SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE (EC)

FOR

1370 MW (2x685MW) Thermal Power Plant

At

Village Raikheda, Gaitara and Chicholi, Tilda Block, Raipur District, Chhattisgarh

Submitted to:

West Central Zone, Regional Office Ministry of Environment, Forests & Climate Change, Central Pollution Control Board, New Delhi & Chhattisgarh Environment Conservation Board, Raipur



Submitted by:

Environment Management Department

Raipur Energen Limited

Village Raikheda, Block Tilda, District Raipur, Chhattisgarh

October'2020 - March '2021

Raipur Energen Limited 1370 MW (2x685 MW) Coal Based Thermal Power Plant

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1370 MW (2x685 MW) Coal Based Thermal Power Plant

INTRODUCTION

Raipur Energen Limited (formerly known as GMR Chhattisgarh Energy Generation Limited) has set up a coal based Thermal Power Plant of capacity 2x685 MW at village Raikheda, Gaitara and Chicholi in Tilda block of Raipur District, Chhattisgarh.

Environmental Clearance has been granted by Hon'ble MoEF&CC to M/s GMR Energy Ltd. vide letter No. J-13012/62/2008-IA.II (T), dated 09/05/2011. It was subsequently amended vide letter dated 13.06.2013, 18.11.2014. 04.02.2015 and 09.12.2015.

The company has been taken over by Adani Power Ltd & name of the company has been changed from M/s GMR Chhattisgarh Energy Limited to Raipur Energen Limited with effect from 20th August 2019 and it is to note that Raipur Energen Limited is 100% subsidiary of M/s Adani Power Limited.

REL has also obtained transferred EC vide letter No. J-13012/62/2008-IA.II (T), dated 05.11.2019.

REL has a well-established Environmental Laboratory with equipped monitoring equipment, which used to monitor and test environmental parameters.

The company has adopted three peripheral villages and executing most of the CSR works which is supported by the Adani Foundation, in those villages in the field of their livelihood, infrastructure development, cleanliness, community health and education.

REL has engaged NABL Accredited Lab for their service of sampling, monitoring and analysis of Environmental parameters as per statutory guidelines.

1370 MW (2x685 MW) Coal Based Thermal Power Plant

Compliance Status of Environmental Clearance

vide letter No. J-13012/62/2008-IA.II (T), dated: 09th May 2011 and amendment dated: 13.06.2013, 18.11.2014, 04.02.2015 & 09.12.2015.

SI. No.	Conditions of EC	Compliance Status
Α.	Specific Conditions	
(i)	Vision document specifying prospective plan for the site shall be formulated and submitted to the Ministry within six months.	Complied. The Vision document of the previous company was submitted with the previous compliance report. Name of the company has been changed to Raipur Energen Limited from 1 st July 2019 and company is now a subsidiary of Adani Power Limited.
(ii)	In case source of fuel supply now proposed to be run on imported coal from South Africa for running the power plant is proposed to be changed to domestic coal at a later stage, the project proponent shall apply for such a change in environmental clearance along with necessary documents as required under EIA notification, 2006 (and its amendments). In such a case the necessity for holding public hearing again or otherwise will be determined by the Ministry in consultation with the Expert Appraisal Committee (Thermal Power).	Being complied. Use of 100% domestic coal sourced from tolling linkage and open market. Talabira-1 Mine is not under operation as Mining Plan has expired and the revised mining plan is due for approval. Sulphur and Ash content of coal being used are within prescribed limits of MoEFCC & CECB.
(iii)	Provision for installation of FGD shall be provided for future use.	Complied. Space provision for FGD have been provided as per the guidelines of CPCB vide letter No. B-33014/07/2017/IPC-II/TPP/15848 dated 11.12.2017. However, as per MoEF&CC's Notification dated 31 st March 2021, Raipur TPP is falling under Category "C" Non- retiring TPPs and the timelines for compliance of SO2 emission is up to December 2024. Accordingly the work is under progress for compliance as per CPCB direction.
(iv)	Stack of 275 m height shall be installed and provided with continuous online monitoring equipment's for SO _x , NO _x , PM _{2.5} & PM ₁₀ . Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack may also monitored on periodic basis.	Complied. Stack Height of 275 meter has been provided. On-line continuous emission monitoring system (CEMS) has been installed for PM, SO ₂ & NOx. Monitoring of Hg in stack emission is also carried out by authorized laboratory by MoEF & CC. The exit gas velocity is ensured @ 22m/sec.

SI. No.	Conditions of EC	Compliance Status
		The Environment Monitoring report is enclosed herewith as Annexure I.
(v)	High Efficiency Electrostatic Precipitators (ESPs) shall be installed followed by installation of Bag Filter and it shall be ensured that particulate emission does not exceed 50 mg.Nm ³ .	Complied. High efficiency Electrostatic Precipitators (ESP) has been considered to meet revised emission standard of <50 mg/ Nm ³ for PM. The monitoring report for stack emission is enclosed in Annexure I.
(vi)	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.	Complied. Dust extraction system has been installed in coal crusher, AHP & coal bunker. Dust suppression system through dry fog method has been installed in coal conveyor transfer point & water spray system in coal yard has also been installed for dust suppression.
(vii)	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.	Being Complied. Sulphur and Ash content in coal being used in project as fired coal is being ensured within prescribed standards < 0.7% and Ash content is within 34%.
(viii)	Transport of coal to the plant site shall be strictly by rail. The project proponent shall therefore immediately take up the matter with the Railways. Status of implementation shall be submitted to the Regional Office of the Ministry from time to time.	Complied. The transportation of Coal through rail has been started. Avenue plantation all along the road has already been done inside the plant premises.
(ix)	Existing de-generated water bodies (if any) within 5.0 Km of the site shall be regenerated at the project proponent's expenses in consultation with the state govt.	Complied. REL has regenerated around 6 numbers of Water bodies in nearby villages including 2 numbers of ponds are deepened and beautification has been done in consultation with state government.
(x)	The proponent shall sponsor a detailed study regarding water availability in Mahanadi River for all competing sources such as drinking, agriculture, industrial, minimum flow of water in the river during the lean season etc. through institutions like IIT, Delhi/IIT Roorkee. The draft terms of reference shall be submitted within three months which shall be finalized by the Expert Appraisal Committee. The	Complied. Water allocation is from Mahanadi River and maintained by WRD, Chhattisgarh. REL has no role in regulating the water flow downstream & distribution

