DB Power Limited

CIN: U40109MP2006PLC019008
Business Office : Village – Badadarha, Post – Kanwali, Dist – Sakti, Chhattisgarh, PIN – 495695
Tel. : +91-7389912699

No. DBPL/ENV/199 Date: 26.05.2025

To,
Inspector General of Forests
Ministry of Environment, Forest and Climate Change,
Integrated Regional Office, AranyaBhawan,
North Block, Sector-19, Naya Raipur,
Atal Nagar, Chhattisgarh – 492002
iro.raipur-mefcc@gov.in

Subject: **Six Monthly Compliance Report for the period of Oct 2024 – March 2025**

Ref: Environment Clearance granted by MOEF vide letter no. J-13012/79/2008-IA. II (T) Dated 16/09/2010 to our 2X600 MW Thermal Power Plant located at village – Badadarha, Taluka- Dabhra, Dist –Sakti, Chhattisgarh, DB Power Limited.

Dear Sir,

We are pleased to enclose herewith six monthly Compliance Status Report for the conditions stipulated in subject EC granted to our Thermal power plant located at Village - Badadarha, Taluk - Dabhra, District-Sakti, Chhattisgarh. The report has following enclosures –

1. **CSR & Expenses Report - Annexure IA & IB**
2. **Fly Ash Utilization Report – Annexure II**
3. **Environment Monitoring Report-Annexure III**
4. **Plantation Verification Report –IV**
5. **Social Audit Report- V**
6. **Hydrogeological Study Report-VI**

Thanking you,
Yours Faithfully

D.B. POWER LIMITED * BADADARHA *

Head Environment

Enclosures: as above

Copy to:

The Member Secretary, Chhattisgarh Environment Conservation Board,
ParyavasBhavan, North Block Sector-19, Atal Nagar, Raipur (C.G.) 492002

Regional Officer, Chhattisgarh Environment Conservation Board
VyaparVihar, Near Pt. Dindayal Upadyay Garden, Dist: Bilaspur (C.G.)

Status of compliance of conditions of Environment Clearance granted by MOEF vide letter no. J-13012/79/2008-IA.II (T) dated 16.09.2010 to M/S DB Power limited,

2X600 MW Thermal Power Plant located at Baradarha, Sakti, Chhattisgarh

(Period : Oct2024 – March 2025)

A. Specific Conditions

S. No.	Stipulation	Compliance Status
i.	Vision document specifying prospective plan for the site shall be formulated and submitted to the Ministry within six months.	Complied.
ii.	Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5% and 34% respectively at any given time. In case of variation of coal quality at any point of time, fresh reference shall be made to MoEF for suitable amendments to environmental clearance condition wherever necessary.	Company is procuring coal from Coal India subsidiaries namely SECL & MCL. We are committed to comply MOEF&CC notification vide S.O. 1561(E) dated 21.05.2020.
iii.	A bi-flue stack of 275 m height shall be provided with continuous online monitoring equipments for SOx, NOx and Particulate Matter. Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack may also monitored on periodic basis.	A 275 meter tall twin flue stack has been constructed for effective dispersion of fumes aimed at proper dilution. We have installed continuous online monitoring system each attached to stack for SOx, NOx and Particulate Matter. The exit velocity of flue gas > 22 m/s.
iv.	Source sustainability study of water requirement shall be carried out by an institute of repute. The study shall also specify the source of water for meeting the requirement during lean season. The Report shall be submitted to the Regional Office of the Ministry within six months.	Complied. Source sustainability study was carried out by ISM Dhanbad and same had been submitted along with compliance report vide our Letter No. DBPL/ENV/41 Dated 28.05.2018.
v.	Hydro-geological study of the area shall be reviewed annually and report submitted to the Ministry.	Hydro-geological study report for the Fy 2024-25 is attached as **Annexure VI.**
vi.	No ground water shall be extracted for use in operation of the power plant even in Lean season. COC of 5.0 shall be adopted.	Ground water is not extracted for industrial & domestic use. COC of 6.5-7.0 is maintained in water circulated through the cooling tower during operation. This is aimed at water conservation.
vii.	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. Minimum required environmental flow suggested by the competent Authority of the state govt. shall be maintained in the channel / Rivers (as applicable) even in lean season.	Being complied.
viii.	Local employable youth shall be trained in skills relevant to the project for eventual employment in the project itself. The action taken report and details thereof to this effect shall be submitted to the Regional Office of the Ministry and the State Govt. Dept. concerned from time to time.	The local youths are being trained in skills such as Plumbing, Masonry, Hand pump repair etc. by DB Power CSR team. CSR Report indicating such initiatives during the reporting period is attached as **Annexure I A.**
ix.	Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.	Complied

POWER LTD. * BADADARHA *

x.	Provision for installation of FGD shall be provided for future use. High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm3. Adequate dust extraction system such as cyclones / bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	1. The Performance Guarantee (PG) tests for the Flue Gas Desulfurization (FGD) systems were successfully completed for both units—Unit #1 on 25th October 2024 and Unit #2 on 17th January 2025. The FGD systems have been in continuous operation since January 2025. 2. High Efficiency (99.94%) Electro-static precipitator having 80 fields has been installed. This has kept particulate emission from stack < 50 mg/Nm3. 3. We have provided dust extraction system (DE) complete with filter bags, cage and hopper fitted to Crusher unit, transfer points (5, 6, 7 and 8) and bunkers. We have also provided dust suppression system (DS) at crusher house, TP-1,2,3 and 4 and also at MUH and ERH. The conveyors have been closed on all sides using color coated galvanized profile sheet (CCGP) to confine fugitive emissions. We have provided water cannons at strategic locations in coal handling. At ash silo loading point of ash, water fogging and spraying system is installed for fugitive emission of ash. Similar system is also installed at wagon tippler zone. Road dust cleaning is done manually on road inside and outside premises. Ash transportation from generation point to silo and to ash pond is done using closed MS pipes. Above actions have immensely helped us contain fugitive emission and meet ambient air quality norms in the area.
xi.	Utilization of 100% Fly Ash generated shall be made from 4th year of operation of the plant. Status of implementation shall be reported to the Regional Office of the Ministry from time to time. Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry form. Mercury and other heavy metals (As,Hg,Cr, Pb etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in low lying area.	Fly ash generation & utilization report from April-2024 to March-2025 is attached as **Annexure II.** Heavy metal monitoring is done periodically and analysis report is attached as **Annexure III.**

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xii.	Ash pond shall be lined with HDPE / LDPE lining or any other suitable impermeable media such that no leaching takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached. For disposal of Bottom Ash in abandoned mines (if proposed to be undertaken) it shall be ensured that the bottom and sides of the mined out areas are adequately lined with clay before Bottom Ash is tilled up. The project proponent shall inform the State Pollution Control Board well in advance before undertaking the activity.	Complied. LDPE liners used for lining of Ash pond.
xiii.	Green Belt consisting of 3 tiers of plantations of native species around plant and at least 100 m width shall be raised. Wherever 100 m width is not feasible a 50 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not less than 2500 per ha with survival rate not less than 75 %.	The total plantation done in the area of 211 acre is 2,23,967 (with 80.50% survival) as per post monsoon survey 2024-25, details attached in **Annexure IV.**
xiv.	Two nearest village shall be adopted and basic amenities like development of roads, drinking water supply, primary health center, primary school etc shall be developed in coordination with the District administration. For the tribal families (if any) affected directly or indirectly by the proposed project, specific schemes for upliftment of their sustainable livelihood shall be prepared with time bound implementation and in built monitoring program me. The status of implementation shall be submitted to the Regional Office of the Ministry from time to time.	We have adopted 2 villages Tundri and Badadarha located near the plant as required. Basic amenities like development of roads, drinking water supply, health camps, infrastructure and other support in schools, etc are being done. **Annexure I A.**
xv.	An action plan for R&R (as applicable) with package for the project affected persons be submitted and implemented as per prevalent R&R policy within three months from the date of issue of this letter.	Complied.
xvi.	An amount of Rs 26.0 Corers shall be earmarked as one time capital cost for CSR program. Subsequently a recurring expenditure of Rs 5.2 Corers per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation.	Expenses incurred towards implementation of CSR program from Oct-24 to March-2025 is attached as **Annexure 1B.**
xvii.	While identifying CSR programme the company shall conduct need based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor Section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such program. Company shall provide separate budget for community development activities and income generating program. This will be in addition to vocational training for individuals imparted to take up self-employment and jobs.	CSR activities have been undertaken by DB Power Ltd. CSR activity detail is attached as **Annexure I A.**

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xviii.	It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time.	Social Audit report for the year 2023-24 is attached in Annexure V & for FY 2024-25 is under process report will be submited in next compliance.

B. General Conditions

S. No.	Stipulation	Compliance Status
i.	The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. There shall be no discharge outside the Plant boundary except during monsoon. Arrangements shall be made that effluents and storm water do not get mixed.	• Treated water of ETP is reused green belt irrigation besides in ash handling plant. • Ash Dyke decant water is treated and re-circulated to ash water sump for reuse. • The plant is designed for zero liquid discharge. • Process and storm water is kept separate.
ii.	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt / Plantation.	Sewage Treatment Plants (16 in number) have been installed and commissioned. The treated water from STPs is used for green belt nursing.
iii.	Rainwater harvesting should be adopted, Central Groundwater Authority / Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of issue of clearance and details shall be furnished to the Regional Office of the Ministry.	We have constructed 7 number of Rain water harvesting structures for the purpose. This is complete with a receiving pond, gravel/sand bed filter besides bore well. The collected water is subjected to ground water recharging.
iv.	Adequate safety measures shall be provided in the plant area to check / minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.	Complied. We have provided a Fire Detection & Protection System (FDPS) including fire hydrants at all strategic points. The detail of same has already been submitted.
v.	Storage facilities for auxiliary liquid fuel such as LDO and HFO /LSHS shall be made in the plant area in consultation with Department of Explosives, Nagpur Sulphur content in the liquid fuel will not exceed 0. 5%, Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.	A storage facility for LDO is in place after obtaining license from PESO. We also own onsite Disaster/emergency plan duly approved by Factory inspectorate for meeting emergencies.
vi.	Regular monitoring of ground water level shall be carried out by establishing a network of existing wells and constructing new piezometers. Monitoring around the ash pond area shall be carried out particularly for heavy metals (Hg, Cr,As, Pb) and records maintained and submitted to the Regional Office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.	The ground water monitoring is done at regular intervals and records are maintained.

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vii.	Monitoring surface water quantity and 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 be undertaken.	The monitoring surface water around the plant is done at regular intervals and records maintained. **Annexure III**
viii.	First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Complied
ix.	Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dBA. For people working in the high noise areas, requisite personal protective equipment like earplugs / ear muffs etc. shall be provided, Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy / less noisy areas.	The ambient noise monitoring is conducted regularly with noise within the prescribed limit and records maintained. See **Annexure III** • Turbine is housed in a specially designed acoustic insulated box. • Compressors are kept in isolated closed chambers. • Boiler safety valves are fitted with silencers to contain noise. • In high noise areas PPE like Ear plugs / Ear Muffs are provided to keep impact minimum. • High noise area kept unmanned as far as practical. • The periodical audiometry test of all employees is done and recorded at OHC with remedial action in case of any hearing loss reported. Above arrangements have helped to keep noise level below 85 dB (A) as per Factory Act at plant equipment work zone and found impact negligible
x.	Regular monitoring of ground level concentration of SO_2, NO_X, $PM_{2.5}$ & PM_{10} and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.	Regular monitoring for ambient air quality is carried in the impact zone (both core and buffer). Values are well within norms. The monitoring report is enclosed as **Annexure III.** We have installed 4 nos. online AAQMS for real time monitoring of ground level concentration and are integrated to the central server of CPCB. These are working fine.
xi.	Provision shall be made for the housing of construction labor (as applicable) 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.

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xii.	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informs that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests.	Complied
xiii.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, ZilaParisad / Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions/representations, if any, received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Complied
xiv.	An Environmental Cell shall be created at the project site itself and shall be headed by an officer of appropriate seniority and qualification. It shall be ensured that the head of the Cell shall directly report to the head of the organization.	Environmental Cell is in place and is suitably staffed. It is headed by a senior officer reporting directly to the head of the organization.
xv.	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically, It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM (PM2.5 & PM10), SO2, NOX (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.	Complied.
xvi.	The environment statement for each financial year ending 31st March in From –V as is mandated to be submitted by the project proponent to the concerned State pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.	Complied. Environment Statement submitted for FY 2023-24 vide letter dated 23.09.2024.

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xvii.	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same bye-mail to the Regional Office, Ministry of. Environment and Forests.	Complied. The last six monthly compliance reports to EC conditions were submitted to IRO, MoEF&CC, Raipur & SPCB (CECB) through our Email dated 07.11.2024. The same also uploaded in our company website.
xviii.	Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent 'will upload the compliance status in their website and up-date the same from time to time at least six monthly bases. Criteria pollutants levels including NOX (Stack & ambient air) shall be displayed at the main gate of the power plant.	Being Complied as and when required.
xix.	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up, These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.	The Expenditure incurred in environmental protection measures are – Capital Expenditure up to March 2018 = 1237.48 Crore Recurring Expenditure : Department: Expenses from Oct-24 to March-25(in Crore) Environment: 0.51 Horticulture: 0.56 Fly Ash Utilization: 53.93 OHC: 0.04 Total: 55.04
xx.	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.	Complied. Informed vide letter dated 06.06.2011.
xxi.	Full cooperation shall be extended to the Scientists / Officers from the Ministry / Regional Office of the Ministry at Bhopal / CPCB / SPCB who would be monitoring the compliance of environmental status.	Full cooperation will be extended to the Scientists / Officers from the Ministry / Regional Office of the Ministry at Raipur / CPCB / SPCB as and when required/visited.

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Annexure-1 A

CSR activities- OCT.24 to March 2025

DB Power Ltd

CSR Activities

* Constructed of Boundary wall (93 meters) near Government Higher Secondary School, Tundri.

* Constructed of Boundary wall (100 meters) near Government Primary School, Amapali.

* Constructed Cremation Shed is in village Kunkuni, Khairpali and Tundri Village.

DB Power Ltd

CSR Activities

* Constructed shed in premise of Government Primary School at Rampur.

* Constructed Drain (400 meters) at Basanpali.

* Repairing of Stop Dam at Badadarha.

CSR Activities

* Distributed study and stationery materials (Guide, Practice Book, White Board, Chalk and markar pen (23 students) to the students for preparation of the exam of Jawahar Navodaya Vidyalaya class 6th.

* Awareness program organized (TV & HIV Aids), Arogya Hospital, DBPL 41 nearby plant villages.

* Awareness program organized Energy Conservation for School students of Govt. higher secondary school, Sondka.

CSR Activities

* 8155 people benefited from DBPL hospital.

* 63 people benefited from Special Health Camp at DBPL hospital.

* Ambulance referral services have been provided to 191 people nearby the plant villages.

CSR Activities

* Repairing of 21 Hand pumps have been done at Badadarha, Rampur, Tundri & Bendojhariya * Repairing of 34 Motor pumps have been done at Badadarha, Rampur & Tundri * Repairing of 8 Bio gas units at Badadarha & Rampur * Repaired 106 time street lights of at Badadarha & Rampur. * Repaired 12 times pipe line at Badadarha & Rampur. * Repaired 18 times Personal light connection of villagers at Badadarha, Rampur & Tundri.

* On the occasion of the marriage of girl of plant affected village (Badadarha, Rampur & Tundri) Rs. 20000/- have been given to Sonia Sarthi, Tundri by DBPL management.

* Provided grocery items in the house of Mandhar Yadav , Balaram Oraon & Kulkit Rathia at Tundri for performing Daskarm.

DB POWER LTD.							
CSR EXPENSES OCT-24 TO MAR-25							
Sum of Amount	**MONTH'S**						
Sector in which the project is covered	**Oct-24**	**Nov-24**	**Dec-24**	**Jan-25**	**Feb-25**	**Mar-25**	**Grand Total**
Cultural & Social Activity	354,304	174,082	108,587	345,020	154,475	3,782,420	4,918,888
Education & Skill Development	61,498	558,129	47,768	46,033	49,618	127,597,985	128,361,031
Health activity	750,363	167,696	1,218,459	1,360,934	743,234	1,957,961	6,198,648
Infrastructure maintenance & development	206,735	263,947	892,504	2,642,350	793,612	7,792,048	12,591,195
Grand Total	**1,372,900**	**1,163,854**	**2,267,318**	**4,394,338**	**1,740,939**	**141,130,413**	**152,069,761**

Annexure II

Ash Generation & Utilization Report
From April-24 to March-25

Sr.no	Month	Coal Cons. (MT)	Ash (%)	Total Ash Generation (MT)	In making of Fly Ash based/ Bricks/ Blocks/ Tiles etc.	In manufacture of Portland Pozzolana Cement	In construction of Highways & Roads including Flyovers	Part replacement of cement in concrete	In Hydro Power Sector in RCC Dam Construction	In Ash dyke raising	In reclamation of low lying Area	In Mine filling	In Agriculture/ Waste land Devlopment	Others	Total Ash Utilization	Ash Utilization (%)
1	Apr-24	552101.0	44.96	248208.8	3988.9	208.0	0.0	0.0	0.0	0.0	65368.7	159470.4	0.0	0.0	229036.0	**92.28**
2	May-24	539406.0	44.00	237313.3	4019.0	34.6	33573.4	0.0	0.0	0.0	34147.0	167645.0	0.0	0.0	239419.0	**100.89**
3	Jun-24	543151.0	45.13	245139.8	5016.6	31.0	109916.7	0.0	0.0	0.0	16474.5	174791.0	0.0	0.0	306229.8	**124.92**
4	Jul-24	374295.0	43.94	164464.6	413.2	31.9	40230.4	0.0	0.0	0.0	2408.7	145866.8	0.0	0.0	188951.0	**114.89**
5	Aug-24	424917.0	44.02	187043.0	227.2	36.7	15137.3	0.0	0.0	0.0	7014.7	175887.4	0.0	0.0	198303.3	**106.02**
6	Sep-24	526725.0	43.89	231190.9	1116.2	8137.6	804.8	0.0	0.0	0.0	9763.8	233107.3	0.0	0.0	252929.7	**109.40**
7	Oct-24	553001.0	42.77	236507.5	2229.7	35.0	0.0	0.0	0.0	0.0	9092.3	245111.9	0.0	0.0	256469.0	**108.44**
8	Nov-24	483987.0	43.80	212009.7	2395.7	116.0	0.0	0.0	0.0	0.0	5187.4	289149.6	0.0	0.0	296848.7	**140.02**
9	Dec-24	529398.0	41.63	220397.5	1898.8	60.1	0.0	0.0	0.0	0.0	3179.8	321555.8	0.0	0.0	326694.6	**148.23**
10	Jan-25	516196.0	41.16	212466.3	2310.0	235.0	0.0	0.0	0.0	0.0	46442.0	213040.0	0.0	0.0	262027.0	**123.33**
11	Feb-25	488334.0	41.23	201330.3	1469.0	0.0	0.0	0.0	0.0	0.0	0.0	215807.0	0.0	0.0	217276.0	**107.92**
12	Mar-25	509062.0	40.91	208266.33	4494.00	36.00	0.0	0.0	0.0	0.0	3370.00	178179.91	0.0	0.0	186079.91	**89.35**
Total		**6040573**	**43.11**	**2604338**	**29578**	**8962**	**199663**	**0**	**0**	**0**	**202449**	**2519612**	**0**	**0**	**2960264**	**113.67**

TEST REPORT

Report No.: GECPL/ AA-202503/13/A			Date:	04/04/2025
URL No.:				
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW		
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)		
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type :	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID :	AA-202503/13
Sampling Location	:	Komo Village	Sample Description :	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring :	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On :	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On :	04/04/2025
Type of Container	:	Plastic Container	Format No. :	7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C	

Ambient Air Analysis Results

Sampling Location	Date Of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m³
Komo Village	03.03.2025	43.14	24.82	19.90	22.00	0.48
	07.03.2025	42.50	21.97	20.10	22.10	0.44
	10.03.2025	45.62	23.07	19.30	23.00	0.46
	11.03.2025	46.39	25.01	20.20	24.50	0.51
	17.03.2025	51.37	28.37	21.00	27.30	0.52
	21.03.2025	49.66	26.88	20.00	27.20	0.49
	24.03.2025	51.39	28.38	19.70	23.90	0.47
	28.03.2025	43.75	27.27	19.20	27.20	0.47
	31.03.2025	46.74	25.73	19.94	24.68	0.46
	Avg.	46.73	25.72	19.92	24.65	0.48
	Min	42.5	21.97	19.2	22	0.44
	Max	51.39	28.38	21	27.3	0.52

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

---------------------------------End Report------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

Gurukripa Enviro Care Pvt Ltd Auth. Sign. Jaipur

This Report is issued under the following terms & Condition:

- Samples are not drawn by Gurukripa Enviro Care Private Limited, unless otherwise mentioned. The results are applicable only to the submitted sample. Endorsement of the product is neither inferred nor implemented.
- The test report in full or part shall not be used for promotional or publicity purposes without the written consent of Gurukripa Enviro Care Private Limited.
- Samples shall be stored for the period of 15 days after the date of issue of Report.

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ AA-202503/13/B			Date:	04/04/2025	
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)			
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	:	AA-202503/13
Sampling Location	:	Komo Village	Sample Description	:	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	:	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C		

Ambient Air Analysis Results

Date Of Sampling	Hg ng/m³	NH_3 µg/m³	O_3 µg/m³	C_6H_6 µg/m³	B(A)P ng/m³	Ni ng/m³	Pb µg/m³	As ng/m³
03.03.2025	BLQ(LOQ0.005)	7.8	5.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.5	BDL	BDL
07.03.2025	BLQ(LOQ0.005)	8.9	7.1	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.7	BDL	BDL
10.03.2025	BLQ(LOQ0.005)	8.3	6.3	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.2	BDL	BDL
11.03.2025	BLQ(LOQ0.005)	8.1	7.4	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.5	BDL	BDL
17.03.2025	BLQ(LOQ0.005)	9.0	7.4	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.4	BDL	BDL
21.03.2025	BLQ(LOQ0.005)	8.2	6.8	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.3	BDL	BDL
24.03.2025	BLQ(LOQ0.005)	8.6	6.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.8	BDL	BDL
28.03.2025	BLQ(LOQ0.005)	9.0	6.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.7	BDL	BDL
31.03.2025	BLQ(LOQ0.005)	8.6	6.4	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.5	BDL	BDL
Avg.	-	8.5	6.7	-	-	4.4	-	-
Min	-	7.8	5.6	-	-	3.2	-	-
Max	-	9	7.4	-	-	5.5	-	-

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

----------------------------------**End Report**------------------------------

Tested By
(Sr. Chemist/Chemist)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ AA-202503/14/A			Date:	04/04/2025	
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)			
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	:	AA-202503/14
Sampling Location	:	Fulbandhiya Village	Sample Description	:	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	:	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C		

Ambient Air Analysis Results

Sampling Location	Date Of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m3
Fulbandhiya Village	03.03.2025	46.90	26.80	20.80	24.70	0.57
	07.03.2025	48.50	24.90	17.80	21.80	0.41
	10.03.2025	55.30	28.30	19.10	23.30	0.59
	11.03.2025	56.60	28.90	17.90	21.90	0.58
	17.03.2025	54.40	23.60	18.70	21.80	0.59
	21.03.2025	48.10	24.90	17.80	21.80	0.41
	24.03.2025	56.20	26.10	19.90	23.10	0.47
	28.03.2025	51.00	27.00	17.70	20.80	0.42
	31.03.2025	52.11	26.33	18.70	22.41	0.50
	Avg.	52.12	26.31	18.71	22.40	0.50
	Min	46.9	23.6	17.7	20.8	0.41
	Max	56.6	28.9	20.8	24.7	0.59

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

---------------------------------**End Report**------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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TEST REPORT

Report No.: GECPL/ AA-202503/14/B				Date:	04/04/2025
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)			
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	:	AA-202503/14
Sampling Location	:	Fulbandhiya Village	Sample Description	:	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	:	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C		

Ambient Air Analysis Results

Date Of Sampling	Hg ng/m³	NH_3 µg/m³	O_3 µg/m³	C_6H_6 µg/m³	B(A)P ng/m³	Ni ng/m³	Pb µg/m³	As ng/m³
03.03.2025	BLQ(LOQ0.005)	8.0	9.3	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.6	BDL	BDL
07.03.2025	BLQ(LOQ0.005)	7.4	9.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.8	BDL	BDL
10.03.2025	BLQ(LOQ0.005)	6.7	8.0	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.5	BDL	BDL
11.03.2025	BLQ(LOQ0.005)	7.8	7.9	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.1	BDL	BDL
17.03.2025	BLQ(LOQ0.005)	8.3	8.0	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.0	BDL	BDL
21.03.2025	BLQ(LOQ0.005)	9.6	6.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.7	BDL	BDL
24.03.2025	BLQ(LOQ0.005)	9.6	6.9	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.0	BDL	BDL
28.03.2025	BLQ(LOQ0.005)	7.4	9.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.5	BDL	BDL
31.03.2025	BLQ(LOQ0.005)	8.1	8.2	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.1	BDL	BDL
Avg.	-	8.1	8.2	-	-	5.3	-	-
Min	-	6.7	6.7	-	-	4.5	-	-
Max	-	9.6	9.6	-	-	5.8	-	-

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

---------------------------------**End Report**------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By &Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ AA-202503/15/A			Date:		04/04/2025
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)			
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	:	AA-202503/15
Sampling Location	:	Nandeli Village	Sample Description	:	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	:	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C		

Ambient Air Analysis Results

Sampling Location	Date Of Sampling	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO mg/m3
Nandeli Village	03.03.2025	56.37	28.09	19.07	21.16	0.50
	07.03.2025	55.39	26.71	18.78	26.65	0.43
	10.03.2025	43.79	23.11	20.34	27.04	0.42
	11.03.2025	44.65	24.88	20.17	21.91	0.47
	17.03.2025	52.38	27.34	19.79	26.05	0.53
	21.03.2025	55.67	28.09	19.07	21.16	0.49
	24.03.2025	52.19	25.91	19.68	24.18	0.46
	28.03.2025	42.64	23.14	18.75	21.16	0.37
	31.03.2025	50.36	25.68	19.72	23.35	0.45
	Avg.	50.38	25.88	19.49	23.63	0.46
	Min	42.64	23.11	18.75	21.16	0.37
	Max	56.37	28.09	20.34	27.04	0.53

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

---------------------------------**End Report**------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By &Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

Gurukripa Enviro Care Pvt. Ltd. (Auth. Sign.) Jaipur

TEST REPORT

Report No.: GECPL/ AA-202503/15/B			Date:		04/04/2025
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)			
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	:	AA-202503/15
Sampling Location	:	Nandeli Village	Sample Description	:	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	:	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C		

Ambient Air Analysis Results

Date Of Sampling	Hg ng/m³	NH_3 µg/m³	O_3 µg/m³	C_6H_6 µg/m³	B(A)P ng/m³	Ni ng/m³	Pb µg/m³	As ng/m³
03.03.2025	BLQ(LOQ0.005)	9.5	6.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.5	BDL	BDL
07.03.2025	BLQ(LOQ0.005)	7.6	7.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.5	BDL	BDL
10.03.2025	BLQ(LOQ0.005)	8.9	7.1	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.6	BDL	BDL
11.03.2025	BLQ(LOQ0.005)	9.3	6.5	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.2	BDL	BDL
17.03.2025	BLQ(LOQ0.005)	8.7	6.3	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.5	BDL	BDL
21.03.2025	BLQ(LOQ0.005)	7.8	7.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.3	BDL	BDL
24.03.2025	BLQ(LOQ0.005)	8.0	7.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.9	BDL	BDL
28.03.2025	BLQ(LOQ0.005)	8.2	7.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.6	BDL	BDL
31.03.2025	BLQ(LOQ0.005)	8.4	7.3	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.2	BDL	BDL
Avg.	-	8.5	7.2	-	-	5.3	-	-
Min	-	7.6	6.3	-	-	4.5	-	-
Max	-	9.5	7.7	-	-	5.9	-	-

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

----------------------------------**End Report**------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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TEST REPORT

Report No.: GECPL/ AA-202503/16/A				Date:	04/04/2025
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)			
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	:	AA-202503/16
Sampling Location	:	Dhurkot VILLAGE	Sample Description	:	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	:	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C		

Ambient Air Analysis Results

Sampling Location	Date Of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m3
Dhurkot village	03.03.2025	48.20	23.95	16.16	17.84	0.45
	07.03.2025	49.48	26.21	17.88	20.98	0.53
	10.03.2025	42.60	23.95	15.37	17.84	0.45
	11.03.2025	54.35	29.47	20.18	23.84	0.65
	17.03.2025	52.22	26.06	18.05	22.65	0.55
	21.03.2025	50.22	25.24	18.73	21.85	0.58
	24.03.2025	46.34	28.19	20.18	22.87	0.56
	28.03.2025	42.60	23.95	15.37	17.84	0.45
	31.03.2025	48.21	25.84	17.75	20.70	0.51
	Avg.	48.25	25.87	17.74	20.71	0.53
	Min	42.6	23.95	15.37	17.84	0.45
	Max	54.35	29.47	20.18	23.84	0.65

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

---------------------------------End Report-----------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By &Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

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TEST REPORT

Report No.: GECPL/ AA-202503/16/B				Date:	04/04/2025
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)			
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	:	AA-202503/16
Sampling Location	:	Dhurkot VILLAGE	Sample Description	:	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	:	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C		

Ambient Air Analysis Results

Date Of Sampling	Hg ng/m³	NH_3 µg/m³	O_3 µg/m³	C_6H_6 µg/m³	B(A)P ng/m³	Ni ng/m³	Pb µg/m³	As ng/m³
03.03.2025	BLQ(LOQ0.005)	7.6	7.3	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.4	BDL	BDL
07.03.2025	BLQ(LOQ0.005)	8.0	6.1	BLQ(LOQ0.001)	BLQ(LOQ0.001)	6.5	BDL	BDL
10.03.2025	BLQ(LOQ0.005)	7.5	7.5	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.5	BDL	BDL
11.03.2025	BLQ(LOQ0.005)	7.7	7.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.6	BDL	BDL
17.03.2025	BLQ(LOQ0.005)	8.3	6.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.4	BDL	BDL
21.03.2025	BLQ(LOQ0.005)	7.5	6.8	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.9	BDL	BDL
24.03.2025	BLQ(LOQ0.005)	9.2	6.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.2	BDL	BDL
28.03.2025	BLQ(LOQ0.005)	8.6	7.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.7	BDL	BDL
31.03.2025	BLQ(LOQ0.005)	8.0	7.1	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.4	BDL	BDL
Avg.	-	8.0	7.0	-	-	5.3	-	-
Min	-	7.5	6.1	-	-	3.9	-	-
Max	-	9.2	7.7	-	-	6.5	-	-

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

---------------------------------**End Report**------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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TEST REPORT

Report No.: GECPL/AA-202503/17/A			Date:		04/04/2025
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)			
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	:	AA-202503/17
Sampling Location	:	AAQMS STATION 01	Sample Description	:	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	:	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C		

Ambient Air Analysis Results

Sampling Location	Date Of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m3
AAQMS STATION 01	03.03.2025	54.08	23.17	17.00	19.95	0.61
	07.03.2025	54.32	25.98	17.35	21.14	0.48
	10.03.2025	48.90	24.21	17.85	21.97	0.55
	11.03.2025	55.38	27.07	17.82	21.83	0.43
	17.03.2025	56.31	29.91	19.38	23.92	0.57
	21.03.2025	57.47	22.97	18.97	26.84	0.41
	24.03.2025	54.01	25.17	20.07	22.75	0.42
	28.03.2025	54.02	25.55	18.55	22.69	0.57
	31.03.2025	54.33	25.51	17.89	21.71	0.56
	Avg.	54.31	25.50	18.32	22.53	0.51
	Min	48.9	22.97	17	19.95	0.41
	Max	57.47	29.91	20.07	26.84	0.61

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

Tested By
(Sr. Chemist/Chemist)

Verified By &Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

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- The test report in full or part shall not be used for promotional or publicity purposes without the written consent of Gurukripa Enviro Care Private Limited.
- Samples shall be stored for the period of 15 days after the date of issue of Report.

TEST REPORT

Report No.: GECPL/ AA-202503/17/B			Date:	04/04/2025	
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)			
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	:	AA-202503/17
Sampling Location	:	AAQMS STATION 01	Sample Description	:	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	:	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-05
Meteorological condition during monitoring		25°C ±3 °C			

Ambient Air Analysis Results

Date Of Sampling	Hg ng/m³	NH_3 µg/m³	O_3 µg/m³	C_6H_6 µg/m³	B(A)P ng/m³	Ni ng/m³	Pb µg/m³	As ng/m³
03.03.2025	BLQ(LOQ0.005)	9.2	6.1	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.5	BDL	BDL
07.03.2025	BLQ(LOQ0.005)	7.5	8.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.9	BDL	BDL
10.03.2025	BLQ(LOQ0.005)	8.6	7.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.0	BDL	BDL
11.03.2025	BLQ(LOQ0.005)	9.1	6.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.6	BDL	BDL
17.03.2025	BLQ(LOQ0.005)	7.2	5.8	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.6	BDL	BDL
21.03.2025	BLQ(LOQ0.005)	8.5	7.0	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.4	BDL	BDL
24.03.2025	BLQ(LOQ0.005)	8.3	7.0	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.9	BDL	BDL
28.03.2025	BLQ(LOQ0.005)	7.6	6.9	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.3	BDL	BDL
31.03.2025	BLQ(LOQ0.005)	8.1	6.5	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.7	BDL	BDL
Avg.	-	8.2	6.9	-	-	5.0	-	-
Min	-	7.2	5.8	-	-	4.3	-	-
Max	-	9.2	8.7	-	-	5.7	-	-

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

----------------------------------End Report-------------------------------

Gurukripa Enviro Care Pvt. Ltd. Jaipur Auth. Sign.

Tested By
(Sr. Chemist/Chemist)

Verified By &Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ AA-202503/18/A			Date:	04/04/2025	
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)			
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	:	AA-202503/18
Sampling Location	:	URJA AAQMS NO.2	Sample Description	:	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	:	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C		

Ambient Air Analysis Results

Sampling Location	Date Of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m3
URJA AAQMS NO.2	03.03.2025	55.87	26.97	18.36	24.47	0.55
	07.03.2025	55.34	26.97	16.73	21.84	0.42
	10.03.2025	55.28	30.01	15.95	22.83	0.57
	11.03.2025	58.54	29.84	18.04	21.87	0.57
	17.03.2025	56.68	28.02	16.74	23.17	0.60
	21.03.2025	53.34	26.83	18.88	22.10	0.63
	24.03.2025	55.08	28.15	17.59	22.82	0.53
	28.03.2025	52.38	26.83	15.95	21.84	0.42
	31.03.2025	56.86	28.21	16.47	23.71	0.64
	Avg.	55.49	27.98	17.19	22.74	0.55
	Min	52.38	26.83	15.95	21.84	0.42
	Max	58.54	30.01	18.88	24.47	0.64

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

Tested By
(Sr. Chemist/Chemist)

Verified By &Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

Enviro Care Auth. Sign. Jaipur

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GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ AA-202503/18/B			Date:	04/04/2025	
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)			
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	:	AA-202503/18
Sampling Location	:	URJA AAQMS NO.2	Sample Description	:	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	:	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C		

Ambient Air Analysis Results

Date Of Sampling	Hg ng/m³	NH_3 µg/m³	O_3 µg/m³	C_6H_6 µg/m³	B(A)P ng/m³	Ni ng/m³	Pb µg/m³	As ng/m³
03.03.2025	BLQ(LOQ0.005)	8.5	6.0	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.9	BDL	BDL
07.03.2025	BLQ(LOQ0.005)	7.2	6.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	6.9	BDL	BDL
10.03.2025	BLQ(LOQ0.005)	8.7	6.8	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.4	BDL	BDL
11.03.2025	BLQ(LOQ0.005)	7.8	7.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.0	BDL	BDL
17.03.2025	BLQ(LOQ0.005)	8.0	6.3	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.3	BDL	BDL
21.03.2025	BLQ(LOQ0.005)	9.7	6.9	BLQ(LOQ0.001)	BLQ(LOQ0.001)	6.9	BDL	BDL
24.03.2025	BLQ(LOQ0.005)	7.4	6.5	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.3	BDL	BDL
28.03.2025	BLQ(LOQ0.005)	7.2	6.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.4	BDL	BDL
31.03.2025	BLQ(LOQ0.005)	7.3	6.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.8	BDL	BDL
Avg.	-	8.0	6.7	-	-	4.8	-	-
Min	-	7.2	6	-	-	3.3	-	-
Max	-	9.7	7.6	-	-	6.9	-	-

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

---------------------------------**End Report**------------------------------

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Tested By
(Sr. Chemist/Chemist)

Verified By &Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

TEST REPORT

Report No.: GECPL/ AA-202503/19/A			Date:	04/04/2025
URL No.:				
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW		
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)		
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	: NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	: AA-202503/19
Sampling Location	:	RAW WATER AREA AAQMS NO.3	Sample Description	: Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	: IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	: 04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	: 04/04/2025
Type of Container	:	Plastic Container	Format No.	: 7.8 F-05
Meteorological condition during monitoring		25°C ±3 °C		

Ambient Air Analysis Results

Sampling Location	Date Of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m3
RAW WATER AREA AAQMS NO.3	03.03.2025	61.11	26.07	17.37	20.86	0.50
	07.03.2025	52.65	24.77	17.39	22.88	0.69
	10.03.2025	53.25	27.34	16.88	25.05	0.71
	11.03.2025	52.27	26.07	19.37	29.94	0.73
	17.03.2025	50.39	24.77	16.88	19.43	0.45
	21.03.2025	60.61	27.34	19.37	29.94	0.73
	24.03.2025	57.38	26.84	18.88	19.43	0.53
	28.03.2025	53.67	27.34	18.08	20.15	0.45
	31.03.2025	50.41	24.75	16.86	19.45	0.46
	Avg.	54.64	26.14	17.90	23.01	0.58
	Min	50.39	24.75	16.86	19.43	0.45
	Max	61.11	27.34	19.37	29.94	0.73

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

Tested By
(Sr. Chemist/Chemist)

Verified By &Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ AA-202503/19/B			Date:	04/04/2025
URL No.:				
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW		
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)		
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	: NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	: AA-202503/19
Sampling Location	:	RAW WATER AREA AAQMS NO.3	Sample Description	: Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	: IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	: 04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	: 04/04/2025
Type of Container	:	Plastic Container	Format No.	: 7.8 F-05
Meteorological condition during monitoring		25°C ±3 °C		

Ambient Air Analysis Results

Date Of Sampling	Hg ng/m³	NH_3 µg/m³	O_3 µg/m³	C_6H_6 µg/m³	B(A)P ng/m³	Ni ng/m³	Pb µg/m³	As ng/m³
03.03.2025	BLQ(LOQ0.005)	7.1	5.9	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.5	BDL	BDL
07.03.2025	BLQ(LOQ0.005)	7.4	6.1	BLQ(LOQ0.001)	BLQ(LOQ0.001)	6.2	BDL	BDL
10.03.2025	BLQ(LOQ0.005)	8.5	7.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.9	BDL	BDL
11.03.2025	BLQ(LOQ0.005)	7.9	6.5	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.1	BDL	BDL
17.03.2025	BLQ(LOQ0.005)	7.7	7.9	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.8	BDL	BDL
21.03.2025	BLQ(LOQ0.005)	7.6	7.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.8	BDL	BDL
24.03.2025	BLQ(LOQ0.005)	7.4	7.4	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.1	BDL	BDL
28.03.2025	BLQ(LOQ0.005)	7.3	7.3	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.5	BDL	BDL
31.03.2025	BLQ(LOQ0.005)	7.5	7.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.9	BDL	BDL
Avg.	-	7.6	7.1	-	-	5.0	-	-
Min	-	7.1	5.9	-	-	3.5	-	-
Max	-	8.5	7.9	-	-	6.2	-	-

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

---------------------------------**End Report**------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By &Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

Enviro Care Auth. Sign. Jaipur

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TEST REPORT

Report No.: GECPL/ AA-202503/20/A			Date:	04/04/2025
URL No.:				
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW		
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)		
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	: NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	: AA-202503/20
Sampling Location	:	Coal Yard AAQMS-IV	Sample Description	: Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	: IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	: 04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	: 04/04/2025
Type of Container	:	Plastic Container	Format No.	: 7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C	

Ambient Air Analysis Results

Sampling Location	Date Of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m3
Coal Yard AAQMS-IV	03.03.2025	56.83	27.87	17.88	22.78	0.45
	07.03.2025	54.34	29.97	18.82	21.91	0.49
	10.03.2025	56.38	29.95	20.04	20.18	0.57
	11.03.2025	53.45	26.97	18.98	20.17	0.56
	17.03.2025	57.38	29.14	16.88	20.88	0.51
	21.03.2025	47.27	26.84	17.74	19.87	0.47
	24.03.2025	55.67	27.33	18.37	19.86	0.56
	28.03.2025	60.61	26.07	17.37	20.86	0.50
	31.03.2025	57.83	29.41	16.87	20.84	0.52
	Avg.	55.53	28.17	18.11	20.82	0.51
	Min	47.27	26.07	16.87	19.86	0.45
	Max	60.61	29.97	20.04	22.78	0.57

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

Payal

Tested By
(Sr. Chemist/Chemist)

Verified By &Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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GURUKRIPA ENVIRO CARE PVT. LTD.

Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ AA-202503/20/B			Date:	04/04/2025	
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Protocol used for analysis	:	P (IS 5182 (Part 23) 2006 ,PM2.5 (IS 5182 (Part 24) 2019,SO2 (IS 5182 (Part 2) 2001,NO2(IS 5182 (Part 6) 2006,CO(IS5182 (Part 10)			
Sample Collection Date	:	03/03/2025 to 31/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 02/04/2025	Sample ID	:	AA-202503/20
Sampling Location	:	Coal Yard AAQMS-IV	Sample Description	:	Ambient Air
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 5182
Quantity / No. of Sample	:	2 Filter paper, 1 SO_2×35 mL, NO_2×35 mL, Trade Bag	Analysis Started On	:	04/03/2025 to 02/04/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-05
Meteorological condition during monitoring			25°C ±3 °C		

Ambient Air Analysis Results

Date Of Sampling	Hg ng/m³	NH_3 µg/m³	O_3 µg/m³	C_6H_6 µg/m³	B(A)P ng/m³	Ni ng/m³	Pb µg/m³	As ng/m³
03.03.2025	BLQ(LOQ0.005)	9.6	7.0	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.9	BDL	BDL
07.03.2025	BLQ(LOQ0.005)	7.1	7.4	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.3	BDL	BDL
10.03.2025	BLQ(LOQ0.005)	8.9	8.1	BLQ(LOQ0.001)	BLQ(LOQ0.001)	3.6	BDL	BDL
11.03.2025	BLQ(LOQ0.005)	9.0	8.0	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.2	BDL	BDL
17.03.2025	BLQ(LOQ0.005)	7.7	6.4	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.8	BDL	BDL
21.03.2025	BLQ(LOQ0.005)	8.8	6.7	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.4	BDL	BDL
24.03.2025	BLQ(LOQ0.005)	7.0	6.5	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.9	BDL	BDL
28.03.2025	BLQ(LOQ0.005)	7.1	6.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	5.2	BDL	BDL
31.03.2025	BLQ(LOQ0.005)	7.3	6.6	BLQ(LOQ0.001)	BLQ(LOQ0.001)	4.7	BDL	BDL
Avg.	-	8.1	7.0	-	-	4.6	-	-
Min	-	7.0	6.4	-	-	3.3	-	-
Max	-	9.6	8.1	-	-	5.4	-	-

Remarks: - Sampling done by Gurukripa Enviro Care Pvt Ltd. Representative (Mr. Krishana Sahu).

---------------------------------**End Report**------------------------------

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign.

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/N-202503/10			Date:	04/04/2025	
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:				
Sample Collection Date	:	03/03/2025 to 28/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	04/03/2025 to 31/03/2025	Sample ID	:	N-202503/10
Sampling Location	:	Project Site	Sample Description	:	Ambient Noise Monitoring
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 9989-1991
Analysis Started On	:	04/03/2025 to 31/03/2025	Analysis Completed On	:	04/04/2025
Instrument calibration status	:	Calibrated	Format No.	:	7.8 F-07
Meteorological condition during monitoring	:	Clear Sky	Actual duration of Monitoring, (Hrs.)	:	24 Hrs.
Meteorological condition during monitoring			25°C ±3 °C		

Ambient Noise Analysis Results
Industrial Area

LOCATION	UNIT	Day	Night	Avg.	Limit	
					Day	Night
AAQMS STATION 01	dB(A)	68.3	65.3	66.8	75	70
URJA (AAQMS 02)	dB(A)	71.7	56.8	64.25		
RAW WATER AREA (AAQMS 03)	dB(A)	69.6	59.4	64.5		
Near COAL YARD (AAQMS 04)	dB(A)	64.5	60.3	62.4		
NEAR – DHURKOT VILLAGE	dB(A)	45.8	40.8	43.3	55	45
NEAR – FULBANDHIYA VILLAGE	dB(A)	43.6	40.4	42.0		
NEAR – NANDELI VILLAGE	dB(A)	44.5	41.3	42.9		
NEAR – KOMO VILLAGE	dB(A)	44.6	40.7	42.65		

Remarks: Sampling done by GECPL Representative (Mr. krishan sahu).

---------------------------------**End Report**------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

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TEST REPORT

Report No.: GECPL/AN-202503/11			Date:		04/04/2025
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:				
Sample Collection Date	:	21/03/2025	Sampling Type	:	NA
Sample Receipt Date	:	24/03/2025	Sample ID	:	AN-202503/11
Sampling Location	:	Project Site	Sample Description	:	Noise Monitoring
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS 9989-1991
Analysis Started On	:	24/03/2025	Analysis Completed On	:	04/04/2025
Instrument calibration status	:	Calibrated	Format No.	:	7.8 F-07
Meteorological condition during monitoring	:	Clear Sky	Actual duration of Monitoring, (Hrs.)	:	24 Hrs.
Meteorological condition during monitoring			25°C ±3 °C		

Noise Analysis Results
Industrial Area

LOCATION	UNIT	NOISE MEASURED	LIMIT (INDUSTRIAL ZONE)
TG -01	dB(A)	84.1	**85dB** **(AsperFactoriesAct1948, maximum exposurefor 8hrsworkshift.)**
TG - 02	dB(A)	82.8	
BFPI	dB(A)	82.1	
BFPII	dB(A)	82.3	
Compressor House	dB(A)	83.7	
Tac Building	dB(A)	80.1	
DM Plant	dB(A)	74.4	
MUH-CHP	dB(A)	76.0	
Crusher-CHP	dB(A)	82.2	
Nr. Silo	dB(A)	84.2	
Avg.	dB(A)	81.19	

Remarks: Sampling done by GECPL Team Representative (Mr. Krishana Sahu).

---------------------------------End Report-----------------------------

Gurukripa Enviro Care Pvt. Ltd. Jaipur Auth. Sign.

Payal

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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- Samplesshallbestoredfortheperiodof15daysafterthedateofissueofReport.

TEST REPORT

Report No.: GECPL/W-202503/42			Date:04/04/2025		
URL No.:					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Sample Collection Date	:	05/03/2025	Sampling Type	:	-
Sample Receipt Date	:	15/03/2025	Sample ID	:	W-202503/42
Sampling Location	:	Project Site	Sample Description	:	Ground Water Level Monitoring
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	As CGWA Guidelines
Instrument calibration status	:	Calibrated	Format No.	:	7.8 F-07
Meteorological condition during monitoring			25°C ±3 °C		

Water Results

Sr. No.	LOCATION	UNIT	RESULT (DEPTH/BELOW GROUND WATER LEVEL
1	NEAR-CLARFIER (NORTH SIDE)	Meter	1.34
2	NEAR- ASH DYKE (EAST SIDE)		8.31
3	NEAR- OHC (WEST SIDE)		1.74

Remarks: Sampling done by GECPL Team representative (Mr. Krishan sahu).

----------------------------------End Report------------------------------

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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3. Samplesshallbestoredfortheperiodof15daysafterthedateofissueofReport.

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Complete Enviro Solution

TEST REPORT

Report No.: GECPL/SE-202503/52			Date:		04/04/2025
URL No.					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Sample Collection Date & Time	:	11/03/2025 11:40 pm to 11: 53 pm	Sampling Type	:	Isokinetic
Sample Receipt Date	:	14/03/2025	Sample ID	:	SE-202503/52
Sampling Location	:	Unit-I, 600MW	Sample Description	:	Stack Emission- Height of Stack -275m, Dia. of Stack – 7.3 m, Fuel of Stack - Coal
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS:11255
Quantity / No. of Sample	:	1 Thimble, 1 SO_2×50 mL, NO_x×50 mL, Tedler Bag	Analysis Started On	:	14/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	18/03/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-06
Environmental Condition during the test			25°C ±3 °C		

Stack Analysis Results

S. No.	Parameter	Result	Unit	Protocol used for Analysis	Limits
1	Flow	2683534	Nm^3/hr.	CPCB Emission Regulation part-3,1985	-
2	Flue Gas Velocity	23.31	m/s	CPCB Emission Regulation part-3,1985	-
3	Fuel gas Temp.	125	°C	CPCB Emission Regulation part-3,1985	-
4	Load	505	-	-	-
5	Particulate Matter as PM	47.6	mg/Nm^3	IS 11255 (Part 01): 1985	50
6	Sulphur Dioxide as SO_2	1153	mg/Nm^3	IS 11255 (Part 02): 1985	200
7	Oxides of Nitrogen as No_x	338	mg/Nm^3	IS 11255 (Part 07): 1985	450
8	Carbon Monoxides	<0.2	mg/Nm^3	IS 11255 (Part 10): 1985	-
9	Mercury as Hg	BDL	mg/Nm^3	EPA Method:29	0.03

Remarks: Sampling done by GECPL Team representative (Mr. Krishana sahu).

---------------------------------End Report------------------------------

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Tested By
(Sr. Chemist/Chemist)

Verified by & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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TEST REPORT

Report No.: GECPL/ SE-202503/53			Date:		04/04/2025
URL No.					
Name & Address of Customer	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Sample Collection Date & Time	:	11/03/2025 12:30 pm to 12:45 pm	Sampling Type	:	Isokinetic
Sample Receipt Date	:	14/03/2025	Sample ID	:	SE-202503/53
Sampling Location	:	Unit-II, 600MW	Sample Description	:	Stack Emission- Height of Stack -275m, Dia. of Stack – 7.3 m, Fuel of Stack - Coal
Sample Collected / Submitted by	:	GECPL Team	Protocol used for monitoring	:	IS:11255
Quantity / No. of Sample	:	1 Thimble, 1 SO_2×50 mL, NO_x×50 mL, Tedler Bag	Analysis Started On	:	14/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	18/03/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-06
Environmental Condition during the test			25°C ±3 °C		

Stack Analysis Results

S. No.	Parameter	Result	Unit	Protocol used for Analysis	Limits
1	Flow	2383385	Nm^3/hr.	CPCB Emission Regulation part-3,1985	-
2	Flue Gas Velocity	23.65	m/s	CPCB Emission Regulation part-3,1985	-
3	Fuel gas Temp.	124	°C	CPCB Emission Regulation part-3,1985	-
4	Load	505	-	-	-
5	Particulate Matter as PM	48.7	mg/Nm^3	IS 11255 (Part 01): 1985	50
6	Sulphur Dioxide as SO_2	1148	mg/Nm^3	IS 11255 (Part 02): 1985	200
7	Oxides of Nitrogen as No_x	354	mg/Nm^3	IS 11255 (Part 07): 1985	450
8	Carbon Monoxides	<0.2	mg/Nm^3	IS 11255 (Part 10): 1985	-
9	Mercury as Hg	BDL	mg/Nm^3	EPA Method:29	0.03

Remarks: Sampling done by GECPL Team representative (Mr. Krishana sahu).

----------------------------------**End Report**--------------------------------

Tested By
(Sr. Chemist/Chemist)

Gurukripa Enviro Care Pvt. Ltd.
Auth. Sign.

Verified by & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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TEST REPORT

Report No.: GECPL/WW-202503/09/A			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	19/03/2025	Sampling Type	:	Grab
Date of Sample Received	:	20/03/2025	Sample ID	:	WW-202503/09
Sampling Location	:	STP Outlet	Sample Description	:	Waste Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	20/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	STP-1	STP-2	STP-3	STP-4	STP-5	STP-6	STP-7	STP-8	Units	Limits as per Environmental (Protection Rule, 1986 (Sch-VI)
Chemical Testing												
Water												
1	pH	IS:3025 (Part-11)-2022	7.24	7.38	7.64	7.46	7.86	7.31	7.28	7.74	-	6.0-9.0
2	Total Suspended Solids (TSS)	IS:3025 (Part-17)-1984	16.8	17.4	17.8	16.0	16.8	15.9	15.4	18.1	mg/L	100 (Max.)
3	Chemical Oxygen Demand (COD)	IS:3025(Part-58)-1993	60.6	61.3	62.8	60.1	63.6	62.7	61.8	63.7	mg/L	250 (Max.)
4	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	IS:3025 (Part-44)-2023	19.8	21.2	22.3	20.8	21.6	22.1	23.1	21.4	mg/L	30 (Max.)
5	Oil & Grease	IS:3025 (Part-39)-2021	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	mg/L	10 (Max.)
6	Fecal Coliform	IS : 1622-1981	212	210	198	204	214	212	221	218	ml	-

Remarks:- Sampling done by GECPL representative (Mr. Krishana Sahu).
* N.D. – Not Detect

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

GURUKRIPA ENVIRO CARE PVT. LTD.

Complete Enviro Solution

TEST REPORT

Report No.: GECPL/WW-202503/09/B			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	19/03/2025	Sampling Type	:	Grab
Date of Sample Received	:	20/03/2025	Sample ID	:	WW-202503/09
Sampling Location	:	STP Outlet	Sample Description	:	Waste Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24th Edition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	20/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	STP-9	STP-10	STP-11	STP-12	STP-13	STP-14	STP-15	STP-16	Avg.	Units	Limits as per Environmental (Protection Rule, 1986 (Sch-VI)
Chemical Testing													
Water													
1	pH	IS:3025 (Part-11)-2022	7.64	7.64	7.12	7.14	7.67	7.45	7.97	7.45	7.50	-	6.0-9.0
2	Total Suspended Solids (TSS)	IS:3025 (Part-17)-1984	17.8	16.2	19.8	21.6	21.2	16.8	16.9	17.0	17.59	mg/L	100 (Max.)
3	Chemical Oxygen Demand (COD)	IS:3025(Part-58)-1993	63.4	62.4	62.7	66.9	68.4	70.3	73.6	71.0	64.71	mg/L	250 (Max.)
4	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	IS:3025 (Part-44)-2023	21.2	20.3	22.1	23.8	21.2	23.6	23.2	22.2	21.87	mg/L	30 (Max.)
5	Oil & Grease	IS:3025 (Part-39)-2021	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	mg/L	10 (Max.)
6	Fecal Coliform	IS : 1622-1981	212	217	193	216	223	226	220	214	213.13	ml	-

Remarks: Sampling done by GECPL representative (Mr. Krishana Sahu).

* N.D. – Not Detect

---------------------------------**End Report**-----------------------------

Tested By
(Sr. Chemist/Chemist)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TC-13757

TEST REPORT

Report No.: GECPL/WW-202503/11		Date:	04/04/2025		
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	19/03/2025	Sampling Type	:	Grab
Date of Sample Received	:	25/03/2025	Sample ID	:	WW-202503/11
Sampling Location	:	Ash Pond Recovery Pond	Sample Description	:	Untreated Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Cap Seal	Analysis Completed On	:	31/03/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units
Chemical Testing				
Water				
1	pH	APHA 24th Edition 4500-H+ B	7.8	-
2	Temperature	APHA 24th Edition 2550-B	26.8	°C
3	Total Suspended Solids (TSS)	APHA 24th Edition 2540-D	132	mg/L
4	Oil & Grease	APHA 24th Edition 5520 B	14.2	mg/L
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	IS:3025 (Part-44)-2023	76.2	mg/L
6	Chemical Oxygen Demand (COD)	IS:3025(Part-58)-1993	236	mg/L

Remarks: Sampling done by GECPL representative (Mr. Krishan Sahu).

---------------------------------**End Report**------------------------------

Gurukripa Enviro Care Pvt. Ltd. Jaipur
Auth. Sign.

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution
TC-13757

TEST REPORT

Report No.: GECPL/ WW-202503/12			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	19/03/2025	Sampling Type	:	Grab
Date of Sample Received	:	25/03/2025	Sample ID	:	WW-202503/12
Sampling Location	:	AWRS	Sample Description	:	Treated Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Cap Seal	Analysis Completed On	:	31/03/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units	Limits as per Environmental (Protection Rule, 1986 (Sch-VI)
Chemical Testing					
Water					
1	pH	APHA 24th Edition 4500-H+ B	7.3	-	6.0-9.0
2	Temperature	APHA 24th Edition 2550-B	29.8	°C	-
3	Total Suspended Solids (TSS)	APHA 24th Edition 2540-D	28.6	mg/L	100 (Max.)
4	Oil & Grease	APHA 24th Edition 5520 B	2.4	mg/L	10 (Max.)
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	IS:3025 (Part-44)-2023	8.2	mg/L	30 (Max.)
6	Chemical Oxygen Demand (COD)	IS:3025(Part-58)-1993	29.4	mg/L	250 (Max.)
7	Phosphate as PO_4	APHA 24thEdition 4500-P, D	N.D.	mg/L	-

Remarks: Sampling done by GECPL representative (Mr. Krishana Sahu).

S---------------------------------End Report------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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3. Samples shall be stored for the period of 15 days after the date of issue of Report.

TEST REPORT

Report No.: GECPL/ WW-202503/13			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	19/03/2025	Sampling Type	:	Grab
Date of Sample Received	:	25/03/2025	Sample ID	:	WW-202503/13
Sampling Location	:	Boiler Blow Down water Unit-II	Sample Description	:	Untreated Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Litre/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Cap Seal	Analysis Completed On	:	31/03/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units
Chemical Testing				
Water				
1	Suspended Solids	APHA 24th Edition 2540-D	mg/L	6.8
2	Oil & Grease	APHA 24th Edition 5520 B	mg/L	N.D.
3	Iron Total as Fe	APHA 24th Edition 3500 Fe-B	mg/L	N.D.
4	Copper As Cu	APHA 24th Edition 3111 Cu B	mg/L	N.D.

Remarks: Sampling done by GECPL representative (Mr. Krishana Sahu).
N.D.: - Not Detect

x---------------------------------**End Report**-------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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TEST REPORT

Report No.: GECPL/ WW-202503/14			Date:	04/04/2025	
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	19/03/2025	Sampling Type	:	Grab
Date of Sample Received	:	25/03/2025	Sample ID	:	WW-202503/14
Sampling Location	:	Coal Setling Pond	Sample Description	:	Untreated Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Cap Seal	Analysis Completed On	:	31/03/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units
Chemical Testing				
Water				
1	pH	APHA 24th Edition 4500-H+ B	7.4	-
2	Temperature	APHA 24th Edition 2550-B	29.9	°C
3	Total Suspended Solids (TSS)	APHA 24th Edition 2540-D	124	mg/L
4	Oil & Grease	APHA 24th Edition 5520 B	14.2	mg/L
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	IS:3025 (Part-44)-2023	112	mg/L
6	Chemical Oxygen Demand (COD)	IS:3025(Part-58)-1993	340	mg/L

Remarks: Sampling done by GECPL representative (Mr. Krishana Sahu).

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

---------------------------------**End Report**------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TC-13757

TEST REPORT

Report No.: GECPL/ WW-202503/15			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	19/03/2025	Sampling Type	:	Grab
Date of Sample Received	:	25/03/2025	Sample ID	:	WW-202503/15
Sampling Location	:	Condenser Cooling Water	Sample Description	:	Untreated Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	31/03/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units	Limits as per IS:10500:2012	
					Acceptable	Permissible
Chemical Testing						
Water						
1	pH	APHA 24th Edition 4500-H+ B	7.6	-	6.5 – 8.5	No relaxation
2	Temperature	APHA 24th Edition 2550-B	29.9	°C	-	-
3	Total Suspended Solids (TSS)	APHA 24th Edition 2540-D	28	mg/L	-	-
4	Oil & Grease	APHA 24th Edition 5520 B	ND	mg/L	-	-
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	IS:3025 (Part-44)-2023	12	mg/L	-	-
6	Chemical Oxygen Demand (COD)	IS:3025(Part-58)-1993	40	mg/L	-	-
7	Phosphate as PO_4	APHA 24thEdition 4500-P, D	N.D.	mg/L	-	-
8	Free Available Chlorine	APHA 24th Edition 4500-Cl B	0.1	mg/L	0.20 (Min.)	1.0

Remarks: Sampling done by GECPL representative (Mr. Krishana Sahu).

---------------------------------End Report---------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign.

TEST REPORT

Report No.: GECPL/ WW-202503/16			Date:	04/04/2025	
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	19/03/2025	Sampling Type	:	Grab
Date of Sample Received	:	25/03/2025	Sample ID	:	WW-202503/16
Sampling Location	:	CT Blow Down	Sample Description	:	Untreated water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Cap Seal	Analysis Completed On	:	31/03/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units
Chemical Testing				
Water				
1	pH	APHA 24th Edition 4500-H+ B	7.8	-
2	Temperature	APHA 24th Edition 2550-B	29.6	°C
3	Total Suspended Solids (TSS)	APHA 24th Edition 2540-D	128	mg/L
4	Oil & Grease	APHA 24th Edition 5520 B	17.2	mg/L
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	IS:3025 (Part-44)-2023	124.0	mg/L
6	Chemical Oxygen Demand (COD)	IS:3025(Part-58)-1993	480	mg/L

Remarks: Sampling done by GECPL representative (Mr. Krishana Sahu).

