed & Authorized by
Sita Rani Yadav

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End of Report

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TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/A/250806709
		Date of Reporting:	04/09/2025
		Monitoring Period:	August, 2025
		Protocol Used:	IS-5182
Sample Description:	AMBIENT AIR QUALITY MONITORING	Instrument Used for Sampling:	RDS & FPS
Sample Collected By:	JMELPL Team	Sampling Location:	At CHP/AHP Area Near Boundary Wall (Village- Benipali)
Client Representative:	Mr. Priyranjan Trivedi (Head- Env.)		

TEST RESULTS

NAAQS	PARAMETERS											
	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)	NO_2 (µg/m³)	SO_2 (µg/m³)	Ozone (µg/m³)	Lead (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Arsenic (ng/m³)	Nickel (ng/m³)
Monitoring Date												
04/08/2025 to 05/08/2025	27.2	53.9	15.4	8.6	19.6	BDL (DL 0.02)	0.58	24.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
07/08/2025 to 08/08/2025	22.3	46.3	11.8	6.2	15.0	BDL (DL 0.02)	BDL (DL 0.50)	18.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
11/08/2025 to 12/08/2025	28.5	60.6	15.0	9.2	19.1	BDL (DL 0.02)	0.59	23.7	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
14/08/2025 to 15/08/2025	32.0	71.1	17.4	13.5	22.1	BDL (DL 0.02)	0.67	27.5	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
18/08/2025 to 19/08/2025	29.4	58.0	14.7	9.1	18.7	BDL (DL 0.02)	0.6	23.2	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
21/08/2025 to 22/08/2025	19.9	40.8	11.3	4.7	14.4	BDL (DL 0.02)	BDL (DL 0.50)	17.9	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
25/08/2025 to 26/08/2025	24.6	51.9	17.4	8.3	22.1	BDL (DL 0.02)	0.54	27.5	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
28/08/2025 to 29/08/2025	27.8	58.8	19.9	13.4	25.3	BDL (DL 0.02)	0.57	31.4	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
Testing Method	IS:5182, (Part-24)	IS:5182, (Part-23)	IS: 5182, (Part-6)	IS: 5182, (Part-2) sec 1	IS: 5182, (Part-9)	IS: 5182, (Part-22)	IS: 5182, (Part-10)	IS: 5182, (Part-25)	IS:5182, (Part-11)	IS:5182, (Part-12)	JMELPL/ST OP/03	IS: 5182, (Part-26)
NAAQS	60 (24 Hourly)	100 (24 Hourly)	80 (24 Hourly)	80 (24 Hourly	180 (1 hourly)	1 (24 hourly)	4 (1 hourly)	400 (24 hourly)	5 (Annual)	1 (Annual)	6 (Annual)	20 (Annual)

Note: NAAQS-National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)] [Part-II sec.-3(i)] 18.11.2009.

Abbreviations:

PM2.5- Particulate Matter 2.5
PM10- Particulate Matter 10
NO2- Nitrogen Dioxide
SO2- Sulphur Dioxide
CO- Carbon Monoxide
NH3- Ammonia
C6H6- Benzene
BaP- Benzo(a)Pyrene-
BDL-Below Detection Limit
DL- Detection Limit

Checked by
Deepak Singh Yadav

Reviewed & Authorized by
Sita Ram Yadav

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End of Report

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TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/A/250806710
		Date of Reporting:	04/09/2025
		Monitoring Period:	August, 2025
		Protocol Used:	IS-5182
Sample Description:	AMBIENT AIR QUALITY MONITORING	Instrument Used for Sampling:	RDS & FPS
Sample Collected By:	JMELPL Team	Sampling Location:	Colony Area Near Boundary Wall (Village- Nimohi)
Client Representative:	Mr. Priyranjan Trivedi (Head- Env.)		

TEST RESULTS

NAAQS	PARAMETERS											
	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)	NO_2 (µg/m³)	SO_2 (µg/m³)	Ozone (µg/m³)	Lead (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Arsenic (ng/m³)	Nickel (ng/m³)
Monitoring Date												
04/08/2025 to 05/08/2025	20.9	46.5	14.1	6.3	17.9	BDL (DL 0.02)	0.54	22.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
07/08/2025 to 08/08/2025	14.6	35.2	11.3	4.9	14.4	BDL (DL 0.02)	BDL (DL 0.50)	17.9	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
11/08/2025 to 12/08/2025	19.4	51.7	13.7	5.6	17.4	BDL (DL 0.02)	0.52	21.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
14/08/2025 to 15/08/2025	28.8	58.3	15.6	9.0	19.8	BDL (DL 0.02)	0.53	24.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
18/08/2025 to 19/08/2025	24.6	52.8	14.7	7.4	18.7	BDL (DL 0.02)	BDL (DL 0.50)	23.2	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
21/08/2025 to 22/08/2025	17.5	37.8	10.5	4.5	13.3	BDL (DL 0.02)	BDL (DL 0.50)	19.2	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
25/08/2025 to 26/08/2025	19.6	44.9	12.7	4.7	16.1	BDL (DL 0.02)	BDL (DL 0.50)	20.1	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
28/08/2025 to 29/08/2025	23.3	55.3	15.4	6.0	19.6	BDL (DL 0.02)	0.51	24.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
Testing Method	IS:5182, (Part-24)	IS:5182, (Part-23)	IS: 5182, (Part-6)	IS: 5182, (Part-2) sec 1	IS: 5182, (Part-9)	IS: 5182, (Part-22)	IS: 5182, (Part-10)	IS: 5182, (Part-25)	IS:5182, (Part-11)	IS:5182, (Part-12)	JMELPL/STOP/03	IS: 5182, (Part-26)
NAAQS	60 (24 Hourly)	100 (24 Hourly)	80 (24 Hourly)	80 (24 Hourly)	180 (1 hourly)	1 (24 hourly)	4 (1 hourly)	400 (24 hourly)	5 (Annual)	1 (Annual)	6 (Annual)	20 (Annual)

Note: NAAQS-National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)] [Part-II sec.-3(i)] 18.11.2009.

Abbreviations:

PM2.5- Particulate Matter 2.5
PM10- Particulate Matter 10
NO2- Nitrogen Dioxide
SO2- Sulphur Dioxide
CO- Carbon Monoxide
NH3- Ammonia
C6H6- Benzene
BaP- Benzo(a)Pyrene
BDL-Below Detection Limit
DL- Detection Limit

J. M. ENVIROLAB PVT. LTD. Authorised Signatory

Checked by
Deepak Singh Yadav

Reviewed & Authorized by
Ram Yadav

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End of Report

CIN No. U74210HR2011PTC085736

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TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/A/25090861I
		Date of Reporting:	03/10/2025
		Monitoring Period:	September, 2025
		Protocol Used:	IS-5182
Sample Description:	AMBIENT AIR QUALITY MONITORING	Instrument Used for Sampling:	RDS & FPS
Sample Collected By:	JMELPL Team	Sampling Location:	Colony Area Near Boundary Wall (Village- Nimohi)
Client Representative:	Mr. Priyranjan Trivedi (Head- Env.)		

TEST RESULTS

NAAQS	PARAMETERS											
	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)	NO_2 (µg/m³)	SO_2 (µg/m³)	Ozone (µg/m³)	Lead (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Arsenic (ng/m³)	Nickel (ng/m³)
Monitoring Date												
01/09/2025 to 02/09/2025	23.4	49.0	11.7	4.6	14.9	BDL (DL 0.02)	0.53	18.5	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
04/09/2025 to 05/09/2025	17.5	38.5	11.0	4.1	14.0	BDL (DL 0.02)	BDL (DL 0.50)	17.4	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
08/09/2025 to 09/09/2025	24.4	51.5	13.3	5.6	16.9	BDL (DL 0.02)	0.55	21.8	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
11/09/2025 to 12/09/2025	30.8	61.4	14.5	8.2	18.4	BDL (DL 0.02)	0.61	22.2	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
15/09/2025 to 16/09/2025	24.6	47.7	12.2	6.5	15.5	BDL (DL 0.02)	0.54	19.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
18/09/2025 to 19/09/2025	15.5	33.5	10.0	3.7	12.7	BDL (DL 0.02)	BDL (DL 0.50)	15.8	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
22/09/2025 to 23/09/2025	19.2	45.7	12.1	5.5	15.4	BDL (DL 0.02)	BDL (DL 0.50)	19.1	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
24/09/2025 to 25/09/2025	22.5	52.5	13.2	6.1	16.8	BDL (DL 0.02)	0.59	20.9	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
Testing Method	IS:5182, (Part-24)	IS:5182, (Part-23)	IS: 5182, (Part-6)	IS: 5182, (Part-2) sec 1	IS: 5182, (Part-9)	IS: 5182, (Part-22)	IS: 5182, (Part-10)	IS: 5182, (Part-25)	IS:5182, (Part-11)	IS:5182, (Part-12)	JMELPL/ST OP/03	IS: 5182, (Part-26)
NAAQS	60 (24 Hourly)	100 (24 Hourly)	80 (24 Hourly)	80 (24 Hourly)	180 (1 hourly)	1 (24 hourly)	4 (1 hourly)	400 (24 hourly)	5 (Annual)	1 (Annual)	6 (Annual)	20 (Annual)

Note: NAAQS-National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)] [Part-II sec.-3(i)] 18.11.2009.

Abbreviations:

PM2.5- Particulate Matter 2.5
PM10- Particulate Matter 10
NO2- Nitrogen Dioxide
SO2- Sulphur Dioxide
CO- Carbon Monoxide
NH3- Ammonia
C6H6- Benzene
BaP- Benzo(a)Pyrene
BDL-Below Detection Limit
DL- Detection Limit

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Checked by
Ritika Saini

Reviewed & Authorized by
Sita Ram Yadav

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End of Report

CIN No.: U74210HR2019PTC080736

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TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/A/250908612
		Date of Reporting:	03/10/2025
		Monitoring Period:	September, 2025
		Protocol Used:	IS-5182
Sample Description:	AMBIENT AIR QUALITY MONITORING	Instrument Used for Sampling:	RDS & FPS
Sample Collected By:	JMELPL Team	Sampling Location:	Near Fire Station
Client Representative:	Mr. Priyranjan Trivedi (Head- Env.)		

TEST RESULTS

NAAQS	PARAMETERS											
	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)	NO_2 (µg/m³)	SO_2 (µg/m³)	Ozone (µg/m³)	Lead (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Arsenic (ng/m³)	Nickel (ng/m³)
Monitoring Date												
01/09/2025 to 02/09/2025	31.4	57.2	21.0	8.4	17.2	BDL (DL 0.02)	0.59	23.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
04/09/2025 to 05/09/2025	23.1	44.8	18.1	7.5	14.8	BDL (DL 0.02)	BDL (DL 0.50)	20.1	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
08/09/2025 to 09/09/2025	27.2	55.6	22.7	9.4	18.6	BDL (DL 0.02)	0.61	25.2	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
11/09/2025 to 12/09/2025	33.7	67.8	25.8	12.9	21.2	BDL (DL 0.02)	0.65	28.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
15/09/2025 to 16/09/2025	28.5	54.8	23.1	8.4	18.9	BDL (DL 0.02)	0.56	25.4	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
18/09/2025 to 19/09/2025	17.8	38.5	17.6	6.3	14.4	BDL (DL 0.02)	0.52	19.5	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
22/09/2025 to 23/09/2025	21.1	47.6	21.3	10.1	17.5	BDL (DL 0.02)	BDL (DL 0.50)	23.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
24/09/2025 to 25/09/2025	28.4	56.7	22.3	10.8	18.3	BDL (DL 0.02)	0.57	24.8	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
Testing Method	IS:5182, (Part-24)	IS:5182, (Part-23)	IS: 5182, (Part-6)	IS: 5182, (Part-2) sec 1	IS: 5182, (Part-9)	IS: 5182, (Part-22)	IS: 5182, (Part-10)	IS: 5182, (Part-25)	IS:5182, (Part-11)	IS:5182, (Part-12)	JMELPL/STOP/03	IS: 5182, (Part-26)
NAAQS	60 (24 Hourly)	100 (24 Hourly)	80 (24 Hourly)	80 (24 Hourly)	180 (1 hourly)	1 (24 hourly)	4 (1 hourly)	400 (24 hourly)	5 (Annual)	1 (Annual)	6 (Annual)	20 (Annual)

Note: NAAQS-National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (38)] [Part-II sec.-3(i)] 18.11.2009.

Abbreviations:

PM2.5- Particulate Matter 2.5
PM10- Particulate Matter 10
NO2- Nitrogen Dioxide
SO2- Sulphur Dioxide
CO- Carbon Monoxide
NH3- Ammonia
C6H6- Benzene
BaP- Benzo(a)Pyrene
BDL-Below Detection Limit
DL- Detection Limit

J. M. ENVIROLAB PVT. LTD. Authorised Signatory

Checked by
Ritika Saini

Reviewed & Authorized by
Shri Ram Yadav

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End of Report

CIN No. U74120HR2011PTC043158

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TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/A/250908613
		Date of Reporting:	03/10/2025
		Monitoring Period:	September, 2025
		Protocol Used:	IS-5182
Sample Description:	AMBIENT AIR QUALITY MONITORING	Instrument Used for Sampling:	RDS & FPS
Sample Collected By:	JMELPL Team	Sampling Location:	At CHP/AHP Area Near Boundary Wall (Village- Benipali)
Client Representative:	Mr. Priyranjan Trivedi (Head- Env.)		

TEST RESULTS

NAAQS	PARAMETERS											
	$PM_{2.5}$ ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	Ozone ($\mu g/m^3$)	Lead ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Arsenic (ng/m^3)	Nickel (ng/m^3)
Monitoring Date												
01/09/2025 to 02/09/2025	29.1	57.7	17.9	10.4	22.7	BDL (DL 0.02)	0.62	28.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
04/09/2025 to 05/09/2025	23.9	49.5	13.7	7.2	17.4	BDL (DL 0.02)	0.54	21.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
08/09/2025 to 09/09/2025	30.5	64.8	17.4	10.7	22.1	BDL (DL 0.02)	0.63	27.5	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
11/09/2025 to 12/09/2025	34.2	76.1	20.2	15.7	25.7	BDL (DL 0.02)	0.72	31.9	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
15/09/2025 to 16/09/2025	30.9	62.1	17.1	10.6	21.7	BDL (DL 0.02)	0.64	27.0	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
18/09/2025 to 19/09/2025	21.1	43.7	13.1	5.5	16.6	BDL (DL 0.02)	0.55	20.7	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
22/09/2025 to 23/09/2025	26.3	55.5	20.2	9.6	25.7	BDL (DL 0.02)	0.58	31.9	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
24/09/2025 to 25/09/2025	29.7	62.9	23.1	15.5	29.3	BDL (DL 0.02)	0.61	27.4	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
Testing Method	IS:5182, (Part-24)	IS:5182, (Part-23)	IS: 5182, (Part-6)	IS: 5182, (Part-2) sec 1	IS: 5182, (Part-9)	IS: 5182, (Part-22)	IS: 5182, (Part-10)	IS: 5182, (Part-25)	IS:5182, (Part-11)	IS:5182, (Part-12)	JMELPL/STOP/03	IS: 5182, (Part-26)
NAAQS	60 (24 Hourly)	100 (24 Hourly)	80 (24 Hourly)	80 (24 Hourly)	180 (1 hourly)	1 (24 hourly)	4 (1 hourly)	400 (24 hourly)	5 (Annual)	1 (Annual)	6 (Annual)	20 (Annual)

Note: NAAQS-National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (38)] [Part-II sec.-3(i)] 18.11.2009.

Abbreviations:

PM2.5- Particulate Matter 2.5
PM10- Particulate Matter 10
NO2- Nitrogen Dioxide
SO2- Sulphur Dioxide
CO- Carbon Monoxide
NH3- Ammonia
C6H6- Benzene
BaP- Benzo(a)Pyrene-
BDL-Below Detection Limit
DL- Detection Limit

ENVIROLAB PVT. LTD. Authorised Signatory

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End of Report

CIN No.: U74220HR2011PTC085378

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TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/A/250908614
		Date of Reporting:	03/10/2025
		Monitoring Period:	September, 2025
		Protocol Used:	IS-5182
Sample Description:	AMBIENT AIR QUALITY MONITORING	Instrument Used for Sampling:	RDS & FPS
Sample Collected By:	JMELPL Team	Sampling Location:	Colony Area Near Boundary Wall (Village- Nimohi)
Client Representative:	Mr. Priyranjan Trivedi (Head- Env.)		

TEST RESULTS

NAAQS	PARAMETERS											
	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)	NO_2 (µg/m³)	SO_2 (µg/m³)	Ozone (µg/m³)	Lead (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Arsenic (ng/m³)	Nickel (ng/m³)
Monitoring Date												
01/09/2025 to 02/09/2025	22.4	49.8	16.4	7.3	20.8	BDL (DL 0.02)	0.56	25.9	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
04/09/2025 to 05/09/2025	15.6	37.7	13.1	5.7	16.6	BDL (DL 0.02)	BDL (DL 0.50)	20.7	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
08/09/2025 to 09/09/2025	20.8	55.3	15.9	6.5	20.2	BDL (DL 0.02)	0.53	25.1	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
11/09/2025 to 12/09/2025	30.8	62.4	18.1	10.4	23.0	BDL (DL 0.02)	0.57	28.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
15/09/2025 to 16/09/2025	26.3	56.5	17.1	8.6	21.7	BDL (DL 0.02)	0.54	27.0	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
18/09/2025 to 19/09/2025	18.7	40.4	12.2	5.2	15.5	BDL (DL 0.02)	BDL (DL 0.50)	19.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
22/09/2025 to 23/09/2025	21.0	48.0	14.7	5.5	18.7	BDL (DL 0.02)	BDL (DL 0.50)	23.2	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
24/09/2025 to 25/09/2025	24.9	59.2	17.9	7.0	22.7	BDL (DL 0.02)	0.56	28.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
Testing Method	IS:5182, (Part-24)	IS:5182, (Part-23)	IS: 5182, (Part-6)	IS: 5182, (Part-2) sec 1	IS: 5182, (Part-9)	IS: 5182, (Part-22)	IS: 5182, (Part-10)	IS: 5182, (Part-25)	IS:5182, (Part-11)	IS:5182, (Part-12)	JMELPL/STOP/03	IS: 5182, (Part-26)
NAAQS	60 (24 Hourly)	100 (24 Hourly)	80 (24 Hourly)	80 (24 Hourly)	180 (1 hourly)	1 (24 hourly)	4 (1 hourly)	400 (24 hourly)	5 (Annual)	1 (Annual)	6 (Annual)	20 (Annual)

Note: NAAQS-National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)] [Part-II sec.-3(i)] 18.11.2009.

Abbreviations:

PM2.5- Particulate Matter 2.5
PM10- Particulate Matter 10
NO2- Nitrogen Dioxide
SO2- Sulphur Dioxide
CO- Carbon Monoxide
NH3- Ammonia
C6H6- Benzene
BaP- Benzo(a)Pyrene
BDL-Below Detection Limit
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End of Report

CIN No. U74220HR2011PTC085158

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TC-6821

TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/A/251003533
		Date of Reporting:	04/11/2025
		Monitoring Period:	October, 2025
		Sampling Protocol:	JMELPL/STOP/04
Sample Description:	AMBIENT AIR QUALITY MONITORING	Instrument Used for Sampling:	RDS & FPS
Sample Collected By:	JMELPL Team	Sampling Location:	Water Reservoir Area Near Boundary Wall (Village- Singhitarai)
Client Representative:	Mr. Priyranjan Trivedi (Head- Env.)		

TEST RESULTS

NAAQS	PARAMETERS											
	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)	NO_2 (µg/m³)	SO_2 (µg/m³)	Ozone (µg/m³)	Lead (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Arsenic (ng/m³)	Nickel (ng/m³)
Monitoring Date												
01/10/2025 to 02/10/2025	21.5	55.2	15.0	6.6	17.1	BDL (DL 0.02)	0.57	19.2	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
04/10/2025 to 05/10/2025	24.7	59.7	18.4	7.5	21.0	BDL (DL 0.02)	0.64	23.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
06/10/2025 to 07/10/2025	23.3	45.3	15.4	6.3	17.6	BDL (DL 0.02)	BDL (DL 0.50)	19.7	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
09/10/2025 to 10/10/2025	18.4	40.5	12.3	4.9	14.0	BDL (DL 0.02)	BDL (DL 0.50)	15.7	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
13/10/2025 to 14/10/2025	21.6	49.1	14.5	5.2	16.5	BDL (DL 0.02)	BDL (DL 0.50)	18.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
16/10/2025 to 17/10/2025	23.4	52.7	15.7	8.4	17.9	BDL (DL 0.02)	0.52	20.1	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
21/10/2025 to 22/10/2025	26.0	58.9	17.4	9.3	19.8	BDL (DL 0.02)	0.55	22.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
23/10/2025 to 24/10/2025	19.3	51.2	19.0	10.1	21.7	BDL (DL 0.02)	0.53	24.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
27/10/2025 to 28/10/2025	25.7	47.1	17.3	9.2	19.7	BDL (DL 0.02)	BDL (DL 0.50)	22.1	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
30/10/2025 to 31/10/2025	27.8	49.6	21.1	9.9	24.1	BDL (DL 0.02)	BDL (DL 0.50)	27.0	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
Testing Method	IS:5182, (Part-24)	IS:5182, (Part-23)	IS: 5182, (Part-6)	IS: 5182, (Part-2) sec 1	IS: 5182, (Part-9)	IS: 5182, (Part-22)	IS: 5182, (Part-10)	IS: 5182, (Part-25)	IS:5182, (Part-11)	IS:5182, (Part-12)	JMELPL/STOP/03	IS: 5182, (Part-26)
NAAQS	60 (24 Hourly)	100 (24 Hourly)	80 (24 Hourly)	80 (24 Hourly)	180 (1 hourly)	1 (24 hourly)	4 (1 hourly)	400 (24 hourly)	5 (Annual)	1 (Annual)	6 (Annual)	20 (Annual)

Note: NAAQS-National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)] [Part-II sec.-3(i)] 18.11.2009.

Abbreviations:

PM2.5- Particulate Matter 2.5
PM10- Particulate Matter 10
NO2- Nitrogen Dioxide
SO2- Sulphur Dioxide
CO- Carbon Monoxide
NH3- Ammonia
C6H6- Benzene
BaP- Benzo(a)Pyrene-
BDL-Below Detection Limit
DL- Detection Limit

Checked by
Deepak Singh Yadav

Reviewed & Authorized by
Shiv Ram Yadav

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CIN No. U74220HR2011PTC088756

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TC-6821

TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/A/251003534
		Date of Reporting:	04/11/2025
		Monitoring Period:	October, 2025
		Sampling Protocol:	JMELPL/STOP/04
Sample Description:	AMBIENT AIR QUALITY MONITORING	Instrument Used for Sampling:	RDS & FPS
Sample Collected By:	JMELPL Team	Sampling Location:	Near Fire Station
Client Representative:	Mr. Priyranjan Trivedi (Head- Env.)		

TEST RESULTS

NAAQS	PARAMETERS											
	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)	NO_2 (µg/m³)	SO_2 (µg/m³)	Ozone (µg/m³)	Lead (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Arsenic (ng/m³)	Nickel (ng/m³)
Monitoring Date												
01/10/2025 to 02/10/2025	29.2	64.6	21.4	8.9	24.4	BDL (DL 0.02)	0.63	27.4	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
04/10/2025 to 05/10/2025	33.4	69.8	17.6	7.2	20.1	BDL (DL 0.02)	0.67	22.5	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
06/10/2025 to 07/10/2025	22.8	53.0	20.1	9.2	22.9	BDL (DL 0.02)	0.54	25.7	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
09/10/2025 to 10/10/2025	21.5	47.4	25.1	12.1	28.6	BDL (DL 0.02)	BDL (DL 0.50)	32.1	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
13/10/2025 to 14/10/2025	24.9	58.2	21.1	8.1	24.1	BDL (DL 0.02)	0.56	27.0	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
16/10/2025 to 17/10/2025	27.2	61.7	17.2	5.8	19.6	BDL (DL 0.02)	0.59	22.5	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
21/10/2025 to 22/10/2025	31.3	68.9	23.4	8.6	26.7	BDL (DL 0.02)	0.65	27.4	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
23/10/2025 to 24/10/2025	26.4	59.5	21	11.1	23.9	BDL (DL 0.02)	0.61	26.9	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
27/10/2025 to 28/10/2025	23.7	55.1	19.1	8.2	21.8	BDL (DL 0.02)	0.56	24.4	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
30/10/2025 to 31/10/2025	25.1	58.0	23.3	10.9	26.6	BDL (DL 0.02)	0.67	29.8	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
Testing Method	IS:5182, (Part-24)	IS:5182, (Part-23)	IS: 5182, (Part-6)	IS: 5182, (Part-2) sec 1	IS: 5182, (Part-9)	IS: 5182, (Part-22)	IS: 5182, (Part-10)	IS: 5182, (Part-25)	IS:5182, (Part-11)	IS:5182, (Part-12)	JMELPL/STOP/03	IS: 5182, (Part-26)
NAAQS	60 (24 Hourly)	100 (24 Hourly)	80 (24 Hourly)	80 (24 Hourly)	180 (1 hourly)	1 (24 hourly)	4 (1 hourly)	400 (24 hourly)	5 (Annual)	1 (Annual)	6 (Annual)	20 (Annual)

Note: NAAQS-National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)] [Part-II sec.-3(i)] 18.11.2009.

Abbreviations:

PM2.5- Particulate Matter 2.5
PM10- Particulate Matter 10
NO_2- Nitrogen Dioxide
SO_2- Sulphur Dioxide
CO- Carbon Monoxide
NH_3- Ammonia
C_6H_6- Benzene
BaP- Benzo(a)Pyrene
BDL-Below Detection Limit
DL- Detection Limit

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Checked by
Deepak Singh Yadav

Reviewed & Authorized by
Sita Ram Yadav

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TC-8821

TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/A/251003535
		Date of Reporting:	04/11/2025
		Monitoring Period:	October, 2025
		Sampling Protocol:	JMELPL/STOP/04
Sample Description:	AMBIENT AIR QUALITY MONITORING	Instrument Used for Sampling:	RDS & FPS
Sample Collected By:	JMELPL Team	Sampling Location:	At CHP/AHP Area Near Boundary Wall (Village- Benipali)
Client Representative:	Mr. Priyranjan Trivedi (Head- Env.)		

TEST RESULTS

NAAQS	PARAMETERS											
	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)	NO_2 (µg/m³)	SO_2 (µg/m³)	Ozone (µg/m³)	Lead (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Arsenic (ng/m³)	Nickel (ng/m³)
Monitoring Date												
01/10/2025 to 02/10/2025	31.5	69.8	23.1	9.6	26.3	BDL (DL 0.02)	0.65	29.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
04/10/2025 to 05/10/2025	39.7	75.4	19.0	7.8	21.7	BDL (DL 0.02)	0.69	24.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
06/10/2025 to 07/10/2025	24.6	59.2	21.7	9.9	24.7	BDL (DL 0.02)	0.56	27.8	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
09/10/2025 to 10/10/2025	23.2	51.2	27.1	13.1	30.9	BDL (DL 0.02)	0.52	34.7	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
13/10/2025 to 14/10/2025	26.9	62.9	22.8	8.7	26	BDL (DL 0.02)	0.58	29.2	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
16/10/2025 to 17/10/2025	29.4	66.6	18.6	6.3	21.2	BDL (DL 0.02)	0.61	23.8	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
21/10/2025 to 22/10/2025	33.8	74.4	25.3	9.3	28.8	BDL (DL 0.02)	0.67	32.4	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
23/10/2025 to 24/10/2025	28.5	64.3	22.7	12.0	25.9	BDL (DL 0.02)	0.63	29.1	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
27/10/2025 to 28/10/2025	25.6	59.5	20.6	10.9	23.5	BDL (DL 0.02)	0.58	26.4	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
30/10/2025 to 31/10/2025	27.1	61.6	25.2	11.8	28.7	BDL (DL 0.02)	0.69	32.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
Testing Method	IS:5182, (Part-24)	IS:5182, (Part-23)	IS: 5182, (Part-6)	IS: 5182, (Part-2) sec 1	IS: 5182, (Part-9)	IS: 5182, (Part-22)	IS: 5182, (Part-10)	IS: 5182, (Part-25)	IS:5182, (Part-11)	IS:5182, (Part-12)	JMELPL/STOP/03	IS: 5182, (Part-26)
NAAQS	60 (24 Hourly)	100 (24 Hourly)	80 (24 Hourly)	80 (24 Hourly)	180 (1 hourly)	1 (24 hourly)	4 (1 hourly)	400 (24 hourly)	5 (Annual)	1 (Annual)	6 (Annual)	20 (Annual)

Note: NAAQS-National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)] [Part-II sec.-3(i)] 18.11.2009.

Abbreviations:

PM2.5- Particulate Matter 2.5
PM10- Particulate Matter 10
NO2- Nitrogen Dioxide
SO2- Sulphur Dioxide
CO- Carbon Monoxide
NH3- Ammonia
C6H6- Benzene
BaP- Benzo(a)Pyrene
BOL-Below Detection Limit
DL- Detection Limit

Checked by
Deepak Singh Yadav

Reviewed & Authorized by
Sita Ram Yadav

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CIN No.- U74220HR2011PTC085726

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TC-6821

TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/A/251003536
		Date of Reporting:	04/11/2025
		Monitoring Period:	October, 2025
		Sampling Protocol:	JMELPL/STOP/04
Sample Description:	AMBIENT AIR QUALITY MONITORING	Instrument Used for Sampling:	RDS & FPS
Sample Collected By:	JMELPL Team	Sampling Location:	Colony Area Near Boundary Wall (Village- Nimohi)
Client Representative:	Mr. Priyranjan Trivedi (Head- Env.)		

TEST RESULTS

NAAQS	PARAMETERS											
	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)	NO_2 (µg/m³)	SO_2 (µg/m³)	Ozone (µg/m³)	Lead (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Arsenic (ng/m³)	Nickel (ng/m³)
Monitoring Date												
01/10/2025 to 02/10/2025	22.9	58.5	16.6	5.6	18.9	BDL (DL 0.02)	BDL (DL 0.50)	21.2	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
04/10/2025 to 05/10/2025	26.3	63.3	12.7	4.6	14.5	BDL (DL 0.02)	0.55	16.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
06/10/2025 to 07/10/2025	24.8	48.0	14.6	6.2	16.6	BDL (DL 0.02)	BDL (DL 0.50)	18.7	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
09/10/2025 to 10/10/2025	19.6	42.9	17.6	9.6	20.1	BDL (DL 0.02)	BDL (DL 0.50)	22.5	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
13/10/2025 to 14/10/2025	22.5	52.1	15.8	8.1	18.0	BDL (DL 0.02)	BDL (DL 0.50)	20.2	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
16/10/2025 to 17/10/2025	24.3	55.6	11.8	4.4	13.5	BDL (DL 0.02)	0.51	15.1	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
21/10/2025 to 22/10/2025	27.0	62.4	17.4	6.8	19.8	BDL (DL 0.02)	0.56	22.3	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
23/10/2025 to 24/10/2025	20.1	54.3	14.5	7.8	16.5	BDL (DL 0.02)	0.53	18.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
27/10/2025 to 28/10/2025	26.7	49.9	13.2	7.1	15.0	BDL (DL 0.02)	BDL (DL 0.50)	16.9	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
30/10/2025 to 31/10/2025	28.9	52.6	16.1	7.7	18.4	BDL (DL 0.02)	BDL (DL 0.50)	20.6	BDL (DL 1.0)	BDL (DL 0.50)	BDL (DL 0.50)	BDL (DL 1.0)
Testing Method	IS:5182, (Part-24)	IS:5182, (Part-23)	IS: 5182, (Part-6)	IS: 5182, (Part-2) sec 1	IS: 5182, (Part-9)	IS: 5182, (Part-22)	IS: 5182, (Part-10)	IS: 5182, (Part-25)	IS:5182, (Part-11)	IS:5182, (Part-12)	JMELPL/STOP/03	IS: 5182, (Part-26)
NAAQS	60 (24 Hourly)	100 (24 Hourly)	80 (24 Hourly)	80 (24 Hourly)	180 (1 hourly)	1 (24 hourly)	4 (1 hourly)	400 (24 hourly)	5 (Annual)	1 (Annual)	6 (Annual)	20 (Annual)

Note: NAAQS-National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (38)] [Part-II sec.-3(i)] 18.11.2009.

Abbreviations:

PM2.5- Particulate Matter 2.5
PM10- Particulate Matter 10
NO2- Nitrogen Dioxide
SO2- Sulphur Dioxide
CO- Carbon Monoxide
NH3- Ammonia
C6H6- Benzene
BaP- Benzo(a)Pyrene
BDL-Below Detection Limit
DL- Detection Limit

Checked by
Deepak Singh Yadav

Reviewed & Authorized by
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CIN No. :U74220HR2011PTC085736

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TEST REPORT

PSample Number:	JME/VL/WW/01	Report No.:	JME/WW/250826007
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Party Reference:	Nil
		Reporting Date:	29/08/2025
		Analysis Completion Date:	29/08/2025
Sample Description:	WASTE WATER	Analysis Start Date:	26/08/2025
Sampling Location:	Colony STP Inlet	Receipt Date:	26/08/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	25/08/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL Team	Environmental condition during sampling:	Temperature- 30°C, Cloudy Sky
Latitude:	21° 54' 2" N	Preservation:	Refrigerated
Longitude:	83° 7' 40" E	Sample Quantity:	3.0 Litre
Sampling Protocol:	JMELPL/STOP/04	Parameter Required:	As per work order

TEST RESULTS

S. No.	Parameter	Test Method	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	7.13	mg/l
2.	Total Suspended Solids	IS:3025 (Part-17)	34.0	mg/l
3.	Chemical Oxygen Demand	IS:3025 (Part-58)	202.0	mg/l
4.	Biochemical Oxygen Demand (3 Days at 27°C)	IS: 3025 (Part-44)	56.0	mg/l
5.	Oil & Grease	IS:3025 (Part- 39)	BDL (DL 1.0)	mg/l

J. M. ENVIROLAB PVT. LTD. Authorised Signatory

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Ram Yadav

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End of Report

CIN No. U74220HR2011PTC080756

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TEST REPORT

Sample Number:	JME/VL/WW/02	Report No.:	JME/WW/250826008
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Party Reference:	Nil
		Reporting Date:	29/08/2025
		Analysis Completion Date:	29/08/2025
Sample Description:	WASTE WATER	Analysis Start Date:	26/08/2025
Sampling Location:	Colony STP Outlet	Receipt Date:	26/08/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	25/08/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL Team	Environmental condition during sampling:	Temperature- 30°C, Cloudy Sky
Latitude:	21° 54' 2" N	Preservation:	Refrigerated
Longitude:	83° 7' 40" E	Sample Quantity:	3.0 Litre
Sampling Protocol:	JMELPL/STOP/04	Parameter Required:	As per work order

TEST RESULTS

S. No.	Parameter	Test Method	Result	Unit	Limit
1.	pH (at 25°C)	IS: 3025 (Part-11)	7.61	mg/l	5.5-9.0
2.	Total Suspended Solids	IS: 3025 (Part-17)	14.2	mg/l	100
3.	Chemical Oxygen Demand	IS: 3025 (Part-58)	33.0	mg/l	250
4.	Biochemical Oxygen Demand (3 Days at 27°C)	IS: 3025 (Part-44)	9.4	mg/l	30
5.	Oil & Grease	IS:3025 (Part- 39)	BDL (DL 1.0)	mg/l	10

Note: BDL- Below Detection Limit, DL- Detection Limit

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Checked by
Abhishek Tiwari

Reviewed & Authorized by
Ram Yadav

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Corporate Office
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End of Report

CIN No. U74210HR2011PTC085156

J. M. ENVIROLAB PVT. LTD.

30 years of success Recognized by CPCB under EP Act-1986, Certified by ISO-9001:2015, 14001:2015 & 45001:2018

TEST REPORT

PSample Number:	JME/VL/WW/01	Report No.:	JME/WW/250918007
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Party Reference:	Nil
		Reporting Date:	24/09/2025
		Analysis Completion Date:	24/09/2025
Sample Description:	WASTE WATER	Analysis Start Date:	18/09/2025
Sampling Location:	Colony STP Inlet	Receipt Date:	18/09/2025
Client Repreeentative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	16/09/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL Team	Environmental condition during sampling:	Temperature 28°C, Cloudy Sky
Latitude:	21° 54' 2" N	Preservation:	Refrigerated
Longitude:	83° 7' 40" E	Sample Quantity:	3.0 Litre
Sampling Protocol:	JMELPL/STOP/04	Parameter Required:	As per work order

TEST RESULTS

S. No.	Parameter	Test Method	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	7.19	-
2.	Total Suspended Solids	IS:3025 (Part-17)	31.0	mg/l
3.	Chemical Oxygen Demand	IS:3025 (Part-58)	197.0	mg/l
4.	Biochemical Oxygen Demand (3 Days at 27°C)	IS: 3025 (Part-44)	57.0	mg/l
5.	Oil & Grease	IS:3025 (Part- 39)	BDL (DL 1.0)	mg/l

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Checked by
Abhishek Tiwari

Reviewed & Authorized by
Rajkumar Yadav

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TEST REPORT

Sample Number:	JME/VL/WW/02	Report No.:	JME/WW/250918008
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Party Reference:	Nil
		Reporting Date:	24/09/2025
		Analysis Completion Date:	24/09/2025
Sample Description:	WASTE WATER	Analysis Start Date:	18/09/2025
Sampling Location:	Colony STP Outlet	Receipt Date:	18/09/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	16/09/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL Team	Environmental condition during sampling:	Temperature 28°C, Cloudy Sky
Latitude:	21° 54' 2" N	Preservation:	Refrigerated
Longitude:	83° 7' 40" E	Sample Quantity:	3.0 Litre
Sampling Protocol:	JMELPL/STOP/04	Parameter Required:	As per work order

TEST RESULTS

S. No.	Parameter	Test Method	Result	Unit	Limit
1.	pH (at 25°C)	IS: 3025 (Part-11)	7.66	-	5.5-9.0
2.	Total Suspended Solids	IS: 3025 (Part-17)	12.7	mg/l	100
3.	Chemical Oxygen Demand	IS: 3025 (Part-58)	28.0	mg/l	250
4.	Biochemical Oxygen Demand (3 Days at 27°C)	IS: 3025 (Part-44)	8.0	mg/l	30
5.	Oil & Grease	IS:3025 (Part- 39)	BDL (DL 1.0)	mg/l	10

Note: BDL- Below Detection Limit, DL- Detection Limit

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TC-6821

TEST REPORT

Sample Number:	JME/VL/WW/01	Report No.:	JME/WW/251016001
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Party Reference:	Nil
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	WASTE WATER	Analysis Start Date:	16/10/2025
Sampling Location:	Colony STP Inlet	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL Team	Environmental condition during sampling:	Temperature 27°C, Cloudy Sky
Latitude:	21°54' 2" N	Preservation:	Refrigerated
Longitude:	83°7' 40" E	Sample Quantity:	3.0 Litre
Sampling Protocol:	JMELPL/STOP/04	Parameter Required:	As per work order

TEST RESULTS

S. No.	Parameter	Test Method	Result	Unit
1.	pH (at 25°C)	IS:3025 (Part-11)	7.24	-
2.	Total Suspended Solids	IS:3025 (Part-17)	28.0	mg/l
3.	Chemical Oxygen Demand	IS:3025 (Part-58)	192.0	mg/l
4.	Biochemical Oxygen Demand (3 Days at 27°C)	IS: 3025 (Part-44)	54.0	mg/l
5.	Oil & Grease	IS:3025 (Part- 39)	BDL (DL 1.0)	mg/l

Checked by
Srishti Mehta

Reviewed & Authorized by
Pallavi Verma

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TC-6821

TEST REPORT

Sample Number:	JME/VL/WW/02	Report No.:	JME/WW/251016002
Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Format No.:	7.8 F-01
		Party Reference:	Nil
		Reporting Date:	22/10/2025
		Analysis Completion Date:	22/10/2025
Sample Description:	WASTE WATER	Analysis Start Date:	16/10/2025
Sampling Location:	Colony STP Outlet	Receipt Date:	16/10/2025
Client Representative (Name & Designation):	Mr. Priyranjan Trivedi (Head- Env.)	Sampling Date:	14/10/2025
		Sampling Type:	Grab
Sample collected by:	JMELPL Team	Environmental condition during sampling:	Temperature 27°C, Cloudy Sky
Latitude:	21°54' 7" N	Preservation:	Refrigerated
Longitude:	83°7' 40" E	Sample Quantity:	3.0 Litre
Sampling Protocol:	JMELPL/STOP/04	Parameter Required:	As per work order

TEST RESULTS

S. No.	Parameter	Test Method	Result	Unit	Limit
1.	pH (at 25°C)	IS: 3025 (Part-11)	7.72	-	5.5-9.0
2.	Total Suspended Solids	IS: 3025 (Part-17)	11.5	mg/l	100
3.	Chemical Oxygen Demand	IS: 3025 (Part-58)	22.0	mg/l	250
4.	Biochemical Oxygen Demand (3 Days at 27°C)	IS: 3025 (Part-44)	5.0	mg/l	30
5.	Oil & Grease	IS:3025 (Part- 39)	BDL (DL 1.0)	mg/l	10