SI. No.	Conditions of EC	Compliance Status
	preliminary report on the above study shall be submitted within one year.	
(xi)	The project proponent shall undertake proactive water harvesting measures and water storage for a larger period not less than 30 days storage shall be developed. The rain water harvesting system shall be put in place before commissioning of the plant. Central Groundwater Authority Board shall be consulted for finalization of appropriate rainwater harvesting technology design within a period of three months from the date of this clearance and details shall be furnished. The design of rain water harvesting shall comprise of rain water collection from the built up and open area in the plant premises. Action plan and road map for implementation shall be submitted to the Ministry within six months.	Rainwater harvesting design is approved by CGWA. Copy of approval letter is submitted to MoEF&CC. Rainwater harvesting system has been implemented & further improvement is ongoing.
(xii)	Hydrogeology in and around the project area shall be reviewed annually from an institute. organization of repute to assess impact of surface water and ground regime (especially around ash dyke). In case and deterioration is observed specific mitigation measures shall be undertaken and reports. data of water quality monitored regularly and maintained shall be submitted to the Regional Office of the Ministry.	Complied. The annual review of hydrogeology study has been carried out, and submitted with compliance report for the period of April'2020 to September'2020.
(xiii)	No ground water shall be extracted for use in operation of the power plant even in lean season.	Being Complied. Ground water is not used for operation of plant.
(xiv)	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.	Complied. No water bodies have been disturbed during construction & operational activity of the plant.
(xv)	Water requirement shall be optimized to around 32 MCM and shall accordingly adopt higher COC of at least not less than 5.0.	Complied. Water requirement is being restricted to 25 MCM. It has been incorporated in the plant design and COC is being maintained more than 5.0.
(xvi)	Minimum required environmental flow suggested by the Competent Authority of the State Govt. shall be maintained in the	Complied. REL has revised and optimized water requirements by reusing and recycling approaches, the water allotment has been

SI. No.	Conditions of EC	Compliance Status
	Channel. Rivers (as applicable) even in lean season.	reduced from 37 to 25 MCM per annum by Water Resource Department, Government of Chhattisgarh considering the minimum water flow requirement in the river.
(xvii)	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	Complied. Six nos. piezometers constructed around periphery of the ash pond. Seasonal monitoring of ground water level and quality is being done and monitoring data is being submitted to the MOEF, CPCB & CECB regularly. The ground water analysis data is attached in Annexure I .
(xviii)	Monitoring surface water quality in the region 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.	Complied. Seasonal monitoring of Surface water is being done. The monitored data is being submitted to MOEF, CPCB & CECB regularly. The surface water analysis data is attached in Annexure I.
(xix)	Additional soil for levelling 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. Completed during construction phase. No major construction is being executed in operation phase.
(xx)	The project proponent shall undertake measures and ensure that no fugitive fly ash emissions take place at any point of time.	Complied. All the preventive measures have been ensured to restrict fugitive emission from fly ash.
(xxi)	Utilization of 100% Fly Ash generated shall be made from 4th year of operation. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.	Complied. Fly ash is being supplied to nearest cement industries and brick manufacturer. Fly Ash generation and utilization is attached as Annexure II
(xxii)	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	Being Complied. Fly ash is being collected in dry form and unutilized fly ash is being disposed in dedicated ash storage ponds. As per MoEF & CC Office Memorandum dated 28 th August 2019, utilization of fly ash in low lying areas has been permitted and the existing condition

SI. No.	Conditions of EC	Compliance Status
	existing ash pond. No ash shall be disposed off in low lying area.	in Environmental Clearance may stand replaced, accordingly organization has started utilization of fly ash in low lying areas and land reclamation. Mercury and heavy metals are being monitored in bottom ash. No effluent is emanated from ash pond.
(xxiii)	Ash pond shall be lined with HDPE/LDPE lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached.	Complied. Ash ponds is constructed in the way that no leachate takes place any point of time.
(xxiv)	For disposal of Bottom Ash in abandoned mines (if proposed to be undertaken) shall be done after obtaining due permission from DGMS and after ensuring that the bottom and sides of the mined out areas are adequately lined with clay before Bottom Ash is filled up. The project proponent shall inform the State Pollution Control Board well in advance before undertaking the activity.	Noted. Compliance assured.
(xxv)	Green Belt consisting of 3 tiers of plantations of native species around plant and at least 75 m width shall be raised. Tree density shall not less than 2500 per ha with survival rate not less than 80 %.	Complied. Plantation / Greenbelt development is being developed as per guidelines & in consultation with forest department for local species. Greenbelt Report is enclosed.
(xxvi)	At least three nearest village shall be adopted and basic amenities like development of roads, drinking water supply, primary health centre, primary school etc shall be developed in co-ordination with the district administration.	Complied. The Company undertakes various CSR activities with expenditure within the framework of the CSR Rules under the Companies Act. Community services in three nearby villages namely Raikheda, Chicholi & Gaitera is conducted with focus and Sontara, Gaurkheda and Murra village area also covered. The outreach is also expanded to other nearby villages namely Khamariya, Konari, Tulsi, Tarashiv, Bartori, Chatod and Samoda. The thematic area of work in villages is improving quality of education, access of health care and sanitation, empowerment and livelihood thought SHGs, individual income generation & community vocational training centre and community development.

SI. No.	Conditions of EC	Compliance Status
		Please refer the attached annual report for latest updates as Annexure IV
(xxvii)	The project proponent shall also adequately contribute in the development of the neighbouring villages. Special package with implementation schedule for providing potable drinking water supply in the nearby villages and schools shall be undertaken in a time bound manner.	Being complied. The Company is undertaking CSR activities within 10 km radius area with focus on project affected and Railway siding villages namely Sontara, Gaurkheda, Khamariya, Konari Murra, Tulsi, Tarashiv, Bartori, Chatod located on western and northern boundary of the proposed plant. The development work in these villages is implemented in planned and time bound manner.
(xxviii)	A time bound implementation of the CSR shall be formulated within six months and submitted to the Ministry. While identifying CSR activities it shall be ensured that need based assessment for the nearby villages within study area shall be conducted 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 shall be undertaken. Development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. Vocational training programme for possible self-employment and jobs shall be imparted to identify villagers free of cost.	Being complied. CSR Plan for the villages is made as per local need and CSR activities are identified by Social work professionals employed exclusively for CSR through the company in consultation with communities and their representatives. Poorest of the poor families are identified basing village Panchayats statistics and special interventions have been planned for their up-liftment. Separate budget has been allocated for community development activities, income generation activities. Vocational training is being provided to youth for self-employment free of cost. We have started Pratibha Center for local youths. To increase access of youth to educational and employment opportunities through helping them become aware of and to prepare for these. To prepare youth to become self-reliant through education and employment opportunities at Pratibha centers. Please refer the attached annual report for latest updates as Annexure IV
(xxix)	An amount of Rs 33.16 Crores shall be earmarked as one time capital cost for CSR programme as committed by the project	Time bound implementation of CSR activities have been carried out & CSR budget has earmarked for CSR activities being
	proponent. Subsequently a recurring expenditure of Rs 6.63 Crores per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within six	implemented in nearby project villages.