---------------------------------End Report---------------------------------

Gurukripa Enviro Care Pvt. Ltd. Jaipur (Auth. Sign.)

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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3. Samples shall be stored for the period of 15 days after the date of issue of Report.

TEST REPORT

Report No.: GECPL/ WW-202503/17			Date:	04/04/2025	
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	19/03/2025	Sampling Type	:	Grab
Date of Sample Received	:	25/03/2025	Sample ID	:	WW-202503/17
Sampling Location	:	Near- Guard Pond Inlet	Sample Description	:	Untreated Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24th Edition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Cap Seal	Analysis Completed On	:	31/03/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units
Chemical Testing				
Water				
1	pH	APHA 24th Edition 4500-H+ B	7.4	-
2	Temperature	APHA 24th Edition 2550-B	29.4	°C
3	Total Suspended Solids (TSS)	APHA 24th Edition 2540-D	134	mg/L
4	Oil & Grease	APHA 24th Edition 5520 B	15.4	mg/L
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	IS:3025 (Part-44)-2023	136.2	mg/L
6	Chemical Oxygen Demand (COD)	IS:3025(Part-58)-1993	431.3	mg/L

Remarks Sampling done by GECPL representative (Mr. Krishana Sahu).

---------------------------------End Report------------------------------

Tested By
(Sr. Chemist/Chemist)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign.

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

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GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TC-13757

TEST REPORT

Report No.: GECPL/ WW-202503/18			Date:	04/04/2025
URL No.:				
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW		
Contact Person	:	-		

Date of Sample Collection	:	19/03/2025	Sampling Type	:	Grab
Date of Sample Received	:	25/03/2025	Sample ID	:	WW-202503/18
Sampling Location	:	Near- Guard Pond Outlet	Sample Description	:	Treated Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Cap Seal	Analysis Completed On	:	31/03/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units	Limits as per Environmental (Protection Rule, 1986 (Sch-VI)
Chemical Testing					
Water					
1	pH	APHA 24th Edition 4500-H+ B	7.5	-	6.0-9.0
2	Temperature	APHA 24th Edition 2550-B	29.7	°C	-
3	Total Suspended Solids (TSS)	APHA 24th Edition 2540-D	32.6	mg/L	100 (Max.)
4	Oil & Grease	APHA 24th Edition 5520 B	3.2	mg/L	10 (Max.)
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	IS:3025 (Part-44)-2023	22.8	mg/L	30 (Max.)
6	Chemical Oxygen Demand (COD)	IS:3025(Part-58)-1993	126	mg/L	250 (Max.)

Remarks: Sampling done by GECPL representative (Mr. Krishana Sahu).

---------------------------------End Report------------------------------

Payal

Tesed By
(Sr. Chemist/Chemist)

Enviro Care Pvt. Ltd. Gurukripa Auth. Sign.

Verified By & Authorized Signatory
Mr. Neeraj Kumar yadav
(Quality Manager)

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/55			Date:	04/04/2025	
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/55
Sampling Location	:	NEAR- BADADARHA VILLAGE Surface Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Litre/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012 Acceptable	Permissible
Chemical Testing						
Water						
1	pH	IS:3025 (Part-11)-2022	7.6	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	<1	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.78	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	242	mg/L	250.0(Max.)	300.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	31.8	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	31.9	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	12.7	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign.

+91-97996 00577
+91-99289 11231
info@gurukripaenviro.com
www.gurukripaenviro.com
J-491/492, Near Chatrala Circle, Sitapura Industrial Area, Jaipur-302022 (Raj.)

TEST REPORT

Report No.: GECPL/ W-202503/55			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/55
Sampling Location	:	NEAR- BADADARHA VILLAGE Surface Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Litre/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	4.4	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(as Se)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	12.3	mg/L	200.0(Max.)	400.0
22	Total Alkalinity (asCaCO3)	IS:3025 (Part-23)-2023	89.0	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	136	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	79.5	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	378.1	µs/cm	-	-

Remarks: Sampling done by GECPL Team representative (Mr. Krishana sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

----------------------------------End Report------------------------------

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

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TEST REPORT

Report No.: GECPL/ W-202503/53			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/53
Sampling Location	:	NEAR - BAISPALI VILLAGE Surface Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24th Edition
Quantity / No. of Sample	:	5 Litre/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
Chemical Testing						
Water						
1	pH	IS:3025 (Part-11)-2022	7.47	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	<1	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.84	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	262	mg/L	250.0(Max.)	300.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	35.6	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	37.9	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	21.6	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/53		Date:	04/04/2025
URL No.:			

Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/53
Sampling Location	:	NEAR - BAISPALI VILLAGE Surface Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24th Edition
Quantity / No. of Sample	:	5 Litre/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	4.3	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(as Se)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	10.2	mg/L	200.0(Max.)	400.0
22	Total Alkalinity (asCaCO3)	IS:3025 (Part-23)-2023	78	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	178	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	89.0	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	409.3	µs/cm	-	-

Remarks: Sampling done by GECPL Team representative (Mr. Krishana sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

---------------------------------**End Report**------------------------------

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

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1. Samples are not drawn by Gurukripa Enviro Care Private Limited, unless otherwise mentioned. The results are applicable only to the submitted sample. Endorsement of the product is neither inferred nor implemented.
2. The test report in full or part shall not be used for promotional or publicity purposes without the written consent of Gurukripa Enviro Care Private Limited.
3. Samples shall be stored for the period of 15 days after the date of issue of Report.

TEST REPORT

Report No.: GECPL/ W-202503/54			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/54
Sampling Location	:	NEAR-MAND RIVER Surface Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Litre/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012 Acceptable	Permissible
Chemical Testing						
Water						
1	pH	IS:3025 (Part-11)-2022	7.86	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	<1	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.78	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	246	mg/L	250.0(Max.)	300.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	36.0	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	32.9	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	21.8	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. NirrajKumar yadav
(Quality Manager)

TEST REPORT

Report No.: GECPL/ W-202503/54			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/54
Sampling Location	:	NEAR-MAND RIVER Surface Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Litre/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	4.6	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(as Se)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	12.3	mg/L	200.0(Max.)	400.0
22	Total Alkalinity (asCaCO3)	IS:3025 (Part-23)-2023	70.0	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	180	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	90.0	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	381.2	µs/cm	-	-

Remarks: Sampling done by GECPL Team representative (Mr. Krishana sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

----------------------------------**End Report**------------------------------

Gurukripa Enviro Care Pvt. Ltd. Jaipur Auth. Sign.

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

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3. Samples shall be stored for the period of 15 days after the date of issue of Report.

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/W-202503/52			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/52
Sampling Location	:	NEAR – GPATHRI NALA WATER Surface Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Litre/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
Chemical Testing						
	Water					
1	pH	IS:3025 (Part-11)-2022	7.48	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	<1	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.76	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	242	mg/L	250.0(Max.)	300.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	34.0	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	41.91	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	20.6	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/W-202503/52			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/52
Sampling Location	:	NEAR – GPATHRI NALA WATER Surface Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Litre/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	4.0	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(as Se)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05))	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	12.1	mg/L	200.0(Max.)	400.0
22	Total Alkalinity (asCaCO3)	IS:3025 (Part-23)-2023	52.0	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	170	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	85.0	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	378.1	µs/cm	-	-

Remarks: Sampling done by GECPL Team representative (Mr. Krishana sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

--------------------------------**End Report**--------------------------------

Payal

Tested By
(Sr. Chemist/Chemist)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Verified By & Authorized Signatory
Mr. Niraj Kumar yadav
(Quality Manager)

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GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/47			Date:	04/04/2025
URL No.:				
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW		
Contact Person	:	-		

Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/47
Sampling Location	:	Ash Dump Site Borewell water	Sample Description	:	Ground Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24th Edition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
Chemical Testing						
	Water					
1	pH	IS:3025 (Part-11)-2022	7.89	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	<1	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	<1	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	456	mg/L	500.0(Max.)	2000.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	35.2	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	31.9	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	21.3	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

TEST REPORT

Report No.: GECPL/ W-202503/47			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/47
Sampling Location	:	Ash Dump Site Borewell water	Sample Description	:	Ground Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Acceptable
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	5.6	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(asSe)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	14.26	mg/L	200.0(Max.)	400.0
22	Total Alkalinity (asCaCO3)	IS:3025 (Part-23)-2023	270	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	176	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	88.0	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	712.5	µs/cm	-	-

Remarks: Sampling done by GECPL Team representative (Krishana Sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

---------------------------------**End Report**------------------------------

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

TEST REPORT

Report No.: GECPL/ W-202503/48			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/48
Sampling Location	:	BADADARHA VILLAGE Ground water	Sample Description	:	Dringking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012 Acceptable	Permissible
Chemical Testing						
Water						
1	pH	IS:3025 (Part-11)-2022	7.85	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	<1	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.77	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	238	mg/L	500.0(Max.)	2000.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	33.6	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	34.9	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	20.4	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign.

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/48			Date:	04/04/2025	
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/48
Sampling Location	:	BADADARHA VILLAGE Ground water	Sample Description	:	Dringking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012 Acceptable	Acceptable
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	5.4	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(asSe)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	16.14	mg/L	200.0(Max.)	400.0
22	Total Alkalinity as calcium carbonate	IS:3025 (Part-23)-2023	216	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	168	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	84.0	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	371.8	µs/cm	-	-

Remarks: Sampling done by GECPL Team representative (Mr. Krishana Sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

---------------------------------**End Report**------------------------------

Enviro Care Pvt. Ltd. Gurukripa Auth. Sign.

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

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1. Samples are not drawn by Gurukripa Enviro Care Private Limited, unless otherwise mentioned. The results are applicable only to the submitted sample. Endorsement of the product is neither inferred nor implemented.
2. The test report in full or part shall not be used for promotional or publicity purposes without the written consent of Gurukripa Enviro Care Private Limited.
3. Samples shall be stored for the period of 15 days after the date of issue of Report.

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/49			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/49
Sampling Location	:	BAISPALI VILLAGE Ground Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
Chemical Testing						
Water						
1	pH	IS:3025 (Part-11)-2022	7.65	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	<1	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.76	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	241	mg/L	500.0(Max.)	2000.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	31.2	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	31.9	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	18.9	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

+91-97996 00577
+91-99289 11231
info@gurukripaenviro.com
www.gurukripaenviro.com
J-491/492, Near Chatrala Circle,
Sitapura Industrial Area, Jaipur-302022 (Raj.)

TEST REPORT

Report No.: GECPL/ W-202503/49		Date:	04/04/2025
URL No.:			

Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/49
Sampling Location	:	BAISPALI VILLAGE Ground Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Acceptable
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	5.4	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(asSe)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	15.1	mg/L	200.0(Max.)	400.0
22	Total Alkalinity as calcium carbonate	IS:3025 (Part-23)-2023	178	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	156	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	78.0	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	376.5	µs/cm	-	-

Remarks:- Sampling done by GECPL Team representative (Mr. Krishana Sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

----------------------------------**End Report**------------------------------

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign.

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

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2. The test report in full or part shall not be used for promotional or publicity purposes without the written consent of Gurukripa Enviro Care Private Limited.
3. Samples shall be stored for the period of 15 days after the date of issue of Report.

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/50				Date:	04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/50
Sampling Location	:	KANWALI VILLAGE Ground Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
Chemical Testing						
Water						
1	pH	IS:3025 (Part-11)-2022	7.37	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	<1	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.72	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	244	mg/L	500.0(Max.)	2000.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	32.4	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	31.9	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 02)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	19.6	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/50			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/50
Sampling Location	:	KANWALI VILLAGE Ground Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Acceptable
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	5.0	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(asSe)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	17.2	mg/L	200.0(Max.)	400.0
22	Total Alkalinity as calcium carbonate	IS:3025 (Part-23)-2023	78	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	162	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	81.0	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	381.2	µs/cm	-	-

Remarks: Sampling done by GECPL Team representative (Mr. Krishana Sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

---------------------------------**End Report**------------------------------

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign.

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

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GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/51			Date:	04/04/2025		
URL No.:						
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW				
Contact Person	:	-				
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW	
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/51	
Sampling Location	:	TUNDRI VILLAGE Ground Water	Sample Description	:	Drinking Water	
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition	
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025	
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025	
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01	
Environmental Condition during the test			25°C ±3 °C			

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
Chemical Testing						
Water						
1	pH	IS:3025 (Part-11)-2022	7.58	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	<1	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.81	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	278	mg/L	500.0(Max.)	2000.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	34.2	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	37.9	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	20.7	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign.

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/51			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/51
Sampling Location	:	TUNDRI VILLAGE Ground Water	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012 Acceptable	Acceptable
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	5.6	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(asSe)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	12.2	mg/L	200.0(Max.)	400.0
22	Total Alkalinity as calcium carbonate	IS:3025 (Part-23)-2023	78	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	171	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	85.5	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	434.3	µs/cm	-	-

Remarks:- Sampling done by GECPL Team representative (Mr. Krishana Sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

---------------------------------**End Report**-----------------------------

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

+91-97996 00577
+91-99289 11231
info@gurukripaenviro.com
www.gurukripaenviro.com
J-491/492, Near Chatrala Circle, Sitapura Industrial Area, Jaipur-302022 (Raj.)

TEST REPORT

Report No.: GECPL/W-202503/42		Date:	04/04/2025
URL No.:			

Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/42
Sampling Location	:	ADITYA CANTEEN	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
Chemical Testing						
	Water					
1	pH	IS:3025 (Part-11)-2022	7.54	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	BLQ(LOQ:1.0)	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.54	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	189	mg/L	500.0(Max.)	2000.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	28.4	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	13.9	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3(Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	17.2	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign.

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

TEST REPORT

Report No.: GECPL/W-202503/42			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/42
Sampling Location	:	ADITYA CANTEEN	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24th Edition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	4.4	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(as Se)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	11.2	mg/L	200.0(Max.)	400.0
22	Total Alkalinity as calcium carbonate	IS:3025 (Part-23)-2023	64.0	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	142.0	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	71.0	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	295.3	µs/cm	-	-

Remarks: Sampling done by GECPL Team representative (Mr. Krishana Sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

----------------------------------**End Report**----------------------------------

Tested By
(Sr. Chemist/Chemist)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign.

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

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2. The test report in full or part shall not be used for promotional or publicity purposes without the written consent of Gurukripa Enviro Care Private Limited.
3. Samples shall be stored for the period of 15 days after the date of issue of Report.

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/43			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/43
Sampling Location	:	DM PLANT	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24th Edition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
Chemical Testing						
Water						
1	pH	IS:3025 (Part-11)-2022	7.45	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	BLQ(LOQ:1.0)	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.46	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	174	mg/L	500.0(Max.)	2000.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	12.8	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	11.9	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	7.7	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Niraj Kumar yadav
(Quality Manager)

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/43			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/43
Sampling Location	:	DM PLANT	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	4.1	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(as Se)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	13.0	mg/L	200.0(Max.)	400.0
22	Total Alkalinity as calcium carbonate	IS:3025 (Part-23)-2023	58	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	64.0	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	32.0	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	268.7	µs/cm	-	-

Remarks: Sampling done by GECPL Team representative (Mr. Krishana Sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

---------------------------------**End Report**------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

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GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/44		Date:	04/04/2025
URL No.:			

Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/44
Sampling Location	:	Mine Water Tank	Sample Description	:	Drinking water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
Chemical Testing						
Water						
1	pH	IS:3025 (Part-11)-2022	7.4	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	BLQ(LOQ:1.0)	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.82	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	188	mg/L	500.0(Max.)	2000.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	24.8	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	21.9	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	15.0	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Gurukripa Enviro Care Pvt. Ltd.
Auth. Sign.

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/44			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/44
Sampling Location	:	Mine Water Tank	Sample Description	:	Drinking water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

S.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Acceptable
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	4.6	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(asSe)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	12.1	mg/L	200.0(Max.)	400.0
22	Total Alkalinity as calcium carbonate	IS:3025 (Part-23)-2023	178	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	124	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	62.0	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	293.7	µs/cm	-	-

Remarks: Sampling done by GECPL Team representative (Mr. Krishana Sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

----------------------------------**End Report**------------------------------

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign.

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

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3. Samples shall be stored for the period of 15 days after the date of issue of Report.

TEST REPORT

Report No.: GECPL/ W-202503/45			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/45
Sampling Location	:	SERVICE BUILDING	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012 Acceptable	Permissible
Chemical Testing						
Water						
1	pH	IS:3025 (Part-11)-2022	7.6	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	BLQ(LOQ:1.0)	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.58	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	168	mg/L	500.0(Max.)	2000.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	27.2	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	17.9	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	16.5	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign.

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/45		Date:	04/04/2025
URL No.:			

Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/45
Sampling Location	:	SERVICE BUILDING	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	4.0	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(as Se)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	14.1	mg/L	200.0(Max.)	400.0
22	Total Alkalinity as calcium carbonate	IS:3025 (Part-23)-2023	58.0	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	136	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	68.0	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	265.3	µs/cm	-	-

Remarks: Sampling done by GECPL Team representative (Mr. Krishana Sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

----------------------------------End Report------------------------------

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

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3. Samples shall be stored for the period of 15 days after the date of issue of Report.

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/46			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/46
Sampling Location	:	WAIGON TIPPER	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr. No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
Chemical Testing						
Water						
1	pH	IS:3025 (Part-11)-2022	7.6	-	6.5–8.5	No relaxation
2	Odour	IS:3025(Part-5)-2018	Agreeable	-	Agreeable	Agreeable
3	Colour	IS:3025(Part-4)-2021	BLQ(LOQ:1.0)	Hazen	5.0(Max.)	15.0
4	Taste	IS:3025(Part-8)-2023	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)-2023	0.54	NTU	1.0(Max.)	5.0
6	Total Dissolved Solids	IS:3025(Part-16)-2023	178	mg/L	500.0(Max.)	2000.0
7	Aluminum(as Al)	APHA 24thEdition 3111 Al D	BLQ(LOQ:1.0)	mg/L	0.03(Max.)	0.20
8	Anionic Detergents (as MBAS)	AnnexKofIS13428:2005	BLQ (LOQ 0.05)	mg/L	0.20(Max.)	1.0
9	Boron(as B)	APHA 24thEdition 4500-B-B	BLQ (LOQ 0.1)	mg/L	0.50 (Max.)	2.4
10	Calcium(as Ca)	IS:3025 (Part-40)-1991	21.05	mg/L	75.0(Max.)	200.0
11	Chlorides(as Cl-)	IS:3025 (Part-32)-1988	20.26	mg/L	250.0(Max.)	1000.0
12	Copper (as Cu)	APHA 24th Edition 3111 Cu B	BLQ(LOQ:0.04)	mg/L	0.05(Max.)	1.50
13	Fluorides(as F)	APHA 24th Edition 4500 F-B & D	BLQ (LOQ 0.2)	mg/L	1.0(Max.)	1.5
14	Free Residual Chlorine	IS 3025(Part-26)-2021	BLQ (LOQ 0.05)	mg/L	0.20(Min.)	1.0
15	Iron (as Fe)	APHA 24th Edition 3500 Fe-B	BLQ(LOQ:0.1)	mg/L	0.3 (Max.)	No relaxation
16	Magnesium(as Mg)	IS:3025 (Part-46)-2023	19.23	mg/L	30.0(Max.)	100.0
17	Manganese(as Mn)	APHA 24th Edition 3111 Mn	BLQ(LOQ:0.05)	mg/L	0.10(Max.)	0.30

Tested By
(Sr. Chemist/Chemist)

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

GURUKRIPA ENVIRO CARE PVT. LTD.
Complete Enviro Solution

TEST REPORT

Report No.: GECPL/ W-202503/46			Date:		04/04/2025
URL No.:					
Customer Name & Address	:	**M/s DB Power Limited** Village-Badadhara Dist.-Sakti (C.G) 495695 Chhattisgarh India GSTIN:22AACCD5475F1ZW			
Contact Person	:	-			
Date of Sample Collection	:	18/03/2025	Sampling Type	:	GW
Date of Sample Received	:	25/03/2025	Sample ID	:	W-202503/46
Sampling Location	:	WAIGON TIPPER	Sample Description	:	Drinking Water
Sample Collected / Submitted by	:	GECPL Team	Protocol used for Sampling	:	APHA 24thEdition
Quantity / No. of Sample	:	5 Liter/1Nos.	Analysis Started On	:	25/03/2025
Packing / Seal	:	Temp. Sealed	Analysis Completed On	:	04/04/2025
Type of Container	:	Plastic Container	Format No.	:	7.8 F-01
Environmental Condition during the test			25°C ±3 °C		

Water Analysis Results

Sr.No.	Name of Test	Method of Test	Test Result	Units	Limits asperIS:10500:2012	
					Acceptable	Permissible
18	Nitrate(asNO3)	APHA 23rdEdition 4500-NO3-B:2017	4.4	mg/L	45.0(Max.)	No relaxation
19	Phenolic Compound(as C6H5OH)	IS:3025 (Part-43/Sec-1)2022	BLQ (LOQ0.001)	mg/L	0.001(Max.)	0.002
20	Selenium(as Se)	APHA 24th Edition 3114 Se C	BLQ(LOQ:0.05)	mg/L	0.01(Max.)	No relaxation
21	Sulphate (asSO4)	IS:3025 (Part-24/Sec-1)2022	15.2	mg/L	200.0(Max.)	400.0
22	Total Alkalinity as calcium carbonate	IS:3025 (Part-23)-1986	56.0	mg/L	200.0(Max.)	600.0
23	Total Hardness(asCaCO3)	IS:3025 (Part-21)-2009	142	mg/L	200.0(Max.)	600.0
24	CalciumHardnessasCaCO3	IS:3025 (Part-21)-2009	23.0	mg/L	Not Specified	No Specified
25	Zinc(as Zn)	APHA 24th Edition 3111 Zn B	BLQ(LOQ:0.05)	mg/L	5.0(Max.)	15.0
26	Electrical Conductivity EC	IS 3025(Part 14): 2013	351	µs/cm	-	-

Remarks: Sampling done by GECPL Team representative (Krishana Sahu).
BLQ: below limit of quantification, LOQ: limit of quantification

----------------------------------**End Report**-------------------------------

Gurukripa Enviro Care Pvt. Ltd. Auth. Sign. Jaipur

Tested By
(Sr. Chemist/Chemist)

Verified By & Authorized Signatory
Mr. Nirraj Kumar yadav
(Quality Manager)

This Report is issued under the following terms & Condition:

1. Samples are not drawn by Gurukripa Enviro Care Private Limited, unless otherwise mentioned. The results are applicable only to the submitted sample. Endorsement of the product is neither inferred nor implemented.
2. The test report in full or part shall not be used for promotional or publicity purposes without the written consent of Gurukripa Enviro Care Private Limited.
3. Samples shall be stored for the period of 15 days after the date of issue of Report.

GREEN BELT MONITORING & EVALUATION REPORT - FY- 2024-25

M/s D B POWER PVT. LTD.

28-Nov-24
"SOCIETY FOR ENVIRONMENT & INTEGRATED DEVELOPMENT RAIPUR"
"SEIDR"

GREEN BELT MONITORING & EVALUATION REPORT

MONITORING & EVALUATION OF GREEN BELT DEVELOPMENT

OF

M/s DB POWER PVT. LTD.
VILLAGE - BADADAHARA (SAKTI)

Survey & Evaluation by: "Society for Evaluation & Integrated Development Raipur"

REPORT PREPAIRD BY: Mr. S. K. Roy (Retd. A. C. F. Chhattisgarh Forest)

SOCIETY FOR ENVIRONMENT & INTEGRATED DEVELOPMENT RAIPUR
SEIDR

GREEN BELT MONITORING & EVALUATION REPORT
M/s D B POWER PVT. LTD. BADADAHARA

INDEX

PART – 'A'

INTRODUCTION:

M/s DB POWER LTD. Is located at village –Badadhara, Dist. Sakti (CG).

- Registered Office: - Office Block IA, 5th Floor, Corporate Block, D B City Area Hills Opp. MP Nagar Zone – I, Bhopal 462016.
- Corporate Office: - Nariman Corporate Link, C-31G Block, BKC Bandra (E), Mumbai 400050.

Green vegetation cover offers numerous benefits for the environment and society. It aids in conserving biodiversity by providing habitats for various species. Additionally, it helps retain soil moisture, facilitating agricultural productivity and reducing erosion. Green cover also contributes to groundwater recharge, ensuring sustainable water resources. Moreover, it plays a crucial role in maintaining a pleasant microclimate in regions, offering shade and cooling effects. Overall, green vegetation cover is essential for ecological balance and human well-being.

- **Regulations/ Environmental Law for Green Belts Development in India:**

  The regulation and environmental laws pertaining to green belt development in India are primarily governed by the following:

  1. Environment Protection Act, 1986 (EPA): This is the umbrella legislation for environmental protection in India. It empowers the central government to take measures for the protection and improvement of the environment. Under this Act, Environmental Impact Assessment (EIA) is mandatory for certain projects including those affecting green belts.

  2. Forest (Conservation) Act, 1980: This Act regulates the diversion of forest land for non-forest purposes, including for green belt development. It requires prior approval from the central government for such diversions.

  3. Wildlife Protection Act, 1972: This Act aims to protect wildlife and their habitats. It prohibits certain activities within protected areas, which often include green belts.

  4. Town and Country Planning Acts: Different states in India have their own town and country planning acts which regulate land use and development activities, including provisions for green belts.

  5. Local Municipal Laws: Municipal laws and by-laws often include provisions for maintaining green spaces within urban areas.

  6. National Green Tribunal (NGT): The NGT is a specialized body in India that handles cases related to environmental protection and conservation. It plays a crucial role in ensuring compliance with environmental laws, including those related to green belts.

  7. Environmental Clearance: Projects that impact the environment, including those affecting green belts, require environmental clearance from the Ministry of Environment, Forest and Climate Change (MoEF&CC) or the State Environmental Impact Assessment Authority (SEIAA) depending on the scale of the project.

  8. Land Acquisition Act, 2013: In cases where land needs to be acquired for green belt development, the Land Acquisition Act provides the legal framework for fair compensation and rehabilitation of affected persons.

9. Local Government Regulations: Municipal corporations and local governing bodies often have regulations pertaining to green spaces, parks, and open areas within their jurisdictions.

These laws and regulations collectively aim to ensure sustainable development while protecting and preserving green spaces and the environment in India. Compliance with these regulations is crucial for any development activities, including those involving green belts, to avoid legal complications and environmental damage.

This refers to environmental regulations or guidelines set forth by the Ministry of Environment, Forest and Climate Change (MoEF&CC) regarding the establishment of green belts around industrial plants. These regulations typically aim to mitigate the environmental impact of industrial activities by promoting the creation of green spaces.

According to the stipulations mentioned, a green belt must be established around the plant by planting trees. The total area of the green belt, including landscaping areas, should be one-third (33%) of the total plant area. This means that a significant portion of the plant area will be dedicated to greenery and landscaping to improve the environmental aesthetics and ecological balance.

Additionally, it is also mentioned to lay down areas that will be converted into green spaces later on. This suggests that there may be temporary areas within the plant site that will eventually be transformed into green zones as part of the overall green belt development.

Following these regulations will not only help in complying with environmental laws but also contributes to biodiversity conservation, air quality improvement, and overall environmental sustainability.

1. ABOUT PROJECT

M/s DB Power Pvt. Ltd. situated at Village - Badadarha, District - Sakti (C.G.) is an integrated coal based super thermal power plant of 2×600 MW capacity Power Generation Plant equipped with advanced technology for the production of Power products. Its operational site office is situated at village - Badadahra. District - Sakti (C.G.) India.

2. LOCATION OF PLANT AND ACCESSIBILLTY

The plant area of M/s DB Power Pvt. Ltd. situated at Village - Badadarha (Nandeli Road) Sakti - district, Chhattisgarh State. It's approximately 20 kilometers away from Kharsia city and just 18 kilometers from Bilaspur- Raigarh (NH 49). Access to the project site is facilitated by both bitumen roads. The Kharsia railway station, located on the Mumbai- Howrah broad gauge mainline of the South-Eastern-Central Railway, is about 21 kilometers away from the project area. Additionally, Additionally, the Bilasa Devi Kewat Domestic Airport is approximately 112 kilometers away from the M/s D B Power Limited.

3. **AREA DESCRIPTION**
   I. Plant Area - Approx. 630 Acres (254.952 HA.)
   II. Existing Green belt area - 211 Acres (85.38 Ha.)

4. **GREEN BELT**

Establishing an Environment Management Department (EMD) demonstrates M/s DB Power Ltd. commitment to environmental responsibility and compliance with regulations set forth by the Ministry of Environment, Forest and Climate Change (MoEF&CC), Central Pollution Control Board (CPCB), and the Chhattisgarh Environment Conservation Board. The green belt development mandate in India aims to mitigate environmental impact, particularly in industrial sectors like steel production.

DB POWER'S EMD likely oversees various pollution control measures, including but not limited to:

1. Implementing technologies for reducing emissions of pollutants such as particulate matter.

2. Monitoring air, water, and soil quality to ensure compliance with regulatory standards.

3. Managing waste generated during the steel production process, including hazardous and non-hazardous waste, through proper disposal or recycling methods.

4. Developing and maintaining green belts or vegetative barriers around the industrial facility to mitigate air and noise pollution, improve aesthetics, and provide ecological benefits such as biodiversity conservation and soil stabilization.

5. By establishing an EMD, DB Power not only fulfils its legal obligations but also demonstrates a proactive approach to environmental stewardship and sustainable business practices. This department plays a crucial role in ensuring that the company operates in harmony with its surroundings while minimizing its environmental footprint.

The Green Belt helps to capture the fugitive emission and attenuate the noise apart from improving the aesthetics of the region. Of total area (630 acres approx.) of the project site, 33% area (211 acres) shall be developed as green belt all along the boundary of the plant, in blocks and other available spaces. Development of green belt and other forms of greenery in and around plant site and plantation in the nearby hill and village are helpful to improve ecological conditions and biodiversity status of the area.

Survey and Evaluation work was allotted by M/s DB Power situated at Village - Badadarha, District - Sakti (C.G.) to our organization "Society for Environment & Integrated Development Raipur" vide Service order no. .... Dated ..../..../2025.

5. EVALUATION OF PLANTATION

Evaluation of Plantation needs to be done by the Industrial units for Existing Plantation within plant premise & nearby areas as per stipulations made by MoEF & CC, New Delhi and CECB, Raipur in its permissions granted to the company as also directions received from the Regional offices time to time.

6. PROJECT OBJECTIVE

Plant Species act as bio-monitoring agent to monitor the air environment as well as it keeps and maintains the project environment healthy by providing more oxygen. The two areas of air pollution i.e. gases and dust need to be urgently attended by using plants. Keeping this in mind, pollution abatement measures have been suggested to develop green belt based on local and physical conditions of the areas by taking the cognizance of "**Greening with Purpose drive**".

7. PLANTATION DETAILS

M/s DB Power Ltd. Plant is working extensively on its plant premises and outside. Apart from gap filing, a total of 16830 plants were planted in an area of approximately 15 acres from the year 2024-25 in an effort to develop 33% of the total land area as green belt. This represents a unique example of environmental protection and sustainability.

Table : 1 Details of year wise plantation inside plant premises:

S. n.	Plantation years	Total planted plants	Total Survival plants	Mortality	Survival %
1.	2024-2025	16830	13670	3160	81%

8. Table : 1 Details of plantation within and outside of plant premises: (Apart Casualty Replacement)

S. n.	Plantation years	Total planted plants	Total Survival plants	Mortality	Survival %
2.	2011-2025	278220	223967	54253	80.50%

9. PLANTATION SITES

Plantation work has been done along the plant boundary, inside the plant premises, roadside and the nearby outside Kurupath hill area. Plantation survey has been carried out by our expert team with the help of M/s DB Power Ltd. Management and office staff. Following plantation sites have been planted by M/s DB Power Ltd.

A. Plant premises & outside area:

1. Main Gate to Vehicle Parking. (Road both side)
2. Surrounding Reservoir.
3. Main Gate Entrance left side along with boundary wall.
4. Auto Mobile area.
5. Near Pond area.
6. Labors Quarters area.

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7. Nursery area.
8. Outside Main gate Boundary wall.
9. Outside Mandi surrounding area.
10. Outside mini stadium area.

Part - B

1. **PHYSICAL VERIFICATION OF PLANTATION (GREEN BELT) AND EVALUATION REPORT**
2. **METHODOLOGY**
   - Counting- All plants, Trees and sapling of all sites are counted.
   - Measurement – Average Height of Trees, Plants and Sapling are taken randomly.
   - Measurement are Recorded. Photographs have been taken so as to show real picture of plantation.
   - Plantation at the site. Details of species are also noted.

   Upon survey (Physical verification) by our team, we found that FY year 2025 - 2026. 16830 nos. plants have been planted by M/s DB Power Ltd. out of which 13670 has survived. The measurements of the plants are given in table below:-
3. **Planted Species and Measurements**

M/s DB Power Ltd. Badadarha, (2025-26)							
s. n.	Species	Average		Maximum		Minimum	
		Girth (cm)	Height (m)	Girth (cm)	Height (m)	Girth (cm)	Height (m)
1	Semal	7.85	1.73	10	2.50	6	1.30
2	Amaltas	7.61	1.46	10	2.50	5	0.90
3	Neem	6.41	1.22	10	2.00	4	1.00
4	Bahunia	6.2	1.41	12	2.20	4	0.80
5	Peltophorum	4.83	1.12	8	1.50	3	0.70
6	Teak	8	2.08	12	2.60	6	1.70
7	Arcacia	10.9	0.94	17	1.70	5	0.50
8	Largastromiya	5.45	0.80	12	2.10	4	0.45
9	Mahaneem	9.92	1.76	16	3.00	3	0.60
10	Ganga Imali	3.6	1.04	8	2.00	2	0.60
11	Ticoma	7.5	1.8	12	2.60	4	0.50
12	Malabar neem (Milia dubia)	6.07	1.58	12	2.80	3	0.75
13	Shisham	5.75	1.58	10	3.00	2	0.35
14	Gulmohar	12.15	1.95	20	2.50	6	0.80
15	Paras Pipal	11.66	1.43	18	1.80	5	0.70
16	Boatel Palm	16.88	2.52	30	3.50	8	0.90
17	Eucalypts	9.33	1.36	20	3.00	4	0.45
18	Fox tail Palm	17.71	3.1	35	3.60	10	1.20
19	Harra	15.5	2.54	25	3.50	8	1.50
20	Arjun	10.63	2.99	18	4.00	6	1.80

4. **Planted Species and Measurements**

M/s DB Power Ltd. Badadarha, (2011-12 to-2025-26)							
s. n.	Species	Average		Maximum		Minimum	
		Girth (cm)	Height (m)	Girth (cm)	Height (m)	Girth (cm)	Height (m)
1	Teak	17.6	3.59	28	5	5	2.50
2	Aonla (Gooseberry)	16.46	3.79	38	7	4	0.60
3	Guava (Amrood)	20	1.68	32	3.50	8	0.80
4	Largestonia	18.6	3.42	35	4.00	6	1.50
5	Peltophorum	10.78	2.27	42	7.50	4	0.50
6	Eucalypts	43.66	7.45	70	12	6	2.00
7	Alastonia	46.5	5.75	70	8	20	2.50
8	Arjun	36.8	5.24	80	8.50	8	1.00
9	Neem	23.54	5.45	45	8.00	6	1.80
10	Karanj	25.69	4.90	37	6.00	5	2.20
11	Palasa	28	3.61	40	4.50	15	2.50
12	Riya	45.35	4.73	70	8.50	15	2.50
13	Champa	27.2	3.45	40	4.00	18	2.00
14	Kachnar	35.7	4.1	60	6.50	8	1.50
15	Pipla	43.44	4.6	1.10	8.00	5	1.50
16	Jamun	15.10	2.94	70	6.00	4	0.40
17	Jetrofa	12.44	2.07	32	4.50	10	1.50
18	Mahaneem	17.55	2.88	60	8.00	4	0.50
19	Mango	24.55	4.36	45	6.50	10	2.80
20	Subabool	36.42	7.34	85	12	2	1.50
21	Mahoguini	13.16	2.58	45	5.50	3	1.90
22	Bottle Palm	19.85	1.02	45	5.50	8	2.00
23	Semal	36.09	4.16	60	6.50	6	1.50
24	Shisham	53.42	6.88	1.05	12	30	1.80
25	Ticoma	12.2	2.15	20	4.00	10	1.60
26	Gulmohar	63.3	4.05	65	6.00	12	3.50
27	Arcacia	23.80	2.80	40	5.50	7	1.80
28	Causurina	37	5.60	48	6.50	18	2.50
29	Bargada	17.06	4.01	58	7.50	8	2.20
30	Jetrofa	19.8	2.20	30	3.00	10	1.50
31	Kaner	18.50	3	20	3.50	8	2.00
32	Kadamba	27.00	3.10	45.00	6.00	8.00	2.00
33	Badam	14.83	1.93	40	5.50	4	0.50
34	Raintree	16.46	3.79	40	12	2	0.66
35	Dumar	33.66	4.4	50	5.50	12	3.00
36	Spethodia	28.50	4	38	5.10	21	2.15

37	Kesia Samia	16.4	3.24	46	7	5	1.40
38	Conocarpus	37.6	4.51	70	6.00	8	1.10
39	Sisoo	29.5	4.35	45	6.00	8	2.35
40	Ganga Imali	30.73	3.52	55	6.50	10	0.60
41	Celendra	23.07	2.82	45	5.00	6	1.50

4. PLANTED SPECIES, PLANTS NUMBER AND PERCENTAGE

Planted Species, No. of planted plants, Survival plants no. and percentage				
S. N.	PLANTED SPECIES	No. of planted species	Survival as per survey	Survival (%)
1.	Teak, Aonla, Amrood, Acacia, Largestonia, Peltophorum, Eucalypts, Alastonia, Arjuna, Neem, Karanj, Palsa, Riya, Champa, Kachnar, Pipal, Jamun, Mahaneem, Mango, Shubabool, Mahogauni, Bottle Palm, Semal, Shishum, Ticoma, Gulmohar, Arcacia, Bahunia, Causurina, Jetrofa, Kaner, Kadamba, Badam, Raintree, Dumar, Spethodia, Kesia Samia, Conocarpus, Sisoo, Ganga Imali, Celendra etc.	278220 (2011-26)	223967	80.50%
	Total =	**278220 (2011-26)**	**223967**	**80.50%**

5. GRADING OF PLANTATION :- GRADE CARD
M/s DB Power Ltd. (Badadarha)

a. Grading of project plantation on scale of 1 to 10

Qualitative Aspects	**Survival**	**7.50**
	Health of Plantation	**7.50**
	Maintenance	**7.50**
	Sustainability	**7.50**

b. Grading of Project plantation on scale 1 to 10

Overall Grading of Plantation	**Outstanding (Excellent) (8<10)**	**Very Good (5<8)**	**Good (3<5)**	**Poor (>3)**
		7.5		

6. DISCUSSION WITH MANAGEMENT AND STAFF AS UNDER –

1. Mr. Manoj Panda : DGM (ENV.)
2. Mr. Yashodhan Sirothia : AGM - Horticulter

7. SUGGESTION FOR IMPROVEMENT:

1. Plants to be planted not less than one year in age and 01 meter height.

2. Space 2M×2M, 3M×3M and maximum 4M×4M according to maximum girth of trees after maturity.
3. Species – Fast growing to be planted.
4. Given priority to broader leaves plants.
5. Species may be chosen as under – Khamar, Shisham, Teak, Kadamba, Acacia, Peltophorum,Neem, Nilgiri, Peepal, Amaltas, Karanja, Gulmohar, Mahaneem, Jamun, Ashoka, Arjuna, Bottle pam, Badam, Kadamba, Bamboos etc.
6. Increase irrigation facility to more number of plants.
7. Soils of pits should be changed in hard soil area.
8. Plants to be planted regularly every year including mortality replacement.
9. Germination Time – Humic oxide can be used for better results.
10. Manure – Compost, Vermi compost, DAP, Zhaim also to be used.
11. Termite and Other pests control – Cholorocyper, Imida combine.
12. Planting work to be done in June and July.
13. Mortality should not be counted for increase in area.
14. It is compulsory to have a water pipe line for the proper growth of the planted plants.

8. Pictures of Plantation:

CETIFECATE

This is to certify that Monitoring and Evaluation Report of FY-2025-26 Green Belt Plantation was conducted by **"M/s Society for Environment & Integrated Development Raipur"** at the plant area of **M/s DB Power Ltd. Village – Badadarha, Distt. Sakti, Chhattisgarh.** Based on the survey and study report, we hereby certify that total number of trees planted (278220), the number of surviving in plant and periphery of plant is 223967 at the rate of approx 2600 number of trees per hectare with the survival rate of 80.50% This covers 86.14 hectare of the total plant and periphery area.

Date: 28/11/2024

SOCIETY FOR ENVIRONMENT & INTEGRATED DEVELOPMENT ★ RAIPUR

SEIDR

Mr. S. K. Roy
(Retd. ACF C. G. Forest)
President
"Society for Environment
&
Integrated Development Raipur"

A WORD OF APPRECIATION

We appreciate all management officers and staff of M/s DB Power Ltd. Badadarha, who have taken steps to develop the green belt & greenery of area. We found that saplings have been taken care well after plantation. We appreciate the commitment and the efforts made by the management for developing the green belt and greenery within & outside the plant premises.

"SEIDR"

(Society for Environment & Integrated Development Raipur)

Chhattisgarh

THE TEAM INVOLVED IN SURVEY & EVALUATION

S.No.	Name	Job	Experience
1	Shri S. K. Roy	Head of the team	47 Year Experience of the C. G. Forest
2	Shri D. K. Tiwari	Team Leader	18 years' experience of forest related work
3	Shri KamleshDubey	Coordinator	8years' experience of monitoring & evaluation & micro planning
4	Shri Jashvir Singh Virdi	Investigator	7years' experience of monitoring & evaluation

EXECUTIVE BODY OF "SEIDR"

S.No.	Post	Name	Experience
1	President	Shri S.K. Roy	Retd. A.C.F. C.G. Govt.
2	Vice President	Smt. Shobh Mishra	Professional
3	Secretary	Smt. AshaTiwari	Professional
4	Join Secretary	Kamlesh Dubey	Professional
5	Treasurer	Shri D.K. Tiwari	Professional

ABOUT THE EVALUATION AGENCY

Organization profile

Name of Organization	*"Society for Environment & Integrated Development Raipur"*
Status	*Non-Government Organization {NGO} and working as Development and welfare.*
No. & Date of registration	*C. G. State – 3270. Date – 01/03/2011*
Registration	*Under Society Registration Act. – 1973.*
Resource Centre Address: -	*J-9/A, ShriRam Nagar, Phase –I, Street – II, Post Office Shankar Nagar Raipur (C.G.) Pin Code – 492004*
Phone: -	*+91- 771-3587611*
Chief Functionary	*Mr. S. K. Roy (Retd. Forest A.C.F. C.G. Forest)* *Mob. No. 094255 – 02223*
Contact Person	*Mr.D. K. Tiwari (Contact Person)* *Mob. No. 98261 – 86813, 96695 - 77114*
Mail at	seidraipur@gmail.com
Bank with	*State Bank of India, Vip Estate colony Raipur (C.G)* *Account No. – 35731546062 (Current A/C)* *IFS Code - SBIN0013004, PAN - AAHAS3608L*

SEIDR MISSION

Is to release the creative energies resources and aspirations of the poor. Especially tribes, equality and women to seek and obtain opportunities for full effective sustainable participation in social, economic, political and cultural life of society and nation.

SEIDR VISION

SEIDR is society based on the values of gamine democracy, equality and peace for all its citizens, where people and government play their respective roles effectively with transparency and accountability.

Area of Operation

Intensively in all districts of Chhattisgarh state, with trained technical and professional staff.

OTHER MEMBER OF EXECUTIVE BODY

S. No.	Name	Experience
1	Mohd. Q Siddiki	Retd. Forester
2	PrabhatPandey	Electrical Engineer
3	AkhilShrivastava	Professional
4	VarunTiwari	Labour Court Lawyer
6	Moh. Jabbar	Businessman
7	Pradeep Sahu	Professional

THANK YOU

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SOCIETY FOR ENVIRONMENT & INTEGRATED DEVELOPMENT RAIPUR ★ SEIDR

SOCIAL AUDIT REPORT
APRIL 2023 –MARCH 2024
Of

DB Power Limited

Village: Badadarha

Block & Tehsil: Dabhra

Distt: Sakti

Chhattisgarh - 495695

Prepared By: Dr. Vikram Singh

Associate Professor

Department of Social Work

Regional Campus Manipur

Indira Gandhi National Tribal University

(A Central University)

Amarkantak Madhya Pradesh-484887

Dr. Vikram Singh
Associate Professor
Department of Social Work
Indira Gandhi National Tribal University
Amarkantak, Madhya Pradesh

1. Introduction to DB Power Ltd:

DB Power Ltd. is a prominent entity in the energy sector, having established a coal-based power plant in the state of Chhattisgarh, India, through its Special Purpose Vehicle (SPV), DB Power Limited (DBPL). Since its successful commissioning in 2015, the project has significantly contributed to the region's energy supply, delivering power under a combination of long-term and short-term Power Purchase Agreements (PPAs) to both state-owned and private distribution companies, as well as industrial consumers.

1.1. Background and Incorporation:

DB Power Limited was incorporated on October 12, 2006, as a subsidiary of Diligent Power Private Limited (DPPL), which is an associate company of the Dainik Bhaskar group, a diversified Indian conglomerate with interests spanning media, power, real estate, textiles, and more. The establishment of DBPL as an SPV was a strategic move to harness the potential of coal-based energy production in India, particularly in Chhattisgarh, a state rich in coal resources. DBPL's coal-based Super Thermal Power Plant (TPP) is situated in the village of Badadarha, District Sakti, Chhattisgarh. The plant boasts a capacity of 1200 MW, divided into two units of 600 MW each. The project's scale and infrastructure demonstrate the company's commitment to contributing to India's growing energy needs. The plant's strategic location offers several logistical advantages. It is accessible via a major district road connecting Raigarh and Bilaspur, with the nearest urban centre, Raigarh, located approximately 25 km to the east. The nearest railway station is at Robertson, about 15 km away, while the closest commercial airport is 250 km away in Raipur. This connectivity facilitates smooth operations and ease of access for employees, stakeholders, and supply chains.

1.2. Corporate Social Responsibility (CSR):

Diligent Power Private Limited has consistently demonstrated its commitment to social responsibility since its inception. Recognizing the impact of its operations on local communities, the company engages in various Corporate Social Responsibility (CSR) initiatives aimed at improving the quality of life for the underprivileged and fostering sustainable development in the regions where it operates. CSR Focus Areas:

a. **Education:** DBPL emphasizes educational initiatives to empower the local population. By supporting schools, providing scholarships, and enhancing educational infrastructure, the company aims to increase literacy rates and improve access to quality education for children in the region.

b. **Environment:** Environmental conservation is a core aspect of DBPL's CSR activities. The company implements measures to minimize its ecological footprint, such as afforestation projects, pollution control initiatives, and awareness campaigns on sustainable practices.

c. **Community Development:** DBPL actively engages with local communities to identify their needs and develop tailored programs that address critical issues such as healthcare, sanitation, and infrastructure development. Through partnerships with local NGOs and government bodies, the company strives to create a positive impact on the socio-economic landscape.

d. **Livelihood Enhancement:** The company supports initiatives that enhance livelihoods, such as skill development programs and vocational training, to equip individuals with the skills needed for gainful employment and entrepreneurship.

DBPL's CSR team works year-round to implement various initiatives across Chhattisgarh, focusing on areas where the company has operations through its subsidiary. The approach involves conducting need-based surveys and engaging in consultations with local communities to ensure that CSR activities are relevant, impactful, and aligned with the aspirations of the people they aim to serve. DB Power Ltd., through its SPV DB Power Limited, has established itself as a key player in India's energy sector.

The successful commissioning of its coal-based power plant in Chhattisgarh reflects its commitment to meeting the nation's growing energy demands while maintaining a strong focus on social responsibility. By integrating modern technology, efficient processes, and a robust CSR strategy, DBPL not only contributes to the region's economic development but also enhances the quality of life for the communities it serves. The information offers a detailed overview of DB Power Ltd.'s operations, its strategic importance, and its commitment to social responsibility, illustrating the company's role as a responsible corporate citizen in India's energy landscape.

2.0. Social Audit and Corporate Social Responsibility:

In an era marked by rapid globalization and increasing ecological challenges, the traditional boundaries of corporate responsibility have expanded significantly. The role of corporations in the broader social paradigm is transforming, as society and governments place heightened expectations on businesses to integrate social responsibility into their core strategies.

This shift is not confined to large public sector enterprises; it extends to small and medium enterprises as well. At the heart of this transformation is Corporate Social Responsibility (CSR), a mechanism through which companies can demonstrate their commitment to acting responsibly and contributing to societal well-being. Corporate Social Responsibility (CSR) is a concept that encourages businesses to consider their impact on society and the environment, going beyond profit-making to embrace ethical practices. CSR is often viewed as a dual-edged sword, providing both tangible and intangible benefits to companies. It creates goodwill and brand loyalty among consumers, while also catalysing social and economic change (Carroll & Shabana, 2010).

CSR initiatives can take various forms, including community development projects, environmental conservation efforts, fair labour practices, and ethical governance. By engaging in CSR activities, companies can build a positive image and enhance their competitiveness in the market (Porter & Kramer, 2006).

2.1. The Emergence of Social Audit:

As CSR gains traction, the need for mechanisms to evaluate and ensure the authenticity of corporate social claims has become critical. Enter the social audit—a tool that provides an independent evaluation of an organization's performance in achieving its social goals. Social audits are instruments of social accountability, offering a transparent assessment of a company's social, economic, and environmental impact (Bendell, 2000).

Social auditing has gained significance globally, but particularly in countries like India, following the 73rd Amendment of the Constitution, which strengthened local governance through Panchayati Raj institutions. This amendment emphasized the importance of social audits in ensuring that democratic governance is carried out with the consent and understanding of all stakeholders (Paul, 2019).

2.2. Principles and Objectives of Social Audit:

Social audit is based on several core principles that guide its implementation:

a. **Transparency**: Social audits promote transparency by making information available to stakeholders, allowing them to understand and assess the organization's actions and outcomes.

b. **Participation:** The process encourages the active involvement of stakeholders, particularly marginalized groups, ensuring that their voices are heard and considered in decision-making.

c. **Accountability**: By evaluating social performance, social audits hold organizations accountable for their actions and commitments.

d. **Learning and Improvement**: Social audits provide valuable insights that help organizations learn from their experiences and continuously improve their social performance.

The primary objectives of social audits are to measure, understand, report, and ultimately enhance an organization's social and ethical performance. By doing so, social audits help narrow the gap between vision and reality, and between efficiency and effectiveness (Gonella et al., 1998).

2.3. The Process of Social Auditing:

Social auditing is a systematic process that involves several key steps:

a. **Planning and Preparation**: This stage involves defining the scope of the audit, identifying stakeholders, and developing a framework for evaluation.

b. **Data Collection**: Information is gathered from various sources, including reports, surveys, interviews, and public records. This data provides a comprehensive view of the organization's social performance.

c. **Stakeholder Engagement**: Engaging with stakeholders is a critical aspect of social auditing. This involves conducting public hearings, focus group discussions, and community consultations to gather feedback and insights.

d. **Evaluation and Analysis**: The collected data is analysed to assess the organization's social impact, identify strengths and weaknesses, and evaluate the effectiveness of its CSR initiatives.

e. **Reporting and Disclosure**: The findings of the social audit are compiled into a report, which is shared with stakeholders and the public. Transparency in reporting ensures that the organization remains accountable to its commitments.

f. **Action and Follow-up**: Based on the audit findings, organizations develop action plans to address identified issues and improve their social performance. Regular follow-ups ensure that progress is monitored, and adjustments are made as needed (Estes, 1976).

2.4. The Future of Social Audits and CSR:

The future of social audits and CSR is promising, as organizations increasingly recognize the importance of social responsibility in achieving sustainable growth. Technological advancements, such as blockchain and digital platforms, offer new opportunities to enhance the transparency and efficiency of social audits (Kshetri, 2017). These technologies can streamline data collection, facilitate stakeholder engagement, and improve the accuracy and reliability of audit findings.

Moreover, there is a growing emphasis on aligning CSR initiatives with the United Nations Sustainable Development Goals (SDGs), which provide a global framework for addressing social, economic, and environmental challenges. Social audits can play a pivotal role in monitoring SDG progress and ensuring that organizations contribute meaningfully to global development efforts (Scheyvens et al., 2016). Henceforth social audits are indispensable tools for evaluating and enhancing the social performance of organizations. They provide a structured approach to assessing the impact of CSR initiatives, promoting transparency, accountability, and stakeholder participation. By bridging the gap between vision and reality, social audits empower organisations to create positive social change and contribute to sustainable development. As the world grapples with complex challenges, the importance of CSR and social auditing will continue to grow. Organisations that embrace these concepts are better positioned to navigate the evolving landscape of corporate responsibility and make a lasting impact on society. Through continued innovation and collaboration, social audits can pave the way for a more equitable and sustainable future.

The Social Audit has been carried out of CSR for FY 2023-2024. There are 08 villages categorized into two categories (Plant Affected Villages and Railway Corridor Affected Villages) where CSR activities have been carried out details are as follows:

Table 01: Plant Affected Villages

S. No	Name of Village
1.	Badadarha
2.	Tundri

Table 02: Railway Corridor Affected Villages

S. No	Name of Village
1.	Basanpali
2.	Phulbadhiya
3.	Amapali
4.	Khedapali
5.	Bendojahriya
6.	Kunkuni

3.0. Objectives of the Social audit:

a. Assessing the Actual Needs of Village Development and Resources Provided by DB Power

The primary goal of this objective is to evaluate the genuine developmental needs of the village community. This involves a comprehensive analysis of the socio-economic conditions of the villagers, identifying areas that require immediate attention, and determining the gaps between what is needed and what is available. DB Power's contributions to village development are also assessed to ensure they align with the community's priorities.

This objective ensures that the resources provided are utilized effectively to meet the actual needs of the villagers, thus facilitating sustainable development.

b. Provide Suggestions for Increasing the Efficacy and Effectiveness of Village Development Programs by DB Power Ltd.

This objective focuses on offering constructive feedback and recommendations to enhance the implementation of village development programs initiated by DB Power Ltd. By analysing current strategies and their outcomes, the social audit aims to identify areas of improvement that could lead to more efficient use of resources and better outcomes. Suggestions may include refining program strategies, adopting new technologies, or improving stakeholder engagement to ensure that the programs have a meaningful and lasting impact on the community.

c. Analysis of Work Carried Out Keeping in View Stakeholder Interests and Priorities, Particularly of Villagers

An essential aspect of the social audit is to evaluate the development work from the perspective of all stakeholders, with a particular focus on villagers. This involves understanding the expectations and priorities of different groups, including local authorities, DB Power, and the villagers themselves. By ensuring that the development efforts align with stakeholder interests, the audit seeks to foster a collaborative environment where all parties are committed to the common goal of community development. This alignment is crucial for building trust and ensuring the sustainability of development initiatives.

d. To Assess Infrastructural Development and Its Impact on the Quality of Lives of the Residents

This objective aims to evaluate the extent and effectiveness of infrastructural developments in the village and how these improvements have impacted the residents' quality of life. The audit examines various infrastructure projects such as roads, water supply, sanitation, and electricity, assessing their availability, accessibility, and reliability. The goal is to determine how these developments have contributed to the well-being of the villagers, facilitating better living conditions, economic opportunities, and overall life satisfaction.

e. Assessing the Physical and Financial Gaps Between Needs and Resources Available for Local Development

Identifying and analysing the discrepancies between the village's developmental needs and the resources allocated is a critical aspect of the social audit. This objective involves a thorough examination of both physical resources (such as infrastructure, manpower, and technology) and financial resources (such as funding and investments) to identify any gaps or shortfalls. By pinpointing these gaps, the audit can provide recommendations for reallocating or increasing resources to ensure that the village's developmental needs are adequately met.

f. Creating Awareness Among Beneficiaries and Providers of Local Social and Productive Services

This objective emphasizes the importance of raising awareness among both the beneficiaries (villagers) and the providers (DB Power and other stakeholders) regarding the social and productive services available to the community. Educating villagers about their rights and the resources available to them empowers them to actively participate in the development process. Similarly, informing providers about the community's needs and expectations encourages more effective service delivery and accountability. This mutual awareness fosters collaboration and transparency, essential for successful village development.

g. Increasing Efficacy and Effectiveness of Local Development Programs

The goal here is to continuously improve the performance and impact of local development programs. The social audit assesses the current methodologies, strategies, and outcomes of these programs to identify best practices and areas for improvement. By adopting innovative approaches and leveraging local knowledge and resources, the audit aims to enhance the efficacy and effectiveness of these programs, ensuring that they achieve their intended objectives and contribute to the community's sustainable development.

h. Scrutiny of Various Policy Decisions, Keeping in View Stakeholder Interests and Priorities, Particularly of Rural Poor at the Community Level

This objective involves a critical examination of policy decisions related to village development, with a focus on how they affect the rural poor at the community level. The social audit evaluates the alignment of these policies with the interests and priorities of stakeholders, particularly the most vulnerable groups. By scrutinizing policy decisions, the audit seeks to ensure that they are equitable, inclusive, and responsive to the needs of the rural poor, promoting social justice and reducing inequalities within the community.

i. Estimation of the Opportunity Cost for Stakeholders of Not Getting Timely Access to Public Services

The final objective is to estimate the opportunity costs incurred by stakeholders due to delays or inefficiencies in accessing public services. This involves analyzing the economic, social, and personal costs that arise when villagers are unable to access essential services such as healthcare, education, and infrastructure promptly. By highlighting these costs, the social audit emphasizes the importance of improving service delivery and reducing barriers to access, ultimately advocating for more efficient and responsive public service systems that cater to the community's needs.

4.0. Methods Used for Social Audit in Plant-Affected and Railway Corridor Villages:

Social audits are crucial for evaluating the impact of development projects and ensuring accountability and transparency in their implementation. This report details the methods used for conducting a social audit in two categories of villages: those affected by industrial plants and those along railway corridors. The audit aimed to assess the social, economic, and environmental impacts of these projects on local communities and to gather feedback from various stakeholder groups. The methodology employed includes preliminary surveys, personal interviews, focus group discussions, and community meetings.

I. Preliminary Surveys

The social audit began with preliminary surveys of the plant-affected and railway corridor villages. This step was essential to gather baseline data about the demographic, economic, and social conditions of these communities. The surveys were conducted using structured questionnaires designed to capture a wide range of information, including:

- **Demographic Information**: Age, gender, education, and occupation of residents.
- **Economic Status**: Income levels, employment status, and sources of livelihood.
- **Social Infrastructure**: Access to education, healthcare, and other social services.
- **Environmental Concerns**: Issues related to pollution, resource depletion, and land use changes.

Fieldworkers conducted door-to-door visits to ensure comprehensive coverage and to build rapport with community members. This approach helped in gaining the trust of the villagers and encouraged them to share honest and detailed information.

The data collected provided a foundation for understanding the specific needs and concerns of each village, allowing for a more targeted and effective social audit process.

II. Personal Interviews

Personal interviews were conducted with a diverse range of stakeholders, including local leaders, community members, and representatives from various beneficiary groups. These interviews aimed to gain deeper insights into the experiences and perceptions of individuals directly affected by the projects. The interviews were semi-structured, allowing for flexibility in exploring specific issues while ensuring that key topics were covered.

Some of the key areas explored during the interviews included:

- **Impact on Livelihoods**: How the projects have affected employment opportunities, income levels, and traditional occupations.
- **Social Cohesion**: Changes in community dynamics, relationships, and social support networks.
- **Quality of Life**: Access to basic services, housing conditions, and overall well-being.
- **Community Engagement**: The level of involvement and consultation with communities in project planning and implementation.

The interviews provided valuable qualitative data, highlighting the personal stories and experiences of those affected by the projects. This information was crucial for understanding the nuanced impacts of development initiatives and for identifying areas for improvement.

III. Focus Group Discussions

Focus group discussions (FGDs) were organized with specific beneficiary groups, such as self-help groups (SHGs), sewing centre beneficiaries, and other community organizations. These discussions provided a platform for participants to share their experiences, challenges, and suggestions in a group setting. FGDs were conducted separately for different groups to ensure that participants felt comfortable expressing their views without any hierarchical or social constraints.

The FGDs focused on several key areas:

- **Project Impact**: Participants discussed the benefits and drawbacks of the projects, including any unintended consequences.
- **Community Needs**: Identification of unmet needs and priorities for future development efforts.
- **Empowerment and Participation**: Opportunities for community members to engage in decision-making processes and to influence project outcomes.
- **Capacity Building**: Training and support required to enhance the skills and capabilities of residents.

The discussions were facilitated by trained moderators who encouraged open and inclusive dialogue. This method helped to identify common themes and concerns across different groups and provided a comprehensive understanding of the community's perspectives.

IV. Community Meetings

A series of community meetings were held with residents of the adopted villages. These meetings served as a forum for sharing the findings of the social audit and for gathering feedback from the broader community. The meetings were organized in accessible locations and were open to all residents, ensuring maximum participation and inclusivity.

During the meetings, the following activities were conducted:

- **Presentation of Findings:** The key findings from the preliminary surveys, interviews, and FGDs were presented to the community. This included both positive impacts and areas of concern identified during the audit.
- **Feedback and Discussion:** Community members were invited to share their thoughts on the findings and to provide additional input or clarification. This feedback was crucial for validating the audit results and for identifying any gaps or inaccuracies.
- **Action Planning:** Participants were encouraged to propose solutions and strategies for addressing the identified issues. This collaborative approach helped to build a sense of ownership and accountability among community members.
- **Commitment to Follow-Up:** The meetings concluded with a commitment from project implementers and local leaders to address the concerns raised and to provide regular updates on progress.

The social audit of plant-affected and railway corridor villages employed a comprehensive and participatory approach, involving a range of methods to gather data and engage with community members. Through preliminary surveys, personal interviews, focus group discussions, and community meetings, the audit provided a detailed assessment of the impacts of development projects and identified areas for improvement. By prioritizing community engagement and feedback, the social audit not only ensured transparency and accountability but also empowered residents to play an active role in shaping their future development.