Note: BDL- Below Detection Limit, DL- Detection Limit

Checked by
Srishti Mehta

Reviewed & Authorized by
Pallavi Verma

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TEST REPORT

Name & Address of Unit:	**M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh**	Report No.:	**JME/AN/250825023-026**
		Reporting Date:	**28/08/2025**
		Analysis Completion Date:	**28/08/2025**
		Analysis Start Date:	**25/08/2025**
		Receipt Date:	**25/08/2025**
Sample Description:	**AMBIENT NOISE LEVEL MONITORING**	Equipment Used:	**Sound Level Meter**
Sample Collected by:	**JMELPL TEAM**	Duration of Monitoring:	**24 Hours**
Client Representative:	**Mr. Priyranjan Trivedi (Head- EVS)**	Protocol Used :	**CPCB Guidelines & IS-9989**

TEST RESULTS

S. No.	Sampling Locations	Date of Monitoring	Results	
			Day Time (06:00 AM to 10:00 PM) Leq in dB (A)	Night Time (10:00 PM to 06:00 AM) Leq in dB (A)
1.	Water Reservoir Area Near Boundary Wall (Village-Singhitarai)	20/08/2025 to 21/08/2025	53.9	42.5
2.	Plant Site (Near Main Gate)	20/08/2025 to 21/08/2025	63.1	55.2
3.	At CHP/AHP Area Near Boundary Wall (Village-Benipali)	22/08/2025 to 23/08/2025	60.9	50.3
4.	Colony Area Near Boundary Wall (Village-Nimohi)	22/08/2025 to 23/08/2025	51.2	41.6

CPCB NOISE STANDARDS

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.
2. Night Time is reckoned between 10.00 PM to 6.00 AM
3. Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

J.M. ENVIROLAB PVT. LTD. Authorised Signatory INDIA

Checked by
Deepak Singh Yadav

Reviewed & Authorized by
Sita Ram Yadav

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CIN No. U74220HR2011PTC060756

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TEST REPORT

Name & Address of Unit:	**M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh**	Report No.:	**JME/AN/250827001-016**
		Reporting Date:	**30/08/2025**
		Analysis Completion Date:	**30/08/2025**
		Analysis Start Date:	**27/08/2025**
		Receipt Date:	**27/08/2025**
Sample Description:	**AMBIENT NOISE LEVEL MONITORING**	Equipment Used:	**Sound Level Meter**
Sample Collected by:	**JMELPL TEAM**	Duration of Monitoring:	**24 Hours**
Client Representative:	**Mr. Priyranjan Trivedi (Head- EVS)**	Protocol Used :	**CPCB Guidelines & IS-9989**

TEST RESULTS

S. No.	Sampling Locations	Date of Monitoring	Day Time (06:00 AM to 10:00 PM)	Night Time (10:00 PM to 06:00 AM)
			Leq in dB (A)	Leq in dB (A)
1.	Main Gate Colony	04/08/2025 to 05/08/2025	53.3	46.6
2.	Shopping Complex- Colony	04/08/2025 to 05/08/2025	51.6	42.9
3.	Near First Aid Centre	06/08/2025 to 07/08/2025	59.5	48.3
4.	Near DM Plant	06/08/2025 to 07/08/2025	64.4	56.0
5.	Temple Premises	08/08/2025 to 09/08/2025	52.6	41.9
6.	Project Office	08/08/2025 to 09/08/2025	61.4	53.7
7.	Near Ash Dyke	11/08/2025 to 12/08/2025	67.2	58.9
8.	Near CHP	11/08/2025 to 12/08/2025	60.5	51.9
9.	Village Kulba	13/08/2025 to 14/08/2025	53.9	43.5
10.	Village Sukhda	13/08/2025 to 14/08/2025	54.4	43.8
11.	Village Basnajhar	15/08/2025 to 16/08/2025	53.3	43.3
12.	Village Kenapali	15/08/2025 to 16/08/2025	52.0	44.2
13.	Town Kharsia	18/08/2025 to 19/08/2025	60.8	49.9
14.	Village Nimchi	18/08/2025 to 19/08/2025	53.2	43.4
15.	CHP Crusher House	25/08/2025 to 26/08/2025	63.5	57.4
16.	Nearby Arni Office	25/08/2025 to 26/08/2025	54.2	43.0

CPCB NOISE STANDARDS

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.
2. Night Time is reckoned between 10.00 PM to 6.00 AM
3. Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Checked by
Deepak Singh Yadav

Reviewed & Authorized by
Ram Yadav

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End of Report

TEST REPORT

Name & Address of Unit:	**M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh**	Report No.:	**JME/AN/250913007-010**
		Reporting Date:	**16/09/2025**
		Analysis Completion Date:	**16/09/2025**
		Analysis Start Date:	**13/09/2025**
		Receipt Date:	**13/09/2025**
Sample Description:	**AMBIENT NOISE LEVEL MONITORING**	Equipment Used:	**Sound Level Meter**
Sample Collected by:	**JMELPL TEAM**	Duration of Monitoring:	**24 Hours**
Client Representative:	**Mr. Priyranjan Trivedi (Head- EVS)**	Protocol Used :	**CPCB Guidelines & IS-9989**

TEST RESULTS

S. No.	Sampling Locations	Date of Monitoring	Results	
			Day Time (06:00 AM to 10:00 PM) Leq in dB (A)	Night Time (10:00 PM to 06:00 AM) Leq in dB (A)
1.	Water Reservoir Area Near Boundary Wall (Village-Singhitarai)	11/09/2025 to 12/09/2025	54.4	43.4
2.	Plant Site (Near Main Gate)	11/09/2025 to 12/09/2025	66.7	58.2
3.	At CHP/AHP Area Near Boundary Wall (Village-Benipali)	11/09/2025 to 12/09/2025	62.1	51.3
4.	Colony Area Near Boundary Wall (Village-Nimohi)	11/09/2025 to 12/09/2025	52.6	42.3

CPCB NOISE STANDARDS

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.
2. Night Time is reckoned between 10.00 PM to 6.00 AM
3. Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

Checked by
Ritika Saini

Reviewed & Authorized by
Shiv Ram Yadav

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End of Report

TEST REPORT

Name & Address of Unit:	**M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh**	Report No.:	**JME/AN/250911039-044**
		Reporting Date:	**15/09/2025**
		Analysis Completion Date:	**15/09/2025**
		Analysis Start Date:	**11/09/2025**
		Receipt Date:	**11/09/2025**
Sample Description:	**AMBIENT NOISE LEVEL MONITORING**	Equipment Used:	**Sound Level Meter**
Sample Collected by:	**JMELPL TEAM**	Duration of Monitoring:	**24 Hours**
Client Representative:	**Mr. Priyranjan Trivedi (Head- EVS)**	Protocol Used :	**CPCB Guidelines & IS-9989**

TEST RESULTS

S. No.	Sampling Locations	Date of Monitoring	Day Time (06:00 AM to 10:00 PM)	Night Time (10:00 PM to 06:00 AM)
			Leq in dB (A)	Leq in dB (A)
1.	Main Gate Colony	03/09/2025 to 04/09/2025	53.8	47.6
2.	Shopping Complex- Colony	03/09/2025 to 04/09/2025	52.5	43.6
3.	Near First Aid Centre	05/09/2025 to 06/09/2025	60.1	49.3
4.	Near DM Plant	05/09/2025 to 06/09/2025	65.4	57.1
5.	Temple Premises	09/09/2025 to 10/09/2025	53.2	42.7
6.	Near Cooling Tower	09/09/2025 to 10/09/2025	69.3	61.9

CPCB NOISE STANDARDS

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.
2. Night Time is reckoned between 10.00 PM to 6.00 AM
3. Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.

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Checked by
Ritika Saini

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Reviewed & Authorized by
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TC-6821

TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/AN/251015001-004
		Reporting Date:	18/10/2025
Sample Description:	AMBIENT NOISE LEVEL MONITORING	Receipt Date:	15/10/2025
Sample Collected by:	JMELPL TEAM	Equipment Used:	Sound Level Meter
Client Representative:	Mr. Priyranjan Trivedi (Head- EVS)	Duration of Monitoring:	24 Hours
Sampling Protocol:	JMELPL/STOP/04	Testing Protocol:	IS-9989

TEST RESULTS

S. No.	Sampling Locations	Date of Monitoring	Results	
			Day Time (06:00 AM to 10:00 PM) Leq in dB (A)	Night Time (10:00 PM to 06:00 AM) Leq in dB (A)
1.	Water Reservoir Area Near Boundary Wall (Village- Singhitaral)	13/10/2025 to 14/10/2025	52.8	42.1
2.	Plant Site (Near Main Gate)	13/10/2025 to 14/10/2025	68.9	59.5
3.	At CHP/AHP Area Near Boundary Wall (Village- Benipali)	13/10/2025 to 14/10/2025	65.4	54.7
4.	Colony Area Near Boundary Wall (Village- Nimohi)	13/10/2025 to 14/10/2025	53.0	41.8

CPCB NOISE STANDARDS

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.
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Checked by
Ritika Saini

Reviewed & Authorized by
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Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517, Golf Course Ext. Road, Sector-61,Gurugram-122011(Haryana)

End of Report

CIN No. :U74220HR2015PTC056705

J.M. ENVIROLAB PVT. LTD.

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TC-6821

TEST REPORT

Name & Address of Unit:	**M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitarai, Tehsil- Dabhara, District- Sakti, Chhattisgarh**	Report No.:	**JME/WN/251011001-010**
		Report Date:	**15/10/2025**
Sample Description:	**WORKZONE NOISE LEVEL MONITORING**	Receipt Date:	**11/10/2025**
Sample Collected by:	**JMELPL TEAM**	Equipment Used:	**Sound Level Meter**
Client Representative:	**Mr. Priyranjan Trivedi (Head- Env.)**	Testing Protocol:	**JMELPL/STOP/08**
Sampling Protocol:	**JMELPL/STOP/04**		

TEST RESULTS

S. No.	Locations	Date of Monitoring	Parameters	Standard Limits dB(A)
			Noise Level dB(A)	
1.	TG Area Unit-1	07/10/2025	81.6	85
2.	TG Area Unit-2	07/10/2025	78.9	
3.	Boiler Area-1	07/10/2025	75.8	
4.	Boiler Area-2	07/10/2025	77.7	
5.	DG Set -1	08/10/2025	72.3	
6.	DG Set -2	08/10/2025	69.8	
7.	Compressor House	08/10/2025	80.1	
8.	DM Plant	09/10/2025	74.3	
9.	Coal Crusher	09/10/2025	76.8	
10.	Cooling Tower	10/10/2025	81.3	

Standard Limits as Per Factory Act 1948 for Operational & Work Place Area (Unit: dB (A))

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Checked by
Ritika Saini

Reviewed & Authorized by
Sita Ram Yadav

Note:
1. This test report pertains solely to the tested sample as received.
2. This report shall not be reproduced without in full.
3. Any discrepancies in this test report must be brought to our attention within 7 days from the date of issue.
4. The sample will be destroyed after the specified retention period unless prior instructions are received.
5. All disputes are subject to the exclusive jurisdiction of Gurugram only.

Reg. Office & Lab.
424, Ground Floor, Udyog Vihar,
Phase-IV, Gurugram-122015 (Haryana)
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End of Report

TEST REPORT

Name & Address of Unit:	M/s. Vedanta Limited Chhattisgarh Thermal Power Plant (2×600 MW) Village- Singhitaral, Tehsil- Dabhara, District- Sakti, Chhattisgarh	Report No.:	JME/AN/251023001-004
		Reporting Date:	25/10/2025
Sample Description:	AMBIENT NOISE LEVEL MONITORING	Receipt Date:	23/10/2025
Sample Collected by:	JMELPL TEAM	Equipment Used:	Sound Level Meter
Client Representative:	Mr. Priyranjan Trivedi (Head- EVS)	Duration of Monitoring:	24 Hours
Sampling Protocol:	JMELPL/STOP/04	Testing Protocol:	IS-9989

TEST RESULTS

S. No.	Sampling Locations	Date of Monitoring	Day Time (06:00 AM to 10:00 PM)	Night Time (10:00 PM to 06:00 AM)
			Leq in dB (A)	Leq in dB (A)
1.	Main Gate Colony	15/10/2025 to 16/10/2025	53.5	47.3
2.	Shopping Complex- Colony	15/10/2025 to 16/10/2025	52.2	43.6
3.	Near First Aid Centre	17/10/2025 to 18/10/2025	59.8	49.1
4.	Near DM Plant	17/10/2025 to 18/10/2025	65.1	56.8
5.	Temple Premises	21/10/2025 to 22/10/2025	52.9	42.5
6.	Near Cooling Tower	21/10/2025 to 22/10/2025	69.0	61.6

CPCB NOISE STANDARDS

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.
2. Night Time is reckoned between 10.00 PM to 6.00 AM
3. Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

J.M. ENVIROLAB PVT. LTD. INDIA Authorised Signatory

Checked by
Ritika Saini

Reviewed & Authorized by
Sita Ram Yadav

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End of Report

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Ref. No: EC/ACPL/Env./2025-26/42 **November 21, 2025**

To

The Chief Municipal Officer
Nagar Panchayat, Dabhara
District- Sakti (CG)

Subject: Certificate for handling Municipal Solid Waste generated from Vedanta Limited- Chhattisgarh Thermal Power Plant located at village Singhitarai, tehsil Dabhara, district Sakti (CG) 495695

Reference: Environmental Clearance File No.: J-13012/ 07/ 2009-IA. II(T) (EC Identification # EC23A0601CG5872873N) dated 06.01.2024

Dear Sir,

With reference to the above-mentioned subject, we would like to submit that, Vedanta Limited- Chhattisgarh Thermal Power Plant (hereinafter referred as the "***Company***") is operating its thermal power plant at village: Singhitarai, tehsil: Dabhara, district: Sakti (CG) 495695 and has obtained all relevant regulatory permissions including Environmental Clearance and presently unit-1 (1 X 600 MW) has started its operation in the month of July'2025.

Further, Condition No. 6.1, under Waste Management section of above-mentioned Environmental Clearance dated 06.01.2025 (Copy attached) granted by MoEF&CC states that:

A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project shall be obtained.

Accordingly, we hereby request your good office to kindly provide the **certificate** as mentioned herein above in order to dispose the municipal solid waste.

This letter is being submitted for your information and further needful in the matter please.

Thanking You.

For and on behalf of Vedanta Limited
Chhattisgarh Thermal Power Plant (CTPP)

Devendra Kumar Patel
(Chief Operating Officer)

Vedanta Limited- CTPP
Site Office: 2X600 MW Chhattisgarh Thermal Power Plant, Village-Singhitarai, Tehsil-Dabhara, District - Sakti, Chhattisgarh, Pin-495695
Registered Office: Vedanta Limited 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai 400093, Maharashtra, India
T +91 22 6643 4500 I F +91 22 6643 4530
CIN: U32200MH1965PLC291394

ROAD SAFETY FOUNDATION

C-110, NATIONAL PARADISE, TAKKA, PLOT NO-290/PANVEL, NAVI MUMBAI-410206



COMPREHENSIVE ROAD SAFETY & TRAFFIC ENGINEERING SURVEY

PHASE- :-PLAZA-1/CENTRAL AVENUE

"ROAD ACCIDENT FREE CORRIDOR"

ATHENA CHHATTISGARH POWER LTD

CHHATTISGARH WORK

Singhitarai Thermal Power Project, Village Singhitarai, Tehsil Dabhra, Janjgir-Champa District, Dabhara, Chhattisgarh 495692

MONDAY, JULY 17, 2024

Report Produce for: ACPL

Report Produced by :Mr. Durgesh Sharma/Ms. Swapnali Patil /Mr. Mandar Dabhade

ROAD SAFETY FOUNDATION, MUMBAI

ROAD SAFETY FOUNDATION



C-110, NATIONAL PARADISE, TAKKA, PLOT NO-290/PANVEL, NAVI MUMBAI-410206

DOCUMENTS CONTROL SHEET

COMPREHENSIVE ROAD SAFETY & TRAFFIC ENGINEERING SURVEY

REPORT TILE- ACPL

ATHENA CHHATTISGARH POWER LTD

Revision : Every 2 Years
Status : Final

Record of Issue: 1101

Issue	Head Auditor	Data Collected	Checked by	Date	Authorized	Date
FINAL	MR DURGESH SHARMA	JUNE 2024	MS SWAPNALI PATIL	16/07/2024	MR MANDAR D.	16/7/2024

Distribution

Organization	Contact Person	Driver	Copies
ATHENA CHATTISGARH POWER LTD	MR. ASHISH PADAMWAR		1

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ROAD SAFETY FOUNDATION

	NAME	DATE
APPROVED	DKD	10.07.2024
CHECKED	BKP	10.07.2024
CAD	MSD	10.07.2024

TITLE :

ATHENA CHHATTISGARH POWER LIMITED

THIS DRAWING IS THE PROPERTY OF ROAD SAFETY FOUNDATION AND IS ISSUED FOR THE SPECIFIC PROJECT MENTIONED THERE IN AND NOT TO BE COPIED / USED FOR ANY OTHER PROJECTS.

ROAD NUMBER WITH LENGTH & WIDTH

CHP PLANT

SR. NO.	ROAD NO.	LENGTH IN METER	EXISTING WIDTH IN METER	PROPOSED WIDTH IN METER
1	PARKING GATE SITE ROAD	160	--	7.5
2	PARKING CENTER ROAD	250	--	9.5
3	PARKING RIGHT SITE ROAD	200	--	9.5
4	PARKING LEFT SITE ROAD	280	--	9
5	PARKING INNER ROAD	2560	--	7
6	ROAD NO .14	80	5.75	7.5
7	ROAD NO .07	550	5.75	7.5
8	ROAD NO .13	90	9.5	12
9	ROAD NO .09	250	9.5	15.5
10	ROAD NO .09	250	9.5	--
11	ROAD NO .08	270	9.5	--
12	ROAD NO .15	260	5.75	--
13	ROAD NO .11	90	9.5	--
14	ROAD NO .10	270	9.5	--
15	PROPOSED ROAD CRUSHER	390	--	8
16	PROPOSED ROAD UNLODING	290	--	10.5
17	PROPOSED EXIT ROAD	250	--	12
18	PROPOSED EXIT ROAD WAVE BRIDGE NO.06	130	--	9.5
19	PERIPHERIAL ROAD	--	--	3.75
TOTAL		6620M		

TOWNSHIP

SR. NO.	ROAD NO.	LENGTH IN METER	WIDTH IN METER (L + R) LANE
1	ROAD NO.01	200	6 + 6
2	ROAD NO.02	110	6
3	ROAD NO.03	120	10.3
4	ROAD NO.04&05	240	6
5	ROAD NO.06	110	6
6	ROAD NO.07	110	6
7	ROAD NO.08	120	6
8	ROAD NO.09	410	6
9	ROAD NO.10	430	6 + 6
10	ROAD NO.11	210	210
11	ROAD NO.12	320	9.3
TOTAL		2380M	

POWER PLANT

SR. NO.	ROAD NO.	LENGTH IN METER	WIDTH IN METER (L + R) LANE
1	ROAD NO.01	800	7.5 + 7.5
2	ROAD NO.02	1050	7.5
3	ROAD NO.03	800	7.5
4	ROAD NO.04	2630	7.5
5	ROAD NO.05	1180	7.5
6	ROAD NO.06	480	7.5
TOTAL		6940M	

SUMMARY- ROAD SAFETY & TRAFFIC ENGG(ROAD)- WORK TO BE DONE

ROAD NO	INTERSECTION TO BE MODIFIED					PEDESTRIAN WALKWAY		OTHER TRAIFF CONTROL DEVICES											
	TO BE MODIFY IN QTY	RCC WORK TO BE DONE(SQM)	ROAD SIGN REQUIRED(QTY)	CHEVRON SIGN IN QTY	OBJECT HAZARDS SIGN IN QTY	WALKWAY IN SQM	WALKWAY GURADRAIL IN RUNNING METER	MEDIAN LANE DIVIDER IN SQM	SPEED BREAKER IN QTY	SPEED BREAKER IN SQM	TRAFFIC REFLECTION PLASTIC	CAT EYES / ROAD STUDS QTY	MEDIAN MARKERS IN QTY	TRAFFIC SIGNAL (QTY)	BLINKER / FLASHING SIGNAL(YELLOW + RED)	RED SIGNAL ENFORCEMENT CAMERA IN QTY	PEDESTRIAN PUSH BUTTON(QTY)	ROAD SAFETY CONVEX MIRROR(QTY)	SEGREGATION CRASH BARRIER(IN RUNNING METER)
CHP PLANT ROAD	14	1013.7	96	27	3	5250.0	5250.0	--	3	102.1	51	1540	--	9	3	9	2	--	171
POWER PLANT ROAD	15	1145	198	43	9	13702.5	13702.5	--	18	452.9	--	3543	235	--	18	--	--	1	507.1
TOWNSHIP ROAD	12	445.2	84	25	13	4515.0	4515.0	--	1	36.3	--	1157	180	--	17	--	--	--	--
TOTAL	**41**	**2644.9**	**378**	**95**	**25**	**23467.5**	**23467.5**	**--**	**22**	**591.3**	**51**	**6240**	**415**	**--**	**38**	**9**	**2**	**1**	**678.1**

Sensitivity: Public (C4)

SUMMARY- INTERSECTIONS TO BE MODIFIED WITH PCC WORK TO BE DONE.

POWER PLANT												
SR. NO.	ROAD NO.	INTERSECTION NAME	INTERSECTION NO.	CURVERTURE IN METER				PCC WORK TO BE DONE (SQM)				TOTAL
				L1	L2	R1	R2	L1	L2	R1	R2	
1	NO.01	CROSS INTERSECTION ROAD NO.01	NO.01	12	12	12	12	28.1	28.1	28.1	28.1	112.4
2	NO.01	CROSS INTERSECTION ROAD NO.01 & ROAD NO.02	NO.02	12	12	15	15	30.9	--	48.6	48.6	128.1
3	NO.01	CROSS INTERSECTION ROAD NO.01 & ROAD NO.03	NO.03	12	12	12	12	30.9	30.9	30.9	30.9	123.6
4	NO.01	RIGHT HAND SITE INTERSECTION ROAD NO.01	NO.04	--	--	8	8	--	--	13.5	13.5	27
5	NO.01	CROSS INTERSECTION ROAD NO.01 & ROAD NO.04	NO.05	15	12	15	12	48.6	30.9	48.6	30.9	159
6	NO.02	LEFT HAND SITE INTERSECTION ROAD NO.02	NO.06	11	11	--	--	28.1	28.1	--	--	56.2
7	NO.04	T INTERSECTION ROAD NO.04	NO.07	15	--	--	---	15.2	--	--	--	15.2
8	NO.05	STAGGERED INTERSECTION ROAD NO.05 & ROAD NO.02	NO.08	12	12	15	15	30.9	30.9	48.6	48.6	159
9	NO.05	CROSS INTERSECTION ROAD NO.05	NO.09			7	7	--	--	3.6	28	31.6
10	NO.05	CROSS INTERSECTION ROAD NO.05 & ROAD NO.03	NO.10	15	15	15	15	48.6	48.6	48.6	48.6	194.4
11	NO.05	SHARP TURN INTERSECTION ROAD NO.05	NO.11	--	--	12	--	--	--	30.9	--	30.9
12	NO.04	STAGGERED INTERSECTION ROAD NO.04	NO.12	7	7	--	--	10.5	10.5	--	--	21
13	NO.04	LEFT HAND SITE INTERSECTION ROAD NO.04	NO.13	7	7	--	--	10.5	10.5	--	--	21
14	NO.04	LEFT HAND SITE INTERSECTION ROAD NO.04 & ROAD NO.06	NO.14	12	12	--	--	30.9	30.9	--	--	61.8
15	NO.06	CROSS INTERSECTION ROAD NO.06	NO.15	--	--	3	3	--	--	1.9	1.9	3.8
SUMMARY - PCC WORK TO BE DONE AT CURVATURE IN SQM												1145

SUMMARY- INTERSECTIONS TO BE MODIFIED WITH PCC WORK TO BE DONE.

CHP PLANT

SR.NO.	ROAD NO.	INTERSECTION NAME	INTERSECTION NO.	CURVERTURE IN METER				PCC WORK TO BE DONE (SQM)				TOTAL
				L1	L2	R1	R2	L1	L2	R1	R2	
1	PARKING	RAW MATERIAL GATE INTERSECTION	NO.01	2	4	2	--	0.8	3.2	0.8	--	4.8
2	PARKING	PARKING AND ROAD NO.10 RIGHT HAND SITE INTERSECTION	NO.02	--	--	--	9	--	--	--	19.1	19.1
3	NO.09	ROAD NO.09 CROSS INTERSECTION BEFORE FLY ASH SILO	NO.03	15	15	8	11	48.2	48.2	15.2	27.4	139
4	NO.09	T INTERSECTION BETWEEN PROPOSED RAW MATERIAL GATE ROAD NO.09	NO.04	15	15	--	--	36.7	28.1	--	--	64.8
5	PARKING	PROPOSED LEFT HAND SIDE INTERSECTIO BEFORE WAVE BRIDGE NO.01	NO.05	24	8	--	--	58.7	33.5	--	--	92.2
6	NO.09	RIGHT HAND SITE INTERSECTION BETWEEN ROAD NO.09 & 13	NO.06	--	--	--	24	--	--	--	127.2	127.2
7	NO.07	CROSS INTERSECTION BETWEEN ROAD NO.13 & 07	NO.07	15	24	15	4	48.2	123.6	48.2	3.5	223.5
8	NO.07	LEFT HAND SITE INTERSECTION FROM PORTABLE CURSHER ON ROAD NO.7	NO.08	--	7	--	--	--	11.4	--	--	11.4
9	PROPOSED	RIGHT HAND INTERSECTION BETWEEN PROPOSED RAW MATERIAL OUT	NO.09	--	--	12	12	--	--	60.7	26.1	86.8
10	PROPOSED	SHARP BEND BEFORE LEVEL CROSSING NO.7 ON PROPOSED EXIT ROAD	NO.10	24	--	--	--	90.3	--	--	--	90.3
11	PROPOSED	RIGHT HAND SITE INTERSECTION BEFORE WAVE BRIDGE NO.04	NO.11	--	--	8	8	--	--	13.7	13.7	27.4
12	PROPOSED	RAW MATERIAL EXIT GATE NO.03	NO.12	--	--	12	12	--	--	30.9	30.9	61.8
13	NO.11	CROSS INTERSECTION GATE NO.02	NO.13	9	8	--	--	20.5	34.6	--	--	55.1
14	NO.11	T INTERSECTION BETWEEN ROAD NO.11 AND ROAD NO.09	NO.14	--	--	5	6	--	--	2.9	7.4	10.3
SUMMARY - PCC WORK TO BE DONE AT CURVATURE IN SQM												1013.7

TOWNSHIP

SR.NO.	ROAD NO.	INTERSECTION NAME	INTERSECTION NO.	CURVERTURE IN METER				PCC WORK TO BE DONE (SQM)				TOTAL
				L1	L2	R1	R2	L1	L2	R1	R2	
1	NO.01	RIGHT HAND SITE INTERSECTION ROAD NO.01	NO.01	--	--	12	12	--	--	30.9	30.9	61.8
2	NO.10	CROSS INTERSECTION ROAD NO.10 & ROAD NO.02,03	NO.02	8	8	8	8	13.4	13.4	13.4	13.4	53.6
3	NO.10	CROSS INTERSECTION ROAD NO.10 & ROAD NO.04,05	NO.03	8	8	8	8	13.4	13.4	13.4	13.4	53.6
4	NO.10	LEFT HAND INTERSECTION ROAD NO.10 & ROAD NO.06	NO.04	8	8	--	--	13.4	13.4	--	--	26.8
5	NO.10	LEFT HAND INTERSECTION ROAD NO.10 &ROAD NO.07	NO.05	8	8	--	--	13.4	13.4	--	--	26.8
6	NO.09	RIGHT HAND INTERSECTION ROAD NO.09 & ROAD NO.02	NO.06	--	--	8	8	--	--	13.4	13.4	26.8
7	NO.09	RIGHT HAND INTERSECTION ROAD NO.09 & ROAD NO.04	NO.07	--	--	8	8	--	--	13.4	13.4	26.8
8	NO.09	RIGHT HAND INTERSECTION ROAD NO.09 & ROAD NO.06	NO.08	--	--	8	8	--	--	13.4	13.4	26.8
9	NO.09	RIGHT HAND INTERSECTION ROAD NO.09 & ROAD NO.07	NO.09	--	--	12	12	--	--	30.9	30.9	61.8
10	NO.11	RIGHT HAND INTERSECTION ROAD NO.11 & ROAD NO.08	NO.10	--	--	8	8	--	--	13.4	13.4	26.8
11	NO.11	LEFT HAND INTERSECTION ROAD NO.11 &ROAD NO.05	NO.11	8	8	--	--	13.4	13.4	--	--	26.8
12	NO.12	RIGHT HAND INTERSECTION ROAD NO.12 & ROAD NO.05	NO.12	--	--	8	8	--	--	13.4	13.4	26.8
SUMMARY - PCC WORK TO BE DONE AT CURVATURE IN SQM												445.2

SUMMARY OF RCC WORK TO BE DONE	2603.9 SQM

SUMMARY-ROAD SIGNAGE TO BE INSTALLED

SR.NO	ROAD SIGN NAME	QTY.
1	BARRIER	9
2	COMPULSORY RIGHT TURN	12
3	CROSS INTERSECTION	40
4	GAP IN MEDIAN	19
5	LEFT HAND INTERSECTION	29
6	LEFT TURN PROHIBITED	1
7	NO ENTRY	3
8	NO PARKING NO STANDING	3
9	ONE WAY	2
10	OVERTAKING PROHIBITED	14
11	PARKING	4
12	PEDESTRIAN CROSSING	80
13	PEDESTRIAN CROSSING & STOP	26
14	PEDESTRIAN PUSH BUTTON	2
15	RAILWAY	9
16	RIGHT HAND INTERSECTION	23
17	RIGHT TURN PROHIBITED	5
18	SPEED BREAKER	22
19	SPEED LIMIT	34
20	STAGGERED	9
21	T INTERSECTION	31
22	ROAD WIDED RIGHT	1
TOTAL		**378**

ROAD SIGNAGE PLANT WISE		
SR.NO.	**ROAD NO**	**QTY.**
1	CHP PLANT	96
2	MAIN PLANT	198
3	TOWNSHIP	84
TOTAL		**378**

Sensitivity: Public (C4)

LIST OF ROAD SIGN WITH LOCATION IN LOCAL COORDINATES

CHP PLANT

SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
1	PARKING SIDE	ONE WAY	SINGLE SIDE	X= 1712.114 Y= 1651.778
2	PARKING SIDE	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1704.377 Y= 1674.696
3	PARKING SIDE	T INTERSECTION	SINGLE SIDE	X= 1710.386 Y= 1688.393
4	PARKING SIDE	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1710.528 Y= 1694.455
5	PARKING SIDE	NO ENTRY	SINGLE SIDE	X= 1710.773 Y= 1703.466
6	PARKING SIDE	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1785.464 Y= 1662.810
7	PARKING SIDE	NO ENTRY	SINGLE SIDE	X= 1809.192 Y= 1652.827
8	PARKING SIDE	T INTERSECTION	SINGLE SIDE	X= 1786.047 Y= 1656.629
9	PARKING SIDE	COMPULSORY RIGHT TURN	SINGLE SIDE	X= 1802.063 Y= 1643.861
10	PARKING SIDE	COMPULSORY RIGHT TURN	SINGLE SIDE	X= 1800.091 Y= 1625.593
11	PARKING SIDE	COMPULSORY RIGHT TURN	SINGLE SIDE	X= 1798.507 Y= 1607.403
12	PARKING SIDE	COMPULSORY RIGHT TURN	SINGLE SIDE	X= 1796.899 Y= 1589.164
13	PARKING SIDE	COMPULSORY RIGHT TURN	SINGLE SIDE	X= 1795.311 Y= 1571.036
14	PARKING SIDE	COMPULSORY RIGHT TURN	SINGLE SIDE	X= 1793.749 Y= 1553.036
15	PARKING SIDE	COMPULSORY RIGHT TURN	SINGLE SIDE	X= 1792.162 Y= 1534.907
16	PARKING SIDE	COMPULSORY RIGHT TURN	SINGLE SIDE	X= 1790.566 Y= 1516.783
17	PARKING SIDE	COMPULSORY RIGHT TURN	SINGLE SIDE	X= 1788.983 Y= 1498.696
18	PARKING SIDE	COMPULSORY RIGHT TURN	SINGLE SIDE	X= 1787.393 Y= 1480.525
19	PARKING SIDE	COMPULSORY RIGHT TURN	SINGLE SIDE	X= 1785.806 Y= 1462.396
20	PARKING SIDE	SPEED LIMIT	BOTH SIDE	X= 1773.196 Y= 1444.135
21	PARKING SIDE	PARKING	SINGLE SIDE	X= 1771.731 Y= 1425.795
22	PARKING SIDE	SPEED LIMIT	BOTH SIDE	X= 1812.809 Y= 1422.111
23	PARKING SIDE	PARKING	SINGLE SIDE	X= 1824.819 Y= 1423.502
24	PARKING SIDE	ONE WAY	SINGLE SIDE	X= 1860.882 Y= 1430.215
25	PARKING SIDE	CROSS INTERSECTION	SINGLE SIDE	X= 1932.248 Y= 1581.116
26	PARKING SIDE	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1936.924 Y= 1591.010
27	ROAD NO. 07	CROSS INTERSECTION	SINGLE SIDE	X= 1736.286 Y= 1821.780
28	ROAD NO. 07	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1746.289 Y= 1827.517
29	ROAD NO. 07	PEDESTRIAN PUSH BUTTON	SINGLE SIDE	X= 1749.478 Y= 1827.619
30	ROAD NO. 13	RAILWAY	SINGLE SIDE	X= 1747.165 Y= 1809.789
31	ROAD NO. 13	BARRIER	SINGLE SIDE	X= 1765.144 Y= 1802.710

CHP PLANT

SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
32	ROAD NO. 13	NO PARKING NO STANDING	SINGLE SIDE	X= 1742.282 Y= 1792.994
33	ROAD NO. 13	RAILWAY	SINGLE SIDE	X= 1731.363 Y= 1741.739
34	ROAD NO. 13	BARRIER	SINGLE SIDE	X= 1716.877 Y= 1739.240
35	ROAD NO. 07	CROSS INTERSECTION	SINGLE SIDE	X= 1776.961 Y= 1802.206
36	ROAD NO. 07	SPEED LIMIT	BOTH SIDE	X= 1839.322 Y= 1772.198
37	ROAD NO. 07	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2014.419 Y= 1696.243
38	COAL EXIT ROAD	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1757.979 Y= 1830.100
39	COAL EXIT ROAD	PEDESTRIAN PUSH BUTTON	SINGLE SIDE	X= 1772.173 Y= 1816.318
40	COAL EXIT ROAD	CROSS INTERSECTION	SINGLE SIDE	X= 1780.477 Y= 1825.869
41	COAL EXIT ROAD	SPEED LIMIT	BOTH SIDE	X= 1822.711 Y= 1827.123
42	COAL EXIT ROAD	PEDESTIAN CROSSING	SINGLE SIDE	X= 2037.803 Y= 1691.841
43	COAL EXIT ROAD	SPEED LIMIT	BOTH SIDE	X= 2173.373 Y= 1619.755
44	COAL EXIT ROAD	RIGHT TURN PROHIBITED	SINGLE SIDE	X= 2211.775 Y= 1613.456
45	COAL EXIT ROAD	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2226.865 Y= 1611.722
46	COAL EXIT ROAD	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2229.906 Y= 1599.642
47	COAL EXIT ROAD	LEFT TURN PROHIBITED	SINGLE SIDE	X= 2235.016 Y= 1593.039
48	COAL EXIT ROAD	RAILWAY	SINGLE SIDE	X= 2234.387 Y= 1584.249
49	COAL EXIT ROAD	BARRIER	SINGLE SIDE	X= 2244.203 Y= 1587.914
50	COAL EXIT ROAD	BARRIER	SINGLE SIDE	X= 2303.193 Y= 1583.235
51	COAL EXIT ROAD	RAILWAY	SINGLE SIDE	X= 2290.449 Y= 1579.340
52	COAL EXIT ROAD	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2291.907 Y= 1558.171
53	COAL EXIT ROAD	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2413.454 Y= 1608.350
54	COAL EXIT ROAD	T INTERSECTION	SINGLE SIDE	X= 2405.991 Y= 1619.591
55	PARKING SIDE	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2414.622 Y= 1620.590
56	PARKING SIDE	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 2424.166 Y= 1623.314
57	COAL EXIT ROAD	RAILWAY	SINGLE SIDE	X= 2305.814 Y= 1490.293
58	COAL EXIT ROAD	BARRIER	SINGLE SIDE	X= 2293.902 Y= 1486.857
59	ROAD NO. 09	T INTERSECTION	SINGLE SIDE	X= 1732.014 Y= 1695.546
60	ROAD NO. 09	RIGHT TURN PROHIBITED	SINGLE SIDE	X= 1790.057 Y= 1684.293
61	ROAD NO. 09	CROSS INTERSECTION	SINGLE SIDE	X= 1915.273 Y= 1607.386
62	ROAD NO. 09	BARRIER	SINGLE SIDE	X= 1926.458 Y= 1623.081
63	ROAD NO. 09	RAILWAY	SINGLE SIDE	X= 1948.776 Y= 1613.421
64	ROAD NO. 09	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1951.933 Y= 1605.579

LIST OF ROAD SIGN WITH LOCATION IN LOCAL COORDINATES

CHP PLANT

SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
65	ROAD NO. 09	CROSS INTERSECTION	SINGLE SIDE	X= 1954.307 Y= 1594.213
66	ROAD NO. 09	SPEED LIMIT	BOTH SIDE	X= 2046.146 Y= 1560.938
67	ROAD NO. 08	RAILWAY	SINGLE SIDE	X= 1970.567 Y= 1633.251
68	ROAD NO. 08	BARRIER	SINGLE SIDE	X= 1974.076 Y= 1619.291
69	ROAD NO. 08	RAILWAY	SINGLE SIDE	X= 2119.683 Y= 1559.254
70	ROAD NO. 08	BARRIER	SINGLE SIDE	X= 2116.577 Y= 1550.203
71	ROAD NO. 08	T INTERSECTION	SINGLE SIDE	X= 2175.778 Y= 1521.961
72	ROAD NO. 08	RAILWAY	SINGLE SIDE	X= 2195.931 Y= 1509.003
73	ROAD NO. 08	BARRIER	SINGLE SIDE	X= 2176.112 Y= 1506.815
74	ROAD NO. 11	T INTERSECTION	SINGLE SIDE	X= 2177.393 Y= 1492.609
75	ROAD NO. 11	SPEED LIMIT	BOTH SIDE	X= 2162.217 Y= 1425.671
76	ROAD NO. 11	SPEED BREAKER	SINGLE SIDE	X= 2168.364 Y= 1416.070
77	ROAD NO. 11	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2165.384 Y= 1409.320
78	ROAD NO. 11	CROSS INTERSECTION	SINGLE SIDE	X= 2155.593 Y= 1410.715
79	ROAD NO. 10	SPEED LIMIT	BOTH SIDE	X= 1939.070 Y= 1503.975
80	ROAD NO. 10	CROSS INTERSECTION	SINGLE SIDE	X= 2121.785 Y= 1406.260
81	ROAD NO. 10	SPEED BREAKER	SINGLE SIDE	X= 2135.167 Y= 1410.406
82	ROAD NO. 10	NO ENTRY	SINGLE SIDE	X= 2140.996 Y= 1397.096
83	ROAD NO. 10	SPEED BREAKER	SINGLE SIDE	X= 1915.170 Y= 1504.855
84	ROAD NO. 10	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 1903.703 Y= 1510.327
85	ROAD NO. 10	COMPULSORY RIGHT TURN	SINGLE SIDE	X= 1910.780 Y= 1517.452
86	COAL EXIT ROAD	PEDESTIAN CROSSING	SINGLE SIDE	X= 2169.813 Y= 1396.686
87	COAL EXIT ROAD	CROSS INTERSECTION	SINGLE SIDE	X= 2172.484 Y= 1386.240
88	COAL EXIT ROAD	PARKING	SINGLE SIDE	X= 2221.460 Y= 1396.371
89	COAL EXIT ROAD	PARKING	SINGLE SIDE	X= 2288.550 Y= 1467.259
90	PARKING SIDE	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1864.499 Y= 1399.799
91	PARKING SIDE	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1767.962 Y= 1413.727
92	ROAD NO. 09	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1991.383 Y= 1576.535
93	PRO.ROAD	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2297.105 Y= 1358.589
94	PRO. ROAD	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2286.622 Y= 1398.793
95	PRO. ROAD	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2312.127 Y= 1355.636
96	ROAD NO. 07	WIDE CARRIAGEWAY RIGHT	SINGLE SIDE	X= 2018.728 Y=1685.723