SI. No.	Conditions of EC	Compliance Status
	month along with road map for implementation.	
(xxx)	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	Complied. Annual review of Social Audit has been carried out in year 2020 by Indian Institute of Social Welfare and Business Management, Management House, College Square, West Kolkata. The report has already been submitted with compliance report for period of April'2020 to Spetember'2020
В.	General Conditions;	
(i)	The treated effluents conforming to the prescribed standards only shall be re- circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.	Complied. The treated effluents conforming to the prescribed standards only are re-circulated and reused within the plant. Plant layout has been designed so that effluents and storm water do not get mixed. The ETP analysis report is attached as Annexure I.
(ii)	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt plantation.	Complied. A well-equipped Sewage Treatment Plant has been installed and is already operational. Treated Water is being used within plant premises for plantation & horticulture.
(iii)	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 location plant layout shall be submitted to the Ministry as well as to the Regional Office of the ministry.	Complied. Drawings & other details are already submitted to the MoEF&CC, Delhi as well as Regional Office, MoEF&CC.
(iv)	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. First Aid and sanitation arrangements shall	Complied. Approval for storage facilities for auxiliary liquid fuel such as LDO/ HFO/LSHS has been obtained from Department of Explosives, Nagpur and the same has been submitted. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan also is in place. Complied.
(v)	be made for the drivers and other contract workers during construction phase.	
(vi)	Noise levels emanating for turbines shall be so controlled such that the noise in the work	Complied.

SI. No.	Conditions of EC	Compliance Status
	zone shall be limited to 85 dBA from the source. For people working in the high noise area, requisite personal protective equipment like ear plugs, 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.	Engineering control for noise such as acoustic enclosure, silencer have been installed in the turbine. Other than engineering controls, PPE's like ear plug, muff etc. are provided to workers in high noise area. Noise level monitoring report is attached in Annexure I .
(vii)	Regular monitoring of ambient air ground level concentration of SO ₂ , NOx, 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.	Complied. REL has installed three nos. of stationary AAQMS station at periphery of the plant for Ambient air quality monitoring. Environment Monitoring Data as part of the six-monthly compliance is being submitted to MoEF&CC and is also made available at company's website. https://www.adanipower.com/Downloads The ambient air quality monitoring report is attached as Annexure I.
(viii)	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 completion of the project.	Complied.
(ix)	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 Quality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance an 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 at <u>http:envfor.nic.in</u>	Complied. Advertisement has been published in local daily News Papers & details submitted with previous compliance report.

SI. No.	Conditions of EC	Compliance Status
(x)	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad, Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions, representations. If any, receive while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Complied. The environment clearance letter is available at website of Adani Power. <u>https://www.adanipower.com/Downloads</u>
(xi)	An Environmental Cell comprising of at least one expert in environmental science. engineering, occupational health and social scientist, shall be created at the project site itself and shall be headed by an officer of appropriate superiority and qualification it shall be ensured that the Head the Cell shall directly report to the head of the organization and he shall be held responsible for implementation of environmental regulations and social impact improvement, mitigation measures.	Complied. REL has a well-established Environment Management Dept. headed by a competent experienced Manager with relevant academic qualification supported by Environmental Engineers, Chemist & Horticulturist. Environmental laboratory has already been established & is operational to monitor Environmental Quality Parameters for Ambient Air, Water, Stack emission monitoring etc.
(xii)	The proponent shall upload the status of compliance of the stipulated environmental clearance 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 display at a convenient location near the main gate of the company in the public domain.	Complied. Display board has been installed at main gate of TPP. Environment compliance report will be uploaded in company website. <u>www.adanipower.com/Downloads</u>
(xiii)	The environment statement for each financial year ending 31 March in Form- 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 at the Ministry.	Complied. The Environmental Statement Form V has been submitted vide Letter No, REL/EMD/Sept/72 dated 21 st September 2020.

SI. No.	Conditions of EC	Compliance Status
(xiv)	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 by e-mail to the Regional Office, Ministry of Environment and Forests.	Being Complied. Six monthly compliance on the Environmental Clearance granted by MoEF is being submitted to MoEF, CPCB & CECB regularly. Compliance status updated on company's website. <u>www.adanipower.com/Downloads</u> Compliance report for the period of April'2020 to September'2020 had been submitted to your good office vide letter no.: REL/TPP/EMD/MoEF/EC/1125/20 dated 25.11.2020
(xv)	Regional Office of the Ministry of Environment, forest and climate change 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 update the same from time to time at least six monthly basis Criteria pollutants levels including NOX (from stack & ambient air) shall be displayed at the main gate of the power plant.	Being Complied. EIA & EMP report with all necessary document & information are already submitted to RO, MoEF&CC and CECB.
(xvi)	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.	Complied. Separate fund has been already allocated for environmental protection.
(xvii)	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 date of start	Complied. Financial Closure granted on 10 th Dec'10. The Project development started after receiving Consent to establish dated 13 th Jun'11.

SI. No.	Conditions of EC	Compliance Status
	of land development work a commissioning	
	of plant.	
(xviii)	Full cooperation shall be extended to the	Noted.
	Scientists/Officers from the Ministry	Full co-operation always extended.
	Regional Office of the Ministry at	
	Bangalore/CPCB/SPCB who would be	
	monitoring the compliance of environmental	
	status.	
	tions of Amended EC dated 13.06.2013	
(v)	High Efficiency Electrostatic Precipitators	Complied.
	(ESPs) shall be installed and it shall be	High efficiency Electrostatic Precipitators (ESP)
	ensured that particulate emission does not	has been considered to meet revised emission
	exceed 50 mg/Nm3"	standard of <50 mg/ Nm ³ for PM. The monitoring report for stack emission is
		enclosed as Annexure I.
(xxxi)	The GCV of the imported coal from South	Being Complied.
(^^^)	Africa shall not be less than 4911 Kcal/kg and	being complied.
	the ash and sulphur contents shall not	Sulphur and Ash content in coal being used in
	exceed the limits stated under:	project as fired coal is being ensured within
	Ash contents: 33.7%	prescribed standards <0.7% and Ash content
	Sulphur contents: 0.7%	is within 34%.
(xxxii)	A long term study of radio activity and heavy	Radioactivity analysis in coal and ash has
(,	metals contents on coal to be used shall be	been carried out by Board of Radiation and
	carried out through a reputed institute.	Isotope Technology (BRIT) Government of
	Thereafter mechanism for an in-built	India,
	continuous monitoring for radio activity and	
	heavy metals in coal and fly ash (including	
	bottom ash) shall be put in place.	
(xxxiii)	Continuous monitoring for heavy metals in	Being complied.
	and around the ash pond area shall be carried	
	out through reputed institutes like IIT,	
	Kanpur and records/ data maintained.	
Condit	ions of Amended EC Extension dated 18.11.20	
(i)	The coal transportation by road shall be	Complied.
	through mechanically covered trucks to the	The transportation through rail is being done.
	extent feasible, else, shall be through	
	tarpaulin covered trucks.	
(ii)	Avenue plantation of 2/3 rows all along the	Complied.
	road shall be carried out by the project	The coal transportation through rail has been
	proponent at its own expenses in	started.
	consultation with the State Government	Avenue plantation all along the road has already been done inside the plant premises.
/	Authorities.	
(iii)	Periodic maintenance of the road shall be	Complied after EC amendment.
	done by the project proponent at its own	The coal transportation through rail has been
	expenses and shall facilitate the traffic	started.