5.0. Sources of Data for Social Audit:

A social audit is a systematic evaluation of an organization's social, ethical, and environmental performance, focusing on the company's impact on society and the environment. It aims to enhance transparency, accountability, and community engagement, allowing stakeholders to assess whether the organization adheres to its social objectives and values. A comprehensive social audit relies on both primary and secondary data sources to paint an accurate picture of the company's social responsibility efforts. Here, we explore the significance and role of these data sources, particularly in the context of a social audit conducted for DB Power Ltd.

I. Primary Data Sources: Primary data refers to information collected firsthand by the auditor through various methods such as interviews, surveys, direct observations, and focus group discussions. In the context of a social audit for DB Power Ltd., primary data is crucial for capturing real-time, on-the-ground insights into the company's operations and social impact.

a. Interviews and Surveys: Interviews and surveys with employees, community members, beneficiaries of corporate social responsibility (CSR) initiatives, and other stakeholders offer qualitative and quantitative insights into how the company's operations affect individuals and communities. These methods help gather subjective experiences, perceptions, and feedback directly from those impacted by the company's activities, providing a human dimension to the data.

b. Focus Group Discussions: Focus group discussions facilitate deeper engagement with specific stakeholder groups, encouraging dialogue and obtaining diverse viewpoints. This method can reveal collective experiences and concerns that may not surface in individual interviews or surveys, enhancing the understanding of the company's social impact.

c. Direct Observations: Observations conducted at project sites, community centres, and other relevant locations allow auditors to witness firsthand the implementation and outcomes of CSR initiatives. Direct observations can validate information obtained from other data sources and provide visual evidence of the company's efforts and their effects on the community.

II. Secondary Data Sources: Secondary data comprises information that has already been collected, processed, and reported by the organization or other entities. For a social audit of DB Power Ltd., secondary data is typically provided by the company itself and includes various internal documents and reports.

a. **Stock Records:** Stock records detail the materials and resources used in the company's operations, offering insights into the company's consumption patterns and resource management. Analysing these records helps auditors assess the environmental impact of the company's activities and the efficiency of resource utilization.

b. **Meeting Registers:** Meeting registers document the proceedings of internal and external meetings, including board meetings, CSR committee meetings, and community consultations. These records provide insights into the company's decision-making processes, stakeholder engagement strategies, and the alignment of its operations with social responsibility goals.

c. **Quarterly and Monthly Reports:** CSR reports published by DB Power Ltd. contain detailed accounts of the company's social responsibility initiatives, performance metrics, challenges faced, and plans. These reports offer a comprehensive overview of the company's CSR activities, highlighting achievements, areas for improvement, and alignment with national and international standards.

The integration of primary and secondary data sources in a social audit enables a holistic assessment of DB Power Ltd.'s social and environmental performance. Primary data adds depth and context to the quantitative information obtained from secondary sources, while secondary data provides a structured framework for evaluating the company's activities. By cross-referencing primary data with secondary data, auditors can identify discrepancies, validate findings, and ensure a balanced representation of the company's social impact. This comprehensive approach not only enhances the credibility and reliability of the social audit but also empowers stakeholders to hold the company accountable for its social responsibilities.

The use of both primary and secondary data sources is essential for conducting an effective social audit of DB Power Ltd. While primary data offers firsthand insights and qualitative perspectives, secondary data provides structured, quantitative information that supports the evaluation process. Together, these data sources enable auditors to deliver a comprehensive assessment of the company's social responsibility efforts, fostering transparency, accountability, and continuous improvement.

6.0. Major Thrust Areas of CSR at DB Power Ltd:

Corporate Social Responsibility (CSR) is a vital concept that emphasizes the role of business organizations in contributing to societal well-being. CSR encompasses the strategies and actions companies undertake to ensure their operations are ethical, sustainable, and beneficial to the communities they affect. For DB Power Ltd., a prominent player in the power sector, CSR is more than just a compliance requirement; it is a commitment to fostering holistic development and improving the quality of life for disadvantaged groups in the areas surrounding its operations. This essay explores the major thrust areas of CSR at DB Power Ltd, focusing on their impact on rural infrastructure, education, health, women empowerment, and social welfare.

This obligation shows that the organizations must comply with legislation and voluntarily take initiatives to improve the well-being of the affected local community and society at large. CSR simply refers to strategies corporations or firms conduct their business in a way that is ethical and society friendly. The focus of the corporate social responsibility unit of DB Power Plant Sakti is the holistic development and improvement in the quality of life of habitations and affected communities, particularly of the disadvantaged groups, in and around the neighbourhoods of power station project sites. The DB power plant under its CSR policy has implemented various projects in the financial year from 2023-24 based on the needs of the neighbouring affected villages and above-mentioned communities with the participation of the villagers, district, and local administrations.

Based on the CSR guidelines issued by the Department of Public Enterprises, the Government of India, DB Power Ltd must carry out CSR activities in affected villages every financial year. All activities undertaken by DB Power under CSR in the 02 Plant Affected Villages and 06 Railway Corridor villages will be covered in the Social Audit. The activities about various developmental fields are as follows:

A. Rural Infrastructure Programme:

One of the critical thrust areas of CSR at DB Power Ltd. is the development of rural infrastructure. This program aims to enhance the quality of life in the plant-affected and railway corridor villages by improving basic amenities and facilities. Infrastructure development is foundational for economic growth and social development, providing communities with the resources they need to thrive. The following Key Initiatives were carried out. DB Power Ltd. has invested in building and maintaining roads to improve connectivity between villages and urban centres. Improved roads facilitate access to markets, healthcare, and educational institutions, thereby enhancing economic opportunities and quality of life.

Water Supply and Sanitation: Access to clean water and sanitation facilities is crucial for health and well-being. DB Power Ltd. has implemented projects to provide potable water, construct sanitation facilities, and promote hygiene practices, significantly reducing water-borne diseases in the community.

Electrification: Electrification projects have been undertaken to provide reliable power supply to underserved areas. Access to electricity not only improves living standards but also opens up new avenues for education and business.

Community Centres: The construction of community centres serves as a hub for social interaction, cultural activities, and skill development programs, fostering a sense of community and cooperation among residents.

The Rural Infrastructure Programme has transformed the landscape of affected villages, providing them with essential facilities that were previously lacking. Improved infrastructure has led to increased economic activity, better health outcomes, and enhanced educational opportunities, contributing to the overall development of the region.

B. Education and Skill Development:

Education and skill development are pivotal for empowering individuals and driving social change. DB Power Ltd.'s CSR initiatives in this area aim to provide quality education and vocational training to equip community members with the skills necessary for gainful employment. The Key Initiatives taken are as follows

School Renovation and Support: DB Power Ltd. has undertaken the renovation of schools, providing necessary infrastructure, learning materials, and financial support to improve the quality of education. Scholarships and educational assistance programs have been established to encourage higher education among students from disadvantaged backgrounds.

Vocational Training Centres: To address the skill gap and enhance employability, vocational training centres have been set up to provide training in various trades such as tailoring, carpentry, and computer skills. These centres offer certification and job placement assistance, helping participants secure stable employment.

Career Counseling and Guidance: Career counselling sessions are organized to help students and young adults make informed decisions about their education and career paths. By providing guidance and resources, DB Power Ltd. aims to inspire the next generation to pursue fulfilling careers.

The Education and Skill Development initiatives have empowered individuals with knowledge and skills, leading to increased employment opportunities and improved living standards.

By investing in education, DB Power Ltd. is not only enhancing individual potential but also contributing to the socio-economic development of the entire community.

C. Health, Hygiene & Sanitation:

Health, hygiene, and sanitation are critical components of community well-being. DB Power Ltd.'s CSR initiatives in this area focus on improving healthcare access, promoting hygiene practices, and enhancing sanitation facilities to ensure a healthier community. The Key Initiatives taken

Medical Camps and Health Check-ups: Regular medical camps and health check-ups are organized to provide free medical services and screenings for common illnesses. These camps are instrumental in diagnosing and treating health issues at an early stage, thereby preventing complications.

Health Awareness Campaigns: Awareness campaigns on topics such as nutrition, maternal health, and disease prevention are conducted to educate the community about healthy practices and lifestyle choices. These campaigns empower individuals with the knowledge to make informed health decisions.

Sanitation Drives: Sanitation drives focus on promoting cleanliness and hygiene in the community. Activities include the construction of toilets, waste management programs, and awareness sessions on personal hygiene, significantly reducing the incidence of sanitation-related diseases.

Partnerships with Healthcare Providers: Collaborations with local healthcare providers enhance the quality and reach of healthcare services. By partnering with hospitals and clinics, DB Power Ltd. ensures that community members have access to specialized medical care when needed.

The Health, Hygiene & Sanitation initiatives have led to improved health outcomes, reduced disease prevalence, and enhanced quality of life for community members. By prioritizing health and hygiene, DB Power Ltd. is building a foundation for sustainable community development.

D. Women Empowerment:

Empowering women is essential for achieving gender equality and fostering inclusive development. DB Power Ltd.'s CSR initiatives aim to empower women by providing them with opportunities for education, skill development, and economic participation. The Key Initiatives taken

Self-Help Groups (SHGs): DB Power Ltd. supports the formation of self-help groups, providing women with access to financial resources, training, and networking opportunities. SHGs enable women to start small businesses, generate income, and contribute to their families' well-being.

Skill Development Workshops: Workshops on various skills such as tailoring, handicrafts, and entrepreneurship are conducted to equip women with the skills needed to pursue income-generating activities. These workshops not only enhance skills but also boost confidence and self-reliance.

Leadership and Advocacy Training: Training programs on leadership and advocacy empower women to take on leadership roles in their communities and advocate for their rights. By building leadership capacity, DB Power Ltd. is fostering a generation of women leaders who can drive positive change.

Health and Nutrition Programs: Special programs focused on women's health and nutrition ensure that women have access to healthcare services and nutritional support. These programs address specific health issues faced by women and promote overall well-being.

The Women Empowerment initiatives have transformed the lives of many women, enabling them to become active participants in their communities and economies. By providing women with the tools, they need to succeed, DB Power Ltd. is promoting gender equality and fostering inclusive growth.

E. Social Welfare and Development Programme:

The Social Welfare and Development Programme encompasses a broad range of initiatives aimed at improving the overall well-being of the community. These initiatives address various social issues and provide support to vulnerable groups. The Key Initiatives taken

Support for Vulnerable Groups: DB Power Ltd. provides support to vulnerable groups such as the elderly, differently abled, and marginalized communities. Assistance includes financial aid, healthcare services, and access to social services.

Environmental Conservation: Environmental conservation initiatives focus on preserving natural resources and promoting sustainable practices. Activities include tree planting drives, waste management programs, and awareness campaigns on environmental conservation.

Community Engagement and Participation: DB Power Ltd. actively engages with the community through participatory programs that encourage involvement in decision-making processes. Community participation ensures that initiatives are aligned with the needs and aspirations of the people.

The Social Welfare and Development Programme has made a significant impact on the overall quality of life in the community. By addressing social issues and providing support to vulnerable groups, DB Power Ltd. is fostering a more inclusive and equitable society.

DB Power Ltd.'s CSR initiatives demonstrate a comprehensive approach to corporate social responsibility, focusing on the holistic development of communities affected by its operations. Through targeted programs in rural infrastructure, education, health, women empowerment, and social welfare, the company is making a tangible difference in the lives of individuals and communities.

By prioritizing ethical and society-friendly practices, DB Power Ltd. is setting a benchmark for responsible business and contributing to the sustainable development of society. Rural infrastructure is the backbone of sustainable development in rural areas, providing essential services and facilities that directly influence the quality of life and economic productivity of the population. In a country like India, where a significant portion of the population resides in rural areas, the development of rural infrastructure is crucial for economic growth, poverty alleviation, and human development. This essay elaborates on the importance of rural infrastructure, the various components involved, and the role of Corporate Social Responsibility (CSR) interventions in enhancing rural infrastructure, ultimately contributing to employment generation and improved living standards.

7.0. Expenses of Budget Allocated in Financial Year 2023-2024 for CSR Activities:

Financial Year	Rural Infrastructure Development	Health & Sanitation	Education & Skill Development	Women Empowerment	Social & Cultural Programmes	Total
2023-2024	116683716	6488491	747799	11146115		135,066,121

8.0. Activities Carried Out under Rural Infrastructure:

Rural infrastructure encompasses the physical framework and services that facilitate economic activities and improve the quality of life in rural areas. It includes transportation systems, power generation and distribution, telecommunications, water supply and sanitation, irrigation systems, educational facilities, healthcare centres, and markets. The development of these facilities is vital for several reasons:

Economic Growth: Infrastructure is a key driver of economic growth. Improved transportation networks, such as roads and bridges, facilitate the movement of goods and people, reducing costs and increasing efficiency.

Access to reliable power and telecommunications enables businesses to operate effectively and reach broader markets.

Poverty Alleviation: By improving access to essential services and creating job opportunities, rural infrastructure development plays a significant role in poverty alleviation. Infrastructure projects can create employment opportunities during both the construction and operational phases, providing income to local communities.

Human Development: Access to education and healthcare facilities is crucial for human development. Improved infrastructure ensures that rural populations have access to quality education and healthcare services, which are essential for improving living standards and breaking the cycle of poverty.

Agricultural Productivity: Agriculture is the primary livelihood for many rural households. Infrastructure such as irrigation systems and rural roads enhance agricultural productivity by providing reliable water sources and efficient means of transporting produce to markets.

Social Cohesion: Infrastructure development can also strengthen social cohesion by connecting isolated communities and promoting social interaction. This connectivity can lead to a greater sense of community and shared purpose.

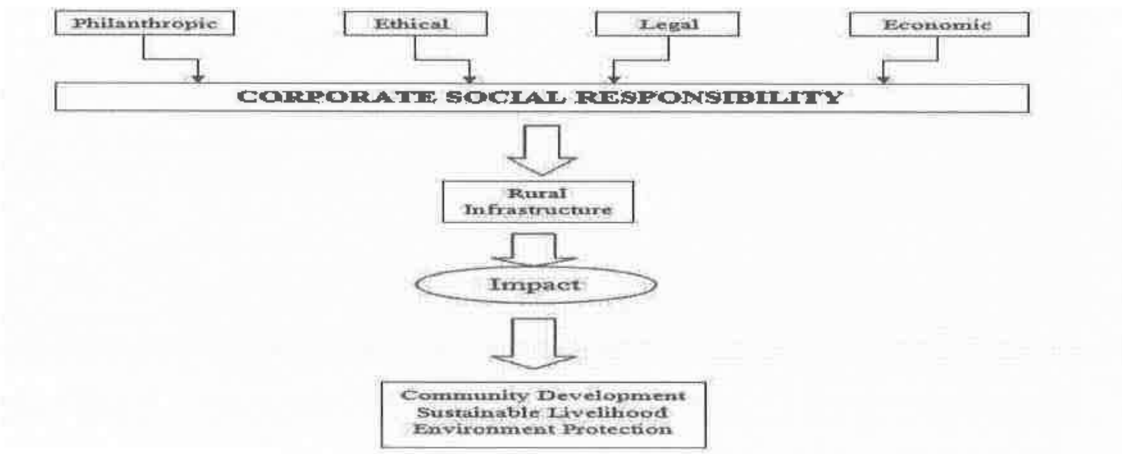


Figure: 01 Conceptual Framework of DB Power Ltd CSR Unit in Rural Infrastructure

The image presents a conceptual framework for Corporate Social Responsibility (CSR) as applied by DB Power Ltd in the context of rural infrastructure. The framework outlines how various dimensions of CSR are integrated to achieve specific outcomes in community development, sustainable livelihoods, and environmental protection. Let's break down the elements of this framework to understand its implications. The framework starts by identifying four key dimensions of CSR:

Philanthropic: This dimension focuses on the company's voluntary actions to contribute to society. Philanthropy may include charitable donations, sponsorships, and other activities that benefit the community. This element of CSR reflects the company's commitment to giving back and enhancing social welfare beyond profit-making activities.

Ethical: Ethical responsibility pertains to conducting business fairly and morally. It involves adherence to ethical standards and principles, ensuring that the company operates with integrity and transparency. Ethical behaviour fosters trust and positive relationships with stakeholders, including employees, customers, and the community.

Legal: Legal responsibility encompasses compliance with laws and regulations. Companies must operate within the legal frameworks set by governments and regulatory bodies. Legal compliance ensures that businesses do not engage in practices that harm society or the environment, protecting both the company and the public.

Economic: Economic responsibility refers to the company's obligation to be profitable and economically sustainable. It involves making sound financial decisions that benefit the company and its stakeholders. By being economically responsible, a company can generate wealth, create jobs, and contribute to the economic development of the communities it serves.

The framework illustrates that these CSR dimensions collectively lead to initiatives focused on **Rural Infrastructure**. This focus is significant because rural areas often lack essential infrastructure, such as roads, schools, healthcare facilities, and utilities.

By investing in rural infrastructure, DB Power Ltd can address critical gaps that hinder community development and economic growth in these areas. The central oval labelled **Impact** suggests that the efforts in rural infrastructure have tangible and measurable outcomes. The impact reflects the effectiveness of CSR initiatives in transforming the community. It indicates that CSR activities should not only be about implementing projects but also about assessing their effects on improving the quality of life for rural populations. The framework culminates in three primary outcomes:

Community Development: By enhancing rural infrastructure, the company can significantly contribute to community development. Improved infrastructure can lead to better education, healthcare, and overall living standards, empowering communities to thrive.

Sustainable Livelihood: Infrastructure improvements can create sustainable livelihoods by providing communities with access to markets, resources, and opportunities. For instance, better roads can facilitate trade and commerce, while access to electricity can enable small businesses to operate efficiently.

Environment Protection: CSR activities in rural infrastructure should also prioritize environmental protection. Sustainable practices can ensure that development does not come at the expense of natural resources. Environmental initiatives might include renewable energy projects, conservation efforts, and sustainable agricultural practices.

In summary, the conceptual framework of DB Power Ltd's CSR in rural infrastructure illustrates a holistic approach to corporate responsibility. By integrating philanthropic, ethical, legal, and economic dimensions, the company aims to achieve significant impacts in rural areas. The focus on community development, sustainable livelihoods, and environmental protection underscores the company's commitment to creating positive social and economic change. This framework highlights the importance of strategic CSR planning that aligns business goals with societal needs, ultimately fostering a sustainable future for rural communities.

Rural infrastructure development is a critical component of sustainable development in rural areas. It plays a vital role in economic growth, poverty alleviation, and human development. CSR interventions have made significant contributions to enhancing rural infrastructure, creating employment opportunities, and improving living standards for rural populations. By addressing challenges and focusing on collaboration, scalability, and sustainability, CSR initiatives can continue to play a transformative role in rural development, ensuring that rural communities have the infrastructure they need to thrive and prosper.

This section covered the details of CSR intervention in rural infrastructure, public relations, and activities based on preserving the environment like pollution prevention programs, and awareness programs in the community. It also analyzed how CSR activities have provided significant employment to the local community people and production of crops and enhancement in services Infrastructure assets such as rural roads, tracks, bridges, irrigation schemes, water supplies, schools, health Centre and markets are needed in rural areas for the local population to fulfil their basic needs and live a social and economic productive life.

Photo 1: Constructed CC Road (400 meters) in village Tundri and 300 meters at village Rampur Badadarha.

Constructing CC (cement concrete) roads in rural areas is a common Corporate Social Responsibility (CSR) initiative, aimed at improving infrastructure and accessibility. Here is an analysis and interpretation of the construction of 400 meters of CC road in Tundri and 300 meters in Rampur, carried out by DB Power Ltd. The primary objective of constructing CC roads under CSR is to enhance rural infrastructure, improve connectivity, and contribute to community development. Improved roads can lead to better access to markets, healthcare, and education facilities. The construction of CC roads in Tundri and Rampur is a strategic initiative by DB Power Ltd to fulfil their CSR commitments and positively impact rural development. The project aligns with broader development goals, such as:

Sustainable Development Goals (SDGs): This initiative supports SDG 9 (Industry, Innovation, and Infrastructure) and SDG 11 (Sustainable Cities and Communities) by promoting inclusive and sustainable infrastructure development.

Community Empowerment: By enhancing infrastructure, the project empowers communities, enabling them to leverage new opportunities for growth and development.

Corporate Image: Engaging in CSR activities like this can improve the corporate image of DB Power Ltd, fostering goodwill and strengthening relationships with local communities and stakeholders.

The construction of CC roads in Tundri and Rampur under CSR is a commendable effort by DB Power Ltd. It not only demonstrates their commitment to social responsibility but also contributes to the holistic development of the villages. By focusing on infrastructure improvements, the company aids in creating a foundation for sustained economic and social benefits, leading to the upliftment of rural areas.

Photo 2: Constructed water tanks 02 (Capacity- 3000 Liter each) and connected pipeline from Bore well to Water tanks at village Tundri.

The primary objective of this project was to enhance the water supply infrastructure in Tundri village by constructing two water tanks, each with a capacity of 3,000 litres, and connecting them to a bore well via a newly installed pipeline. This initiative was part of a CSR activity carried out by DB Power Ltd, aimed at improving rural infrastructure. Two 3,000-liter tanks were constructed to store water, ensuring a steady supply for the village. The installation of two 3,000-liter tanks has significantly increased the water storage capacity in the village, ensuring a reliable supply even during peak demand times. The pipeline provides a direct and efficient method of transferring water from the bore well to the tanks, reducing reliance on manual transportation and improving overall water distribution. It has enhanced access to clean and potable water for the residents of Tundri Village, contributing to improved health and sanitation. A pipeline was laid down to connect the bore well to the water tanks, allowing for efficient water transfer. With the water supply system in place, villagers save time and effort previously spent on fetching water from distant sources.

The construction of the water tanks and the pipeline connection as part of the CSR initiative by DB Power Ltd represents a significant step towards improving rural infrastructure in Tundri village. This addresses the immediate need for a reliable water supply but also lays the groundwork for long-term benefits, including better health outcomes, economic development, and environmental sustainability. This activity highlights the positive impact of the CSR activity on Tundri Village, demonstrating the value of corporate involvement in rural development.

Photo 3: Constructed Cremation sheds in Kanchanpur and Beladula Mohalla at Tundri.

Though, CSR refers to the efforts made by corporations to address social, economic, and environmental issues. It involves companies taking responsibility for the impact of their operations on society and the environment and undertaking initiatives that contribute to the welfare of the community. The primary objective of this CSR initiative was to construct cremation sheds in Kanchanpur and Beladula Mohalla at Tundri. The project aims to provide a dedicated space for performing last rites with dignity and in a structured environment. By creating cremation sheds, the project addresses a crucial need within these communities, ensuring that residents have access to proper facilities for conducting funerals. This is particularly important in areas where such infrastructure may be lacking or inadequate.

The construction of cremation sheds ensures that community members can perform last rites respectfully and with dignity, reflecting cultural and religious practices.

The availability of such infrastructure can enhance the overall well-being of the community, reducing stress and logistical challenges associated with funerals. Therefore, the construction of cremation sheds in Kanchanpur and Beladula Mohalla at Tundri under the DB Power Ltd. CSR initiative is a significant step towards enhancing rural infrastructure. By addressing the social, economic, and environmental needs of the community, the project demonstrates the positive impact that CSR activities can have on local populations. Through careful planning, execution, and stakeholder engagement, such initiatives can lead to sustainable community development and improved quality of life for residents.

Photo 4: Constructed Bathing Steps in Bandhwa Pond at Tundri, Deepa Pond at Fulbandhia and Pankhi Pond at Basanpali.

DB Power Ltd's construction of bathing steps at Bandhwa Pond in Tundri, Deepa Pond in Fulbandhia, and Pankhi Pond in Basanpali represents a strategic Corporate Social Responsibility (CSR) initiative aimed at enhancing rural infrastructure. This initiative reflects the company's commitment to community development and environmental sustainability.

The construction of bathing steps facilitates easier and safer access to water bodies for local communities. Previously, accessing ponds for bathing or other purposes might have been challenging, especially for children and the elderly, due to steep or slippery banks. Proper steps reduce the risk of accidents such as slipping or falling, ensuring a safer environment for daily activities. With improved infrastructure, locals are more likely to use the ponds regularly, promoting better hygiene practices. Safer access and better sanitation facilities can reduce the incidence of waterborne diseases, contributing to overall community health. Ponds are often integral to local traditions and daily routines. Improving these facilities helps preserve cultural practices related to water use. The ponds can serve as communal gathering spaces, fostering social interaction and community cohesion. Properly managed access points can help preserve the natural ecosystem around ponds, preventing erosion and contamination from unregulated access. Encouraging responsible use and management of water resources contributes to long-term sustainability. By minimizing human impact on natural banks, the initiative helps protect the habitats of various aquatic and terrestrial species. The construction of bathing steps at Bandhwa Pond, Deepa Pond, and Pankhi Pond is a significant CSR initiative by DB Power Ltd, showcasing a multifaceted approach to community development. By addressing safety, health, environmental, and economic aspects, this project not only improves the quality of life for local communities but also supports broader objectives of sustainable development and corporate responsibility. Such initiatives highlight the potential for corporations to positively influence rural infrastructure, creating a model for future CSR projects that seek to balance business objectives with community and environmental needs.

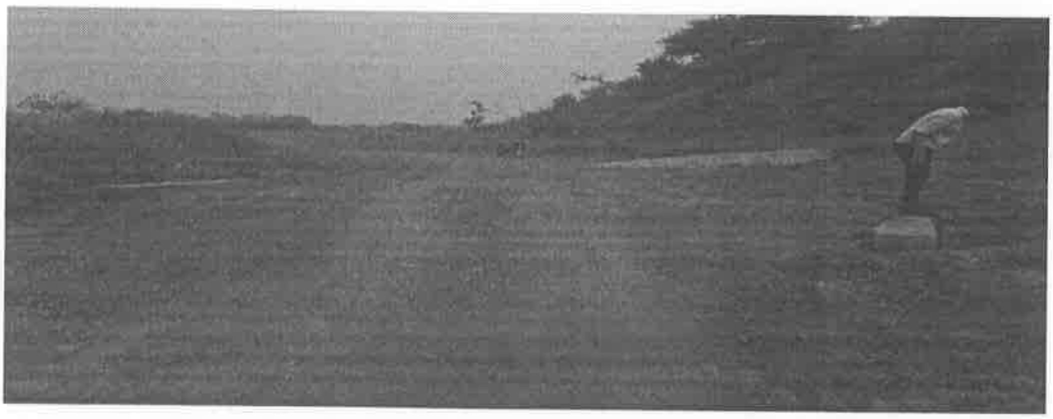


Photo 5: Constructed Culvert on the East side of Ash dyke at village Tundri

The culvert is typically designed to facilitate water flow under roads or embankments, preventing waterlogging and damage to infrastructure. It likely aims to enhance local infrastructure, benefiting villagers by improving transportation and preventing water-related issues. It often focuses on improving living conditions in rural areas, supporting local economic development, and ensuring better connectivity. The culvert helps manage stormwater flow, reducing soil erosion and preventing environmental degradation.

By controlling water flow, the culvert can help protect local ecosystems and biodiversity from potential harm caused by uncontrolled runoff at Tundari Village. This aligns with the CSR objectives of DB Power Ltd focused on rural development and infrastructure enhancement. It reflects a commitment to improving living conditions and supporting community welfare.

Photo 6: Repairing of 49 Hand pumps has been done at Badadarha & Tundri

Repairing of 71 Motor pumps has been done at Badadarha Rampur & Tundri.
Repairing of 27 Biogas units at Badadarha & Rampur
Repairing of streetlights (72 Nos) 206 times at Badadarha & Rampur have been done.
Repairing of 27-time Personal light connection of villagers at Badadarha & Rampur.

DB Power Ltd's CSR activities have made a significant impact in the rural areas of Badadarha, Tundri, and Rampur.

Hand Pumps (49 repairs): Increased Access to Clean Water, repairing hand pumps directly enhances the availability of potable water for local communities. This is crucial for health and well-being. Reduced Disease Risk, properly functioning hand pumps decrease the likelihood of waterborne diseases. Health Improvement, Access to clean water can significantly reduce waterborne diseases and improve overall health. Time Savings, Reliable hand pumps reduce the time spent fetching water, allowing villagers to use their time more productively.

Motor Pumps (71 repairs): Improved Irrigation, Motor pumps are essential for irrigation, which supports agriculture, a key livelihood for many in rural areas. Economic Benefits, Enhanced irrigation can lead to better crop yields and, consequently, increased income for farmers. Enhanced Agricultural Productivity, Better irrigation systems can lead to increased agricultural output, improving food security and economic stability. Increased Income, Farmers can potentially earn more due to better crop yields.

Biogas Units (27 repairs): Sustainable Energy Source, Biogas units provide a renewable source of energy, reducing reliance on traditional fuels. Waste Management, help in managing organic waste effectively. Environmental Benefits, using biogas reduces greenhouse gas emissions and promotes cleaner energy use. Cost Savings, Villagers save money on fuel and reduce waste disposal issues.

Streetlights (72 repairs, 206 instances): Enhanced Safety, Functional Street lights improve safety and security in the community, especially at night. Increased Nighttime Activities and better lighting can encourage more community activities and economic transactions after dark. Improved Safety: Reduces crime rates and accidents at night, creating a safer environment for residents. Economic Activity, encourages more evening activities and local commerce, boosting the local economy.

Personal Light Connections (27 repairs): Better Living Conditions, Reliable personal lighting improves daily living conditions, particularly in the evenings. Increased Productivity and more consistent lighting can extend productive hours for work or study. Enhanced Quality of Life, Improved lighting contributes to better living standards and safety. Educational and Work Opportunities, Reliable lighting can support education and productivity in the home. Health Benefits, Improved access to clean water and enhanced sanitation reduce health risks.

Economic Growth, Better irrigation and energy sources support agricultural productivity and local businesses. Environmental Impact, Use of biogas and improved street lighting contribute to environmental sustainability. Social Benefits, Enhanced safety, reduced crime, and better living conditions foster community well-being. These activities collectively contribute to rural development, improving both the quality of life and economic stability in the affected areas.

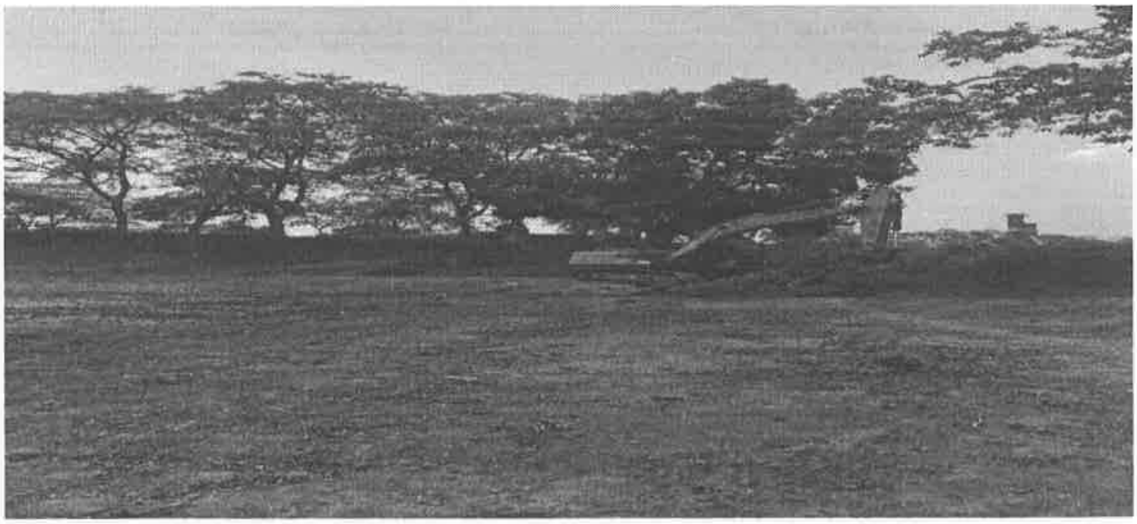


Photo 7: Deepening & cleaning of Darri Pond, Rampur and Lavlin Pond at Badadarha.

DB Power Ltd. undertook a CSR initiative focusing on the deepening and cleaning of Darri Pond in Rampur and Lavlin Pond at Badadarha. This project aimed to improve rural infrastructure and enhance local environmental conditions. It Enhances Water Storage Capacity because by deepening the ponds, the project intended to increase their water storage capacity. Moreover, it Improves Water Quality because Cleaning the ponds would help in reducing pollution and improving water quality.

Additionally, it supports agriculture which Improves water availability and would support local agricultural activities by promoting hygiene through which cleaner water sources contribute to better hygiene and reduced waterborne diseases. It involved excavation, removal of silt, and cleaning of debris. It also included measures to prevent future contamination and ensure the sustainability of the ponds.

Deepening and cleaning the ponds significantly improved the water quality and capacity. This enhancement supports local ecosystems and provides a more reliable water source. By addressing contamination and increasing water storage, the project contributes to long-term environmental health and sustainability. Furthermore, Increased water availability directly benefits local farmers by providing a more reliable water source for irrigation, potentially leading to higher crop yields it also Improves water quality and reduces the risk of waterborne diseases, leading to better public health outcomes.

It also likely involved local communities in the cleaning process, fostering a sense of ownership and collaboration. The CSR activity undertaken by DB Power Ltd to deepen and clean Darri Pond and Lavlin Pond has had a substantial positive impact on both the environment and the local community. By improving water quality and availability, the project supports agricultural productivity, public health, and overall economic development.

The success of this initiative highlights the importance of corporate social responsibility in fostering sustainable rural development and enhancing the quality of life for local populations. Hence it serves as a model for future CSR activities aimed at improving rural infrastructure and environmental conditions.

Photo 8: Cleaning of the Canal has been done for smooth flow of water at Badadarha.

The cleaning of the canal at Badadarha by DB Power Ltd was a strategic intervention under their Corporate Social Responsibility (CSR) program, aimed at improving rural infrastructure. The primary objective was to ensure the smooth flow of water, which is crucial for various aspects of rural life, including agriculture, drinking water supply, and local ecosystems.

Removal of silt, debris, and obstructions from the canal helps to restore its functionality. It includes Labor, machinery, and possibly expertise in water management. Additionally catalyze the Potential engagement of local communities in the cleaning process or in maintaining the canal post-cleaning.

The canal cleaning project can be interpreted as a proactive measure to enhance the local infrastructure, thereby addressing issues related to water management in rural areas. By improving the canal's capacity to handle water flow, DB Power Ltd is addressing potential problems related to water scarcity, flooding, and agricultural productivity. By removing blockages, the canal's efficiency in channeling water is improved, which can lead to better irrigation and water availability. The activity likely contributes to the sustainability of water resources in the region, reducing the need for frequent maintenance and mitigating potential environmental issues.

It helps in Improved irrigation can lead to better crop yields and more reliable farming practices, which directly benefits the local economy. The Clean canals reduce the risk of waterborne diseases by preventing stagnation and contamination. So, a well-maintained canal can support local ecosystems and wildlife, preserving biodiversity and natural habitats. Therefore, enhanced infrastructure contributes to the overall quality of life, as reliable water sources are crucial for daily living and economic activities.

The canal cleaning initiative by DB Power Ltd exemplifies a successful CSR activity that addresses critical infrastructure needs in rural areas. By investing in the maintenance and improvement of essential water management systems, the company demonstrates a commitment to sustainable development and community welfare.

The positive outcomes, including improved agricultural productivity, public health, environmental sustainability, and community well-being, underscore the value of such CSR efforts in creating tangible benefits for underserved areas. Overall, this activity reflects a meaningful contribution to rural infrastructure and sets a precedent for future CSR activities aimed at enhancing quality of life through strategic investments in community resources.

Photo 9: Inauguration of DB Power Limited Arogya Kendra

DB Power Limited's inauguration of the Arogya Kendra represents a significant commitment to enhancing healthcare access in rural areas. This initiative is part of their broader Corporate Social Responsibility (CSR) strategy aimed at improving infrastructure and quality of life in underserved communities. The Arogya Kendra is likely designed to provide basic medical services, preventive care, and health education to residents in rural locations.

The Arogya Kendra is situated in a rural area, making healthcare more accessible to populations that previously had limited access. It offers essential medical services such as consultations, diagnostics, treatment for common ailments, and possibly preventive care. It likely involved local community leaders and residents in its planning and implementation phases, ensuring that it meets the specific needs of the population.

The establishment of the Arogya Kendra can be interpreted as DB Power Limited's strategic move to align its CSR activities with the pressing needs of rural communities. By focusing on healthcare, they address one of the most critical needs in these areas — access to medical services. This initiative reflects a recognition of the broader social determinants of health and the role that companies can play in mitigating these challenges. The initiative aligns with global CSR goals related to health and well-being, particularly in areas with limited infrastructure. It also enhances DB Power Limited's corporate image, showcasing its commitment to social responsibility and community development.

The impact of the Arogya Kendra increased access to medical services is likely to result in better health outcomes, reduced morbidity, and improved quality of life for the local population. Because Healthier communities are more productive, which can contribute to economic development. Reduced healthcare costs for individuals can also lead to increased disposable income and better living standards.

It fosters greater community cohesion and trust in corporate entities. It may also serve as a model for other companies considering similar CSR initiatives. The inauguration of DB Power Limited's Arogya Kendra marks a noteworthy contribution to rural infrastructure development through their CSR efforts.

By addressing a critical need for healthcare in underserved areas, DB Power Limited not only fulfils a social responsibility but also strengthens its corporate reputation. The initiative is poised to deliver significant health, economic, and social benefits, aligning with broader goals of sustainable development and community well-being. Future assessments should focus on evaluating the effectiveness of the services provided and the overall satisfaction of the community to ensure continued success and improvement of such CSR initiatives.

8.1. Impact of Rural Infrastructure Initiatives on Community:

DB Power Limited has undertaken significant Corporate Social Responsibility (CSR) activities aimed at community development, particularly focusing on rural infrastructure improvements. These initiatives have brought transformative changes to the communities, enhancing connectivity, access to resources, and quality of life. This overview explores the impact of various projects implemented by DB Power Limited in the context of rural infrastructure development.

Concrete Roads for Improved Connectivity

One of the notable CSR activities by DB Power Limited is the construction of concrete roads in rural areas. Concrete roads are a preferred choice in developing countries due to their technical and economic advantages. These roads offer excellent load distribution, reducing the need for thick and costly bases. They are highly resistant to deformation and wear, irrespective of temperature fluctuations, and are not affected by substances like oil, clay, or faecal matter. With an estimated service life of over 30 years, these roads provide a durable solution for rural connectivity.

The newly constructed concrete roads have significantly improved transportation within villages, connecting them to urban centres.

This enhanced connectivity facilitates the movement of goods and people, boosting economic activities and providing villagers access to better services and opportunities. The roads have become vital lifelines, reduced isolation and fostering development.

Ensuring Access to Safe Drinking Water

Access to safe drinking water remains a critical issue in many parts of rural India. Approximately 45% of the rural population lacks access to safe drinking water, leading to health issues like jaundice, cholera, and gastroenteritis. DB Power Limited addressed this challenge by drilling bore wells and installing hand pumps in labour colonies. This initiative ensures villagers have access to clean and safe drinking water, significantly reducing the prevalence of waterborne diseases.

Groundwater, a crucial source of irrigation, has been exploited extensively, often without considering recharge prospects. By providing bore wells and hand pumps, DB Power Limited not only addresses drinking water needs but also supports agricultural activities by ensuring a reliable water supply for irrigation.

Infrastructure Renovation for Better Administration

Renovating existing infrastructure is another critical aspect of DB Power Limited's CSR activities. Renovations improve outdated or damaged structures, enhancing their functionality and lifespan. One such project involved renovating roads leading to the collector's office and connecting villages with metal roads. This renovation has streamlined administrative functions, improving access for primary and secondary stakeholders and fostering better governance.

Supporting Religious and Spiritual Activities

Religious and spiritual activities play a vital role in social integration. Recognizing this, DB Power Limited constructed a shed near a local temple. The shed provides shelter for visitors, protecting them from harsh weather conditions.

While religious activities can sometimes accelerate groundwater exploitation, the shed construction is focused on enhancing the spiritual experience for the community. This initiative underscores the importance of social cohesion and cultural preservation in community development.

Enhancing Water Resources and Safety

In rural areas, ponds have been traditional sources of water for livestock, irrigation, and other purposes. DB Power Limited has taken steps to enhance the functionality and safety of these ponds. By constructing steps with bricks and cement around the ponds, the company has improved accessibility, reducing the risk of accidents like slipping and drowning.

The enhanced ponds now serve multiple purposes, including fish farming, which has emerged as an alternative livelihood source for villagers. This initiative has not only improved water resource management but also contributed to economic development by diversifying income sources for the community.

Pond Cleaning and Water Harvesting

Water scarcity is a significant challenge in rural India, particularly in drought-prone areas. To address this, DB Power Limited undertook pond cleaning and water harvesting initiatives. Cleaning existing ponds and constructing embankments help capture rainwater and surface runoff, ensuring a steady water supply for agriculture and other uses. Farm ponds, created as part of this initiative, serve as vital reservoirs, providing water during dry seasons for irrigation and other purposes. This approach supports sustainable agriculture, improves farmers' socio-economic status, and strengthens community resilience against climate variability.

Canal Repair for Improved Irrigation

Canals are crucial for irrigation in rural areas, supporting agriculture by channeling water to fields. DB Power Limited repaired the Kachcha Canal in Badadarha to enhance its functionality for irrigation purposes.

This repair ensures a reliable water supply, supporting agricultural productivity and reducing dependence on erratic monsoon rains.

Promoting Renewable Energy and Biogas

DB Power Limited is committed to promoting renewable energy through the installation of domestic biogas units. These units convert cow dung into biogas, providing a sustainable energy source for cooking and reducing reliance on traditional fuels like firewood and kerosene.

The use of biogas has multiple benefits, including reducing indoor air pollution, alleviating the workload for women and children, and decreasing deforestation. This initiative supports India's National Policy on Biofuels, contributing to climate protection and energy sustainability.

Enhancing Safety and Quality of Life with Street Lights

The installation of streetlights in rural areas is another impactful CSR initiative by DB Power Limited. Streetlights enhance safety and security, reducing the risk of animal attacks and accidents, particularly after sunset. Villagers report feeling safer and more confident moving around at night, leading to increased social interactions and community activities.

The presence of streetlights has also facilitated women's mobility during evening hours, empowering them to participate more actively in social and economic activities. The initiative has transformed village life, fostering a sense of pride and well-being among residents. DB Power Limited's CSR activities in rural infrastructure development have made a significant impact on community development. From improving connectivity and access to clean water to enhancing safety and promoting renewable energy, these initiatives have transformed rural life. The projects not only address immediate needs but also lay the foundation for sustainable development, empowering communities to thrive. Through strategic investments in infrastructure and community well-being, DB Power Limited demonstrates the power of CSR in driving positive change and creating lasting benefits for society.

8.2. Activities Carried Out under Health, Hygiene & Sanitation:

Sanitation, hygiene, and cleanliness are fundamental indicators of a cultured society. They are not merely aspects of personal or community well-being but are intrinsic to public health and sustainable socio-economic development. Sanitation plays a pivotal role in maintaining human health, preventing diseases, and ensuring a dignified way of life. Mahatma Gandhi's profound statement in 1923, "Sanitation is more important than independence," underscores the crucial importance of sanitation in building a civilized society. This quote is especially relevant in the context of developing nations like India, where sanitation is a pressing concern.

India is a vast country with a significant portion of its population residing in rural areas. Despite the rapid urbanization and development in recent years, a large number of rural inhabitants still practice open defecation due to inadequate access to proper sanitation facilities. This practice not only poses serious health risks but also affects the dignity and safety of individuals, particularly women and children. The lack of sanitation facilities contributes to the spread of diseases such as diarrhea, cholera, and typhoid, which are prevalent in areas where open defecation is common. Therefore, improving sanitation is not only a matter of public health but also a crucial step towards achieving social equity and justice.

The challenge of improving sanitation in rural India is multi-faceted and involves various stakeholders, including the government, healthcare sector, non-governmental organizations (NGOs), and the private sector. The healthcare sector, in particular, has a significant role to play in promoting sanitation and hygiene practices. Healthcare professionals, providers, and managers must continually explore ways to prioritize the welfare of individual patients and promote health equity through socially responsible activities. However, the main challenges faced by the healthcare sector in addressing sanitation issues are the lack of resources, awareness, and accessibility to services.

One of the fundamental barriers to improving sanitation in rural areas is the lack of resources. Many communities do not have access to basic sanitation facilities such as toilets, clean water, and waste disposal systems. This lack of infrastructure is often due to insufficient funding and investment in sanitation projects. The government must prioritize the allocation of resources towards building and maintaining sanitation facilities in rural areas. This includes not only the construction of toilets but also the development of water supply systems and waste management infrastructure. Moreover, there is a need for innovative solutions that are cost-effective and sustainable, particularly in resource-constrained settings.

In addition to resource constraints, there is a significant lack of awareness and education about the importance of sanitation and hygiene practices among rural populations. Many individuals are unaware of the health risks associated with poor sanitation and continue to engage in practices such as open defecation due to cultural norms and beliefs. Therefore, there is a need for comprehensive awareness campaigns that educate communities about the benefits of sanitation and hygiene. These campaigns should be culturally sensitive and tailored to the specific needs and contexts of different communities. They should also involve local leaders and influencers who can advocate for change and encourage community participation.

Moreover, the healthcare sector must address the issue of accessibility to sanitation services. Many rural communities are located in remote areas with limited access to healthcare facilities and services. This makes it challenging for individuals to seek medical care and sanitation-related services when needed. To address this issue, the healthcare sector must adopt a more decentralized approach that brings services closer to communities. This can be achieved through the establishment of community health centers, mobile clinics, and outreach programs that provide essential healthcare and sanitation services to underserved populations. Corporate social responsibility (CSR) also has a vital role to play in promoting sanitation and hygiene in rural areas.

Businesses and corporations must recognize their social and ethical responsibilities towards the communities they operate in and contribute to the development of sanitation infrastructure and services. This can be done through partnerships with the government and NGOs to implement sanitation projects and initiatives. By investing in sanitation, businesses not only contribute to the well-being of communities but also enhance their reputation and brand image.

Furthermore, ethical principles must be at the core of efforts to improve sanitation and health equity. This involves ensuring that resources and services are distributed fairly and equitably among different communities. It also requires the adoption of a rights-based approach that recognizes sanitation as a fundamental human right. All individuals, regardless of their socio-economic status or geographical location, should have access to basic sanitation facilities and services. This requires a concerted effort from all stakeholders to address the root causes of sanitation inequities and ensure that no one is left behind.

In conclusion, sanitation, hygiene, and cleanliness are essential components of a cultured and civilized society. They are critical for public health, social equity, and sustainable development. In a country like India, where a significant portion of the population lacks access to proper sanitation facilities, there is an urgent need for action. The healthcare sector, government, NGOs, and private sector must work together to overcome the challenges of resource constraints, lack of awareness, and accessibility to services. By prioritizing sanitation and adopting socially responsible and ethical practices, we can create a healthier and more equitable society for all. The importance of sanitation cannot be overstated, and as Gandhi's words remind us, it is indeed more important than independence. Only by addressing this fundamental issue can we hope to achieve true progress and development.

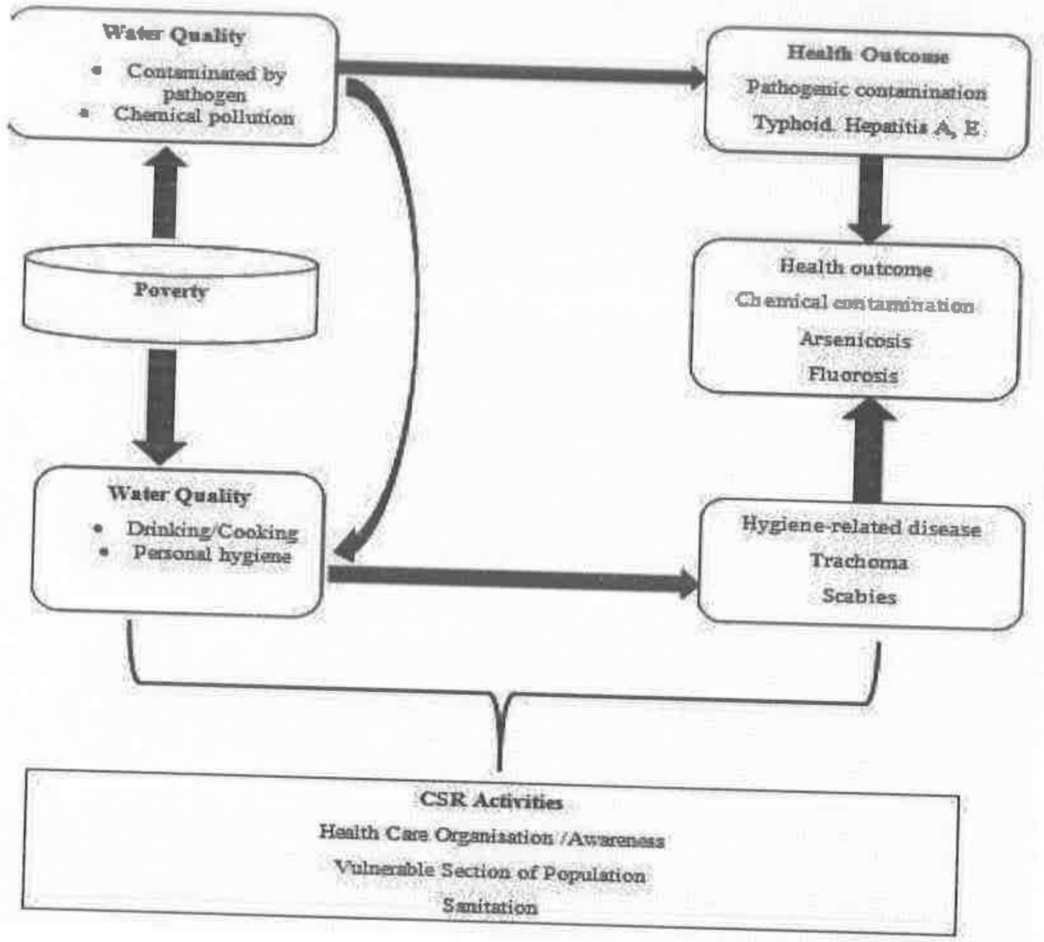


Figure: 02 Conceptual Frameworks Depicting the Role of CSR in Health and Sanitation

The conceptual framework depicted in the figure illustrates the intricate relationships between water quality, poverty, health outcomes, and Corporate Social Responsibility (CSR) activities. It underscores the multifaceted nature of public health challenges and the pivotal role that CSR can play in addressing these issues, particularly in vulnerable communities. CSR activities can play a transformative role in breaking the cycle of poor water quality and adverse health outcomes. By investing in healthcare organizations and awareness programs, companies can help improve community health. Educational initiatives on hygiene practices, disease prevention, and the importance of clean water can empower communities to take proactive measures to safeguard their health.

Focus on Vulnerable Sections of the Population: CSR initiatives should prioritize the vulnerable sections of the population, who are disproportionately affected by poor water quality and health outcomes. This includes children, the elderly, and economically disadvantaged groups. Targeted interventions can ensure that these populations receive the support and resources necessary to improve their health and well-being.

Sanitation: Improving sanitation infrastructure is a crucial component of CSR activities. This involves constructing clean and accessible toilets, waste management systems, and clean water facilities. By addressing the root causes of water contamination and poor hygiene, CSR initiatives can significantly reduce the incidence of waterborne and hygiene-related diseases.

Integrative Approach for Sustainable Impact: The framework highlights the need for an integrative approach that combines efforts from various stakeholders, including governments, non-profit organizations, and the private sector, through CSR activities. Collaboration among these entities can lead to more sustainable and impactful solutions to the challenges posed by water quality and health outcomes.

This section covered the details of CSR intervention in Health & Sanitation. It also discusses how Health is increasingly becoming a focal point of Corporate Social Responsibility (CSR), largely due to the recognition that a healthy workforce and community are fundamental to the longevity of a business and the success of an economy. The following work has been carried out under Health and Sanitation.

Photo 10: 74 Weekly Health Camps organized at Plant and Railway Corridor affected villages. A total of 3486 people benefited from these camps.

DB Power Limited has initiated a series of weekly health camps as part of its Corporate Social Responsibility (CSR) initiative. These camps are held in villages affected by their plant and railway corridor operations. Throughout the initiative, a total of 3,486 individuals have benefited from the health services provided. This initiative is a prime example of how companies can play a pivotal role in enhancing community well-being and fostering sustainable development.

Corporate Social Responsibility (CSR) is a business model that helps a company be socially accountable—to itself, its stakeholders, and the public. By practicing CSR, companies can be conscious of the kind of impact they are having on all aspects of society, including economic, social, and environmental. For DB Power Limited, organizing health camps is a way to give back to the community, mitigate any adverse effects of their operations, and promote sustainable community development.

The health camps organized by DB Power Limited focus on providing essential medical services to communities that may otherwise lack access to adequate healthcare. The image depicts a typical setup of one of these camps, showcasing the interaction between healthcare providers and community members. A healthcare professional is seen attending to a patient, with others waiting for their turn, emphasizing the accessibility and direct impact of these services.

The camps aim to address the immediate health needs of the community, offering services such as blood pressure checks, diabetes screenings, vaccinations, and general health consultations.

Educating the community about health issues and preventive measures is a key component. Health awareness can lead to better personal health practices and early detection of potential health problems.

By actively engaging with the community, DB Power Limited fosters goodwill and trust. This can lead to improved community relations and support for the company's operations.

The camps provide an opportunity to address specific health concerns prevalent in the area, such as respiratory issues or skin conditions, which may be linked to the environmental impact of industrial activities.

Many rural communities face challenges in accessing healthcare facilities due to distance, cost, or lack of awareness. The camps bring healthcare services directly to these communities, reducing barriers to access.

Regular health check-ups can lead to the early detection of diseases, which is crucial for effective treatment and management. Preventive care also reduces the long-term healthcare burden on individuals and families. Health education empowers individuals to take control of their health, make informed decisions, and adopt healthier lifestyles.

By addressing immediate health concerns and promoting wellness, these camps contribute to an improved quality of life for community members.

The fact that 3,486 people have benefited from these camps underscores the significant impact of the initiative. Each individual served represents not only an improvement in personal health but also a ripple effect of positive change within the community. Healthier individuals contribute to a more productive and vibrant community, which in turn supports local development.

While the health camps have been successful, there are challenges and considerations to ensure their continued effectiveness and sustainability: Ensuring that the camps are adequately staffed and equipped with the necessary medical supplies is crucial. This requires ongoing investment and logistical planning. The long-term sustainability of the camps is essential. This can be achieved by integrating them into a broader healthcare strategy that includes follow-up services and partnerships with local healthcare providers.

Active engagement with the community is necessary to understand their needs and tailor services accordingly. Feedback mechanisms should be established to continually improve the initiative.DB Power Limited should also focus on minimizing any negative environmental and social impacts of its operations to complement the benefits of the health camps.

The weekly health camps organized by DB Power Limited are a commendable effort to address the healthcare needs of communities affected by industrial operations. By providing essential medical services and health education, the initiative not only improves individual health outcomes but also strengthens community resilience and development. As the company continues to expand its CSR efforts, maintaining a focus on sustainability, community engagement, and environmental responsibility will be key to maximizing the positive impact of these health camps.

Photo 11& 12: 01 for Children and 06 for Women's Special health camps at DB Power Ltd. Arogya Kendra. A total of 226 people benefitted from these camps.

These images are part of a special health camp for women and children organized by DB Power Ltd. Arogya Kendra, where 226 people benefitted, here is an analysis and interpretation of such initiatives:

Health camps are pivotal in providing essential healthcare services to underserved populations, especially in rural or semi-urban areas where access to healthcare facilities might be limited. The initiative by DB Power Ltd. Arogya Kendra reflects a commitment to community health, focusing on women's and children's health. Such camps play a crucial role in:

Enhancing Accessibility: By bringing healthcare services directly to the community, these camps make healthcare accessible to those who might otherwise face barriers such as distance, financial constraints, or lack of awareness.

Early Detection and Prevention: Health camps often focus on screening for common health issues, allowing for early detection and prevention. This is especially important for women and children, who might have specific health needs that require timely attention.

Health Education and Awareness: Besides medical check-ups, these camps usually include educational sessions that aim to raise awareness about health issues, hygiene practices, and nutrition, empowering communities to make informed health choices.

Women and children are often the most vulnerable groups in terms of healthcare needs. Special health camps targeting these groups can address specific issues such as:

Maternal and Child Health: Ensuring the health of mothers and their children is vital for community well-being. These camps can offer prenatal and postnatal care, vaccination services, and nutritional advice, contributing to reducing maternal and infant mortality rates.

Reproductive Health: For women, access to reproductive health services is crucial. Health camps can provide information and services related to family planning, menstrual health, and sexually transmitted infections, which are often stigmatized and neglected.

Pediatric Care: Children require regular health check-ups to monitor their growth and development. Camps can provide immunization, nutritional assessments, and check-ups for common childhood illnesses.

The fact that 226 people benefitted from the camps indicates a substantial outreach and impact. The outcomes of such camps can be measured in terms of:

Improved Health Indicators: An increase in immunization rates, better maternal health outcomes, and early treatment of diseases can lead to improved overall health indicators for the community.

Community Engagement: Health camps foster community engagement and trust in healthcare providers, which can enhance the uptake of healthcare services in the long term.

The special health camps organized by DB Power Ltd. Arogya Kendra are commendable efforts toward improving community health, particularly for women and children.

By addressing immediate healthcare needs and promoting health education, these camps can lead to lasting health benefits and empower communities to take charge of their health. Continuous efforts and strategic planning are required to overcome challenges and ensure the sustainability of such health initiatives.

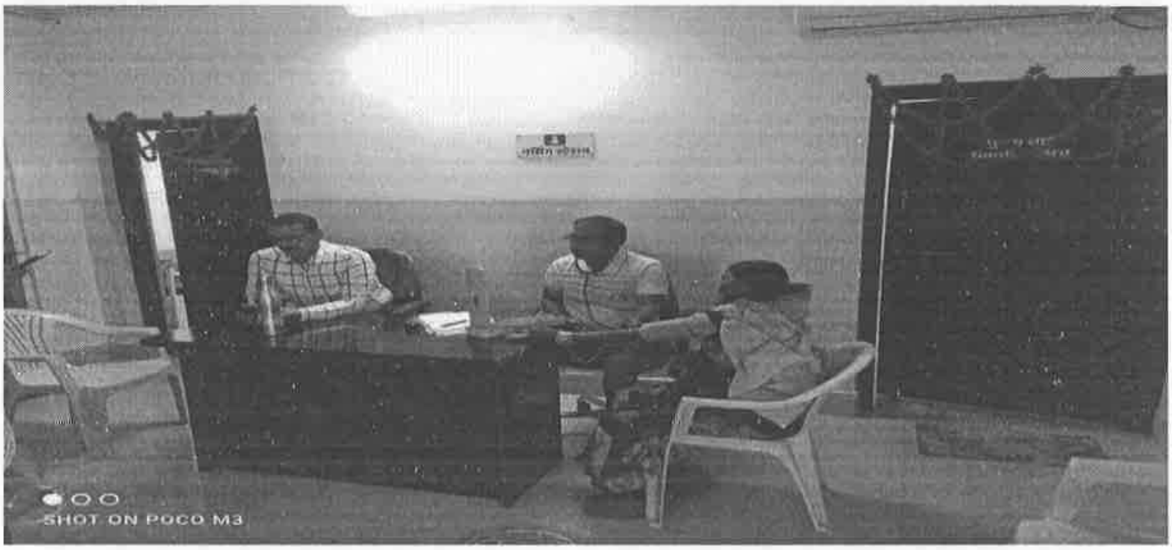


Photo 13: A total of 1398 beneficiaries benefitted in the daily OPD of DB Power Ltd. Arogya Kendra under CSR activity in FY 2023-24.

In the fiscal year 2023-24, DB Power Ltd. Arogya Kendra made significant strides in enhancing community health through its corporate social responsibility (CSR) initiatives. A total of 1,398 beneficiaries were served through the daily Outpatient Department (OPD) services, reflecting the company's dedication to improving the well-being of the communities it serves. This achievement underscores the importance of corporate involvement in public health and showcases the tangible benefits of strategic CSR programs.

Corporate Social Responsibility (CSR) is a business model that enables companies to operate in an economically, socially, and environmentally sustainable manner.

Companies like DB Power Ltd. recognize that their responsibilities extend beyond mere profit-making. By integrating health-focused CSR activities into their operations, they contribute to societal goals, improve community health outcomes, and foster a sense of social responsibility.

DB Power Ltd. has been at the forefront of promoting health through its Arogya Kendra, a health initiative designed to provide essential medical services to underserved populations. The initiative reflects a deep understanding of the barriers that many individuals face in accessing healthcare, including cost, distance, and lack of awareness.

The Arogya Kendra's daily OPD services have been instrumental in addressing immediate healthcare needs and fostering long-term wellness. The 1,398 beneficiaries served in the fiscal year 2023-24 signify a substantial impact on individual and community health.

One of the most critical aspects of the Arogya Kendra's services is its accessibility. By offering daily OPD services, the initiative ensures that individuals can receive timely medical attention. This is particularly important for rural and low-income communities where healthcare facilities are often scarce. By bringing healthcare closer to these populations, DB Power Ltd. helps bridge the gap between need and access.

The Arogya Kendra offers a range of services, from preventive health check-ups to curative treatments for common ailments. Preventive care is vital in catching potential health issues before they become severe, ultimately reducing the overall burden of disease. Regular health screenings and awareness campaigns conducted by the Arogya Kendra educate the community about maintaining a healthy lifestyle and the importance of early detection.

In addition to addressing acute health issues, the Arogya Kendra also focuses on chronic disease management. Non-communicable diseases such as diabetes, hypertension, and cardiovascular conditions require ongoing medical care and lifestyle modifications.