POWER PLANT

SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
1	ROAD NO. 01	SPEED LIMIT	SINGLE SIDE	X= 2139.378 Y= 1264.571
2	ROAD NO. 01	OVERTAKING PROHIBITED	SINGLE SIDE	X= 2131.876 Y= 1244.209
3	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2139.378 Y= 1238.064
4	ROAD NO. 01	GAP IN MEDIAN	SINGLE SIDE	X= 2131.876 Y= 1233.394
5	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2140.002 Y= 1226.999
6	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2150.224 Y= 1218.862
7	ROAD NO. 01	SPEED BREAKER	SINGLE SIDE	X= 2157.214 Y= 1211.313
8	ROAD NO. 01	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2148.028 Y= 1210.835
9	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2115.246 Y= 1218.253
10	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2111.387 Y= 1213.089
11	ROAD NO. 01	PEDESTIAN CROSSING	SINGLE SIDE	X= 2121.282 Y= 1203.138
12	ROAD NO. 01	GAP IN MEDIAN	SINGLE SIDE	X= 2128.875 Y= 1196.610
13	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2121.373 Y= 1191.073
14	ROAD NO. 01	SPEED LIMIT	SINGLE SIDE	X= 2121.373 Y= 1167.546
15	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2139.378 Y= 1141.956
16	ROAD NO. 01	GAP IN MEDIAN	SINGLE SIDE	X= 2131.876 Y= 1138.541
17	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2139.492 Y= 1131.891
18	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2150.228 Y= 1121.594
19	ROAD NO. 01	SPEED BREAKER	SINGLE SIDE	X= 2157.215 Y= 1114.036
20	ROAD NO. 01	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2146.780 Y= 1113.119
21	ROAD NO. 01	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2113.545 Y= 1123.412
22	ROAD NO. 01	SPEED BREAKER	SINGLE SIDE	X= 2103.525 Y= 1121.538
23	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2110.468 Y= 1113.465
24	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2120.634 Y= 1103.683
25	ROAD NO. 01	GAP IN MEDIAN	SINGLE SIDE	X= 2128.875 Y= 1097.043
26	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2121.373 Y= 1091.618
27	ROAD NO. 01	SPEED LIMIT	SINGLE SIDE	X= 2139.378 Y= 994.571
28	ROAD NO. 01	NO PARKING NO STANDING	SINGLE SIDE	X= 2131.876 Y= 979.628
29	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2117.491 Y= 965.472
30	ROAD NO. 01	T INTERSECTION	SINGLE SIDE	X= 2111.376 Y= 956.828
31	ROAD NO. 01	RIGHT TURN PROHIBITED	SINGLE SIDE	X= 2128.875 Y= 960.579
32	ROAD NO. 01	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2121.212 Y= 950.424

LIST OF ROAD SIGN WITH LOCATION IN LOCAL COORDINATES

POWER PLANT				
SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
33	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2139.379 Y= 959.385
34	ROAD NO. 01	GAP IN MEDIAN	SINGLE SIDE	X= 2131.876 Y= 948.970
35	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2140.050 Y= 940.320
36	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2150.228 Y= 932.340
37	ROAD NO. 01	SPEED BREAKER	SINGLE SIDE	X= 2157.215 Y= 924.783
38	ROAD NO. 01	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2146.771 Y= 923.862
39	ROAD NO. 01	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2113.931 Y= 933.185
40	ROAD NO. 01	SPEED BREAKER	SINGLE SIDE	X= 2103.520 Y= 932.295
41	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2110.520 Y= 924.783
42	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2120.702 Y= 916.736
43	ROAD NO. 01	GAP IN MEDIAN	SINGLE SIDE	X= 2128.875 Y= 910.096
44	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2121.373 Y= 904.671
45	ROAD NO. 01	SPEED LIMIT	SINGLE SIDE	X= 2121.373 Y= 865.546
46	ROAD NO. 01	OVERTAKING PROHIBITED	SINGLE SIDE	X= 2131.876 Y= 839.201
47	ROAD NO. 01	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 2139.413 Y= 813.806
48	ROAD NO. 01	GAP IN MEDIAN	SINGLE SIDE	X= 2131.876 Y= 809.385
49	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2139.378 Y= 801.736
50	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2117.405 Y= 796.478
51	ROAD NO. 01	T INTERSECTION	SINGLE SIDE	X= 2113.371 Y= 790.058
52	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2121.201 Y= 783.707
53	ROAD NO. 01	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2139.378 Y= 775.799
54	ROAD NO. 01	GAP IN MEDIAN	SINGLE SIDE	X= 2128.890 Y= 777.065
55	ROAD NO. 01	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2121.373 Y= 771.643
56	ROAD NO. 01	RIGHT TURN PROHIBITED	SINGLE SIDE	X= 2131.876 Y= 765.133
57	ROAD NO. 01	T INTERSECTION	SINGLE SIDE	X= 2148.131 Y= 767.797
58	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2143.398 Y= 761.409
59	ROAD NO. 01	NO PARKING NO STANDING	SINGLE SIDE	X= 2128.875 Y= 747.856
60	ROAD NO. 01	OVERTAKING PROHIBITED	SINGLE SIDE	X= 2128.875 Y= 724.955
61	ROAD NO. 01	SPEED LIMIT	SINGLE SIDE	X= 2139.378 Y= 684.571
62	ROAD NO. 01	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2113.051 Y= 673.001
63	ROAD NO. 01	SPEED BREAKER	SINGLE SIDE	X= 2103.520 Y= 671.432

POWER PLANT				
SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
64	ROAD NO. 01	T INTERSECTION	SINGLE SIDE	X= 2110.919 Y= 663.223
65	ROAD NO. 01	RIGHT TURN PROHIBITED	SINGLE SIDE	X= 2128.875 Y= 667.605
66	ROAD NO. 01	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2121.373 Y= 648.925
67	ROAD NO. 01	SPEED LIMIT	SINGLE SIDE	X= 2121.373 Y= 637.546
68	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2139.378 Y= 633.978
69	ROAD NO. 01	GAP IN MEDIAN	SINGLE SIDE	X= 2131.876 Y= 628.619
70	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2140.610 Y= 621.913
71	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2151.108 Y= 613.224
72	ROAD NO. 01	SPEED BREAKER	SINGLE SIDE	X= 2158.484 Y= 605.353
73	ROAD NO. 01	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2149.432 Y= 605.353
74	ROAD NO. 01	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2111.822 Y= 613.881
75	ROAD NO. 01	SPEED BREAKER	SINGLE SIDE	X= 2101.584 Y= 612.866
76	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2110.729 Y= 605.310
77	ROAD NO. 01	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2125.964 Y= 597.221
78	ROAD NO. 01	CROSS INTERSECTION	SINGLE SIDE	X= 2134.460 Y= 594.885
79	ROAD NO. 01	SPEED BREAKER	SINGLE SIDE	X= 2126.623 Y= 587.301
80	ROAD NO. 02	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2315.538 Y= 1253.512
81	ROAD NO. 02	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 2246.558 Y= 1227.658
82	ROAD NO. 02	T INTERSECTION	SINGLE SIDE	X= 2224.143 Y= 1218.815
83	ROAD NO. 02	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2234.219 Y= 1209.209
84	ROAD NO. 02	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2246.558 Y= 1200.910
85	ROAD NO. 02	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2239.056 Y= 1189.792
86	ROAD NO. 02	OVERTAKING PROHIBITED	SINGLE SIDE	X= 2239.056 Y= 1173.976
87	ROAD NO. 02	T INTERSECTION	SINGLE SIDE	X= 2246.558 Y= 1134.243
88	ROAD NO. 02	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2236.413 Y= 1125.673
89	ROAD NO. 02	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2227.603 Y= 1121.538
90	ROAD NO. 02	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 2258.012 Y= 1114.036
91	ROAD NO. 02	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2042.696 Y= 1126.824
92	ROAD NO. 02	SPEED LIMIT	BOTH SIDE	X= 2006.607 Y= 1114.036
93	ROAD NO. 02	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1939.420 Y= 1114.036
94	ROAD NO. 02	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1928.996 Y= 1126.782
95	ROAD NO. 02	SPEED LIMIT	BOTH SIDE	X= 1821.373 Y= 1121.538
96	ROAD NO. 03	T INTERSECTION	SINGLE SIDE	X= 2292.791 Y= 948.196

LIST OF ROAD SIGN WITH LOCATION IN LOCAL COORDINATES

POWER PLANT				
SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
97	ROAD NO. 03	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2301.134 Y= 936.717
98	ROAD NO. 03	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2284.789 Y= 932.285
99	ROAD NO. 03	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 2308.296 Y= 924.783
100	ROAD NO. 03	SPEED LIMIT	BOTH SIDE	X= 2006.607 Y= 924.783
101	ROAD NO. 03	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1962.475 Y= 917.927
102	ROAD NO. 03	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1931.315 Y= 939.037
103	ROAD NO. 03	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1914.343 Y= 932.285
104	ROAD NO. 03	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1877.619 Y= 918.253
105	ROAD NO. 03	SPEED LIMIT	BOTH SIDE	X= 1821.701 Y= 932.285
106	ROAD NO. 04	SPEED LIMIT	BOTH SIDE	X= 2225.036 Y= 612.862
107	ROAD NO. 04	T INTERSECTION	SINGLE SIDE	X= 2257.725 Y= 605.353
108	ROAD NO. 04	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2267.168 Y= 612.862
109	ROAD NO. 04	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2272.366 Y= 601.085
110	ROAD NO. 04	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 2293.842 Y= 611.952
111	ROAD NO. 04	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 2406.712 Y= 669.412
112	ROAD NO. 04	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2403.590 Y= 650.122
113	ROAD NO. 04	T INTERSECTION	SINGLE SIDE	X= 2405.365 Y= 640.480
114	ROAD NO. 04	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2427.063 Y= 649.071
115	ROAD NO. 04	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2428.563 Y= 636.951
116	ROAD NO. 04	SPEED LIMIT	BOTH SIDE	X= 2456.881 Y= 608.633
117	ROAD NO. 04	T INTERSECTION	SINGLE SIDE	X= 2476.738 Y= 588.757
118	ROAD NO. 04	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2479.883 Y= 568.655
119	ROAD NO. 04	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2489.922 Y= 588.022
120	ROAD NO. 04	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 2507.468 Y= 585.630
121	ROAD NO. 04	SPEED LIMIT	BOTH SIDE	X= 2090.175 Y= 605.355
122	ROAD NO. 04	OVERTAKING PROHIBITED	SINGLE SIDE	X= 2077.442 Y= 612.853
123	ROAD NO. 04	STAGGERED	SINGLE SIDE	X= 2064.367 Y= 605.357
124	ROAD NO. 04	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2019.032 Y= 605.355
125	ROAD NO. 04	PEDESTRIAN CROSSING	SINGLE SIDE	X= 2010.889 Y= 617.703
126	ROAD NO. 04	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1992.776 Y= 612.855
127	ROAD NO. 04	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 1975.385 Y= 605.354

POWER PLANT				
SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
128	ROAD NO. 04	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1957.776 Y= 612.855
129	ROAD NO. 04	STAGGERED	SINGLE SIDE	X= 1894.693 Y= 605.353
130	ROAD NO. 04	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1885.055 Y= 617.703
131	ROAD NO. 04	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1838.090 Y= 600.472
132	ROAD NO. 04	STAGGERED	SINGLE SIDE	X= 1831.419 Y= 612.844
133	ROAD NO. 04	STAGGERED	SINGLE SIDE	X= 1787.392 Y= 605.353
134	ROAD NO. 04	SPEED LIMIT	BOTH SIDE	X= 1777.482 Y= 612.857
135	ROAD NO. 04	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1776.217 Y= 600.551
136	ROAD NO. 04	OVERTAKING PROHIBITED	SINGLE SIDE	X= 1763.416 Y= 605.223
137	ROAD NO. 04	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1758.505 Y= 617.703
138	ROAD NO. 04	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1740.390 Y= 612.855
139	ROAD NO. 04	STAGGERED	SINGLE SIDE	X= 1730.550 Y= 605.238
140	ROAD NO. 05	OVERTAKING PROHIBITED	SINGLE SIDE	X= 1706.347 Y= 632.611
141	ROAD NO. 05	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1699.085 Y= 682.522
142	ROAD NO. 05	SPEED LIMIT	BOTH SIDE	X= 1699.105 Y= 765.835
143	ROAD NO. 05	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1699.105 Y= 800.202
144	ROAD NO. 05	OVERTAKING PROHIBITED	SINGLE SIDE	X= 1699.105 Y= 888.761
145	ROAD NO. 05	CROSS INTERSECTION	SINGLE SIDE	X= 1706.607 Y= 906.601
146	ROAD NO. 05	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1698.159 Y= 915.053
147	ROAD NO. 05	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 1711.467 Y= 920.834
148	ROAD NO. 05	SPEED BREAKER	SINGLE SIDE	X= 1724.840 Y= 924.783
149	ROAD NO. 05	CROSS INTERSECTION	SINGLE SIDE	X= 1716.788 Y= 933.081
150	ROAD NO. 05	CROSS INTERSECTION	SINGLE SIDE	X= 1688.778 Y= 924.040
151	ROAD NO. 05	SPEED BREAKER	SINGLE SIDE	X= 1680.684 Y= 932.352
152	ROAD NO. 05	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 1694.631 Y= 936.677
153	ROAD NO. 05	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1707.442 Y= 942.353
154	ROAD NO. 05	CROSS INTERSECTION	SINGLE SIDE	X= 1699.096 Y= 951.813
155	ROAD NO. 05	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1699.010 Y= 1004.442
156	ROAD NO. 05	T INTERSECTION	SINGLE SIDE	X= 1689.214 Y= 1012.162
157	ROAD NO. 05	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1695.163 Y= 1017.399
158	ROAD NO. 05	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 1706.607 Y= 1024.293
159	ROAD NO. 05	SPEED LIMIT	BOTH SIDE	X= 1706.607 Y= 1065.835
160	ROAD NO. 05	STAGGERED	SINGLE SIDE	X= 1699.105 Y= 1084.514

LIST OF ROAD SIGN WITH LOCATION IN LOCAL COORDINATES

POWER PLANT

SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
161	ROAD NO. 05	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1706.607 Y= 1090.622
162	ROAD NO. 05	T INTERSECTION	SINGLE SIDE	X= 1691.193 Y= 1098.315
163	ROAD NO. 05	SPEED BREAKER	SINGLE SIDE	X= 1682.139 Y= 1106.534
164	ROAD NO. 05	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 1694.391 Y= 1109.001
165	ROAD NO. 05	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 1711.164 Y= 1109.801
166	ROAD NO. 05	SPEED BREAKER	SINGLE SIDE	X= 1724.400 Y= 1114.036
167	ROAD NO. 05	T INTERSECTION	SINGLE SIDE	X= 1716.657 Y= 1122.379
168	ROAD NO. 05	STAGGERED	SINGLE SIDE	X= 1706.733 Y= 1134.599
169	ROAD NO. 05	STAGGERED	SINGLE SIDE	X= 1706.595 Y= 1194.970
170	ROAD NO. 05	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1698.296 Y= 1210.630
171	ROAD NO. 05	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1695.166 Y= 1225.165
172	ROAD NO. 05	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 1711.068 Y= 1241.264
173	ROAD NO. 05	SPEED BREAKER	SINGLE SIDE	X= 1723.403 Y= 1243.647
174	ROAD NO. 05	T INTERSECTION	SINGLE SIDE	X= 1716.372 Y= 1251.279
175	ROAD NO. 05	STAGGERED	SINGLE SIDE	X= 1706.685 Y= 1262.636
176	ROAD NO. 05	OVERTAKING PROHIBITED	SINGLE SIDE	X= 1706.607 Y= 1285.360
177	ROAD NO. 06	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2044.162 Y= 597.235
178	ROAD NO. 06	T INTERSECTION	SINGLE SIDE	X= 2052.583 Y= 595.944
179	ROAD NO. 06	SPEED BREAKER	SINGLE SIDE	X= 2044.807 Y= 587.301
180	ROAD NO. 06	SPEED BREAKER	SINGLE SIDE	X= 2052.372 Y= 356.187
181	ROAD NO. 06	CROSS INTERSECTION	SINGLE SIDE	X= 2044.875 Y= 347.394
182	ROAD NO. 06	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2052.390 Y= 342.751
183	ROAD NO. 06	CROSS INTERSECTION	SINGLE SIDE	X= 2039.873 Y= 338.491
184	ROAD NO. 06	CROSS INTERSECTION	SINGLE SIDE	X= 2044.880 Y= 330.511
185	ROAD NO. 06	CROSS INTERSECTION	SINGLE SIDE	X= 2057.397 Y= 334.394
186	ROAD NO. 06	T INTERSECTION	SINGLE SIDE	X= 2051.275 Y= 303.899
187	ROAD NO. 06	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2035.410 Y= 296.644
188	ROAD NO. 06	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 2058.529 Y= 288.036
189	ROAD NO. 06	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2052.385 Y= 445.710
190	ROAD NO. 06	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 2044.880 Y= 422.155
191	ROAD NO. 06	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2056.985 Y= 429.398

POWER PLANT

SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
192	ROAD NO. 06	T INTERSECTION	SINGLE SIDE	X= 2062.071 Y= 437.710
193	ROAD NO. 06	SPEED BREAKER	SINGLE SIDE	X= 2070.238 Y= 430.155
194	ROAD NO. 06	SPEED BREAKER	SINGLE SIDE	X= 2171.508 Y= 353.098
195	ROAD NO. 06	T INTERSECTION	SINGLE SIDE	X= 2163.867 Y= 345.050
196	ROAD NO. 06	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 2171.488 Y= 341.025
197	ROAD NO. 06	LEFT HAND INTERSECTION	SINGLE SIDE	X= 2152.995 Y= 332.379
198	ROAD NO. 06	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 2178.600 Y= 325.860

TOWNSHIP

SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
1	ROAD NO. 01	SPEED LIMIT	SINGLE SIDE	X= 1883.913 Y= 274.008
2	ROAD NO. 01	OVERTAKING PROHIBITED	SINGLE SIDE	X= 1877.839 Y= 259.693
3	ROAD NO. 01	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 1883.857 Y= 246.061
4	ROAD NO. 01	GAP IN MEDIAN	SINGLE SIDE	X= 1877.839 Y= 239.628
5	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1883.832 Y= 232.965
6	ROAD NO. 01	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1869.187 Y= 202.266
7	ROAD NO. 01	GAP IN MEDIAN	SINGLE SIDE	X= 1875.765 Y= 195.775
8	ROAD NO. 01	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1869.763 Y= 189.202
9	ROAD NO. 01	OVERTAKING PROHIBITED	SINGLE SIDE	X= 1875.765 Y= 170.710
10	ROAD NO. 01	SPEED LIMIT	SINGLE SIDE	X= 1883.666 Y= 144.008
11	ROAD NO. 02&03	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1765.547 Y= 203.201
12	ROAD NO. 02&03	CROSS INTERSECTION	SINGLE SIDE	X= 1759.591 Y= 198.087
13	ROAD NO. 02&03	T INTERSECTION	SINGLE SIDE	X= 1759.591 Y= 130.102
14	ROAD NO. 02&03	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1766.785 Y= 122.011
15	ROAD NO. 02&03	PEDESTRIAN CROSSING & STOP	SINGLE SIDE	X= 1766.760 Y= 230.461
16	ROAD NO. 02&03	CROSS INTERSECTION	SINGLE SIDE	X= 1756.394 Y= 235.287
17	ROAD NO. 02&03	SPEED BREAKER	SINGLE SIDE	X= 1766.530 Y= 242.372
18	ROAD NO. 02&03	SPEED LIMIT	BOTH SIDE	X= 1756.394 Y= 293.950
19	ROAD NO. 04&05	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1670.631 Y= 203.185
20	ROAD NO. 04&05	CROSS INTERSECTION	SINGLE SIDE	X= 1664.085 Y= 198.034
21	ROAD NO. 04&05	T INTERSECTION	SINGLE SIDE	X= 1664.583 Y= 130.123

LIST OF ROAD SIGN WITH LOCATION IN LOCAL COORDINATES

TOWNSHIP				
SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
22	ROAD NO. 04&05	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1671.380 Y= 122.018
23	ROAD NO. 04&05	PEDESTRAN CROSSING	SINGLE SIDE	X= 1670.166 Y= 232.554
24	ROAD NO. 04&05	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1664.450 Y= 275.951
25	ROAD NO. 04&05	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 1670.332 Y= 298.023
26	ROAD NO. 04&05	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1664.450 Y= 336.137
27	ROAD NO. 06	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1597.537 Y= 203.209
28	ROAD NO. 06	T INTERSECTION	SINGLE SIDE	X= 1591.359 Y= 198.079
29	ROAD NO. 06	T INTERSECTION	SINGLE SIDE	X= 1591.359 Y= 130.102
30	ROAD NO. 06	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1598.629 Y= 122.026
31	ROAD NO. 07	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1518.427 Y= 203.206
32	ROAD NO. 07	T INTERSECTION	SINGLE SIDE	X= 1512.212 Y= 198.079
33	ROAD NO. 07	T INTERSECTION	SINGLE SIDE	X= 1512.212 Y= 130.114
34	ROAD NO. 07	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1521.563 Y= 122.005
35	ROAD NO. 08	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 1452.434 Y= 275.939
36	ROAD NO. 08	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1458.531 Y= 297.855
37	ROAD NO. 08	SPEED LIMIT	SINGLE SIDE	X= 1458.531 Y= 313.170
38	ROAD NO. 09	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 1773.652 Y= 112.081
39	ROAD NO. 09	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1751.591 Y= 118.114
40	ROAD NO. 09	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 1678.253 Y= 112.071
41	ROAD NO. 09	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1656.612 Y= 118.114
42	ROAD NO. 09	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 1605.506 Y= 112.081
43	ROAD NO. 09	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1583.359 Y= 118.114
44	ROAD NO. 09	SPEED LIMIT	SINGLE SIDE	X= 1553.619 Y= 118.114
45	ROAD NO. 09	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 1530.408 Y= 112.081
46	ROAD NO. 09	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1500.212 Y= 118.114
47	ROAD NO. 10	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1865.132 Y= 227.073
48	ROAD NO. 10	OVERTAKING PROHIBITED	SINGLE SIDE	X= 1857.132 Y= 218.544
49	ROAD NO. 10	T INTERSECTION	SINGLE SIDE	X= 1852.067 Y= 224.584
50	ROAD NO. 10	SPEED LIMIT	SINGLE SIDE	X= 1833.371 Y= 224.575
51	ROAD NO. 10	SPEED LIMIT	SINGLE SIDE	X= 1819.268 Y= 210.528
52	ROAD NO. 10	OVERTAKING PROHIBITED	SINGLE SIDE	X= 1803.345 Y= 216.519

TOWNSHIP				
SNO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
53	ROAD NO. 10	CROSS INTERSECTION	SINGLE SIDE	X= 1788.407 Y= 210.474
54	ROAD NO. 10	GAP IN MEDIAN	SINGLE SIDE	X= 1781.534 Y= 216.539
55	ROAD NO. 10	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1773.342 Y= 210.469
56	ROAD NO. 10	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1749.406 Y= 224.611
57	ROAD NO. 10	GAP IN MEDIAN	SINGLE SIDE	X= 1741.355 Y= 218.526
58	ROAD NO. 10	CROSS INTERSECTION	SINGLE SIDE	X= 1734.341 Y= 224.547
59	ROAD NO. 10	CROSS INTERSECTION	SINGLE SIDE	X= 1692.195 Y= 210.506
60	ROAD NO. 10	GAP IN MEDIAN	SINGLE SIDE	X= 1685.321 Y= 216.526
61	ROAD NO. 10	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1677.145 Y= 210.373
62	ROAD NO. 10	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1657.869 Y= 224.674
63	ROAD NO. 10	GAP IN MEDIAN	SINGLE SIDE	X= 1649.835 Y= 218.526
64	ROAD NO. 10	CROSS INTERSECTION	SINGLE SIDE	X= 1642.821 Y= 224.547
65	ROAD NO. 10	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1618.554 Y= 210.506
66	ROAD NO. 10	GAP IN MEDIAN	SINGLE SIDE	X= 1612.277 Y= 216.526
67	ROAD NO. 10	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1605.236 Y= 210.502
68	ROAD NO. 10	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1584.370 Y= 224.611
69	ROAD NO. 10	GAP IN MEDIAN	SINGLE SIDE	X= 1576.322 Y= 218.551
70	ROAD NO. 10	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 1571.305 Y= 224.547
71	ROAD NO. 10	SPEED LIMIT	SINGLE SIDE	X= 1547.975 Y= 224.547
72	ROAD NO. 10	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1539.727 Y= 210.656
73	ROAD NO. 10	GAP IN MEDIAN	SINGLE SIDE	X= 1533.327 Y= 216.526
74	ROAD NO. 10	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1526.408 Y= 210.656
75	ROAD NO. 10	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1505.205 Y= 224.547
76	ROAD NO. 10	GAP IN MEDIAN	SINGLE SIDE	X= 1497.175 Y= 218.551
77	ROAD NO. 10	SPEED LIMIT	SINGLE SIDE	X= 1494.268 Y= 210.528
78	ROAD NO. 10	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 1492.158 Y= 224.547
79	ROAD NO. 10	OVERTAKING PROHIBITED	SINGLE SIDE	X= 1480.360 Y= 218.526
80	ROAD NO. 11	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1462.586 Y= 282.911
81	ROAD NO. 11	PEDESTRIAN CROSSING	SINGLE SIDE	X= 1462.586 Y= 282.911
82	ROAD NO. 12	SPEED LIMIT	SINGLE SIDE	X= 1583.462 Y= 353.737
83	ROAD NO. 12	RIGHT HAND INTERSECTION	SINGLE SIDE	X= 1656.445 Y= 353.737
84	ROAD NO. 12	LEFT HAND INTERSECTION	SINGLE SIDE	X= 1679.813 Y= 339.566

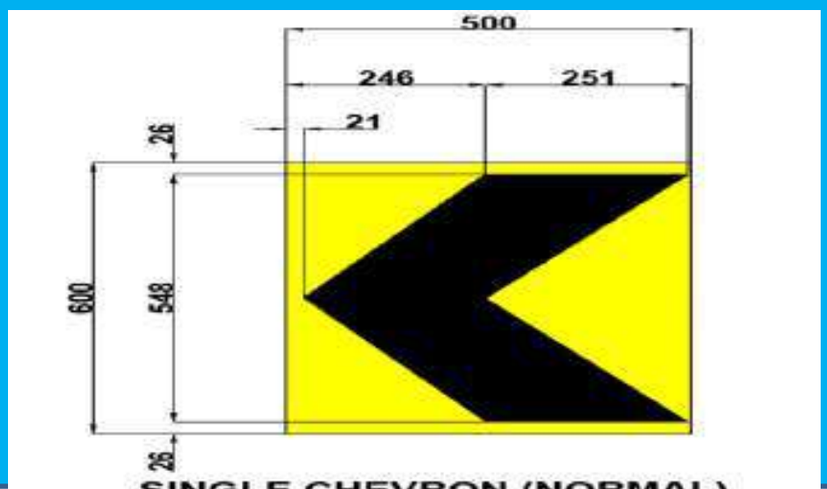
LIST OF ROAD SIGN WITH LOCATION IN LOCAL COORDINATES

LIST OF ROAD SIGN WITH LOCATION IN LOCAL COORDINATES

SR.NO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
		POWER PLANT		
1	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2255.561 Y= 1246.010
2	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2247.137 Y= 1251.200
3	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2250.583 Y= 1244.509
4	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2242.865 Y= 1247.554
5	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2247.358 Y= 1240.717
6	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2240.050 Y= 1242.648
7	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2239.056 Y= 1237.007
8	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2281.229 Y= 1121.538
9	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2287.841 Y= 1111.705
10	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2286.947 Y= 1120.660
11	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2291.379 Y= 1107.627
12	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2292.115 Y= 1118.124
13	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2292.791 Y= 1102.383
14	ROAD NO. 02	CHEVRON	SINGLE SIDE	X= 2296.284 Y= 1114.169
15	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2363.716 Y= 692.435
16	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2373.445 Y= 685.594
17	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2368.145 Y= 695.894
18	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2379.583 Y= 684.396
19	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2373.403 Y= 697.133
20	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2378.741 Y= 696.089
21	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2384.312 Y= 681.202
22	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2549.974 Y= 638.749
23	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2558.612 Y= 634.969
24	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2554.806 Y= 641.777
25	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2560.211 Y= 642.426
26	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2562.706 Y= 633.444
27	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2594.743 Y= 612.016
28	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2590.921 Y= 604.677
29	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2597.966 Y= 607.330
30	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2591.739 Y= 599.830
31	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2599.302 Y= 601.738
32	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2598.574 Y= 596.193
33	ROAD NO. 04	CHEVRON	SINGLE SIDE	X= 2589.438 Y= 595.218
34	ROAD NO. 05	CHEVRON	SINGLE SIDE	X= 1703.090 Y= 605.202
35	ROAD NO. 05	CHEVRON	SINGLE SIDE	X= 1711.308 Y= 615.332
36	ROAD NO. 05	CHEVRON	SINGLE SIDE	X= 1699.762 Y= 606.976
37	ROAD NO. 05	CHEVRON	SINGLE SIDE	X= 1707.867 Y= 619.505
38	ROAD NO. 05	CHEVRON	SINGLE SIDE	X= 1706.607 Y= 624.858
39	ROAD NO. 06	CHEVRON	SINGLE SIDE	X= 2158.027 Y= 428.777
40	ROAD NO. 06	CHEVRON	SINGLE SIDE	X= 2163.408 Y= 434.326
41	ROAD NO. 06	CHEVRON	SINGLE SIDE	X= 2162.166 Y= 424.963
42	ROAD NO. 06	CHEVRON	SINGLE SIDE	X= 2167.647 Y= 430.309
43	ROAD NO. 06	CHEVRON	SINGLE SIDE	X= 2170.445 Y= 425.205

LIST OF ROAD SIGN WITH LOCATION IN LOCAL COORDINATES

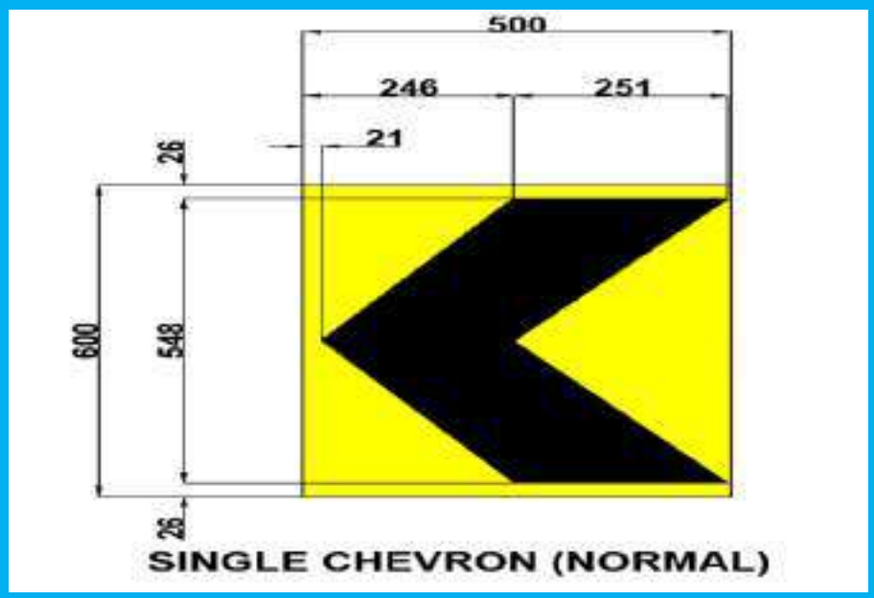
SR.NO.	ROAD NO.	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES	LOCATION IN LOCAL COORDINATES
		CHP PLANT		
1	PARKING SIDE	CHEVRON	SINGLE SIDE	X= 1700.533 Y= 1422.813
2	PARKING SIDE	CHEVRON	SINGLE SIDE	X= 1696.080 Y= 1424.921
3	PARKING SIDE	CHEVRON	SINGLE SIDE	X= 1693.737 Y= 1429.090
4	ROAD NO. 14	CHEVRON	SINGLE SIDE	X= 1528.307 Y= 1946.811
5	ROAD NO. 14	CHEVRON	SINGLE SIDE	X= 1526.857 Y= 1941.321
6	ROAD NO. 14	CHEVRON	SINGLE SIDE	X= 1527.517 Y= 1935.794
7	ROAD NO. 14	CHEVRON	SINGLE SIDE	X= 1530.160 Y= 1930.870
8	ROAD NO. 14	CHEVRON	SINGLE SIDE	X= 1517.383 Y= 1937.542
9	ROAD NO. 14	CHEVRON	SINGLE SIDE	X= 1518.381 Y= 1931.982
10	ROAD NO. 14	CHEVRON	SINGLE SIDE	X= 1521.160 Y= 1927.009
11	ROAD NO. 14	CHEVRON	SINGLE SIDE	X= 1525.216 Y= 1923.345
12	COAL EXIT ROAD	CHEVRON	SINGLE SIDE	X= 2289.726 Y= 1604.495
13	COAL EXIT ROAD	CHEVRON	SINGLE SIDE	X= 2295.113 Y= 1602.806
14	COAL EXIT ROAD	CHEVRON	SINGLE SIDE	X= 2299.434 Y= 1599.317
15	COAL EXIT ROAD	CHEVRON	SINGLE SIDE	X= 2302.205 Y= 1594.448
16	COAL EXIT ROAD	CHEVRON	SINGLE SIDE	X= 2390.696 Y= 1565.111
17	COAL EXIT ROAD	CHEVRON	SINGLE SIDE	X= 2399.606 Y= 1567.662
18	COAL EXIT ROAD	CHEVRON	SINGLE SIDE	X= 1778.883 Y= 1849.185
19	COAL EXIT ROAD	CHEVRON	SINGLE SIDE	X= 1783.058 Y= 1847.083
20	COAL EXIT ROAD	CHEVRON	SINGLE SIDE	X= 2031.682 Y= 1674.064
21	COAL EXIT ROAD	CHEVRON	SINGLE SIDE	X= 2026.387 Y= 1676.848
22	ROAD NO. 08	CHEVRON	SINGLE SIDE	X= 2185.481 Y= 1501.417
23	ROAD NO. 11	CHEVRON	SINGLE SIDE	X= 2192.579 Y= 1484.577
24	ROAD NO. 11	CHEVRON	SINGLE SIDE	X= 2184.193 Y= 1480.107
25	ROAD NO. 11	CHEVRON	SINGLE SIDE	X= 2194.203 Y= 1479.007
26	ROAD NO. 11	CHEVRON	SINGLE SIDE	X= 2184.327 Y= 1475.770
27	ROAD NO. 11	CHEVRON	SINGLE SIDE	X= 2193.613 Y= 1473.527



SINGLE CHEVRON (NORMAL)

LIST OF ROAD SIGN WITH LOCATION IN LOCAL COORDINATES

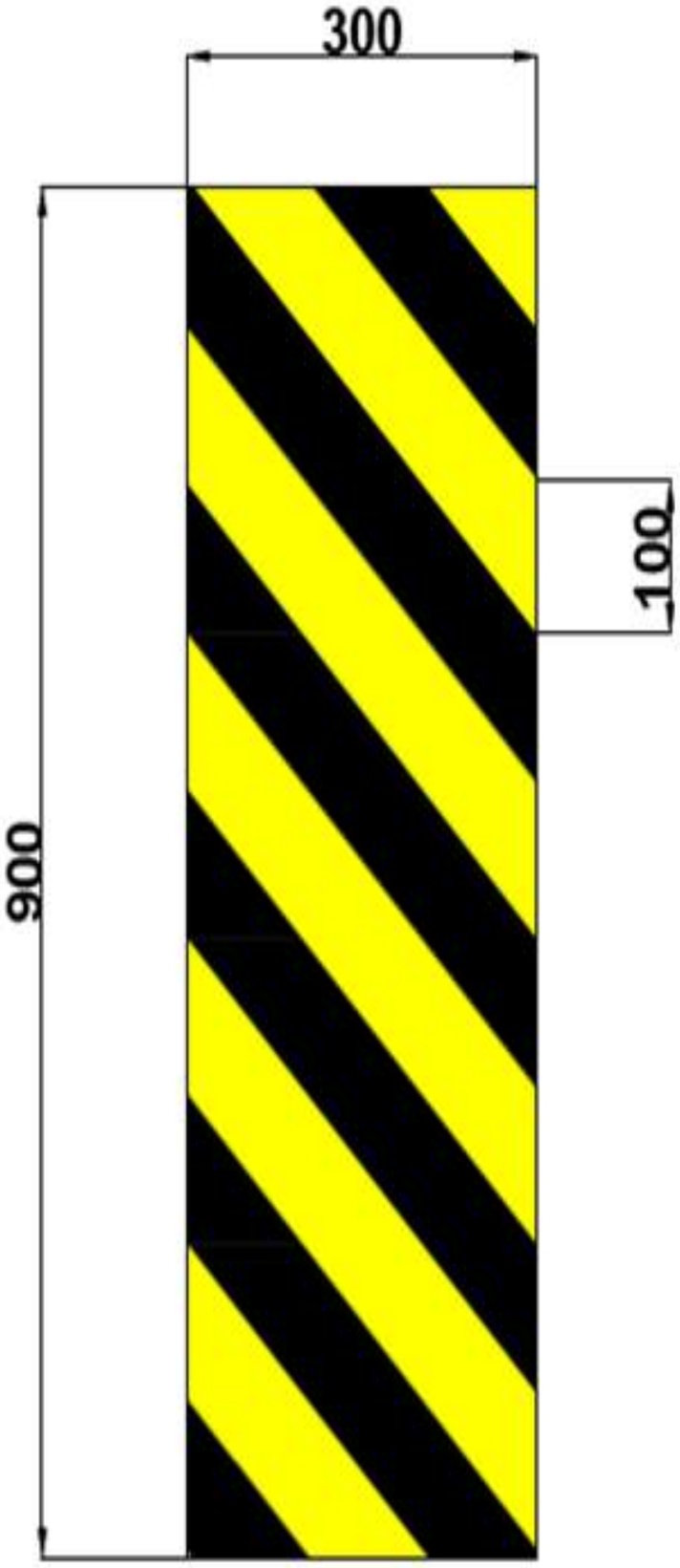
LIST OF ROAD SIGN WITH LOCATION IN LOCAL COORDINATES				
SR.NO.	ROAD NO.	ROAD SIGN	SINGLE/BOTH SIDES	LOCATION IN LOCAL COORDINATES
TOWNSHIP				
1	ROAD NO. 01	CHEVRON	SINGLE SIDE	X= 1883.634 Y= 127.103
2	ROAD NO. 01	CHEVRON	SINGLE SIDE	X= 1882.544 Y= 121.459
3	ROAD NO. 01	CHEVRON	SINGLE SIDE	X= 1869.763 Y= 128.344
4	ROAD NO. 01	CHEVRON	SINGLE SIDE	X= 1879.397 Y= 116.624
5	ROAD NO. 01	CHEVRON	SINGLE SIDE	X= 1868.505 Y= 123.261
6	ROAD NO. 01	CHEVRON	SINGLE SIDE	X= 1875.102 Y= 113.538
7	ROAD NO. 01	CHEVRON	SINGLE SIDE	X= 1864.908 Y= 119.541
8	ROAD NO. 01	CHEVRON	SINGLE SIDE	X= 1859.763 Y= 118.116
9	ROAD NO. 08	CHEVRON	SINGLE SIDE	X= 1458.705 Y= 325.682
10	ROAD NO. 08	CHEVRON	SINGLE SIDE	X= 1452.185 Y= 337.493
11	ROAD NO. 08	CHEVRON	SINGLE SIDE	X= 1461.461 Y= 330.021
12	ROAD NO. 10	CHEVRON	SINGLE SIDE	X= 1460.668 Y= 210.506
13	ROAD NO. 10	CHEVRON	SINGLE SIDE	X= 1455.906 Y= 212.077
14	ROAD NO. 10	CHEVRON	SINGLE SIDE	X= 1453.084 Y= 215.959
15	ROAD NO. 10	CHEVRON	SINGLE SIDE	X= 1464.150 Y= 224.910
16	ROAD NO. 10	CHEVRON	SINGLE SIDE	X= 1460.139 Y= 227.736
17	ROAD NO. 10	CHEVRON	SINGLE SIDE	X= 1460.139 Y= 227.736
18	ROAD NO. 12	CHEVRON	SINGLE SIDE	X= 1478.028 Y= 342.700
19	ROAD NO. 12	CHEVRON	SINGLE SIDE	X= 1483.012 Y= 344.359
20	ROAD NO. 12	CHEVRON	SINGLE SIDE	X= 1750.837 Y= 327.099
21	ROAD NO. 12	CHEVRON	SINGLE SIDE	X= 1759.392 Y= 335.180
22	ROAD NO. 12	CHEVRON	SINGLE SIDE	X= 1754.781 Y= 324.298
23	ROAD NO. 12	CHEVRON	SINGLE SIDE	X= 1764.044 Y= 332.726
24	ROAD NO. 12	CHEVRON	SINGLE SIDE	X= 1756.394 Y= 319.481
25	ROAD NO. 12	CHEVRON	SINGLE SIDE	X= 1766.613 Y= 328.367



SINGLE CHEVRON (NORMAL)