SI. No.	Conditions of EC	Compliance Status
	control on the road in consultation with the State Government Authorities.	Avenue plantation all along the road has already been done inside the plant premises.
(iv)	The PP shall advertise in the newspaper and place on the website, the amendment issued by the Ministry for public information.	Complied. Advertisement has been published in local daily News Papers. & details submitted with previous compliance report. Original Env. Clearance along with its amendment from time to time has been kept in public domain at the website of holding company https://www.adanipower.com/Downloads
(xxxiv)	Harnessing solar power within the premises of the plant particularly at available rooftops shall be undertaken and status of implementation shall be submitted periodically to the Regional Office of the Ministry.	Being Complied. The feasibility study has been done & the work is awarded to M/s Mundra Solar PV Limited (MSPVL).
(xxxv)	Green belt shall also be developed around the Ash Pond over and above the Green Belt around the plant boundary.	Complied. Greenbelt development report is attached as Annexure III.
(xxxvi)	laid Corporate Environment Policy, identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.	Complied. REL has implemented ISO 14001:2015 under Integrated Management System consist of Environment, Health & Safety, Quality and Energy Management Systems. We have formulated a Corporate policy as per the requirement of Integrated Management System (IMS), Biodiversity Conservation Policy has already been framed and incorporated in existing IMS policy. REL has well established Environment Management Dept. which is headed by experience Manager& supported by Env. Engineer & Lab Chemist. Environmental laboratory has been established to monitor Environmental Quality Parameters for Ambient Air, Water, Stack emission monitoring etc. Environmental Management System as per EMS ISO 14001:2015 implemented under Integrated Management System.
	tions of Amended EC Extension dated 04.02.2	
(i)	Sulphur and ash contents in the coal to be used in the project shall not exceed 0.7% and 34% respectively for at any given time. In case of variation of coal quality at any point	Being Complied. Sulphur and Ash content in coal being used in project as fired coal is being ensured within

SI. No.	Conditions of EC	Compliance Status				
	of time, fresh reference shall be made to the	prescribed standards of <0.7% and Ash				
	Ministry for suitable amendments to	content is within 34%.				
	environmental clearance condition wherever					
	necessary.					
(ii)	The PP shall advertise in the local	Complied.				
	newspapers and place on the website, the	Advertisement has been published in local				
	proposed amendment for public information.	daily News Papers. & details submitted with				
		previous compliance report.				
Condi	tions of Amended EC Extension dated 09.12.20	015				
(i)	The Sulphur and ash contents in the coal	Being Complied.				
	shall not exceed 0.7 % and 34% respectively.	Sulphur and Ash content in coal being used in				
	In case of variation of coal quality at any	project as fired coal is being ensured within				
	point of time, fresh reference shall be made	prescribed standards of 0.7% and Ash content				
	to the Ministry for consideration.	is within 34%.				
(ii)	The PP shall advertise in the local leading	Complied.				
	newspapers and place on the website, the	•				
	proposed amendment of EC (after receipt	daily News Papers & details already submitted				
	from Ministry) for change in source of coal	along with compliance report.				
	for public information.					

EC	EC amendment – MoEF&CC notification vide letter number S.O. 1561 (E) dated 21 st May, 2020						
SI. No.	Condition of Notification	Compliance Status					
1)	 Setting up technology solution for emission norms i) Compliance of specified emission norms for Particulate Matter, as per extent notifications and instructions of Central Pollution Control Board, issued from time to time. ii) In case of washeries, middling and rejects to be utilized in FBC (Fluidised Bed Combustion) technology based thermal power plant. Washery to have linkage for middling and rejects in Fluidised Bed Combustion plants. 	 Noted. i) Technology solutions are being implemented for mitigating fugitive emissions of Particulate Matter. ii) Washeries, middling and rejects are not applicable for this Thermal Power Plant. 					
2)	 Management of Ash Ponds i) The thermal power plants shall comply with conditions, as notified in the Fly Ash notifications issued from time to time, without being entitled to additional capacity of fly ash pond (for existing power generation capacity) on ground of switching from washed coal to unwashed coal. 	 i) Noted & being complied. Fly ash is being supplied to nearest cement industries and brick manufacturer. Fly Ash generation and utilization is regularly submitted to MoEFCC, CPCB, CEA & CECB. Please refer Annexure II. ii) Water requirement is being restricted to 25 MCM. Optimization of water has 					

	ii) Appropriate Technology solutions shall be applied to optimise water consumption for Ash management.	been incorporated as part of plant design and COC is being maintained more than 5.0 iii) Noted & being complied
	 iii) The segregation of ash may be done at the Electro- Static Precipitator stage, if required, based on site specific conditions, to ensure maximum utilisation of fly ash iv) Subject to 2(i) above, the thermal power plants to dispose fly ash in abandoned or working mines (to be facilitated by mine owner) with environmental safeguards. 	iv) Noted & will be complied as & when fly ash is disposed in abandoned or working mines.
3)	 Transportation i) Coal transportation may be undertaken by covered Railway wagon (railway wagons covered by tarpaulin or other means) and/or covered conveyor beyond the mine area. However, till such time enabling Rail transport/conveyer beyond infrastructure is not available, road transportation may be undertaken in trucks, covered by tarpaulin or other means. ii) It shall be ensured by the thermal power plant that 	 i) Noted & being complied. Rail siding facility has been made operational & coal is being transported through covered rail wagons ii)
	 that a) Rail siding facility or conveyer facility is set up at or near the power plant, for transportation by rail or conveyor; and b) If transportation by rail or conveyor facility is 	 a) Rail siding facility has been made operational & coal is being transported through covered rail wagons b) Not applicable as Rail siding facility has been made operational & coal
	not available, ensure that the coal is transported out from the Delivery Point of the respective mine in covered trucks (by tarpaulin or other means), or any mechanized closed trucks by roads.	is being transported through covered rail wagons

Environmental Monitoring Report



<u>Submitted To</u>:

M/s Raipur Energen Limited Formerly GMR Chhattisgarh Energy Ltd. Village: Raikheda, Block-Tilda, Dist.-Raipur (Chhattisgarh)

<u>Conducted by</u>:

M/s Vardan EnviroLab

Plot no. 82A, Sector-5, IMT Manesar, Gurugram (Haryana)

(Recognized by MoEF & CC, NABL Government of India)

Environmental Monitoring Report

PREFACE

The growing concern for environmental protection and the passing of various environmental legislations have increased the responsibilities of Ministry of Environment, Forests & Climate Chang, Pollution Control boards in many folds. Besides enforcing the various environmental legislations MoEF&CC, CPCB & SPCB strive to propagate the necessity awareness regarding the various legal provisions and environmental protection measures in the country.