By providing consistent monitoring and treatment, the Arogya Kendra empowers individuals to manage their health effectively, improving their quality of life and reducing the risk of complications.

Beyond providing direct healthcare services, the Arogya Kendra actively engages with the community through health education and awareness programs. These initiatives are designed to empower individuals with the knowledge and tools needed to make informed health decisions. Topics such as nutrition, hygiene, maternal and child health, and disease prevention are covered in workshops and seminars, fostering a culture of health awareness.

The success of DB Power Ltd.'s Arogya Kendra serves as a model for how corporations can positively impact public health through CSR activities. The benefits extend beyond the immediate recipients of healthcare services. Healthier communities contribute to a more productive workforce, improved quality of life, and a reduction in healthcare costs over time.

Moreover, CSR initiatives like the Arogya Kendra enhance the company's reputation and strengthen its relationship with the community. This fosters trust and goodwill, which are invaluable assets in today's socially conscious business environment.

The achievements of DB Power Ltd.'s Arogya Kendra in FY 2023-24 highlight the potential of CSR activities to drive meaningful change in community health. By addressing barriers to healthcare access, providing essential services, and engaging with the community, the Arogya Kendra exemplifies the transformative power of corporate involvement in public health. As more companies recognize the importance of CSR, initiatives like the Arogya Kendra will continue to play a crucial role in building healthier, more resilient communities.

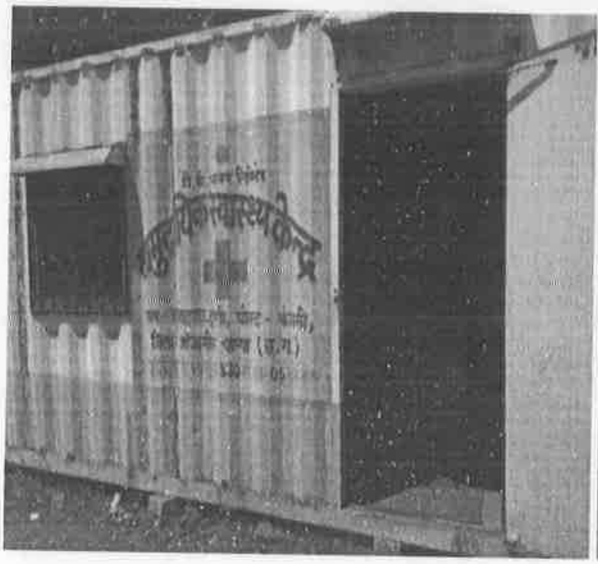


Photo14 & 15: A Total of 2402 people benefited from the Primary Health Center of DB Power Ltd. under CSR activity in FY 2023-24 in the daily OPD

In the fiscal year 2023-24, DB Power Ltd. made significant strides in its commitment to corporate social responsibility (CSR) by operating a Primary Health Centre (PHC) that directly benefited 2,402 individuals through its daily Outpatient Department (OPD) services. This initiative underscores the company's dedication to fostering community health and well-being, demonstrating a model of how corporate entities can play an integral role in public health improvement.

DB Power Ltd.'s initiative is a testament to how businesses can leverage their resources and expertise to address critical social challenges. In this case, the focus on healthcare addresses one of the most fundamental needs of any community: access to quality medical services.

The Primary Health Centre established by DB Power Ltd. is strategically designed to provide comprehensive healthcare services to the local community. The PHC operates with a focus on the daily Outpatient Department (OPD), which caters to individuals requiring immediate medical attention and routine health check-ups. The services offered at the PHC include general consultations, maternal and child healthcare, immunizations, treatment of common illnesses, and basic diagnostic services.

The success of the PHC can be attributed to its patient-centric approach, which prioritizes accessibility and quality care. The centre is staffed with qualified medical professionals, including doctors, nurses, and support staff, who are trained to deliver compassionate and effective care. Moreover, the PHC is equipped with essential medical equipment and supplies, ensuring that it can meet the diverse healthcare needs of the community.

The impact of the Primary Health Centre in FY 2023-24 is significant, as evidenced by the 2,402 individuals who benefited from its services. This figure represents not just a number but a tangible improvement in the health outcomes of the community. The presence of the PHC has alleviated the burden on local healthcare facilities, reduced travel time for patients seeking medical care, and provided a reliable source of healthcare for underserved populations.

One of the key outcomes of the PHC's operations is the improvement in preventative care. Through regular health check-ups and immunizations, the PHC has contributed to a decrease in the prevalence of preventable diseases. This proactive approach to healthcare reduces the long-term healthcare costs for individuals and the community, as early detection and treatment of illnesses prevent complications and the need for more intensive medical interventions.

While the achievements of the PHC are commendable, some challenges need to be addressed to ensure its sustainability and continued impact. One of the primary challenges is the need for continuous funding to maintain and expand the services offered by the centre. DB Power Ltd. and other stakeholders must explore innovative funding models and partnerships to secure the financial stability of the PHC.

Furthermore, there is a need to enhance community engagement and awareness about the services available at the PHC. Outreach programs and health education initiatives can play a crucial role in encouraging more individuals to utilize the PHC's services, thereby maximizing its impact.

In terms of future directions, DB Power Ltd. can consider expanding the scope of services offered at the PHC to include specialized care for chronic conditions, mental health services, and telemedicine consultations. Additionally, integrating technology into the PHC's operations, such as electronic medical records and mobile health applications, can improve efficiency and patient care.

The Primary Health Centre of DB Power Ltd. serves as an exemplary model of how CSR initiatives can drive meaningful change in public health. By providing essential healthcare services to 2,402 individuals in FY 2023-24, the PHC has significantly contributed to the well-being of the community.

As the PHC continues to evolve and adapt to the needs of the population, it holds the potential to further enhance health outcomes and set a benchmark for CSR-driven healthcare initiatives across the region.

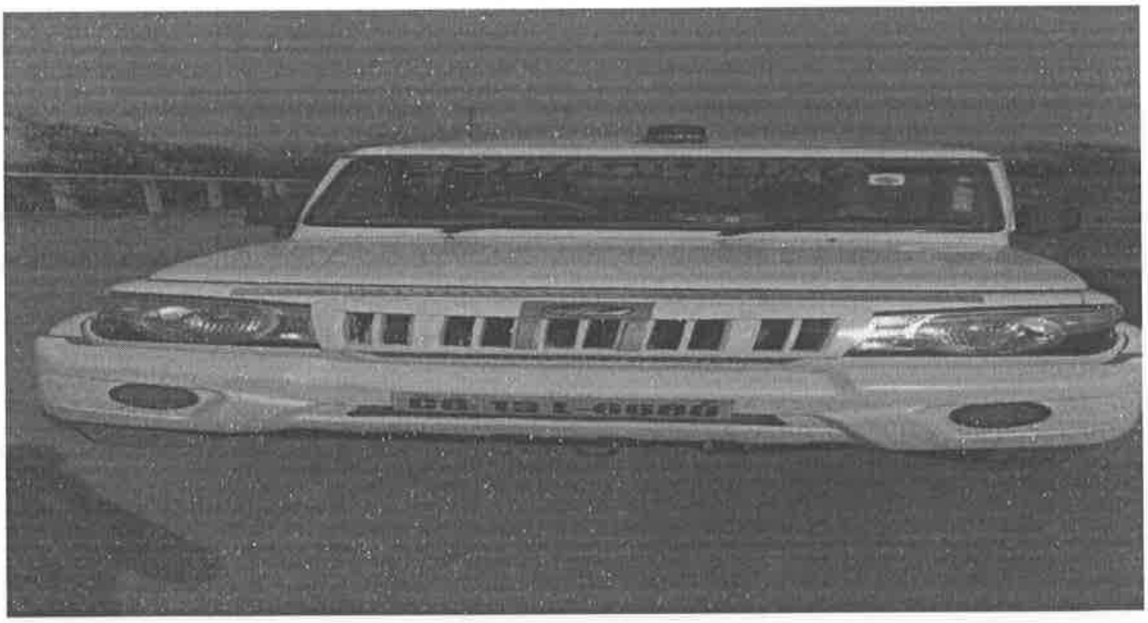


Photo 16: Ambulance referral services have been provided to 416 people near plant-affected Villages.

DB Power Ltd., a leading energy company, has taken a commendable step in this direction by implementing ambulance referral services in villages affected by their plant operations.

During the fiscal year 2023-24, these services were provided to 416 people across several villages, highlighting the company's commitment to social welfare and community development.

DB Power Ltd. operates in regions where communities often face challenges related to healthcare access, partly due to the environmental and socio-economic changes brought about by industrial activities. These challenges include air and water pollution, increased health risks, and the disruption of traditional lifestyles. The company has recognized its role and responsibility in mitigating these impacts and has thus initiated various CSR activities aimed at improving the quality of life in these areas.

The ambulance referral service is a significant part of DB Power Ltd.'s CSR initiatives. By providing free and accessible healthcare transportation, the company aims to ensure that medical emergencies are handled promptly, reducing mortality rates and improving overall health outcomes in the region.

The implementation of ambulance referral services involved several steps to ensure effectiveness and reach. DB Power Ltd. partnered with local healthcare providers, NGOs, and government bodies to understand the specific needs of the communities. The collaboration helped identify critical areas where ambulance services were most needed and tailor the services to fit those needs.

The company conducted awareness programs in the affected villages to inform residents about the availability and usage of ambulance services. This was crucial in building trust and ensuring that the services were utilized effectively. To support the ambulance services, DB Power Ltd. invested in building infrastructure, including roads and helipads, to facilitate quick and efficient transportation of patients to nearby hospitals and clinics. The use of technology played a vital role in the success of the ambulance services. DB Power Ltd. implemented a centralized call centre with GPS tracking systems in ambulances to ensure timely response and coordination with healthcare facilities.

The initiative also included training programs for local youth, providing them with skills to work as emergency medical technicians and drivers. This not only created employment opportunities but also ensured that the services were sustainable and community driven.

The introduction of ambulance referral services has had a profound impact on the communities surrounding the DB Power Ltd. plant. In the fiscal year 2023-24 alone, 416 individuals benefitted from these services, marking a significant improvement in emergency healthcare access. The immediate availability of ambulance services has led to a reduction in mortality rates and improved health outcomes in the region. Residents now have quicker access to healthcare facilities, ensuring timely medical intervention during emergencies. The reduction in healthcare-related fatalities and morbidities has translated into economic benefits for the community. Families spend less on healthcare and can focus more on their livelihoods and education, contributing to overall economic growth. By addressing a critical need, DB Power Ltd. has strengthened its relationship with the local communities. The trust and goodwill generated through these services have paved the way for further collaboration in other areas of development. The CSR initiative has also led to increased environmental awareness among the residents. DB Power Ltd. has leveraged its relationship with the community to promote sustainable practices and environmental conservation efforts.

While the ambulance referral services have been successful, there are challenges that DB Power Ltd. continues to address. These include ensuring the sustainability of the services, expanding coverage to more remote areas, and continuously adapting to the changing needs of the community. Looking forward, DB Power Ltd. plans to expand its CSR activities to include more comprehensive healthcare solutions, educational programs, and environmental conservation projects. By maintaining a focus on sustainable development, the company aims to create long-lasting positive impacts in the communities it serves.

DB Power Ltd.'s ambulance referral services exemplify the positive role that corporations can play in community development through CSR initiatives. By addressing healthcare needs and fostering community trust, the company not only fulfils its corporate responsibilities but also contributes to the overall well-being and resilience of the communities it operates in.

Photo 17: Sprinkling water on the main road Tundri to Kanwali, Tundri to Bypass Road Badadarha, Tundri to Ash Silo gate and Pump house to Urja Bhawan for dust Control and Cleaning the CC road at Tundri and Badadarha through Sweeping.

One of their significant projects focused on dust control and road cleaning across several key locations, including the main road from Tundri to Kanwali, Tundri to Bypass Road Badadarha, Tundri to Ash Silo gate, and from the Pump House to Urja Bhawan. This initiative aimed to enhance the quality of life for local communities and improve environmental conditions.

Dust pollution is a common issue in many industrial and semi-urban areas, affecting air quality and posing health risks to residents. Dust particles can exacerbate respiratory conditions, reduce visibility, and contribute to environmental degradation. In regions where roads are frequented by heavy vehicles, such as those near industrial plants, dust control becomes even more critical.

The areas targeted by DB Power Ltd.'s CSR initiative, including Tundri, Kanwali, Badadarha, and Urja Bhawan, are significant for both residential and industrial activities. The movement of vehicles and the operations of industries contribute to the dust levels in these regions. Therefore, implementing dust control measures is essential to mitigate the adverse impacts on the community and the environment.

Sprinkling Water for Dust Control: One of the primary methods employed by DB Power Ltd. for dust control was the regular sprinkling of water on the main roads connecting Tundri to Kanwali, Tundri to Bypass Road Badadarha, Tundri to Ash Silo gate, and Pump House to Urja Bhawan. Water sprinkling is an effective and straightforward technique to suppress dust particles and prevent them from becoming airborne. By applying water at regular intervals, DB Power Ltd. aimed to maintain road conditions that minimize dust dispersion. This activity not only improved air quality but also contributed to a cleaner and healthier environment for the residents living near these roads. The initiative was particularly beneficial for individuals with respiratory issues, children, and the elderly, who are more susceptible to the effects of dust pollution.

Road Cleaning through Sweeping: In addition to water sprinkling, DB Power Ltd. also implemented a comprehensive road cleaning strategy through sweeping, focusing on cleaning the CC (cement concrete) roads at Tundri and Badadarha. Road sweeping is a vital aspect of maintaining road hygiene and reducing dust accumulation. The use of mechanical sweepers and manual labour ensured the thorough cleaning of roads, removing not only dust but also debris and litter. This activity was part of a larger effort to maintain the aesthetics of the area, improve safety for commuters, and prevent potential road hazards caused by accumulated waste.

The CSR initiative by DB Power Ltd. had a positive impact on the local community in several ways:

Regular water sprinkling and road sweeping significantly reduced dust levels, leading to improved air quality. This contributed to better respiratory health for the residents and workers in the area. Cleaner roads are safer for both pedestrians and drivers. The removal of debris and dust reduced the risk of accidents and improved visibility, particularly during dry and windy conditions.

Clean and well-maintained roads contribute to the overall aesthetic appeal of an area. The efforts by DB Power Ltd. enhanced the visual appeal of the roads, creating a more pleasant environment for residents and visitors.

By addressing local issues, DB Power Ltd. demonstrated its commitment to the community's well-being. This initiative fostered goodwill and strengthened the relationship between the company and the local population.

DB Power Ltd.'s dust control and road cleaning initiative exemplify the company's dedication to corporate social responsibility and sustainable development. By investing in the health and well-being of local communities, the company not only addresses environmental concerns but also contributes to the overall quality of life in the region. Through continued efforts in dust control and road maintenance, DB Power Ltd. sets a positive example for other corporations to follow, highlighting the importance of corporate involvement in community development and environmental stewardship.

8.3. Impact on Community Activities Related to Health, Hygiene & Sanitation:

Good health is one of life's greatest blessings, and for those with poor health, life can become a weary burden. In rural areas, particularly in economically disadvantaged states like Chhattisgarh, India, health issues are a significant concern.

Many people in these regions struggle to access quality healthcare services, and even when health centres are available, they often face various challenges, such as inadequate facilities and shortages of trained healthcare personnel.

One of the most significant challenges faced by rural communities in backward states like Chhattisgarh is the lack of access to adequate healthcare services. With a predominantly agrarian economy and a high percentage of the population living below the poverty line, these communities often lack the financial means to seek medical help. The healthcare infrastructure in these areas is generally underdeveloped, with limited availability of hospitals, clinics, and health centres. Even when facilities are present, they often lack essential medical equipment, supplies, and qualified staff, making it difficult for residents to receive necessary medical care.

Despite significant growth in healthcare units, many villages in backward states like Chhattisgarh continue to face serious challenges regarding the unavailability of institutional healthcare. Institutional healthcare refers to organized, structured healthcare services provided by hospitals, clinics, and health centres. Several issues contribute to the challenges faced by these institutions:

Recognizing the critical need for improved healthcare, hygiene, and sanitation services in rural areas, DB Power Ltd has undertaken several initiatives to address these challenges and improve the overall health status of communities in Chhattisgarh. DB Power Ltd has organized health camps in project-affected and railway corridor villages. These health camps aim to provide essential medical services to communities that lack access to healthcare facilities. By bringing healthcare services directly to these communities, DB Power Ltd helps improve health outcomes and reduce morbidity levels in rural areas. Health camps offer various services, including medical check-ups, diagnostic tests, treatment of common illnesses, and referrals to specialized care when necessary.

To further improve access to healthcare services, DB Power Ltd provides a referral ambulance service to nearby villages of the plant. This service aims to ensure that residents can reach healthcare facilities in emergencies or when they require specialized medical care. The availability of ambulance services is crucial in rural areas, where transportation options are limited and timely access to medical care can be a matter of life and death.

DB Power Ltd has taken steps to establish a primary health centre in rural areas. The centre serves as the first point of contact for individuals seeking medical care and plays a vital role in providing preventive and primary healthcare services. By establishing a primary health centre, DB Power Ltd aims to address the gap in healthcare infrastructure and ensure that rural residents have access to essential medical services close to home.

One of the key strategies employed by DB Power Ltd to improve health outcomes in rural areas is to foster community participation and health inclusion. The organization recognizes that sustainable improvements in healthcare can only be achieved by involving the community in the planning and implementation of health initiatives. By empowering communities to take an active role in their health and well-being, DB Power Ltd aims to create a sense of ownership and responsibility among residents, leading to better health outcomes.

The initiatives undertaken by DB Power Ltd in health, hygiene, and sanitation have significantly impacted rural communities in Chhattisgarh. Some of the key benefits and outcomes of these initiatives include: The health camps, referral ambulance services, and primary health Arogya centres established by DB Power Ltd have improved health outcomes in rural areas. By providing access to essential medical services, these initiatives have helped reduce morbidity levels and improve the overall health status of communities. DB Power Ltd's efforts have improved access to healthcare services in rural areas, ensuring that residents can receive medical care when needed.

The availability of health camps, ambulance services, and primary health centres has reduced the burden of travel and financial constraints on rural residents, enabling them to seek medical help more easily.

DB Power Ltd's focus on community participation and health inclusion has empowered rural communities to take an active role in their health and well-being. By involving communities in the planning and implementation of health initiatives, DB Power Ltd has created a sense of ownership and responsibility among residents, leading to sustainable improvements in healthcare. The establishment of primary health centres and referral ambulance services by DB Power Ltd has strengthened the healthcare infrastructure in rural areas. By addressing the gaps in healthcare facilities and services, these initiatives have improved the capacity of rural communities to address health challenges and access medical care.

While the initiatives undertaken by DB Power Ltd have significantly improved healthcare in rural areas, several challenges remain that require further attention and action. Addressing these challenges will be crucial to ensuring the long-term sustainability and effectiveness of healthcare initiatives in rural communities.

The recruitment and retention of qualified healthcare professionals in rural areas remain a significant challenge. Efforts should be made to provide incentives and support to healthcare professionals willing to work in remote areas, including competitive salaries, professional development opportunities, and improved working conditions. Continued efforts are needed to strengthen health education and awareness programs in rural communities. By increasing awareness of preventive healthcare practices and the importance of seeking medical care, communities can be empowered to take control of their health and well-being.

Improving coordination and collaboration between healthcare providers, government agencies, and community organizations is essential to ensure the efficient delivery of healthcare services in rural areas. Efforts should be made to foster partnerships and collaboration to address healthcare challenges and improve service delivery.

Regular monitoring and evaluation of healthcare initiatives are crucial to assessing their impact and effectiveness. By collecting and analyzing data on health outcomes, healthcare providers can identify areas for improvement and implement strategies to enhance the quality of care and service delivery.

The initiatives undertaken by DB Power Ltd in health, hygiene, and sanitation have significantly improved rural communities in Chhattisgarh. By addressing the challenges faced by rural healthcare systems and fostering community participation, DB Power Ltd has helped improve health outcomes, enhance access to healthcare, and strengthen healthcare infrastructure. Continued efforts and collaboration are essential to ensure the long-term sustainability and effectiveness of healthcare initiatives in rural areas, ultimately improving the quality of life and well-being of rural communities.

8.4. Activities Carried Out under Education and Skill Development:

Education and skill development are crucial components of Corporate Social Responsibility (CSR) initiatives, especially in a country like India, where educational disparities significantly impact socio-economic outcomes. Education is a fundamental element of both the United Nations Millennium Development Goals and the Sustainable Development Goals, underscoring its global importance. Despite progress in some areas, there remain significant gaps in educational outcomes between developed and developing countries.

India's organized sector employs only 34 million people, a small fraction of the total population, reflecting the broader challenges within India's literacy rate and education system. In particular, rural education has faced numerous challenges, even as the system undergoes various changes and transformations. While there have been improvements in rural education over the years, guaranteeing quality education remains a significant challenge for the government. One of the major issues in rural education is the lack of accessible schools.

Many villages do not have local schools, requiring students to travel to other villages to attend classes. This often results in lower Enrollment rates, particularly for girls, as parents are hesitant to send their daughters far from home. The problem is exacerbated by poverty; government schools often lack resources, and private schools are too expensive for many families. Consequently, dropout rates at the secondary level are high, perpetuating the cycle of educational underachievement in rural areas.

The concept of education itself has deep roots. The English word "education" is derived from two Latin words: *educare* (or *educere*) and *educatum*. *Educare* means to train or mould and implies drawing out the latent faculties of an individual, from inward to outward. *Educatum* refers to the act of teaching and the principles and practices involved. The role of the educator is crucial in developing the potential of students, who are often unaware of their capabilities.

In Hindi, "education" translates to "Shiksha," originating from the Sanskrit word "Shash," which means to discipline, control, order, direct, or rule. In traditional contexts, education was about controlling or disciplining behaviour. In Sanskrit, "Shiksha" is one of six branches of Sutra literature, which includes Shiksha, Chhanda, Vyakarana, Nirukta, Jyotisha, and Kalpa, all aimed at mastering the Vedas. Shiksha specifically focuses on the rules of pronunciation.

In India, skill development is achieved through two main institutional structures: formal and informal. The formal structure encompasses higher technical education in colleges, vocational training in post-secondary schools, technical skills in specialized institutions, and apprenticeship programs. To support social development, the Indian government has implemented various schemes aimed at providing basic employable skills.

As an agrarian society, over 70% of India's population resides in rural areas, relying heavily on agriculture and related sectors for their livelihood. For any society, the ability of its individuals to adapt to social change, contribute to economic growth, and engage in development processes is essential.

Therefore, a nation seeking development must focus on building institutions, fostering entrepreneurship, and enhancing skill development to drive change and support evolving societal structures and livelihood profiles.

After gaining independence in the 1940s, India was still grappling with the impacts of imperialism and remained a developing nation. The constraints and opportunities for rural development are deeply rooted in the agrarian nature of Indian society. The 20th-century Industrial Revolution brought about significant changes, transforming agrarian societal structures that were deeply embedded in the agricultural sector.

The Industrial Revolution shifted the responsibility for education from the home to formal institutions, creating a rural-urban divide, especially in agrarian societies. It created a demand for educational agents outside the home. Schools were tasked with two primary objectives: (1) developing human resources, particularly men, with skills suited for the manufacturing sector, and (2) taking on part of the home's role by providing value-based and moral education. This led to increased separation across sectors and left many rural youths lacking in productive and technical skills. Consequently, young people from rural areas often struggle to find employment, forcing them to migrate to urban areas in search of work.

The migration patterns vary depending on the region, opportunities, and socio-economic status of the families. The poorest families, especially those who are landless or own small, low-quality plots of land, are more likely to migrate. Such migrations can negatively impact the quality of life due to poor health, lack of education, inadequate skill development, and social pressures, leading to the erosion of moral values. In the 1950s, nearly all national governments in Asia introduced community development programs aimed at achieving self-reliance and development through local institutions and the active participation of rural communities.

The core elements of these programs included:

People's Participation: Encouraging local communities to actively participate in development projects to ensure that the initiatives met their specific needs and fostered a sense of ownership.

Democratic Decentralization: Distributing decision-making powers to local levels to facilitate more responsive and efficient governance.

Transfer of Technology: Introducing and disseminating technology to improve productivity and living standards in rural areas.

Self-help Efforts: Encouraging communities to leverage their resources and capabilities to achieve sustainable development. The rural development strategies of the 1950s and 1960s primarily focused on "growth-first" models. Despite robust economic growth during the 1960s, the benefits of this growth did not trickle down to the broader population. As a result, many people continued to live in abject poverty, with rising unemployment and increasing inequalities.

Hence, education and skill development are pivotal to India's socio-economic progress. By addressing the challenges faced by the rural education system and enhancing skill development initiatives, India can work towards bridging the gap between urban and rural areas. Through effective CSR interventions, businesses can contribute to creating a more equitable and prosperous society, aligning with global development goals and fostering sustainable growth for the nation.

This section covered different Work carried out under the Education and Skill Development by DB Power Ltd as follows.

Photo:18 Establishment of a Coaching Centre at Badadarha and Tundri Village for Class 6th Entrance Exam Preparation at Jawahar Navodaya Vidyalayas

Education plays a crucial role in shaping the future of children and empowering communities. However, rural areas often face significant challenges in accessing quality education and resources. Recognizing the need to bridge this gap, DB Power Ltd., under its Corporate Social Responsibility (CSR) initiative, has taken a significant step towards enhancing educational opportunities for children in Badadarha and Tundri villages by establishing coaching centres dedicated to preparing students for the Jawahar Navodaya Vidyalaya (JNV) entrance exam for class 6th.

Jawahar Navodaya Vidyalayas are a system of alternative schools for talented students predominantly from rural areas in India. Established by the Government of India, these schools aim to provide quality education equivalent to the best residential schools without any cost. Admission to these schools is highly competitive, with entrance exams testing students on mental ability, arithmetic, and language skills. The JNVs offer students an opportunity to access excellent education, thus paving the way for their holistic development and future success. The entrance exam for JNVs is competitive and demands a strong foundation in various subjects. However, many students from rural backgrounds lack access to adequate resources and guidance to prepare for such examinations.

The absence of proper coaching and support often leads to missed opportunities for deserving students. Recognizing this gap, DB Power Ltd. decided to establish coaching centres in Badadarha and Tundri villages to support and prepare students for the JNV entrance exam.

The primary objective of establishing these coaching centres is to provide equitable educational opportunities to students from underprivileged backgrounds. The coaching centres focus on improving the students' skills in subjects crucial for the entrance exam, including mathematics, language, and mental ability. Through regular practice and mock tests, the coaching centres aim to build confidence among students, preparing them to face the exam with a positive mindset. Experienced teachers and mentors are appointed to guide students, addressing their doubts and helping them develop effective learning strategies. In addition to academic preparation, the centres emphasize the overall development of students, including communication skills, critical thinking, and problem-solving abilities.

DB Power Ltd. invested in creating a conducive learning environment by setting up well-equipped classrooms with the necessary teaching aids and resources. Qualified and experienced teachers were recruited to ensure that students receive quality education and personalized attention. A comprehensive curriculum was designed to cover all aspects of the JNV entrance exam. The curriculum includes interactive sessions, group discussions, and regular assessments to track students' progress. The initiative also involved creating awareness among parents and the community about the benefits of JNV education, encouraging them to enrol their children in the coaching program. Regular monitoring and evaluation mechanisms were established to assess the effectiveness of the coaching centres and make necessary improvements.

The establishment of coaching centres in Badadarha and Tundri villages has already begun to show positive results. Students are exhibiting increased confidence, improved academic performance, and a greater enthusiasm for learning. The initiative is not only preparing students for the JNV entrance exam but also inspiring a culture of education and ambition within the community.

By investing in the education of rural children, DB Power Ltd. is making a meaningful contribution to society. The company's commitment to CSR reflects its dedication to social progress and empowerment. As more students gain access to quality education through these coaching Centre, the impact will ripple through generations, leading to sustainable development and upliftment of the entire community.

The initiative by DB Power Ltd. to establish a coaching Centre in Badadarha and Tundri villages exemplifies the transformative power of education and corporate social responsibility. By empowering students with the knowledge and skills needed to succeed in the JNV entrance exam, the company is opening doors to brighter futures and creating lasting change in rural communities. This initiative serves as a model for other organizations to contribute meaningfully to education and social development, ultimately building a more equitable and prosperous society.

Photo 19: Distribution of Study and Stationary Materials to Students Preparing for the Class 6th Entrance Examination for Jawahar Navodaya Vidyalayas.

One of the flagship programs undertaken by the company was the distribution of study and stationery materials to students preparing for the Class 6th entrance examination for Jawahar Navodaya Vidyalaya (JNV).

This initiative aimed to empower underprivileged students by providing them with the necessary resources to succeed in their academic pursuits and gain admission to one of India's premier educational institutions. Jawahar Navodaya Vidyalayas are a system of central schools for talented students predominantly from rural areas in India. These schools are run by the Navodaya Vidyalaya Samiti, an autonomous organization under the Ministry of Education, Government of India. Admission to these schools is based on a highly competitive entrance examination, making it imperative for aspiring students to have access to quality study materials and resources.

DB Power Ltd. recognized the challenges faced by students from economically disadvantaged backgrounds in preparing for this examination. The primary objective of this CSR initiative was to bridge the gap between aspiration and achievement by providing these students with the tools they needed to compete on an equal footing with their more privileged counterparts. By doing so, the company aimed to contribute to the overall development of the communities in which it operates.

DB Power Ltd. conducted a thorough needs assessment to identify the target group of students who would benefit the most from this program. The focus was on students from rural and low-income families who demonstrated academic potential but lacked access to adequate study materials.

Working closely with local schools and community leaders, DB Power Ltd. identified students preparing for the Class 6th JNV entrance examination who needed support. Special emphasis was placed on identifying students from marginalized communities. The study kits were meticulously prepared to include essential items such as textbooks, workbooks, notebooks, pens, pencils, erasers, rulers, and geometry sets. In addition, supplementary materials like sample papers and guidebooks were included to enhance the student's preparation. The distribution of study materials was organized through a series of events held in various locations, ensuring maximum reach and accessibility.

These events were designed not only to distribute materials but also to motivate and inspire students by highlighting the importance of education and perseverance. DB Power Ltd. implemented a robust monitoring mechanism to track the progress of the beneficiaries and gather feedback on the effectiveness of the initiative. This feedback loop was crucial for assessing the impact and identifying areas for improvement in future programs. The distribution of study and stationery materials had a profound impact on the students and their families. By alleviating the financial burden of purchasing study materials, DB Power Ltd. enabled students to focus on their studies and improve their chances of success in the entrance examination. The initiative also fostered a sense of confidence and motivation among the students, encouraging them to strive for academic excellence. Furthermore, the program contributed to the broader goal of promoting education and reducing inequalities in educational opportunities. By supporting students from underserved communities, DB Power Ltd. played a vital role in empowering the next generation and fostering social development. DB Power Ltd.'s CSR initiative to distribute study and stationery materials to students preparing for the Class 6th entrance examination for Jawahar Navodaya Vidyalaya is a testament to the company's commitment to education and community development. By investing in the education of underprivileged students, the company not only helped transform individual lives but also contributed to building a more equitable and educated society. This initiative serves as a model for other corporations seeking to make a meaningful impact through their CSR activities.

Photo 20: Open a Beauty Parlor Training Centre for Adolescent Girls and Women of Project Affected Villages to Enhance their Skills at Badadarha

This initiative aims to enhance the skills and livelihoods of these women, empowering them to become self-reliant and economically independent. Project-affected villages often face challenges such as displacement, unemployment, and lack of access to education and skill development opportunities. Women and adolescent girls in these communities are particularly vulnerable, often having limited access to resources and opportunities that can lead to economic independence. By providing them with skill development opportunities, such as training in beauty and wellness, DB Power Ltd. is addressing a critical need for sustainable livelihood options.

The Beauty Parlor Training Centre is designed to equip women with the necessary skills to excel in the beauty and wellness industry. This industry offers numerous opportunities for self-employment and entrepreneurship, making it an ideal choice for women looking to improve their economic status. The training centre will provide courses covering various aspects of beauty therapy, including skincare, haircare, makeup, and nail art, among others. The training program will be tailored to suit the needs and capabilities of the participants, ensuring that even those with little to no prior experience can benefit. Experienced trainers will guide them through practical sessions, helping them develop proficiency and confidence in their skills. Upon completion of the program, participants will receive certifications that will enhance their employability in salons or enable them to start their beauty businesses.

The impact of this initiative extends beyond individual empowerment. As women become economically independent, they contribute to the overall economic development of their communities. This can lead to a ripple effect, where the benefits of financial stability and empowerment are passed on to their families, improving the quality of life for all. By focusing on women and adolescent girls, the training centre is also promoting gender equality and challenging traditional gender roles that often restrict women to domestic duties.

Moreover, the Beauty Parlor Training Centre will create a support network for women in project-affected villages, fostering a sense of community and collaboration. Participants can share experiences, exchange ideas, and support each other in their entrepreneurial journeys. This network will be invaluable in sustaining the impact of the training centre and encouraging continuous learning and growth. DB Power Ltd.'s initiative is not a one-time intervention but part of a long-term vision for sustainable development. The company plans to monitor the progress of the training centre regularly, ensuring it meets the evolving needs of the participants. By collaborating with local NGOs and community organizations, DB Power Ltd. aims to scale up the initiative, replicating its success in other project-affected villages. Hence, the establishment of a Beauty Parlor Training Centre for adolescent girls and women at Badadarha represents a significant step towards empowering women through skill development and economic independence. DB Power Ltd.'s commitment to CSR and community development is creating pathways for a brighter, more equitable future for project-affected villages. This initiative serves as an inspiring model for other organizations seeking to make a positive impact through CSR activities.

Photo 21: Water Dispenser, Purifier-cum Chilling Machine donated in Government Middle School, Badadarha Village by DB Power Ladies Club ("Abhivyakti")

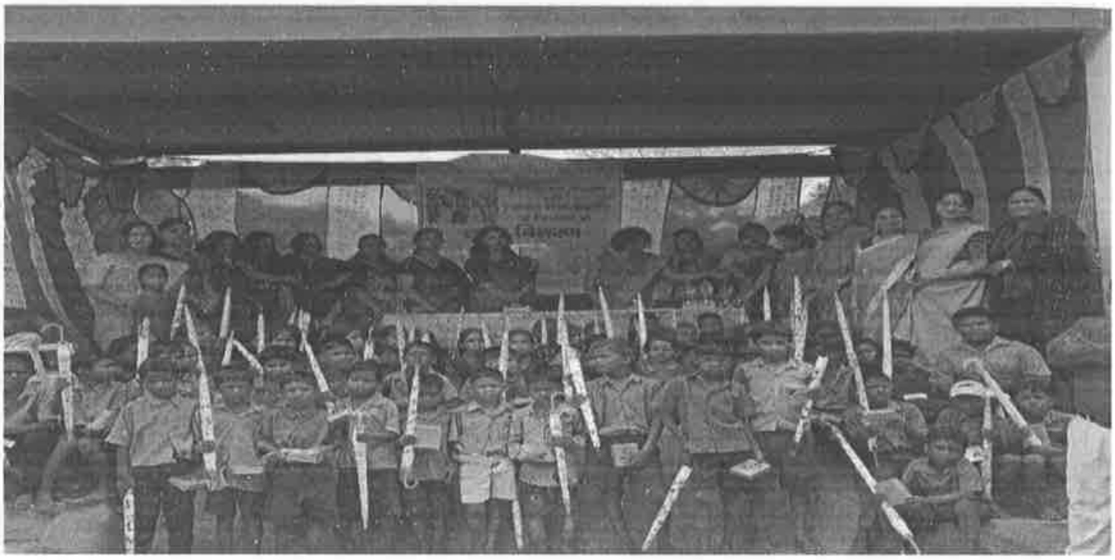


Photo 22: Distribution of umbrellas among the students of Government Primary & Middle Schools at Badadarha Village by DB Power Ladies Club ("Abhivyakti").

DB Power Ladies Club ("Abhivyakti") is a notable social initiative founded by the spouses of senior employees working at DB Power Limited. This sister concern of DB Power Limited exemplifies how corporations can engage with local communities to promote education and foster development. Abhivyakti is committed to improving the educational standards of students in villages surrounding DB Power Ltd., primarily focusing on enhancing government school facilities and student welfare.

The primary objective of the DB Power Ladies Club is to elevate the educational experience for students in nearby villages. By addressing fundamental educational needs and creating a nurturing environment, the club aims to motivate students to regularly attend school and actively participate in their studies. Abhivyakti believes that by fostering educational growth, it can contribute to the overall development of these communities and help them achieve a brighter future.

The club's approach to achieving its goals involves direct engagement with students, teachers, and parents. Members of Abhivyakti have begun by visiting government schools, assessing their needs, and understanding the challenges faced by students and educators.

This hands-on approach allows the club to tailor its initiatives to the specific requirements of each school and ensure that its efforts have a meaningful impact.

During these visits, Abhivyakti members engage in discussions with teachers to gain insights into the educational landscape of the villages. They also interact with students to understand their aspirations, challenges, and needs. Moreover, the club seeks input from parents to ensure that its initiatives are well-aligned with the community's expectations and requirements.

One of the initial steps taken by Abhivyakti is fulfilling the basic requirements of government schools in the region. Many schools in rural areas often lack essential infrastructure and resources, which can hinder the learning experience. By addressing these needs, Abhivyakti aims to create a conducive environment for learning and growth.

One such initiative involved the provision of a water dispenser to the Government Middle School in Badadarha Village. Access to clean drinking water is a fundamental necessity that is often overlooked in many rural schools. The installation of a water dispenser not only addresses a critical health and hygiene need but also demonstrates the club's commitment to enhancing the overall well-being of students. Absenteeism is a significant challenge faced by schools in rural areas, often stemming from various socio-economic factors. Abhivyakti recognizes the importance of addressing this issue to improve educational outcomes. The club actively works to motivate students to attend school regularly by creating an engaging and supportive learning environment.

One strategy employed by Abhivyakti is organizing interactive sessions and workshops that make learning enjoyable and relevant. By incorporating creative teaching methods and activities, the club aims to instill a love for learning among students. Additionally, Abhivyakti members emphasize the importance of education in achieving personal and community development, encouraging students to prioritize their studies.

In line with its commitment to student welfare, Abhivyakti has undertaken several initiatives to support students in their educational journey. One such initiative involved the distribution of umbrellas to students of Government Primary and Middle Schools in Badadarha Village. This activity was conducted as part of DB Power Ltd's Corporate Social Responsibility (CSR) efforts for the fiscal year 2023-24.

The distribution of umbrellas serves a practical purpose, especially during the monsoon season when students often have to travel long distances to reach school. By providing umbrellas, Abhivyakti aims to ensure that students can attend school without being hindered by adverse weather conditions. This seemingly simple gesture has a significant impact on reducing absenteeism and encouraging regular attendance.

Abhivyakti's initiatives go beyond addressing immediate needs; they are aimed at empowering students and their communities for long-term growth. By fostering an environment where education is valued and prioritized, the club seeks to instill a sense of purpose and ambition among students. Education is a powerful tool for breaking the cycle of poverty and opening doors to new opportunities, and Abhivyakti is dedicated to unlocking this potential for the students it serves.

In addition to its focus on education, Abhivyakti also emphasizes the importance of community involvement and collaboration. The club actively engages with local stakeholders, including government officials, community leaders, and parents, to ensure that its initiatives are sustainable and well-received. By fostering partnerships and building trust, Abhivyakti aims to create a lasting impact that extends beyond its immediate efforts.

As Abhivyakti continues its journey, it remains committed to expanding its reach and impact. The club envisions a future where every child in the surrounding villages has access to quality education and the resources they need to succeed. To achieve this vision, Abhivyakti plans to explore new avenues for collaboration and innovation.

One area of focus for the club is leveraging technology to enhance the learning experience. By introducing digital tools and resources, Abhivyakti aims to bridge the digital divide and provide students with access to a wealth of information and learning opportunities. The club recognizes the transformative potential of technology in education and is eager to harness it for the benefit of the communities it serves.

DB Power Ladies Club ("Abhivyakti") stands as a shining example of how corporate initiatives can drive positive change in local communities. Through its commitment to education and student welfare, the club is making a meaningful impact on the lives of students in the villages surrounding DB Power Ltd. By addressing basic needs, combating absenteeism, and empowering students and communities, Abhivyakti is paving the way for a brighter future.

As the club continues to grow and evolve, it remains dedicated to its mission of enhancing educational opportunities and fostering development. With a strong foundation and a clear vision, Abhivyakti is poised to continue its journey of empowerment and transformation, one student at a time.

8.5. Impact of Skill Development Activities on Communities:

In the dynamic landscape of today's global economy, skill development has emerged as a crucial element for sustainable growth and development. DB Power Ltd has taken significant strides in enhancing vocational training programs at the village level, making a profound impact on local communities. This initiative aligns with the global Sustainable Development Goals (SDGs) set by the United Nations, which emphasize empowering younger generations to actively participate in sustainable development.

The SDGs, launched by the United Nations in 2016, provide a blueprint for achieving a better and more sustainable future for all. These 17 interconnected goals, accompanied by 169 specific targets, highlight the need for inclusive growth and emphasize the involvement of young people as key stakeholders.

With 43% of the global population under the age of twenty-five, and a significant portion residing in developing countries, engaging youth in the development agenda is not only a necessity but also a right.

Young people play a crucial role in shaping the future, as they will live with the consequences of today's decisions. By equipping them with the necessary skills and knowledge, they can become active participants in driving sustainable change. Ignoring their potential contributions can pose risks to achieving long-term sustainability. Instead, they should be embraced as partners in realizing the SDGs, turning potential challenges into opportunities.

India, as one of the youngest nations in the world, stands at the forefront of this demographic transition. With 54% of its population below the age of 25 and over 62% in the working-age group (15-59 years), India is uniquely positioned to harness the power of its youth. The average age of the Indian population is approximately 29 years, which is significantly lower than in developed countries such as the US, Japan, and European nations.

In the coming years, India is expected to witness a substantial increase in its labor force, contrasting with a decline in industrialized countries. This presents both a challenge and an opportunity—a "demographic dividend" that can propel the nation toward unprecedented economic growth. However, to realize this potential, the workforce must be equipped with employable skills and knowledge.

India has long grappled with a significant skill gap, hindering its economic progress. The disparity between the demand for skilled manpower and the available supply has become a major impediment to national development. Each year, over ten million individuals join the workforce, but fewer than 25% possess the skills necessary to meet the demands of various sectors.

A recent survey reveals that while 90% of employment opportunities require vocational skills, most young people leaving school or college possess only theoretical knowledge.

They may be academically qualified, but they lack the practical skills needed for employment. This skill deficit poses a considerable challenge to India's ambition of becoming a 5 trillion-dollar economy.

To address this pressing issue, DB Power Ltd has taken proactive measures by launching several skill development initiatives as part of its Corporate Social Responsibility (CSR) programs. These initiatives aim to bridge the gap between academic education and practical skills, equipping individuals with the tools they need to succeed in the job market.

DB Power Ltd's vocational training programs have been instrumental in transforming the lives of individuals in rural communities. By focusing on skill development at the village level, the company ensures that even those in remote areas have access to quality training and opportunities for personal and professional growth. The vocational training programs cover a wide range of skills, from traditional crafts to modern technologies. This comprehensive approach caters to diverse interests and aspirations, enabling participants to choose a path that aligns with their passions and career goals. By providing training in sectors such as agriculture, healthcare, information technology, and manufacturing, DB Power Ltd equips individuals with the skills needed to thrive in today's competitive job market.

The impact of DB Power Ltd's skill development initiatives extends beyond individual empowerment. By equipping youth with practical skills, the company contributes to community development and economic growth. Skilled individuals are more likely to secure stable employment, support their families, and contribute to the local economy. This creates a positive ripple effect, leading to improved living standards and increased opportunities for all. Moreover, these initiatives foster a sense of self-reliance and confidence among participants. As they acquire new skills, individuals gain the ability to explore entrepreneurial ventures and contribute to the economic development of their communities.

This empowerment of youth is a vital component of building sustainable communities and achieving the SDGs. DB Power Ltd's skill development programs also address several socio-economic challenges faced by rural communities. By providing training and employment opportunities, the company helps alleviate poverty and reduce unemployment rates. This, in turn, mitigates the migration of young individuals to urban areas in search of work, allowing them to contribute to the development of their native villages.

Furthermore, the emphasis on vocational training ensures that individuals are equipped with skills that are in demand across various industries. This alignment between training and market needs enhances employability and reduces the skills mismatch that has long plagued the Indian job market.

The success of DB Power Ltd's skill development initiatives underscores the importance of public-private partnerships in driving sustainable development. Collaborations between corporations, government agencies, and non-governmental organizations are essential for creating comprehensive skill development programs that address the diverse needs of communities.

By working together, stakeholders can pool resources, share expertise, and create innovative solutions to the challenges of skill development. These partnerships play a crucial role in scaling initiatives, reaching underserved communities, and ensuring the sustainability of skill development programs.

In conclusion, DB Power Ltd's commitment to skill development at the village level has had a transformative impact on local communities. By aligning its initiatives with the Sustainable Development Goals and empowering youth with practical skills, the company is driving positive change and contributing to long-term sustainability.

As India continues to navigate its demographic transition, the emphasis on skill development is more critical than ever. By addressing the skill gap and harnessing the potential of its young population, India can unlock the full potential of its demographic dividend.

With the right investments in education and training, India can become the skill capital of the world, leading the way in sustainable development and economic growth. DB Power Ltd's efforts serve as a shining example of how corporations can play a pivotal role in shaping the future by empowering communities and creating pathways to success. Through its skill development initiatives, the company is not only transforming lives but also contributing to the broader goal of building a sustainable and prosperous future for all.

8.6. Activities carried out for Women Empowerment:

Women's empowerment is a critical issue worldwide, and in India, it is influenced by various factors such as geographical location, educational status, social status (caste and class), and age. In recent years, India has made significant strides toward empowering women, with policies and programs designed to address the unique challenges faced by women across the country. However, despite progress, gaps remain between policy advancements and the reality of women's lives at the community level. By providing equal access to rural services and infrastructure, women can be empowered to access education, and productive resources, and build on their knowledge, skills, and abilities.

India has implemented various policies at national, state, and local (Panchayat) levels to promote women's empowerment in multiple sectors, including health, education, economic opportunities, gender-based violence, and political participation (UN Women, 2020). These policies aim to create an environment where women can thrive and contribute to the socio-economic development of their communities. However, despite these efforts, significant gaps persist between policy advancements and actual practice at the grassroots level (Das, 2022).

Women in India face numerous challenges that hinder their empowerment. These challenges are often compounded by factors such as geographical location, social status, and educational background.

In rural areas, women often lack access to education, healthcare, and economic opportunities, making it difficult for them to break free from the cycle of poverty (Kabeer, 2016). Additionally, cultural norms and gender stereotypes continue to limit women's participation in decision-making processes both within households and in the broader community (Nayar, 2019).

Providing equal access to rural services and infrastructure is crucial for empowering women in India. By facilitating access to education and productive resources, women can build on their skills and abilities, ultimately contributing to their communities' socio-economic development. Improved infrastructure, such as roads, electricity, and communication networks, can help women access markets, healthcare, and educational opportunities, thus enhancing their quality of life (Mishra & Sinha, 2019).

The Indian government has introduced several schemes to support and guide rural women through various entitlements. These schemes have played a significant role in empowering women and encouraging them to form Self-Help Groups (SHGs) (Ministry of Women and Child Development, 2021). One such scheme is the Pradhan Mantri Mudra Yojana, which supports over 50 million small business owners, 78% of whom are women (Government of India, 2022). This scheme provides financial assistance to women entrepreneurs, enabling them to explore business ideas and access resources to start and expand their ventures.

Another notable scheme is the Mahila Shakti Kendra, which aims to empower rural women by providing opportunities for skill development, employment, digital literacy, health, and nutrition (Press Information Bureau, 2022). By focusing on holistic development, these schemes help women overcome barriers and participate actively in the socio-economic development of their communities.

Self-Help Groups (SHGs): A Pathway to Empowerment

Self-help groups (SHGs) have emerged as a powerful tool for women's empowerment in India.

SHGs are informal associations of women from similar socio-economic backgrounds who come together to address common interests and challenges (National Bank for Agriculture and Rural Development, 2020). Typically consisting of 10-15 members, SHGs operate on the principles of self-help and mutual support, providing a platform for women to share experiences, build skills, and access financial resources.

Self-Help and Mutual Support: SHGs operate on the principles of self-help and mutual support, encouraging women to come together to address common challenges and work towards collective goals.

Democratic Decision-Making: SHGs follow a democratic process, allowing all members to participate in decision-making and contribute to the group's development. This approach empowers women to voice their opinions and take ownership of their actions (Das & Thakur, 2018).

Thrift and Credit: Members of SHGs contribute small amounts of money regularly, creating a pool of funds that can be used for loans and other financial needs. This system promotes financial discipline and helps women develop savings habits (Singh, 2017).

Women in rural India have leveraged SHGs to engage in income-generating activities, asserting their rights and demands through various platforms. By participating in SHGs, women gain access to micro-credit schemes, enabling them to start and expand businesses at their own pace (Karmakar, 2016). These income-generating activities not only improve the economic status of women but also contribute to the overall development of their communities.

SHGs have successfully partnered with local banks to provide micro-credit to women entrepreneurs. This model is based on peer monitoring, where each member is accountable for the entire group. This approach has proven effective in imparting financial knowledge and discipline, resulting in a significant decrease in payment defaults (Reddy & Manak, 2005).

Micro-credit schemes have empowered women to take up various economic activities, from agriculture and handicrafts to small-scale manufacturing and services (Tripathi, 2019). By providing access to credit, SHGs enable women to invest in their businesses, improve productivity, and increase their income levels.

In recent years, women in rural India have effectively utilized digital platforms to enhance their socio-economic advancement. Digital literacy programs have equipped women with the skills needed to access information, connect with markets, and participate in e-commerce (Gurumurthy & Chami, 2020). By embracing technology, women can expand their businesses, reach new customers, and compete effectively in the market.

The impact of women's empowerment programs in India is evident in various aspects of society. Empowered women contribute to the economic development of their communities, leading to improved living standards and enhanced quality of life (Chowdhury, 2019). Additionally, women's participation in decision-making processes at the household and community levels fosters a more inclusive and equitable society.

By promoting gender equality and empowering women, India can harness the full potential of its population and achieve sustainable development. Women's empowerment is not only a matter of social justice but also a strategic imperative for economic growth and prosperity (World Bank, 2018).

In conclusion, women's empowerment in India is a multifaceted issue that requires a comprehensive approach. By addressing the challenges faced by women and providing them with access to resources, education, and opportunities, India can create an environment where women can thrive and contribute to the socio-economic development of their communities. Government schemes, such as the Pradhan Mantri Mudra Yojana and Mahila Shakti Kendra, play a vital role in empowering women by providing financial assistance and skill development opportunities.

Additionally, Self-Help Groups (SHGs) have emerged as a powerful tool for women's empowerment, enabling them to engage in income-generating activities and assert their rights. Empowering women is essential for achieving sustainable development and building a more inclusive society. By promoting gender equality and providing women with the tools they need to succeed, India can harness the full potential of its population and drive positive change for generations to come.

Photo 23 and 24: Imparted Training Program for Rural SHG women (namely Jagriti Self-help Group Badadarha Village and Saraswati, Self-help Group Tundari Village) on Herbal Soap making and Marketing to sell the Product.

Self-help groups (SHGs) play a crucial role in promoting financial independence and development, especially among women. By encouraging small savings among their members, SHGs help women accumulate a common fund that is securely kept in a bank account under the group's name. This collective approach empowers women to participate actively in economic activities and community development.

Most SHG members are women, which significantly increases their involvement in developmental processes. In many cases, women lack the necessary resources to contribute effectively to their empowerment and overall well-being. As a result, there is a pressing need to focus on economic independence through self-employment and entrepreneurial development.

By facilitating access to financial resources, SHGs enable women to engage in income-generating activities, thereby improving their economic status and self-confidence. These groups also provide a platform for women to learn new skills, share knowledge, and support each other in overcoming challenges.

Ultimately, the growth of SHGs contributes to the broader goal of women's empowerment by fostering economic independence, improving social status, and enhancing the quality of life for women and their families. Encouraging the development of SHGs can lead to more sustainable and inclusive growth for communities.

The empowerment of rural women is a key factor in fostering economic growth and development in rural areas. With this goal in mind, DB Power Ltd has implemented a comprehensive training program for the women of the Jagriti Self-help Group in Badadarha Village and the Saraswati Self-help Group in Tundari Village. This program, under the company's Corporate Social Responsibility (CSR) initiative, aims to equip these women with the skills and knowledge necessary for producing and marketing herbal soaps. By doing so, the program seeks to enhance their entrepreneurial capabilities and improve their livelihoods.

The primary objective of this training program is to empower women in rural areas by providing them with a sustainable means of income through skill development. By training women in herbal soap making, DB Power Ltd aims to create opportunities for them to become financially independent and contribute to the economic development of their communities. Additionally, the program focuses on developing marketing skills to ensure that women can effectively sell their products and reach a broader market.

8.7. Impact of Women Empowerment activities on Community:

The training program is designed to provide comprehensive knowledge and skills in herbal soap making. The women are taught about the various natural ingredients used in soap making, such as essential oils, herbs, and natural fragrances. They learn the process of soap formulation, including the mixing of ingredients, the use of mould, and the curing process. The training emphasizes the importance of maintaining quality and hygiene standards throughout the production process to ensure a high-quality product.

The choice of herbal soaps is strategic, as they are increasingly in demand due to the growing consumer preference for natural and organic products. By tapping into this trend, women can create a niche market for their products, thereby enhancing their chances of success. In addition to soap-making skills, the program also includes training in marketing and sales strategies. The women are taught how to effectively promote their products through various channels, such as local markets, fairs, and online platforms. They learn about pricing strategies, packaging, branding, and customer relationship management. The training also covers basic financial literacy, helping the women understand how to manage their finances, maintain records, and reinvest profits into their business.

DB Power Ltd collaborates with marketing experts to provide insights into market trends and consumer behaviour, enabling women to tailor their products and strategies accordingly.

By equipping them with these skills, the program ensures that the women can not only produce high-quality products but also effectively sell them in the market. The training program has already begun to show positive results, with the women demonstrating increased confidence and entrepreneurial spirit. Many participants have started producing and selling their herbal soaps, generating income for themselves and their families. This empowerment has led to a greater sense of self-worth and community involvement among the women, as they become role models for others in their villages.

Looking forward, DB Power Ltd plans to expand the program to include more self-help groups in other villages, thereby broadening the impact of this initiative. The company also aims to create a support network for these women, providing them with continuous guidance and resources to sustain and grow their businesses.

Therefore, the training program on herbal soap making and marketing by DB Power Ltd is a significant step towards rural women empowerment. By providing these women with the skills and knowledge needed to create a sustainable livelihood, the program not only improves their economic status but also contributes to the overall development of their communities.

8.8. Cultural and Social Activities & Events under the Welfare program:

Corporate Social Responsibility (CSR) has become a significant aspect of business operations in contemporary times, where companies take active roles in addressing social, economic, and environmental issues in the communities they impact. DB Power Limited (DBPL), a leading entity in the energy sector, has made a strong commitment to enhancing the welfare of the plant-affected villages near its operational areas, particularly in the regions of Badadarha, Rampur, and Tundri. Recognizing its responsibility beyond just business operations, DBPL has adopted an inclusive approach, integrating the welfare and development needs of the local communities into its CSR agenda.

This holistic initiative underscores the company's philosophy of not just economic growth but also sustainable and equitable community development. The villages of Badadarha, Rampur, and Tundri have faced several socio-economic challenges, particularly as they have been affected by the industrial expansion and the establishment of DBPL's power plant. The impact on traditional livelihoods, disruption of local socio-cultural dynamics, and environmental concerns have necessitated a responsive and sensitive approach from DBPL.

Considering these challenges, the company's CSR initiatives aim to mitigate adverse impacts while fostering positive and long-term community development. Under the thrust area of *Cultural and Social Events under the Welfare Program*, DBPL has implemented a range of activities designed to support community well-being, strengthen social cohesion, and preserve cultural heritage.

A key focus of DBPL's welfare initiatives has been the empowerment and upliftment of vulnerable groups within these communities, particularly women and economically disadvantaged families. Recognizing the importance of economic self-sufficiency for women, the company has taken steps to provide resources such as sewing machines to young women getting married in these villages. This gesture is not merely symbolic but aims to foster skills development and entrepreneurship among women, enabling them to contribute economically to their households. By providing sewing machines as part of wedding gifts, DBPL promotes the idea of sustainability and long-term support, offering young women a tool for financial independence.

Additionally, DBPL's welfare program includes various forms of direct financial assistance to villagers for household procurement. This includes monetary aid for purchasing essential appliances like refrigerators, which enhances the quality of life and provides convenience to rural households. The company's efforts extend beyond immediate financial assistance, also encompassing cultural and social engagement activities aimed at building strong, positive relationships within the community.

By organizing spiritual tours to significant cultural sites like Puri and Bhubaneswar, DBPL aims to strengthen social bonds and foster a sense of unity and shared experience among the villagers. DBPL has also taken an active role in supporting traditional and cultural practices, recognizing their importance in maintaining community identity and cohesion. This includes contributions to religious ceremonies and aiding for rites of passage, such as the "Daskarm" ritual, which is an important cultural practice in the region. By supporting families in performing these ceremonies, DBPL acknowledges the cultural significance of these events and the need for preserving such traditions, even amidst the rapidly changing social and economic landscape brought about by industrialization.

Furthermore, the company has invested in the preservation and renovation of local cultural sites, such as temples and religious idols. The renovation of dev idols at the Kurupath temple in Tundri is one example of DBPL's commitment to preserving the region's cultural heritage. These activities not only help maintain historical and cultural landmarks but also foster community pride and spiritual well-being, which are crucial elements of a resilient and healthy society.

Overall, DB Power Limited's initiatives under the *Cultural and Social Events under the Welfare Program* reflect a comprehensive approach to CSR, emphasizing both tangible and intangible aspects of community development. By addressing economic needs, supporting cultural traditions, and fostering social harmony, DBPL aims to build a strong foundation for sustainable development in its plant-affected villages. Through these efforts, the company strives to maintain a balanced relationship with the communities it operates in, aligning its corporate objectives with the broader goal of inclusive and holistic rural development.

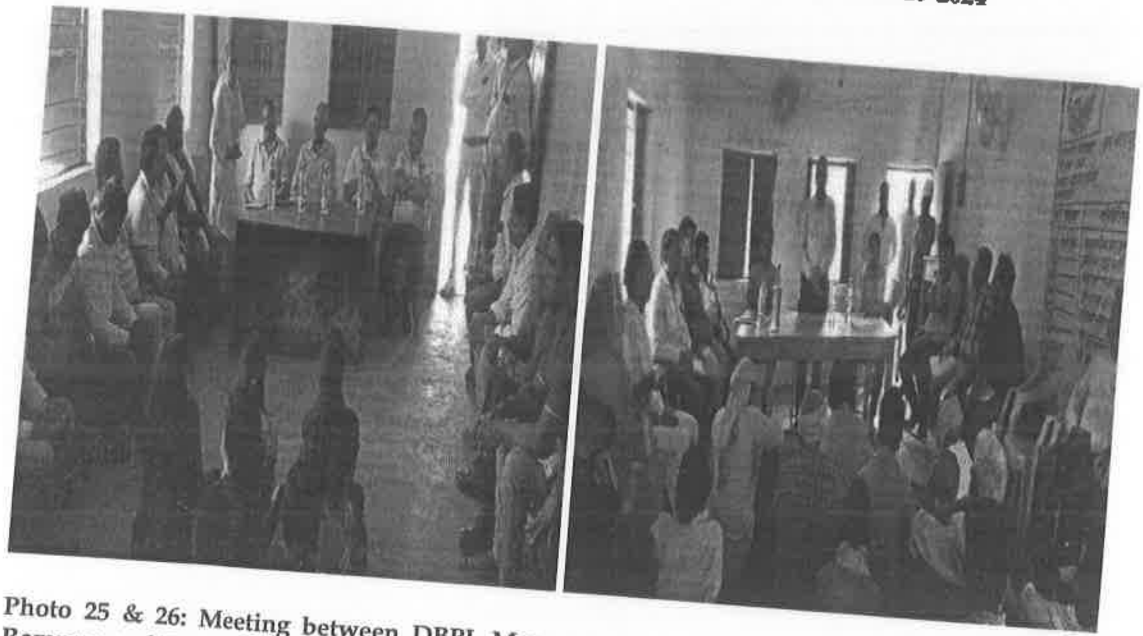
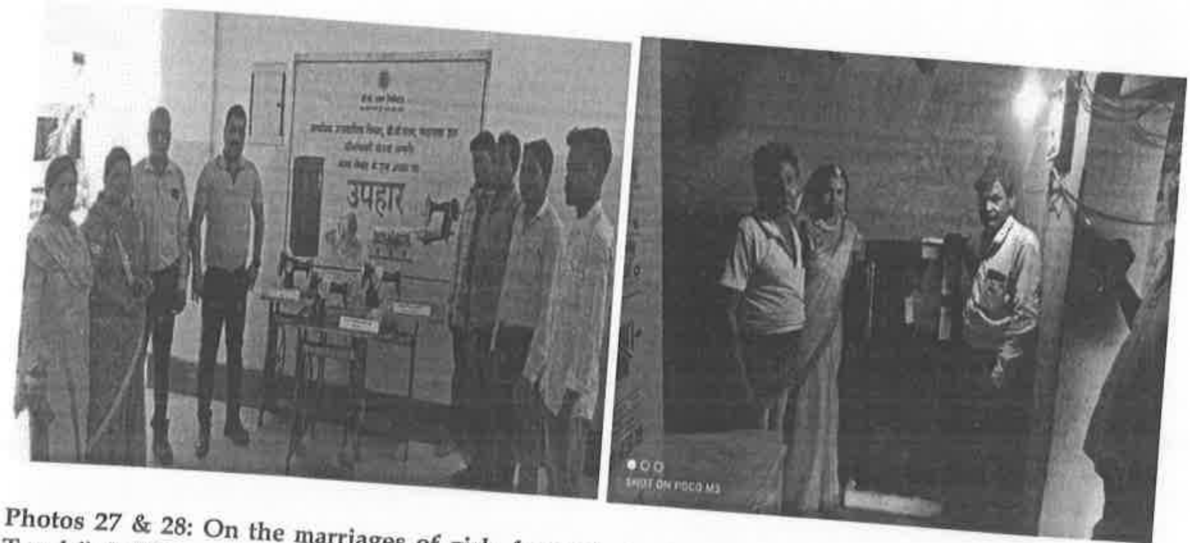


Photo 25 & 26: Meeting between DBPL Management and Village Representatives (Badadarha, Rampur, and Tundri) on Village Development Initiatives

The meeting facilitated by DBPL management with representatives from Badadarha, Rampur, and Tundri focused on discussing and planning developmental projects as part of the company's CSR initiatives. This dialogue aimed at understanding local needs, enhancing collaboration, and implementing community-driven solutions to improve infrastructure, livelihood opportunities, and overall welfare in the affected villages.