LIST OF OBJECT HAZARDS WITH CAD DESIGN

OBJECT HAZARDS - SIGNS TO BE INSTALLED				
SR NO.	**ROAD NO.**	**ROAD SIGN**	**SINGLE/BOTH SIDES**	**LOCATION IN LOCAL CORDINATES**
CHP PLANT				
1	COAL EXIT ROAD	OBJECT HAZARD	SINGLE SIDE	X= 2305.012 Y= 1562.017
2	COAL EXIT ROAD	OBJECT HAZARD	SINGLE SIDE	X= 2290.118 Y= 1545.742
3	COAL EXIT ROAD	OBJECT HAZARD	SINGLE SIDE	X= 2194.803 Y= 1386.360
POWER PLANT				
4	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 2130.421 Y= 1227.005
5	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 2130.380 Y= 1203.111
6	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 2130.313 Y= 1132.153
7	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 2130.376 Y= 1103.683
8	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 2130.344 Y= 940.502
9	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 2130.399 Y= 916.586
10	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 2130.376 Y= 801.736
11	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 2130.376 Y= 783.556
12	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 2130.419 Y= 622.064
TOWNSHIP				
13	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 1876.839 Y= 287.003
14	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 1876.839 Y= 232.978
15	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 1876.765 Y= 202.425
16	ROAD NO. 01	OBJECT HAZARD	SINGLE SIDE	X= 1876.765 Y= 127.116
17	ROAD NO. 10	OBJECT HAZARD	SINGLE SIDE	X= 1865.132 Y= 217.544
18	ROAD NO. 10	OBJECT HAZARD	SINGLE SIDE	X= 1773.492 Y= 217.539
19	ROAD NO. 10	OBJECT HAZARD	SINGLE SIDE	X= 1749.220 Y= 217.539
20	ROAD NO. 10	OBJECT HAZARD	SINGLE SIDE	X= 1677.361 Y= 217.513
21	ROAD NO. 10	OBJECT HAZARD	SINGLE SIDE	X= 1657.874 Y= 217.525
22	ROAD NO. 10	OBJECT HAZARD	SINGLE SIDE	X= 1604.235 Y= 217.503
23	ROAD NO. 10	OBJECT HAZARD	SINGLE SIDE	X= 1584.359 Y= 217.525
24	ROAD NO. 10	OBJECT HAZARD	SINGLE SIDE	X= 1525.354 Y= 217.573
25	ROAD NO. 10	OBJECT HAZARD	SINGLE SIDE	X= 1505.212 Y= 217.526
TOTAL OBJECT HAZARDS				**25**

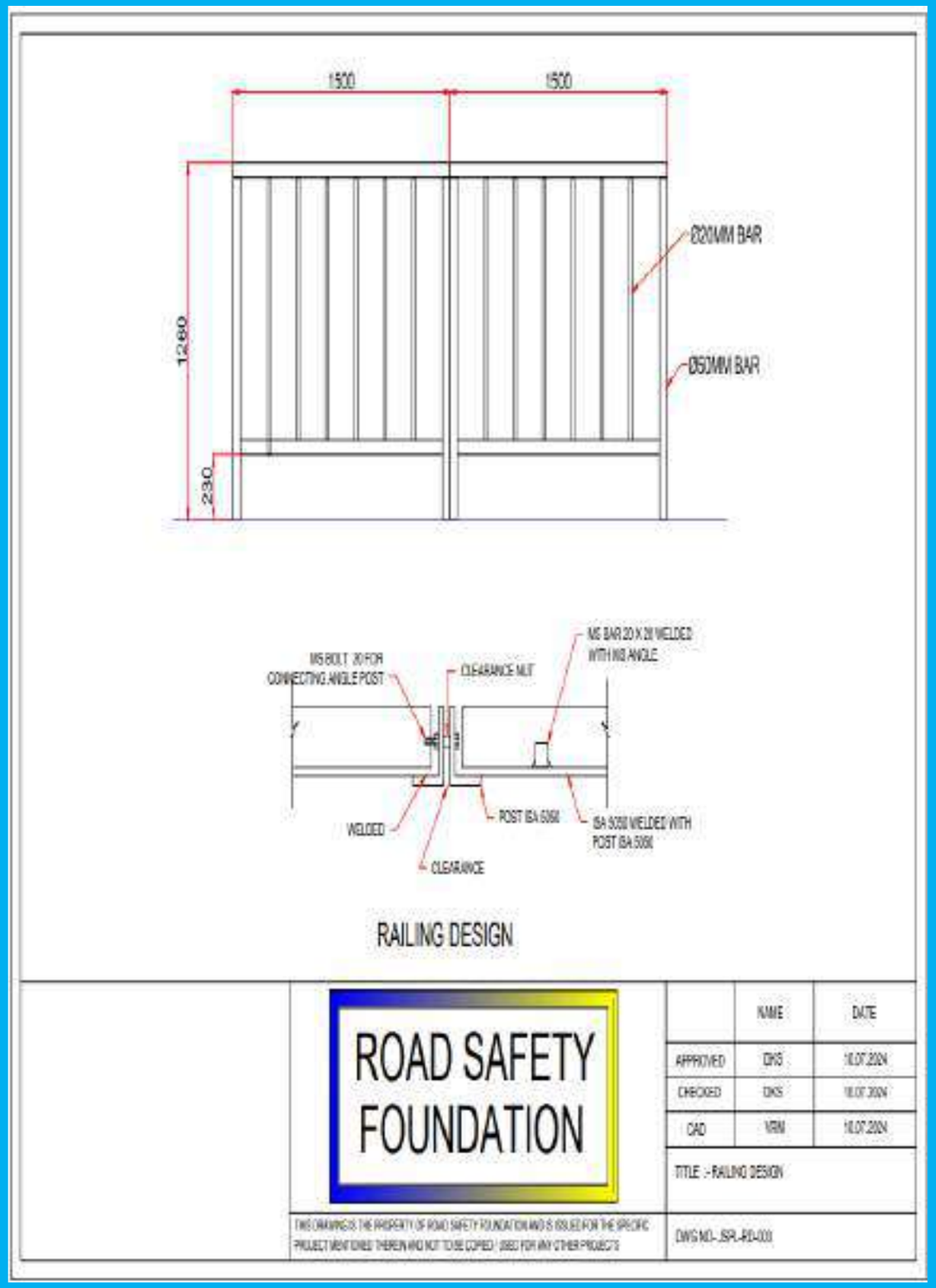


OBJECT HAZARD LEFT

PEDESTRIAN WALKWAY WITH GUARDRAIL WORK TO BE DONE

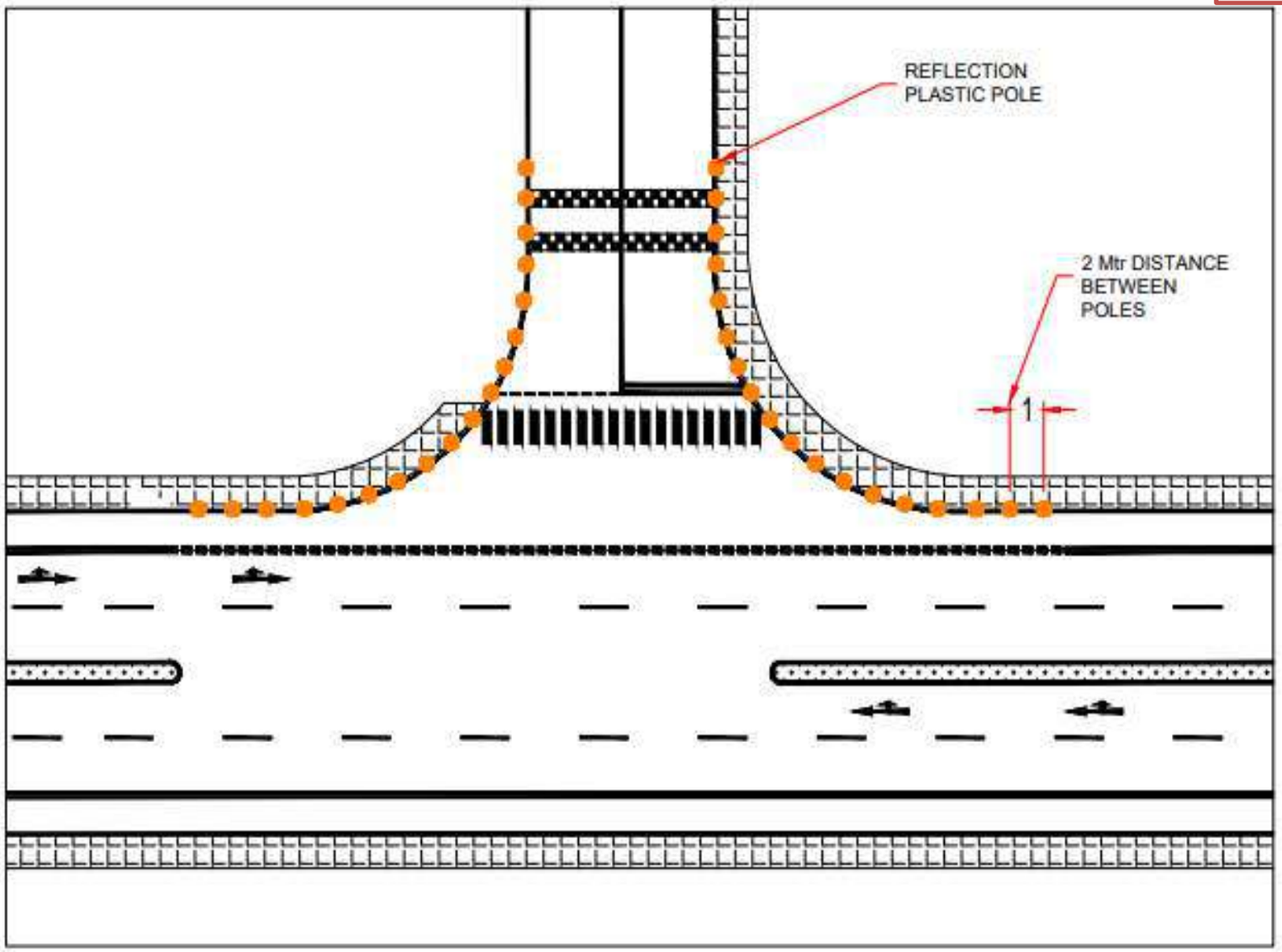
SUMMARY OF WALK WAY(FOOTPATH) WORK TO BE DONE FOR PEDESTRIAN SAFETY						
WALKWAY LENGTH AND AREA IN SQM.						
SR.NO	ROAD NAME	WALKWAY LENGTH		TOTAL LENGTH (M)	WALKWAY WIDTH	WALKWAY SQM
		L	R			
1	CHP PLANT	1850	1650	3500	1.5	5250.0
2	POWER PLANT	5655	3480	9135	1.5	13702.5
3	TOWNSHIP	930	2080	3010	1.5	4515.0
TOTAL WALKWAY WORK (PROPOSED BY CIVIL)		**8435**	**7210**	**15645**		**23467.5**

SUMMARY OF WALK WAY GUARDRAIL WORK TO BE DONE FOR PEDESTRIAN SAFETY IN METER						
WALKWAY LENGTH AND AREA IN SQM.						
SR.NO	ROAD NAME	LEFT LANE		RIGHT LANE		TOTAL (L+R)
		INNER	OUTER	INNER	OUTER	
1	CHP PLANT	--	1850	--	1650	3500
2	POWER PLANT	--	5655	--	3480	9135
3	TOWNSHIP	--	930	--	2080	3010
TOTAL WALKWAY GUARDRAIL WORK TO BE DONE			**8435**		**7210**	**15645M**



COST-GUARDRAIL WORK	RS. 2500/m or 105/Kg





REFLECTION PLASTIC POLE DESIGN

ROAD SAFETY FOUNDATION

	NAME	DATE
APPROVED	DKS	10.07.2024
CHECKED	DKS	10.07.2024
CAD	MSD	10.07.2024

TITLE :- REFLECTION PLASTIC POLE DESIGN

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DWG NO- JSPL/POLE-005

SUMMARY OF MEDIAN MARKERS & CAT EYES TO BE INSTALLED

LIST OF CAT EYES TO BE INSTALLED		
SR.NO	**ROAD NO**	**QTY.**
1	CHP PLANT	1540
2	POWER PLANT	3543
3	TOWNSHIP	1157
TOTAL LIST OF CAT EYES TO BE INSTALLED		**6240**



LIST OF MEDIAN MAKER TO BE INSTALLED			
SR.NO	**ROAD NO**	**LENGTH (METER)**	**QTY.(/5)**
1	CHP PLANT	--	--
2	POWER PLANT	1170	235
3	TOWNSHIP	894	180
TOTAL MEDIAN MARKERS TO BE INSTALLED		**2064**	**415**



NOTE- INSTALLTION INSTRUCTION	
MEDIAN MARKER	EVERY 5 METER
CAT EYES -EDGE MARKING	EVERY 10 METER
CAT EYES -CENTRAL MARKING	EVERY 2 CENTER MARKING 1 CAT EYE
CAT EYES –ZEBRA CROSSING/BROKING LINE	300 MM
CAT EYES –STOP /CONTINUES MARKING/SPEED BREAKER/BUS STOP	3 METER

SUMMARY OF RED FLASING SIGNAL, YELLOW FLASHING SIGNAL AND RED SIGNAL ENFORCEMENT CAMERA TO BE INSTALLED

LIST OF FLASING- YELLOW SIGNAL LIGHT

SR. NO.	Road No.		Location in Local Coordinates
	POWER PLANT		
1	ROAD NO. 01	YELLOW SIGNAL BLINKER	X= 2131.876 Y= 1228.394
2	ROAD NO. 01	YELLOW SIGNAL BLINKER	X= 2128.875 Y= 1201.610
3	ROAD NO. 01	YELLOW SIGNAL BLINKER	X= 2131.876 Y= 1133.531
4	ROAD NO. 01	YELLOW SIGNAL BLINKER	X= 2128.875 Y= 1102.032
5	ROAD NO. 01	YELLOW SIGNAL BLINKER	X= 2132.026 Y= 941.971
6	ROAD NO. 01	YELLOW SIGNAL BLINKER	X= 2128.875 Y= 915.086
7	ROAD NO. 01	YELLOW SIGNAL BLINKER	X= 2131.876 Y= 803.387
8	ROAD NO. 01	YELLOW SIGNAL BLINKER	X= 2128.875 Y= 782.056
9	ROAD NO. 01	YELLOW SIGNAL BLINKER	X= 2131.876 Y= 623.564
	TOWNSHIP		
10	ROAD NO. 01	YELLOW SIGNAL BLINKER	X= 1877.839 Y= 234.128
11	ROAD NO. 01	YELLOW SIGNAL BLINKER	X= 1875.727 Y= 201.285
12	ROAD NO. 10	YELLOW SIGNAL BLINKER	X= 1774.492 Y= 216.516
13	ROAD NO. 10	YELLOW SIGNAL BLINKER	X= 1748.357 Y= 218.536
14	ROAD NO. 10	YELLOW SIGNAL BLINKER	X= 1678.430 Y= 216.526
15	ROAD NO. 10	YELLOW SIGNAL BLINKER	X= 1656.874 Y= 218.526
16	ROAD NO. 10	YELLOW SIGNAL BLINKER	X= 1605.385 Y= 216.526
17	ROAD NO. 10	YELLOW SIGNAL BLINKER	X= 1583.359 Y= 218.526
18	ROAD NO. 10	YELLOW SIGNAL BLINKER	X= 1526.398 Y= 216.536
19	ROAD NO. 10	YELLOW SIGNAL BLINKER	X= 1504.212 Y= 218.526

LIST OF FLASING- RED SIGNAL LIGHT

SR. NO.	Road No.		Location in Local Coordinates
	CHP PLANT		
1	ROAD NO. 11	RED SIGNAL BLINKER	X= 2163.950 Y= 1404.062
2	ROAD NO. 10	RED SIGNAL BLINKER	X= 2146.057 Y= 1405.749
3	ROAD NO.	RED SIGNAL BLINKER	X= 2162.517 Y= 1388.074
	POWER PLANT		
4	ROAD NO. 01	RED SIGNAL BLINKER	X= 2143.811 Y= 1208.625
5	ROAD NO. 01	RED SIGNAL BLINKER	X= 2143.811 Y= 1111.347
6	ROAD NO. 01	RED SIGNAL BLINKER	X= 2116.940 Y= 1125.980
7	ROAD NO. 01	RED SIGNAL BLINKER	X= 2143.849 Y= 922.056
8	ROAD NO. 01	RED SIGNAL BLINKER	X= 2116.978 Y= 934.963
9	ROAD NO. 01	RED SIGNAL BLINKER	X= 2116.978 Y= 675.778
10	ROAD NO. 01	RED SIGNAL BLINKER	X= 2144.980 Y= 605.273
11	ROAD NO. 01	RED SIGNAL BLINKER	X= 2115.628 Y= 616.013
12	ROAD NO. 01	RED SIGNAL BLINKER	X= 2123.980 Y= 600.814
	TOWNSHIP		
13	ROAD NO. 02&03	RED SIGNAL BLINKER	X= 1758.119 Y= 207.131
14	ROAD NO. 02&03	RED SIGNAL BLINKER	X= 1768.198 Y= 227.562
15	ROAD NO. 04&05	RED SIGNAL BLINKER	X= 1662.612 Y= 207.101
16	ROAD NO. 04&05	RED SIGNAL BLINKER	X= 1671.854 Y= 227.581
17	ROAD NO. 06	RED SIGNAL BLINKER	X= 1589.896 Y= 207.101
18	ROAD NO. 07	RED SIGNAL BLINKER	X= 1510.711 Y= 207.111
19	ROAD NO. 10	RED SIGNAL BLINKER	X= 1864.169 Y= 218.534

LIST OF RED SIGNAL ENFORCEMENT CAMERA

SR. NO.	Road No.		Location in Local Coordinates
	CHP PLANT		
1	ROAD NO. 13	RED SIGNAL ENFORCEMENT CAMERA	X= 1762.778 Y= 1801.567
2	ROAD NO. 13	RED SIGNAL ENFORCEMENT CAMERA	X= 1719.918 Y= 1745.648
3	COAL EXIT ROAD	RED SIGNAL ENFORCEMENT CAMERA	X= 2242.147 Y= 1583.256
4	COAL EXIT ROAD	RED SIGNAL ENFORCEMENT CAMERA	X= 2303.315 Y= 1579.095
5	COAL EXIT ROAD	RED SIGNAL ENFORCEMENT CAMERA	X= 2293.802 Y= 1491.132
6	ROAD NO. 09	RED SIGNAL ENFORCEMENT CAMERA	X= 1928.402 Y= 1623.729
7	ROAD NO. 08	RED SIGNAL ENFORCEMENT CAMERA	X= 1968.469 Y= 1621.966
8	ROAD NO. 08	RED SIGNAL ENFORCEMENT CAMERA	X= 2122.453 Y= 1557.925
9	ROAD NO. 08	RED SIGNAL ENFORCEMENT CAMERA	X= 2179.609 Y= 1508.707







SUMMARY OF CONVEX MIRRORS/SPEED RADAR DISPLAY

LIST OF COVEX MIRRORS WITH LOCATION

SNO.	ROAD NO.	DIAMENTION	LOCATION IN LOCAL COORDINATES
POWER PLANT			
1	ROAD NO 1	1000MM	X= 2286.483 Y= 604.594

CONVEX MIRRORS	01 QTY	

Technical Specification

1000mm Diameter
View-360 degree
Heavy Duty Acrylic Surface
Visibility Area should be up to 30m
polycarbonate material
Supplied with Post Fixings to suit a 1000mm diameter post
Extremely Durable for Outdoor/Indoor environment



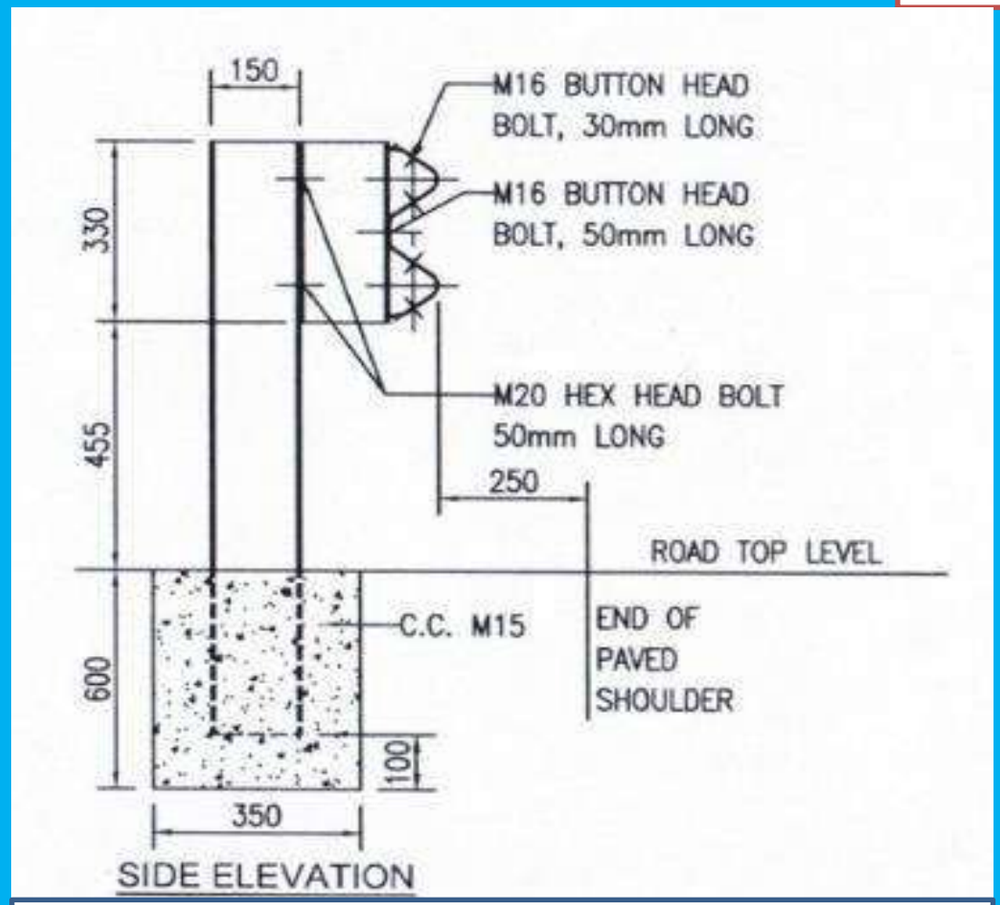
SEGGRATION/CRASH BARRIER

CHP PLANT

SR.NO.	ROAD NO.	INTERSECTION NO.	CURVATURE NAME	LOCATION IN LOCAL COORDINATES	LENGTH (METER)
1	ROAD NO. 13	06 INTERSECTION	R1	X = 1713.812 Y = 1732.783	37.7
2	ROAD NO. 07	07 INTERSECTION	L1	X = 1746.502 Y = 1812.178	23.5
3	ROAD NO. 07	07 INTERSECTION	L2	X = 1766.714 Y = 1837.641	37.7
4	ROAD NO. 07	07 INTERSECTION	R1	X = 1768.544 Y = 1803.562	23.6
5	ROAD NO. 07	07 INTERSECTION	R2	X = 1773.262 Y = 1812.585	5.5
6	ROAD NO. 07	08 INTERSECTION	R2	X = 2038.260 Y = 1686.319	12.1
7	ROAD NO. 15	--	L1	X = 2310.626 Y = 1554.196	13.5
8	ROAD NO. 15	--	L2	X = 2310.804 Y = 1550.091	11.7
9	ROAD NO. 11	14 INTERSECTION	L1	X = 2172.244 Y = 1493.933	5.7
TOTAL					171

POWER PLANT

Sno.	ROAD NO.	INTERSECTION NO.	CURVATURE NAME	LOCATION IN LOCAL COORDINATES	LENGTH (METER)
1	ROAD NO. 01	02 INTERSECTION	L1	X = 2141.281 Y = 1127.056	18.9
2	ROAD NO. 01	02 INTERSECTION	R1	X = 2118.917 Y = 1128.446	23.5
3	ROAD NO. 01	02 INTERSECTION	R2	X = 2118.959 Y = 1107.194	23.6
4	ROAD NO. 01	03 INTERSECTION	L1	X = 2141.279 Y = 937.807	18.9
5	ROAD NO. 01	03 INTERSECTION	L2	X = 2141.592 Y = 919.726	18.9
6	ROAD NO. 01	03 INTERSECTION	R1	X = 2119.473 Y = 937.807	18.9
7	ROAD NO. 01	03 INTERSECTION	R2	X = 2119.143 Y = 919.748	18.9
8	ROAD NO. 01	--	R1.	X = 2117.907 Y = 676.844	23.6
9	ROAD NO. 01	--	R2	X = 2117.889 Y = 658.539	23.6
10	ROAD NO. 01	05 INTERSECTION	L1	X = 2142.020 Y = 619.364	23.6
11	ROAD NO. 01	05 INTERSECTION	R1	X = 2118.725 Y = 619.347	23.6
12	ROAD NO. 04	07 INTERSECTION	L1	X = 2283.133 Y = 613.794	11.8
13	ROAD NO. 04	07 INTERSECTION	R1	X = 2272.843 Y = 603.953	5.9
14	ROAD NO. 04	--	R1	X = 2377.841 Y = 685.015	23.6
15	ROAD NO. 04	--	R1	X = 2404.460 Y = 652.318	18.9
16	ROAD NO. 04	--	R2	X = 2415.590 Y = 645.336	18.9
17	ROAD NO. 05	08 INTERSECTION	R1	X = 1707.489 Y = 1104.101	23.6
18	ROAD NO. 05	08 INTERSECTION	R2	X = 1707.489 Y = 1131.472	23.6
19	ROAD NO. 05	10 INTERSECTION	R1	X = 1707.774 Y = 915.581	23.6
20	ROAD NO. 05	10 INTERSECTION	R2	X = 1707.774 Y = 941.486	23.6
21	ROAD NO. 04	14 INTERSECTION	L1	X = 2057.256 Y = 603.070	18.9
22	ROAD NO. 04	14 INTERSECTION	L2	X = 2039.835 Y = 603.080	18.9
23	ROAD NO. 04	--	R1	X = 2013.597 Y = 615.057	18.9
24	ROAD NO. 04	--	R2	X = 1999.703 Y = 615.057	18.9
25	ROAD NO. 04	--	R1	X = 1970.586 Y = 614.905	11
26	ROAD NO. 04	--	R2	X = 1962.720 Y = 614.899	11
TOTAL					507.1



Crash Barriers Specifications

1)The Height of Post should be 785 mm long above finish road level.

02) W profile formed corrugated beams(effective length of 4318 m) 311 mm x 83 mm.

03) Post consists of formed channel of size 150 x 75 x 5, 785 mm long above ground level.

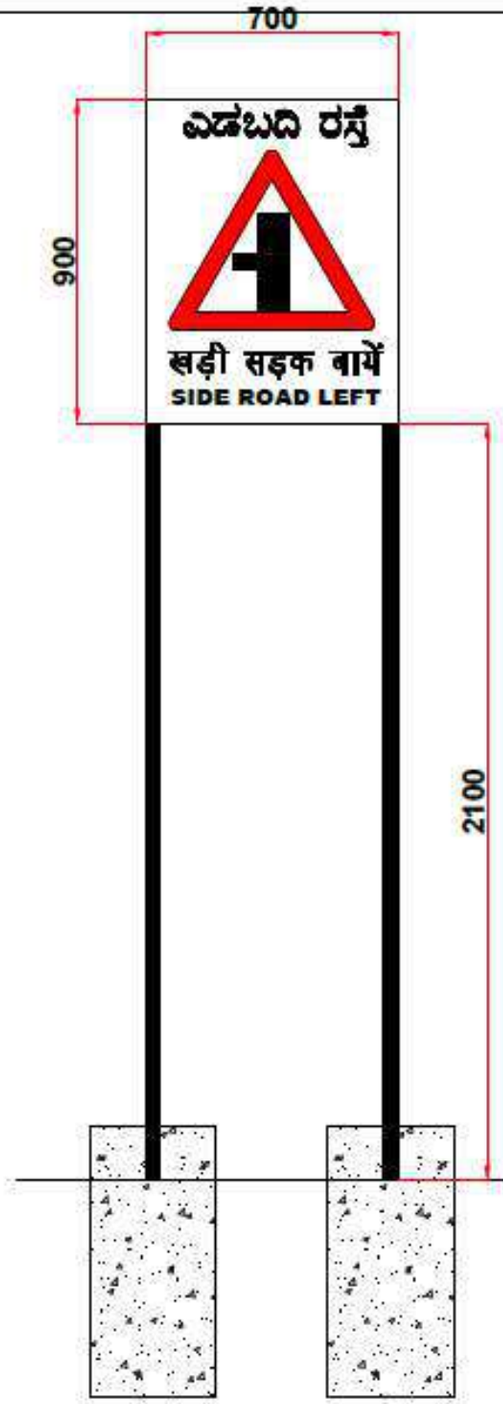
04)Spacer consists of formed channel of size 150 x 75 x 5, 330 mm long

05) Button head bolts M16 x 30 mm long, 8 nos for the splicing of the W- profile at each location.

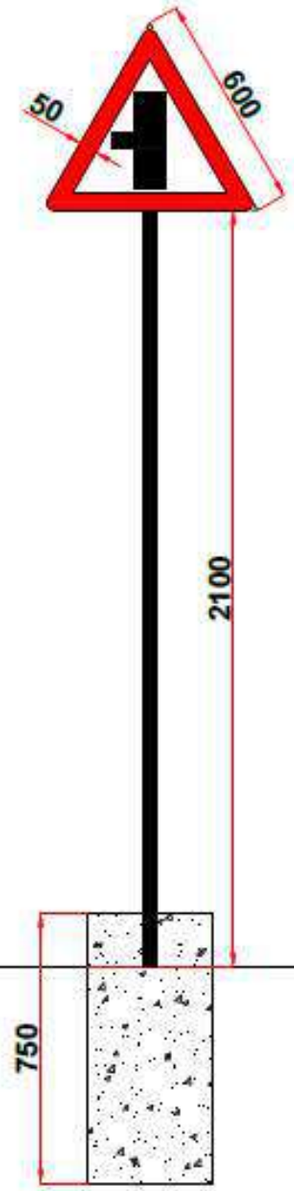
06) Button head bolts M16 x 50 mm long, 1 nos. at the connection of the W beam to space.

07) Hex head bolts M20 x 50 mm long, 2 numbers at the connection. .

08} 11)The base material of the corrugated beam shall comply to following mechanical properties. (i)Tensile strength, Minimum 483 MPA (ii) Elongation, in 2 inches, minimum 12% , (iii)Yield Strength minimum 345 MPA.



DESCRIPTION :--
3MM ACP SHEET,
MS ANGLE BACK SUPPORT 25MM X 25MM X 25MM X 5MM,
1.3M HIP,REFLECTIVE SHEET.
STAND : 3400 MM HEIGHT (45MMX45MMX5MM)
1 COTE OF PRIMER AND BLACK & WHITE PAINT



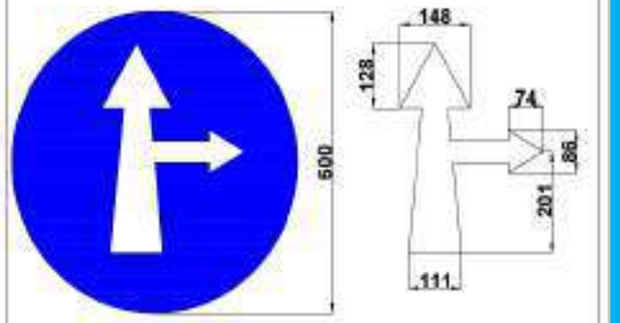
ROAD SAFETY FOUNDATION

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	NAME	DATE
APPROVED	DKS	
CHECKED	DKS	
CAD	VRM	

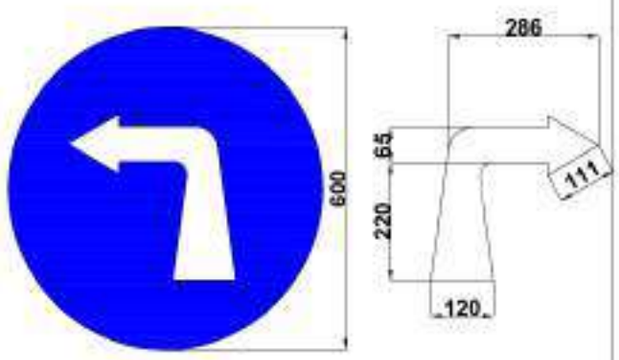
TITLE :-

ROAD SIGN FOUNDATION



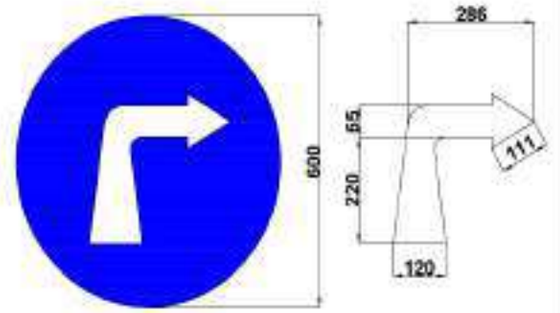
COMPULSORY AHEAD OR RIGHT TURN

ROAD SAFETY FOUNDATION



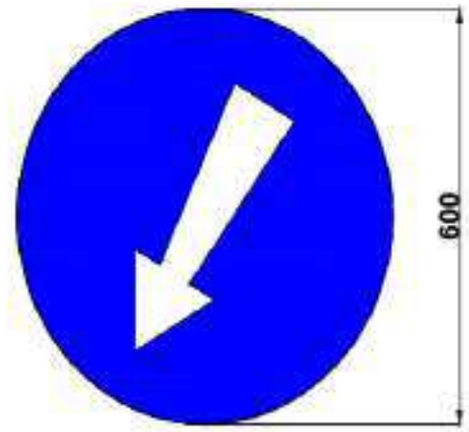
COMPULSORY TURN LEFT
(in advance of junction)

ROAD SAFETY FOUNDATION



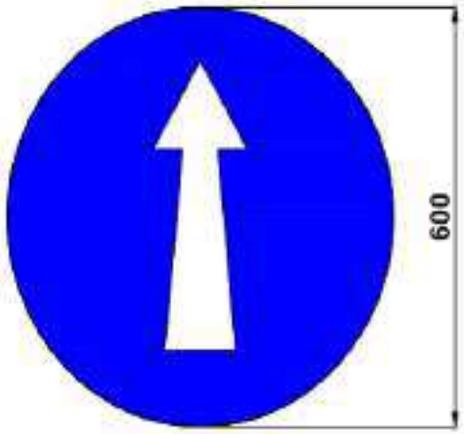
COMPULSORY TURN RIGHT
(in advance of junction)

ROAD SAFETY FOUNDATION



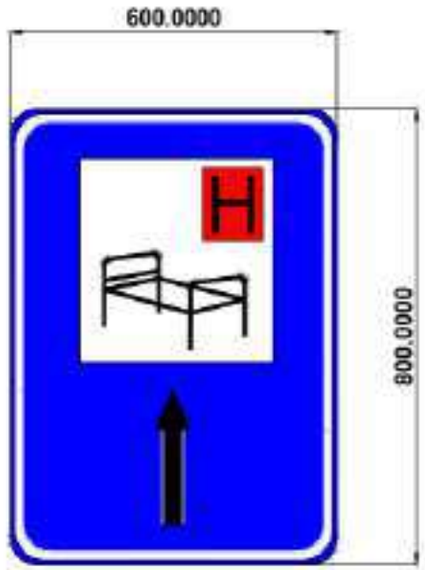
COMPULSORY KEEP LEFT

ROAD SAFETY FOUNDATION



COMPULSORY STRAIGHT AHEAD

ROAD SAFETY FOUNDATION



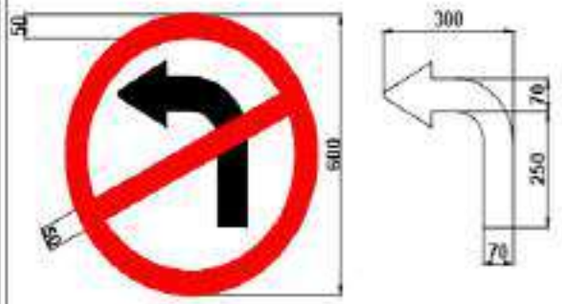
HOSPITAL

ROAD SAFETY FOUNDATION



RIGHT TURN PROHIBITED

ROAD SAFETY FOUNDATION



LEFT TURN PROHIBITED

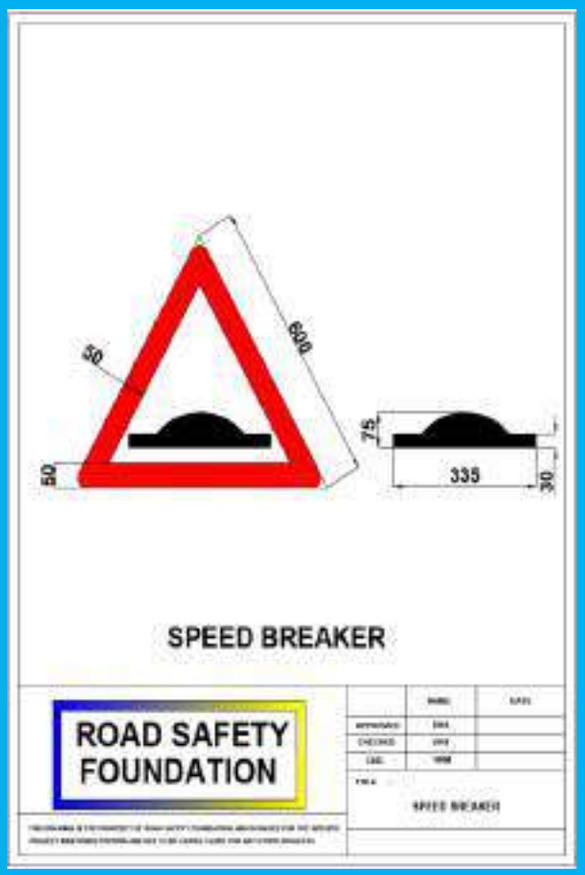
ROAD SAFETY FOUNDATION


50
600
ONE WAY STRAIGHT PERMITTED
ROAD SAFETY FOUNDATION
ONE WAY STRAIGHT PERMITTED


50
600
50
NO ENTRY
ROAD SAFETY FOUNDATION
NO ENTRY


50
20
600
20
225
335
SPEED LIMIT 20
ROAD SAFETY FOUNDATION
SPEED LIMIT 20


STOP
PEDESTRIAN CROSSING & STOP
ROAD SAFETY FOUNDATION


50
600
75
335
30
SPEED BREAKER
ROAD SAFETY FOUNDATION
SPEED BREAKER


600
50
50
35
R75
ROUNDABOUT
ROAD SAFETY FOUNDATION
ROUNDABOUT


50
600
90
90
45
T-INTERSECTION
ROAD SAFETY FOUNDATION
T-INTERSECTION


50
600
CROSS ROAD
ROAD SAFETY FOUNDATION
CROSS ROAD

ROAD SIGNAGE DESIGN WITH DIAMENSIONS


















600
PARKING
ROAD SAFETY FOUNDATION
PARKING


50
600
50
251
160
145
425
OVERTAKING PROHIBITED
ROAD SAFETY FOUNDATION
OVERTAKING PROHIBITED


50
600
50
BARRIER
ROAD SAFETY FOUNDATION
BARRIER


600
800
BUS
STOP
BUS TOP
ROAD SAFETY FOUNDATION
BUS TOP


50
600
50
80
900
380
GUARDED RAILWAY CROSSING AT 50M
ROAD SAFETY FOUNDATION
GUARDED RAILWAY CROSSING AT 50M


50
600
50
80
900
380
GUARDED RAILWAY CROSSING AT 100M
ROAD SAFETY FOUNDATION
GUARDED RAILWAY CROSSING AT 100M

SUMMARY OF ROAD MARKING WORK TO BE DONE (IN SQM)

ROAD NO. / NAME	EDGE MARKING		CENTER MARKING		ZEBRA CROSSING	STOP MARKING IN SQM.	PAVEMENT MARKING (ARROW & STOP LOOK GO/NO LEFT TURN & NO RIGHT TURN)	EDGE BROKING LINE IN SQM.	SPEED BREAKER MARKING		INTERSECTION ZIG-ZAG
	LENGTH IN M	AREA IN SQM	QTY	IN SQM	IN SQM				QTY	AREA IN SQM	IN SQM
CHP PLANT ROAD	7590	1138.5	874	262.2	643.3	73.0	281.2	577	3	102.1	114
POWER PLANT ROAD	15422	2313.3	947	284.1	2243.3	144.0	160.3	4.2	19	479.5	141
TOWNSHIP ROAD	5360	804	209	62.7	830	8.0	87.4	9.5	1	36.3	119
TOTAL	**28372**	**4255.8**	**2030**	**609**	**3716.6**	**225**	**528.9**	**590.7**	**23**	**617.9**	**374**
TOTAL ROAD MARKING WORK TO BE DONE :- 10,917.9											

COST CALCULATION	AREA	UNIT PRICE IN SQM
SUMMARY OF ROAD MARKING WORK TO BE DONE	SQM	RS.900/SQM

PAVEMENT ROAD MARKING WORK

EDGE MARKING			
SR.NO	ROAD NO. / NAME	LENGTH (METER)/ TRUCK PARKING PATH	AREA IN SQM(*0.15)
1	CHP PLANT	7590	1138.5
2	POWER PLANT	15422	2313.3
3	TOWNSHIP	5360	804
TOTAL		**28372**	**4255.8**