Electric Power scenario has occupied a significant place in the development program of the country. Development and environment can neither be separated nor ignored. In fact, they are complimentary to each other. These issues have become a concern of the community, particularly the environment impact due to industries in the developing countries.

However, the prerequisite for sustainable development is judicious planning of environmental status, likely impacts of the approach adopted on the environment including inhabitants of the locality, availability of the eco-friendly technology, emerging waste disposal and waste utilization processes, techniques of land reclamation for the restoration of aesthetic beauty and soon.

M/s Raipur Energen Limited, Formerly GMR Chhattisgarh Energy Ltd. Village: Raikheda, Block-Tilda, Dist.-Raipur (Chhattisgarh), India, has engaged *M/S Vardan EnviroLab, Gurugram, (HR)* to provide Environmental Services in respect of ambient air quality monitoring, stack emission, noise level monitoring & Sampling and Analysis of ground water quality, surface water quality, treated effluent sewage, effluent water from ETP, and soil for *Raipur Energen Limited, Raipur district of Chhattisgharh*, as per guidelines of MoEF & CC and CPCB Gazette notification.

M/S Vardan EnviroLab, Gurugram, (HR) has deployed entirely its own personnel, facilities and expertise for doing this service. Sampling / Monitoring Stations were identified by the Environmental Officer of Raipur Energen Limited, Raipur, The samples were analyzed **partly** at site and partly at our MoEF Recognized laboratory situated at Gurugram (HR).

This report presents the data generated for the period from 15th Dec. 2020 to 19th Dec. 2020, **i.e.** for Third quarter which includes sampling locations, Methodology, testing procedure and compilation for the Environmental parameters i.e. Air, Water, Soil & Noise with a view to evaluate the impact due to the thermal power plant activities.

During the course of our operations for the above task, the staff and management of Raipur Energen Limited,. were extremely co-operative. We are grateful to them for their invaluable support and assistance rendered to us during the course of the sampling and monitoring.

Date :

Authorized Signatory

M/S Vardan Envirolab Gurugram (HR)

Project Name: Raipur Energen Limited Formerly GMR Chhattisgarh Energy Ltd. Village: Raikheda, Block- Tilda, Dist.-Raipur (Chhattisgarh)

Environmental Monitoring Report

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Environmental Monitoring Report

Chapter - 1.0

INTRODUCTION

M/s Raipur Energen Limited., a subsidiary of Adani Power, is a power generation company based at Raipur in the State of Chattisgarh. Raipur Energen Limited., has commissioned its Thermal Power Plant 1370 MW (2x685 MW) Unit at Village Raikheda, Block -Tilda, Dist- Raipur, Chhattisgarh (India).

Raipur Energen Limited., is also committed towards the environment and the community it operates in. It has successfully implemented several community welfare schemes in the field of livelihood, infrastructure, community health and education which has so far benefited over 60,000 people from close to 75 villages.



Figure No.1. Raipur Energen Limited.

Chapter - 2.0

PROJECT PROFILE

2.1 Topography & Drainage

Topography of this area is generally undulating. The area is drained by Raikheda Talab approximately 2.5 km. away from plant in SW direction and Bangoli dam approximately 2 km. away from plant in SW direction. Mura Talab approximately 5 km. away from plant in South direction. Chhicholi Talab approximately 2 km. away from plant in East direction.

2.2 Location

Plant is bounded by Northern Latitudes of 21° 26' 23" to 21° 27' 48" and Eastern Longitude of 81° 50'34.6" to 81° 52'08.5". This area falls in the survey of India toposheet no. 64 G/14, 64 G/15 in parts(1:50000 Scale) The location of the Plant area is shown in **Fig. No. 2**

2.3 Climate

The climate of the area is Sub-tropical type. It is in the zone of humid tropic climate where temperature and humidity of air are very high. The temperature varies from the minimum - maximum temperature range between 29.5°C - 49 °C in summer, and 8°C - 25 °C in winter. The humidity varies from 35% to 82%. The annual average rainfall in the area is about 1300 mm.

2.4 Communication

The nearest railway station is Tilda, which is at a distance of ~14 Km towards West direction. The area is well connected with S.H. No. 9. Nearest Airport is Raipur ~32 km in SW direction. Nearest village is Raikheda ~ 1.5 km. in South direction and nearest town is Raipur ~31 km. in SW direction.

Environmental Monitoring Report

2.5 Location Map

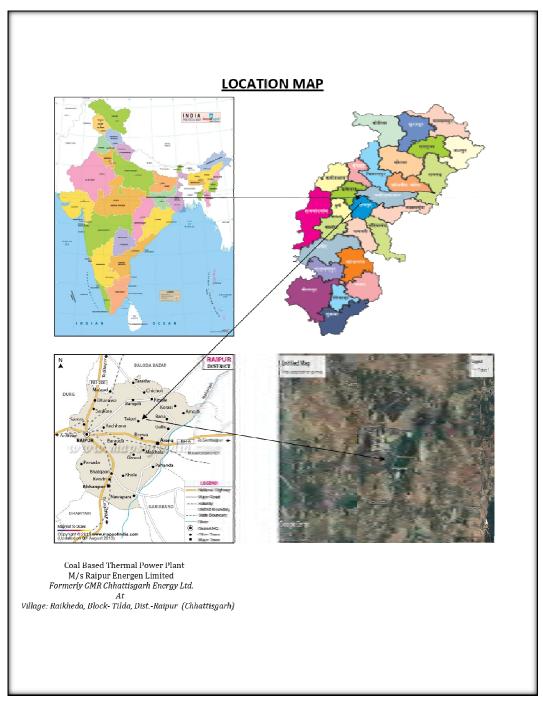


Figure No.2. Location Map

Environmental Monitoring Report

Chapter - 3.0

SCOPE OF STUDY ANDMETHODOLOGY

3.1 Scope of Study

The scope of study includes Environmental Services in respect of ambient air quality monitoring, noise level monitoring & Sampling and Analysis of ground water quality, surface water quality, treated effluent sewage, effluent water from ETP and soil.

3.2 Methodology

As mentioned in the scope of work covering the various Environmental components monitoring and sampling and its analysis was carried out on the basis of guidelines of Ministry of Environment Forest & Climate Control of Government of India & Chattisgarh State Pollution Control Board. Sampling procedure method reference and Analysis procedure method reference are mentioned in monitoring reports.