Photos 27 & 28: On the marriages of girls from plant-affected villages (Badadarha, Rampur, and Tundri), DBPL management provided 10 sewing machines and financial assistance of Rs. 5,000 each to 6 villagers for the purchase of refrigerators.

This initiative by DB Power Limited under its CSR program highlights the company's commitment to supporting the socio-economic welfare of communities impacted by its operations. By providing sewing machines to young women and financial assistance for refrigerators, DBPL promotes economic empowerment, enhances quality of life, and encourages self-reliance. This proactive approach fosters a positive relationship with the local community, ensuring that development benefits are extended to those most affected by industrial growth.

Photo 29: Spiritual tours to Puri and Bhubaneswar have been organized to foster healthy relationships among the villagers from nearby plant-affected villages.

DB Power Limited organized spiritual tours to Puri and Bhubaneswar for villagers from nearby plant-affected areas. These tours were designed to promote social cohesion and strengthen bonds among the local communities. By providing an opportunity for shared cultural and spiritual experiences, DBPL aimed to create a sense of unity and mutual respect among villagers from Badadarha, Rampur, and Tundri. This initiative not only helped in building healthy relationships but also contributed to the overall well-being of the communities by offering a break from daily challenges, reinforcing the company's commitment to community welfare and development.

Photo 30: Grocery items were provided to the households of Sitaram Yadav in Rampur, Sakharam Sarthi in Badadarha, and Banshidhar Sahu & Girja Bai Sahu in Tundri to support them in performing the Daskarm ritual.

As part of its CSR efforts under *Cultural and Social Events under the Welfare Program*, DB Power Limited demonstrated a strong commitment to supporting local traditions and community welfare. The company provided essential grocery items to the households of Sitaram Yadav (Rampur), Sakharam Sarthi (Badadarha), and Banshidhar Sahu & Girja Bai Sahu (Tundri) to assist them in performing the Daskarm ritual. Daskarm is an important cultural and religious ceremony for the affected families, and this assistance ensured that they could carry out the ritual without financial burden. By directly contributing to such cultural practices, DBPL not only preserved local traditions but also fostered a sense of community and belonging among the villagers. This initiative reflects DBPL's understanding of the importance of cultural and spiritual well-being in community development, emphasizing the company's role in creating a holistic and sustainable approach to CSR that goes beyond economic empowerment.

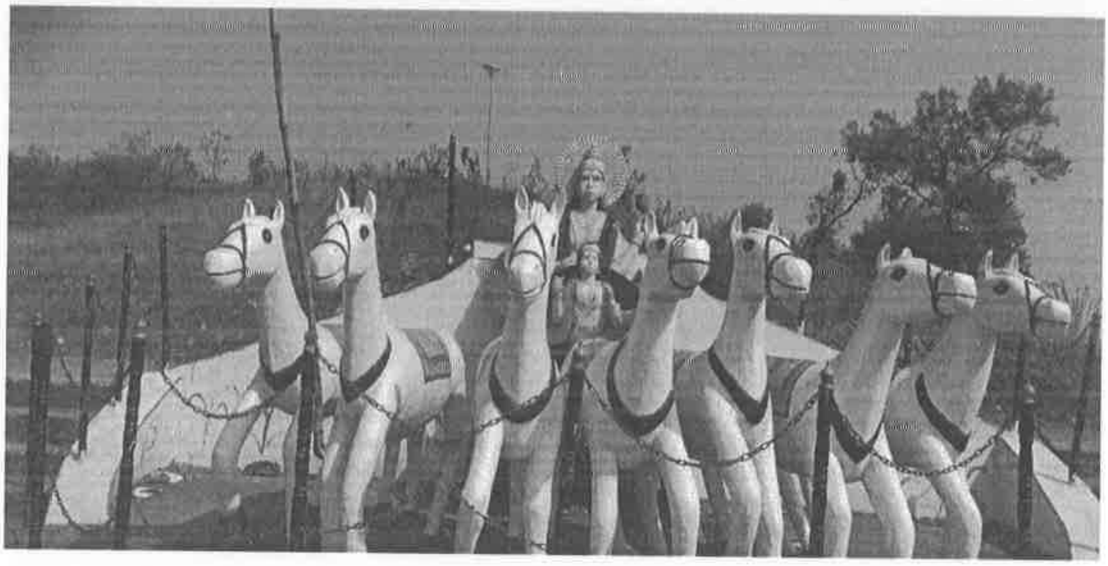


Photo 31: The God idols at the Kurupath temple in Tundri were renovated.

As part of its CSR initiatives under *Cultural and Social Events under the Welfare Program,* DB Power Limited undertook the renovation of the God idols at the Kurupath temple in Tundri. This effort highlights the company's commitment to preserving the cultural and spiritual heritage of the local community. Temples and religious idols play a central role in the social and spiritual life of rural communities, and their upkeep is often a matter of collective pride. By renovating the idols, DBPL not only helped restore an important cultural landmark but also strengthened the community's connection to their traditions and religious practices. This initiative reflects DBPL's broader CSR strategy of supporting both the tangible and intangible aspects of local culture. It demonstrates a holistic approach to community welfare that includes environmental, social, and cultural preservation, ensuring that the community's values and identity are maintained alongside its socio-economic development.

8.9. Impact on the Community of Cultural and Social Events under the Welfare Program

DB Power Limited (DBPL), through its Corporate Social Responsibility (CSR) initiatives, has made significant contributions to the social and cultural upliftment of the communities in and around its plant-affected villages.

These efforts focus on fostering social cohesion, improving livelihoods, and preserving cultural traditions. Under the *Cultural and Social Events under the Welfare Program*, DBPL has implemented a variety of activities, each of which has had a notable impact on the local communities, particularly in Badadarha, Rampur, and Tundri. The renovation of the God idols at the Kurupath temple in Tundri is one of the key cultural initiatives undertaken by DBPL. Temples and religious idols are integral to the spiritual and cultural identity of rural communities in India. The renovation of these idols has helped preserve the community's religious practices, instilling a sense of pride and connection among the villagers. This initiative reflects DBPL's commitment to preserving the local heritage, as it ensures that religious and cultural practices continue without disruption (Kumar, 2022). The restoration of these idols has likely contributed to maintaining the social fabric and spiritual unity of the community, fostering a collective identity and a sense of belonging.

DBPL's provision of grocery items to families, including Sitaram Yadav (Rampur), Sakharam Sarthi (Badadarha), and Banshidhar Sahu & Girja Bai Sahu (Tundri), to assist them in performing the Daskarm ritual demonstrates the company's sensitivity to cultural practices. The Daskarm ritual is significant for the local communities, and by providing essential supplies, DBPL ensured that families could partake in this cultural ceremony without financial strain. This initiative not only promoted cultural continuity but also addressed immediate needs, thereby improving the overall well-being of the households involved (Sharma, 2023). for the villagers to bond and strengthen social ties. These tours allowed individuals from different villages to come together, fostering unity and mutual respect. Such experiences promote social harmony and a sense of shared identity, especially in regions where communities may have been divided due to industrialization and migration. These tours not only encouraged cultural exchange but also offered a much-needed break from the daily challenges of rural life, contributing to the mental and emotional well-being of the participants (Rao, 2021).

DBPL's provision of 10 sewing machines and financial assistance of Rs. 5,000 each to six villagers for purchasing refrigerators marks a significant step toward economic empowerment. Providing sewing machines to young women in plant-affected villages, especially in the context of marriage, promotes skill development and financial independence. Similarly, the financial assistance for purchasing refrigerators addresses a basic need, improving the quality of life for families. These initiatives empower individuals, particularly women, to enhance their economic standing and become more self-sufficient. Such interventions can have a lasting impact on the community by improving the livelihoods of the marginalized and fostering greater economic resilience (Patel, 2020). The ongoing dialogue between DBPL management and village representatives from Badadarha, Rampur, and Tundri regarding development initiatives ensures that the needs of the community are heard and addressed. This collaborative approach enhances trust and cooperation between the company and the villagers. It also creates a platform for discussing the socio-economic challenges faced by the community and finding mutually beneficial solutions. This participatory model of development helps ensure that the CSR initiatives are aligned with the actual needs of the community, thus making them more effective and impactful (Khan, 2021).

9.0. Conclusion

The impact of DB Power Limited's CSR initiatives under the *Cultural and Social Events under the Welfare Program* is far-reaching, contributing to the cultural preservation, social cohesion, and economic empowerment of the affected communities. By focusing on both immediate needs and long-term development goals, DBPL has demonstrated a holistic approach to community welfare. These activities have not only improved the quality of life for the villagers but also helped strengthen their social fabric and cultural identity. The company's CSR initiatives have set a benchmark for integrating corporate development with community well-being, ensuring sustainable and inclusive growth for the rural population.

In contemporary India, corporate social responsibility (CSR) has evolved beyond mere charity; it has become an essential tool for businesses to contribute meaningfully to the well-being of society. As businesses seek to maximize shareholder wealth, there is increasing recognition of the need to simultaneously fulfill their obligations to other stakeholders, including the communities in which they operate. This is particularly crucial in rural India, where nearly 70% of the population still resides and faces significant challenges in access to basic infrastructure, education, healthcare, and empowerment. While the Indian government plays a key role in promoting rural development, its resources are often constrained, making public-private partnerships (PPP) and corporate involvement vital for addressing the infrastructure and social needs of rural areas. In this context, DB Power Ltd, a leading power generation company, has taken commendable steps through its CSR initiatives, particularly in the rural areas surrounding its plant in Raigarh, Chhattisgarh.

The rural infrastructure improvements made by DB Power Ltd are the foundation of their CSR strategy, which has significantly impacted the lifestyle and living conditions of the villagers. Through its rural infrastructure program, the company has contributed to the development of critical facilities such as rural roads, water supply systems, housing, and electrification. These interventions have played a pivotal role in transforming the quality of life for people living in the affected villages of Badadarha, Rampur, and Tundri. Rural roads have facilitated better connectivity, easing access to markets, healthcare, and educational institutions. Reliable water supply systems have reduced the dependency on manual water collection, leading to better hygiene and overall health conditions. The electrification of these villages has not only improved the standard of living but has also provided opportunities for small-scale enterprises to thrive, thus contributing to local economic development. However, infrastructure development alone is not enough to foster sustainable rural development.

The human development aspects—education, skill development, healthcare, and women empowerment—are equally crucial for creating a thriving rural ecosystem. DB Power Ltd has thus invested heavily in these areas to ensure the holistic development of the communities they serve.

The cornerstone of DB Power Ltd's CSR activities in FY 2023-2024 lies in its rural infrastructure program. This initiative has sought to address the infrastructural deficits faced by rural communities, many of which are still grappling with basic needs such as roads, electricity, and clean water. By focusing on rural roads, the company has significantly improved transportation and mobility, which is vital for the socio-economic upliftment of these villages. Furthermore, DB Power Ltd's efforts in providing rural electrification have been transformative, reducing energy poverty and opening up new avenues for economic activities, including local businesses and educational facilities. The construction of water supply systems has enhanced access to clean water, thereby mitigating health risks associated with unsafe water sources. The holistic nature of DB Power Ltd's infrastructure interventions has been crucial in improving the villagers' living conditions and making the communities more resilient to challenges such as climate change and rural-urban migration.

In line with its vision to improve the lives of rural communities, DB Power Ltd has taken significant strides in the field of education and skill development. Education is an essential driver of social mobility, and DB Power Ltd has recognized the pressing need for quality education in the villages affected by its operations. The company has focused on improving educational infrastructure by building and upgrading schools, providing scholarships, and supporting educational materials and supplies. This has enabled children in these villages to access better educational opportunities, thereby contributing to breaking the cycle of poverty and ensuring that future generations have the skills and knowledge to improve their economic prospects.

Moreover, skill development has been another key focus area for DB Power Ltd in FY 2023-2024. Recognizing that education alone is not sufficient to ensure long-term socio-economic mobility, the company has implemented vocational training programs for young adults. These programs equip villagers with skills that are directly applicable to local economic activities, such as tailoring, carpentry, electrical work, and other trades. By fostering skill development, DB Power Ltd has empowered the rural population to become self-reliant and reduce their dependency on seasonal agricultural work or low-wage labour. These initiatives have created a workforce that is better prepared for the evolving job market, thereby contributing to the overall economic development of the region.

Health and sanitation remain significant challenges in rural India, where access to healthcare facilities is limited, and hygiene practices often lag behind urban standards. DB Power Ltd has made substantial contributions to improving health conditions in the villages of Badadarha, Rampur, and Tundri through its health, hygiene, and sanitation programs. The company has built health centres and supported local clinics, ensuring that essential healthcare services are accessible to the rural population. Additionally, DB Power Ltd has organized health camps that provide medical check-ups, vaccinations, and health education, particularly focusing on preventive care.

In terms of sanitation, DB Power Ltd has taken a proactive role in constructing toilets and promoting sanitation awareness. The company's efforts to improve hygiene in these villages have significantly reduced the incidence of waterborne diseases, improving the overall health of the community. These interventions have not only contributed to better physical health but have also fostered greater awareness of hygiene practices, which is crucial in preventing diseases and improving the quality of life in the long term.

Women empowerment is another vital component of DB Power Ltd's CSR activities. The company recognizes that empowering women is key to the socio-economic development of rural areas.

Through its initiatives, DB Power Ltd has provided women with opportunities for skill development, income generation, and financial independence. For example, the provision of sewing machines to women in plant-affected villages has enabled them to create small businesses, thereby enhancing their economic standing and social status. Moreover, DB Power Ltd has organized awareness programs on women's health, rights, and education, fostering a more gender-equitable environment in these communities. By promoting women's participation in decision-making processes and providing them with the tools to succeed, DB Power Ltd is helping to break down traditional gender barriers and create a more inclusive society.

The company's social welfare and development programs have been pivotal in improving the overall well-being of the villagers. DB Power Ltd's social initiatives have focused on providing financial assistance, improving access to social services, and enhancing the quality of life through various welfare programs. This includes distributing grocery items, supporting cultural practices such as the Daskarm ritual, and organizing spiritual tours to strengthen social cohesion among villagers. The company's efforts have had a positive impact on the social fabric of these rural communities, fostering unity, mutual support, and collective development.

In FY 2023-2024, DB Power Ltd has demonstrated an exemplary commitment to rural development through its comprehensive CSR initiatives. The company's efforts in infrastructure development, education, health, women empowerment, and social welfare have had a tangible impact on the lives of the rural population in the areas surrounding its plant. These initiatives have not only improved the quality of life for individuals and families but have also contributed to the creation of a more resilient and empowered community. As businesses like DB Power Ltd continue to invest in rural development, they play a crucial role in bridging the development gap between urban and rural India, driving inclusive growth that benefits all segments of society. Through its CSR activities, DB Power Ltd has shown that corporate responsibility, when executed with genuine intent and strategic focus, can lead to sustainable, long-term change in rural communities.

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HYDROGEOLOGICAL INVESTIGATION REPORT

Year -2024

OF M/S DB POWER LIMITED

BADADARHA VILLAGE, BLOCK- DABHRA

DISTRICT–SAKTI, CHHATTISGARH-495695

PREPARED BY

ENVIBA ENVIRONMENTAL SERVICES

EE-05, INDRAPRASTHA COLONY, RAIPURA,
RAIPUR, CHHATTISGARH

Ph- 09617160900 (M), 09711718234 M)
Email:enviba.enviro@gmail.com
(An ISO 9001-2015 , ISO 14001-2015 certified company)

CONTENTS

INTRODUCTION

DB Power Limited is a coal-based thermal power plant located at Village: Badadarha, Block: Dabhra, Shakti district in the state of Chhattisgarh. The plant has produced thermal power having capacity of 1200 MW (2*600 MW). Ministry of Coal, Govt. of India has allocated permanent Coal linkage of 2,497 MTPA from SECL Chaal, Baroud, Dipika, Gevra, kusmunda and Manikpur mines area and from MCL Vasundhara & Kukld‌a mines to fulfill the requirement for 1200 MW capacity. Water requirement for the project is getting fulfilled from river Mahanadi, which is flowing at a distance of 23 KM from the plant site. The power plant is operating since 2014. The Project was awarded to BHEL for BTG and L & T for BOP and completed the project within time frame.

1.1 OBJECTIVE AND SCOPE OF WORK

1.1.1 Objective and Scope

The broad objective of the present study is to establish the hydrogeological environment of the project area and study the impact on ground water and suggest strategies for mitigation.

The scope of work includes following points

1. Conducting comprehensive hydrogeological studies, chemical analysis of ground and surface water samples from the buffer zone of 05 km radius and particularly downstream side of ash dyke and its impact on the water regime for DBPL, 2 X 600 MW, at Badadarha, Block- Dabhra, District- Shakti, DB Power Limited.
2. Survey and hydrological data collection of key wells of 05 km radius are from the boundary of plant (buffer zone) of existing open wells/bore wells/piezometers and determine and record for each location including extermination of coordinates of the points by GPS and its plotting on map and water levels, pre & post monsoon levels. Yields, use, aquifer tapped etc.
3. Comprehensive hydrogeological assessment studies of the buffer zone discussing its geomorphology, digitized elevation model, geology, nature of water bearing formation sand depth to water table, long term ground water recharge, present ground water exploitation and present status of ground water development.
4. Collection of samples of ground water and few surface samples from the buffer zone for chemical analysis which parameters comprising pH, Color, EC, TDS, Chloride, Sulphate, Calcium, Magnesium, Fluoride, Nitrate, Bicarbonate, Carbonate, Total

Hardness, Total alkalinity and all the heavy and toxic elements including Hg.

5. Preparation of ground water quality report of 05 km radius area of buffer zone based the results of chemical analysis and its different maps showing the different contour maps on important constituents.
6. Hydrological and drainage studies of buffer zone, delineation of its catchment area, catchment yields, particularly of watershed covering the ash dyke.
7. Preparation of ground water contour map of 5 km radius area showing the Ground water flow direction and hydraulic gradient.
8. Submission of draft report covering the findings of the investigations, original data and recommendations for future monitoring.
9. Submission of final report after incorporation of user observations.

1.1.2 Approach and Methodology

To fulfill the above objectives, especially Hydrogeological study in the area, following approach has been adapted as given below:

A detailed Hydrogeological investigation was carried out in & around Plant within 05 km of radius for both Core & Buffer Zone for evaluating the impact of project activity on ground water storage in the area.

Collection and collation of supplementary data viz. soils, geology, geomorphology, drainage etc. for interpretation.

Establishment of observation stations for water level measurements in different seasons as well as water sample collection for determining the quality aspects.

Pumping test data & its interpretation for knowing the hydrogeological parameters, etc.

Evaluation of present ground water scenario as well as future course of action for protecting the natural environment.

2. GENERAL DESCRIPTION OF THE AREA

2.1 LOCATION

M/S DB Power Limited is a 1200 MW (2 X 600 MW) thermal power plant at Village: Badadarha, Taluka:Dabhra, Dist:. Shakti, Chhattisgarh.

The co-ordinates of the Plant are 21°55’33.38”N - 21°54’14.08”N latitudes and 83°11’5214”E to 83°10’45.12”E longitudes. For the present study, an area of 05 km of radius has been demarcated which lies between 21°57’10.40”N - 21°57’47.54”N latitudes and 83°14’15.58”Eto83°08’26.19”E longitudes and falls under the Survey of India Toposheet No. 64 O/1 (1:50000 scale).The location map of the project site and toposheet of study area is given in **Fig. 2.1, 2.2** and the Satellite image map of the area is given in **Fig. 2.3**.

2.2 ACCESSIBILITY

The area is well connected by metaled and un-metaled road as well as Rail networks. Kharsia Railway station, on Mumbai- Howrah Broad Gauge main line of the South-Eastern-Central Railway is situated around 13 km North- Eastern direction from plant site. Jharsuguda is nearest Airport and is about 117 km from the study area which is also approachable by road and rail. The block head quarter is Dabhra.

2.3 DEMOGRAPHY

There are 21 villages within 5 km radius of plant area. The total population as per 2011 Census is 29024 (for 05 km radius buffer zone). Scheduled Caste population of the study area (05km) is 5352 and Scheduled Tribe is 6824, Percentage of literacy is 78.08%.The workers those actually engaged in occupation are 13927. A population detail is presented in table 2.1.

Table 2.1 Population details as per census 2011

Name	No_HH	TOT_P	TOT_M	TOT_F	P_SC	P_ST	P_LIT	TOT_WORK_P
Kharsia - Raigarh								
Adajhar	164	663	314	349	15	0	74.55 %	355
Karpipali	202	712	351	361	73	21	77.71%	264
Kuarmauha	162	666	330	336	152	175	76.32 %	267
Jaimura	404	1,398	691	707	207	275	77.42 %	358
Amapali	83	318	150	168	0	109	71.94 %	91

Basnajhar	361	1,549	790	759	198	518	76.02 %	634
Basanpali	149	582	293	289	107	145	82.08 %	201
Ful Bandhiya	218	797	394	403	431	222	90.65 %	338
Pandripani	211	823	420	403	139	181	77.50 %	320
Sondka	333	1,115	557	558	251	90	82.31 %	325
Tayang	194	730	365	365	68	253	79.85 %	323
Dabhra – Shakti								
Badadarha	436	1,634	857	777	187	276	75.07 %	1,076
Dhurkot	546	2,378	1,200	1,178	1,107	137	67.80 %	1,090
Dumarpali	277	866	448	418	162	151	81.27 %	312
Kanwali	657	2,499	1,244	1,255	232	1,435	70.50 %	1,170
Khairmuda	204	916	469	447	136	95	69.11 %	423
Komi	281	1,118	572	546	137	378	70.89 %	566
Kenapali	323	1,283	664	619	595	84	78.09 %	702
Saraipali	158	456	217	239	69	157	78.16 %	176
Tundri	1,074	3,810	1,936	1,874	327	1,583	74.55 %	1,760
Jaijaipur – Jangir Champa								
Odekera	1,020	4,711	2,345	2,366	759	539	69.56 %	3,176
Total	**7457**	**29024**	**14607**	**14417**	**5352**	**6824**	**78.08%**	**13927**

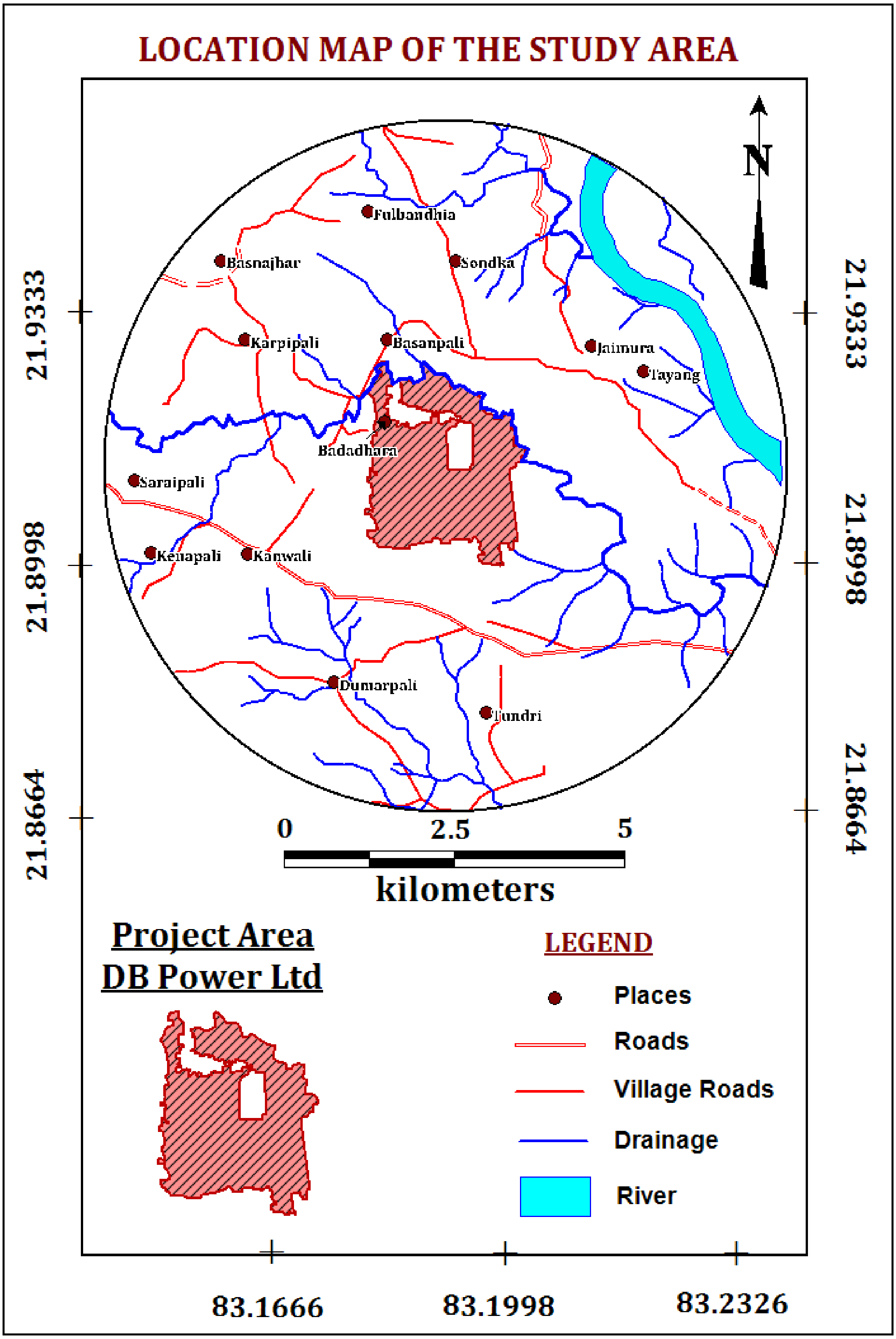


Fig 2.1: Location map the Study area

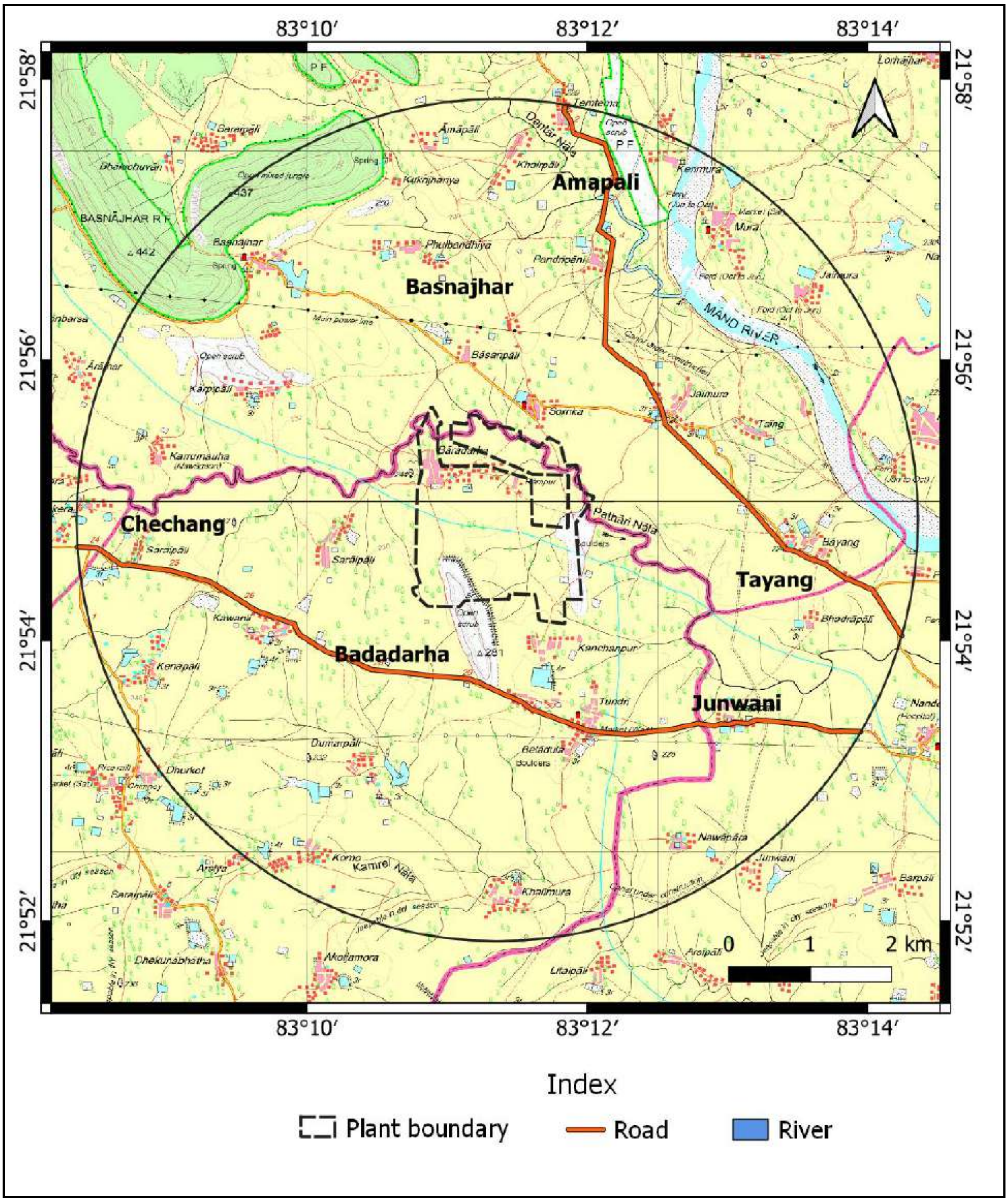


Fig 2.2: Top sheet (1:50000) of the Study area

Fig 2.3: Satellite of the Study area

Fig 2.4: Satellite Map of the Project area

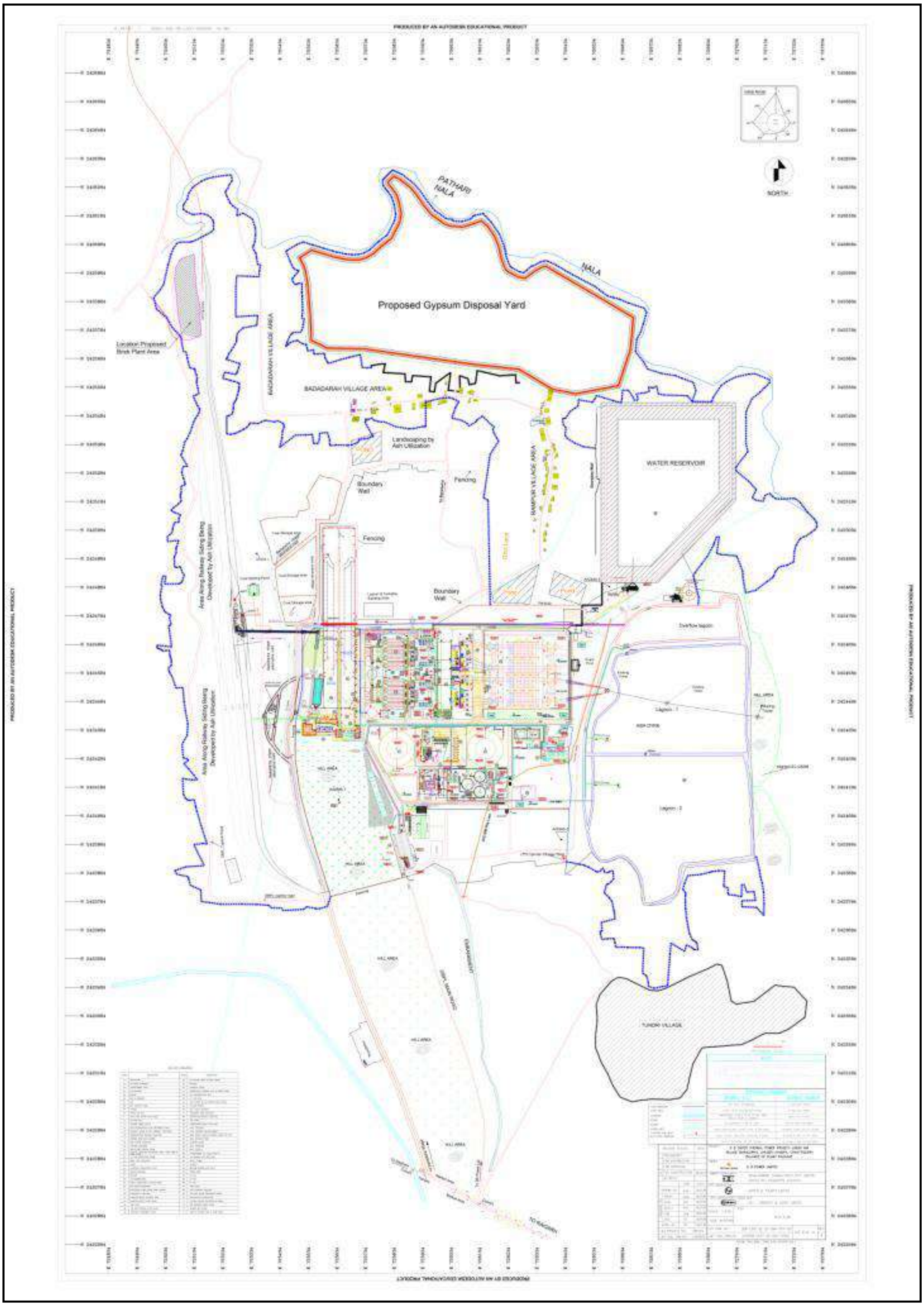


Fig 2.5: Plant Layout

2.4 LAND USE

The Land use / Land cover map for the project area has been prepared using satellite image, the current data will also enable assessing the impact on land use pattern in the study area due to the proposed project activity. Survey of India topo-sheet on 1:50000 scales has been used as a reference map for preparation of base layer data like road, rail network, village and project site and also for geo referencing of satellite image. Land use / Land cover map preparation.

Hybrid technique has been used i.e. visual interpretation and digital image processing for identification of different land use and vegetation cover classes based on spectral signature of geographic feature. Spectral signature represents various land use class. Image interpretation keys are developed based on image characteristics like color, tone, size, shape, texture, pattern, shadow, association etc, which enables interpretation of satellite images for ground feature. Training sites are then assigned based on their spectral signature and interpretation elements. Following classes have been used for the Land use. Land covers Map: Water Bodies, Plantation, Crop Land, Fallow Land, Industry, Human Settlement, Open Scrub, Vegetation, Open waste land, dense scrub & Mine Quarry. The land use/land cover details of the lease and study area are given below in **Table 2.2,** which has been presented in **Fig 2.6**.

Out of the total area taken for the study, nearly 538.79 ha is covered by forested area, only 992.91ha is covered by irrigated area, 9085.95 ha is covered by non-irrigated area. Culturable waste land area comes around 60.20 ha while 520 ha area is covered by area not available for cultivation. The details of land use pattern in the study area within 5 km radius are summarized as below in the **Table 2.2** & Fig **2.6.**

Table 2.2: Land use Pattern of the Study Area (05 km radius from the Project site)

SN	Land use	Area (in Sq KM)	Percentage
1	Agricultural Land-Crop Land-Kharif Crop	90.8595	73.06
2	Agricultural Land-Crop Land-Zaid Crop	3.80495	3.06
3	Agricultural Land-Crop Land-Two crop area	9.92907	7.98
4	Agricultural Land-Fallow-Current Fallow	0.60202	0.48
5	Forest-Deciduous (Dry/Moist/Thorn)-Dense/Closed	5.38796	4.33
6	Wastelands-Scrub land-Open scrub	5.20509	4.19
7	Wastelands-Sandy area-Riverine	1.53606	1.24
8	Build Up-Mining / Industrial area	1.69411	1.36

9	Build Up-Built Up (rural)-Built Up Area (Rural)	2.67511	2.15
10	Build Up-Built Up (Urban)-Transportation	0.140471	0.11
11	Waterbodies-Reservoir/Tanks- Perennial	2.52319	2.03
	Total	124.357531	100

Source: Satellite Imagery

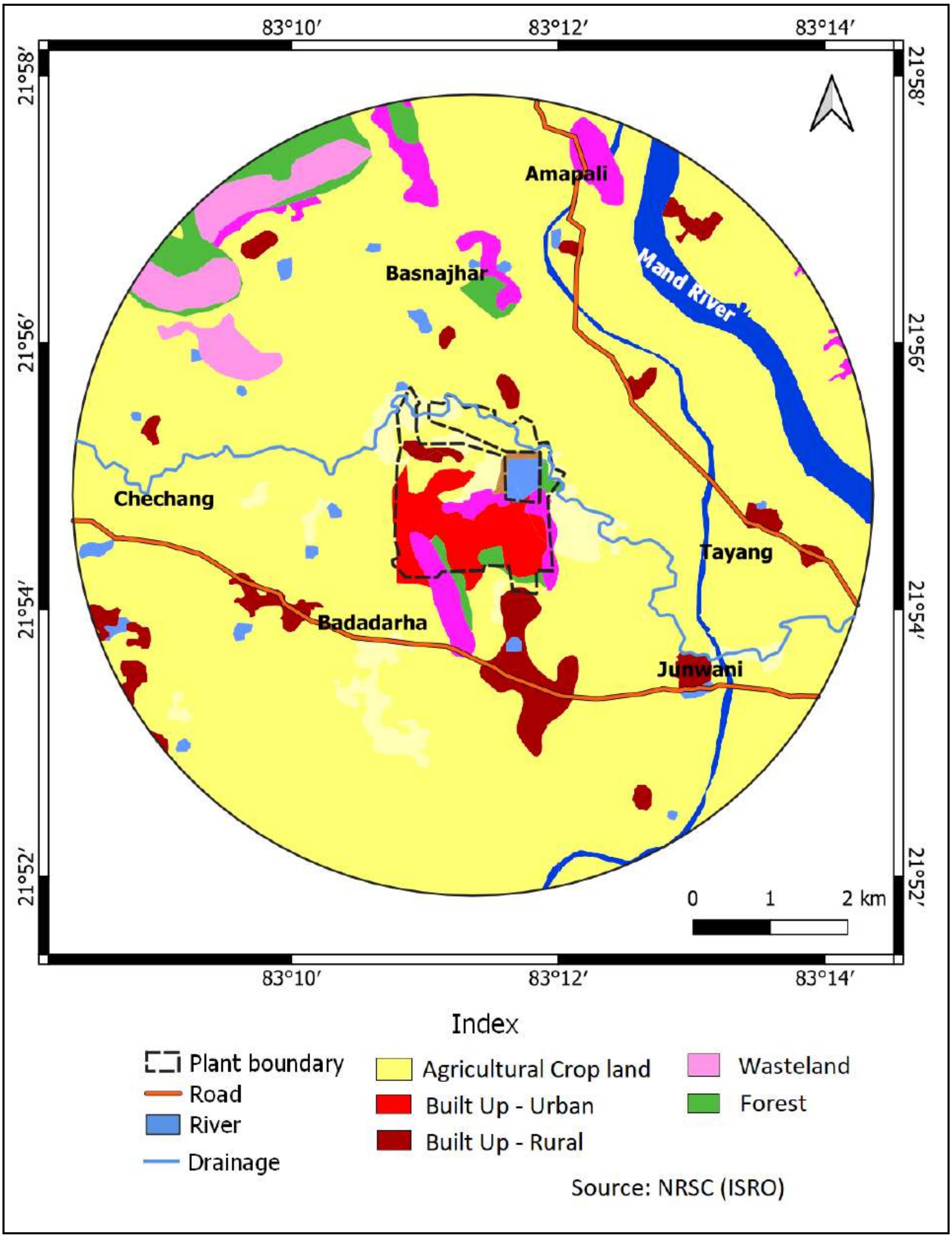


Fig 2.6: Land use map the Study area

2.5 CROPPING PATTERNOF THESTUDYAREA

The study area represents agricultural plain and Green fields and lot of agricultural activities in the surroundings of villages are noticed. Base line data collected from Agriculture Department, Raipur and observed that majority of the area around the 05 Km. radius from the project site is distributed with following crops:

Kharif Crops: - Peddy, Cotton, Wheat, Maize, Jowar, Moong, Sunflower, Soyabean, Groundnut.

Rabi Crops- Gram Wheat, Jow, Tarameera, Sarson, Bhindi, Channa, Pea, Tomato, Palak, Raddish.

Cropping pattern of the area depends upon the climatological conditions and need of the local population of the area. Sometimes cropping pattern may get changed during construction and operational phase because of particular requirement of specified anthropogenic activities.

The study area shows typical agro climatic conditions. In spite of the agriculture being depend mainly on monsoon and underground water, cultivation is the major occupation of this region. The land is mono culture in nature besides the above- mentioned crops, banana, papaya, bar, ginger, methi, tomato, carrots, soya beans etc. are also grown in the area. The growth season of major crops are as shown in table 2.3 given below:-

Table 2.3: Growth seasons of major crops

S.NO.	NAMEOFCROP	PLANTATION MONTH	HARVEST SEASON
1.	PEDDY	JUNE-JULY	OCTOBER
2.	WHEAT	JAN.	MAY
3.	JOWAR	JULY	OCT. -NOV.
4.	COTTON	APRIL	JULY-AUGUST

Most of the crops are grown on small farms (located near the village wells) where generally the work is done manually. A very little mechanized (with tractor) cultivation is also seen at times in certain areas.

2.6 CLIMATE AND SOILS

2.6.1 Climate:

The area enjoys tropical climate with hot summer followed by well-distributed rainfall through South-West monsoon season. The winter commences from December and last till the end of February. The period from March to the end of May is hot season. The monsoon season starts from the middle of June and last till the end of September. The average daily annual normal temperature for the area is 32° C. During the summer Season humidity is lowest i.e. about 32% and is highest during the South-West Monsoon period i.e. about 80%.. About 94 percent of the annual rainfall is received during the period June to October, July and August being the rainiest months. The variation in annual rain fall from year to year is very large on an average the reared 50- 60 rainy days in a year**.** There is only one observatory located in Raipur which is about 240 km away from the study area maintained by Indian Meteorology Department.

2.6.2 Rainfall

During the Year 2010 to 2024 the maximum rainfall recorded 1398.4 mm in the year 2016 and minimum rainfall 866.5 mm had been recorded in the year 2017. Details are as shown in **Table 2.4**. In this year very low rainfall recorder, although ground water of this area falls under safe zone as well as forest is very dense, but precipitation was comparably too less. The average rainfall for last Fifteen year is average 1121.28 mm. Out of the total annual rainfall about 90% of the takes place during the South West Monsoon i.e. among the months June to September. Only 8% of the rainfall takes place during the Winter Season from October to February while only 2% of the rainfall takes place during summer Season.

Table 2.4: Annual Rain Fall (2010-2024)

Sl No	Year	Rain fall (in MM)
1	**2010**	**916.6**
2	**2011**	**884.5**
3	**2012**	**1348.1**
4	**2013**	**1146.7**
5	**2014**	**1423.9**
6	**2015**	**1027.7**
7	**2016**	**1398.4**
8	**2017**	**866.5**
9	**2018**	**1036.6**
10	**2019**	**1157.1**
11	**2020**	**1240**
12	**2021**	**1295.4**
13	**2022**	**889**
14	**2023**	**1225**
15	**2024**	**1050**
Average		**1127.03**

2.7 SOILS

Only one soil categories are present in the study area namely Ultisols, (red & yellow Soils) Soil map of the study area is presented in **Fig 2.7**.

i. 2.7.1: Ultisols

The Indian equivalent of this soil found in study area is Lateritic and red yellow soil. It is exposed in all parts in the area. It is the ultimate product of continuous weathering of minerals in a humid climate. This is a highly weathered and leached acid soil with high levels of clay below top layer. They are characterized by a humus-rich surface horizon and by a layer of clay that has migrated below the surface horizon. This soil has variety of clay minerals but in many cases the dominant mineral is Kaolinite. This clay has good bearing capacity and no shrink-swell property. They are red to yellow in color and are quite acidic having pH less than 5. The red and yellow color results from the accumulation of iron oxide which is highly insoluble in water.

Alluvial Soils are found along the river course.

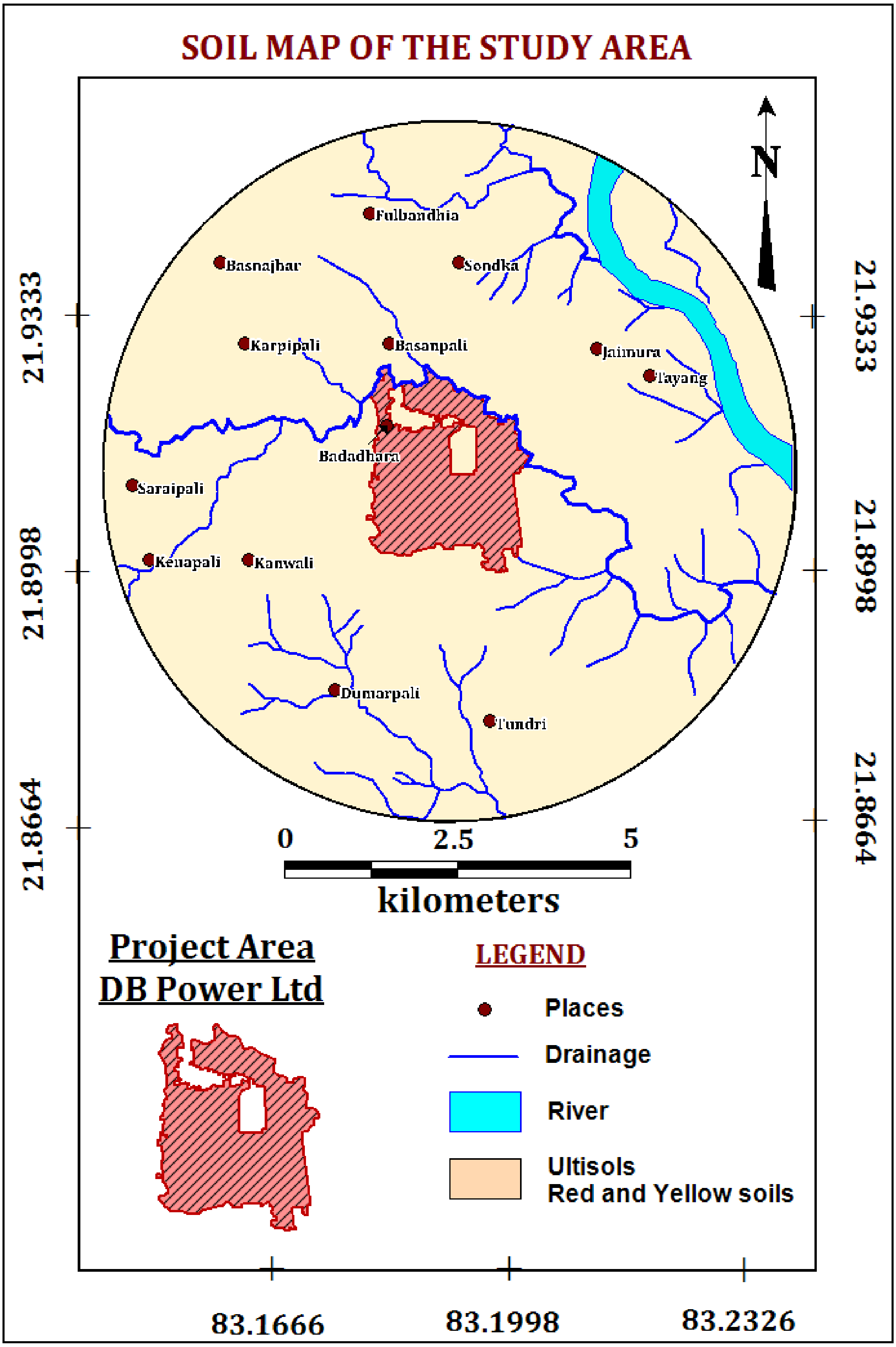


Fig 2.7: Soil map of the Study area

2.8 .DRAINAGE AND GEOMORPHOLOGY

2.8.1 Drainage

The area is drained by tributaries of Mand River. Mand River is flows from North to South-East Direction of project area. Thus the project area is in the interfluves zone of Dantar Nala, Pathari Nala & Mand River. The Mand River is a tributary of the Mahanadi in India. It joins the Mahanadi in Chandarpur, in Chhattisgarh, 28 km from the Odisha border and before the river reaches the Hirakud Dam. This tributary system comes under Mahanadi basin. The drainage pattern in the area is sub-parallel and dendritic in nature with medium drainage density indicating the formations in the area are moderately porous& permeable in nature and are having moderate surface run-off. The drainage density in the central part near to project area is low as compare to remaining area. The drainage map of the study area is presented in **Fig 2.8**.

The study area is characterized by flat undulating terrain with regional slope to the north-east. The average elevation in the southern portion is around 270 m while in the central parts is 310 m amsl. The average land slope of the area is works out about 4m per km from top sheets (1:50000 scale), Survey of India.

Drainage network are universal feature of landscape on the earth. Various environmental factors such as climate, relief, lithology, and vegetation play a considerable role in the development of drainage basin. Watershed geomorphology helps in understanding the physical and hydrological behavior of the river regime.

2.8.2 Geomorphology:

Geo-morphologically the study area comes under Pediplain, Denudation Hills & Floods Plan. The Physiography of the basin is controlled by geological formations namely Sandstone and shale.

The rocks were exposed to renewed post depositional activities and were subjected to intensive and extensive sedimentation, peneplanation and denudation during Pre-Quaternary and Quaternary time. In response to lithology of rocks, the alchemical composition, the irrelative deposition, tectonic setup, they were chiseled into various geomorphic and hydro-geomorphic surfaces; in this case Pediplain and Denudation hills. The feature Denudation Hills are formed in the north-western part of the study area. This unit is controlled by fractures, joints and lineaments. Flood Plain is also developed along the river courses. It is formed by extensive deposition of alluvium by major river system. This unit is normally flat/gently undulating land surface and located along river courses. The elevation of the study area is 210-225 m amsl. Generally the slope is towards the eastern side of the study area.

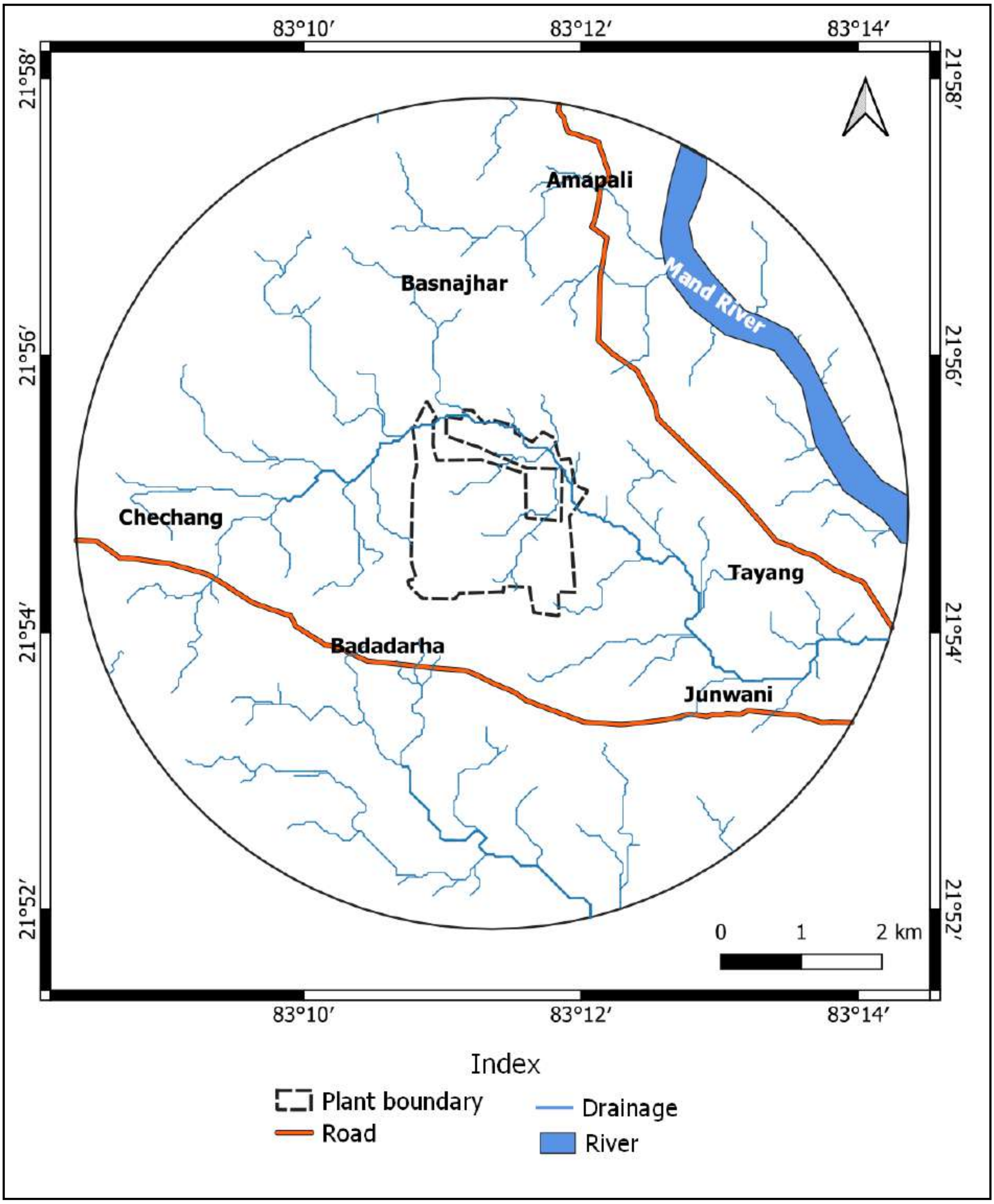


Fig 2.8: Drainage map of the Study area

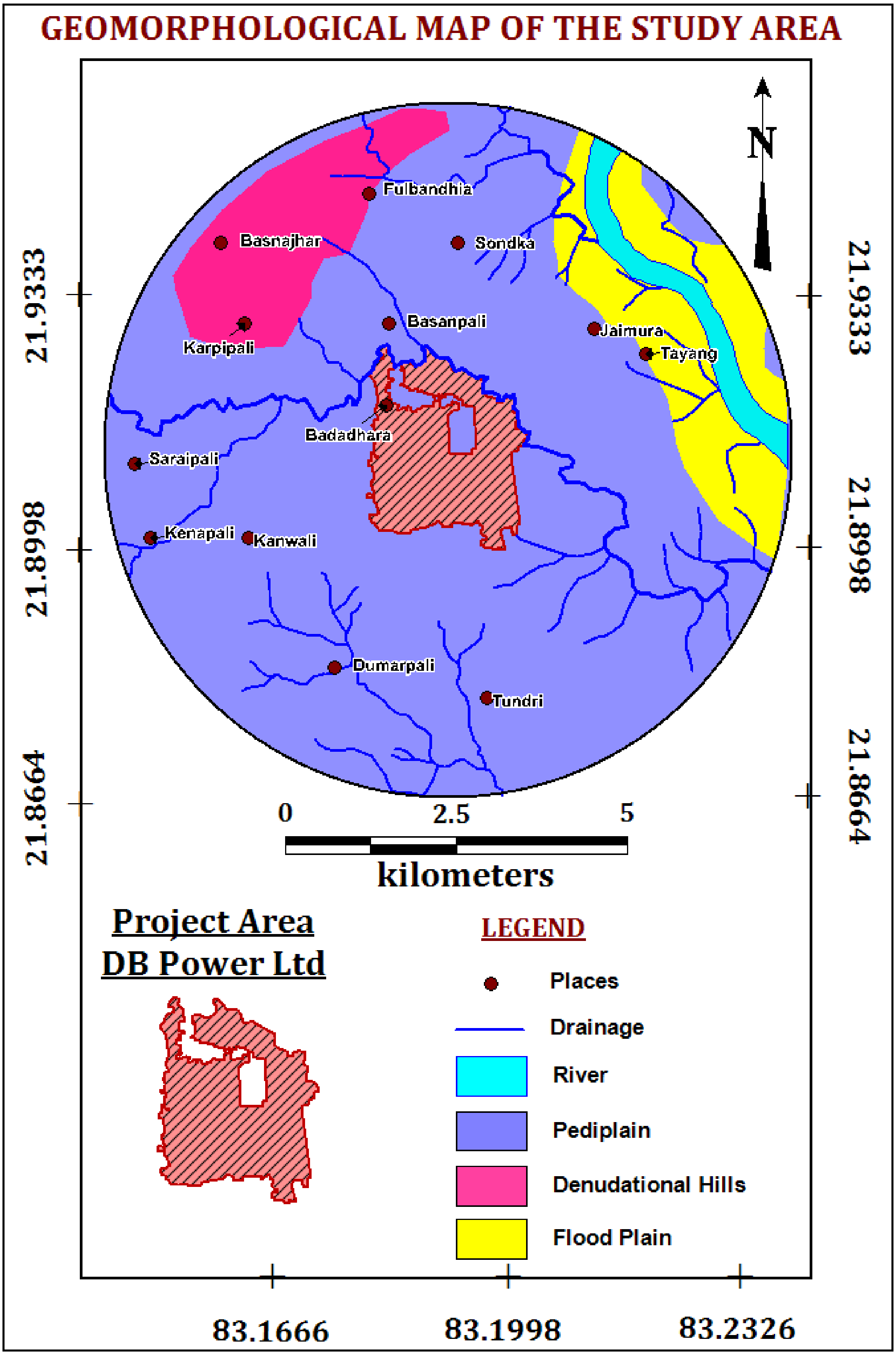


Fig 2.9: Geomorphological map the Study area

3. GEOLOGY

The rocks of the Chhattisgarh super group represented by limestone, Sandstone and shale. A thin layer of alluvium/ laterite belonging to Quaternary period is found on the top surface. The generalized stratigraphic sequence of formation in and around the area is given in **Table 3.1** below.

Table-3.1 Generalized stratigraphic sequence of Janjgir-Champa District

Age	Supergroup	Group	Formation	Lithology
QUATERNARY	Recent to sub-recent		Alluvium and Laterite	Sand, Silt, Clay and lateritic Soil
PROTEROZOIC	Chhattisgarh Supergroup	Raipur Group	Maniyarifm	Gypsiferous Shale
			Hirrifm	Dolomitic limestone
			Tarengafm	Shale & Dolomite
			Chandifm	Limestone & Shale
			Gunderdehifm	Shale
			Raigarh	**Shale,Limest.,Sandstone & Conglomerate**
			Charmuriafm	Limestone & Shale
		Chandrapur Group	Kanspatharfm	Sandstone, Siltstone Shale &Conglomerate
			Choparadihfm	
			Lohardifm	
		Bilari group Sonakhan gr Baya group	Intrusive, lakhadabri, Jonk&Chikhali	Quartz veins, basic dyke, Meta basalt Schist & Gneisses
ARCHAEAN	Basement crystallines- Granite, gneisses ,granulite and Amphibolite			

ii. 3.1.1 Basement Crystalline:

The basement crystallines belongs to Archaean age mainly consists of Granite, gneisses, granulite, phyllites and amphibolites. At places it is intruded by quartz veins. The overlying sedimentaries belongs to Chhattisgarh Super group of rocks. The contact between the Achaeans and the sedimentaries is faulted along the western margin of the basin.

iii. 3.1.2 Chhattisgarh Super group:

The crescent shaped Chhattisgarh basin within the Central Indian Craton can be subdivided into a small Baradwarproto-basin in the east and main Hirriproto -basin in the west. The entire succession of Chhattisgarh super group is divided into three groups. Lowermost Pairi group consists of sandstone, conglomerate, limestone and shale overlies unconformably on crystalline group and developed in the Baradwarproto-basin. The middle Chandrapur group un- conformably overlying the Singhora group or older basement and consists of arenite formations and third is Raipur group at the top, comprising argillite-carbonate suite of rock.

iv. 3.1.2.1 Chandrapur group:

The sequence of Chandrapur group shows a variable thickness ranging from 20 m to as much as 90 m. The maximum thickness is attained in SE part of the basin, thinning westward as well as NE side and directly overlying the crystalline basement.

v. 3.1.2.2 Raipur group:

The Raipur group comprising of predominantly argillite sequence conformably overlies the Chandrapur group with a gradational contact. The group has been subdivided into six sub-division representing three cycles of carbonate-argillite sediments as follows

Charmuria formation- dominantly carbonate sequence and is conformably overlain by Gunderdehi formation.

Gunderdehi formation- dominantly a calcareous argillite purple coloured shale with intercalated limestone is dominant member.

Chandi formation- comprise a major stromatolytic limestone sequence developed around southern side of Hirri sub-basin as arcuate outcrop pattern and is medium to course grained dolomitic limestone.

Tarenga formation- conformably overlies the Chandi formation and comprise cherty shale, calcareous shale and argillaceous dolomite, green and white clay.

Hirri formation- conformably overlies the Tarenga formation in south and Pandaria formation(coalesce of Charmuria, Gunderdehi, Chandi and tarenga formation) in the north. At places intra-formational conglomerate, dolomite and black shale contained gypsum as layer parallel to bedding.