CENTER MARKING			
SR.NO	ROAD NO. / NAME	CENTER MARKING (QTY)	AREA IN SQ.MTR(*0.3)
1	CHP PLANT	874	262.2
2	POWER PLANT	947	284.1
3	TOWNSHIP	209	62.7
TOTAL		**2030**	**609**

STOP LOOK GO			
SR.NO	ROAD NO. / NAME	QTY.	AREA IN SQM (*2.5)
1	CHP PLANT	30	75
2	POWER PLANT	42	105
3	TOWNSHIP	13	32.5
TOTAL		**85**	**212.5**

STOP MARKING			
SR.NO	ROAD NO. / NAME	LENGTH (METER)	AREA IN SQM (*0.2)
1	CHP PLANT	365	73.0
2	POWER PLANT	720	144.0
3	TOWNSHIP	40	8.0
TOTAL		**1125**	**225**

BROKEN LINE			
SR.NO	ROAD NO. / NAME	LENGTH (METER)	AREA IN SQM (*0.1)
1	CHP PLANT	5770	577
2	POWER PLANT	42	4.2
3	TOWNSHIP	95	9.5
TOTAL		**5907**	**590.7**

MEDIAN MARKER			
SR.NO	ROAD NO. / NAME	LENGTH (METER)	QTY.(/5)
1	CHP PLANT	--	--
2	POWER PLANT	1170	235
3	TOWNSHIP	894	180
TOTAL		**2064**	**415**

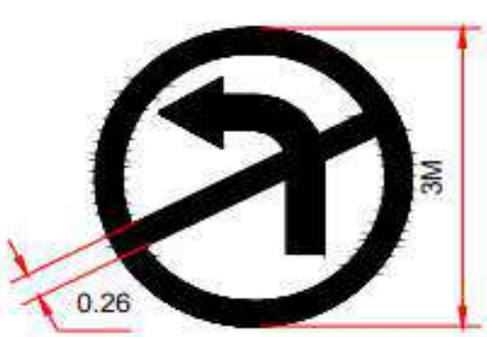
PAVEMENT ROAD MARKING WORK

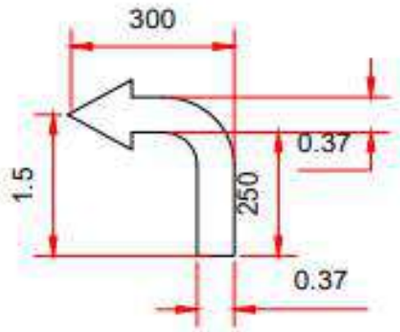
ARROW MARKING				
SR.NO.	ROAD & ARROW NAME	NO.OF COUNT	AREA OF MARKING	SQ.MTR
1	**CHP PLANT**			
	GO STRAIGHT	30	0.7	21.0
	LEFT ARROW M	4	0.7	2.8
	DIRECTIONAL ONE SIDE	34	0.9	30.6
2	**POWER PLANT**			
	GO STRAIGHT	18	0.7	12.6
	STRIGHT & BOTH SIDES	28	1.075	30.1
	DIRECTIONAL ONE SIDE	14	0.9	12.6
3	**TOWNSHIP**			
	GO STRAIGHT	22	0.7	15.4
	STRIGHT & BOTH S	14	1.075	15.1
	DIRECTION ONE SIDE	24	0.9	21.6
	LEFT ARROW M	4	0.7	2.8
TOTAL		**192**		**164.6**

NO LEFT TURN & NO RIGHT TURN			
SR.NO	ROAD NO. / NAME	QTY.	AREA IN SQM (*4.9&*2)
1	CHP PLANT(SYMBOL)	22	107.8
2	CHP PLANT (WORD)	22	44
TOTAL		**44**	**151.8**

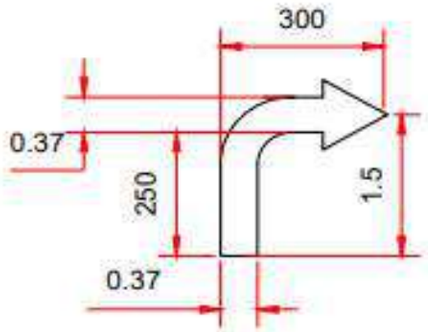
INTERSECTION ZIGZAG			
SR.NO	ROAD NO. / NAME	QTY.	AREA IN SQM (*1.8)
1	CHP PLANT	63.37	114
2	POWER PLANT	78.32	141
3	TOWNSHIP	66.25	119
TOTAL			**374**

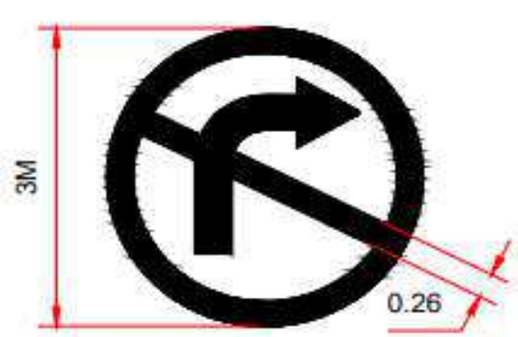
DIRECTIONAL PAVEMENT ROAD MARKING CAD DESIGN



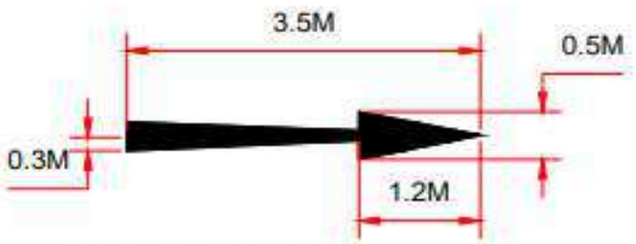


NO LEFT TURN PAVEMENT MARKING

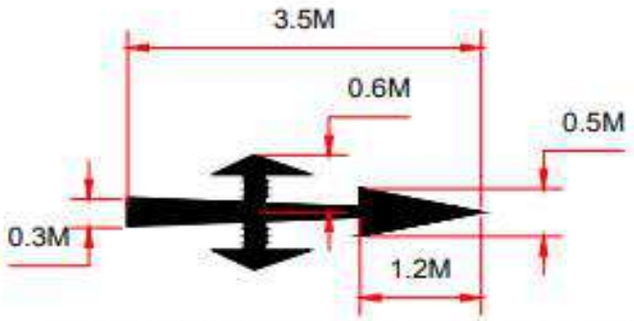




NO RIGHT TURN PAVEMENT MARKING



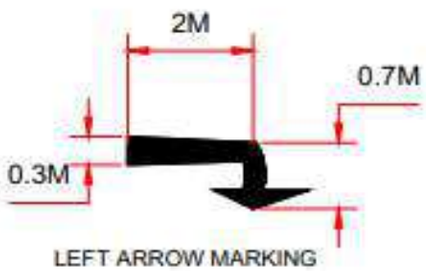
GO STRAIGHT MARKING



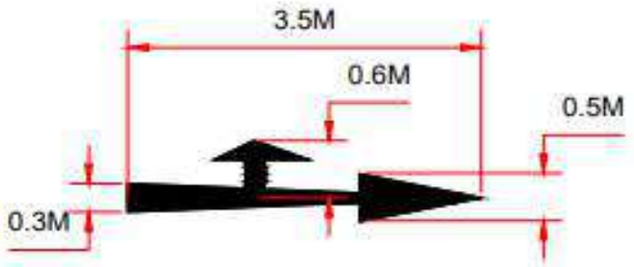
DIRECTION ARROW STRIGHT OR BOTH SIDE MARKING



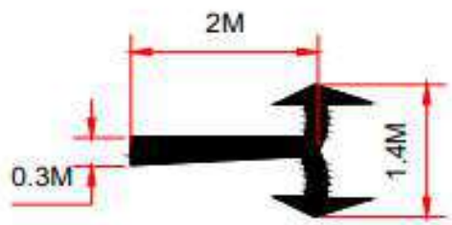
STOP LOOK AND GO PAVEMENT MARKING



LEFT ARROW MARKING



DIRECTION ARROW-1 STRIGHT OR SIDE MARKING



BOTH OF SIDE ARROW MARKING

ROAD SAFETY FOUNDATION

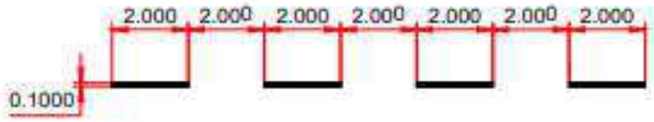
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	NAME	DATE
APPROVED	DKS	10.07.2024
CHECKED	DKS	10.07.2024
CAD	MSD	10.07.2024

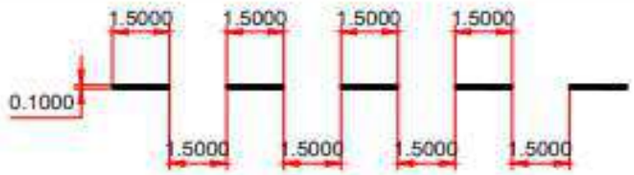
TITLE :- DIRECTIONAL ARROW MARKING DETAILS

DWG NO- JSPL/BRM-005

DIRECTIONAL PAVEMENT ROAD MARKING CAD DESIGN



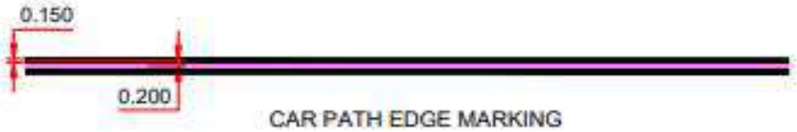
ROAD CENTER MARKING (INTERNAL ROADS &
BEFORE 30 MTR FROM INTERSECTION ON MAIN ROADS)



ROAD CENTER MARKING (FOR ROAD WIDTH UP TO 7 MTR & 20 KM/PH)



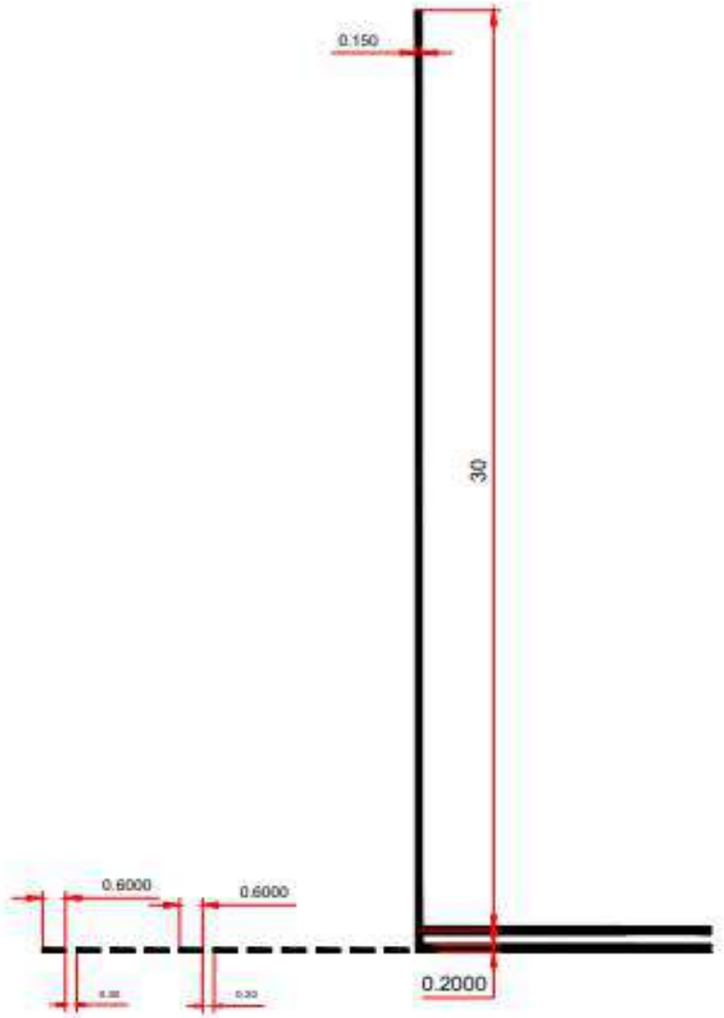
ROAD EDGE MARKING



CAR PATH EDGE MARKING



MEDIAN EDGE MARKING



BROKING LINE & STOP LINE

ROAD SAFETY FOUNDATION

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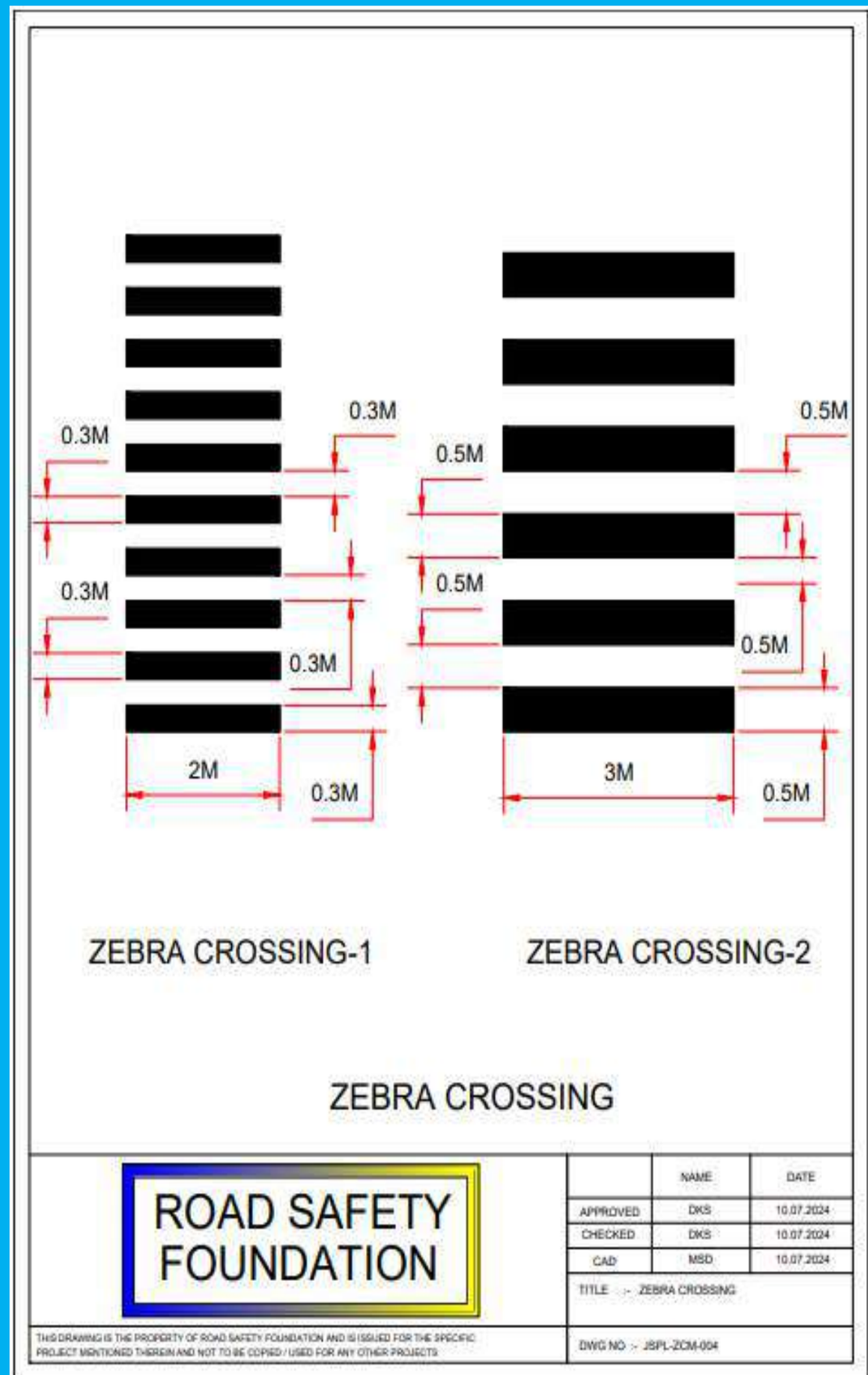
	NAME	DATE
APPROVED	DKS	10.07.2024
CHECKED	DKS	10.07.2024
CAD	MSD	10.07.2024

TITLE :- ROAD MARKING DETAILS

DWG NO- JSPL/RM-001

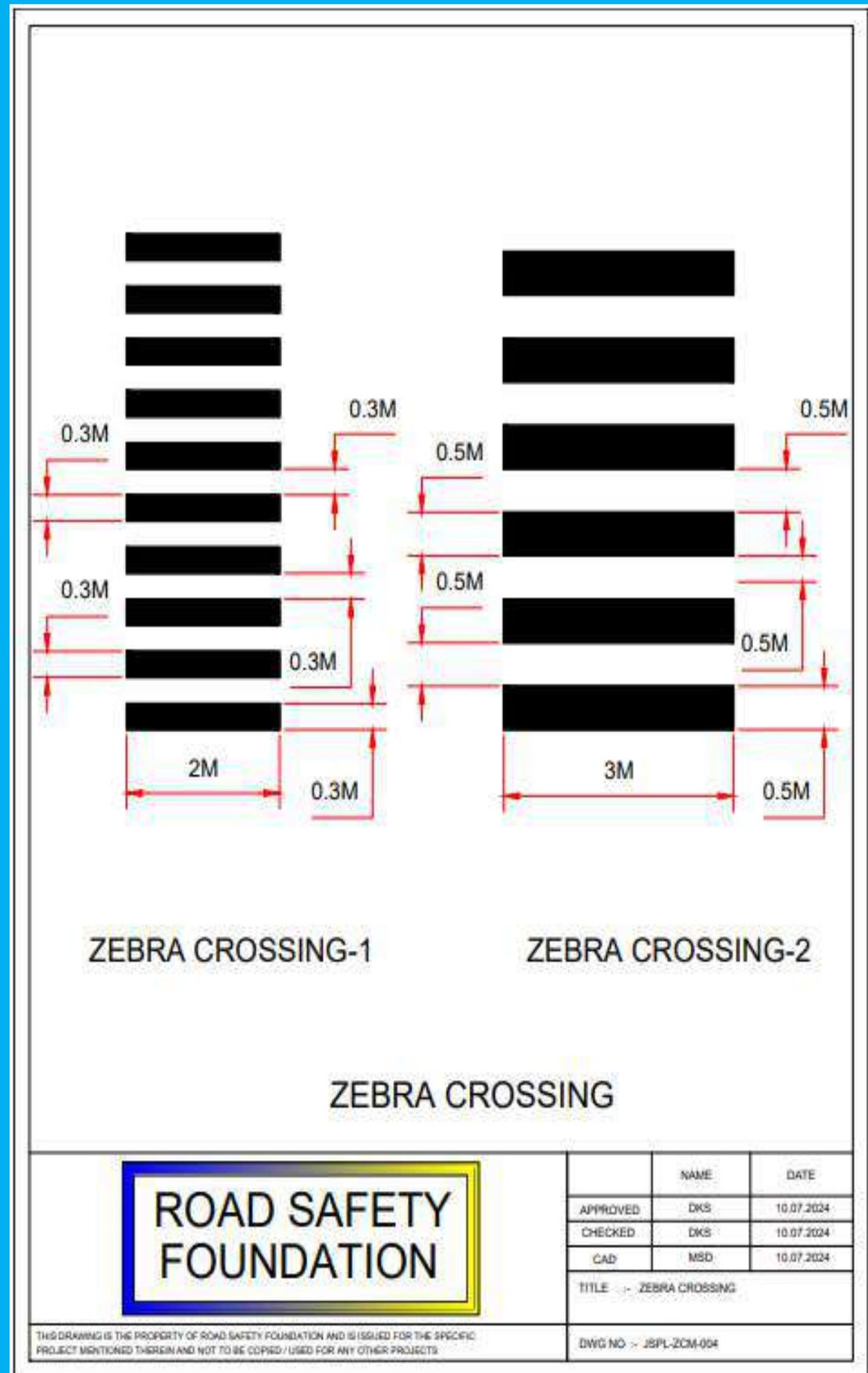
LIST OF ZEBRA CROSSING WITH CAD DESIGN

SR.NO.	ROAD NO.	DESCRIPTION	LOCATION IN LOCAL CORDINATES	NO. 0F COUNT	AREA (NO.x 0.6)
CHP PLANT					
1	PARKING SIDE	ZEBRA CROSSING	X = 1707.387 Y = 1670.281	21	35.0
2	PARKING SIDE	ZEBRA CROSSING	X = 1716.942 Y = 1695.723	22	36.7
3	PARKING SIDE	ZEBRA CROSSING	X = 1795.899 Y = 1660.006	48	80.0
4	PARKING SIDE	ZEBRA CROSSING	X = 1931.938 Y = 1594.576	23	38.3
5	ROAD NO. 07	ZEBRA CROSSING	X = 1746.176 Y = 1821.357	20	33.3
6	ROAD NO.	ZEBRA CROSSING	X = 1762.645 Y = 1822.019	38	63.3
7	ROAD NO.	ZEBRA CROSSING	X = 2031.293 Y = 1690.489	23	38.3
8	ROAD NO.	ZEBRA CROSSING	X = 2229.297 Y = 1606.138	18	30.0
9	ROAD NO. 09	ZEBRA CROSSING	X = 1947.896 Y = 1602.989	18	30.0
10	ROAD NO. 11	ZEBRA CROSSING	X = 2158.261 Y = 1404.790	20	33.3
11	ROAD NO. 10	ZEBRA CROSSING	X = 2145.427 Y = 1400.166	31	51.7
12	ROAD NO.	ZEBRA CROSSING	X = 2164.339 Y = 1393.556	19	31.7
13	ROAD NO.15	ZEBRA CROSSING	X = 2414.451 Y = 1617.621	11	18.3
14	PARKING SIDE	ZEBRA CROSSING	X = 1766.759 Y = 1418.085	12	20.0
15	PARKING SIDE	ZEBRA CROSSING	X = 1862.754 Y = 1402.168	6	10.0
16	ROAD NO.09	ZEBRA CROSSING	X = 1992.173 Y = 1581.418	14	23.3
17	PROPOSED ROAD	ZEBRA CROSSING	X = 2295.434 Y = 1361.784	8	13.3
18	PROPOSED ROAD	ZEBRA CROSSING	X = 2311.736 Y = 1357.511	6	10.0
19	PROPOSED ROAD	ZEBRA CROSSING	X = 2286.361 Y = 1388.940	28	46.7
SR.NO.	ROAD NO.	DESCRIPTION	LOCATION IN LOCAL CORDINATES	NO. 0F COUNT	AREA (NO.x 0.6)
TOWNSHIP					
1	ROAD NO.01	ZEBRA CROSSING	X = 1876.803 Y = 230.978	25	41.7
2	ROAD NO.01	ZEBRA CROSSING	X = 1867.132 Y = 217.618	37	61.7
3	ROAD NO.01	ZEBRA CROSSING	X = 1876.653 Y = 204.267	25	41.7
4	ROAD NO.02&03	ZEBRA CROSSING	X = 1762.895 Y = 120.962	16	26.7
5	ROAD NO.04&05	ZEBRA CROSSING	X = 1667.410 Y = 120.964	15	25.0
6	ROAD NO.04&05	ZEBRA CROSSING	X = 1667.733 Y = 337.345	14	23.3
7	ROAD NO.06	ZEBRA CROSSING	X = 1594.326 Y = 120.962	16	26.7
8	ROAD NO.07	ZEBRA CROSSING	X = 1515.480 Y = 120.962	24	40.0
9	ROAD NO.10	ZEBRA CROSSING	X = 1771.342 Y = 217.561	23	38.3
10	ROAD NO.10	ZEBRA CROSSING	X = 1761.366 Y = 227.393	23	38.3
11	ROAD NO.10	ZEBRA CROSSING	X = 1762.239 Y = 207.641	16	26.7
12	ROAD NO.10	ZEBRA CROSSING	X = 1751.406 Y = 217.378	24	40.0
13	ROAD NO.10	ZEBRA CROSSING	X = 1674.941 Y = 217.706	26	43.3
14	ROAD NO.10	ZEBRA CROSSING	X = 1667.235 Y = 227.395	15	25.0
15	ROAD NO.10	ZEBRA CROSSING	X = 1667.138 Y = 207.610	17	28.3
16	ROAD NO.10	ZEBRA CROSSING	X = 1659.886 Y = 217.626	26	43.3
17	ROAD NO.10	ZEBRA CROSSING	X = 1603.236 Y = 217.423	23	38.3
18	ROAD NO.10	ZEBRA CROSSING	X = 1594.864 Y = 207.610	16	26.7
19	ROAD NO.10	ZEBRA CROSSING	X = 1585.539 Y = 217.423	23	38.3
20	ROAD NO.10	ZEBRA CROSSING	X = 1522.836 Y = 217.423	23	38.3
21	ROAD NO.10	ZEBRA CROSSING	X = 1515.267 Y = 207.610	16	26.7
22	ROAD NO.10	ZEBRA CROSSING	X = 1508.358 Y = 217.423	23	38.3
23	ROAD NO.11	ZEBRA CROSSING	X = 1461.379 Y = 287.009	16	26.7
24	ROAD NO.11	ZEBRA CROSSING	X = 1661.602 Y = 287.264	16	26.7



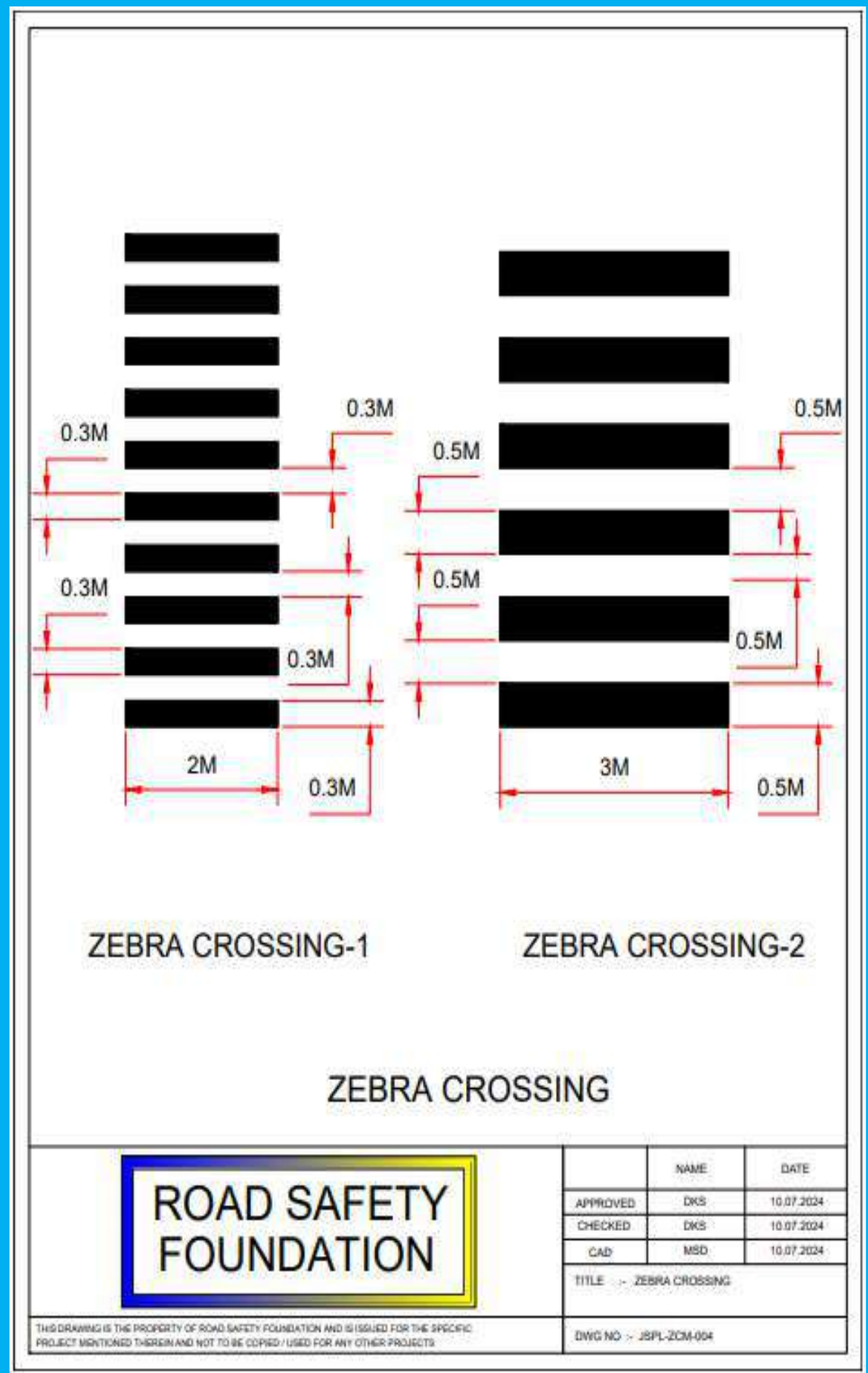
LIST OF ZEBRA CROSSING WITH CAD DESIGN

SR.NO.	ROAD NO.	DESCRIPTION	LOCATION IN LOCAL CORDINATES	NO. 0F COUNT	AREA (NO.x 0.6)
POWER PLANT					
1	ROAD NO.01	ZEBRA CROSSING	X = 2130.252 Y = 1224.790	33	55.0
2	ROAD NO.01	ZEBRA CROSSING	X = 2142.226 Y = 1215.380	26	43.3
3	ROAD NO.01	ZEBRA CROSSING	X = 2118.525 Y = 1215.189	19	31.7
4	ROAD NO.01	ZEBRA CROSSING	X = 2130.250 Y = 1205.286	33	55.0
5	ROAD NO.01	ZEBRA CROSSING	X = 2130.376 Y = 1129.891	33	55.0
6	ROAD NO.01	ZEBRA CROSSING	X = 2142.226 Y = 1117.531	26	43.3
7	ROAD NO.01	ZEBRA CROSSING	X = 2118.525 Y = 1117.829	33	55.0
8	ROAD NO.01	ZEBRA CROSSING	X = 2130.478 Y = 1105.683	33	55.0
9	ROAD NO.01	ZEBRA CROSSING	X = 2118.525 Y = 960.429	18	30.0
10	ROAD NO.01	ZEBRA CROSSING	X = 2130.358 Y = 938.320	33	55.0
11	ROAD NO.01	ZEBRA CROSSING	X = 2142.243 Y = 928.394	26	43.3
12	ROAD NO.01	ZEBRA CROSSING	X = 2118.509 Y = 928.695	26	43.3
13	ROAD NO.01	ZEBRA CROSSING	X = 2130.376 Y = 918.736	33	55.0
14	ROAD NO.01	ZEBRA CROSSING	X = 2130.383 Y = 799.736	31	51.7
15	ROAD NO.01	ZEBRA CROSSING	X = 2118.525 Y = 792.606	15	25.0
16	ROAD NO.01	ZEBRA CROSSING	X = 2130.383 Y = 785.706	31	51.7
17	ROAD NO.01	ZEBRA CROSSING	X = 2142.227 Y = 764.948	15	25.0
18	ROAD NO.01	ZEBRA CROSSING	X = 2118.530 Y = 667.584	32	53.3
19	ROAD NO.01	ZEBRA CROSSING	X = 2130.518 Y = 619.913	37	61.7
20	ROAD NO.01	ZEBRA CROSSING	X = 2143.496 Y = 609.478	21	35.0
21	ROAD NO.01	ZEBRA CROSSING	X = 2117.164 Y = 609.208	20	33.3
22	ROAD NO.01	ZEBRA CROSSING	X = 2130.336 Y = 602.306	26	43.3
23	ROAD NO.02	ZEBRA CROSSING	X = 2317.750 Y = 1250.036	12	20.0
24	ROAD NO.02	ZEBRA CROSSING	X = 2236.209 Y = 1215.088	25	41.7
25	ROAD NO.02	ZEBRA CROSSING	X = 2242.678 Y = 1203.123	13	21.7
26	ROAD NO.02	ZEBRA CROSSING	X = 2242.801 Y = 1124.390	25	41.7
27	ROAD NO.02	ZEBRA CROSSING	X = 2038.331 Y = 1124.386	20	33.3
28	ROAD NO.02	ZEBRA CROSSING	X = 1937.420 Y = 1117.630	12	20.0
29	ROAD NO.02	ZEBRA CROSSING	X = 1923.156 Y = 1124.386	25	41.7
30	ROAD NO.03	ZEBRA CROSSING	X = 2296.388 Y = 935.132	18	30.0
31	ROAD NO.03	ZEBRA CROSSING	X = 1965.682 Y = 921.909	19	31.7
32	ROAD NO.03	ZEBRA CROSSING	X = 1928.495 Y = 935.133	20	33.3
33	ROAD NO.03	ZEBRA CROSSING	X = 1916.343 Y = 928.677	12	20.0
34	ROAD NO.03	ZEBRA CROSSING	X = 1880.988 Y = 921.902	19	31.7
35	ROAD NO.04	ZEBRA CROSSING	X = 2268.598 Y = 609.156	12	20.0
36	ROAD NO.04	ZEBRA CROSSING	X = 2410.568 Y = 650.865	26	43.3
37	ROAD NO.04	ZEBRA CROSSING	X = 2422.920 Y = 647.746	13	21.7



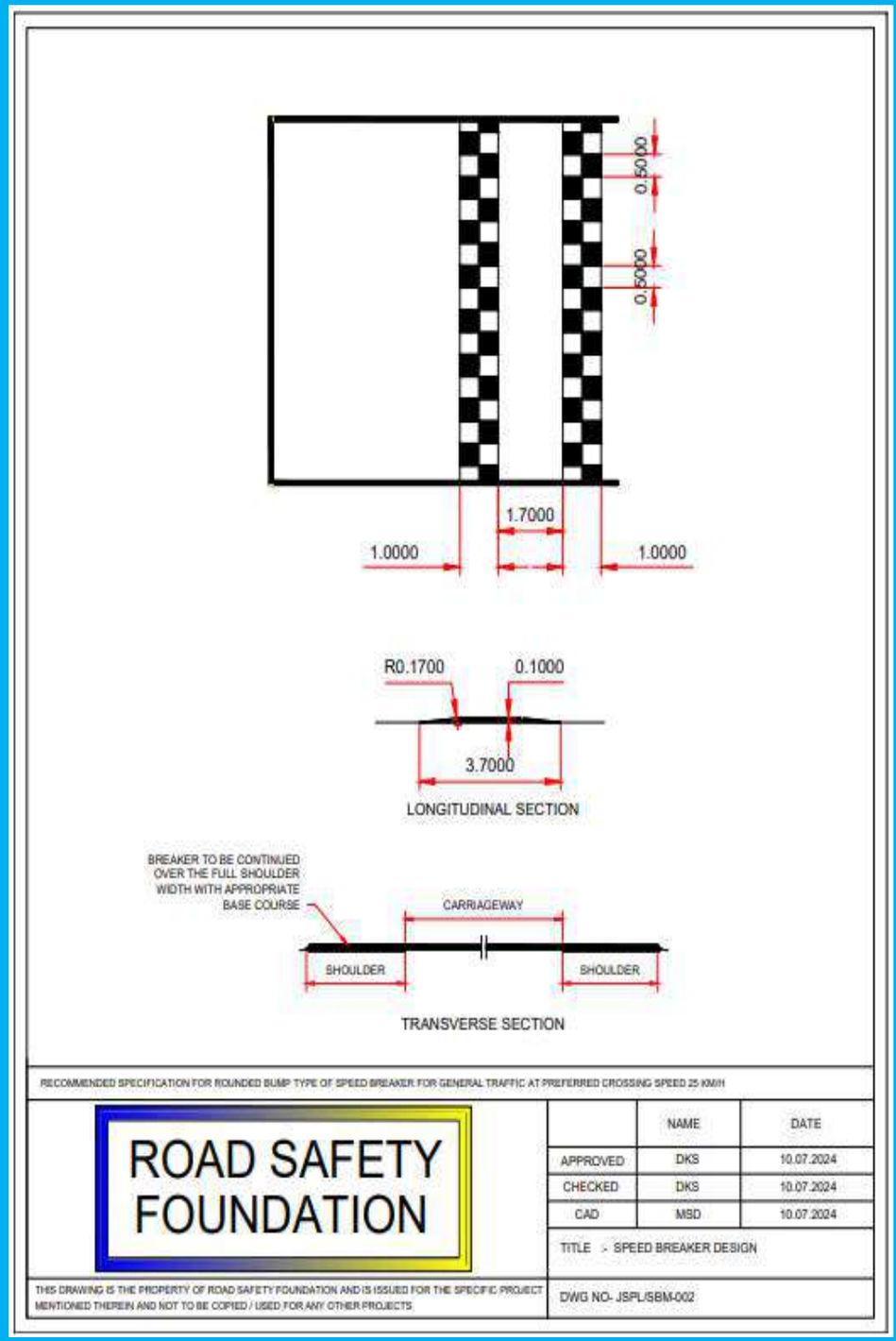
LIST OF ZEBRA CROSSING WITH CAD DESIGN

SR.NO.	ROAD NO.	DESCRIPTION	LOCATION IN LOCAL CORDINATES	NO. 0F COUNT	AREA (NO.x 0.6)
POWER PLANT					
38	ROAD NO.04	ZEBRA CROSSING	X = 2017.032 Y = 609.398	13	21.7
39	ROAD NO.04	ZEBRA CROSSING	X = 2006.406 Y = 615.703	20	33.3
40	ROAD NO.04	ZEBRA CROSSING	X = 1880.569 Y = 615.703	20	33.3
41	ROAD NO.04	ZEBRA CROSSING	X = 1840.385 Y = 602.474	11	18.3
42	ROAD NO.04	ZEBRA CROSSING	X = 1778.559 Y = 602.474	11	18.3
43	ROAD NO.04	ZEBRA CROSSING	X = 1754.574 Y = 615.703	20	33.3
44	ROAD NO.04	ZEBRA CROSSING	X = 1742.390 Y = 608.797	12	20.0
45	ROAD NO.05	ZEBRA CROSSING	X = 1702.993 Y = 684.522	12	20.0
46	ROAD NO.05	ZEBRA CROSSING	X = 1702.712 Y = 802.202	12	20.0
47	ROAD NO.05	ZEBRA CROSSING	X = 1703.189 Y = 917.053	18	30.0
48	ROAD NO.05	ZEBRA CROSSING	X = 1709.453 Y = 928.853	32	53.3
49	ROAD NO.05	ZEBRA CROSSING	X = 1696.265 Y = 928.553	32	53.3
50	ROAD NO.05	ZEBRA CROSSING	X = 1702.739 Y = 940.353	18	30.0
51	ROAD NO.05	ZEBRA CROSSING	X = 1696.265 Y = 1014.237	13	21.7
52	ROAD NO.05	ZEBRA CROSSING	X = 1702.479 Y = 1092.622	14	23.3
53	ROAD NO.05	ZEBRA CROSSING	X = 1696.119 Y = 1102.622	26	43.3
54	ROAD NO.05	ZEBRA CROSSING	X = 1709.412 Y = 1117.829	33	55.0
55	ROAD NO.05	ZEBRA CROSSING	X = 1702.629 Y = 1212.622	14	23.3
56	ROAD NO.05	ZEBRA CROSSING	X = 1696.258 Y = 1220.114	19	31.7
57	ROAD NO.05	ZEBRA CROSSING	X = 1709.412 Y = 1247.455	25	41.7
58	ROAD NO.	ZEBRA CROSSING	X = 1406.208 Y = 1102.693	12	20.0
59	ROAD NO.06	ZEBRA CROSSING	X = 2048.289 Y = 602.433	26	43.3
60	ROAD NO.06	ZEBRA CROSSING	X = 2048.504 Y = 341.185	12	20.0
61	ROAD NO.06	ZEBRA CROSSING	X = 2055.228 Y = 433.934	17	28.3
62	ROAD NO.06	ZEBRA CROSSING	X = 2167.579 Y = 340.110	13	21.7
63	ROAD NO.10	ZEBRA CROSSING	X = 1904.575 Y = 1515.899	20	33.3