3.2.1 AmbientAirQualityMonitoring

The ambient air quality has been carried out at various sources of air pollution surrounding and in the Plant. The prime objective of the ambient air quality monitoring is to access the existing air quality of the area.

The ambient air quality monitoring was carried out for 24 hours at each station. At all stations SO_2 , NO_2 , PM_{10} , $PM_{2.5}$, CO and Mercury were monitored. All the samples collected were analyzed for quantitative analysis of various pollutants.

The ambient air quality sampling locations were identified by the Environmental Officer of Raipur Energen Limited.

3.2.2 Water Environment

The ground water samples, surface water samples were collected from selected locations in two liter sterilized plastic cans. These samples were analyzed as per IS 10500:2012. The domestic effluent and Industrial effluent samples were collected and analyzed for parameters: pH, Total suspended solids, Biochemical Oxygen Demand, Chemical Oxygen Demand and Oil & Grease.

3.2.3 Noise Environment

Sound level meter was used to know the sound levels generated due to plant activities at different locations. The measurements were taken for Equivalent sound level over a time period for day and night which is expressed in dB(A).

3.2.4 Soil

The Soil samples were collected from selected locations. These samples were analyzed for Physico-Chemical parameters including heavy metals.

Environmental Monitoring Report

Chapter - 4.0

SAMPLING LOCATION MAP AND ANALYSIS REPORTS

4.1 Ambient Air Quality Monitoring



Figure No.3. Plan Showing Ambient Air Quality Location Map

Location Code: -

- A1- Raikheda Village
- A2- Mura Village
- A3- Near Doosan
- A4- Near STP
- A5- Chicholi Chatamura Chock







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3	Nitrogen Dioxides (as NO2)	IS:518	32 (P- 6)-2006 RA.2017	and in En 23.63 ab	y welling/m ^a vi	01.db \80 cm E
4	Sulphur Dioxide (as SO2)	IS:518	2 (P- 2)-2001, RA. 2017	11.76	µg/m³	80
MARKED &	Ozone (as O3)	IT UNIT CITY	82 (P-9):1974 RA.2014	9.47	µg/m³	180.0

*BDL-Below Detection Limit, **DL-Detection Limit

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Note: Terms & conditions refer on backside of test report.







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2 Particulate Matter (as PM - 2.5) 3 Nitrogen Dioxides (as NO2)	IS:5182 (P- 24)-2019 IS:5182 (P- 6)-2006 RA.2017	37.96	µg/m³	60 80

BDL-Below Detection Limit DL Detection Limit

Sulphur Dioxide (as SO2)

Ozone (as O3)

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10.23

9.47

µg/m³

µg/m³



Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020 MoEF & CC Recognized | ISO 9001 | ISO 45001

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4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	10.93	µg/m³	80
10184-0	Ozone (as O3)	IS 5182 (P-9):1974 RA.2014	8.61	µg/m³	180.0

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1 Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	76.48	µg/m³	100
2 Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	36.53	µg/m³	60
3 Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	21.54	µg/m²	OLab 80 days
4 Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	12.31	µg/m³	80
5 Ozone (as O3)	IS 5182 (P-9):1974 RA.2014	10.33	µg/m³	180.0

BDL-Below Detection Limit DL Detection Limit

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Envi	Ambient Temperature (°C) Surrounding Activity Scope of Monitoring Sampling & Analysis Protocol Sampling Duration Parameter Required	 Min. 15° Max. 25° Human, Vehicular & Regulatory Requirem IS :5182 24 Hrs. As Per Work Order Test Method	Results	l) Vardan E roLab Vard	СРСВ		
Envi dan Env	Ambient Temperature (°C) Surrounding Activity Scope of Monitoring Sampling & Analysis Protocol Sampling Duration Parameter Required Parameters Particulate Matter (as PM -10)	Min. 15° Max. 25° Human, Vehicular & Regulatory Requirem IS :5182 24 Hrs. As Per Work Order Test Method IS:5182 (P- 23)-2006,RA. 2017	Results 84.26	hð\m ₃ hð\m ₃	CPCB 100		
2	Ambient Temperature (°C) Surrounding Activity Scope of Monitoring Sampling & Analysis Protocol Sampling Duration Parameter Required Parameters Particulate Matter (as PM -10) Particulate Matter (as PM - 2.5)	 Min. 15° Max. 25° Human, Vehicular & Regulatory Requirem IS :5182 24 Hrs. As Per Work Order Test Method IS:5182 (P- 23)-2006, RA. 2017 IS:5182 (P- 24)-2019	Results 84.26 38.30	μg/m³	CPCB 100 60		

BDL-Below Detection Limit DL Detection Limit

End of Report (Checked By)

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Note: Terms & conditions refer on backside of test report.

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Environmental Monitoring Report

4.2 Noise Level Monitoring

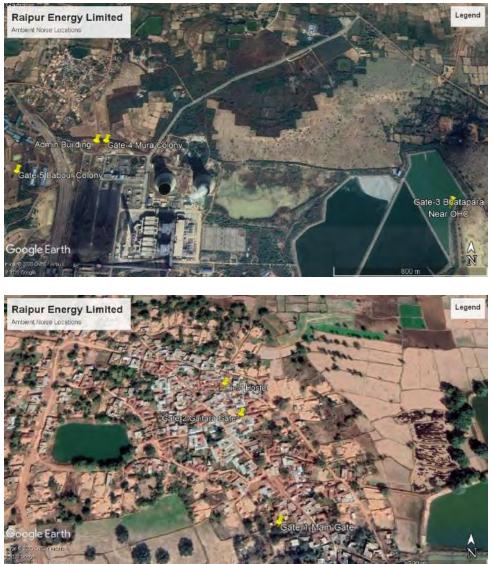


Figure No.4. Plan Showing Noise Level Monitoring Location Map

Ambient Noise Level Monitoring Locations

Location Code: -

- N1- Admin Building N2- Field Hostel N3- Gate-1 Main gate
- N4- Gate-2 Gaitara Gate
- N5- Gate-3 Bhatapara
- N6- Near Mura Village Gate
- N7-Near OHC
- N8- Near Weigh Bridge

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Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020 MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Report No.