Maniyari formation- named after the river along which the rock is best developed. It represents the closing phase of deposition in Chhattisgarh basin and consists of lower gypsiferous grey siltstone and shale followed by reddish brown calcareous and non-calcareous shale with limestone and dolomite.

vi. **Recent to sub-recent:**

3.1.3.1 Laterite:

Insitu and rolled laterite occurs at many places in isolated patches. These are blanket deposits and few centimeters to few meters in thickness. The ferruginous rock formations of Chhattisgarh Supergroup are responsible for the formation of thin capping of laterite due to leaching and concentration of iron oxide from sandstone of Chandrapur group and also of shale of Raipur group.

3.1.3.2 Alluvium:

The alluvium consists of sand, silt and clay. The sands are fine to coarse grained and poorly sorted. The alluvial soils are mostly of residual in nature and are the weathered products of shale and limestone. The thickness of soil varies from few centimeters to over 10m in places.

3.2 LOCAL GEOLOGY:

The area is underlain by thin layer alluvial/laterite belonging to Quaternary period. Thick pile of rocks belonging to Raipur group of Younger Proterozoic period consisting of shale, underlie the alluvial sediments **(Fig 3.1).** The formation have general strike in NE-SW direction with very low dips of 2°to 3° due NW. Two sets of vertical joints trending in N50°E- S50°W and NE-SW direction are prominent in the area. The gap between joint plain is large from few centimeters to 5meters and are mostly interconnected. The lithological characters of various formations present in the study area are described as follows:

3.2.1: Raigarh Formation: The formation is widely developed in Baradwar sub-basin, comprising dominantly friable calcareous purple shale with limestone intercalations. The formation can be classified into a lower shale flaggy carbonate-arenite member which is followed upward by a purple calcareous shale member. Unlike Hirri sub-basin, the bedded flaggy limestone gradually changes in its outcrop width and further east it pinches out occurring as pockets and lenses in the purple shale above the Chandarpur arenite. At places, arenite lenses and bands are also present in the member. The upper member is mainly purple calcareous shale with limestone as well as arenite lenses. Mud cracks and ripple marks are the common structures. One of the mappablearenite members is Dhurkotarenite occurring within the shale and comprises conglomerates and sandstone. Conglomerate consists of clasts of quartz, shale, jasper and chert embedded in siliceous matrix. This grades to a sandstone which is coarse to medium grained containing argillaceous and calcareous matrix. The dark grey dolomite in subsurface grades to light grey to cement limestone. A thin friable green sandstone unit occurs in SariaBorda area of Baramkela block. They also described presence of dolostone around Raigarh town. Some Stromatolitic limestones within this formation in Raigarh district indicate extension of Bamandih Formation upto Raigarh district. In the study area there are Six types of rock formation are found.

1. Granite Gneiss 2. Lohardih (Conglomarate) 3. Kansapathar (Sandstone)

4. Gunderdehi (Shale) 5. Talcher (Fine Grained sand stone)

6. Barakar (Sandstone with coal)

About 70% of the study area is covered by Gunderdehi Shale Formation. It covers in East, west and South part of the area.

Conglomarate/ Grit rock types found in DB Power plant and central part of the study area.

Barakar sand stone and fine grained sand stone fount in nortern part of the study area.

Kansapathar Sandstone found in North-western and South-western part on the study area.

vii. 3.2.2: Soil/Alluvium:

Along The river course is underlain by alluvial residual soil covers which are loam and sandy loam. The thickness of overburden varies from 2 to 6 m. In order to understand the geological sequence fully well in the project site geological map of study area are present in **Fig 3.1.**

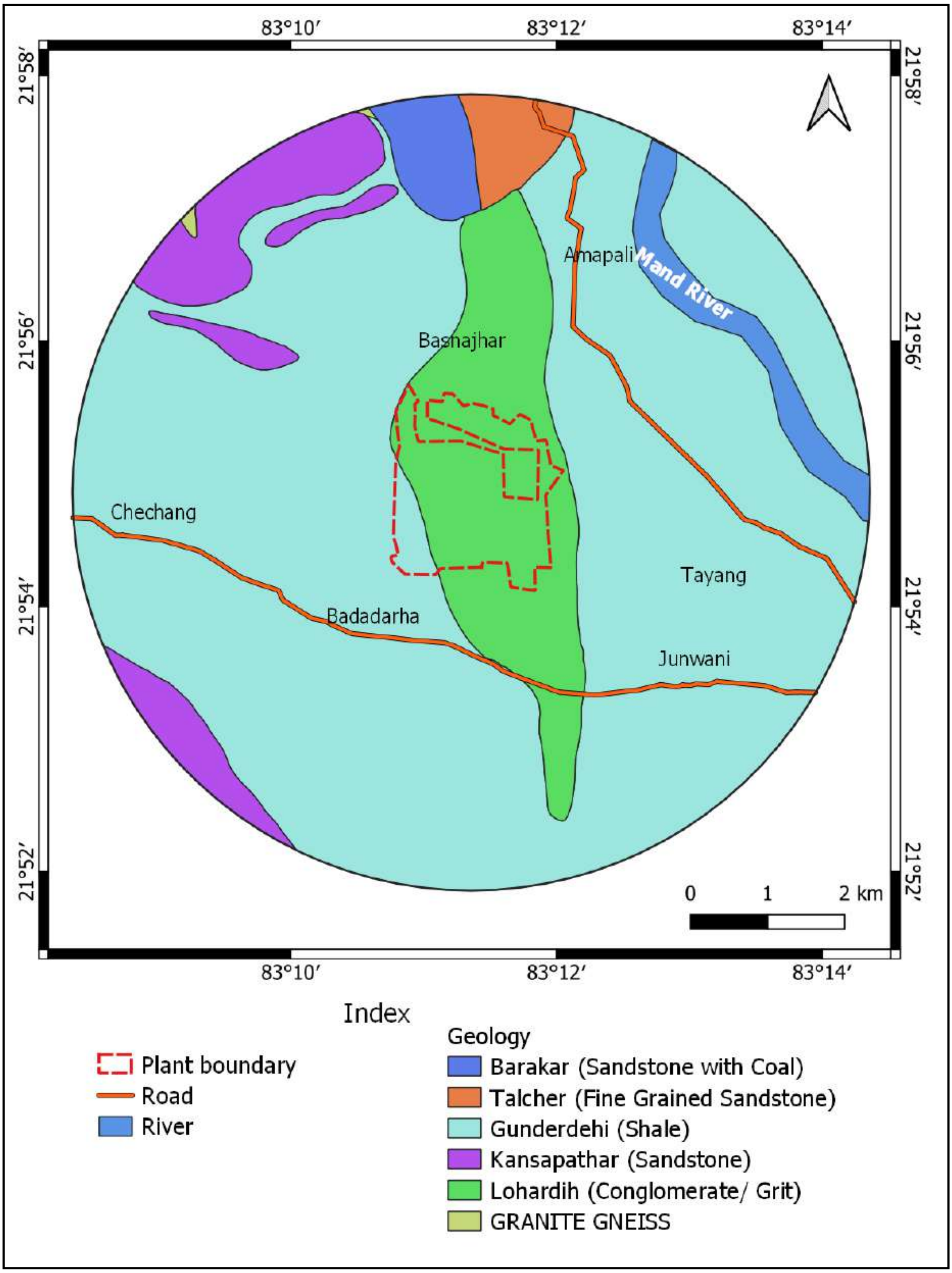


Fig 3.1: Geological map of the Study area

4. HYDROGEOLOGY

4.1 INTRODUCTION

Ground water occurrence is highly influenced by underlying geological formations and their hydro-geological characteristic. Weathered and fractured zones present in the rocks or formation provides scope of ground water occurrence, storage and its movement. Hydrogeology of the area broadly describes the disposition of aquifers, occurrence of ground water its movement, yield potential of water bearing formations, groundwater regime conditions in space and time etc. Detailed hydro-geological investigation has been carried out in and around the project area for elucidating the hydrogeology and establishing the interrelationships between various hydraulic parameters.

4.2 GROUND WATER OCCURRENCE AND AQUIFER SYSTEMS

In the study area, ground water occurs under phreatic or unconfined condition in weathered portion of rocks and semi-confined to confined conditions in fractures/cavernous part of rocks i.e. Sandstone, Conglomerate/ Grit and shale at depths. The shallow aquifers occur within an average depth of 25 m. The configuration of water table in the shallow aquifer follows the topography due to which the ground water movement is generally towards valleys or topographic low. The water bodies such as tanks, canals and streams also influence the occurrence and movement of ground water in shallow aquifers. The shallow aquifers of the area are mostly developed by way of dug wells in the area with depth ranges from 7 to 16 m. In general the yield of dug wells ranges from 25 to 40m^3/day. Deeper aquifer in the area mainly formed of Gunderdehi Shale, Konsapathar sandtone and Lohardih Conglomerate/grit. The deeper aquifers of the area are mostly developed by way of bore wells with depth range from 50 to 80 m. In general, the yield of bore wells ranges from 1 to 5 lps.

4.3 WATER TABLE CONFIGURATION AND FLOW DIRECTION

The flow direction is of two directions i.e. in western, South and northern part of the study area it is towards East Direction and in central and east part of the study area it is towards North-East direction indicating the surface water divide in the central portion of the study area near to project area.

The water table elevation in the study area ranges between 210 to 235 mamsl indicating more or less the plain terrain. North-Eastern part of the area is having low altitude of water table elevation i.e. 210 mamsl while water table elevation increases to western side & is maximum i.e. 235 mamsl. The gradient of water table is variable. In the area the yield ranges between 2 to 5 lps in Central, Northern, sothern indicating the area is covered by sandstone and Conglomerate/grit while in major part of the area it is 1-3 lps which is covered with shale. Contour map & Hydrogeological map is given at **Fig.4.1 and 4.2 r**espectively.

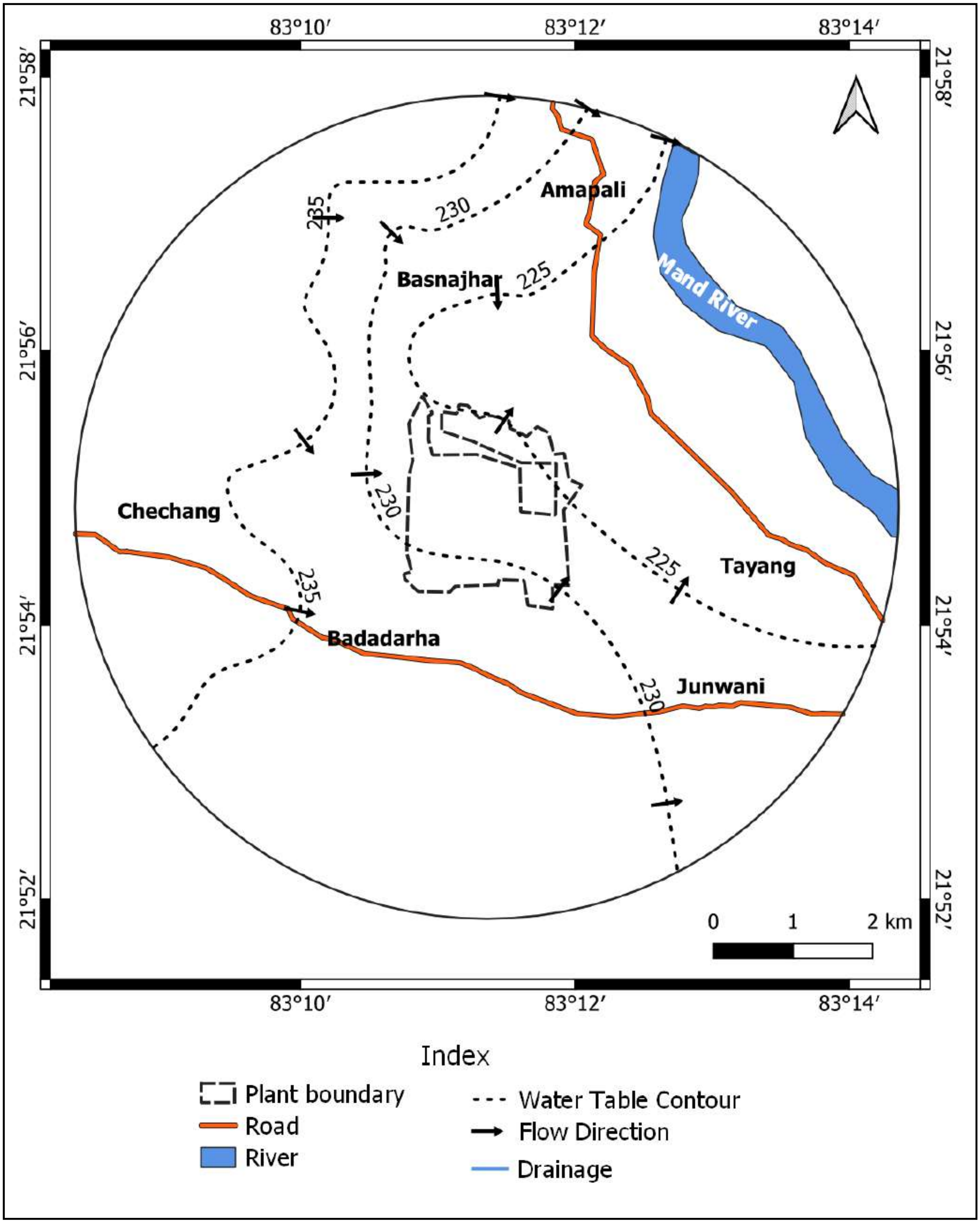


Fig 4.1 Water table contour and ground water flow direction

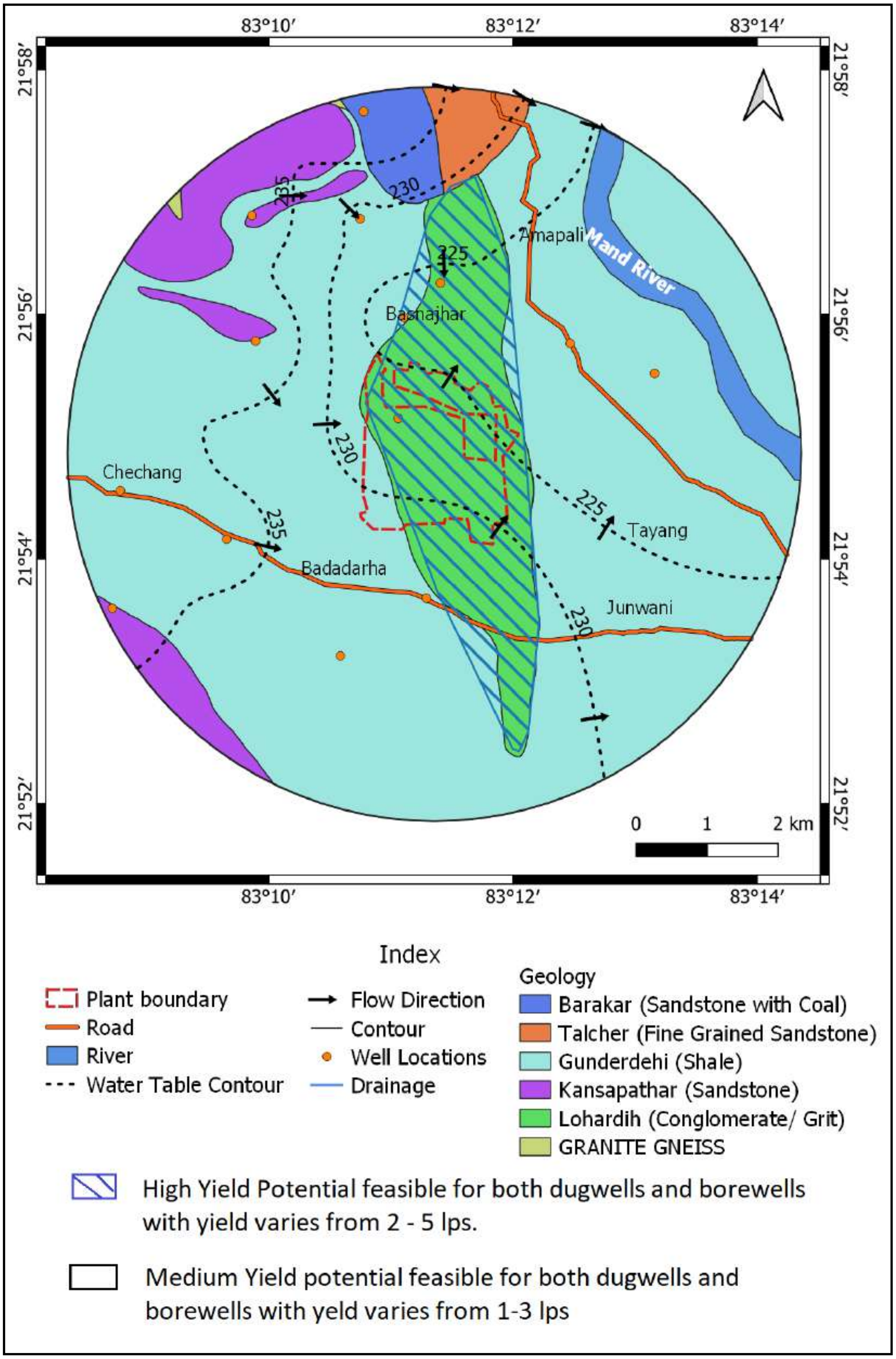
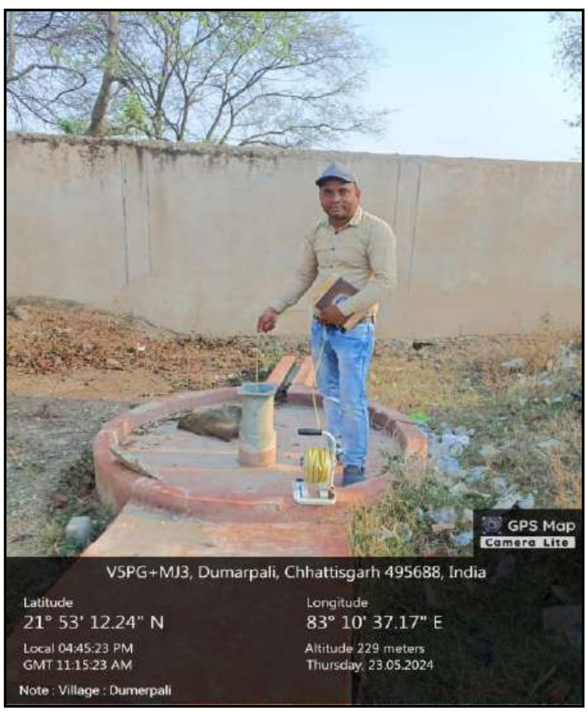


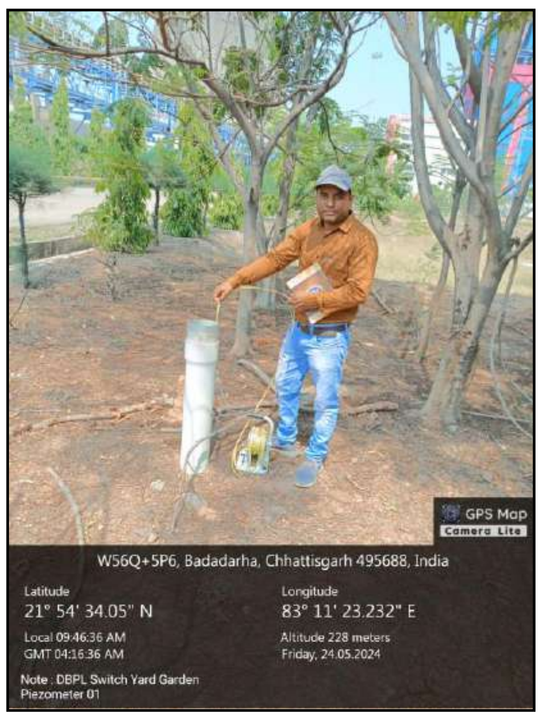
Fig 4.2: Hydrogeological Map of the Study area

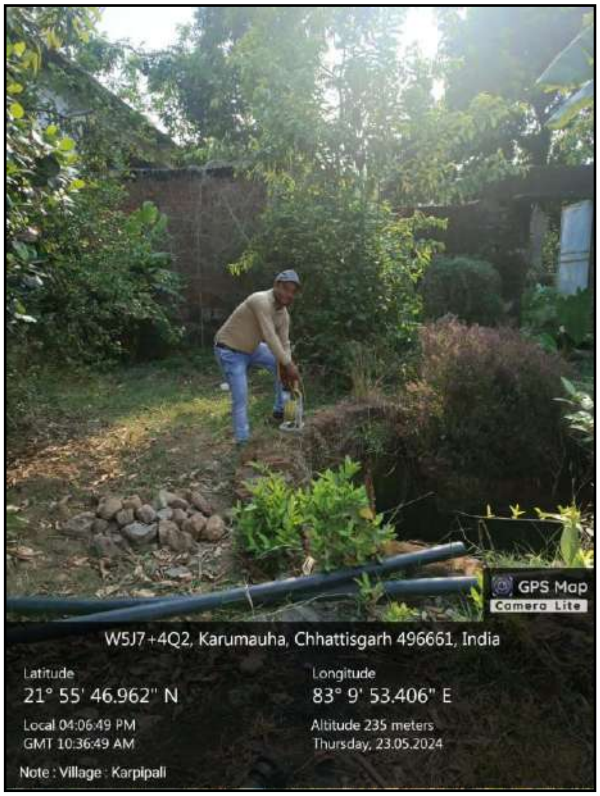
4.4 GROUND WATER REGIME MONITORING

The monitoring of ground water regime is of immense help in management of the water resources as well as protecting the ground water storage. Such study envisages regular monitoring of water level at selected locations to observe the changes in ground water level and variation in ground water quality with respect to time and space. It is pertinent to say that any development of ground water resources in a particular area would bring changes in ground water regime if input to the ground water system is not balanced with output from the same system.

The study aims to observe the changes in ground water levels and quality with respect to the ground water development, which in turn would help in identifying the appropriate measures to be adopted for artificial recharge to ground water and neutralize the impact of the excessive ground water development. In the present report, the monitored data has been presented and the overall picture of ground water regime behavior due to continuous abstraction of ground water has been analyzed for the year 2019-20. Ground water regime monitoring was carried out two times in a year i.e. May, and November. The water level data of the month of May and November are taken as levels of pre-monsoon and post-monsoon respectively, Data presented and analysed for pre and postmonsoon water level data. The photographs of the some monitoring stations are indicated in **plate: I**, which was taken during the collection of water level of ground water in two seasons.



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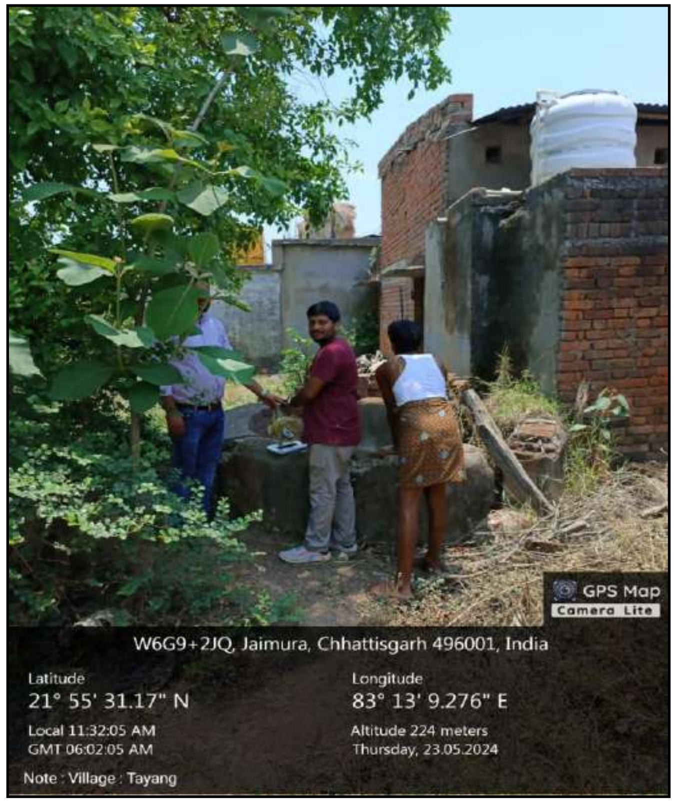
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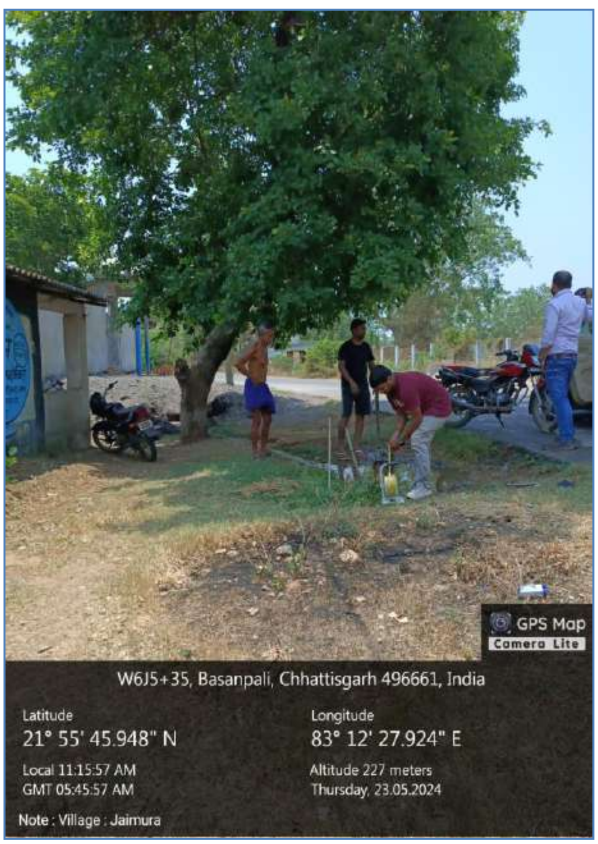
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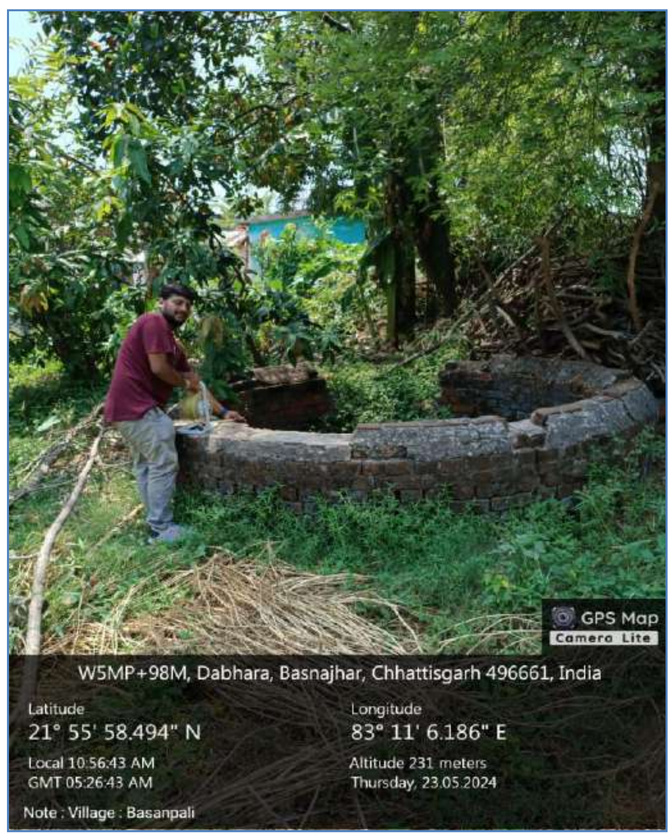
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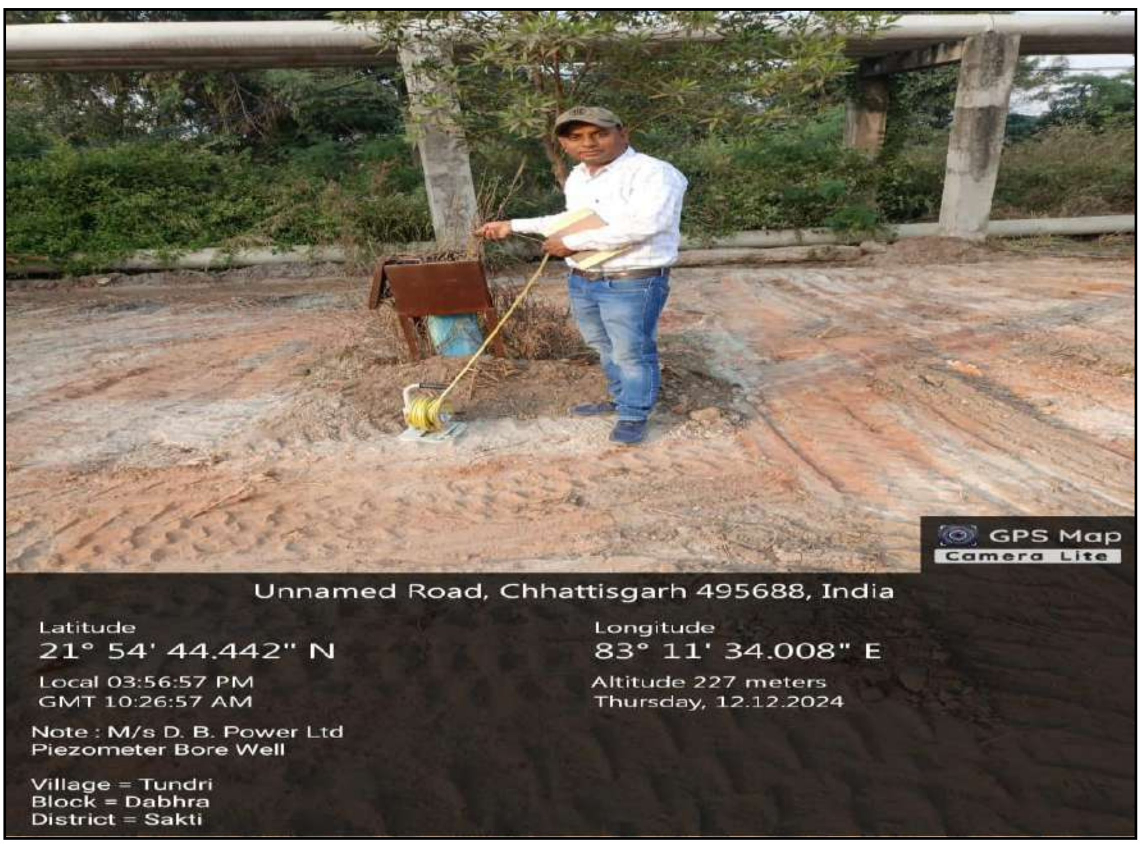
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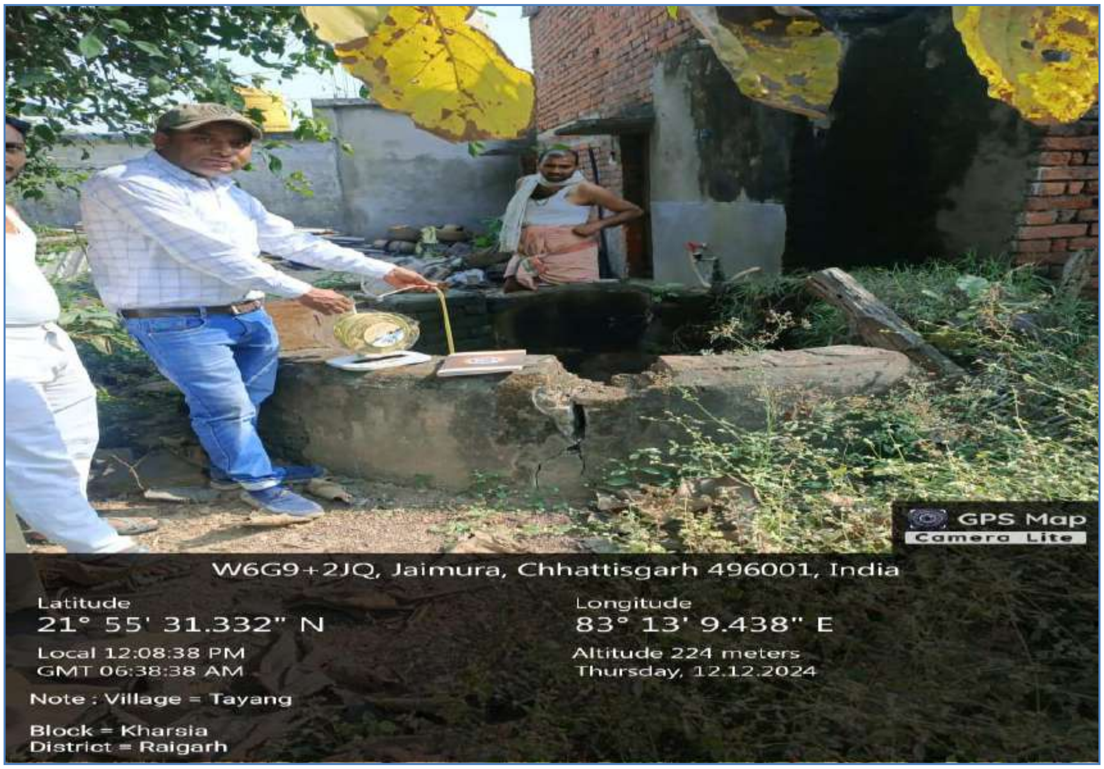
Unnamed Road, Chhattisgarh 495688, India
Latitude
21° 54' 44.442" N
Local 03:56:57 PM
GMT 10:26:57 AM
Longitude
83° 11' 34.008" E
Altitude 227 meters
Thursday, 12.12.2024
Note : M/s D. B. Power Ltd
Piezometer Bore Well
Village = Tundri
Block = Dabhra
District = Sakti

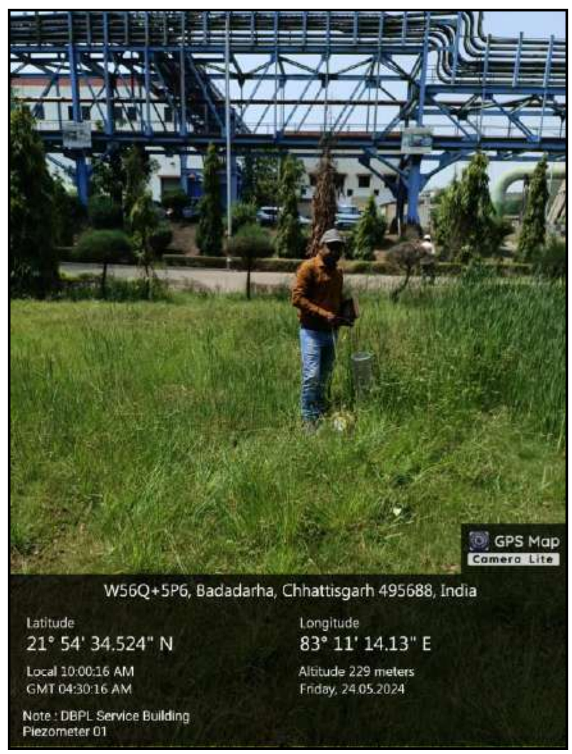

GPS Map
Camera Lite
W6G9+2JQ, Jaimura, Chhattisgarh 496001, India
Latitude
21° 55' 31.332" N
Longitude
83° 13' 9.438" E
Local 12:08:38 PM
GMT 06:38:38 AM
Altitude 224 meters
Thursday, 12.12.2024
Note : Village = Tayang
Block = Kharsia
District = Raigarh


GPS Map
Camera Lite
W5QR+25P, Nandeli Rd, Basnajhar, Chhattisgarh 496661, India
Latitude
21° 56' 15.072" N
Longitude
83° 11' 24.012" E
Local 11:22:23 AM
GMT 05:52:23 AM
Altitude 236 meters
Thursday, 12.12.2024
Note : Village = Sondka
Block = Kharsia
District = Raigarh


GPS Map
Camera Lite
W56Q+5P6, Badadarha, Chhattisgarh 495688, India
Latitude
21° 54' 34.752" N
Local 04:08:44 PM
GMT 10:38:44 AM
Longitude
83° 11' 14.262" E
Altitude 229 meters
Thursday, 12.12.2024
Note : M/s D. B. Power Ltd
Piezometer Bore Well
Near Service Building
Village = Tundri
Block = Dabhra
District = Sakti


GPS Map
Camera Lite
W56Q+5P6, Badadarha, Chhattisgarh 495688, India
Latitude
21° 54' 34.488" N
Local 10:04:36 AM
GMT 04:34:36 AM
Longitude
83° 11' 12.234" E
Altitude 229 meters
Friday, 24.05.2024
Note : DBPL Service Building
Piezometer 03


HOSE STATION-05
GPS Map
Camera Lite
W56Q+5P6, Badadarha, Chhattisgarh 495688, India
Latitude
21° 54' 34.704" N
Local 10:02:07 AM
GMT 04:32:07 AM
Longitude
83° 11' 13.98" E
Altitude 229 meters
Friday, 24.05.2024
Note : DBPL Service Building
Piezometer 02


GPS Map
Camera Lite
W56Q+5P6, Badadarha, Chhattisgarh 495688, India
Latitude
21° 54' 34.524" N
Local 10:00:16 AM
GMT 04:30:16 AM
Longitude
83° 11' 14.13" E
Altitude 229 meters
Friday, 24.05.2024
Note : DBPL Service Building
Piezometer 01

4.4.1 Distribution of monitoring stations

To study the change in ground water regime in and around study area, total of 14 monitoring wells were established at different locations for regular monitoring of ground water level. The basic details of these monitoring wells are presented in **Table 4.1** and their distribution is presented in **Fig 4.3.**

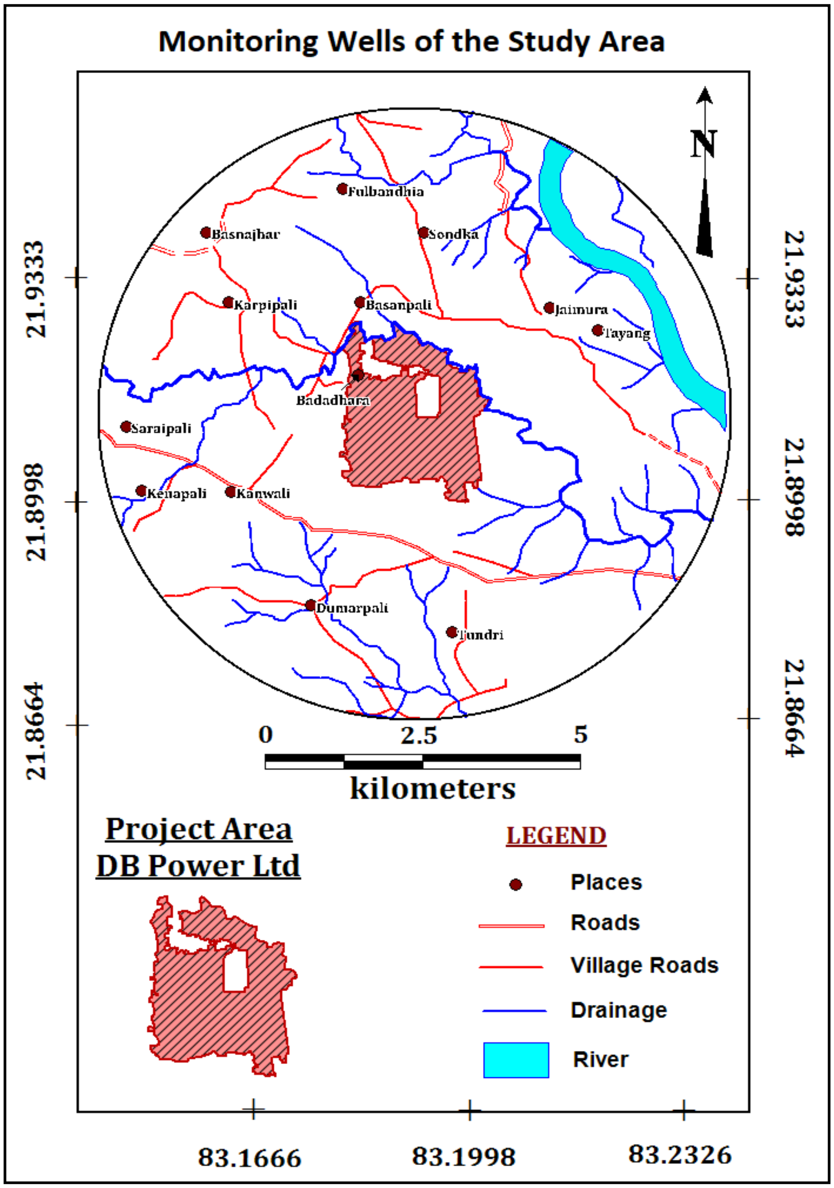


Fig 4.3: location of monitoring wells of the Study area

Table 4.1 : Basic details of established monitoring wells

Sl No.	Village	G.P.	Block	District	RL Of ground level (mamsl)	DIA (m)
1	Amapali	Kherpali	Kharsia	Raigarh	232	6 Inch
2	Sondka	Sondka	Kharsia	Raigarh	233	6 Inch
3	Badadhara	Badadhara	Dabhra	Shakti	231	6 inch
4	Basnajhar	Basnajhar	Kharsia	Raigarh	241	6 inch
5	Fulbandhia	Pandripani	Kharsia	Raigarh	232	6 Inch
6	Karpipali	Kanmuna	Kharsia	Raigarh	234	6 Inch
7	Tundri	Tundri	Dabhra	Shakti	236	6 Inch
8	Basanpali	Sondka	Kharsia	Raigarh	223	2.7 Mtr
9	Kenapali	Kenapali	Dabhra	Shakti	237	6 Inch
10	Saraipali	Saraipali	Dabhra	Shakti	239	6 Inch
11	Kanwali	Kanwali	Dabhra	Shakti	232	6 Inch
12	Dumarpali	Dumarpali	Dabhra	Shakti	232	6 Inch
13	Tayang	Jaimura	Kharsia	Raigarh	221	2.2 mtr
14	Jaimura	Jaimura	Kharsia	Raigarh	224	6 inch

5. ANALYSIS OF WATER LEVELS

5.1 INTRODUCTION

Ground water levels or piezometric heads is resultant of all input and output to ground water system with defined boundaries. Ground water is a dynamic system. The parameters required to be monitored during ground water regime monitoring are ground water level or piezometric heads and chemical quality. These are subject to change due to natural and or anthropogenic causes with respect to dime and space. Rainfall, natural recharge to ground water, ground water draft and seepage from surface water bodies plays important roles in changes in ground water level fluctuations. The quality of water is being recharge, nature of host rock and dilution/concentration of ground water impacts the changes in ground water quality. Monitoring of ground water quality and temperature are one of the essential components for ground water regime monitoring. The monitored data is analyzed in time and space to assess the changes and a relationship is established to determine the impact of ground water development and recharge to the system.

5.2 GROUND WATER LEVELS:

The configuration of the water table depends upon by topography, geology, climate, water yielding and water bearing properties of rocks in the zones of aeration and saturation, which control ground water recharge. The upper surface of the zone of saturation is the water table. In case of wells penetrating confined aquifers, the water level represents the pressure or piezometric head at that point. Ground water monitoring network planning is basic step for ground water regime monitoring and further, for assessment of groundwater resources and planning for development and management programs. The groundwater, being hidden resource can only be analyzed through its signatures in the form of water level fluctuations. The systematic and regular monitoring of groundwater levels can bring out the changes taking place in the regime. The data so generated are of immense help for regional groundwater flow modeling for planning and management of ground water resources and its sustainability. Modeling provides necessary information to the user agencies to frame contingency plans in case of unfavorable groundwater recharge situation.

The data have also immense utility in implementing the legal provisions of groundwater regulation, and to substantiate expert advice in legal issues arising out of conflicting interests of ground water users. Ground water regime data of different seasons have been collected for the year 2023, analyzed for every set of measurements and discussed with maps in following sections.

viii. 5.2.1 Analysis of water levels (2024)

The water level data collected two times during the year 2024 from the observation wells in core zone as well as buffer zone is presented in **Table 5.1.**

Table 5.1: Depth to water levels monitored in the study area (during 2024)

Sl No.	Village	Latitudes	Longitudes	Post monsoon depth to water 2024 level (mbgl)	Pre monsoon depth to water level 2024 (mbgl)	Fluctuation May 2024 Vs Nov 2024 (m)	RL of pre monsoon water level (mamsl)
1	Amapali	21^o 57’ 39.5”	83^o 10’ 46.7”	5.3	8.24	2.94	223.76
2	Sondka	21^o 56’ 15.4”	83^o 11’ 24.3”	6.95	10.84	3.89	222.16
3	Badadhara	21^o 55’ 09.0”	83^o 11’ 03.6”	3.30	5.98	2.68	225.02
4	Basnajhar	21^o 56’ 48.5”	83^o 09’ 51.8”	5.34	7.44	2.1	237.56
5	Fulbandhia	21^o 56’ 46.9”	83^o 10’ 44.9”	5.8	7.85	2.05	228.15
6	Karpipali	21^o 55’ 47.0”	83^o 09’ 53.6”	2.66	6.35	3.69	240.65
7	Tundri	21^o 53’ 40.9”	83^o 11’ 17.4”	4.33	7.45	3.12	237.55
8	Basanpali	21^o 55’ 58.5”	83^o 11’ 06.3”	1.6	4.03	2.43	218.97
9	Kenapali	21^o 53’ 35.9”	83^o 08’ 43.3”	5.6	7.35	1.75	235.65
10	Saraipali	21^o 54’ 33.6”	83^o 08’ 47.2”	4.6	6.84	2.24	237.16
11	Kanwali	21^o 54’ 09.8”	83^o 09’ 39.4”	7.13	11.87	4.74	234.13

Sl No.	Village	Latitudes	Longitudes	Post monsoon depth to water 2024 level (mbgl)	Pre monsoon depth to water level 2024 (mbgl)	Fluctuation May 2024 Vs Nov 2024 (m)	RL of pre monsoon water level (mamsl)
12	Dumarpali	21° 53’ 12.6”	83° 10’ 35.2”	2.20	6.8	4.6	226.2
13	Tayang	21° 55’ 31.1”	83° 13’ 09.5”	6.84	9.99	3.15	211.01
14	Jaimura	21° 55’ 45.8”	83° 12’ 28.0”	8.32	11.44	3.12	212.56

5.2.1.1 Post-monsoon Depth to Water level (November’ 2024)

The depth to water level map has been prepared based on ground water monitoring data of Nov 2024. On perusal of the data and map given at Fig.5.1, it is observed that the overall depth to water level remains between 1.6 and 8.32 meters below ground level. The post-monsoon depths to water level range of 4 to 6 mbgl are observed at Kenapali, Saraipali, Amapali, Basnajhar & Fulbandhia villages. Ground water levels more than 6 mbgl are observed in the villages Kanwali, Sondaka, Tayang and Jaimura Villages. Water level less than 4 mbgl are observed in the remaining parts of the study area.

5.2.1.2 Pre-monsoon Depth to Water level (May’ 2024)

The depth to water level map has been prepared based on ground water monitoring data of May 2024. From the perusal of Table 5.1, it is observed that the overall depth to water level remains between 4.03 to 11.87 meters below ground level. The pre-monsoon depth to water levels ranges Below 5 mbgl is observed in Basanpali villages. Water levels are between 5 - 8 mbgl is observed in the villages namely Basnajhar, Karpipali Saraipali, Kenapali, Dumerpali, Karpipali, Tundri & Fulbandhia villages. Water level greater than 8 mbgl is observed in the remaining parts of the study area as shown in Fig 5.2.

5.2.1.3 Seasonal water level fluctuation (Nov.’ 2024 Vs May’ 2024).

Based on the pre-monsoon & post-monsoon data water level fluctuation in the study area is calculated & respective map (as shown in Fig 5.3) has also been prepared. It is observed that in the study area water level fluctuation varies from 1.75 to 4.74 meters.

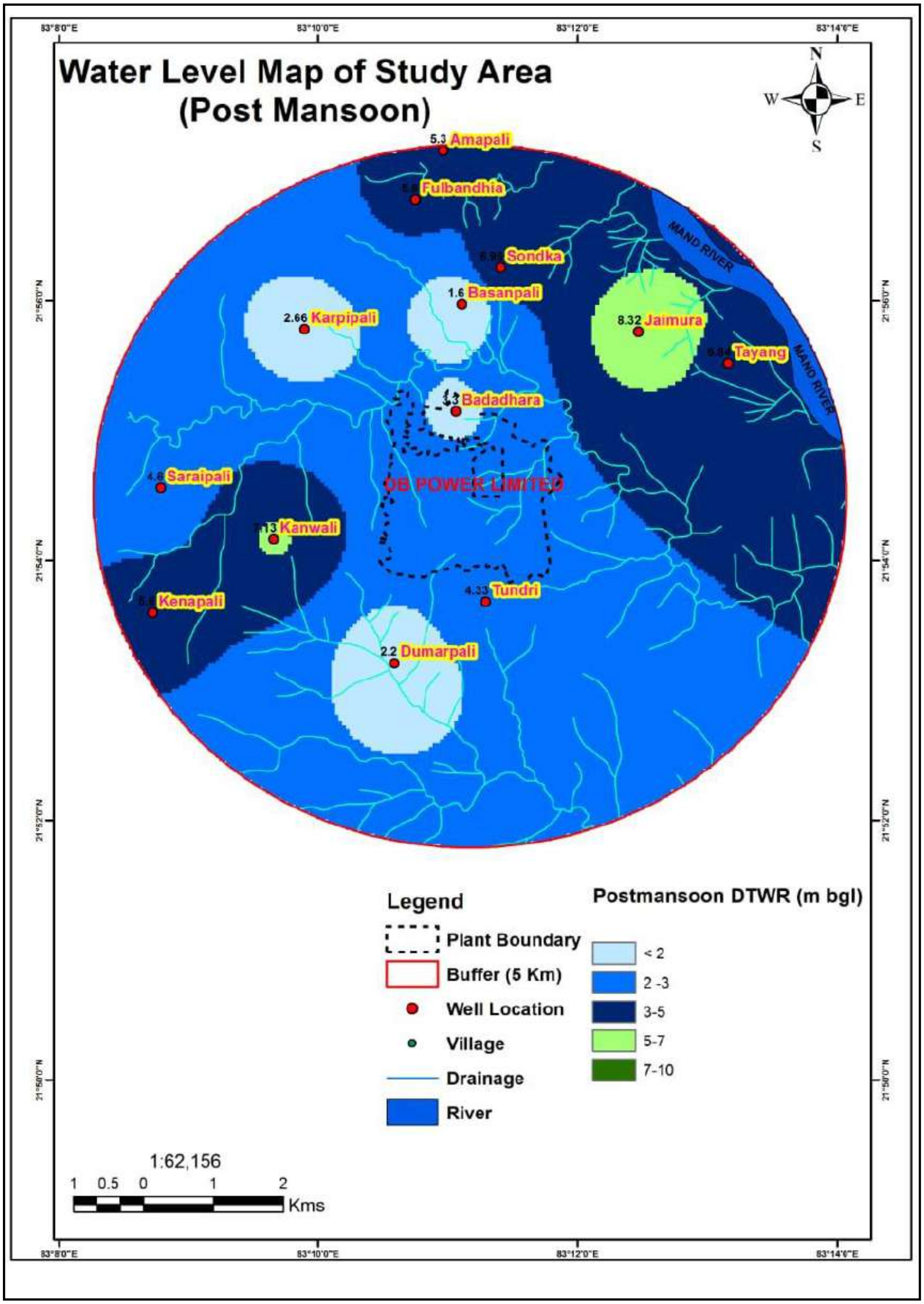


Fig.5.1: Post-monsoon Depth to Water level map (Nov'2024)

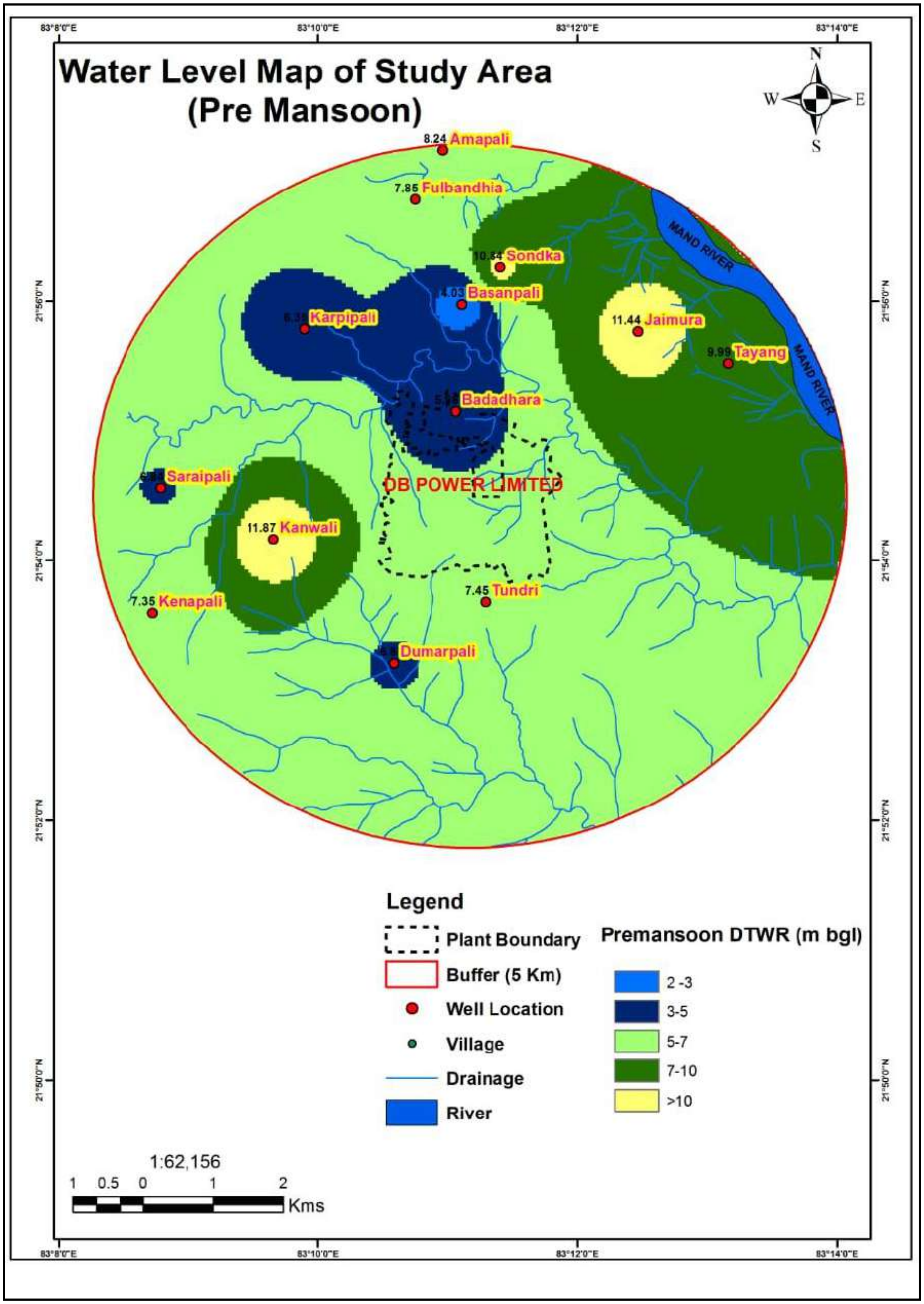


Fig.5.2: Pre-monsoon Depth to Water level map (May'2024)

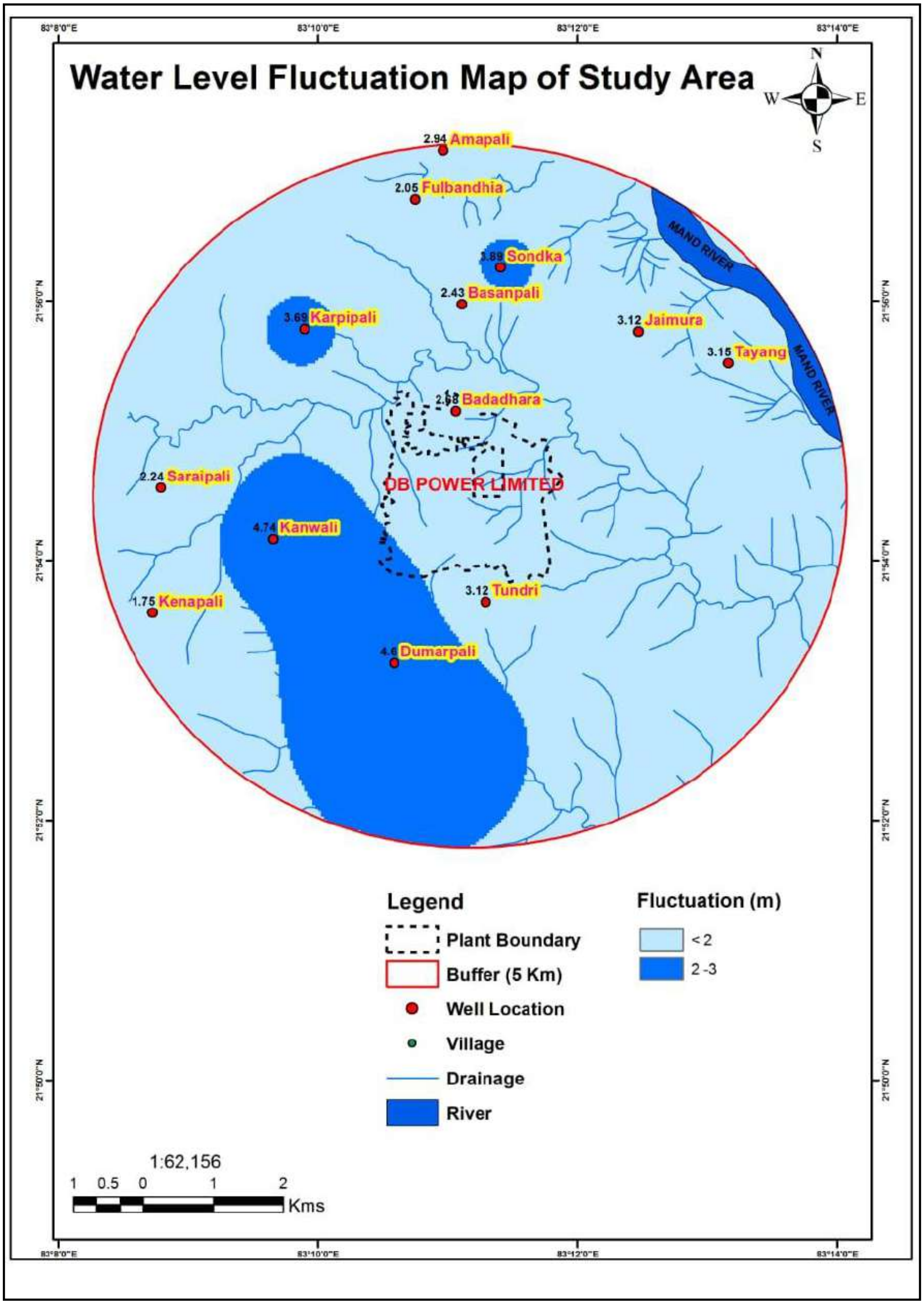
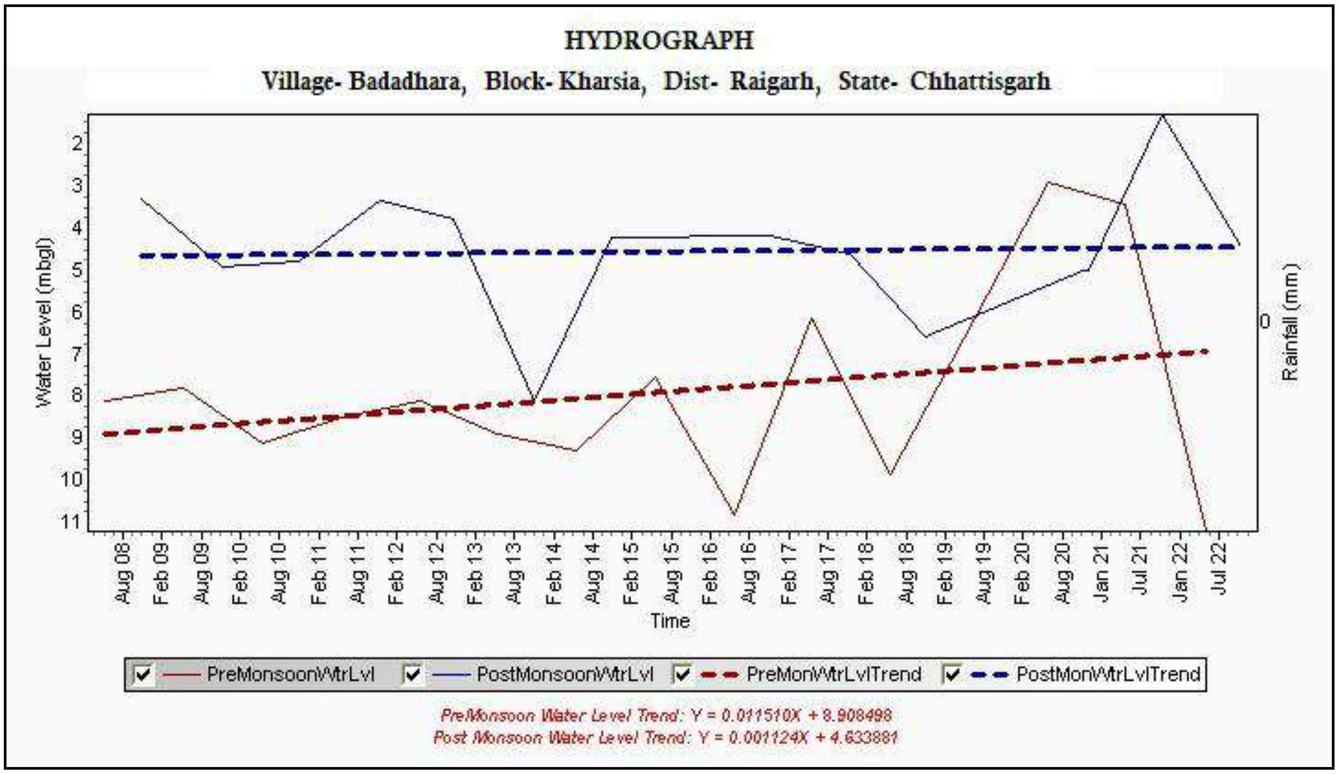
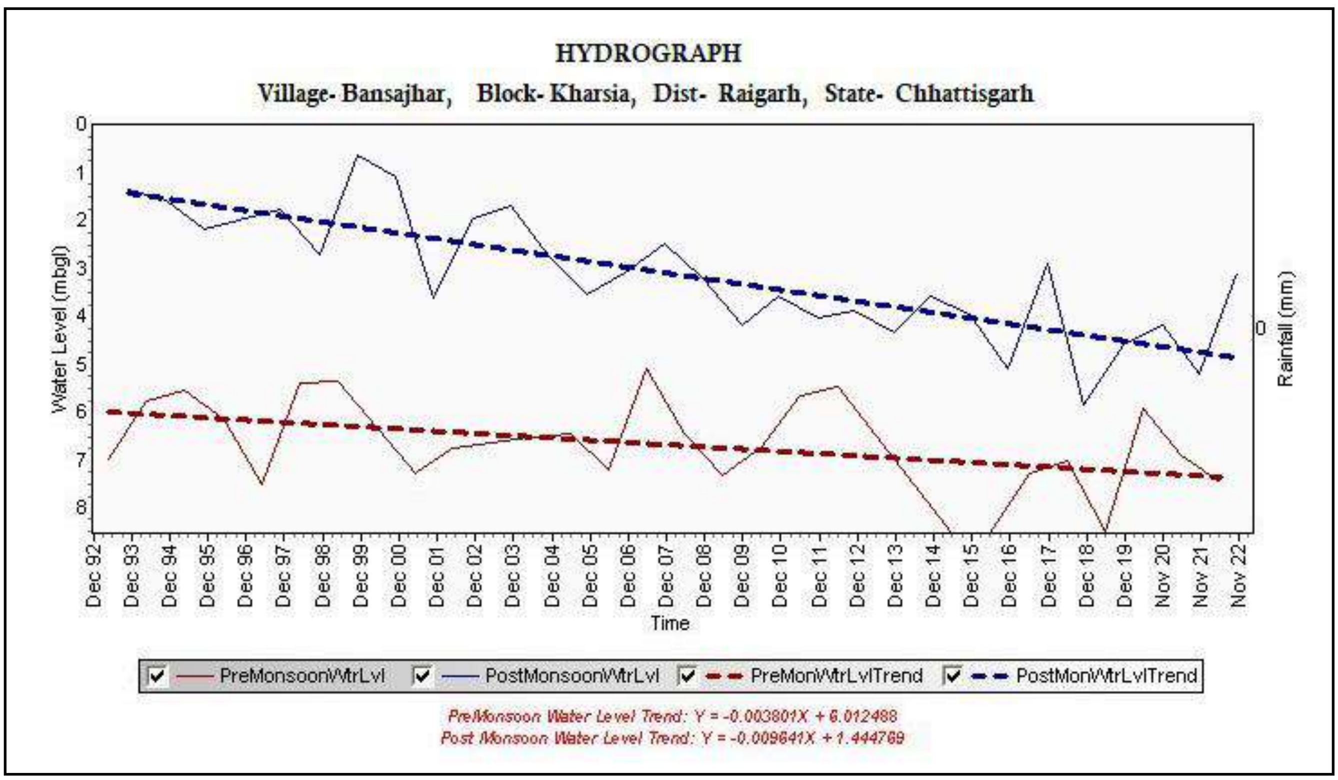


Fig 5.3: Seasonal Water Level Fluctuation map (Nov.' 2024 Vs May' 2024)

5.2. Ground Water Trends or Hydrographs of the Study Area





5.3 COMPARISONS OF WATER LEVELS OVER THE YEARS

The ground water levels in the area have been monitored 2 times in a year as mentioned earlier. Mean water level (2023) has been compared with water levels of year 2024, for pre-monsoon and post-monsoon period separately in the study area, to assess the change in ground water levels over the years. The said water levels of year 2023 (mean) compared with respect to year 2024 both for pre-monsoon and post-monsoon period separately for core and buffer zones are presented in Table 5.2.