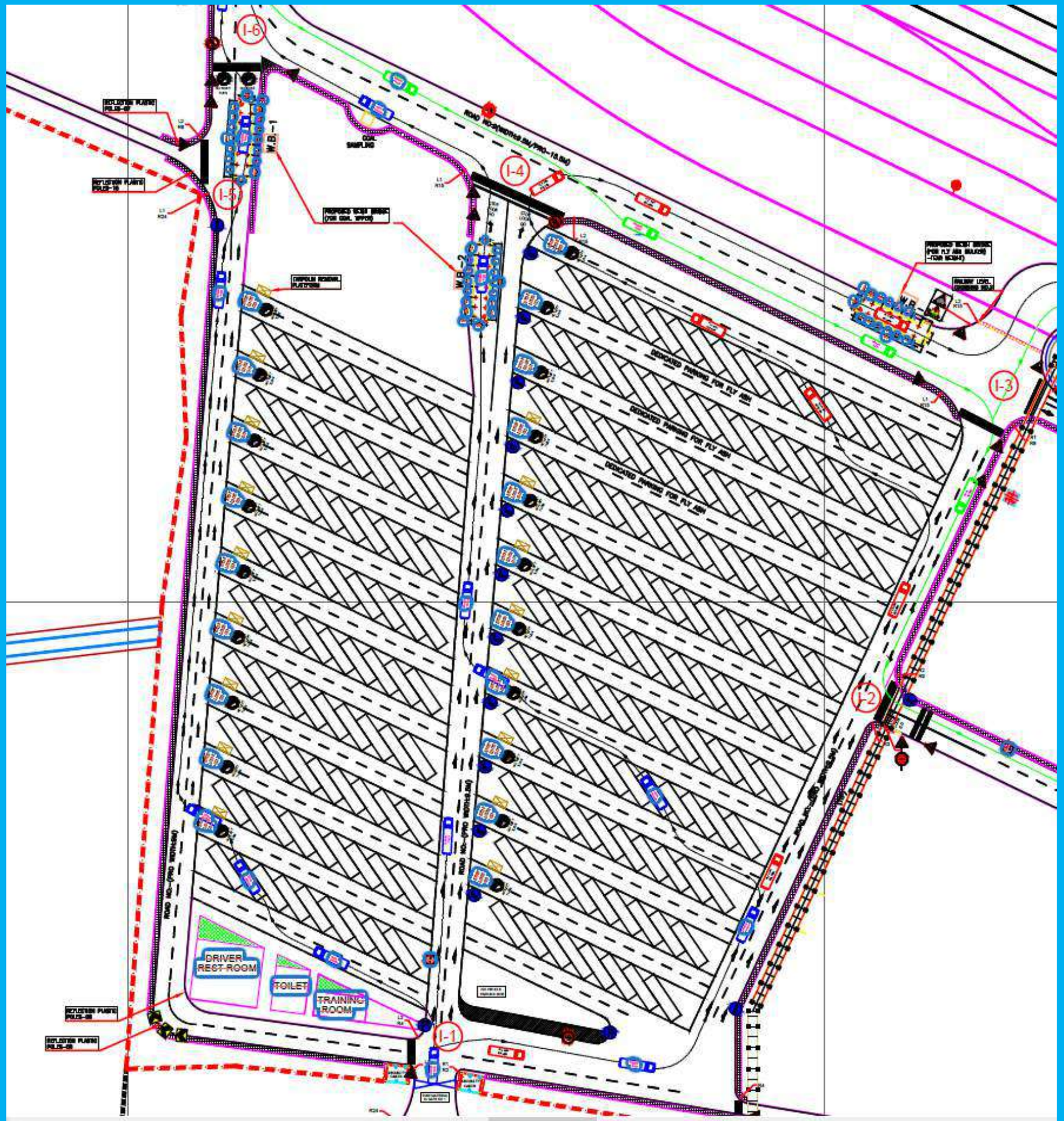


LIST OF SPEED BREAKER WITH LOCAL COORDINATES , CAD DESIGN & SPEED BREAKER MARKING WORK TO BE DONE

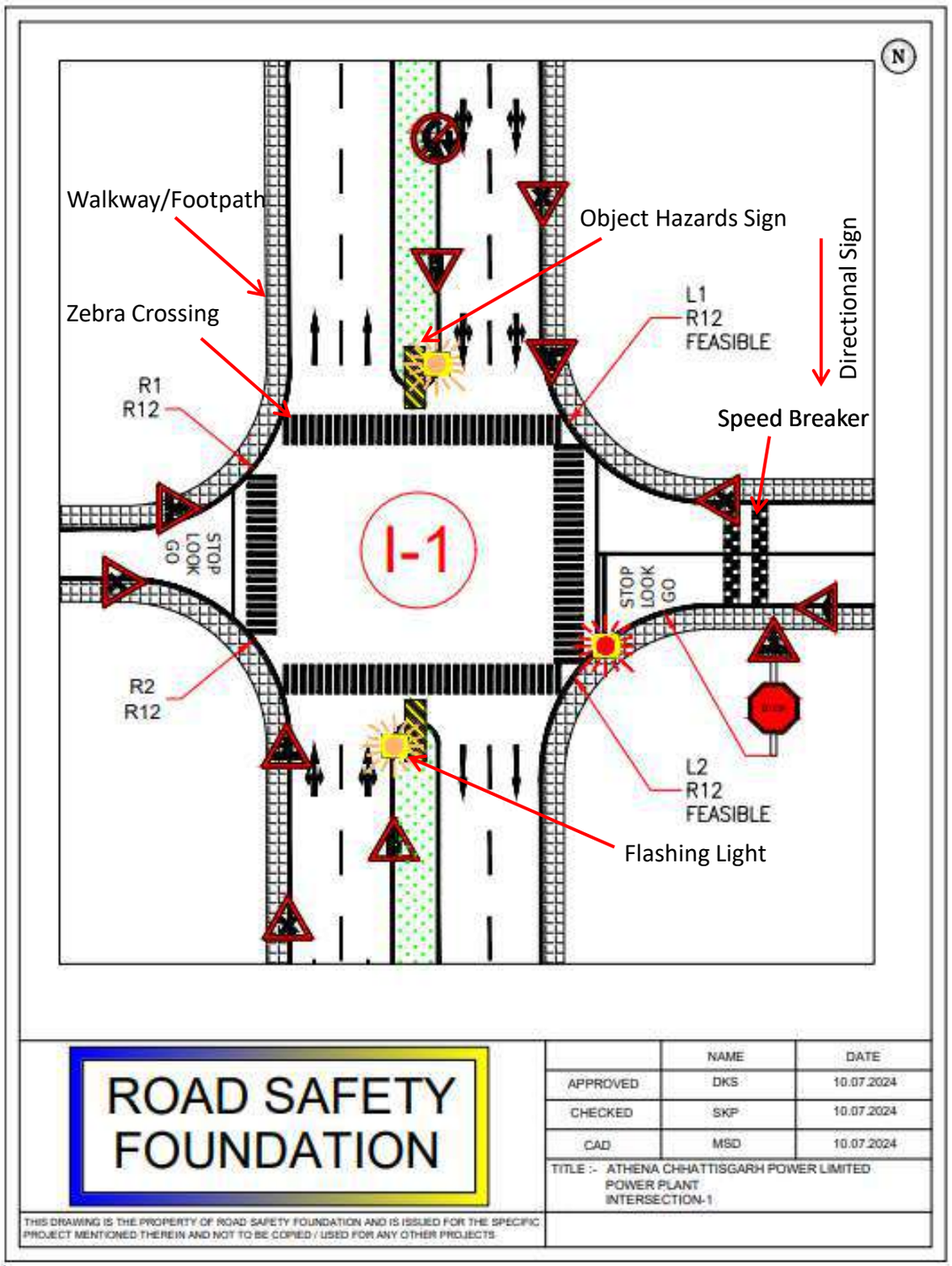
Sno.	Road No.	Description	Location in Local Cordinates	LENGTH	Area (LX3.7)
CHP PLANT					
1	ROAD NO.10	SPEED BREAKER	X = 1913.691 Y = 1510.851	9.2	34.0
2	ROAD NO.10	SPEED BREAKER	X = 2136.915 Y = 1404.188	9.2	34.0
3	ROAD NO.11	SPEED BREAKER	X = 2162.317 Y = 1414.041	9.2	34.0
POWER PLANT					
4	ROAD NO.01	SPEED BREAKER	X = 2152.213 Y = 1215.053	7.2	26.6
5	ROAD NO.01	SPEED BREAKER	X = 2152.213 Y = 1117.890	7.2	26.6
6	ROAD NO.01	SPEED BREAKER	X = 2108.525 Y = 1117.890	7.2	26.6
7	ROAD NO.01	SPEED BREAKER	X = 2152.213 Y = 928.609	7.2	26.6
8	ROAD NO.01	SPEED BREAKER	X = 2108.521 Y = 928.453	7.2	26.6
9	ROAD NO.01	SPEED BREAKER	X = 2153.483 Y = 609.104	7.2	26.6
10	ROAD NO.01	SPEED BREAKER	X = 2106.585 Y = 609.087	7.2	26.6
11	ROAD NO.01	SPEED BREAKER	X = 2130.454 Y = 592.302	7.2	26.6
12	ROAD NO.05	SPEED BREAKER	X = 1719.839 Y = 928.534	7.2	26.6
13	ROAD NO.05	SPEED BREAKER	X = 1685.685 Y = 928.523	7.2	26.6
14	ROAD NO.05	SPEED BREAKER	X = 1687.140 Y = 1102.702	7.2	26.6
15	ROAD NO.05	SPEED BREAKER	X = 1719.399 Y = 1117.740	7.2	26.6
16	ROAD NO.05	SPEED BREAKER	X = 1719.399 Y = 1247.478	7.2	26.6
17	ROAD NO	SPEED BREAKER	X = 1415.187 Y = 1102.726	7.2	26.6
18	ROAD NO.06	SPEED BREAKER	X = 2048.557 Y = 592.446	7.2	26.6
19	ROAD NO.06	SPEED BREAKER	X = 2065.237 Y = 434.008	7.2	26.6
20	ROAD NO.06	SPEED BREAKER	X = 2167.752 Y = 348.098	7.2	26.6
21	ROAD NO.06	SPEED BREAKER	X = 2048.610 Y = 351.185	7.2	26.6
TOWNSHIP					
22	ROAD NO.03	SPEED BREAKER	X = 1761.575 Y = 237.380	9.8	36.3



TOTAL SPEED BREAKER WORK TO BE DONE	**22 QTY**
TOTAL SPEED BREAKER MARKING WORK TO BE DONE IN SQM	**617.9**


I-6
I-5
I-4
I-3
I-2
I-1
COAL SAMPLING
W.B.-1
W.B.-2
DEDICATED PARKING FOR FLY ASH
DEDICATED PARKING FOR FLY ASH
DEDICATED PARKING FOR FLY ASH
DRIVER REST ROOM
TOILET
TRAINING ROOM

INTERSECTION NO.	01	INTERSECTION NAME	CROSS INTERSECTION ROAD NO.01(POWER PLANT)	ROAD NO.	01



ROAD SAFETY FOUNDATION

	NAME	DATE
APPROVED	DKS	10.07.2024
CHECKED	SKP	10.07.2024
CAD	MSD	10.07.2024

TITLE :- ATHENA CHHATTISGARH POWER LIMITED
POWER PLANT
INTERSECTION-1

THIS DRAWING IS THE PROPERTY OF ROAD SAFETY FOUNDATION AND IS ISSUED FOR THE SPECIFIC PROJECT MENTIONED THEREIN AND NOT TO BE COPIED / USED FOR ANY OTHER PROJECTS

RISK ZONE	MEDIUM		SPEED LIMIT	20 KMPH	
ROAD PAVEMENT CONDITION	FAIR				
ROAD WIDTH IS AS PER IRC	YES	PROPOSED ROAD WIDTH			N/A
TURNING CURVATURE IN METER(AS PER IRC GUIDELINES)	NO	L1	L2	R1	R2
		12	12	12	12
PCC WORK TO BE DONE FOR ROAD CURVATURE		28.1	28.1	28.1	28.1
BLIND SPOT	NO	CONVEX MIRROR REQUIRED			NO
SPEED BREAKER REQUIRED	YES , AS SHOWN IN DWG ON LEFT CONNECTING RD.				
PEDESRIAN /ZEBRA CROSSING	YES, AS SHOWN IN DWG				
SIGNAL REQUIRED	NO				
RIGHT OF SIGHT	OK				
FLASING SIGNAL -RED	YES-2	FLASING SIGNAL -YELLOW			YES.-1
ANPR SPEED ENFORCEMENT CAMERA	NO				
RED SIGNAL ENFORCEMENT CAMERA	NO				
PEDESTRIAN PUSH BUTTON REQUIRED	NO				
OBJECT HAZARD SIGN REQUIRED	YES				
PLASTIC REFLECTION TRAFFIC POLES REQUIRED (in Qty	NO				

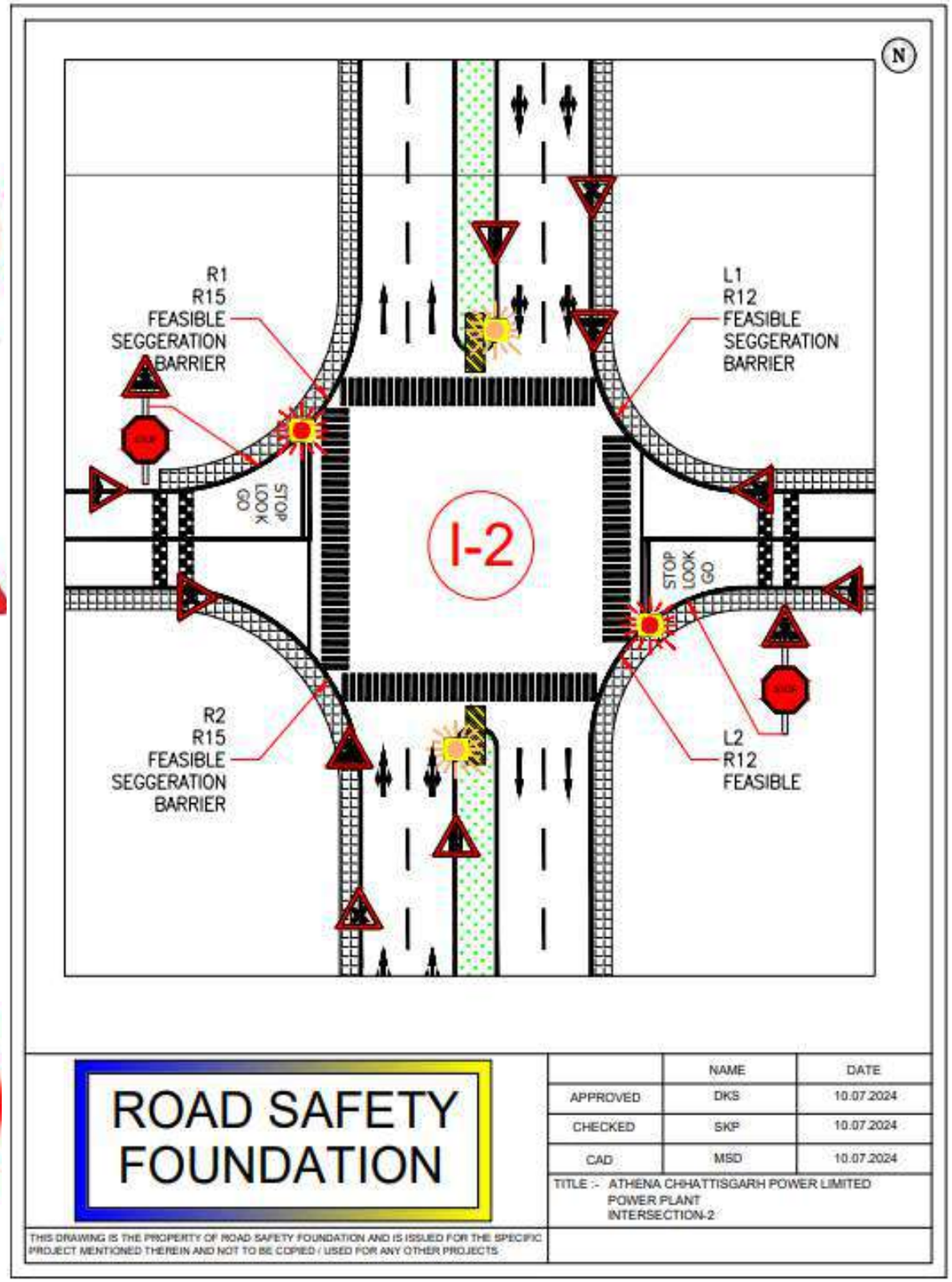
OBJERVATIONS

1. THERE IS A CROSS INTERSECTION WITH GAP IN MEDIEN AFTER POWER PLANT MAIN GATE .WHERE A RIGHT ROAD CONNECTS FROM CENTRAL STORE FROM LEFT AND A RIGHT ROAD CONNECTS FROM PROPOSED ADMIN BUIDING.
2. MISSING OR FADED SIGNS: INADEQUATE SIGNAGE CAN LEAD TO CONFUSION AND POOR DECISION-MAKING BY DRIVERS.
3. FADED OR NO PEDESTRAIN ZEBRA CROSSING , IT CREATES ROAD ACCIDENT HAZARDS TO PEDESTRIANS.
4. REAR END COLLISION- VEHICLE INFRONT OF YOU CAN APPLY SUDDEN BRAKE TO TURN TOWARDS LEFT OR RIGHT CAN CAUSE A REAR END COLLISION.
5. NO SPEED CONTROL DEVICES ARE INSTALLED ON SIDE CONNECTING ROAD. VEHICLES COMIMG LEFT CONNECTING ROAD CAN CAUSE A LEFT HAND SIDE COLLISION WITH VEHICLES COMING ON ROAD NO.1.

RECOMMENDATIONS

1. WE RECOMMEND TO PROVIDE WELL-MARKED CROSSWALKS(ZEBRA CROSSING) AND PEDESTRIAN CROSSING ROAD SIGN AS SHOWN IN CAD DRAWING.
2. IT IS RECOMMENDED TO INSTALL A SPEED BREAKER ON LEFT CONNECTING LANE BEFORE THE INTERSECTION AS SHOWN IN DWG.
3. WE ARE RECOMMENDING TO INSTALL 2 YELLOW BLINKERS/FLASHING LIGHTS AND 1 RED BLINKER/FLASHING LIGHT AT THE INTERSECTION AS SHOWN IN DRAWING.
4. OBJECT HAZARDS BOARD HAS RECOMMENDED ON BOTH CORNERS OF MEDIAN AS SHOWN IN DRAWING.
5. BARRICATED PEDESTRIAN WALKWAY ARE RECOMMENDED ON BOTH SIDES OF ROAD NO.1. BARRICATION SHOULD BE ONLY OPEN AT ZEBRA CROSSINGS. BARRICATION DESIGN & METERIAL SPECIFICATION IS ATTACHED (DWG IS ATTCHED IN REPORT ON PAGE NO. 16.).
6. WE RECOMMENDED TO TAKE SAFE FOLLOWING DISTANCE OF 10 METERS FROM VEHICLE INFRONT OF YOU.ALSO RECOMMENDED TO INSTALL A SIGN OF SAFE FOLLOWING DISTANCE OF 10 METER ON EVERY VEHICLE ENTER THE PLANT.

INTERSECTION NO.	02	INTERSECTION NAME	CROSS INTERSECTION ROAD NO.01 & ROAD NO.02	ROAD NO.	01



ROAD SAFETY FOUNDATION

	NAME	DATE
APPROVED	DKS	10.07.2024
CHECKED	SKP	10.07.2024
CAD	MSD	10.07.2024

TITLE :- ATHENA CHHATTISGARH POWER LIMITED
POWER PLANT
INTERSECTION-2

THIS DRAWING IS THE PROPERTY OF ROAD SAFETY FOUNDATION AND IS ISSUED FOR THE SPECIFIC PROJECT MENTIONED THEREIN AND NOT TO BE COPIED / USED FOR ANY OTHER PROJECTS

RISK ZONE	MEDIUM		SPEED LIMIT	20 KMPH		
ROAD PAVEMENT CONDITION	FAIR					
ROAD WIDTH IS AS PER IRC	YES	PROPOSED ROAD WIDTH				N/A
TURNING CURVATURE IN METER(AS PER IRC GUIDELINES)	NO	L1	L2	R1	R2	TOTAL PCC WORK IN SQM
		12	12	15	15	
PCC WORK TO BE DONE FOR ROAD CURVATURE		30.9	--	48.6	48.6	128.1
BLIND SPOT	NO	CONVEX MIRROR REQUIRED				NO
SPEED BREAKER REQUIRED	YES , AS SHOWN IN.					
PEDESRIAN /ZEBRA CROSSING	YES, AS SHOWN IN DWG					
SIGNAL REQUIRED	NO					
RIGHT OF SIGHT	OK					
FLASING SIGNAL -RED	YES-2	FLASING SIGNAL -YELLOW				YES.-2
ANPR SPEED ENFORCEMENT CAMERA	NO					
RED SIGNAL ENFORCEMENT CAMERA	NO					
PEDESTRIAN PUSH BUTTON REQUIRED	NO					
OBJECT HAZARD SIGN REQUIRED	YES					
PLASTIC REFLECTION TRAFFIC POLES REQUIRED (in Qty	NO					

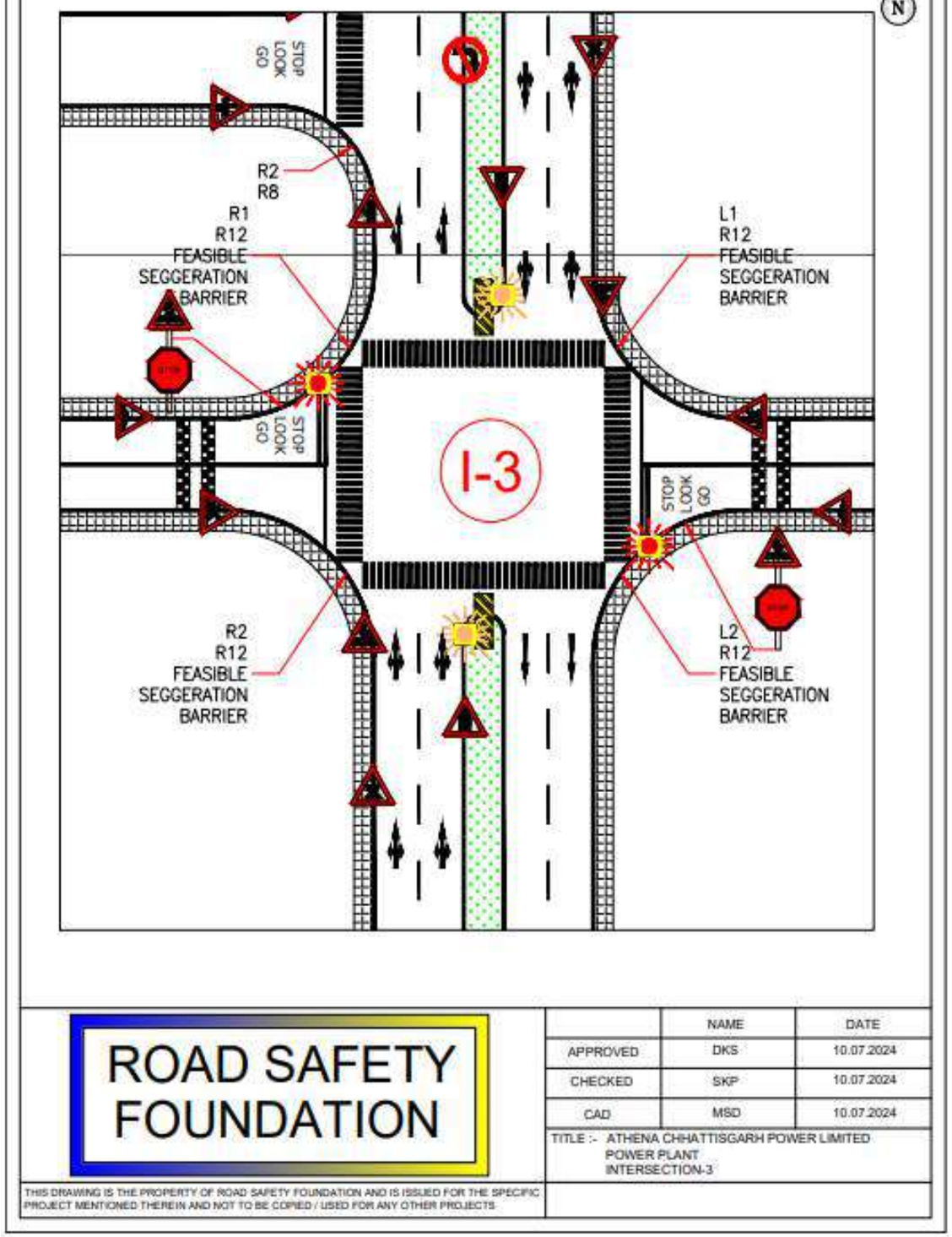
OBJERVATIONS

1. THERE IS A CROSS INTERSECTION WITH GAP IN MEDIEN ON ROAD NO.1 .WHERE A RIGHT ROAD NO.2 CONNECTS FROM OHS AND FIRE STATION AND A RIGHT ROAD CONNECTS FROM PROPOSED CENTRAL STORE.
2. AS TURNING CURVATURE IS NOT AS PER IRC GUIDELINES FOR TRUCK AND TRAILERS ON L1, L2, R1 & R2 CURVATURE. IF THERE IS NO PROPER TURNING CURVATURE TRUCKS OFTEN NEED TO TAKE WIDE TURNS, AND IF THE TURNING RADIUS IS TOO TIGHT, THE TRUCK MIGHT SWING INTO ADJACENT LANES, CAUSING COLLISIONS WITH OTHER VEHICLES.
3. OFF-ROAD COLLISIONS: IF THE TURNING CURVATURE DOES NOT ALLOW ENOUGH ROOM FOR THE TRUCK, IT MIGHT VEER OFF THE ROAD, POTENTIALLY HITTING WALKWAY OR GETTING STUCK IN OPEN DRAIN.
4. MISSING OR FADED SIGNS: INADEQUATE SIGNAGE CAN LEAD TO CONFUSION AND POOR DECISION-MAKING BY DRIVERS.
5. FADED OR NO PEDESTRAIN ZEBRA CROSSING , IT CREATES ROAD ACCIDENT HAZARDS TO PEDESTRIANS.
6. NO SPEED CONTROL DEVICES ARE INSTALLED ON SIDE CONNECTING ROAD. VEHICLES COMIMG FROM ROAD NO.2 CAN CAUSE A LEFT HAND SIDE COLLISION WITH VEHICLES COMING ON ROAD NO.1.

RECOMMENDATIONS

1. WE HAVE RECOMMENDED A TURNING RADIUS OF 15 METERS ON L1 & L2 OF THE LEFT JOINING ROAD AND TURNING RADIUS OF 15 METER AT R1 & R2 AS MENTIONED IN CAD DRAWING.
2. WE RECOMMENDED TO INSTALL SEGGERATION /CRASH BARRIERS AT L1, R1 AND R2 CURVATURES.
3. WE RECOMMEND TO PROVIDE WELL-MARKED CROSSWALKS(ZEBRA CROSSING) AND PEDESTRIAN CROSSING ROAD SIGN AS SHOWN IN CAD DRAWING.
4. IT IS RECOMMENDED TO INSTALL A SPEED BREAKER ON RIGHT CONNECTING LANE BEFORE THE INTERSECTION AS SHOWN IN DWG.
5. WE ARE RECOMMENDING TO INSTALL 2 YELLOW BLINKERS/FLASHING LIGHTS AND 2 RED BLINKER/FLASHING LIGHT AT THE INTERSECTION .
6. OBJECT HAZARDS BOARD HAS RECOMMENDED ON BOTH CORNERS OF MEDIAN AS SHOWN IN DRAWING.
7. BARRICATED PEDESTRIAN WALKWAY ARE RECOMMENDED ON BOTH SIDES OF ROAD NO.1. BARRICATION SHOULD BE ONLY OPEN AT ZEBRA CROSSINGS. BARRICATION DESIGN & METERIAL SPECIFICATION IS ATTACHED (DWG IS ATTCHED IN REPORT ON PAGE NO. 16.).

INTERSECTION NO.	03	INTERSECTION NAME	CROSS INTERSECTION ROAD NO.01 & ROAD NO.03	ROAD NO.	01



ROAD SAFETY FOUNDATION

	NAME	DATE
APPROVED	DKS	10.07.2024
CHECKED	SKP	10.07.2024
CAD	MSD	10.07.2024

TITLE :- ATHENA CHHATTISGARH POWER LIMITED
POWER PLANT
INTERSECTION-3

THIS DRAWING IS THE PROPERTY OF ROAD SAFETY FOUNDATION AND IS ISSUED FOR THE SPECIFIC PROJECT MENTIONED THEREIN AND NOT TO BE COPIED / USED FOR ANY OTHER PROJECTS

RISK ZONE	MEDIUM		SPEED LIMIT	20 KMPH	
ROAD PAVEMENT CONDITION	FAIR				
ROAD WIDTH IS AS PER IRC	YES	PROPOSED ROAD WIDTH			N/A
TURNING CURVATURE IN METER(AS PER IRC GUIDELINES)	NO	L1	L2	R1	R2	TOTAL PCC WORK IN SQM
		12	12	12	12	
PCC WORK TO BE DONE FOR ROAD CURVATURE		30.9	30.9	30.9	30.9	123.6
BLIND SPOT		NO	CONVEX MIRROR REQUIRED			NO
SPEED BREAKER REQUIRED		YES , AS SHOWN IN DWG- RD.				
PEDESRIAN /ZEBRA CROSSING		YES, AS SHOWN IN DWG				
SIGNAL REQUIRED		NO				
RIGHT OF SIGHT		OK				
FLASING SIGNAL -RED		YES-2	FLASING SIGNAL -YELLOW			YES.-2
ANPR SPEED ENFORCEMENT CAMERA		NO				
RED SIGNAL ENFORCEMENT CAMERA		NO				
PEDESTRIAN PUSH BUTTON REQUIRED		NO				
OBJECT HAZARD SIGN REQUIRED		YES				
PLASTIC REFLECTION TRAFFIC POLES REQUIRED (in Qty					NO	

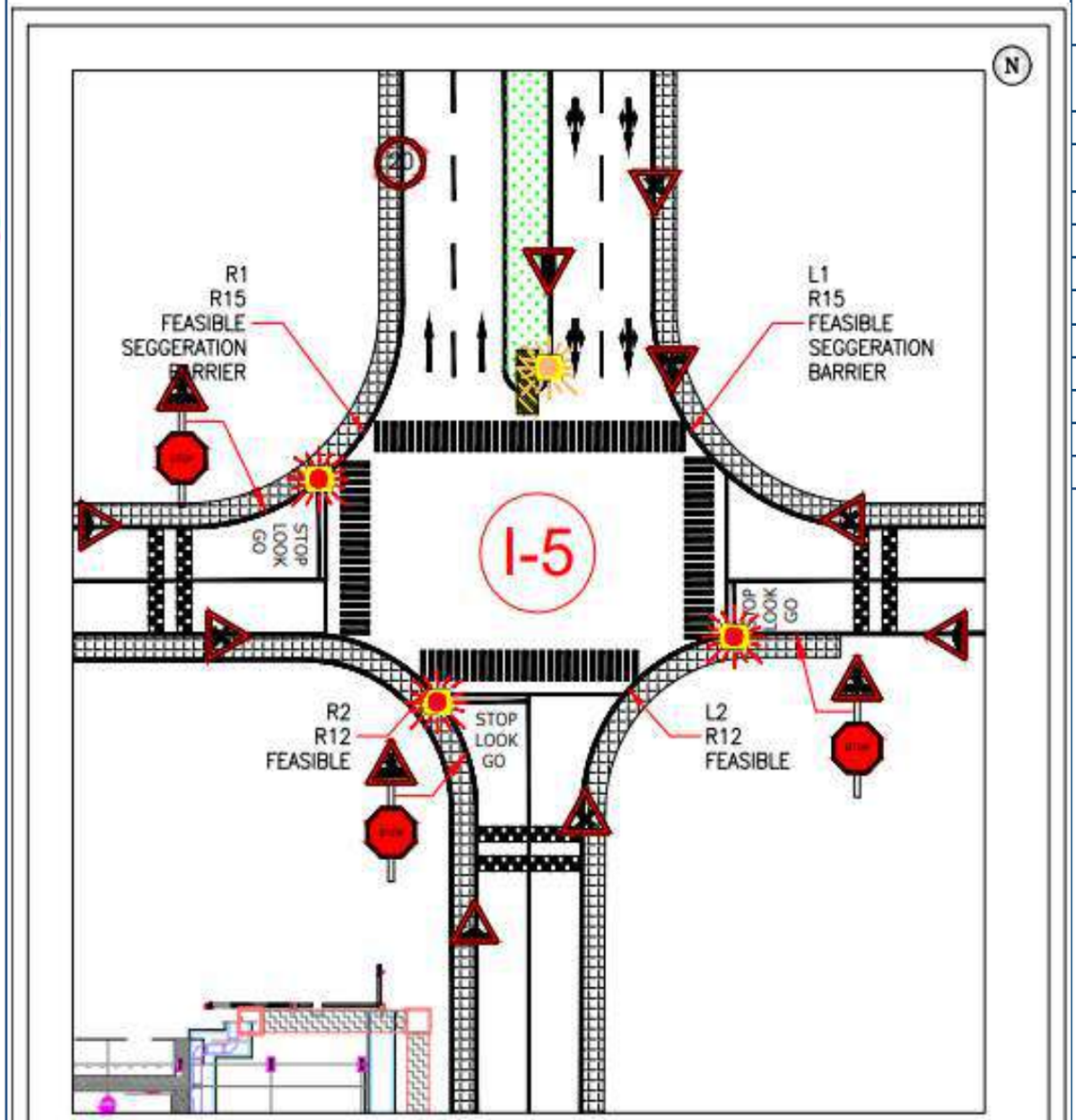
OBJERVATIONS

1. THERE IS A CROSS INTERSECTION WITH GAP IN MEDIEN ON ROAD NO.1 .WHERE A RIGHT & A LEFT CONNECTS FROM ROAD NO.3.
2. AS TURNING CURVATURE IS NOT AS PER IRC GUIDELINES FOR TRUCK AND TRAILERS ON L1, L2, R1 & R2 CURVATURE. IF THERE IS NO PROPER TURNING CURVATURE TRUCKS OFTEN NEED TO TAKE WIDE TURNS, AND IF THE TURNING RADIUS IS TOO TIGHT, THE TRUCK MIGHT SWING INTO ADJACENT LANES, CAUSING COLLISIONS WITH OTHER VEHICLES.
3. OFF-ROAD COLLISIONS: IF THE TURNING CURVATURE DOES NOT ALLOW ENOUGH ROOM FOR THE TRUCK, IT MIGHT VEER OFF THE ROAD, POTENTIALLY HITTING WALKWAY OR GETTING STUCK IN OPEN DRAIN.
4. MISSING OR FADED SIGNS: INADEQUATE SIGNAGE CAN LEAD TO CONFUSION AND POOR DECISION-MAKING BY DRIVERS.
5. FADED OR NO PEDESTRAIN ZEBRA CROSSING , IT CREATES ROAD ACCIDENT HAZARDS TO PEDESTRIANS.
6. NO SPEED CONTROL DEVICES ARE INSTALLED ON SIDE CONNECTING ROAD. VEHICLES COMIMG FROM ROAD NO.2 CAN CAUSE A LEFT HAND SIDE COLLISION WITH VEHICLES COMING ON ROAD NO.1.

RECOMMENDATIONS

1. WE HAVE RECOMMENDED A TURNING RADIUS OF 12 METERS ON L1 ,L2 R1 & R2 CURVATURES AS MENTIONED IN CAD DRAWING.
2. WE RECOMMENDED TO INSTALL SEGGERATION /CRASH BARRIERS AT L1,L2, R1 AND R2 CURVATURES.
3. WE RECOMMEND TO PROVIDE WELL-MARKED CROSSWALKS(ZEBRA CROSSING) AND PEDESTRIAN CROSSING ROAD SIGN AS SHOWN IN CAD DRAWING.
4. IT IS RECOMMENDED TO INSTALL A SPEED BREAKER ON RIGHT CONNECTING LANE BEFORE THE INTERSECTION AS SHOWN IN DWG.
5. WE ARE RECOMMENDING TO INSTALL 2 YELLOW BLINKERS/FLASHING LIGHTS AND 2 RED BLINKER/FLASHING LIGHT AT THE INTERSECTION .
6. OBJECT HAZARDS BOARD HAS RECOMMENDED ON BOTH CORNERS OF MEDIAN AS SHOWN IN DRAWING.
7. BARRICATED PEDESTRIAN WALKWAY ARE RECOMMENDED ON BOTH SIDES OF ROAD

INTERSECTION NO.	05	INTERSECTION NAME	CROSS INTERSECTION ROAD NO.01 & ROAD NO.04	ROAD NO.	01



ROAD SAFETY FOUNDATION

	NAME	DATE
APPROVED	DKS	10.07.2024
CHECKED	SKP	10.07.2024
CAD	MSD	10.07.2024

TITLE :- ATHENA CHHATTISGARH POWER LIMITED
POWER PLANT
INTERSECTION-5

THIS DRAWING IS THE PROPERTY OF ROAD SAFETY FOUNDATION AND IS ISSUED FOR THE SPECIFIC PROJECT MENTIONED THEREIN AND NOT TO BE COPIED / USED FOR ANY OTHER PROJECTS

RISK ZONE	MEDIUM	SPEED LIMIT	20 KMPH		
ROAD PAVEMENT CONDITION	FAIR				
ROAD WIDTH IS AS PER IRC	YES	PROPOSED ROAD WIDTH			N/A
TURNING CURVATURE IN METER(AS PER IRC GUIDELINES)	NO	L1	L2	R1	R2	TOTAL PCC WORK IN SQM
		15	12	15	12	
PCC WORK TO BE DONE FOR ROAD CURVATURE		48.6	30.9	48.6	30.9	159
BLIND SPOT	NO	CONVEX MIRROR REQUIRED				NO
SPEED BREAKER REQUIRED	YES , AS SHOWN IN DWG					
PEDESRIAN /ZEBRA CROSSING	YES, AS SHOWN IN DWG					
SIGNAL REQUIRED	NO					
RIGHT OF SIGHT	OK					
FLASING SIGNAL -RED	YES-1	FLASING SIGNAL -YELLOW				YES.-2
ANPR SPEED ENFORCEMENT CAMERA	NO					
RED SIGNAL ENFORCEMENT CAMERA	NO					
PEDESTRIAN PUSH BUTTON REQUIRED	NO					
OBJECT HAZARD SIGN REQUIRED	YES					
PLASTIC REFLECTION TRAFFIC POLES REQUIRED (in Qty	NO					

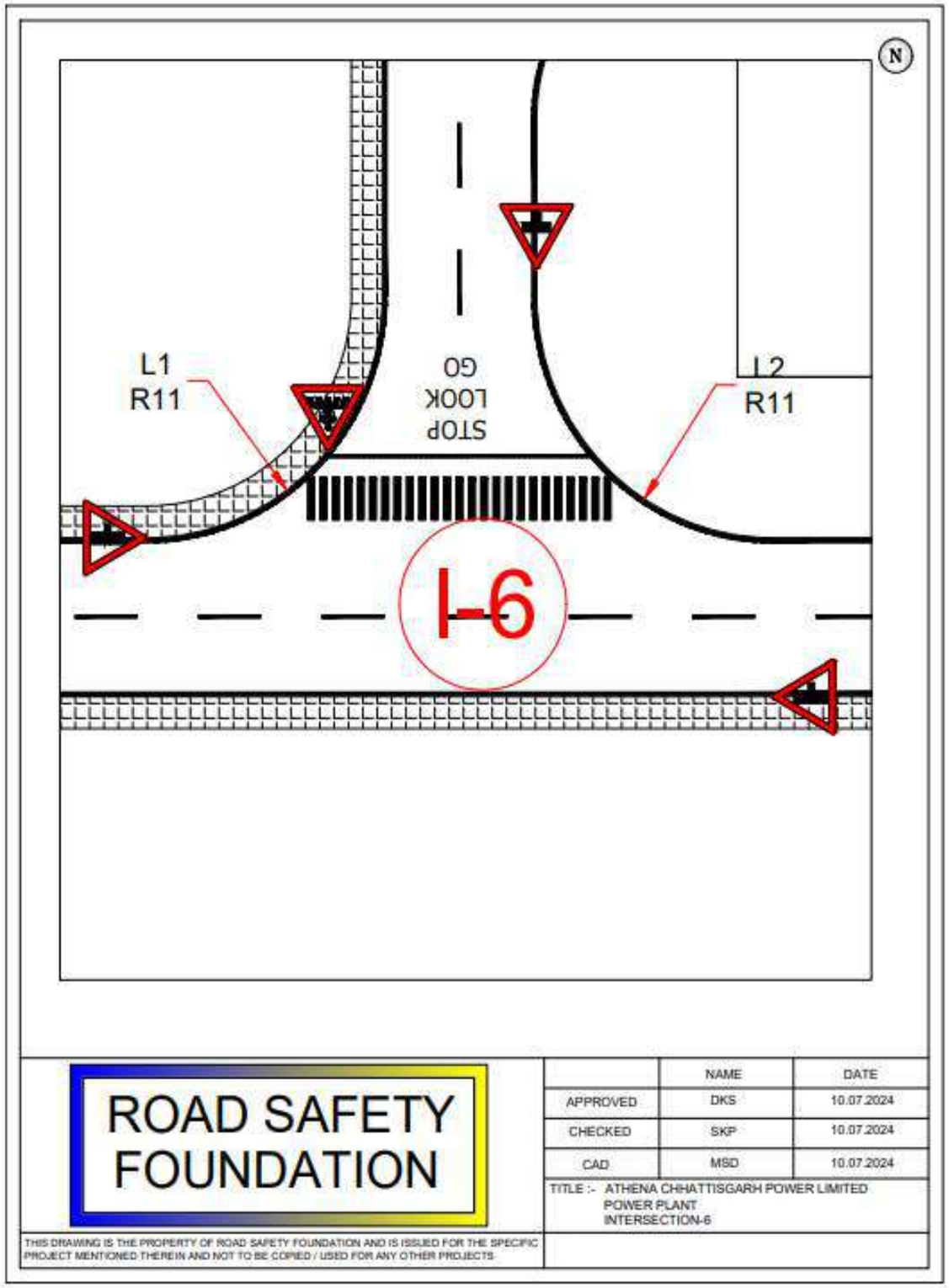
OBJERVATIONS

1. THERE IS A CROSS INTERSECTION WITH GAP IN MEDIEN ON ROAD NO.1 .WHERE A RIGHT CONNECTS FROM ROAD NO.4.
2. AS TURNING CURVATURE IS NOT AS PER IRC GUIDELINES FOR TRUCK AND TRAILERS ON L1, L2, R1 & R2 CURVATURE. IF THERE IS NO PROPER TURNING CURVATURE TRUCKS OFTEN NEED TO TAKE WIDE TURNS, AND IF THE TURNING RADIUS IS TOO TIGHT, THE TRUCK MIGHT SWING INTO ADJACENT LANES, CAUSING COLLISIONS WITH OTHER VEHICLES.
3. OFF-ROAD COLLISIONS: IF THE TURNING CURVATURE DOES NOT ALLOW ENOUGH ROOM FOR THE TRUCK, IT MIGHT VEER OFF THE ROAD, POTENTIALLY HITTING WALKWAY OR GETTING STUCK IN OPEN DRAIN.
4. MISSING OR FADED SIGNS: INADEQUATE SIGNAGE CAN LEAD TO CONFUSION AND POOR DECISION-MAKING BY DRIVERS.
5. FADED OR NO PEDESTRAIN ZEBRA CROSSING , IT CREATES ROAD ACCIDENT HAZARDS TO PEDESTRIANS.
6. NO SPEED CONTROL DEVICES ARE INSTALLED ON SIDE CONNECTING ROAD. VEHICLES COMIMG FROM ROAD NO.2 CAN CAUSE A LEFT HAND SIDE COLLISION WITH VEHICLES COMING ON ROAD NO.1.