S.No. Test Parameters	and a second sec	Dro	atocol		-	
Parameter Require	d	:	As Per Work Order	and the state of the local		
Surrounding Activ	ity	:	Human, Vehicular &	Other Activities		
Ambient Temperat	ure (°C)	:	Min. 22° Max. 30°			
Time of Monitoring	9	:	06.00 to 06.00 Hrs.			
Date of Monitoring	Number Control 25 y	:	15/12/2020 To 16/12	/2020		
Meteorological con	ndition during monitoring	12	Clear Sky			
Instrument Code		:	VEL/JAI/SLM/05			
Sampling Location		:	Near Gate No 1			
General Informa						
Instrument Used	: IS 9989; IS 9876 : SLM			Calibration Status		1. The second
Protocol Used				Instrument		Calibrated
Scope of Monitoring	: Regulatory Requirement			Sample Collected by	:	VEL Team
Sample Description	: Ambient Noise			Sampling Duration	:	24 Hrs.
				Receipt Date		23/12/2020
	Raikheda, Block - Tilda, D)ist. F	Raipur Chhattisgarh	Report Date	-	30/12/2020
	Formerly GMR Chhattisga			Party Reference No	;	NIL
Name & Address of the Party	: M/s Raipur Energen Limit			Format No	;	7.8 F-01
Name & Address of the Dat	a second second second second second			Report No.		VEL1112012200012/A

S.No.	S.No. Test Parameters	Protocol	Test Result dB (A)			
	the second party	To un instrument a sound	Day Time	Night Time		
1	L max	IS: 9989-1981, IS 9876: 1981	65.9	55.6		
2	L min	IS: 9989-1981, IS 9876: 1981	45.9	41.3		
3	Leq	IS: 9989-1981, IS 9876: 1981	57.18	45.68		

Category of Zones	Leq in dB(A)		
and an instant and an instant of the	Day	Night	
Industrial	75	70	
Commercial	65	55	
Residential	55	45	
Silence Zone	50	40	

End of Report

1. Day Time is from 6.00 AM to 10.00 PM.

(R)

VEL/AN/01

Sample Number :

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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: VEL/N/2012230012/A

Note: Terms & conditions refer on backside of test report.



Test Report

Sample Number : VEL/AN/0	2			Report No.	: VEL/N/2012230013/A
Name & Address of the Party	: M/s Raipur Energen Limite	d		Format No	: 7.8 F-01
	Formerly GMR Chhattisgar	h Er	nergy Ltd. Village:	Party Reference No	: NIL
	Raikheda, Block - Tilda, Di	st. F	Raipur Chhattisgarh	Report Date	: 30/12/2020
				Receipt Date	: 23/12/2020
Sample Description	: Ambient Noise			Sampling Duration	: 24 Hrs.
Scope of Monitoring	: Regulatory Requirement			Sample Collected by	: VEL Team
Protocol Used	: IS 9989; IS 9876			Instrument	: Calibrated
Instrument Used	: SLM			Calibration Status	
General Informa	tion				
Sampling Location	n	;	Field Hostel		
Instrument Code		:	VEL/JAI/SLM/06		
Meteorological co	ndition during monitoring	:	Clear Sky		
Date of Monitoring	3	1	15/12/2020 To 16/12	/2020	g i i i i
Time of Monitorin	g	;	06.00 to 06.00 Hrs.		
Ambient Temperat	ture (°C)	4	Min. 22° Max. 30°		
Surrounding Activ	vity	.:	Human, Vehicular &	Other Activities	
Parameter Require	ed	:	As Per Work Order		

S.No.	Test Parameters	Protocol	Test Result dB (A)	
			Day Time	Night Time
1	L max	IS: 9989-1981, IS 9876: 1981	64.3	51.8
2	Lmin	IS: 9989-1981, IS 9876: 1981	42.6	40.6
3	Leq	IS: 9989-1981, IS 9876: 1981	54.67	44.53

Lee	q in dB(A)
Day Night	
75	70
65	55
55	45
50	40
	Day 75 65 55

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Test Report

Sample Number : VEL/AN	/03		Report No.	; VEL/N/2012230014/A
Name & Address of the Party	/ : M/s Raipur Energen Limite	ed	Format No	: 7.8 F-01
	Formerly GMR Chhattisga	rh Energy Ltd. Village:	Party Reference No	: NIL
	Raikheda, Block - Tilda, Di	ist. Raipur Chhattisgarh	Report Date	: 30/12/2020
			Receipt Date	: 23/12/2020
Sample Description	: Ambient Noise		Sampling Duration	: 24 Hrs.
Scope of Monitoring	: Regulatory Requirement		Sample Collected by	: VEL Team
Protocol Used	: IS 9989; IS 9876		Instrument	: Calibrated
Instrument Used	: SLM		Calibration Status	
General Inform	nation			
Sampling Locati	on	Gate No2 (Gaitara	Gate)	
Instrument Code		: VEL/JAI/SLM/07		
Meteorological o	condition during monitoring	: Clear Sky		
Date of Monitori	ng	: 15/12/2020 To 16/12	2/2020	12
Time of Monitori	ing	: 06.00 to 06.00 Hrs.		
Ambient Temper	rature (°C)	: Min. 22° Max. 30°		
Surrounding Act	tivity	: Human, Vehicular &	Other Activities	

	Parameter Required : As Per Work Order				
S.No. Test Parameters Proto		Protocol	Test Res	sult dB (A)	
	241		Day Time	Night Time	
1	L max	IS: 9989-1981, IS 9876: 1981	65.2	52.5	
2	L min	IS: 9989-1981, IS 9876: 1981	44.7	40.5	
3	Leq	IS: 9989-1981, IS 9876: 1981	56.03	44.58	

Category of Zones	Leo	q in dB(A)
Land Application Concerns and Reading Environment	Day Night	
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

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Sample Number : VEL/AN/04	1		Report No.	: VEL/N/2012230015/A
Name & Address of the Party	: M/s Raipur Energen Limiter Formerly GMR Chhattisgar Raikheda, Block - Tilda, Dis	h Energy Ltd. Village:	Format No Party Reference No Report Date	: 7.8 F-01 : NIL : 30/12/2020
Sample Description Scope of Monitoring Protocol Used	: Ambient Noise : Regulatory Requirement		Receipt Date Sampling Duration Sample Collected by	: 23/12/2020 : 24 Hrs. : VEL Team
Instrument Used	: IS 9989; IS 9876 : SLM		Instrument Calibration Status	: Calibrated
General Informat Sampling Location Instrument Code Meteorological com Date of Monitoring Time of Monitoring Ambient Temperatu Surrounding Activit Parameter Required	tion dition during monitoring ure (°C) ty	 Near Weigh Bridge VEL/JAI/SLM/08 Clear Sky 15/12/2020 To 16/12 06.00 to 06.00 Hrs. Min. 22° Max. 30° Human, Vehicular & As Per Work Order 		4

S.No.	No. Test Parameters	Protocol	Test Result dB (A)	
			Day Time	Night Time
1	L max	IS: 9989-1981, IS 9876: 1981	63.5	53.5
2	Lmin	IS: 9989-1981, IS 9876: 1981	44.9	40.4
3	Leq	IS: 9989-1981, IS 9876: 1981	55.48	44.69

Category of Zones	Leo	q in dB(A)
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