Water level Changes

The water level data for last two years have been analysed to assess decline or rise in the ground water level through fluctuation in water level within the study area. Ground water level data for year 2024 has been analyzed for core and buffer zones and changes in water levels through fluctuation with respect to the mean water levels (2023) for different seasons is observed and presented in Table 5.2.

Post-monsoon depth to water level Trend:

While comparing mean pre-monsoon average water levels of 2023 with that of 2024 (Table 5.2) , it is found that all the villages in core zone (5 Km Radius) which are considered for analysis showing increase in the range of 0.18 to 0.33 m. remaining 63% villages which are showing decrease of water level in the ranges of -0.43 to-1.93 m. From the table No. 5.2 it is observed that all the study area Maximum study area ground water level is decreased in the post-monsoon time.

Table 5.2: Comparisons of water levels (2023) with reference to water levels of the year 2024

Sn	Village	pre-monsoon (May 23) (mbgl)	post-monsoon (Nov 23) (mbgl)	pre-monsoon May 2024 (mbgl)	Post-monsoon Nov 2024 (mbgl	Change(m) Pre-monsoon	Change (m) post-monsoon
5 Km Radius							
1	Amapali	6.5	4.8	8.24	5.3	-1.74	-0.5
2	Sondka	8.21	5.87	10.84	6.95	-2.63	-1.08

3	Badadhara	4.72	2.87	5.98	3.30	-1.26	-0.43
4	Basnajhar	6.87	5.67	7.44	5.34	-0.57	0.33
5	Fulbandhia	6.3	5.2	7.85	5.8	-1.55	-0.6
6	Karpipali	6.8	2.98	6.35	2.66	0.45	0.32
7	Tundri	5.65	2.57	7.45	4.33	-1.8	-1.76
8	Basanpali	2.51	0.92	4.03	1.6	-1.52	-0.68
9	Kenapali	6.97	5.8	7.35	5.6	-0.38	0.2
10	Saraipali	6.23	4.8	6.84	4.6	-0.61	0.2
11	Kanwali	9.5	5.2	11.87	7.13	-2.37	-1.93
12	Dumarpali	5.4	1.7	6.8	2.20	-1.4	-0.5
13	Tayang	8.98	6.0	9.99	6.84	-1.01	-0.84
14	Jaimura	10.59	8.5	11.44	8.32	-0.85	0.18

Pre-monsoon depth to water level Trend

While comparing mean post-monsoon average water levels of 2023 with that of 2024 (Table 5.2), it is found that 95% the villages in the study area which are considered for analysis showingdecreasing in the range of -0.38 to -2.63 m. Only one village Karpipali ground water level increase upto 0.45 Mtr.

In conclusion, expect the villages Karpipali all the other village ground water level decrease during pre-monsoon area and it shows bad sign for ground water level of the study area.

From the above it is observed that more than 90 % of the study area ground water level decreased in both pre and post monsoon period for last two years. Karpipali is the only village in the study area that saw an increase in ground water levels during both the pre- and post-monsoon periods.

5.4 AQUIFER PARAMETERS:

Pumping test has been carried out for determination of aquifer parameters accurately. The aquifer parameters of study area covered by Sandstone are described below.

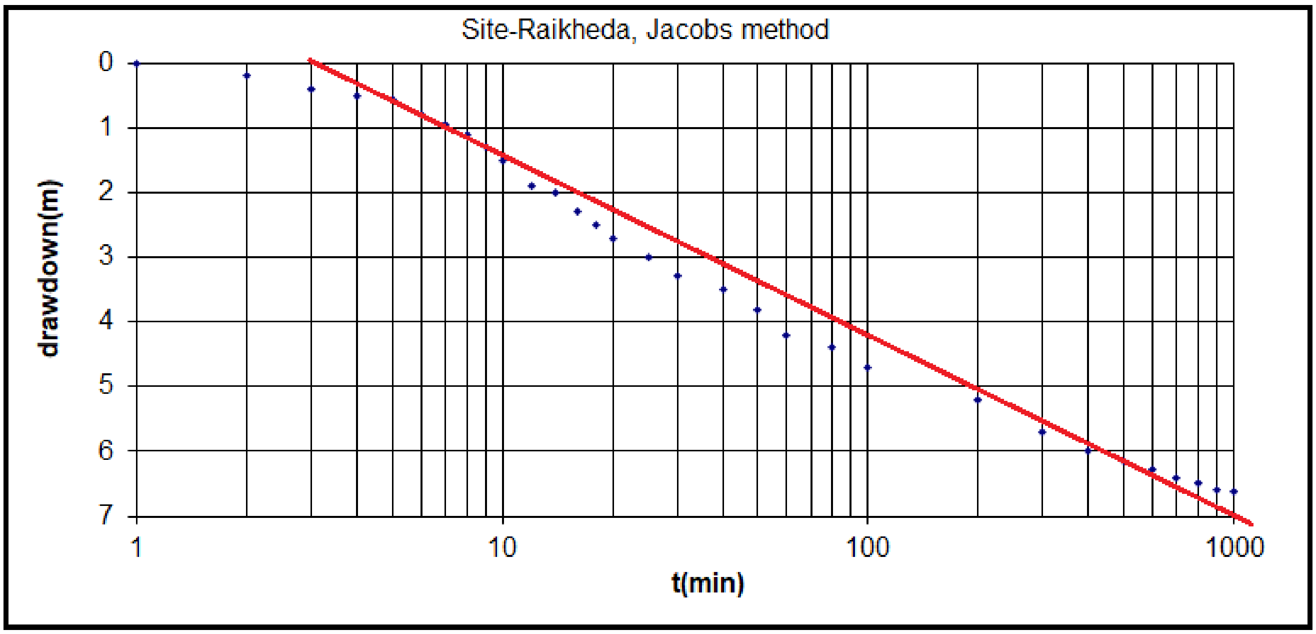
The transmissivity values of phreatic aquifer tapped in open well in general varies from 4 to 8.5 m^2/day while specific capacity ranges from 15 to 40 lpm/m/day. However for deep aquifer the transmissivity ranges from 15-32 m^2/day and at places it ranges up to 40m^2/day.

To verify the aquifer parameters of the aquifer present in the area pumping test has been carried out on a private /public bore well at Badadharha village (close to Project). The results and data interpretation is discussed below

Village	Badadharha
Block	Dabhra
District	Janjgir-Champa
State	Chattisgarh
Duration of test	1000 minutes
Capacity of pump	5 hp
Distance of OW from pump well	45 m.
Thickness of the aquifer	10
MP(magl)	0.8
SWL(mbmp)	6.5
Discharge(lps)	5

Table 5.3: Pumping Data observation well						
Sl.no.	Time since pumping started (min)	Tape Reading (m)		DTW (mbmp)	Draw Down (m)	Remarks
		Hold	Cut			
1	1	20	13.50	6.50	0.00	
2	2	20	13.30	6.70	0.20	
3	3	20	13.10	6.90	0.40	
4	4	20	13.00	7.00	0.50	
5	5	20	12.95	7.05	0.55	
6	6	20	12.70	7.30	0.80	
7	7	20	12.55	7.45	0.95	
8	8	20	12.40	7.60	1.10	
9	9	20	12.20	7.80	1.30	
10	10	20	12.00	8.00	1.50	
11	12	20	11.60	8.40	1.90	
12	14	20	11.50	8.50	2.00	
13	16	20	11.20	8.80	2.30	
14	18	20	11.01	8.99	2.49	
15	20	20	10.80	9.20	2.70	
16	25	20	10.50	9.50	3.00	
17	30	20	10.20	9.80	3.30	
18	40	20	10.00	10.00	3.50	
19	50	20	9.68	10.32	3.82	
20	60	20	9.30	10.70	4.20	
21	80	20	9.10	10.90	4.40	
22	100	20	8.80	11.20	4.70	
23	200	20	8.30	11.70	5.20	
24	300	20	7.80	12.20	5.70	

25	400	20	7.50	12.50	6.00	
26	500	20	7.35	12.65	6.15	
27	600	20	7.22	12.78	6.28	
28	700	20	7.09	12.91	6.41	
29	800	20	7.00	13.00	6.50	
30	900	20	6.90	13.10	6.60	
31	1000	20	6.88	13.12	6.62	



The pumping test data has been analyzed by Jacob's straight line method of the pumping data of the observation well. The calculation is given below.

Formulae: $T= 2.3Q/4\pi\Delta s$

$K==T/b$ &

$S= 2.25\ T\ t_o/r^2$

Where,

$T =kD$ = Transmissivity, m^2/day

K =Permeability

B= Thickness of aquifer

Q = Discharge m^3/day

r = Distance (m) between PW & OW

Δs = Slope of straight line per log cycle of time

S = Storage coefficient

t_o= time in days at zero drawdown

On the basis of above formulae, the calculated parameters are as follows.

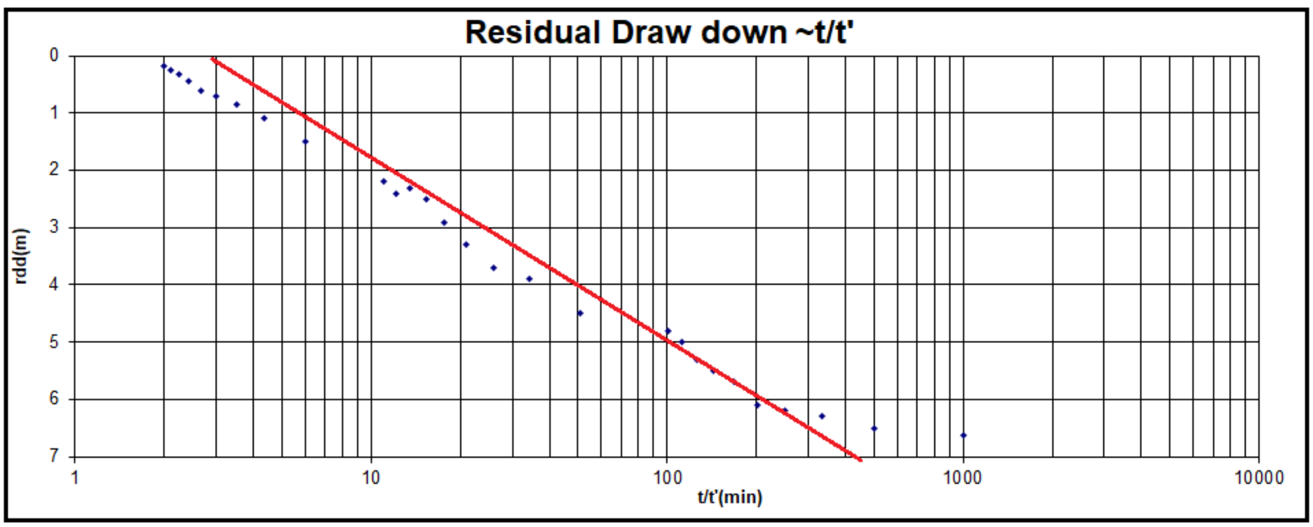
T= 30.42 m^2/day, K=2.3765 m/day&

S= 7.041 $X10^{-5}$

Table 5.4: Recuperation Data

Time since pumping started in min(t)	Time since pumping stopped in min (t')	t/t'	Tape reading (m)		DTW (mbmp)	RDD (m)	Remarks
			Hold	Cut			
1001	1	1001.00	20	6.88	13.12	6.62	
1002	2	501.00	20	7	13	6.5	
1003	3	334.33	20	7.1	12.9	6.4	
1004	4	251.00	20	7.29	12.71	6.21	
1005	5	201.00	20	7.4	12.6	6.1	
1006	6	167.67	20	7.5	12.5	6	
1007	7	143.86	20	7.66	12.34	5.84	
1008	8	126.00	20	7.89	12.11	5.61	
1009	9	112.11	16	4.1	11.9	5.4	
1010	10	101.00	16	4.5	11.5	5	
1020	20	51.00	16	5	11	4.5	
1030	30	34.33	16	5.6	10.4	3.9	

1040	40	26.00	16	5.8	10.2	3.7	
1050	50	21.00	16	6.2	9.8	3.3	
1060	60	17.67	16	6.6	9.4	2.9	
1070	70	15.29	16	6.99	9.01	2.51	
1080	80	13.50	16	7.18	8.82	2.32	
1090	90	12.11	16	7.1	8.9	2.4	
1100	100	11.00	16	7.3	8.7	2.2	
1200	200	6.00	16	8	8	1.5	
1300	300	4.33	16	8.4	7.6	1.1	
1400	400	3.50	16	8.64	7.36	0.86	
1500	500	3.00	16	8.8	7.2	0.7	
1600	600	2.67	16	8.9	7.1	0.6	
1700	700	2.43	16	9.05	6.95	0.45	
1800	800	2.25	16	9.18	6.82	0.32	
1900	900	2.11	16	9.26	6.74	0.24	
2000	1000	2.00	16	9.32	6.68	0.18	



<u>Formulae:</u>

$T = 2.3Q/4\pi\Delta s$, $K = T/b$&

$S = 2.25\ T\ t_o/r^2$

On the basis of above formulae, the calculated parameters are as follows.

T= 30.42 m^2/day, K=2.3765 m/day& S= 7.041 X10^{-5}

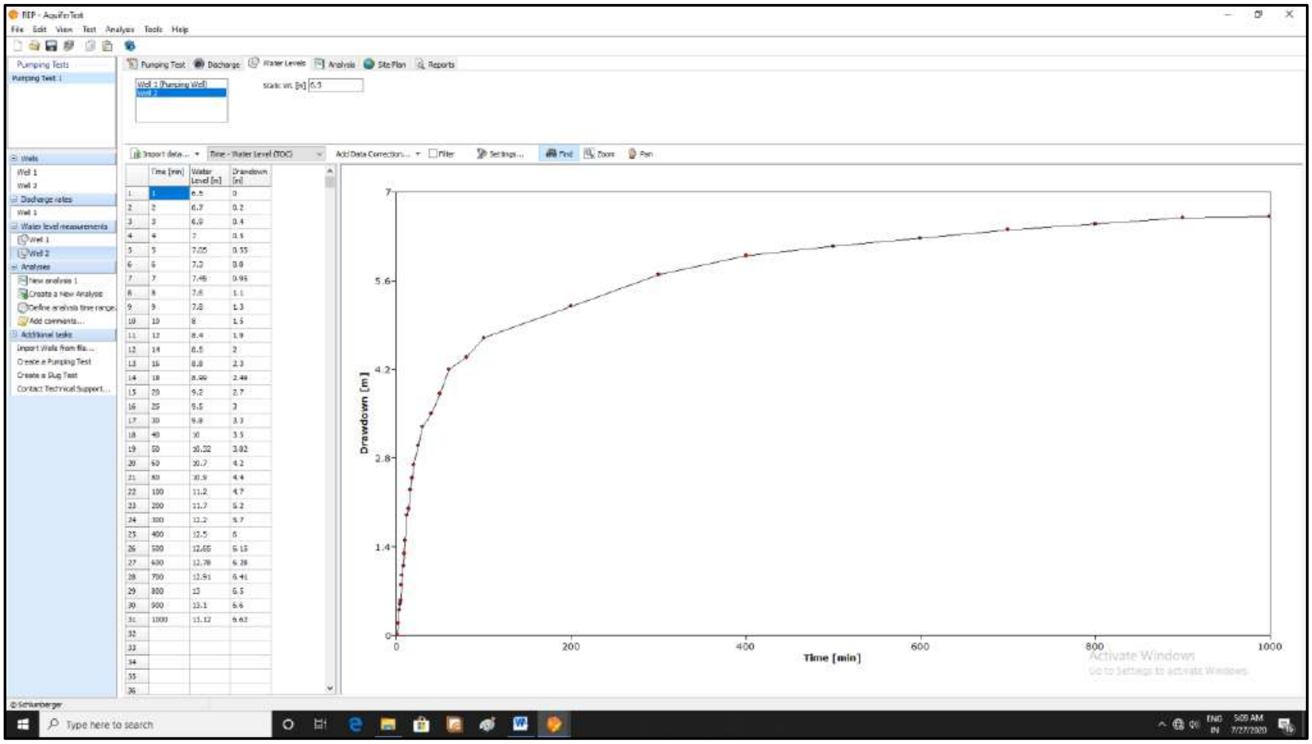


Fig 5.4: Pumping water level data plot in Aquifer test soft ware

6. SURFACE GEOPHYSICAL SURVEY

Surface geophysical survey comprised of one Vertical Electrical Sounding (VES) has been conducted at the project of M/S DB Power Ltd, Village-Badadhara, Block-Dabhra, District-Shakti , Chhattisgarh on 12.01.2024 to know the subsurface condition in the area. The VES location is given in the location map. The VES location is given in Fig No: 6.1.

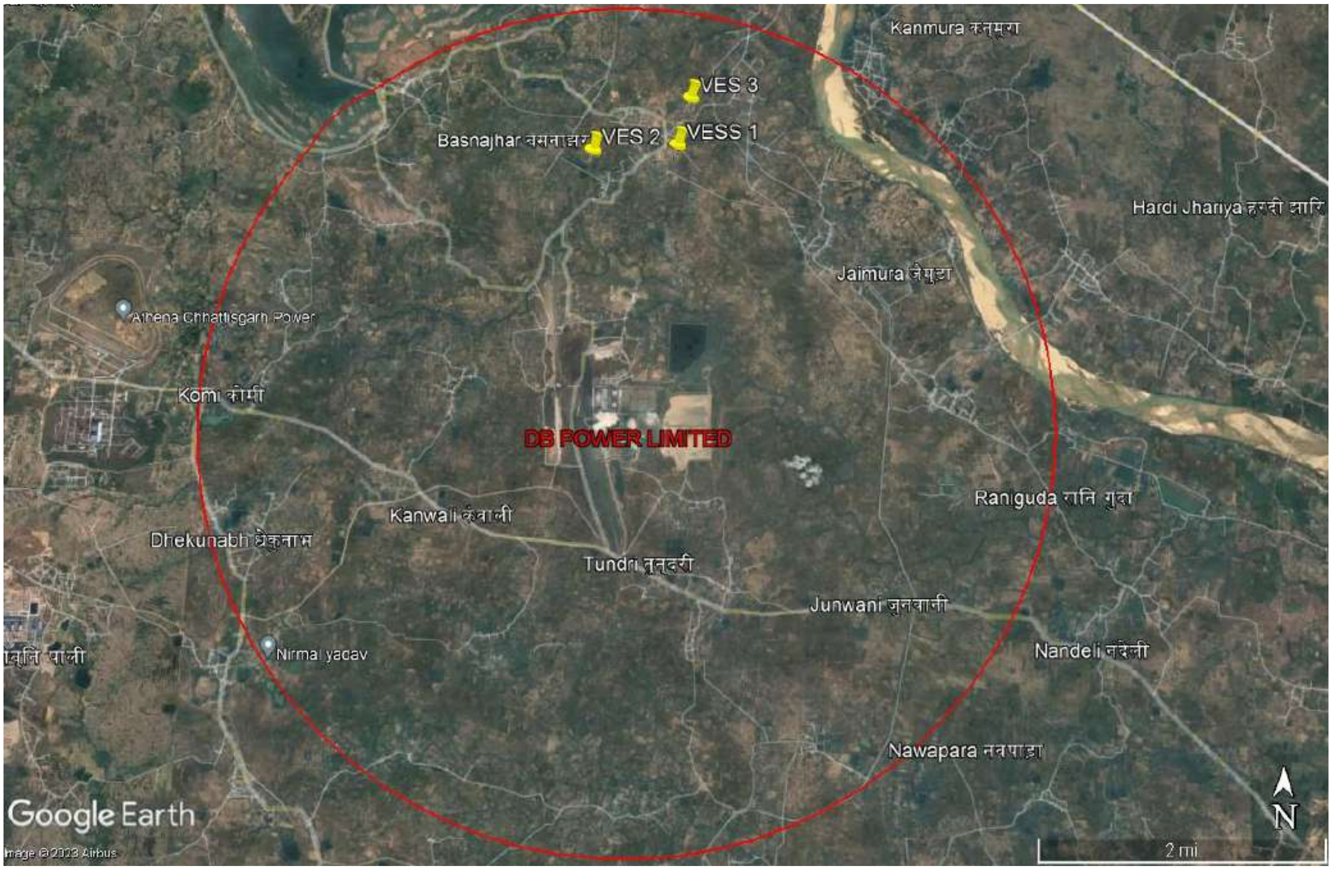


Fig6.1: Location Map of Geophysical Survey

6.1 Resistivity Survey:

Using Ohm's law electrical resistivity of sub-surface geologic formation is determined through artificially energizing the subsurface and carrying measurements on the ground surface. Contrast in resistivity value of an individual layer with the surrounding or effective presence (dependent of its relative resistivity and thickness) makes it detectable.

In the electrical resistivity method, a known amount of electrical current (I) is sent into the ground through a pair of electrode (called current electrodes) and the potential (δV) developed because of the resistance offered by the subsurface due to the passage of this current is measured across another pair of electrodes (potential electrodes) planted into the ground. The ratio between the potential measured and the corresponding current sent into the ground yields the resistance 'R' of the ground to a depth depending upon the spacing between the two current electrodes. Through the multiplication of this value of `R' by a geometric factor a parameter called the apparent resistivity "ρ_a" is computed. Both the parameters, apparent resistivity 'ρ_a' and the resistance 'R' contain the information on the geo-electric characteristics of the subsurface. In practice, there exist several configurations but most commonly used are the Wenner and Schlumberger configurations.

In this survey microprocessor based resistivity meter CRM-500 was used. For the present study Vertical Electrical Sounding (VES) have been carried out using Schlumberger configuration.Maximum spreads were 200m (AB) for sounding.

6.2 Vertical Electrical Sounding (VES)

VES is a process by which the depth investigation is made. In this, the centre is fixed and the measurements are made by successively increasing the electrode spacing. The apparent resistivity values obtained with increasing values of electrode separations are used to estimate the thickness and resistivity's of the subsurface formations. In Schlumberger sounding arrangement (Figure-6), all the four electrodes are kept in a line symmetrically over a point '0', with inner (Potential) electrodes kept closer. For increasing the depth of investigation the current electrodes C_1 and C_2 are moved apart symmetrically from the centre point `0' keeping the potential electrodes fixed. The separation between the potential electrodes is changed only when the potential between them drops to allow value during the course of sounding. The apparent resistivity for each electrode separation is calculated by multiplying the resistance `R' with Schlumberger configuration factor 'K' (which is called as geometrical factor).

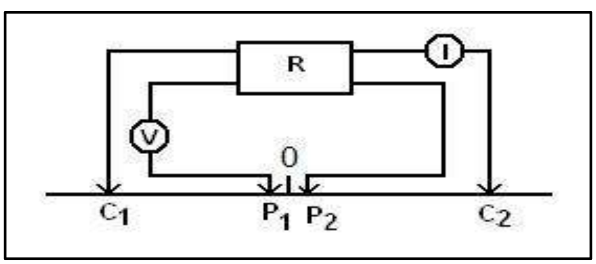


Fig 6.2 (A): Schlumberger electrode configuration

The formula is: $\boldsymbol{\rho_a = \pi R \{(C_1C_2/2)^2 - (P_1P_2/2)^2\} / P_1P_2}$ **or** $\boldsymbol{\rho_a = KR}$

Where 'K' is the geometric factor for Schlumberger configuration,

C_1C_2 is current electrode spacing

P_1P_2 is potential electrode spacing

Equipment

The geophysical methods are useful in constructing a picture of the subsurface hydrogeological conditions in totally virgin areas. It is based upon measurement of earth electrical properties. In the present study the resistivity surveys have been carried out by using Aquameter CRM 500 an indigenous microprocessor based Resistivity Meter (Fig.-6.2 B).

Aquameter CRM 500 is a high power version (40 Watt) which is useful for any type of soil specially preferred for low resistivity soil of the coastal region. It can penetrate current down to 500 meters. It is a popular instrument, because of its single button operation deep penetration, accurate and reliable result, even in adverse field conditions. The instrument has a facility to measure self-potential (SP) which is useful in mineral prospecting and environmental studies.

Fig 6.2 (B): Aquameter CRM 500

6.3 Data Analysis and Interpretation

Surface geophysical survey comprised of two Vertical Electrical Sounding (VES) has been conducted at the premises of M/S DB Power Ltd, , Village-Badadhara, Block-Dabhra, District-Jangir-Champa on 12.01.2024 to know the subsurface condition in the area. The observed resistance values from the instrument have been multiplied with geometric factor (K) to get the apparent resistivity values for each electrode spacing. The apparent resistivity values for different potential dipole were brought to single common potential dipole. The field apparent resistivity data were plotted on log-log graph paper against the half current electrode separation to get the VES curves (X axis-C1C2/2 value and Y axis apparent resistivity value).

These data of $C_1C_2/2$ and apparent resistivity were interpreted with the help of two layer master curve by curve matching technique and further checked with the help of IPI2WIN software. The final results were corroborated with the known hydrogeological conditions existing in the area. The geoelectric layer parameters (layer resistivity and layer thickness) were obtained for each VES. The field data of VES and field curves of VES are given in Table 6.1 and Fig-6.3, 6.4 & 6.5.

6.4 Discussion of result

The VES has been carried out at the premises of M/S D B Power Ltd, Village-Badadhara, Block-Dabhra, District-Jangir-Champa, Chhattisgarh on 10.1.2024 (See fig.1). DDR-3 Resistivity Meter has been used for conducting the VES. Schlumberger configurations have been used for conducting the VES survey. The maximum current electrode spread for conducting VES was 200m (AB).

The data is plotted on double logarithmic graph paper and matched with standard curves to know the true resistivity and thickness of various layers. The data is also interpreted by Computer using IPI2WIN software to verify the results of partial curve matching. From interpreted results of VES is discussed below.

VES-1:

It is an HA type curve and it has four layer. The topmost soil layer having resistivity value of 120 Ω-m is top whereas the second layer may be weathered Sandstone with resistivity of 80 Ω-m. The third layer is hard and compact sandstone with resistivity of 485 Ω-m. The last layer may be shale having resistivity of 66 Ω-m. The thickness of topmost layer is 3.05 m, second layer is 8.7 m and the third layer thickness is 21.5 m.

VES-2: It is also an HA type curve and it has four layer. The topmost soil layer having resistivity value of 106 Ω-m is top whereas the second layer may be weathered Sandstone with resistivity of 85 Ω-m. The third layer is hard and compact sandstone with resistivity of 296 Ω-m. The last layer may be shale having resistivity of 79 Ω-m. The thickness of topmost layer is 1.36, second layer is 67.8 m and the third layer thickness is 28.7 m.

VES-3:

It is also an HA type curve and it has four layer. The topmost soil layer having resistivity value of 87 Ω-m is top whereas the second layer may be weathered Sandstone with resistivity of 68 Ω-m. The third layer is hard and compact sandstone with resistivity of 419 Ω-m. The last layer may be shale having resistivity of 60 Ω-m. The thickness of topmost layer is 2.01, second layer is 6.7 m and the third layer thickness is 19.2 m.

Table-6.1: Interpreted Results of VES

VES No	**Layer Resistivity (in Ohm-m)**				**Layer Thickness (in m)**			**Probable Fracture Zones**
	ρ_1	ρ_2	ρ_3	ρ_4	h_1	h_2	h_3	
VES-1	120	80	485	66	3.05	8.7	21.5	17 to 21 m and 47-50 m
VES-2	106	85	296	79	1.36	7.8	28.7	15 to 19 m and 38-42 m
VES-3	87	68	419	60	2.01	6.7	19.2	22 to 26 m and 43-48 m

Conclusions & Recommendations

From the interpretation of resistivity survey data we got the following outcome.

The thickness of topsoil varies from 1.36 to 3.05 m with resistivity range of 87 to 120 Ω-m.

The thickness of weathered sandstone from 6.7 to 8.7 m with resistivity range of 68 to 85 Ω-m.

The thickness of hard sandstone from 19.2 to 28.7 m with resistivity range of 296 to 485 Ω-m.

The last layer is shale resistivity range of 60 to 79 Ω-m.

At point VES-1 probable fracture zones are there in between 17 to 21 m and 47 to 50 m.

At point VES-2 probable fracture zones are there in between 15 to 19 m and 38 to 42 m.

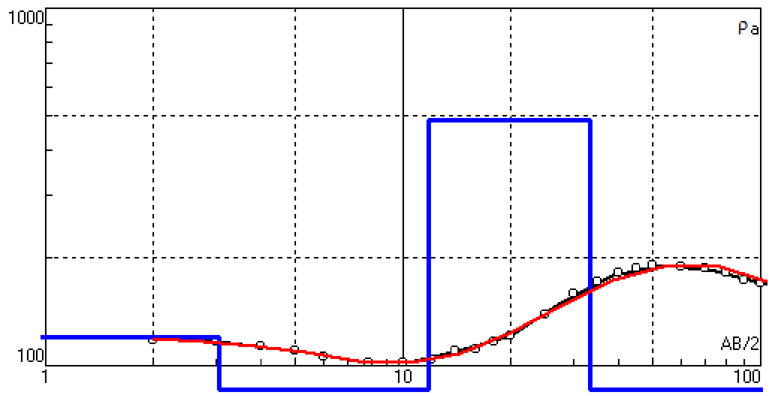
At point VES-3 probable fracture zones are there in between 22 to 26 m and 43-48 m.

Bore hole may be drilled down to 100m to get a good amount of ground water.

Table-6.2: **VES Data**

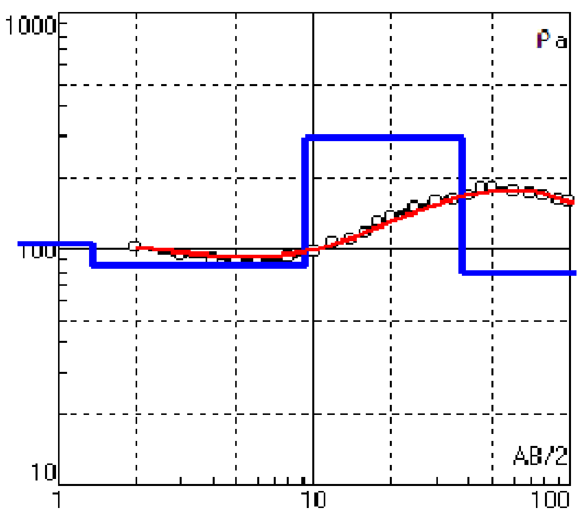
VES1		**VES2**		**VES 3**	
Location: Urja road, inside plant		**Location: Near Resevior, Inside Plant Area**		**Location: Near Coal Yard, Outside of plant area**	
Latitude: N 21°56'14.5"		**Latitude:** N 21°56' 11.99"		**Latitude:** N 21°56’ 11.9"	
Longitude: E 83°11'36.5"		**Longitude:** E 83°11' 1.03"		**Longitude:** E 83°11' 31.04"	
Altitude: 234m		**Altitude:** 235m		**Altitude:** 239 m	
AB/2	**App. R**	**AB/2**	**App. R**	**AB/2**	**App. R**
2	118	2	102.36	2	91.42
3	117.12	3	94.35	3	83.26
4	113.2	4	91.47	4	82.47
5	110.36	5	88.47	5	75.48
6	106.45	6	89.74	6	78.46
8	102.36	8	92.47	8	82.15
10	102.34	10	97.48	10	90.15
12	103.49	12	106.49	12	94.26
14	110.48	14	111.05	14	99.45
16	111.32	16	116.87	16	108.64
18	116.32	18	131.56	18	117.45
20	121.45	20	137.56	20	125.63
25	139.35	25	149.74	25	135.29

30	158.34	30	158.94	30	148.65
35	171.45	35	162.47	35	151.42
40	181.47	40	170.23	40	162.38
45	187.45	45	182.36	45	168.47
50	190.32	50	183.26	50	170.32
60	188.47	60	176.49	60	166.52
70	186.47	70	173.45	70	163.29
80	181.47	80	168.49	80	158.49
90	172.65	90	161.23	90	148.75
100	170.16	100	159.74	100	149.52



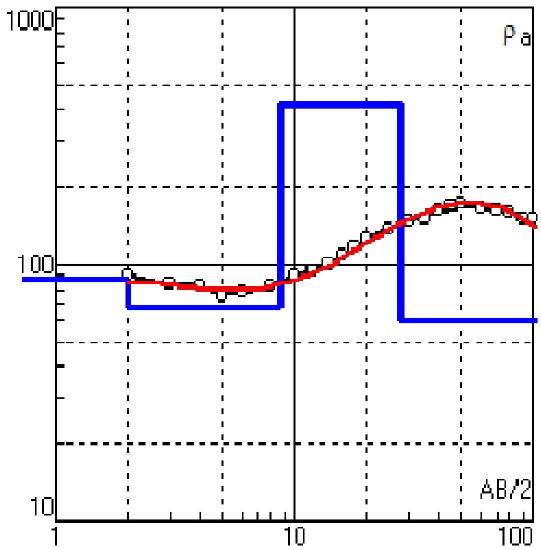
N	ρ	h	d	Alt
1	120	3.05	3.05	-3.0497
2	80.46	8.73	11.78	-11.78
3	485.5	21.56	33.34	-33.344
4	66.08			

Fig-6.3: VES Curve and interpreted results at Badadhara (Near Urja Road, Inside plant area) (VES 1)



N	ρ	h	d	Alt
1	106	1.36	1.36	-1.363
2	85.7	7.89	9.26	-9.255
3	296	28.7	38	-38.01
4	79.3			

Fig-6.4:VES Curve and interpreted results at Badadhara (Near Resevior, Inside Plant Area) (VES 2)



N	ρ	h	d	Alt
1	87.3	2.01	2.01	-2.007
2	67.9	6.73	8.73	-8.733
3	419	19.2	27.9	-27.89
4	60.5			

Fig-6.5:VES Curve and interpreted results at Badadhara (Near Coal Yard, Outside of plant area)(VES3)

FIG 6.6: PHOTOGRAPHS OF GEOPHYSICAL SURVEY IN DIFFERENT LOCATION IN STUDY AREA

7. ARTIFICIAL RECHARGE AND RAIN WATER HARVESTING

Artificial recharge to ground water through scientifically designed structures has been proven as a viable option for augmentation of ground water resources. It also provides an opportunity to utilize the surplus monsoon run-off which otherwise lost to sea unutilized.

Artificial recharge aims at augmenting the natural replenishment of ground water storage by some method of construction, spreading of water, or by artificially changing natural conditions. It is useful for reducing overdraft, conserving surface run-off, and increasing available ground water supplies. Recharge may be incidental or deliberate, depending on whether or not it is a by-product of normal water utilization. Artificial recharge is becoming increasingly necessary to ensure sustainable ground water supplies to satisfy the needs of a multi-pronged demand. The benefits of artificial recharge can be both tangible and intangible.

The concept of rainwater harvesting involves 'tapping the rainwater where it falls'. A major portion of rainwater that falls on the earth's surface runs off into streams and rivers and finally into the sea. The technique of rainwater harvesting involves collecting the rain from localized catchment surfaces such as roofs, plain/sloping surfaces etc., either for direct use or to augment the ground water resources depending on local conditions. Construction of small barriers across small streams to check and store the running water also can be considered as water harvesting.

During monsoon season, whatever rainwater is collected in the premises of project area, i.e. through, Building/roof area, Road/Paved area, Green belt area and Open land will be utilized to recharge the ground water. It is proposed to implement rain water harvesting structures at feasible, viable and sustainable location, catchment wise by diverting the runoff that is generated from the roof area, paved area, roads and green belt area for recharging into the specified recharge structure for putting into ground water system. The runoff generated from the two catchments needs to be suitably diverted through storm water drains to the recharge structures in order to augment the ground water. Overflow water from recharge structures is to be stored into two proposed ponds to be constructed at the western fringe of the plant area as a water conservation measures. Special care needs to be taken for locating the recharge structures and water conservation storage ponds so that the ground water augmentation as well as conservation is optimal. Implementation of water conservation structures and recharge mechanism shall ensure the balance between the discharge vis-à-vis recharge relationships of the aquifer system and provide the sustainable ground water supply. Based on the site plan and the land use pattern of the project area, the computation of runoff for each unit has been worked out and the details are tabulated below.

Total Area available for recharge – **2549521.8 sq.m.**

Rainfall – 1100 mm. (60-65 rainy days)

Formations –Shale & Sandstone.

7.1. Runoff Available for Recharge:

7.1.1: Surrounding area of 5 K.m. from Plant Boundary:

S. N.	Land use type	Area (m^2)	Rainfall (m)	Amount of water that received Through Rain (Cub meter)	Co-efficient of runoff	Quantity of Rainwater (m^3)
1.	Build - up Area	4509691	1.10	4960660.1	0.85	4216561.08
2.	Green belt area Approx.	5387960	1.10	5926756	0.15	889013.4
3.	Open land area	6741150	1.10	7415265	0.20	1483053
4.	Water Bodies	2523190	1.10	2775509	0.60	1665305.4
5.	Agriculture Land	105195540	1.10	115715094	0.30	34714528.2
6.	Total Area	**124357531**	……	……	…….	42968461.08
6.	Assuming 10% is not Suitable for recharge, hence available quantum of Rain water for Recharge is about **38671614.97 m^3** [90% **42968461.08 m^3**]					

From the above, it is observed that a total potential of **38671614.97** cum of rainfall runoff can be collected from the surrounding of 5 k.m. radius from plant boundary.

7.1.2: Recharge from Plant Complex Area:

S. N.	Land use type	Area (m^2)	Rainfall (m)	Amount of water that received Through Rain (Cub meter)	Co-efficient of runoff	Quantity of Rainwater (m^3)
1.	Construction area	1003621.28	1.10	1103983.40	0.85	938385.89
2.	Green belt area Approx.	837700.02	1.10	921470.02	0.15	138220.50
3.	Open land area	465388.1	1.10	511926.91	0.20	102385.38
4.	Raw Water Reservoir	242811.6	1.10	267092.76	0.60	160255.65
5.	Total Area	**2549521**	……	……	…….	1339247.42
6.	Assuming 10% is not Suitable for recharge, hence available quantum of Rain water for Recharge is about **1205322.67 m^3** [90% **1339247.42 m^3**]					

From the above, it is observed that a total potential of **1205322.67** cum of rainfall runoff can be harvested at feasible, viable and sustainable location annually.

Plant Complex area:

The main interest in rainwater harvesting methods is the collecting and conserving rainwater at an early stage in the water cycle to ensure the best use of rainfall before it runs away into rivers and groundwater, or disappears as evaporation. The appropriate choice of rainwater harvesting and artificial recharge techniques depends on the amount of rainfall and its distribution, land topography, soil type, vadose zone thickness and its hydraulic characteristics, depth and type of aquifers, hydraulic parameters of aquifer systems, source and quality of recharge water, and socio-economic factors, among others; these factors tend to be location specific.

Thus, the selection of water harvesting structures and artificial recharge methods strongly depends on local conditions, which calls for proper scientific investigations prior to the design and execution of artificial recharge and/or rainwater harvesting schemes. Water harvesting methods include such widely differing practices as 'roof top water harvesting', 'land surface water harvesting' and 'groundwater harvesting'. On the other hand, a variety of methods have been developed to artificially recharge groundwater and mostly of combinations of direct surface, direct subsurface or indirect recharge techniques. Commonly used artificial recharge techniques, however, are through drainage canals, from surface water bodies like ponds and lakes, recharge through pits/shafts and tube wells/ bore wells etc.

The increasing stress on ground water needs, preventive measures like rain water harvesting structures and recharge measures are to be taken. It has been found that the plant areas of M/S DB Power Limited offers enough scope and options for rain water harvesting and recharge measures. In view of this, detailed topographical, hydro-geological and hydrological study has been undertaken in the area, so as to formulate a comprehensive recharge plan outlining measures with recommended site specific designs for rain water conservation and recharge measures along with the implementing modalities.

Since, the selection and design of artificial recharge and water harvesting structures are highly dependent on the local feasible and suitable conditions and the availability of local materials for their construction. A successful design of artificial recharge and rain water harvesting structures necessitates proper understanding of hydrology and hydro-geology of the project area.

Total recharge potential of **1205322.67** cum of rainfall runoff can be harvested at feasible, viable and sustainable location annually, based on hydrogeological condition trench and recharge pits use for ground water artificial recharge.

The plant is already constructed recharge trench & recharge reservoir to recharge the ground water of the study area.

Fig 7.1: Rain water Harvesting in the plant premises

Fig 7.2: Piezometric Point for Ground water level Monitoring in the plant area

7.3: Stages of Ground water Development:

The Total Ground water Storage, net annual ground water availability (ham), ground water draft (ham), ground water for future use (ham) and stage of ground water development (%) is given in 7.3.

Total Area of Assessment Unit (Ha) is 42064. Total Annual Ground Water (Ham) Recharge is 5528.96. Annual Extractable Ground Water Resource (Ham) is **5400.31**. Total Extraction (Ham) is **3707.93**. Net Ground Water Availability for future use (Ham) is 1046.8. Stage of Ground Water Extraction (%) is 74.04.

As per ground water resources data the Block Dabhara is categorized as **Semi-critical zone**.

Table: 7.2: Ground Water Resource of Dabhara Tehsil

Assessment Unit Name	Total Area of Assessment Unit (Ha)	Recharge Worthy Area(Ha)	Recharge from Rainfall-Monsoon Season	Recharge from Other Sources-Monsoon Season	Recharge from Rainfall-Non Monsoon Season	Recharge from Other Sources-Non Monsoon Season	Total Annual Ground Water (Ham) Recharge	Total Natural Discharges (Ham)
In ham								
Dabhara	**42064**	**42064**	**2471.65**	**1211.64**	**27.73**	**1817.94**	**5528.96**	**410.36**

Table: 7.3: Ground Water Resource of Dabhara Tehsil

Assessment Unit Name	Annual Extractable Ground Water Resource (Ham)	Ground Water Extraction for Irrigation Use (Ham)	Ground Water Extraction for Industrial & Domestic Use (Ham)	Total Extraction (Ham)	Annual GW Allocation for Domestic Use as on 2025 (Ham)	Net Ground Water Availability for future use (Ham)	Stage of Ground Water Extraction (%)
In ham							
Dabhara	**5400.31**	**3273.122**	**434.801**	**3707.93**	**488.76**	**5008.01**	**74.04**

Ground water recharge by rainfall infiltration Method

Rrf= NAR x A x rfi, Where Rrf= Recharge from Rain fall, NAR= Normal Annual Rainfall, A= Area of unit in ha

RIF = Rain fall infiltration Factor

Total Annual water availability= Rain fall recharge + seepage from irrigation + Recharge from tanks/Ponds

Net ground water availability = total recharge – Base Flow

Total Annual Demand in Ham = Population X Average Per Capita Consumption (60) X 365/1000 X 10000

Ground Water Draft for Irrigation = Number of Ground Water Structure X Unit Draft in Ham

Ground Water Balance = Annual Utilizable GW Resource – Gross Ground Water Draft

Stage of Ground Water Development = Gross Ground Water Draft X 100/ Annual Utilizable GW Resource.

8. GROUND WATER QUALITY

The suitability of ground water for drinking/irrigation/industrial purposes is determined keeping in view the effects of various chemical constituents present in water on the growth of human being, animals, and various plants and also on industrial requirement. However, many ions are very essential for the growth of plants and human body but when present in excess, have an adverse effect on health and growth. For estimation of the quality of ground water, 7 ground water samples have been collected in study area. The ground water samples were analysed for major as well as heavy chemical constituents. The ranges of different chemical constituents present in ground water are given in **Table 8.1 and location of sampling is given in fig 8.1**.

Table 8.1: Village wise chemical constituents

Village	Desirable limit	Permissible limit	Reservior Pond	Ash Pond	Main gate Pond Water	Badadadhra Village	Basanpali Village	Jaimura Village River Water	Tayang village	Tundri village
G.P.			Badadadhra	Badadadhra	Badadadhra	Badadadhra	Sandka	Jaimura	Jaimura	Tundri
Block			Dabhra	Dabhra	Dabhra	Dabhra	Dabhra	Dabhra	Dabhra	Dabhra
Dist			Shakti	Shakti	Shakti	Shakti	Shakti	Shakti	Shakti	Shakti
Latitude			N 21º 54' 50.21"	N 21º 54' 46.69"	N 21º 54' 04.88"	N 21º 55' 09.02"	N 21º 55' 48.6"	N 21º 55' 09.5"	N 21º 55' 31.1"	N 21º 53' 33.3"
Longitude			E 83º 11' 37.56"	E 83º 11' 45.39"	E 83º 11' 16.21"	E83º11'03.34"	E83º 10'50.6"	E83º14'04.6"	E 83º 13' 09.4"	E 83º 11' 29.79"

Sample taken from			Surface Water	Surface Water	Surface Water	Ground water	Ground water	Surface Water	Ground water	Ground water
PH Value	6.5-8.5	No relaxation	7.22	7.19	6.98	7.01	7.22	7.29	7.63	7.18
Turbidity (NTU)	1	5	1.36	2.3	3.9	<1	<5	5	<5	<1
Conductivity	>1000	3200	570	620	600	200	600	200	790	550
Total Disolved Solid (mg/l)	500	2000	370	403	390	130	390	130	515	357
Total Hardness (as Caco3) (mg/l)	200	600	260	380	270	92	168	88	488	288
Calcium (Ca) (mg/l)	75	200	51.3	76.95	53.98	24.04	35.27	16.03	97.79	57.71
Calcium Hardness in (mg/l)	-	-	159.94	191.99	134.68	59.97	87.99	39.99	243.99	143.99
magnesium (As mg) (mg/l)	30	100	32.07	45.68	32.88	17.01	19.44	11.66	59.29	34.99
Magnesium Hardness(As mg) (mg/l)	-	-	132	188	135.31	70.03	80.01	48.01	244	44.01
Carbonates As c03	-	-	108.24	229.6	80	65.6	68.88	65.6	324.72	162
Bi-carbonates as Hco3	-	-	161.04	341.6	122	97.6	102.48	97.6	483.12	244

chloride (As Cl) (mg/l)	250	1000	21.99	61.98	15.99	19.9	19.99	11.99	290.69	59.98
Total Alkalinity (as Caco3) (mg/l)	200	600	132	280	100	80	84	80	396	200
Fluride (as F) (mg/l)	1	1.5	0.08	0.19	0.36	0.56	0.31	0.11	0.62	0.42
Sulphate (As So4) (mg/l)	200	400	6	6	2.6	1.1	2.61	1.3	25.6	6.3
iron (as Fe) (mg/l)	1	No relaxation	0.02	0.06	0.06	0.08	0.09	0.14	0.11	0.09
Nitrate (As No3) (mg/l)	45	No relaxation	0.49	1.6	2.3	0.51	0.46	0.43	1.26	0.52
Sodium (Na) (mg/l)	-	-	9	3	1.1	1	1.3	0.8	8	1.3
Potasium (K) (mg/l)			0.3	1.9	0.6	0.4	0.6	0.2	2.6	0.6

Table 8.2: Village wise chemical constituents

SN	Parameters	Prescribed limits as per IS 10500		Observed value	
		Desirable limit	Permissible limit	Min	Max
1	PH Value	6.5-8.5	No relaxation	6.98	7.63
2	Turbidity (NTU)	1	5	1.36	<5
3	Conductivity	>1000	3200	200	790
4	Total Disolved Solid (mg/l)	500	2000	130	515
5	Total Hardness (as Caco3) (mg/l)	200	600	88	488
6	Calcium (Ca) (mg/l)	75	200	16.03	97.79

7	Calcium Hardness in (mg/l)	-	-	39.99	243.99
8	magnesium (As mg) (mg/l)	30	100	11.66	59.29
9	Magnesium Hardness(As mg) (mg/l)	-	-	44.01	244
10	Carbonates As c03	-	-	65.6	324.72
11	Bi-carbonates as Hco3	-	-	97.6	483.12
12	chloride (As Cl) (mg/l)	250	1000	11.99	290.69
13	Total Alkalinity (as Caco3) (mg/l)	200	600	80	396
14	Fluride (as F) (mg/l)	1	1.5	0.08	0.62
15	Sulphate (As So4) (mg/l)	200	400	1.1	25.6
16	iron (as Fe) (mg/l)	1	No relaxation	0.02	0.11
17	Nitrate (As No3) (mg/l)	45	No relaxation	0.43	2.26
18	Sodium (Na) (mg/l)	-	-	1	9
19	Potasium (K) (mg/l)			0.2	2.6

According to above table, majority of chemical constituent of all samples are within permissible limit and suitable for drinking, irrigation and industrial use.

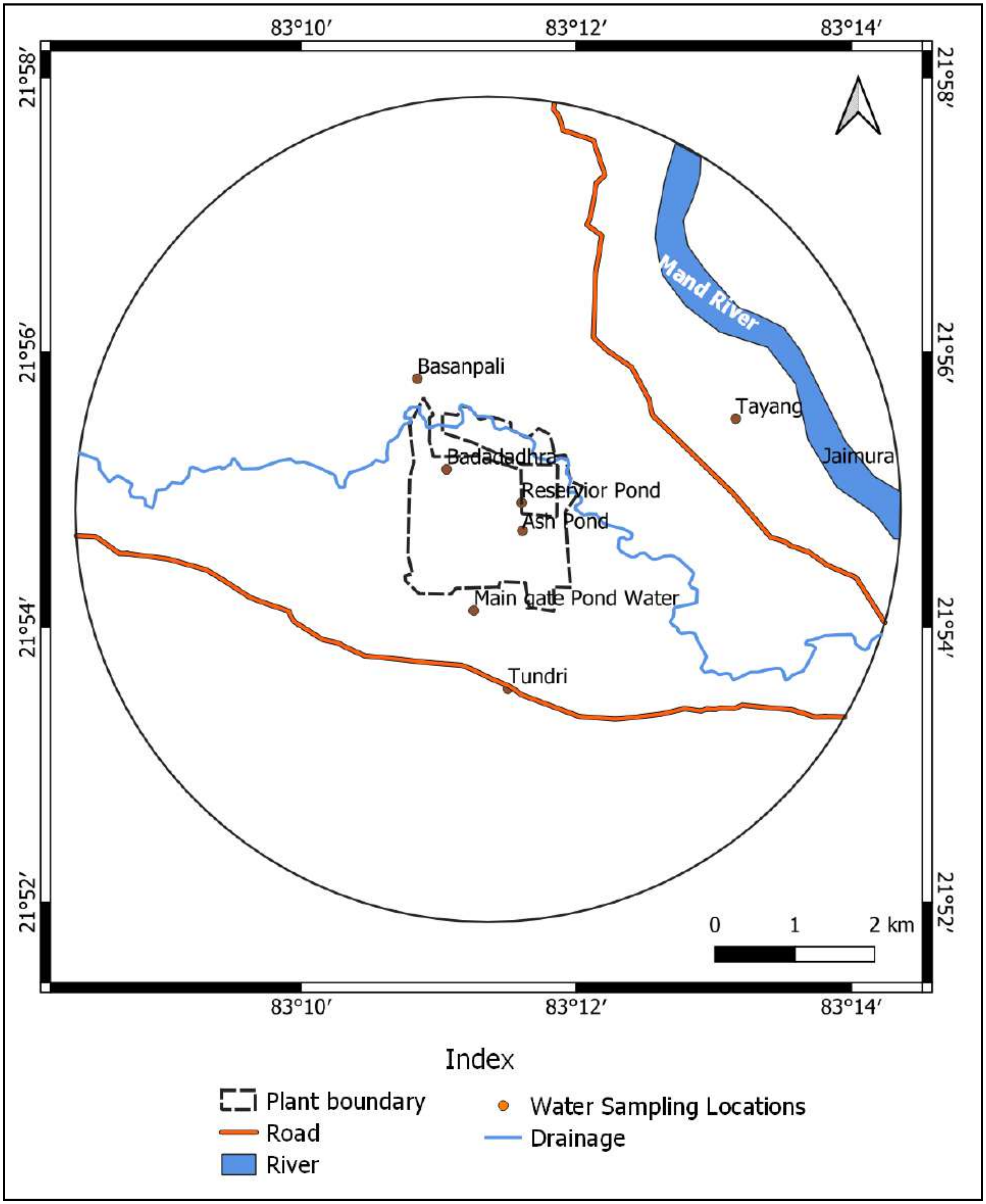


Fig 8.1 location of water sampling stations

Geochemical Classification of Ground Water

The geochemical classification of ground water, of study area has been carried out by using Piper Diagrams the ground water is of Ca/Mg-CO3/HCO_3 type. The analysis of ground water samples collected from the area suggests that type of water in the major part is bicarbonate dominating type, The type of ground water found in each ground water sample collected is given in the **Table 8.3**

Table 8.3. The type of ground water

SN	Sample ID	Station ID	X	Y	Water Type	pH	El. Cond. uS/cm	TDS (mg/l)
1	SW1	Reservior Pond	E 83° 11' 37.56"	N 21° 54' 54.4"	Ca-Mg-CO3-HCO3	7.22	570	370
2	SW2	Ash Pond	E 83° 11' 37.56"	N21° 54' 42.3"	Mg-Ca-SO4-Cl	7.19	620	403
3	SW3	Main gate Pond	E 83° 11' 37.56"	N21° 54' 07.4"	Mg-Ca-CO3-HCO3	6.98	600	390
4	SW4	Badadadhra	E 83° 11' 37.56"	N21°55'09.02"	Ca-Mg-Cl-CO3-HCO3	7.01	200	130
5	SW5	Basanpali	E 83° 11' 37.56"	N21° 55' 48.6"	Ca-Mg-CO3-HCO3	7.22	600	390
6	SW6	Jaimura River	E 83° 11' 37.56"	N21° 55' 09.4"	Mg-Ca-CO3-HCO3-Cl	7.29	200	130
7	SW7	Tayang	E 83° 11' 37.56"	N21° 55' 31.1"	Ca-Mg-CO3-Cl-HCO3	7.63	790	515
8	SW8	Tundri	E 83° 11' 37.56"	N21° 53' 33.3"	Mg-Ca-CO3-HCO3	7.18	550	357

SUITABILITY OF GROUND WATER FOR DRINKING AND IRRIGATION PURPOSES

The suitability of ground water for drinking purpose

The suitability of ground water for drinking purpose is determined keeping in view the effects of various chemical constituents present in water on the biological system of human being. The standards proposed by the Bureau of Indian Standards (BIS) for drinking water (BIS-2012, revised) were used to decide the suitability of ground water that occur in study area for drinking purpose. The classification of ground water samples falling below desirable limit (DL), between desirable &

maximum permissible limit (DL-MPL) and above maximum permissible limit (MPL) for drinking water purpose limit is shown in the following **Table 8.4**

Table 8.4: Classification of Ground Water Samples for Drinking Purposes.

Parameters	Drinking water Standards (IS-10500-91, Revised 2012)		Total No. of GW Samples	Samples (< DL)		Samples (DL-MPL)		Samples (>MPL)	
	Desirable Limit (DL)	Maximum Permissible Limit (MPL)		No.	%	No.	%	No.	%
PH	6.5-8.5	No relaxation	8	0	0	8	100	0	0
TDS (mg/L)	500	2000	8	7	87.5	1	12.5	0	0
TH (mg/L)	200	600	8	3	37.5	5	62.5	0	0
Ca (mg/L)	75	200	8	6	75	2	25	0	0
Mg (mg/L)	30	100	8	3	37.5	5	62.5	0	0
Cl (mg/L)	250	1000	8	7	87.5	1	12.5	0	0
SO_4 (mg/L)	200	400	8	8	100	0	0	0	0
NO_3 (mg/L)	45	-	8	8	100	0	0	0	0

It is observed from the above **table 8.4**, that than 100 % of samples are suitable for drinking purposes. Therefore, it is concluded that the portability of ground water in study area.

The suitability of ground water for Irrigation purpose

Water is one of the most important constituents, which is required for plant growth, which not only provides the liquid for food processing of the plants but also provides important nutrients for the growth of the plants. But when concentration of ions, are found in excess in the water, it affects the plant growth and reduces the plant yield. Therefore, it is necessary to know the quality of the water before applying in the field, so that the maximum crop yield can be obtained.

Sodium Adsorption Ratio (SAR)

SAR is an expression pertaining to cation makes up of water and soil solution and is used for characterizing the sodium hazard of irrigation water. The main problem with high sodium concentration is its effect on soil permeability & water irrigation. Sodium also contributes directly to the total salinity of the water and may be toxic to sensitive crops such as fruit trees. SAR is calculated from the following equation-

$$SAR = \frac{Na^{+}}{\sqrt{(Ca^{2+} + Mg^{2+})/2}}$$

Where the concentration of cations are expressed in meq/L.

Residual Sodium Carbonate (RSC)

Water containing carbon dioxide on way gets saturated with carbon dioxide and forms bicarbonates. The excess bicarbonates of Mg and Ca are precipitated out as carbonates. This produces impermeability to the top soil. Bicarbonate concentration of water has been suggested as additional criteria of suitability of irrigation water. Residual sodium carbonate is determined by using the following formula.

RSC = (CO3+ HCO3) - (Ca+Mg)

The suitability of ground water of study area for irrigation purpose was considered on the basis of U. S Salinity diagram in which electrical conductivity value in μS/cm at 25°C upto 2250 μS/cm at 25°C is plotted on one axis and the SAR values upto 10 on the other. The electrical conductivity and the corresponding SAR & RSC values of each ground water sample collected from the study area is given in the **Table 8.5**, and the EC and SAR values are plotted in **Wilcox Diagram (Fig 8.2)** and **Piper(Fig 8.3).**

The number of ground water samples based on Sodium Absorption Ratio (SAR) characteristics falling under Good, Good to Permissible, Doubtful & Bad (Unsuitable) categories is shown in the following **Table 8.5**

From the Table 8.5, it is observed that 100% of samples show SAR values below 10 and falling in the Low Sodium (alkali) Hazard Zone (S1). Such type of water can be used for irrigation on almost all soils with little danger of development of sodium exchangeable problem. Out of 8 samples collected from study area all samples having EC < 2250 µS/cm at 25° .