RECOMMENDATIONS

1. WE HAVE RECOMMENDED A TURNING RADIUS OF 12 METERS ON L1 & R1 CURVATURES AND 12M TURNING RADIUS AT L2 & R2 AS MENTIONED IN CAD DRAWING.
2. WE RECOMMENDED TO INSTALL SEGGERATION /CRASH BARRIERS AT L1 AND R1 CURVATURES.
3. WE RECOMMEND TO PROVIDE WELL-MARKED CROSSWALKS(ZEBRA CROSSING) AND PEDESTRIAN CROSSING ROAD SIGN AS SHOWN IN CAD DRAWING.
4. IT IS RECOMMENDED TO INSTALL A SPEED BREAKER ON RIGHT CONNECTING LANE BEFORE THE INTERSECTION AS SHOWN IN DWG.
5. WE ARE RECOMMENDING TO INSTALL 2 YELLOW BLINKERS/FLASHING LIGHTS AND 2 RED BLINKER/FLASHING LIGHT AT THE INTERSECTION .
6. OBJECT HAZARDS BOARD HAS RECOMMENDED ON BOTH CORNERS OF MEDIAN AS SHOWN IN DRAWING.
7. BARRICATED PEDESTRIAN WALKWAY ARE RECOMMENDED ON BOTH SIDES OF ROAD NO.1. BARRICATION SHOULD BE ONLY OPEN AT ZEBRA CROSSINGS. BARRICATION

INTERSECTION NO.	06	INTERSECTION NAME	LEFT HAND SITE INTERSECTION ROAD NO.02	ROAD NO.	02



RISK ZONE	MEDIUM		SPEED LIMIT	20 KMPH	
ROAD PAVEMENT CONDITION	FAIR				
ROAD WIDTH IS AS PER IRC	YES	PROPOSED ROAD WIDTH			N/A
TURNING CURVATURE IN METER(AS PER IRC GUIDELINES)	NO	L1	L2	R1	R2
		11	11	--	--
PCC WORK TO BE DONE FOR ROAD CURVATURE		28.1	28.1	--	--
BLIND SPOT		NO	CONVEX MIRROR REQUIRED		NO
SPEED BREAKER REQUIRED		YES , AS SHOWN IN DWG-17 ON JINDAL SCHOOL RD.			
PEDESRIAN /ZEBRA CROSSING		YES, AS SHOWN IN DWG			
SIGNAL REQUIRED		NO			
RIGHT OF SIGHT		OK			
FLASING SIGNAL -RED		YES-1	FLASING SIGNAL -YELLOW		YES.-2
ANPR SPEED ENFORCEMENT CAMERA		NO			
RED SIGNAL ENFORCEMENT CAMERA		NO			
PEDESTRIAN PUSH BUTTON REQUIRED		NO			
OBJECT HAZARD SIGN REQUIRED		YES			
PLASTIC REFLECTION TRAFFIC POLES REQUIRED (in Qty					NO

OBJERVATIONS

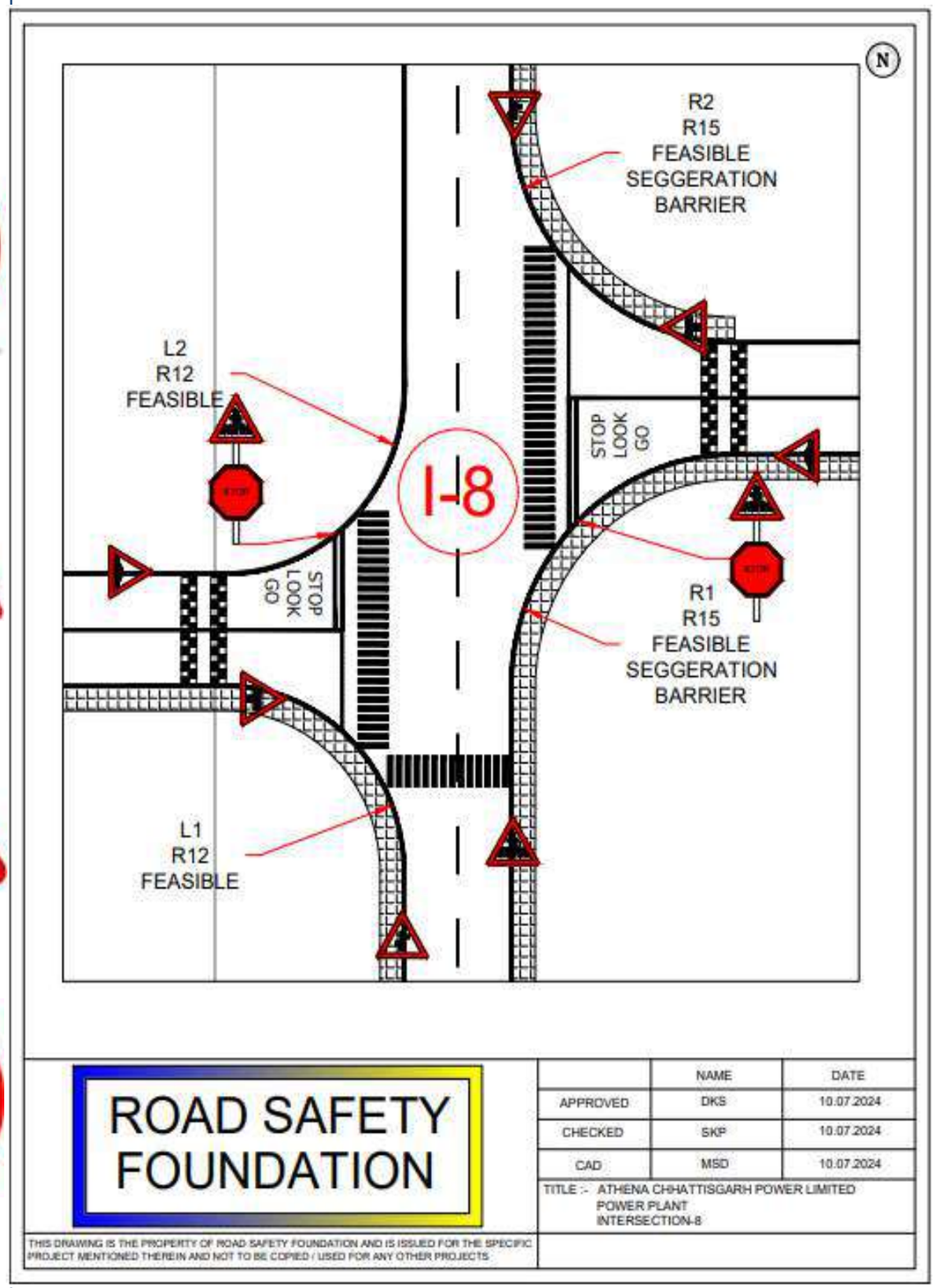
1. THERE IS A LEFT HAND SIDE INTERSECTION WITH GAP IN MEDIEN .WHERE A LEFT ROAD CONNECTS FROM CENTRAL STORE TO ROAD NO.2.
2. ROAD PAVEMENT CONDION: ROAD PAVEMENT CONDITION IS NOT GOOD. ROAD SURFACE IS NOT AS "GRIPPY", ALSO RAW MATERIAL SPILLAGE FROM VEHICLE, AND OTHER POLLUTANTS. IF A VEHICLE IS MAKING A LEFT TURN AT THE INTERSECTION OR SUDDENLY STOPS OR SLOWS DOWN, THERE IS A RISK OF BEING REAR-ENDED BY A VEHICLE TRAVELING BEHIND, OR VEHICLES CAN SLIP AND DRIVERS CAN LOSE THE CONTROL ON THEIR VEHICLE, HE CAN CAUSE HEAD ON COLLISION.
3. AS TURNING CURVATURE IS NOT AS PER IRC GUIDELINES FOR TRUCK AND TRAILERS ON L1 & L2, CURVATURE. IF THERE IS NO PROPER TURNING CURVATURE TRUCKS OFTEN NEED TO TAKE WIDE TURNS, AND IF THE TURNING RADIUS IS TOO TIGHT, THE TRUCK MIGHT SWING INTO ADJACENT LANES, CAUSING COLLISIONS WITH OTHER VEHICLES.
4. MISS LEADING DRIVE LANES: ROAD ARE DIVIDED IN THREE LANES AND THERE ARE NO PROPER SIGNAGES OR INFORMATION BOARD TO IDENTITY OF LANE. IT CREATE CONFUSION, CAN LEAD FOR A ROAD ACCIDENT.
5. MISSING OR FADED SIGNS: INADEQUATE SIGNAGE CAN LEAD TO CONFUSION AND POOR DECISION-MAKING BY DRIVERS.
6. FADED OR NO PEDESTRAIN ZEBRA CROSSING , IT CREATES ROAD ACCIDENT HAZARDS TO PEDESTRIANS.

RECOMMENDATIONS

1. WE RECOMMENDED TO BUILT NEW BITUMIN ROAD AT ROAD NO.2 AND CENTRAL STORE ROAD.
2. WE RECOMMEND TO PROVIDE WELL-MARKED CROSSWALKS(ZEBRA CROSSING) AND PEDESTRIAN CROSSING ROAD SIGN AS SHOWN IN CAD DRAWING.
3. BARRICATED PEDESTRIAN WALKWAY ARE RECOMMENDED ON BOTH SIDES OF ROAD NO.4 TILL INTERSECTION NO.6 AND AFTER INTERSECTION WALKWAY SHOULD CONTINUE IN RIGHT AS SHOWN IN DRAWING .BARRICATION DESIGN & METERIAL SPECIFICATION IS ATTACHED (DWG IS ATTCHED IN REPORT ON PAGE NO. 16.).
4. WE RECOMMENDED TO BUILT A NEW TOWNSHIP GATE THAT SHOULD CONNECT TO TOWNSHIP FROM ROAD NO.6. TOWNSHIP EMPLOEES AND LABOR SHOULD USE TOWNSHIP GATE TO AVOID HIWAY HAZARDS.

INTERSECTION NO.	08	INTERSECTION NAME	STAGGERED INTERSECTION ROAD NO.05 & ROAD NO.02	ROAD NO.	05

60



ROAD SAFETY FOUNDATION

	NAME	DATE
APPROVED	DKS	10.07.2024
CHECKED	SKP	10.07.2024
CAD	MSD	10.07.2024

TITLE :- ATHENA CHHATTISGARH POWER LIMITED
POWER PLANT
INTERSECTION-8

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RISK ZONE	MEDIUM		SPEED LIMIT	20 KMPH	
ROAD PAVEMENT CONDITION	FAIR				
ROAD WIDTH IS AS PER IRC	YES	PROPOSED ROAD WIDTH			N/A
TURNING CURVATURE IN METER(AS PER IRC GUIDELINES)	NO	L1	L2	R1	R2
		12	12	15	15
PCC WORK TO BE DONE FOR ROAD CURVATURE		30.9	30.9	48.6	48.6
BLIND SPOT	NO	CONVEX MIRROR REQUIRED			NO
SPEED BREAKER REQUIRED	YES , AS SHOWN IN DWG-17 ON JINDAL SCHOOL RD.				
PEDESRIAN /ZEBRA CROSSING	YES, AS SHOWN IN DWG				
SIGNAL REQUIRED	NO				
RIGHT OF SIGHT	OK				
FLASING SIGNAL -RED	YES-1	FLASING SIGNAL -YELLOW			YES.-2
ANPR SPEED ENFORCEMENT CAMERA	NO				
RED SIGNAL ENFORCEMENT CAMERA	NO				
PEDESTRIAN PUSH BUTTON REQUIRED	NO				
OBJECT HAZARD SIGN REQUIRED	YES				
PLASTIC REFLECTION TRAFFIC POLES REQUIRED (in Qty	NO				

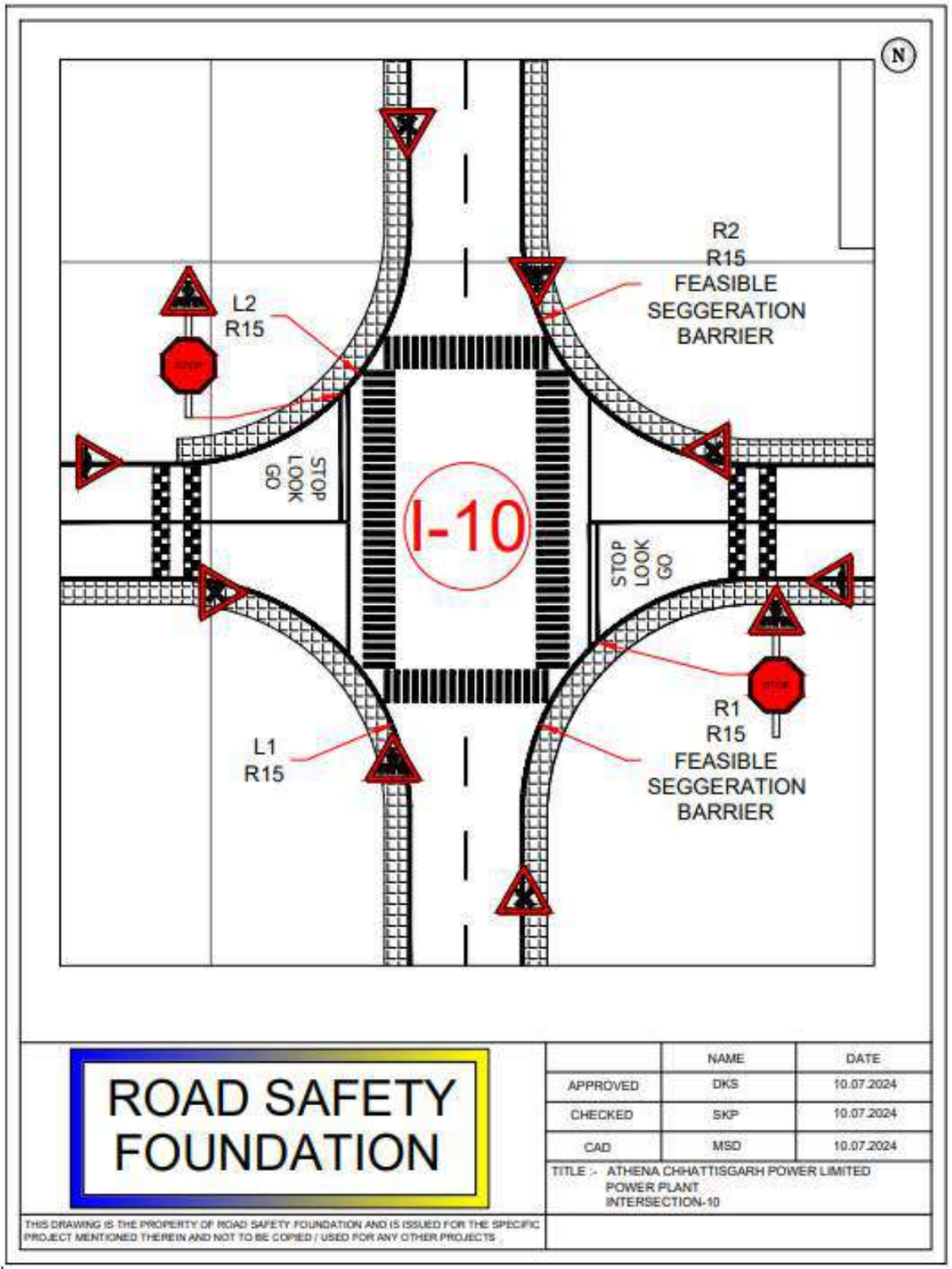
OBJERVATIONS

1. THERE IS A STAGGERED INTERSECTION BETWEEN ROAD NO.5 & ROAD NO .02
2. ROAD PAVEMENT CONDION: ROAD PAVEMENT CONDITION IS NOT GOOD. ROAD SURFACE IS NOT AS "GRIPPY", ALSO RAW MATERIAL SPILLAGE FROM VEHICLE, AND OTHER POLLUTANTS. IF A VEHICLE IS MAKING A LEFT TURN AT THE INTERSECTION OR SUDDENLY STOPS OR SLOWS DOWN, THERE IS A RISK OF BEING REAR-ENDED BY A VEHICLE TRAVELING BEHIND, OR VEHICLES CAN SLIP AND DRIVERS CAN LOSE THE CONTROL ON THEIR VEHICLE, HE CAN CAUSE HEAD ON COLLISION.
3. MISS LEADING DRIVE LANES: ROAD ARE DIVIDED IN THREE LANES AND THERE ARE NO PROPER SIGNAGES OR INFORMATION BOARD TO IDENTITY OF LANE. IT CREATE CONFUSION, CAN LEAD FOR A ROAD ACCIDENT.
4. MISSING OR FADED SIGNS: INADEQUATE SIGNAGE CAN LEAD TO CONFUSION AND POOR DECISION-MAKING BY DRIVERS.
5. FADED OR NO PEDESTRAIN ZEBRA CROSSING , IT CREATES ROAD ACCIDENT HAZARDS TO PEDESTRIANS.
6. NO SPEED CONTROL DEVICES ARE INSTALLED ON SIDE CONNECTING ROAD. VEHICLES COMIMG FROM JINDAL SCHOOL ROAD CAN CAUSE A LEFT HAND SIDE COLLISION WITH VEHICLES COMING ON ROAD NO.1A.

RECOMMENDATIONS

1. WE RECOMMEND TO PROVIDE WELL-MARKED CROSSWALKS(ZEBRA CROSSING) AND PEDESTRIAN CROSSING ROAD SIGN AS SHOWN IN CAD DRAWING.
2. WE RECOMMENDED TO BUILT NEW BITUMIN ROAD AT ROAD NO.2 , ROAD NO.5 AND GATE NO.5 CONNECTING ROAD.
3. IT IS RECOMMENDED TO INSTALL A SPEED BREAKER ON RIGHT CONNECTING LANE BEFORE THE INTERSECTION AS SHOWN IN DWG.
4. BARRICATED PEDESTRIAN WALKWAY ARE RECOMMENDED BOTH SIDE OF ROAD NO.05 TILL THIS INTERSECTION, LEFT SIDE ON GATE NO.5 ROAD AND RIGHT SIDE ON ROAD NO.2 BARRICATION DESIGN & METERIAL SPECIFICATION IS ATTACHED (DWG IS ATTCHED IN REPORT ON PAGE NO. 16.).
5. WE RECOMMENDED TO INSTALL SPEED BREAKERS ON SIDE CONNECTING ROAD.
6. WE RECOMMENDED TO INSTALL SEGGERATION /CRASH BARRIERS AT R1 & R2 CURVATURES.

INTERSECTION NO.	10	INTERSECTION NAME	CROSS INTERSECTION ROAD NO.05 & ROAD NO.03	ROAD NO.	05



ROAD SAFETY FOUNDATION

	NAME	DATE
APPROVED	DKS	10.07.2024
CHECKED	SKP	10.07.2024
CAD	MSD	10.07.2024

TITLE :- ATHENA CHHATTISGARH POWER LIMITED
POWER PLANT
INTERSECTION-10

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RISK ZONE	MEDIUM		SPEED LIMIT	20 KMPH	
ROAD PAVEMENT CONDITION	FAIR				
ROAD WIDTH IS AS PER IRC	YES	PROPOSED ROAD WIDTH			N/A
TURNING CURVATURE IN METER(AS PER IRC GUIDELINES)	NO	L1	L2	R1	R2	TOTAL PCC WORK IN SQM
		15	15	15	15	
PCC WORK TO BE DONE FOR ROAD CURVATURE		48.6	48.6	48.6	48.6	194.4
BLIND SPOT	NO	CONVEX MIRROR REQUIRED			NO	
SPEED BREAKER REQUIRED	YES , AS SHOWN IN DWG-17 ON JINDAL SCHOOL RD.					
PEDESRIAN /ZEBRA CROSSING	YES, AS SHOWN IN DWG					
SIGNAL REQUIRED	NO					
RIGHT OF SIGHT	OK					
FLASING SIGNAL -RED	YES-1	FLASING SIGNAL -YELLOW			YES.-2	
ANPR SPEED ENFORCEMENT CAMERA	NO					
RED SIGNAL ENFORCEMENT CAMERA	NO					
PEDESTRIAN PUSH BUTTON REQUIRED	NO					
OBJECT HAZARD SIGN REQUIRED	YES					
PLASTIC REFLECTION TRAFFIC POLES REQUIRED (in Qty	NO					

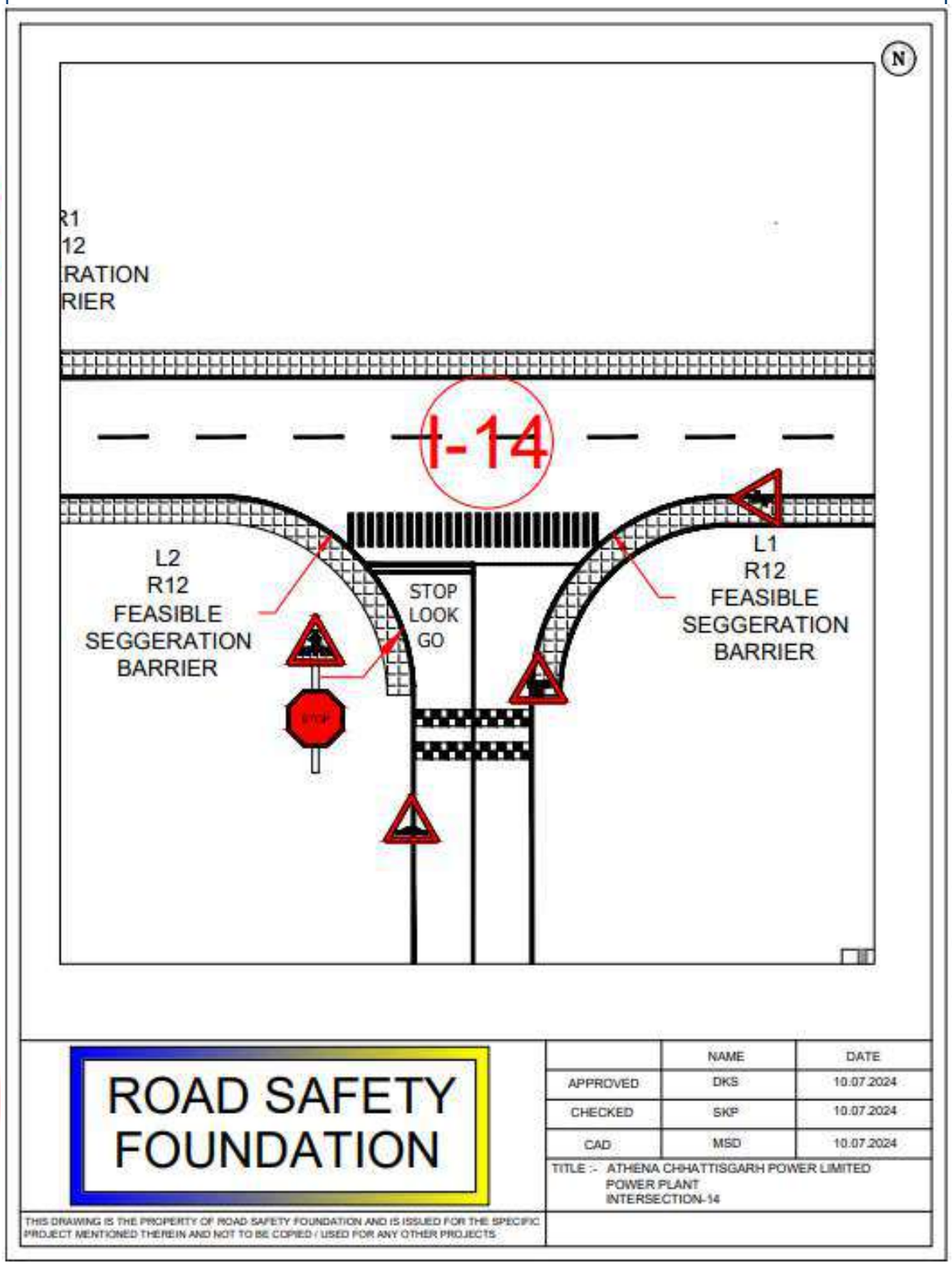
OBJERVATIONS

1. THERE IS A CROSS INTERSECTION WITH NO GAP IN MEDIEN BETWEEN ROAD NO.5 AND ROAD NO.3 .
2. AS TURNING CURVATURE IS NOT AS PER IRC GUIDELINES FOR TRUCK AND TRAILERS ON L1, L2, R1 & R2 CURVATURE. IF THERE IS NO PROPER TURNING CURVATURE TRUCKS OFTEN NEED TO TAKE WIDE TURNS, AND IF THE TURNING RADIUS IS TOO TIGHT, THE TRUCK MIGHT SWING INTO ADJACENT LANES, CAUSING COLLISIONS WITH OTHER VEHICLES.
3. OFF-ROAD COLLISIONS: IF THE TURNING CURVATURE DOES NOT ALLOW ENOUGH ROOM FOR THE TRUCK, IT MIGHT VEER OFF THE ROAD, POTENTIALLY HITTING WALKWAY OR GETTING STUCK IN OPEN DRAIN.
4. MISSING OR FADED SIGNS: INADEQUATE SIGNAGE CAN LEAD TO CONFUSION AND POOR DECISION-MAKING BY DRIVERS.
5. FADED OR NO PEDESTRAIN ZEBRA CROSSING , IT CREATES ROAD ACCIDENT HAZARDS TO PEDESTRIANS.
6. NO SPEED CONTROL DEVICES ARE INSTALLED ON SIDE CONNECTING ROAD. VEHICLES COMIMG FROM ROAD NO.2 CAN CAUSE A LEFT HAND SIDE COLLISION WITH VEHICLES COMING ON ROAD NO.1.

RECOMMENDATIONS

1. WE HAVE RECOMMENDED A TURNING RADIUS OF 15 METERS ON L1, L2, R1 & R2 CURVATURES AS MENTIONED IN CAD DRAWING.
2. WE RECOMMENDED TO INSTALL SEGGERATION /CRASH BARRIERS AT R1 AND R2 CURVATURES.
3. WE RECOMMEND TO PROVIDE WELL-MARKED CROSSWALKS(ZEBRA CROSSING) AND PEDESTRIAN CROSSING ROAD SIGN AS SHOWN IN CAD DRAWING.
4. IT IS RECOMMENDED TO INSTALL A SPEED BREAKER ON RIGHT CONNECTING LANE BEFORE THE INTERSECTION AS SHOWN IN DWG.
5. LIGHTS AND 2 RED BLINKER/FLASHING LIGHT AT THE INTERSECTION .
6. BARRICATED PEDESTRIAN WALKWAY ARE RECOMMENDED ON BOTH SIDES OF ROAD NO.5. BARRICATION SHOULD BE ONLY OPEN AT ZEBRA CROSSINGS. BARRICATION DESIGN & METERIAL SPECIFICATION IS ATTACHED (DWG IS ATTCHED IN REPORT ON PAGE NO. 16.).

INTERSECTION NO.	14	INTERSECTION NAME	LEFT HAND SITE INTERSECTION ROAD NO.04 & ROAD NO.06	ROAD NO.	04



RISK ZONE	MEDIUM		SPEED LIMIT	20 KMPH	
ROAD PAVEMENT CONDITION	FAIR				
ROAD WIDTH IS AS PER IRC	YES	PROPOSED ROAD WIDTH			N/A
TURNING CURVATURE IN METER(AS PER IRC GUIDELINES)	NO	L1	L2	R1	R2	TOTAL PCC WORK IN SQM
		12	12	--	--	
PCC WORK TO BE DONE FOR ROAD CURVATURE		30.9	30.9	--	--	61.8
BLIND SPOT	NO	CONVEX MIRROR REQUIRED			NO
SPEED BREAKER REQUIRED	YES , AS SHOWN IN DWG-17 ON JINDAL SCHOOL RD.				
PEDESRIAN /ZEBRA CROSSING	YES, AS SHOWN IN DWG				
SIGNAL REQUIRED	NO				
RIGHT OF SIGHT	OK				
FLASING SIGNAL -RED	YES-1	FLASING SIGNAL -YELLOW			YES.-2
ANPR SPEED ENFORCEMENT CAMERA	NO				
RED SIGNAL ENFORCEMENT CAMERA	NO				
PEDESTRIAN PUSH BUTTON REQUIRED	NO				
OBJECT HAZARD SIGN REQUIRED	YES				
PLASTIC REFLECTION TRAFFIC POLES REQUIRED (in Qty	NO				

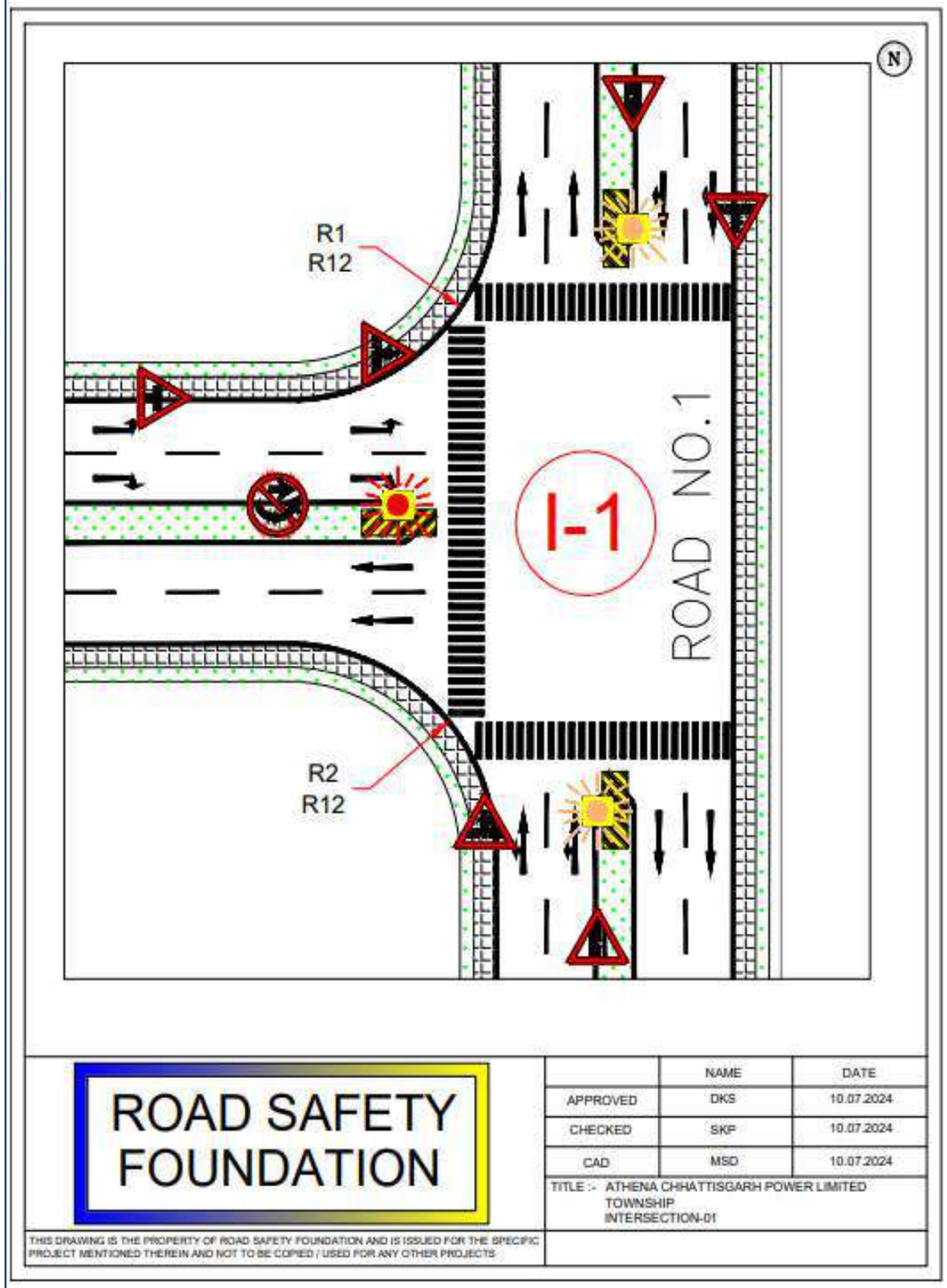
OBJERVATIONS

1. THERE IS A LEFT HAND SIDE INTERSECTION WITH GAP IN MEDIEN .WHERE A LEFT ROAD CONNECTS FROM ROAD NO.6 TO ROAD NO.4.
2. ROAD PAVEMENT CONDION: ROAD PAVEMENT CONDITION IS NOT GOOD. ROAD SURFACE IS NOT AS "GRIPPY", ALSO RAW MATERIAL SPILLAGE FROM VEHICLE, AND OTHER POLLUTANTS. IF A VEHICLE IS MAKING A LEFT TURN AT THE INTERSECTION OR SUDDENLY STOPS OR SLOWS DOWN, THERE IS A RISK OF BEING REAR-ENDED BY A VEHICLE TRAVELING BEHIND, OR VEHICLES CAN SLIP AND DRIVERS CAN LOSE THE CONTROL ON THEIR VEHICLE, HE CAN CAUSE HEAD ON COLLISION.
3. THERE IS NO PEDESTRIAN WALKWAY/FOOTPATH IS GIVEN ON ROAD NO.4.
4. MISS LEADING DRIVE LANES: ROAD ARE DIVIDED IN THREE LANES AND THERE ARE NO PROPER SIGNAGES OR INFORMATION BOARD TO IDENTITY OF LANE. IT CREATE CONFUSION, CAN LEAD FOR A ROAD ACCIDENT.
5. MISSING OR FADED SIGNS: INADEQUATE SIGNAGE CAN LEAD TO CONFUSION AND POOR DECISION-MAKING BY DRIVERS.
6. FADED OR NO PEDESTRAIN ZEBRA CROSSING , IT CREATES ROAD ACCIDENT HAZARDS TO PEDESTRIANS.
7. NO SPEED CONTROL DEVICES ARE INSTALLED ON SIDE CONNECTING ROAD. VEHICLES COMIMG FROM ROAD NO.6, CAN CAUSE A LEFT HAND SIDE COLLISION WITH VEHICLES COMING ON ROAD NO.4.

RECOMMENDATIONS

1. WE RECOMMEND TO PROVIDE WELL-MARKED CROSSWALKS(ZEBRA CROSSING) AND PEDESTRIAN CROSSING ROAD SIGN AS SHOWN IN CAD DRAWING.
2. OBJECT HAZARDS BOARD HAS RECOMMENDED ON BOTH CORNERS OF MEDIAN AS SHOWN IN DRAWING.
3. BARRICATED PEDESTRIAN WALKWAY ARE RECOMMENDED ON BOTH SIDES OF ROAD NO.4 AS SHOWN IN DRAWING .BARRICATION DESIGN & METERIAL SPECIFICATION IS ATTACHED (DWG IS ATTCHED IN REPORT ON PAGE NO. 16.).

INTERSECTION NO.	01	INTERSECTION NAME	RIGHT HAND SITE INTERSECTION ROAD NO.01	ROAD NO.	01



RISK ZONE	MEDIUM		SPEED LIMIT	20 KMPH	
ROAD PAVEMENT CONDITION	FAIR				
ROAD WIDTH IS AS PER IRC	YES	PROPOSED ROAD WIDTH			N/A
TURNING CURVATURE IN METER(AS PER IRC GUIDELINES)	NO	L1	L2	R1	R2
		--	--	12	12
PCC WORK TO BE DONE FOR ROAD CURVATURE		--	--	30.9	30.9
BLIND SPOT	NO	CONVEX MIRROR REQUIRED			NO
SPEED BREAKER REQUIRED	YES , AS SHOWN IN DWG-17 ON JINDAL SCHOOL RD.				
PEDESRIAN /ZEBRA CROSSING	YES, AS SHOWN IN DWG				
SIGNAL REQUIRED	NO				
RIGHT OF SIGHT	OK				
FLASING SIGNAL -RED	YES-1	FLASING SIGNAL -YELLOW			YES.-2
ANPR SPEED ENFORCEMENT CAMERA	NO				
RED SIGNAL ENFORCEMENT CAMERA	NO				
PEDESTRIAN PUSH BUTTON REQUIRED	NO				
OBJECT HAZARD SIGN REQUIRED	YES				
PLASTIC REFLECTION TRAFFIC POLES REQUIRED (in Qty	NO				

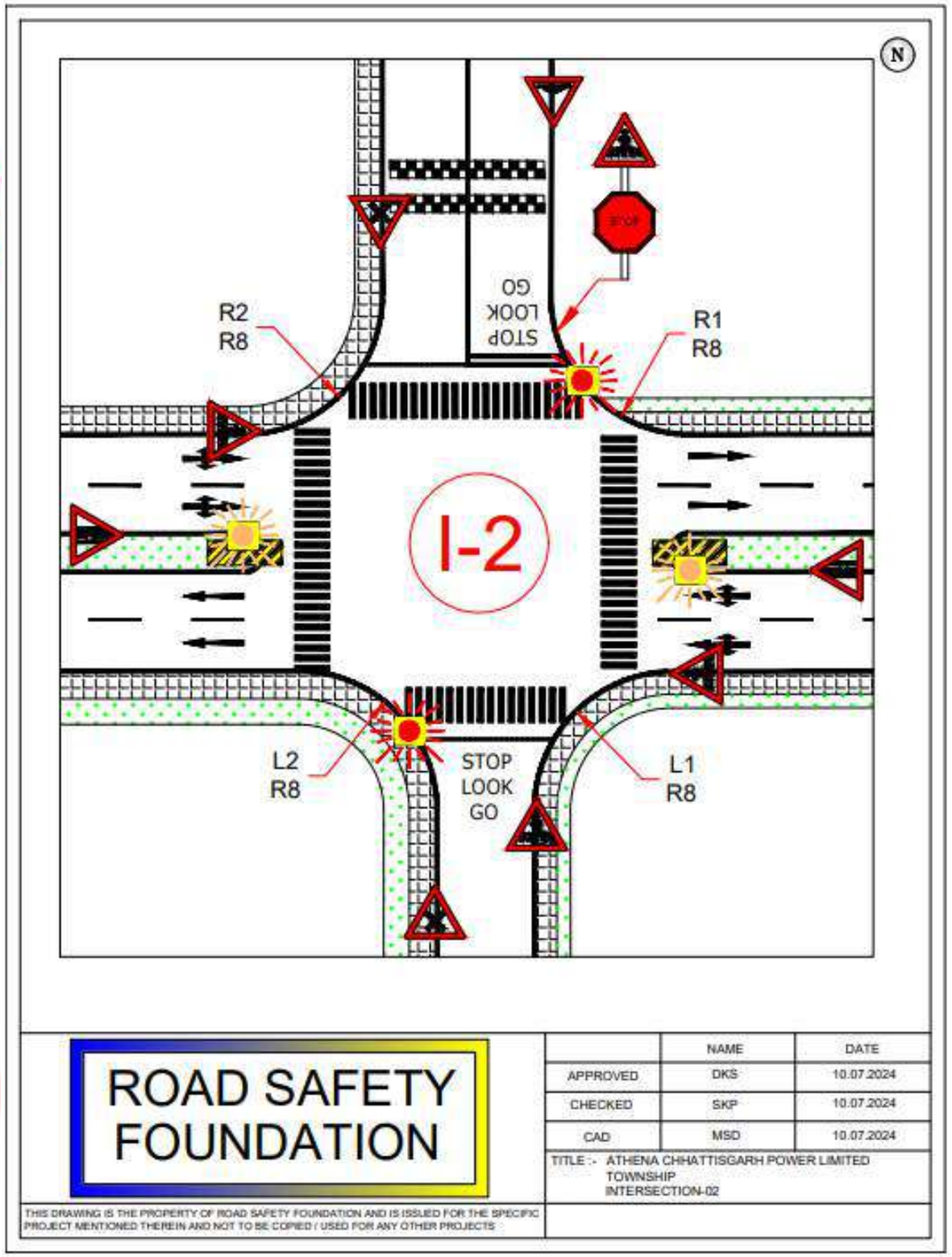
OBJERVATIONS

1. THERE IS A RIGHT HAND SIDE INTERSECTION WITH GAP IN MEDIEN .WHERE A RIGHT ROAD CONNECTS ROAD NO.10 TO ROAD NO. 1.
2. MISS LEADING DRIVE LANES: ROAD ARE DIVIDED IN THREE LANES AND THERE ARE NO PROPER SIGNAGES OR INFORMATION BOARD TO IDENTITY OF LANE. IT CREATE CONFUSION, CAN LEAD FOR A ROAD ACCIDENT.
3. MISSING OR FADED SIGNS: INADEQUATE SIGNAGE CAN LEAD TO CONFUSION AND POOR DECISION-MAKING BY DRIVERS.
4. FADED OR NO PEDESTRAIN ZEBRA CROSSING , IT CREATES ROAD ACCIDENT HAZARDS TO PEDESTRIANS.

RECOMMENDATIONS

1. WE RECOMMEND TO PROVIDE WELL-MARKED CROSSWALKS(ZEBRA CROSSING) AND PEDESTRIAN CROSSING ROAD SIGN AS SHOWN IN CAD DRAWING.
2. WE ARE RECOMMENDING TO INSTALL 2 YELLOW BLINKERS/FLASHING LIGHTS AND 1 RED BLINKER/FLASHING LIGHT AT THE INTERSECTION .
3. OBJECT HAZARDS BOARD HAS RECOMMENDED ON BOTH CORNERS OF MEDIAN AS SHOWN IN DRAWING.
4. BARIICATED PEDESTRIAN WALKWAY ARE RECOMMENDED ON BOTH SIDES OF ROAD NO.1 AND ROAD NO.2. BARRICATION DESIGN & METERIAL SPECIFICATION IS ATTACHED DWG IS ATTCHED IN REPORT ON PAGE NO. 16.).

INTERSECTION NO.	02	INTERSECTION NAME	CROSS INTERSECTION ROAD NO.10 & ROAD NO.02,03	ROAD NO.	10



RISK ZONE	MEDIUM		SPEED LIMIT	20 KMPH		
ROAD PAVEMENT CONDITION	FAIR					
ROAD WIDTH IS AS PER IRC	YES	PROPOSED ROAD WIDTH				N/A
TURNING CURVATURE IN METER(AS PER IRC GUIDELINES)	NO	L1	L2	R1	R2	TOTAL PCC WORK IN SQM
		08	08	08	08	
PCC WORK TO BE DONE FOR ROAD CURVATURE		13.4	13.4	13.4	13.4	53.6
BLIND SPOT	NO	CONVEX MIRROR REQUIRED				NO
SPEED BREAKER REQUIRED	YES , AS SHOWN IN DWG-17 ON JINDAL SCHOOL RD.					
PEDESRIAN /ZEBRA CROSSING	YES, AS SHOWN IN DWG					
SIGNAL REQUIRED	NO					
RIGHT OF SIGHT	OK					
FLASING SIGNAL -RED	YES-1	FLASING SIGNAL -YELLOW				YES.-2
ANPR SPEED ENFORCEMENT CAMERA	NO					
RED SIGNAL ENFORCEMENT CAMERA	NO					
PEDESTRIAN PUSH BUTTON REQUIRED	NO					
OBJECT HAZARD SIGN REQUIRED	YES					
PLASTIC REFLECTION TRAFFIC POLES REQUIRED (in Qty	NO					

OBJERVATIONS

1. THERE IS A CROSS INTERSECTION WITH GAP IN MEDIEN ON ROAD NO.10 .WHERE A RIGHT CONNECTS FROM ROAD NO.2 AND RIGHT ROAD CONNECTS FROM ROAD NO.12.
2. AS TURNING CURVATURE IS NOT AS PER IRC GUIDELINES FOR TRUCK AND TRAILERS ON L1, L2, R1 & R2 CURVATURE.
3. MISSING OR FADED SIGNS: INADEQUATE SIGNAGE CAN LEAD TO CONFUSION AND POOR DECISION-MAKING BY DRIVERS.
4. FADED OR NO PEDESTRAIN ZEBRA CROSSING , IT CREATES ROAD ACCIDENT HAZARDS TO PEDESTRIANS.
5. NO SPEED CONTROL DEVICES ARE INSTALLED ON SIDE CONNECTING ROAD. VEHICLES COMIMG FROM ROAD NO.2 CAN CAUSE A LEFT HAND SIDE COLLISION WITH VEHICLES COMING ON ROAD NO.1.

RECOMMENDATIONS

1. WE HAVE RECOMMENDED A TURNING RADIUS OF 8 METERS ON L1 ,L2 R1 & R2 CURVATURES AS MENTIONED IN CAD DRAWING.
2. WE RECOMMEND TO PROVIDE WELL-MARKED CROSSWALKS(ZEBRA CROSSING) AND PEDESTRIAN CROSSING ROAD SIGN AS SHOWN IN CAD DRAWING.
3. IT IS RECOMMENDED TO INSTALL A SPEED BREAKER ON RIGHT CONNECTING LANE BEFORE THE INTERSECTION AS SHOWN IN DWG.
4. WE ARE RECOMMENDING TO INSTALL 2 YELLOW BLINKERS/FLASHING LIGHTS AND 2 RED BLINKER/FLASHING LIGHT AT THE INTERSECTION .
5. OBJECT HAZARDS BOARD HAS RECOMMENDED ON BOTH CORNERS OF MEDIAN AS SHOWN IN DRAWING.
6. BARRICATED PEDESTRIAN WALKWAY ARE RECOMMENDED ON BOTH SIDES OF ROAD NO.10. BARRICATION SHOULD BE ONLY OPEN AT ZEBRA CROSSINGS. BARRICATION DESIGN & METERIAL SPECIFICATION IS ATTACHED (DWG IS ATTCHED IN REPORT ON PAGE NO. 16.).

INTERSECTION NO.	03	INTERSECTION NAME	CROSS INTERSECTION ROAD NO.10 & ROAD NO.04,05	ROAD NO.	10

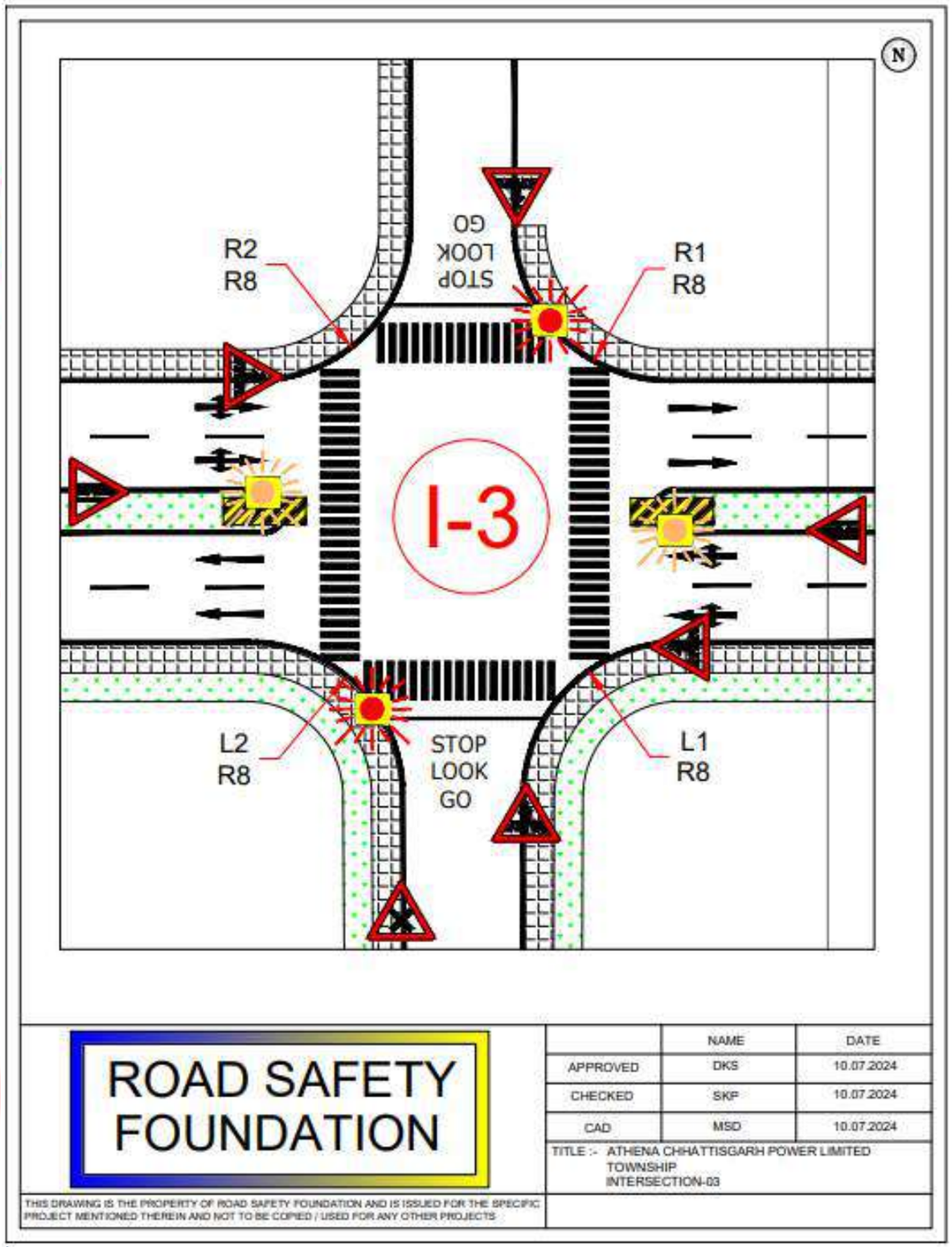












	NAME	DATE
APPROVED	DKS	10.07.2024
CHECKED	SKF	10.07.2024
CAD	MSD	10.07.2024

ROAD SAFETY FOUNDATION

TITLE :- ATHENA CHHATTISGARH POWER LIMITED
TOWNSHIP
INTERSECTION-03

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RISK ZONE	MEDIUM		SPEED LIMIT	20 KMPH	
ROAD PAVEMENT CONDITION	FAIR				
ROAD WIDTH IS AS PER IRC	YES	PROPOSED ROAD WIDTH			N/A
TURNING CURVATURE IN METER(AS PER IRC GUIDELINES)	NO	L1	L2	R1	R2
		08	08	08	08
PCC WORK TO BE DONE FOR ROAD CURVATURE		13.4	13.4	13.4	13.4
BLIND SPOT	NO	CONVEX MIRROR REQUIRED			NO
SPEED BREAKER REQUIRED	YES , AS SHOWN IN DWG-17 ON JINDAL SCHOOL RD.				
PEDESRIAN /ZEBRA CROSSING	YES, AS SHOWN IN DWG				
SIGNAL REQUIRED	NO				
RIGHT OF SIGHT	OK				
FLASING SIGNAL -RED	YES-1	FLASING SIGNAL -YELLOW			YES.-2
ANPR SPEED ENFORCEMENT CAMERA	NO				
RED SIGNAL ENFORCEMENT CAMERA	NO				
PEDESTRIAN PUSH BUTTON REQUIRED	NO				
OBJECT HAZARD SIGN REQUIRED	YES				
PLASTIC REFLECTION TRAFFIC POLES REQUIRED (in Qty	NO				

OBJERVATIONS

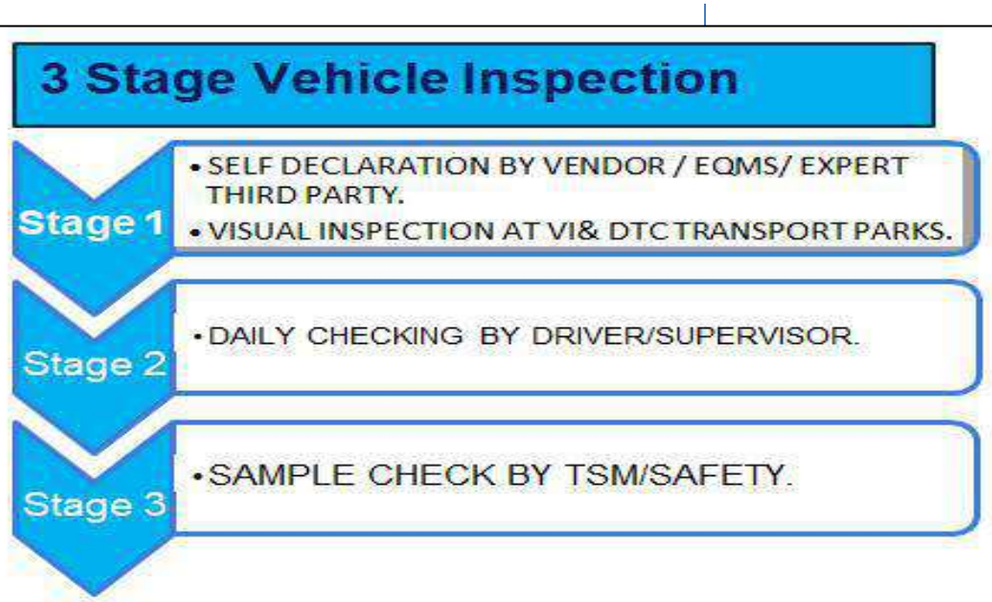
1. THERE IS A CROSS INTERSECTION WITH GAP IN MEDIEN ON ROAD NO.10 .WHERE A RIGHT CONNECTS FROM ROAD NO.4 AND RIGHT ROAD CONNECTS FROM ROAD NO.5.
2. AS TURNING CURVATURE IS NOT AS PER IRC GUIDELINES FOR TRUCK AND TRAILERS ON L1, L2, R1 & R2 CURVATURE.
3. MISSING OR FADED SIGNS: INADEQUATE SIGNAGE CAN LEAD TO CONFUSION AND POOR DECISION-MAKING BY DRIVERS.
4. FADED OR NO PEDESTRAIN ZEBRA CROSSING , IT CREATES ROAD ACCIDENT HAZARDS TO PEDESTRIANS.

RECOMMENDATIONS

1. WE HAVE RECOMMENDED A TURNING RADIUS OF 8 METERS ON L1 ,L2 R1 & R2 CURVATURES AS MENTIONED IN CAD DRAWING.
2. WE RECOMMEND TO PROVIDE WELL-MARKED CROSSWALKS(ZEBRA CROSSING) AND PEDESTRIAN CROSSING ROAD SIGN AS SHOWN IN CAD DRAWING.
3. IT IS RECOMMENDED TO INSTALL A SPEED BREAKER ON RIGHT CONNECTING LANE BEFORE THE INTERSECTION AS SHOWN IN DWG.
4. WE ARE RECOMMENDING TO INSTALL 2 YELLOW BLINKERS/FLASHING LIGHTS AND 2 RED BLINKER/FLASHING LIGHT AT THE INTERSECTION .
5. OBJECT HAZARDS BOARD HAS RECOMMENDED ON BOTH CORNERS OF MEDIAN AS SHOWN IN DRAWING.
6. BARRICATED PEDESTRIAN WALKWAY ARE RECOMMENDED ON BOTH SIDES OF ROAD NO.10. BARRICATION SHOULD BE ONLY OPEN AT ZEBRA CROSSINGS. BARRICATION DESIGN & METERIAL SPECIFICATION IS ATTACHED (DWG IS ATTCHED IN REPORT ON PAGE NO. 16.).

HEAVY VEHICLES SAFETY
(VEHICLE INSPECTION)

VEHICLE SAFETY INSPECTIONS SAVE LIVE AND IMPROVE VEHICLE RELIABILITY. AS THE VEHICLE AGES, COMPONENTS REACH THEIR END OF USEFUL SERVICE LIFE. INSPECTIONS ALSO PROMOTE JOBS AND PRODUCES A PRODUCTIVE WORKFORCE THROUGHOUT THE ENTIRE SUPPLY CHAIN OF THE AFTERMARKET. INSPECTIONS ALSO PROMOTE CONSUMER AWARENESS OF PROPER VEHICLE MAINTENANCE. SAFETY INSPECTIONS ENSURE THAT ALL VEHICLE ON THE ROAD ADHERE TO A "MINIMUM SAFETY STANDARD," PARTICULARLY WHEN IT COMES TO COMPONENTS SUCH AS STEERING, SUSPENSION, BRAKES AND TIRES.









Category	Stage	Type of Check	Frequency	Validity
HEAVY VEHICLES (DUMPERS, BUSES ETC.) & LMV'S (TATA 407, TATA ACE, PICK UP VANS ETC)	I	SELF DECLARATION BY VENDOR / EQMS/ EXPERT THIRD PARTY INSPECTION AT TRANSPORT PARKS	6 MONTHS	6 MONTHS
		VISUAL INSPECTION AT TRANSPORT PARKS	ONCE IN 1 MONTH	1 MONTHS
	II	DAILY CHECKING BY VENDOR (DRIVER / SUPERVISOR)	DAILY	1 DAY
	III	SAMPLE DAILY CHECKING BY ATHENA EMPLOYEE /SAFETY	SAMPLE	1 MONTHS
TRAILER	I	SELF DECLARATION BY VENDOR / EQMS/ EXPERT THIRD PARTY INSPECTION AT TRANSPORT PARKS	ONCE IN 6 MONTHS	6 MONTHS
		VISUAL INSPECTION AT TRANSPORT PARKS	ONCE IN 1 MONTH	1 MONTHS
	II	DAILY CHECKING BY (DRIVER / SUPERVISOR)	DAILY	1 DAY
	III	SAMPLE DAILY CHECKING BY ATHENA EMPLOYEE /SAFETY	SAMPLE	1 MONTHS

HEAVY VEHICLES SAFETY

HEAVY VEHICLES TECHNOLOGICAL INTERVENTIONS RECOMMENDATION

01. ANTI TILT (ATCS)

HAZARDS : ONE OF THE MAJOR HAZARDS RELETED TO USE OF THE DUPMER OR TIPPER IS TIP OVER,. THE HAZARDS MAJORITY ARIASED WHEN TRUCK BOX IS IN RAISED POSITION AND CENTRE OF GARVITY OF BOX AND LOAD GOES OUT OF THE FRAME RAILS OF THE UNIT

RECOMMENDATION : WE ARE RECOMMENDING TO INSTALL A ANTY TILT (ATCS) DEVICES IN INTERNAL & RAW METERIAL DUMPERS & TIPPER TO PROTECT FROM TIPOVER ACCDENTS.

HOW IT WORKS

In order to maintain the Gravity of the box and load within the frame rails, we engage a high technology MEMS based sensors to continuously detect the tilt angle of the box, when the set angle is surpassed it triggers a control valve to stop the box from rising any further. This maintains the gravity within limits, preventing toppling.





ATCS DALA MOUNTED INSIDE FACING



CABIN CONTROL VALVE(CCV) REPLACED & CAN'T TEMPERED

Advantages and Benefit

1. Very Economical Solution
2. One hour retrofitting on Tippers
3. Site configurable of switch Angles
4. Easy Customizable System
5. Most Tipping Accident Avoided
6. Prevents tipping system (cylinder) damage under heavy side loads
7. Prevents damage to tipping body and hinges
8. Reduces strain on the vehicle, hence enhanced chassis frame and axle life

Vendors

Vistec Solutions
Marketing Yard, Kodinar, Junagadh, Gujarat

Royaleo Futuristics
Raigad, Navi Mumbai, Thane, Maharashtra

PRICE-15000-18000/UNIT

Heavy Duty Bus And Truck Parking Sensor 3m with reverse camera

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HAZARDS : STUDY DONE IN CEMENT SECTOR REVERSING COLLISIONS ACCOUNT FOR ABOUT 17% OF PEDESTRIAN ACCIDENTS IN FACTORY. AND COMMERCIAL AND GOODS VEHICLES ARE OVER-REPRESENTED IN THESE COLLISIONS. TRUCK DRIVERS OFTEN FAIL TO SEE the PREDESTRIANS, EVEN PEDESTRIANS FAIL TO ANTICIPATE ITS MANOEUVRE, OR ARE NOT ABLE TO GET OUT ITS PATH. DRIVERS GENERALLY FAIL TO SEE THE PEDESTRIAN BEFORE THE COLLISION. THE REASONS FOR THE REVERSING MANOEUVRES ARE IDENTIFIED AND SUGGEST THAT THESE MANOEUVRES COULD PARTLY BE AVOIDED.

RECOMMENDATION : WE ARE RECOMMENDING TO INSTALL A HEAVY DUTY REVERSE PARKING SENSOR TO ALL INTERNAL BUSES & RAW METERIAL DUMPERS & TIPPER TO PROTECT FROM TIPOVER ACCDENTS






Reverse camera

TECHNICAL SPECIFICATION

Wired LED display waterproof control unit DC10-35V voltage truck parking sensor 24V surface mount parking sensor in Features:• Rear Bumper/Deck 4 Sensor Truck Application• Encapsulated IP68 Waterproof ECU Control Box• Waterproof Surface Mount Double Angle Sensors • Smart Sensor Module(Error amplifier) built in,increase probe sensitivity• Six seperate sensor spacers (7°, 11° and 15°) for sensor angle adjustment• 3 color LED display 4 channel with buzzer built-in• LED display with speaker gives audible and visual feedback. • Water Proof Sensor/ECU Cable Connectors for easy bumper removal. • Advanced Self-Diagnostic function with error detection.• All weather design• Power Input 10-35VDC Sensor:• 4 smart "no drill" reverse sensor • Material: Plastic• Colour: Black• Sensor head size: 27mm in diameter • Sensor detection range: 0cm~2.5m• Sensor detecting angle: Horizontal:120° Vertical: 60°• Bumper Type: Plastic or Metal • no need drill,Surface Mount • Sensor extension cable: 5m (Standard)• Water Proof Sensor/ECU Cable Connectors for easy bumper removal

HEAVY VEHICLES SAFETY

HEAVY VEHICLES TECHNOLOGICAL INTERVENTIONS RECOMMENDATION

02. DRIVER FATIGUEN & DISTRACTION MONITORING SYSTEM(DFMS)

HAZARDS : ONE OF THE MAJOR HAZARDS RELETED TO USE OF THE ROAD ACCIDENTS IS FATIGUE. ACCORDING TO NATIONAL CRIME RECORD BEURO(NCRB) FACTIGUE CAUSES 27% ROAD ACCIDENTS.

RECOMMENDATION : ALL THE INBOUND TIPPERS/DUMPER/TRAILOR/BULKER/BUS SHOULD EQUIPPED WITH DFMS TO REDUCE FATIGUE AND DISTRACTION RELATED INCIDENTS.

FEAUTRES REQUIRED IN FATIGUE MONITORING SYSTEM

SHOULD DETECTS AND ALERTS IMMEDIATELY IF THE DRIVER IS DISTRACTED. THE ALARM SHOULDTRIGGERED IF:

1. USING A CELL PHONE
2. NOT KEEPING THE EYES ON THE ROAD
3. FIDDLING WITH THE STEREO
4. FATIGUED, DROWSY DRIVING.
5. REDUCE THE ACCIDENTS BY 27%.

DRIVER FATIGUE & DISTRACTION MONITORING SYSTEM (DFMS)





PART-4 HEAVY VEHICLES TECHNOLOGICAL INTERVENTIONS RECOMMENDATION

03. DALA RAISED CONTROL SYSTEM(DRCS)

HAZARDS : ROAD ACCIDENT STUDY IN MINING AND STEEL INDUSTIES SHOW MAY TIPPER ACCIDENTS HAPPENS WHILE DRIVER FORGOT TO LOWER THE RAISE DUMP BODY. IT IS ALSO A MAJOR CAUSE FOR TIPPOVER ACCIDENTS IN STEEL AND MINING INDUSTRIES.

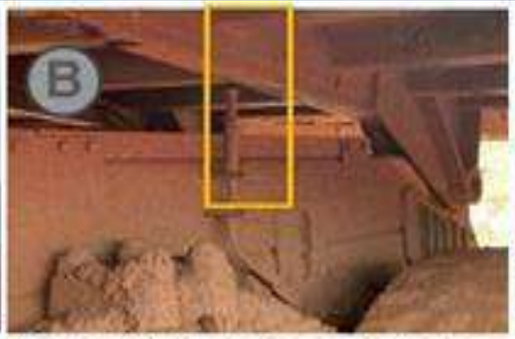
HOW IT WORK:- The Dala raised Control switch is connected with engine ignition switch via Re-lay and a bypass switch is attached between the ignition switch & height limit switch. The main purpose of this initiative to stop the engine during dumper dala raised condition.1. Start the engine & use bypass switch for dumper dala raised for material unloading. During material unloading must press bypass switch, if not pressed bypass switch the engine will be stopped immediately. Until the bypass switch press by driver the engine will be start, once during unloading the bypass switch released by driver the engine immediately stopped.

2. Until the dumper dala not get down, engine will not start. For dala raised condition use bypass switch to start the engine.

3. For normal driving in dumper dala down condition no needs of bypass switch and no effect of the initiative. It will work only during material unloading.



Dump Body Raised



Solenoid Valve at rear end releases – Parking brake automatically applied



Press the Push Button switch to bypass the system



Release the Push Button switch - Parking brake automatically applied





Dump Body Lowered



Tipper can move forward & backward

HEAVY VEHICLES TECHNOLOGICAL INTERVENTIONS RECOMMENDATION

REVERSE / BACKING HORN

HAZARDS : STUDY DONE IN CEMENT SECTOR REVERSING COLLISIONS ACCOUNT FOR ABOUT 17% OF PEDESTRIAN ACCIDENTS IN FACTORY. THESE THESE SPECIALIZED HORNS ARE DESIGNED TO EMIT A DISTINCTIVE SOUND WHEN A DRIVER ENGAGES THE VEHICLE'S REVERSE GEAR, ALERTING THOSE AROUND THE CAR THAT IT IS ABOUT TO BACK UP. THIS INGENIOUS INVENTION AIMS TO PREVENT ACCIDENTS BY PROVIDING AN AUDIBLE WARNING, PARTICULARLY IN CROWDED AREAS OR BUSY PARKING LOTS.

RECOMMENDATION : ALL THE VEHICLES WORK INSIDE THE JSPL PLANT LIMIT SHOULD EQUIPPED WITH REVERSING / BACKUP HORN -Backup alarm can make a powerful beeping sound that is 110dB,nobody will ignore this beeping sound when you are reversing vehicle.



SAFE FOLLOWING DISTANCE STICKER

WE RECOMMENDED TO INSTALL A 12METER SAFE FOLLOWING DISTANCE ON EVERY INSIDE VEHICLES Maintaining a safe distance between vehicles is crucial for road safety and can significantly reduce the risk of various types of accidents. Here's a look at why maintaining a safe distance is important and the types of accidents it can help reduce:



Importance of Maintaining a Safe Distance

Reaction Time: It gives drivers more time to react to sudden stops or changes in traffic flow.
Visibility: Enhances the ability to see the road ahead, including potential hazards.
Stopping Distance: Allows sufficient space for a vehicle to come to a complete stop without colliding with the vehicle in front.
Avoiding Rear-End Collisions: Reduces the risk of hitting the vehicle ahead if it stops suddenly.
Adapting to Road Conditions: Provides extra space to maneuver or stop in adverse weather conditions.

Types of Accidents Reduced by Maintaining Safe Distance

Rear-End Collisions: The most common type of accident, significantly reduced by maintaining a safe following distance.
Multi-Vehicle Pileups: Chain reactions in heavy traffic can be avoided when each driver maintains enough space.
Side-Swipe Accidents: Prevents the need for sudden lane changes that could cause side-swipe collisions.
Underride Collisions: Smaller vehicles are less likely to crash into the back of larger trucks or trailers if they maintain a safe distance.
Intersection Accidents: Reduces the likelihood of collisions at intersections by allowing more time to react to traffic signals and crossing vehicles.
Work Zone Accidents: Provides more reaction time to sudden stops or changes in traffic patterns in construction zones.
Animal Collisions: Allows more time to react to animals crossing the road.
Emergency Maneuvers: More space to perform sudden maneuvers to avoid unexpected hazards without colliding with other vehicles.

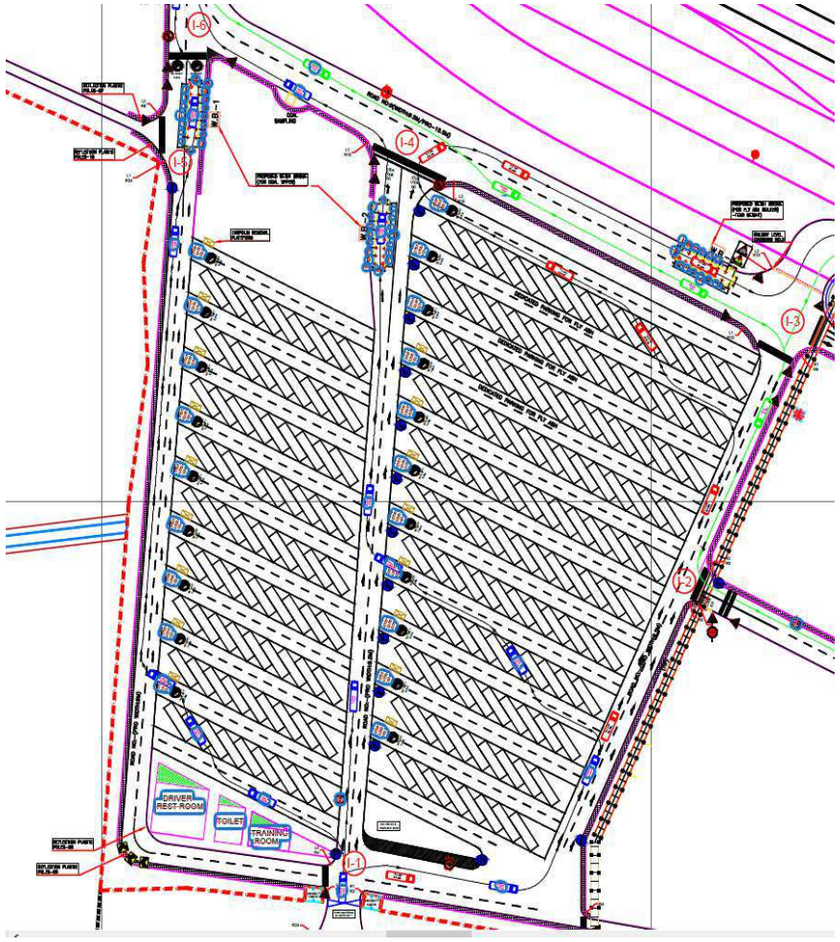
Reduction Statistics

While the exact number of accidents that can be reduced by maintaining a safe distance varies, studies and traffic safety reports consistently show a significant decrease in accidents with proper following distance. For instance:

Rear-End Collisions: Maintaining a safe distance can reduce rear-end collisions by up to 80%.
Multi-Vehicle Pileups: Safe following distances can reduce the severity and occurrence of multi-vehicle accidents by over 50%.
General Traffic Accidents: Overall, maintaining safe distances can reduce the likelihood of accidents by approximately 30-40%.

TRUCK PARKING

WE RECOMMENDED TO INSTALL ADVANCE TRUCK PARKING CONTROL DEVICES Advanced truck parking control devices are designed to improve safety, efficiency, and convenience for truck drivers and fleet managers. These devices use modern technology to optimize the use and monitoring of parking spaces, ensuring that trucks can park safely and in compliance with regulations. Here are some types of advanced truck parking control devices:



1. Parking Space Monitoring Systems
Sensors and Cameras: Installed in parking lots to monitor space availability and relay information to central systems.
IoT Devices: Connected sensors that provide real-time data on parking space occupancy and conditions.

2. **Safety and Security Systems**
Surveillance Cameras: Monitor parking areas to enhance security and deter theft or vandalism.
Emergency Communication Systems/PA System: Provide a way for drivers to quickly contact security or emergency services if needed.

3. **Environmental Monitoring Systems**
Weather Sensors: Provide real-time data on weather conditions that can affect parking safety.
Air Quality Sensors: Monitor air quality in parking areas, ensuring a safe environment for drivers and maintenance staff.

4. **Fleet Management Integration**
Telematics Integration: Connects with fleet management systems to provide data on parking habits, locations, and compliance.
Driver Assistance Systems: Help drivers find and access available parking spots using in-cab displays and alerts.

Benefits of Advanced Truck Parking Control Devices
Improved Safety: Reduces accidents and enhances security for parked trucks.
Increased Efficiency: Optimizes the use of available parking spaces and reduces time spent searching for parking.
Cost Savings: Lowers operational costs by improving parking management and reducing unauthorized parking.
Environmental Benefits: Reduces emissions by minimizing idling and driving in search of parking.
Implementing these advanced parking control devices can lead to significant improvements in the overall logistics and transportation infrastructure, benefiting both truck drivers and fleet operators.

HEAVY VEHICLES TECHNOLOGICAL INTERVENTIONS RECOMMENDATION

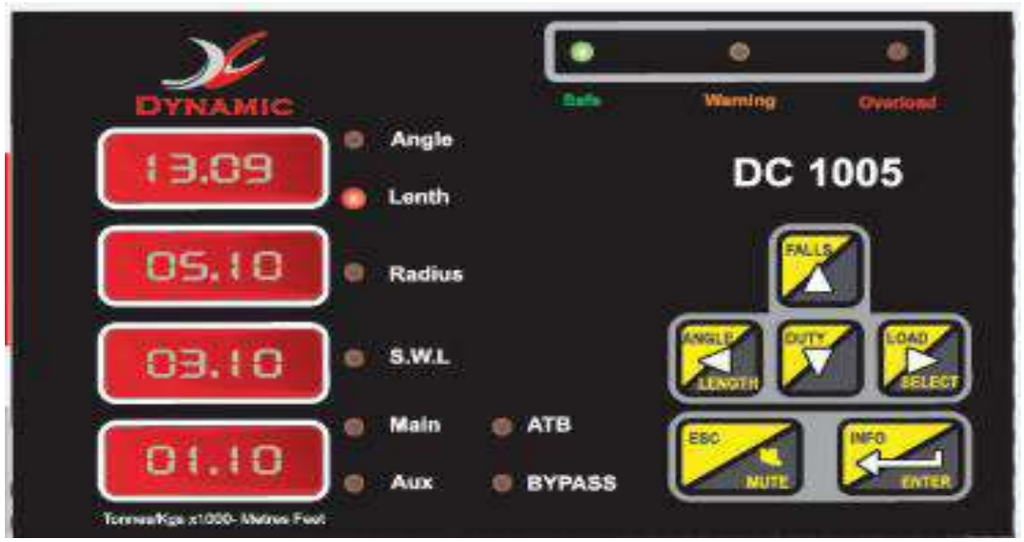
AUTOMATIC SAFE LOAD INDICATOR

HAZARDS : A crane tip-over is an accidental occurrence in which the equipment loading arm reaches and exceeds its load limit and tips over. Cranes are used for lifting, loading, and hauling heavy material, so it's important that proper load limiting devices are used.

Recommendation : all the inbound pick & carry cranes/tower crane/boom truck/reach stackers, gantry crane,EOT crane, rail road crane & rough terrain cranes should equipped with automatic safe load indicator. we also recommended to provide proper training / assessment before deputing the operator to avoid tip over accidents.

A Safe Load Indicator (SLI) or an Automatic Safe Load Indicator (ASLI) is a device which is installed on mobile crane/Boom lift/Reach Stackers/EOT Cranes to alert the operator if the lift is exceeding the safe operating range of the machinery, the device will physically lock the machinery in circumstances it determines to be unsafe.

1. SLI systems are usually composed of a microprocessor connected to various sensors on the crane itself. The SLI measures the angle and extension of the boom along with the load weight and compares this with the manufacturer's specifications to determine if the lift is safe
2. A safe load indicator has the capability of detecting the angle, weight of load lifted, and ground radius of any lifting device. It controls the lifting equipment to the level that it tries to keep the machinery functioning as per the manufacturer's suggested safety charts.





HEAVY VEHICLES TECHNOLOGICAL INTERVENTIONS RECOMMENDATION

ANTI CRANE COLLISION DEVICE

A **crane anti-collision system** is an operator support system for Cranes on construction site in steel industry. It helps an operator to anticipate the risk of contact between the moving parts of a tower crane and other tower cranes and structures. In the event that a collision becomes imminent, the system can send a command to the crane's control system, ordering it to slow down or stop. An anti-collision system can describe an isolated system installed on an individual tower crane. It can also describe a site wide coordinated system, installed on many tower cranes in close proximity.

Recommendation : tower & rough terrain cranes should equipped with crane anti-collision system. we also recommended to provide proper training / assessment before deputing the operator to avoid tip over accidents.





PART-4 AUDIT, SURVEILLANCE & MONITORING

Surveillance & Monitoring HELPS AVOID TRAFFIC ACCIDENTS. TRAFFIC CAMERAS HELP DETER ROAD HAZARDS, SINCE CAMERAS ARE RECORDING NON-STOP,DRIVERS AWARE THEM ARE MORE ATTENTIVE AND ARE LIKELY TO FOLLOW TRAFFIC LAWS. ALSO, HELP KEEP THE ROADS SAFE FOR MOTORISTS AND PEDESTRIANS.
THE SURVEILLANCE SYSTEM HAS LED TO AN INCREASE IN FOCUS AMONG THE SAFETY PROFESSIONALS AND VENDORS ON THE ISSUE OF ROAD SAFETY.

CCTV Monitoring

Including the entry and exit all the internal roads covered by CCTV Surveillance.





Speed Monitoring

Automatic Number plate Recognition (ANPR) Installed in intervals for speed monitoring.



DFMS monitoring from Command Centre

All the inbound tippers are equipped with DFMS to reduce fatigue and distraction related incidents.



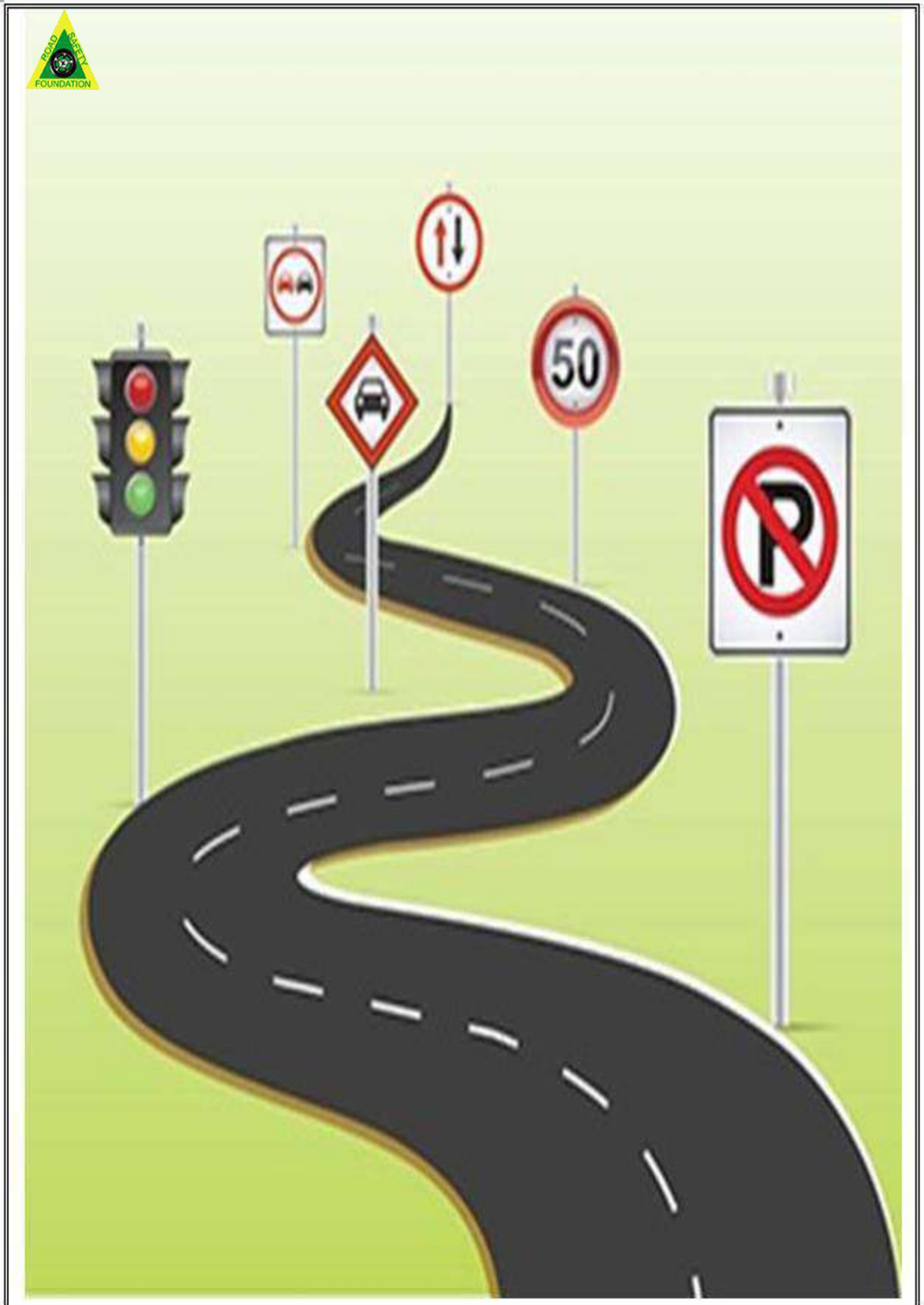


Consequence Management

Each and every Road Safety violation leads to consequence management laid as per TSM standards







THANK YOU

ROAD SAFETY FOUNDATION

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