The High Salinity Water (C3) cannot be used on soils with poor drainage. Even with adequate drainage, special management for salinity control may be required and plants with good salt tolerance should be selected.

Table 8.5: Classification of ground water for irrigation based on SAR values

EC microsiemens/cm at 25°C		SAR Value			
		<10 (S1)	10-18 (S2)	18-26 (S3)	>26 (S4)
	Quality	Good	Good to Permissible	Doubtful	Bad (Unsuitable)
	Total No. of GW Samples	No. of samples	No. of samples	No. of samples	No. of samples
< 100	-	-	-	-	-
100-250 (C1)	2	2	-	-	-
250-750 (C2)	5	5	-	-	-
750-2250 (C3)	1	1	-	-	-
2250-5000 (C4)	-	-	-	-	-
> 5000	-	-	-	-	-
Total	8	8			
Overall Percentage		100%			

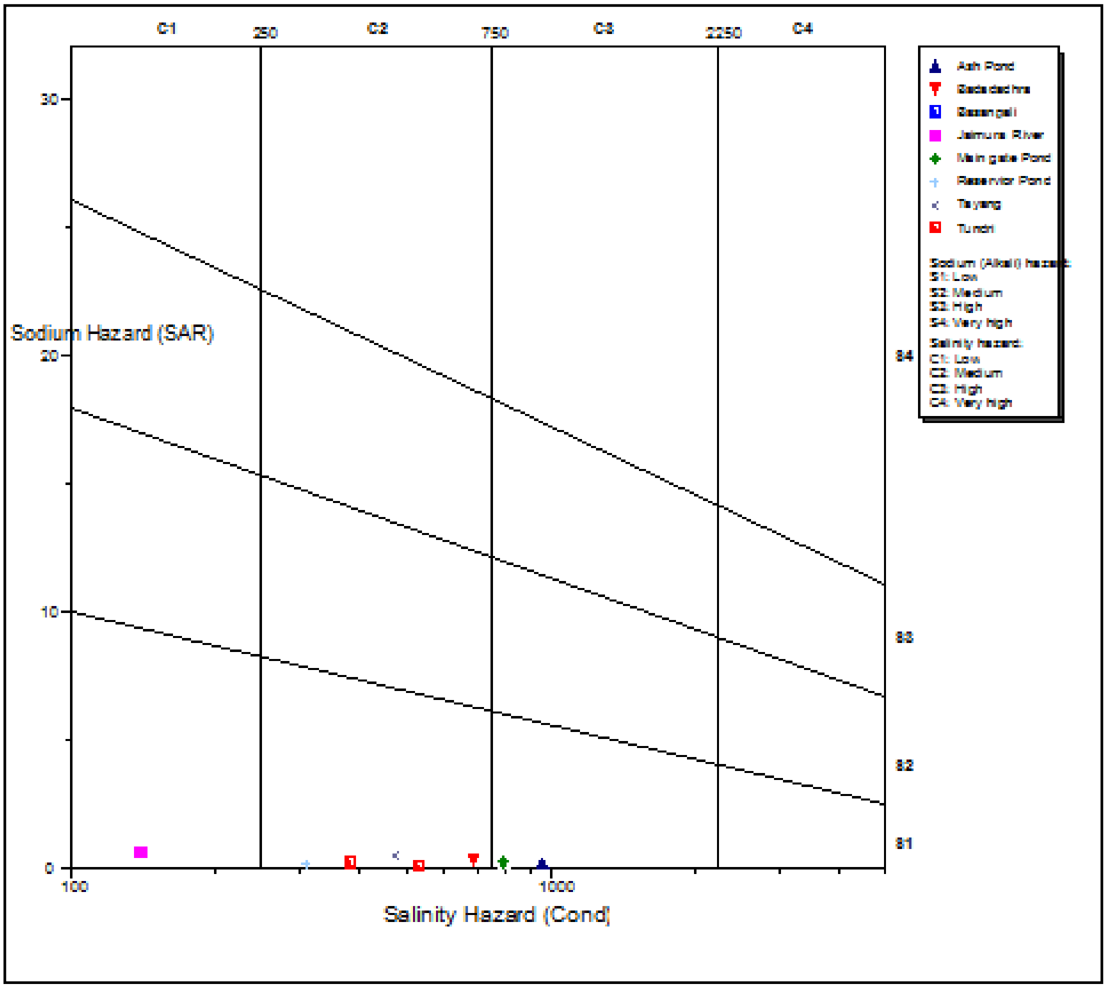


Fig 8.2 Wilcox Diagram

The Very High Salinity Water (C4) is not at all suitable for irrigation under ordinary conditions, but may be used occasionally if the soil is permeable by providing adequate drainage and irrigation water must be applied in excess to provide considerable leaching and very salt tolerant crops should be selected.

Based on above **table 8.5**, ground water samples are classified with respect to salinity and sodium hazard is presented in **Table 8.6.**

Table 8.6: Classification of ground water samples with respect to salinity and sodium hazards			
Type of Classification	**Characteristics**	**No. of samples falling**	**%**
C1S1		2	25
C1S2			
C2S1	Medium salinity and low sodium water	4	50
C3S1	High salinity and low sodium water	2	25
C4S1	Very high salinity and low sodium water		
Total		**8**	**100**

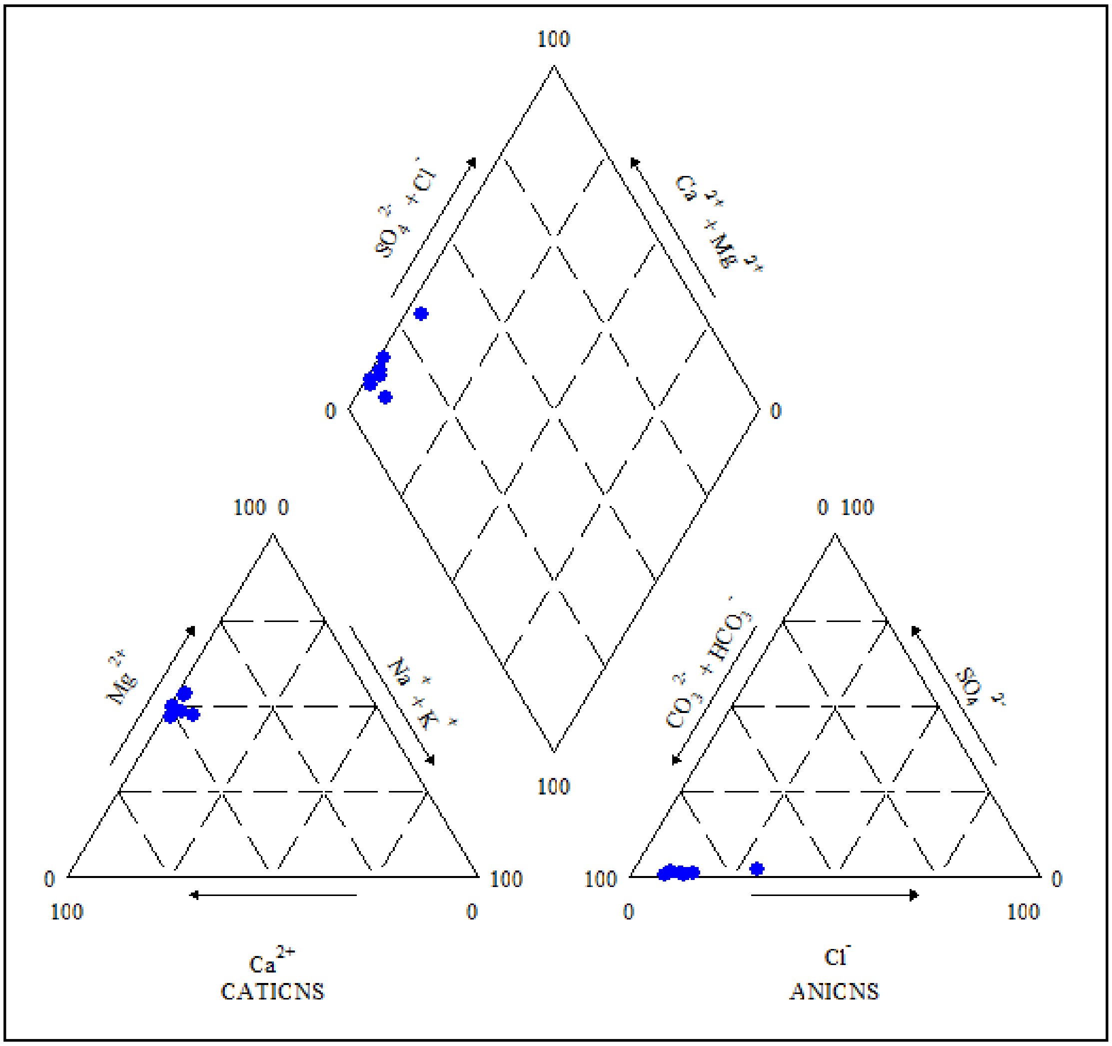


Fig 8.3: Trainer piper diagram

The iso-conductivity map of ground water has been prepared and presented as **Fig 8.4**. On perusal of the iso-conductivity, it is observed that the electrical conductivity for shallow Aquifer in study area ranges from 220 μMhos/cm (Jaimura river sample) to 780 μMhos/cm (Tayang and main gate Pond), the electrical conductivity for shallow aquifer is within Permissible Limit (750-2250 μMhos/cm @ 25°C) Fig **8.4.**

On perusal of the chloride content, it is observed that the chloride content of the study area ranges from 15.92 (Jai Mura river water) to 111.85 (Main gate pond surface water). Maximum study area chloride content is within 60 to 80 mg/l. **fig 8.5.**

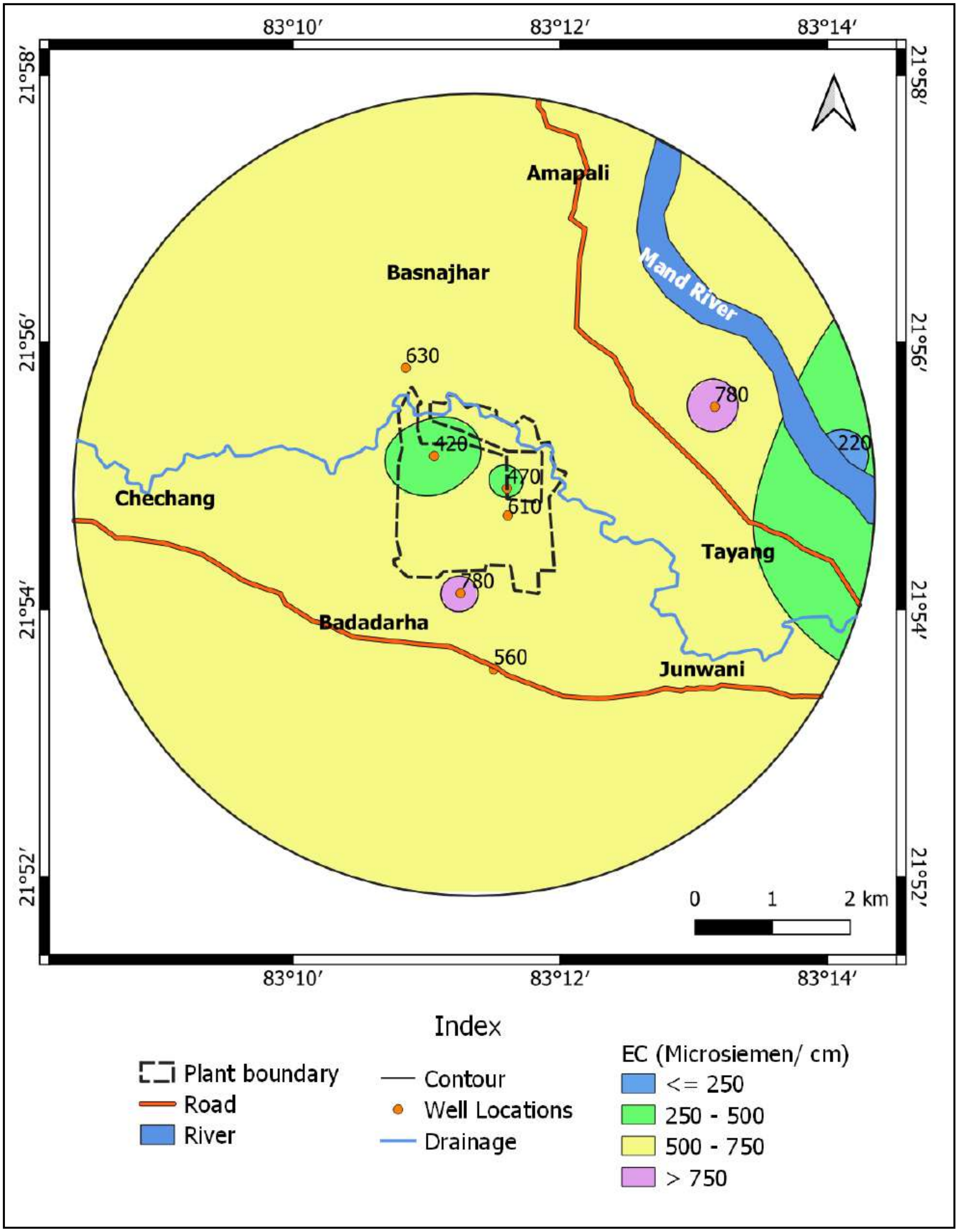


Fig 8.4: EC map of ground water

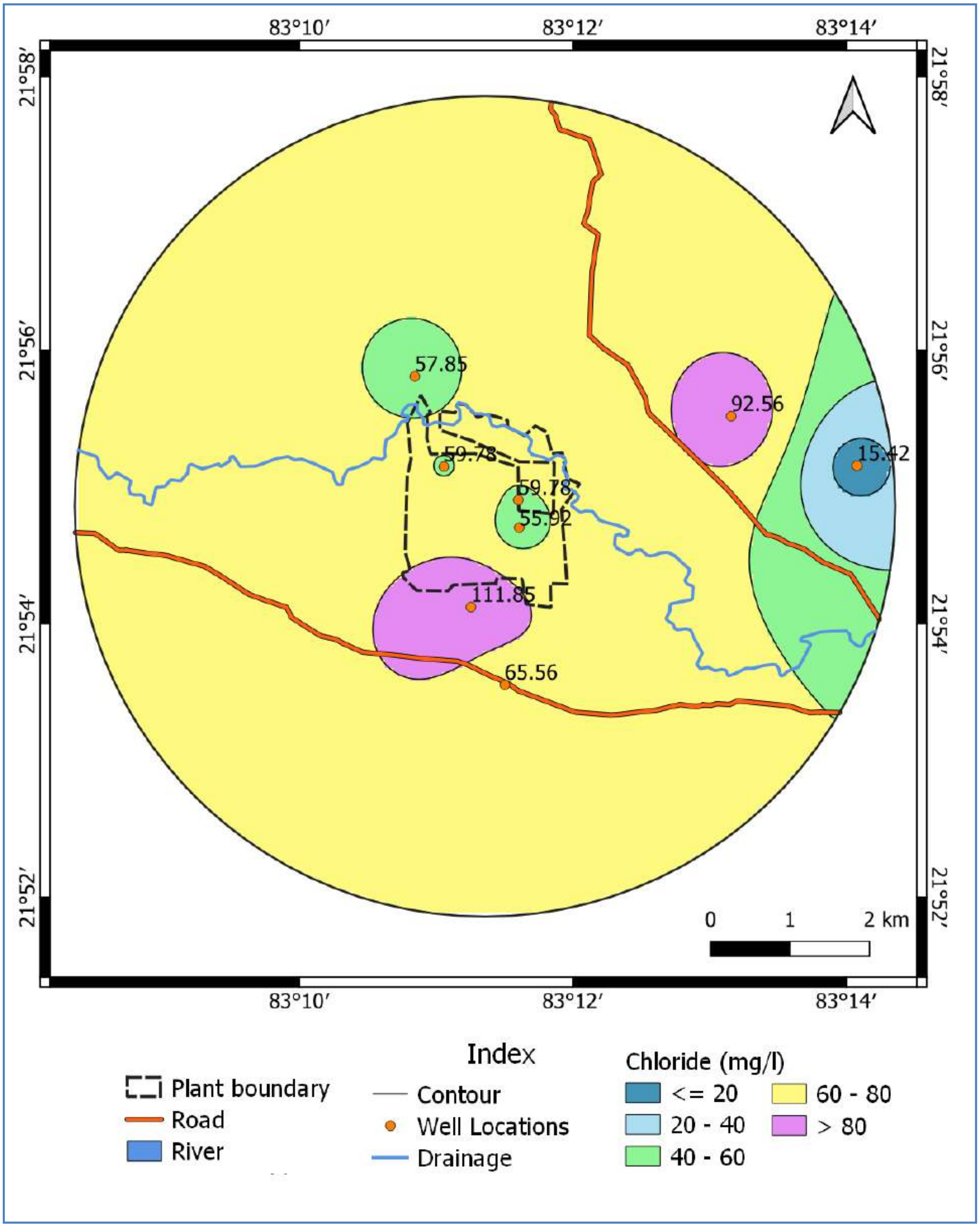
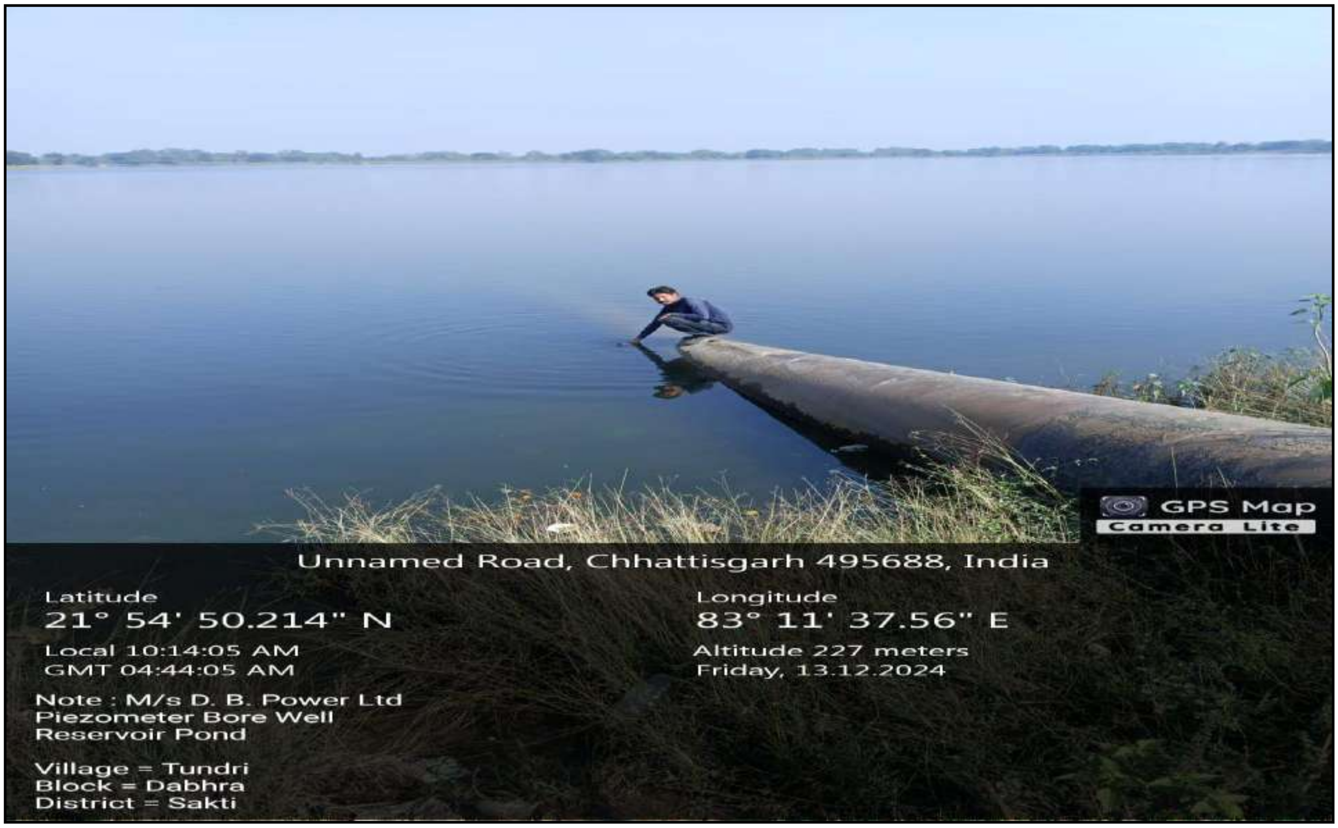
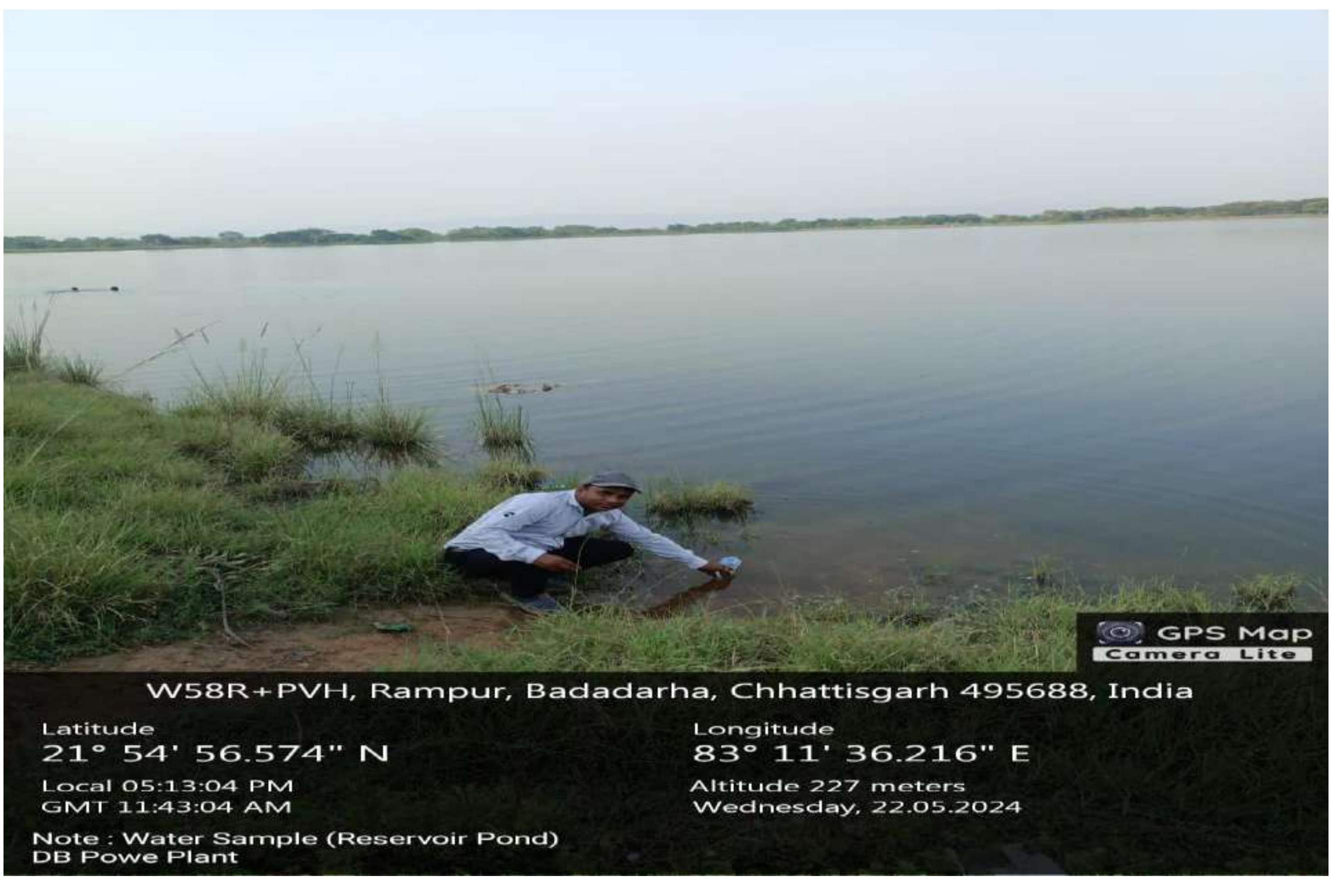


Fig 8.5: Chloride map of ground water


GPS Map
Camera Lite
Unnamed Road, Chhattisgarh 495688, India
Latitude
21° 54' 46.698" N
Longitude
83° 11' 45.39" E
Local 10:10:09 AM
GMT 04:40:09 AM
Altitude 224 meters
Friday, 13.12.2024
Note : M/s D. B. Power Ltd
Piezometer Bore Well
Reservoir Pond
Village = Tundri
Block = Dabhra
District = Sakti


GPS Map
Camera Lite
Unnamed Road, Chhattisgarh 495688, India
Latitude
21° 54' 4.884" N
Longitude
83° 11' 16.212" E
Local 03:46:55 PM
GMT 10:16:55 AM
Altitude 237 meters
Thursday, 12.12.2024
Note : M/s D. B. Power Ltd
Main Gate Pond
Village = Tundri
Block = Dabhra
District = Sakti


GPS Map
Camera Lite
Unnamed Road, Chhattisgarh 495688, India
Latitude
21° 54' 50.214" N
Longitude
83° 11' 37.56" E
Local 10:14:05 AM
GMT 04:44:05 AM
Altitude 227 meters
Friday, 13.12.2024
Note : M/s D. B. Power Ltd
Piezometer Bore Well
Reservoir Pond
Village = Tundri
Block = Dabhra
District = Sakti


GPS Map
Camera Lite
W58R+PVH, Rampur, Badadarha, Chhattisgarh 495688, India
Latitude
21° 54' 56.574" N
Longitude
83° 11' 36.216" E
Local 05:13:04 PM
GMT 11:43:04 AM
Altitude 227 meters
Wednesday, 22.05.2024
Note : Water Sample (Reservoir Pond)
DB Powe Plant

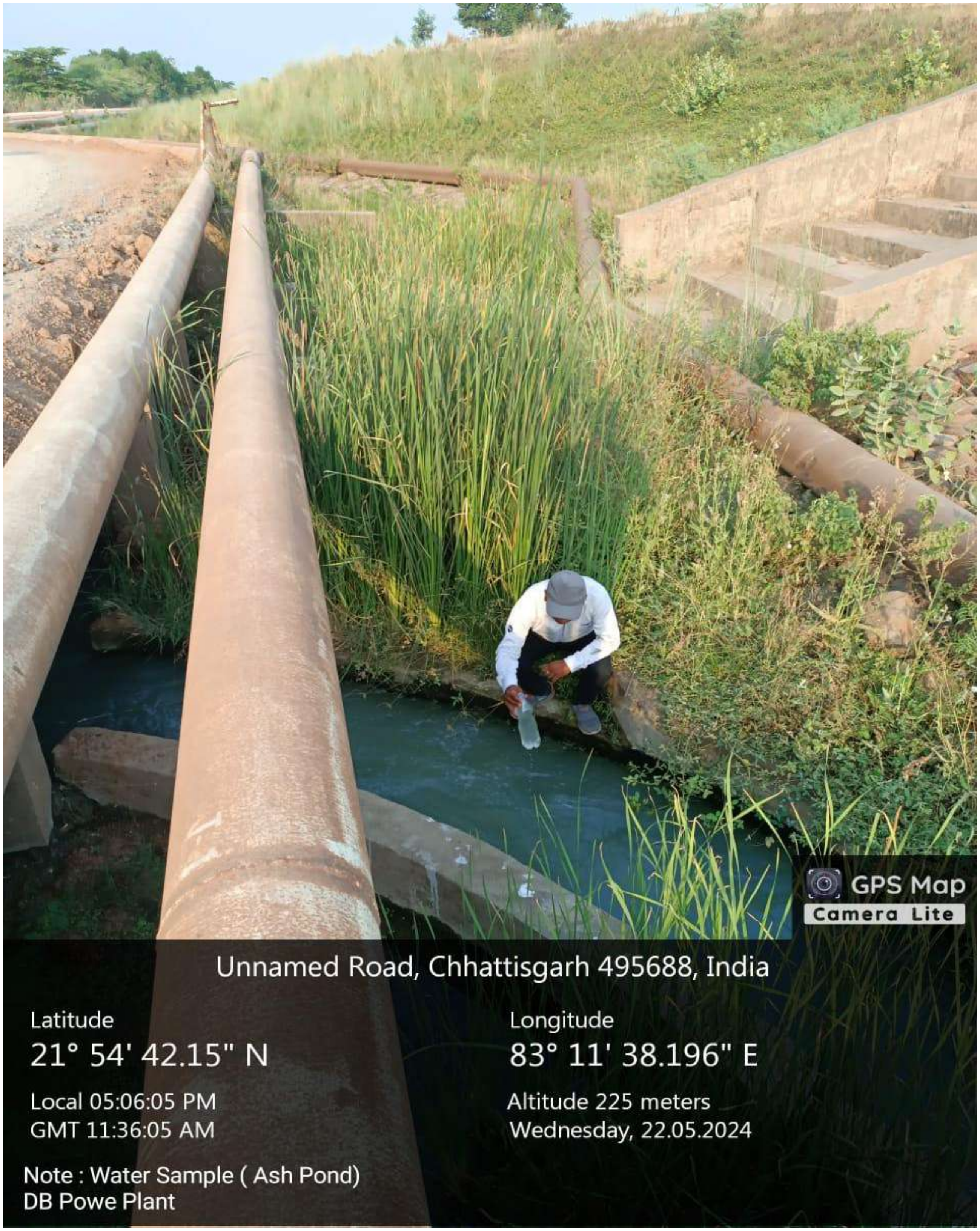


Fig 8.5: Water Sampling in Plant premises and buffer Zone of the Study Area

9. CONCLUSIONS & SUMMARY

DB Power Limited is a coal-based thermal power plant located at Village: Badadarha, Block: Dabhra, Shakti district in the state of Chhattisgarh. The plant has produced thermal power having capacity of 1200 MW (2*600 MW).

The area is drained by tributaries of Mand River. The project area is in the interfluves zone of Dantar Nala, Pathari Nala & Mand River.

The study area is characterized by flat undulating terrain with regional slope to the north-east and south west. The average elevation in the southern portion is around 280m while in the north is 275 mamsl. The average land slope of the area is works out about 4 per km from toposheets (1:50000scale), Survey of India.

Geo-morphologically the study area comes under Pediplain, Denudation Hills & Floods Plan. The Physiography of the basin is controlled by geological formations namely Sandstone and shale.

In the area, ground water occurs under phreatic or unconfined condition in weathered portion of rocks and semi-confined to confined conditions in fractures/cavernous part of rocks i.e. Sandstone & shale at depths.

The depth to water level map has been prepared based on ground water monitoring data of Nov 2024. it is observed that the overall depth to water level remains between 1.6 and 8.32 meters below ground level. The post-monsoon depths to water level range of 4 to 6 mbgl are observed at Kenapali, Saraipali, Amapali, Basnajhar & Fulbandhia villages. Ground water levels more than 6 mbgl are observed in the villages Kanwali, Sondaka, Tayang and Jaimura Villages. Water level less than 4 mbgl are observed in the remaining parts of the study area.

The depth to water level map has been prepared based on ground water monitoring data of May 2024. From the perusal of Table 5.1, it is observed that the overall depth to water level remains between 4.03 to 11.87 meters below ground level. The pre-monsoon depth to water levels ranges Below 5 mbgl is observed in Basanpali villages. Water levels are between 5 - 8 mbgl is observed in the villages namely Basnajhar, Karpipali Saraipali, Kenapali, Dumerpali, Karpipali, Tundri & Fulbandhia villages. Water level greater than 8 mbgl is observed in the remaining parts of the study area

Based on the pre-monsoon & post-monsoon data water level fluctuation in the study area it is observed that in the study area water level fluctuation varies from 1.75 to 4.74 meters.

While comparing mean pre-monsoon and Post Monsoon average water levels of 2023 with that of 2024 it is observed that more than 90 % of the study area ground water level decreased in both pre and post monsoon period for last two years. Karpipali is the only village in the study area that saw a increase in ground water levels during both the pre- and post-monsoon periods.

The flow direction is of two directions i.e. in western, South and northern part of the study area it is towards East Direction and in central and east part of the study area it is towards North-East direction indicating the surface water divide in the central portion of the study area near to project area.

In the area the yield ranges between 2 to 5 lps in Central, Northern, sothern indicating the area is covered by Sandstone while in major part of the area it is 1-3 lps which is covered with shale.

The shallow aquifers of the area are mostly developed by way of dug wells in the area with depth ranges from 7 to 16 m. In general the yield of dug wells ranges from 25 to $40m^3$/day. Deeper aquifer in the area mainly formed of Raipur group of rocks constituted of Raigarh formation comprising Sandstone and shale.

The aquifer parameters of the study area covered by sandstone for deep aquifer the transmissivity values of phreatic aquifer tapped in open well in general varies from 4 to $8.5m^2$/day while specific capacity ranges from 15 to 40 lpm/m/day. However for deep aquifer the transmissivity ranges from 15-32 m^2/day and at places it ranges up to $40m^2$/day.

Total recharge potential of **1205322.67** cum of rainfall runoff can be harvested at feasible, viable and sustainable location annually, based on hydrogeological condition trench and recharge pits use for ground water artificial recharge. The plant is already constructed recharge trench & recharge reservoir to recharge the ground water of the study area.

The detailed chemical analysis for water samples drawn at seven locations of plant study area (Ash Dyke ponds, reservoir pond and various villages) for non-metallic ingredients like pH, Turbidity, TDS, TSS, CaCO3, Ca, Cl, Mg, SO4 & SiO2 and metallic ingredients like Nitrate, Fe, etc. were done in-2023.

From the chemical analysis of water it is observed that than 100 % of samples are suitable for drinking purposes.

It is observed that 100% of samples show SAR values below 10 and falling in the Low Sodium (alkali) Hazard Zone (S1). Such type of water can be used for irrigation on almost all soils with little danger of development of sodium exchangeable problem

The geochemical classification of ground water, of study area has been carried out by using Piper Diagrams the ground water is of Ca/Mg/Na-HCO_3 Cl type. The analysis of ground water samples collected from the area suggests that type of water in the major part is bicarbonate dominating type, The suitability of ground water of study area for irrigation purpose was considered on the basis of U. S Salinity diagram in which electrical conductivity value in µS/cm at 25°C upto 5000 µS/cm at 25°C is plotted on one axis and the SAR values upto 30 on the other. The electrical conductivity and the corresponding SAR & RSC values of each ground water sample collected from the study area.

It is observed that 100% of samples show SAR values below 10 and falling in the Low Sodium (alkali) Hazard Zone (S1). Such type of water can be used for irrigation on almost all soils with little danger of development of sodium exchangeable problem. Out of 8 samples collected from study area is having EC below 2250 µS/cm at 25°.

The High Salinity Water (C3) cannot be used on soils with poor drainage. Even with adequate drainage, special management for salinity control may be required and plants with good salt tolerance should be selected.

The Very High Salinity Water (C4) is not at all suitable for irrigation under ordinary conditions, but may be used occasionally if the soil is permeable by providing adequate drainage and irrigation water must be applied in excess to provide considerable leaching and very salt tolerant crops should be selected.

On perusal of the iso-conductivity, it is observed that the electrical conductivity for shallow Aquifer in study area ranges from 220 µMhos/cm (Jaimura river sample) to 780 µMhos/cm (main gate plant and Tayang), the electrical conductivity for shallow aquifer is within Permissible Limit (750-2250 µMhos/cm @ 25°C).

On perusal of the chloride content, it is observed that the chloride content of the study area ranges from 15.92 (Jai Mura river water) to 111.85 (Main gate pond surface water). Maximum study area chloride content is within 60 to 80 mg/l. **The present study reveals that there is no adverse impact of Ash Pond on ground water regime of the area both on water levels as well as water quality**.

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SUDHAMAYE ENVIRONMENT SOLUTION PVT. LTD.
sudha.maye2024@gmail.com 7000341796, 7000486123, 8817515689
CIN NO-U74900CT2024PTC015669
GST NO- 22ABMCS5715N1ZX
TC-15359

TESTREPORT

URL NO : TC153592025000009F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA, DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/32** Sample ID: **SMPL/WTR/42** Sample Description : **Ground Water** Sample Detail : **Badadahra N 21^{O} 55' 09.06"E 83^{o} 11' 03.55"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample - **08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
1.	**pH**	IS:3025 (Part 11) 1983RA 2002	-	**7.01**	6.5 to 8.5	No relaxation
2.	**Turbidity**	IS:3025 (Part 10) 2023	NTU	**<1**	1	5
3.	**Conductivity**	IS:3025 (Part 14) 1984 RA 2002	µs/cm	**200**	-	-
4.	**Total Dissolve Solids**	IS:3025 (Part 16) 2023	mg/l	**130**	500	2000
5.	**Total Hardness**	IS:3025 (Part 21) 2009	mg/l	**92**	200	600
6.	**Calcium as Ca**	IS:3025 (Part 40) 2024	mg/l	**24.04**	75	200
7.	**Calcium Hardness**	IS:3025 (Part 40) 2024	mg/l	**59.97**	-	-
8.	**Magnesium as Mg**	IS:3025 (Part 46) 2023	mg/l	**17.01**	30	100
9.	**Magnesium Hardness**	IS:3025 (Part 46) 2023	mg/l	**70.03**	-	-
10.	**Chloride**	IS:3025 (Part 32) 1988 RA 2019	mg/l	**19.9**	250	1000
11.	**M-Alkalinity**	IS:3025 (Part 23) 2023	mg/l	**80**	200	600
12.	**Fluoride as F**	IS:3025 (Part 60) 2023	mg/l	**0.56**	1.0	1.5
13.	**Sulphate as SO4**	IS:3025 (Part 24) 2022	mg/l	**1.1**	200	400
14.	**Iron**	IS:3025 (Part 53) :2024	mg/l	**0.08**	0.3	No relaxation

--------End of report----------

Reviewed & Authorized By

Sudhamaye Environment Solution Pvt. Ltd.

Chinmayee Mohanty (QM)

Statement:
1. This Test Report refers only to the particular Item (s) Submitted for Testing
2. The Test Result Reported in this report are Valid at the time of and under the Stated Condition Of Measurement
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sudha.maye2024@gmail.com 7000341796, 7000486123, 8817515689
CIN NO-U74900CT2024PTC015669
GST NO- 22ABMCS5715N1ZX

TESTREPORT

URL NO : TC153592025000009F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA, DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/32** Sample ID: **SMPL/WTR/42** Sample Description : **Ground Water** Sample Detail :**Badadahra N21°55' 09.06"E 83° 11' 03.55"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample - **08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27°C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
15.	**Nitrate**	IS 3025 (Pt.34): 2023	mg/l	**0.51**	45	No relaxation
16.	**Carbonate**	IS:3025 (Part 23) 2023	mg/l	**65.6**	-	-
17.	**Bi- Carbonate**	IS:3025 (Part 23) 2023	mg/l	**97.6**	-	-
18.	**Sodium**	IS:3025 (Part 23) 1993	mg/l	**1**	-	-
19.	**Potassium**	IS:3025 (Part 23) 1993	mg/l	**0.4**	-	-

--------End of report----------

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sudha.maye2024@gmail.com 7000341796, 7000486123, 8817515689

CIN NO-U74900CT2024PTC015669

GST NO- 22ABMCS5715N1ZX

TC-15359

TESTREPORT

URL NO : TC153592025000010F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA, DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/32** Sample ID: **SMPL/WTR/43** Sample Description : **Ground Water** Sample Detail : **Tundri N 21° 53' 33.8" E 83° 11' 29.79"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample - **08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
1.	**pH**	IS:3025 (Part 11) 1983RA 2002	-	**7.18**	6.5 to 8.5	No relaxation
2.	**Turbidity**	IS:3025 (Part 10) 2023	NTU	**<1**	1	5
3.	**Conductivity**	IS:3025 (Part 14) 1984 RA 2002	µs/cm	**550**	-	-
4.	**Total Dissolve Solids**	IS:3025 (Part 16) 2023	mg/l	**357**	500	2000
5.	**Total Hardness**	IS:3025 (Part 21) 2009	mg/l	**288**	200	600
6.	**Calcium as Ca**	IS:3025 (Part 40) 2024	mg/l	**57.71**	75	200
7.	**Calcium Hardness**	IS:3025 (Part 40) 2024	mg/l	**143.99**	-	-
8.	**Magnesium as Mg**	IS:3025 (Part 46) 2023	mg/l	**34.99**	30	100
9.	**Magnesium Hardness**	IS:3025 (Part 46) 2023	mg/l	**44.01**	-	-
10.	**Chloride**	IS:3025 (Part 32) 1988 RA 2019	mg/l	**59.98**	250	1000
11.	**M-Alkalinity**	IS:3025 (Part 23) 2023	mg/l	**200**	200	600
12.	**Fluoride as F**	IS:3025 (Part 60) 2023	mg/l	**0.42**	1.0	1.5
13.	**Sulphate as SO4**	IS:3025 (Part 24) 2022	mg/l	**6.3**	200	400
14.	**Iron**	IS:3025 (Part 53) :2024	mg/l	**0.09**	0.3	No relaxation

--------End of report---------

Reviewed & Authorized By

Sudhamaye Environment Solution Pvt. Ltd.

Chinmayee Mohanty (QM)

Statement:

1. This Test Report refers only to the particular Item (s) Submitted for Testing
2. The Test Result Reported in this report are Valid at the time of and under the Stated Condition Of Measurement
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sudha.maye2024@gmail.com 7000341796, 7000486123, 8817515689

CIN NO-U74900CT2024PTC015669

GST NO- 22ABMCS5715N1ZX

TESTREPORT

URL NO : TC153592025000010F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA, DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/32** Sample ID: **SMPL/WTR/43** Sample Description : **Ground Water** Sample Detail : **Tundri N 21⁰ 53' 33.8" E 83º 11' 29.79"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample **- 08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27⁰C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
15.	**Nitrate**	IS 3025 (Pt.34): 2023	mg/l	**0.52**	45	No relaxation
16.	**Carbonate**	IS:3025 (Part 23) 2023	mg/l	**162**	-	-
17.	**Bi- Carbonate**	IS:3025 (Part 23) 2023	mg/l	**244**	-	-
18.	**Sodium**	IS:3025 (Part 23) 1993	mg/l	**1.3**	-	-
19.	**Potassium**	IS:3025 (Part 23) 1993	mg/l	**0.6**	-	-

--------End of report----------

Reviewed & Authorized By

Chinmayee Mohanty (QM)

Sudhamaye Environment Solution Pvt. Ltd.

SUDHAMAYE ENVIRONMENT SOLUTION PVT. LTD.
sudha.maye2024@gmail.com 7000341796, 7000486123, 8817515689
CIN NO-U74900CT2024PTC015669
GST NO- 22ABMCS5715N1ZX
SUDHAMAYE ENVIRONMENT SOLUTION PVT LTD
TC-15359

TESTREPORT

URL NO : TC153592025000011F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA, DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/27** Sample ID: **SMPL/WTR/44** Sample Description : **Ground Water** Sample Detail : **Basanpali N 21^{O} 55' 48.4" E 83^{o} 10' 50.2"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample - **08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
1.	**pH**	IS:3025 (Part 11) 1983RA 2002	-	**7.22**	6.5 to 8.5	No relaxation
2.	**Turbidity**	IS:3025 (Part 10) 2023	NTU	**<5**	1	5
3.	**Conductivity**	IS:3025 (Part 14) 1984 RA 2002	µs/cm	**600**	-	-
4.	**Total Dissolve Solids**	IS:3025 (Part 16) 2023	mg/l	**390**	500	2000
5.	**Total Hardness**	IS:3025 (Part 21) 2009	mg/l	**168**	200	600
6.	**Calcium as Ca**	IS:3025 (Part 40) 2024	mg/l	**35.27**	75	200
7.	**Calcium Hardness**	IS:3025 (Part 40) 2024	mg/l	**87.99**	-	-
8.	**Magnesium as Mg**	IS:3025 (Part 46) 2023	mg/l	**19.44**	30	100
9.	**Magnesium Hardness**	IS:3025 (Part 46) 2023	mg/l	**80.01**	-	-
10.	**Chloride**	IS:3025 (Part 32) 1988 RA 2019	mg/l	**19.99**	250	1000
11.	**M-Alkalinity**	IS:3025 (Part 23) 2023	mg/l	**84**	200	600
12.	**Fluoride as F**	IS:3025 (Part 60) 2023	mg/l	**0.31**	1.0	1.5
13.	**Sulphate as SO4**	IS:3025 (Part 24) 2022	mg/l	**2.61**	200	400
14.	**Iron**	IS:3025 (Part 53) :2024	mg/l	**0.09**	0.3	No relaxation

--------End of report----------

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Sudhamaye Environment Solution Pvt. Ltd.

Chinmayee Mohanty (QM)

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SUDHAMAYE ENVIRONMENT SOLUTION PVT LTD

SUDHAMAYE ENVIRONMENT SOLUTION PVT. LTD.

sudha.maye2024@gmail.com 7000341796, 7000486123, 8817515689

CIN NO-U74900CT2024PTC015669

GST NO- 22ABMCS5715N1ZX

TESTREPORT

URL NO : TC153592025000011F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA, DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/27** Sample ID: **SMPL/WTR/44** Sample Description : **Ground Water** Sample Detail : **Basanpali N 21^{O} 55' 48.4" E 83^{o} 10' 50.2"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample - **08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
15.	**Nitrate**	IS 3025 (Pt.34): 2023	mg/l	**0.46**	45	No relaxation
16.	**Carbonate**	IS:3025 (Part 23) 2023	mg/l	**68.88**	-	-
17.	**Bi- Carbonate**	IS:3025 (Part 23) 2023	mg/l	**102.48**	-	-
18.	**Sodium**	IS:3025 (Part 23) 1993	mg/l	**1.3**	-	-
19.	**Potassium**	IS:3025 (Part 23) 1993	mg/l	**0.6**	-	-

--------End of report----------

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Chinmayee Mohanty (QM)

Sudhamaye Environment Solution Pvt. Ltd.

TESTREPORT

URL NO : TC153592025000012F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA, DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/27** Sample ID: **SMPL/WTR/45** Sample Description : **River Surface Water** Sample Detail : **JaimuraN 21^{O} 55' 09.5"E 83^{o} 14' 04.6"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample - **08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
					Acceptable Limit	Permissible limit
A.	Chemical Parameter					
1.	**pH**	IS:3025 (Part 11) 1983RA 2002	-	**7.29**	6.5 to 8.5	No relaxation
2.	**Turbidity**	IS:3025 (Part 10) 2023	NTU	**5**	1	5
3.	**Conductivity**	IS:3025 (Part 14) 1984 RA 2002	µs/cm	**200**	-	-
4.	**Total Dissolve Solids**	IS:3025 (Part 16) 2023	mg/l	**130**	500	2000
5.	**Total Hardness**	IS:3025 (Part 21) 2009	mg/l	**88**	200	600
8.	**Calcium as Ca**	IS:3025 (Part 40) 2024	mg/l	**16.03**	75	200
9.	**Calcium Hardness**	IS:3025 (Part 40) 2024	mg/l	**39.99**	-	-
8.	**Magnesium as Mg**	IS:3025 (Part 46) 2023	mg/l	**11.66**	30	100
9.	**Magnesium Hardness**	IS:3025 (Part 46) 2023	mg/l	**48.01**	-	-
10.	**Chloride**	IS:3025 (Part 32) 1988 RA 2019	mg/l	**11.99**	250	1000
11.	**M-Alkalinity**	IS:3025 (Part 23) 2023	mg/l	**80**	200	600
12.	**Fluoride as F**	IS:3025 (Part 60) 2023	mg/l	**0.11**	1.0	1.5
13.	**Sulphate as SO4**	IS:3025 (Part 24) 2022	mg/l	**1.3**	200	400
14.	**Iron**	IS:3025 (Part 53) :2024	mg/l	**0.14**	0.3	No relaxation

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sudha.maye2024@gmail.com 7000341796, 7000486123, 8817515689
CIN NO-U74900CT2024PTC015669
GST NO- 22ABMCS5715N1ZX

TESTREPORT

URL NO : TC153592025000012F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA, DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/27** Sample ID: **SMPL/WTR/45** Sample Description : **River Surface Water** Sample Detail : **JaimuraN 21^{O} 55' 09.5"E 83^{o} 14' 04.6"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample **- 08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
15.	**Nitrate**	IS 3025 (Pt.34): 2023	mg/l	**0.43**	45	No relaxation
16.	**Carbonate**	IS:3025 (Part 23) 2023	mg/l	**65.6**	-	-
17.	**Bi- Carbonate**	IS:3025 (Part 23) 2023	mg/l	**97.6**	-	-
18.	**Sodium**	IS:3025 (Part 23) 1993	mg/l	**0.8**	-	-
19.	**Potassium**	IS:3025 (Part 23) 1993	mg/l	**0.2**	-	-

--------End of report----------

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GST NO- 22ABMCS5715N1ZX

TC-15359

TESTREPORT

URL NO : TC153592025000013F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA, DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/27** Sample ID: **SMPL/WTR/46** Sample Description : **Ground Water** Sample Detail : **Tayang N 21^{O} 55' 31.1 E 83º 13' 09.4"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample - **08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
1.	**pH**	IS:3025 (Part 11) 1983RA 2002	-	**7.63**	6.5 to 8.5	No relaxation
2.	**Turbidity**	IS:3025 (Part 10) 2023	NTU	**<5**	1	5
3.	**Conductivity**	IS:3025 (Part 14) 1984 RA 2002	µs/cm	**790**	-	-
4.	**Total Dissolve Solids**	IS:3025 (Part 16) 2023	mg/l	**515**	500	2000
5.	**Total Hardness**	IS:3025 (Part 21) 2009	mg/l	**488**	200	600
6.	**Calcium as Ca**	IS:3025 (Part 40) 2024	mg/l	**97.79**	75	200
7.	**Calcium Hardness**	IS:3025 (Part 40) 2024	mg/l	**243.99**	-	-
8.	**Magnesium as Mg**	IS:3025 (Part 46) 2023	mg/l	**59.29**	30	100
9.	**Magnesium Hardness**	IS:3025 (Part 46) 2023	mg/l	**244**	-	-
10.	**Chloride**	IS:3025 (Part 32) 1988 RA 2019	mg/l	**290.69**	250	1000
11.	**M-Alkalinity**	IS:3025 (Part 23) 2023	mg/l	**396**	200	600
12.	**Fluoride as F**	IS:3025 (Part 60) 2023	mg/l	**0.62**	1.0	1.5
13.	**Sulphate as SO4**	IS:3025 (Part 24) 2022	mg/l	**25.6**	200	400
14.	**Iron**	IS:3025 (Part 53) :2024	mg/l	**0.11**	0.3	No relaxation

--------End of report----------

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Chinmayee Mohanty (QM)

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sudha.maye2024@gmail.com 7000341796, 7000486123, 8817515689
CIN NO-U74900CT2024PTC015669
GST NO- 22ABMCS5715N1ZX

TESTREPORT

URL NO : TC153592025000013F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA, DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/27** Sample ID: **SMPL/WTR/46** Sample Description : **Ground Water** Sample Detail : **Tayang N 21° 55' 31.1 E 83° 13' 09.4"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample - **08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27⁰C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
15.	**Nitrate**	IS 3025 (Pt.34): 2023	mg/l	**1.26**	45	No relaxation
16.	**Carbonate**	IS:3025 (Part 23) 2023	mg/l	**324.72**	-	-
17.	**Bi- Carbonate**	IS:3025 (Part 23) 2023	mg/l	**483.12**	-	-
18.	**Sodium**	IS:3025 (Part 23) 1993	mg/l	**8**	-	-
19.	**Potassium**	IS:3025 (Part 23) 1993	mg/l	**2.6**	-	-

--------End of report----------

Reviewed & Authorized By

SUDHAMAYE ENVIRONMENT SOLUTION PVT LTD

Chinmayee Mohanty (QM)

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SUDHAMAYE ENVIRONMENT SOLUTION PVT LTD

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sudha.maye2024@gmail.com 7000341796, 7000486123, 8817515689

CIN NO-U74900CT2024PTC015669

GST NO- 22ABMCS5715N1ZX

TC-15359

TESTREPORT

URL NO : TC153592025000014F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA,** **DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/27** Sample ID: **SMPL/WTR/47** Sample Description : **Surface Water** Sample Detail : **Badadahra (Ash Pond) N 21 ^{O} 54' 46.69"** **E 83^{o} 11' 45.39"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample **- 08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
1.	**pH**	IS:3025 (Part 11) 1983RA 2002	-	**7.19**	6.5 to 8.5	No relaxation
2.	**Turbidity**	IS:3025 (Part 10) 2023	NTU	**2.3**	1	5
3.	**Conductivity**	IS:3025 (Part 14) 1984 RA 2002	µs/cm	**620**	-	-
4.	**Total Dissolve Solids**	IS:3025 (Part 16) 2023	mg/l	**403**	500	2000
5.	**Total Hardness**	IS:3025 (Part 21) 2009	mg/l	**380**	200	600
6	**Calcium as Ca**	IS:3025 (Part 40) 2024	mg/l	**76.95**	75	200
7.	**Calcium Hardness**	IS:3025 (Part 40) 2024	mg/l	**191.99**	-	-
8.	**Magnesium as Mg**	IS:3025 (Part 46) 2023	mg/l	**45.68**	30	100
9.	**Magnesium Hardness**	IS:3025 (Part 46) 2023	mg/l	**188**	-	-
10.	**Chloride**	IS:3025 (Part 32) 1988 RA 2019	mg/l	**61.98**	250	1000
11.	**M-Alkalinity**	IS:3025 (Part 23) 2023	mg/l	**280**	200	600
12.	**Fluoride as F**	IS:3025 (Part 60) 2023	mg/l	**0.19**	1.0	1.5
13.	**Sulphate as SO4**	IS:3025 (Part 24) 2022	mg/l	**6**	200	400
14.	**Iron**	IS:3025 (Part 53) :2024	mg/l	**0.06**	0.3	No relaxation

--------End of report----------

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Sudhamaye Environment Solution Pvt. Ltd.

Chinmayee Mohanty (QM)

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CIN NO-U74900CT2024PTC015669

GST NO- 22ABMCS5715N1ZX

TESTREPORT

URL NO : TC153592025000014F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA,** **DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/27** Sample ID: **SMPL/WTR/47** Sample Description : **Surface Water** Sample Detail : **Badadahra (Ash Pond) N 21 ^{O} 54' 46.69"** **E 83^{o} 11' 45.39"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample - **08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
15.	**Nitrate**	IS 3025 (Pt.34): 2023	mg/l	**1.6**	45	No relaxation
16.	**Carbonate**	IS:3025 (Part 23) 2023	mg/l	**229.6**	-	-
17.	**Bi- Carbonate**	IS:3025 (Part 23) 2023	mg/l	**341.6**	-	-
18.	**Sodium**	IS:3025 (Part 23) 1993	mg/l	**3**	-	-
19.	**Potassium**	IS:3025 (Part 23) 1993	mg/l	**1.9**	-	-

--------End of report----------

Reviewed & Authorized By

SUDHAMAYE ENVIRONMENT SOLUTION PVT LTD

Chinmayee Mohanty (QM)

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CIN NO-U74900CT2024PTC015669

GST NO- 22ABMCS5715N1ZX

TC-15359

TESTREPORT

URL NO : TC153592025000015F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA,** **DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/27** Sample ID: **SMPL/WTR/48** Sample Description : **Surface Water** Sample Detail : **Badadahra (Pond Near Main Gate of DB Power Plant) N 21^{O} 54' 4.88" E 83^{o} 11' 16.21"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample - **08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
1.	**pH**	IS:3025 (Part 11) 1983RA 2002	-	**6.98**	6.5 to 8.5	No relaxation
2.	**Turbidity**	IS:3025 (Part 10) 2023	NTU	**3.9**	1	5
3.	**Conductivity**	IS:3025 (Part 14) 1984 RA 2002	µs/cm	**600**	-	-
4.	**Total Dissolve Solids**	IS:3025 (Part 16) 2023	mg/l	**390**	500	2000
5.	**Total Hardness**	IS:3025 (Part 21) 2009	mg/l	**270**	200	600
6.	**Calcium as Ca**	IS:3025 (Part 40) 2024	mg/l	**53.98**	75	200
7.	**Calcium Hardness**	IS:3025 (Part 40) 2024	mg/l	**134.68**	-	-
8.	**Magnesium as Mg**	IS:3025 (Part 46) 2023	mg/l	**32.88**	30	100
9.	**Magnesium Hardness**	IS:3025 (Part 46) 2023	mg/l	**135.31**	-	-
10.	**Chloride**	IS:3025 (Part 32) 1988 RA 2019	mg/l	**15.99**	250	1000
11.	**M-Alkalinity**	IS:3025 (Part 23) 2023	mg/l	**100**	200	600
12.	**Fluoride as F**	IS:3025 (Part 60) 2023	mg/l	**0.36**	1.0	1.5
13.	**Sulphate as SO4**	IS:3025 (Part 24) 2022	mg/l	**2.6**	200	400
14.	**Iron**	IS:3025 (Part 53) :2024	mg/l	**0.06**	0.3	No relaxation

--------End of report----------

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Chinmayee Mohanty (QM)

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TESTREPORT

URL NO : TC153592025000015F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA,** **DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/27** Sample ID: **SMPL/WTR/48** Sample Description : **Surface Water** Sample Detail : **Badadahra (Pond Near Main Gate of DB Power Plant) N 21^{O} 54' 4.88" E 83^{o} 11' 16.21"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample - **08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
15.	**Nitrate**	IS 3025 (Pt.34): 2023	mg/l	**2.3**	45	No relaxation
16.	**Carbonate**	IS:3025 (Part 23) 2023	mg/l	**80**	-	-
17.	**Bi- Carbonate**	IS:3025 (Part 23) 2023	mg/l	**122**	-	-
18.	**Sodium**	IS:3025 (Part 23) 1993	mg/l	**1.1**	-	-
19.	**Potassium**	IS:3025 (Part 23) 1993	mg/l	**0.6**	-	-

--------End of report----------

Reviewed & Authorized By

Chinmayee Mohanty (QM)

Sudhamaye Environment Solution Pvt. Ltd.

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TC-15359

TESTREPORT

URL NO : TC153592025000016F Name and Address of customer **To,** **M/S. D.B POWER** **NANDELI ROAD, VILL- BADADARHA, DIST: SHAKTI (C.G.)**	Request ID: **SMPL/SI/2502/27** Sample ID: **SMPL/WTR/49** Sample Description : **Surface Water** Sample Detail : **Badadahra(Reservior Pond) N 21^O 54' 50.21"E 83^o 11' 37.56"**
Date of Receipt sample: **06/02/2025**	Date of Reporting : **08/02/2025**
Period of Testing : **06/02/2025- 08/02/2025**	Number Of Sample - **08**
Container : **Plastic**	Sample Quantity: **1Ltr**
Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
					Acceptable Limit	Permissible limit
A.	Chemical Parameter					
1.	**pH**	IS:3025 (Part 11) 1983RA 2002	-	**7.22**	6.5 to 8.5	No relaxation
2.	**Turbidity**	IS:3025 (Part 10) 2023	NTU	**1.36**	1	5
3.	**Conductivity**	IS:3025 (Part 14) 1984 RA 2002	μs/cm	**570**	-	-
4.	**Total Dissolve Solids**	IS:3025 (Part 16) 2023	mg/l	**370**	500	2000
5.	**Total Hardness**	IS:3025 (Part 21) 2009	mg/l	**260**	200	600
6.	**Calcium as Ca**	IS:3025 (Part 40) 2024	mg/l	**51.30**	75	200
7.	**Calcium Hardness**	IS:3025 (Part 40) 2024	mg/l	**127.99**	-	-
8.	**Magnesium as Mg**	IS:3025 (Part 46) 2023	mg/l	**32.07**	30	100
9.	**Magnesium Hardness**	IS:3025 (Part 46) 2023	mg/l	**132**	-	-
10.	**Chloride**	IS:3025 (Part 32) 1988 RA 2019	mg/l	**21.99**	250	1000
11.	**M-Alkalinity**	IS:3025 (Part 23) 2023	mg/l	**132**	200	600
12.	**Fluoride as F**	IS:3025 (Part 60) 2023	mg/l	**0.08**	1.0	1.5
13.	**Sulphate as SO4**	IS:3025 (Part 24) 2022	mg/l	**6**	200	400
14.	**Iron**	IS:3025 (Part 53) :2024	mg/l	**0.02**	0.3	No relaxation

--------End of report----------

Reviewed & Authorized By

Chinmayee Mohanty (QM)

Sudhamaye Environment Solution Pvt. Ltd.

Statement:
1. This Test Report refers only to the particular Item (s) Submitted for Testing
2. The Test Result Reported in this report are Valid at the time of and under the Stated Condition Of Measurement
3. This Particular test report cannot be reproduced expect in full, without prior permission of Quality Manager

SUDHAMAYE ENVIRONMENT SOLUTION PVT LTD

SUDHAMAYE ENVIRONMENT SOLUTION PVT. LTD.

sudha.maye2024@gmail.com 7000341796, 7000486123, 8817515689

CIN NO-U74900CT2024PTC015669

GST NO- 22ABMCS5715N1ZX

TESTREPORT

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Environment Condition -: **Temp27^{0}C / Humidity-44%**	

Sl. No	PARAMETERS	TEST METHOD	UNIT	TEST RESULT	DRINKING WATER IS:10500-2012	
A.	Chemical Parameter				Acceptable Limit	Permissible limit
15.	**Nitrate**	IS 3025 (Pt.34): 2023	mg/l	**0.49**	45	No relaxation
16.	**Carbonate**	IS:3025 (Part 23) 2023	mg/l	**108.24**	-	-
17.	**Bi- Carbonate**	IS:3025 (Part 23) 2023	mg/l	**161.04**	-	-
18.	**Sodium**	IS:3025 (Part 23) 1993	mg/l	**09**	-	-
19.	**Potassium**	IS:3025 (Part 23) 1993	mg/l	**0.3**	-	-

--------End of report----------

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