End of Report

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Sample Number : VEL/AN	/05		Report No.	: VEL/N/2012230016/A
Name & Address of the Party	 M/s Raipur Energen Limite Formerly GMR Chhattisga 		Format No	: 7.8 F-01
	Raikheda, Block - Tilda, Di		Party Reference No	: NIL
			Report Date Receipt Date	: 30/12/2020 · 23/12/2020
Sample Deparintion			Sampling Duration	: 23/12/2020
Sample Description Scope of Monitoring	: Ambient Noise : Regulatory Requirement		Sample Collected by	· VEL Team
Protocol Used	: IS 9989; IS 9876		Instrument	: Calibrated
Instrument Used	: SLM		Calibration Status	
General Inform		a ant brend an		
Sampling Locati		Near Admin Building	9	
		: VEL/JAI/SLM/05		
Date of Monitori	ondition during monitoring	: Clear Sky	2/2222	
Time of Monitori		: 16/12/2020 To 17/1	2/2020	
Ambient Temper	-	: 06.00 to 06.00 Hrs.		
Surrounding Act		: Min. 20° Max. 32°	Other Arthulter	
Parameter Regul		: Human, Vehicular & : As Per Work Order	Other Activities	
and the second sec	And a state of the	· rist of Work Order		

S.No. Test Parameters	Protocol	Test Result dB (A)	
A COLORADOR	and the state of the	Day Time	Night Time
1 L max	IS: 9989-1981, IS 9876: 1981	69.2	53.3
2 L min	IS: 9989-1981, IS 9876: 1981	45.6	41.8
3 Leq	IS: 9989-1981, IS 9876: 1981	58.01	45.71

Category of Zones	Leo	q in dB(A)
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

 SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Test Report

Sample Number : VEL/AN/06	5		Report No.	: VEL/N/2012230017/A
Name & Address of the Party	: M/s Raipur Energen Limite Formerly GMR Chhattisgar Raikheda, Block - Tilda, Di	h Energy Ltd. Village:	Format No Party Reference No Report Date Receipt Date	: 7.8 F-01 : NIL : 30/12/2020 - 23/12/2020
Sample Description Scope of Monitoring Protocol Used Instrument Used	: Ambient Noise : Regulatory Requirement : IS 9989; IS 9876		Sampling Duration Sample Collected by Instrument Calibration Status	: 24 Hrs.
General Informat Sampling Location Instrument Code	ndition during monitoring ure (°C) ty	 Near Mura Village G VEL/JAI/SLM/06 Clear Sky 16/12/2020 To 17/12 06.00 to 06.00 Hrs. Min. 20° Max. 32° Human, Vehicular & As Per Work Order 	//2020	

S.No.	Test Parameters	Protocol	Test Res	Test Result dB (A)	
		Charles Charles Internet	Day Time	Night Time	
1 1	_ max	IS: 9989-1981, IS 9876: 1981	65.1	55.4	
2 L	_ min	IS: 9989-1981, IS 9876: 1981	45.9	40.8	
3 L	_eq	IS: 9989-1981, IS 9876: 1981	54.01	44.63	

Category of Zones	Leo	q in dB(A)
and the second sec	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Test Report

Sample Number : VEL/AN/0			Report No.	: VEL/N/2012230018/A
Name & Address of the Party	: M/s Raipur Energen Limite Formerly GMR Chhattisga Raikheda, Block - Tilda, D	rh Energy Ltd. Village:	Format No Party Reference No Report Date Receipt Date	: 7.8 F-01 : NIL : 30/12/2020
Sample Description Scope of Monitoring Protocol Used Instrument Used	: Ambient Noise : Regulatory Requirement : IS 9989; IS 9876 : SLM		Sampling Duration Sample Collected by Instrument Calibration Status	: 23/12/2020 : 24 Hrs. : VEL Team : Calibrated
General Informa Sampling Location Instrument Code	tion n ndition during monitoring ure (°C) ity	 Near OHC VEL/JAI/SLM/07 Clear Sky 16/12/2020 To 17/12 06.00 to 06.00 Hrs. Min. 22° Max. 32° Human, Vehicular & As Per Work Order 		*

S.No.	Test Parameters	Protocol Test Re		sult dB (A)	
	State of the state of the		Day Time	Night Time	
1	L max	IS: 9989-1981, IS 9876: 1981	63.5	52.8	
2	L min	IS: 9989-1981, IS 9876: 1981	44.4	39.3	
3	Leq	IS: 9989-1981, IS 9876: 1981	54.68	43.76	

Category of Zones	Le	q in dB(A)
on and end of the set of the barriers in	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Report No.

	FIOLOCOT	Test Res	ult dB (A)	
1.19.1 1. 1. 1.		Day Time	Night Time	
L max	IS: 9989-1981, IS 9876: 1981	63.3	54.6	
L min	IS: 9989-1981, IS 9876: 1981	45.9	40.9	
Leq	IS: 9989-1981, IS 9876: 1981	53.22	43.20	
	L max L min	L max IS: 9989-1981, IS 9876: 1981 L min IS: 9989-1981, IS 9876: 1981	L max IS: 9989-1981, IS 9876: 1981 63.3 L min IS: 9989-1981, IS 9876: 1981 45.9	

Category of Zones	Lee	q in dB(A)
in the second	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.

R

VEL/AN/08

Sample Number :

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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: VEL/N/2012230019/A

Project Name: Raipur Energen Limited Formerly GMR Chhattisgarh Energy Ltd. Village: Raikheda, Block- Tilda, Dist.-Raipur (Chhattisgarh)

Environmental Monitoring Report

4.3 Ground water Quality Analysis



Figure No.5. Plan Showing Ground Water Quality Monitoring Location Map

Location Code: -

GW1- Village- Craitara Hand Pump Water GW2- Village – Raikhera Tap Water GW3- Village- Chicholi Hand Pump Water GW4- Near Field Hostel GW5- Village- Mura Hand Pump Water

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Test Report

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Sample Number : VEL/GW//	012/20-02	Report No.	: VEL/W/2012230033/A
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	: 7.8 F-01
	Formerly GMR Chhattisgarh Energy Ltd. Village	Party Reference No	: NIL
	Raikheda, Block - Tilda, Dist. Raipur Chhattisgarh	Report Date	: 01/01/2021
		Period of Analysis	: 23/12/2021-01/01/2021
		Receipt Date	: 23/12/2020
Sample Description	: GROUND WATER	Sampling Date	: 14/12/2020
Location	: Village- Craitara Hand Pump Water	Sampling Quantity	: 2 Ltr.
Sample Collected by	: VEL Team	Sampling Type	Grab
Descartation			. Orab

Preservation Sampling and Analysis Protocol

: Suitable Preservation : IS 10500 -2012

S.No.	Parameters	Parameters Protocols Resul	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	рН	IS 3025 (P-11): 1983 Reaff. 2017	7.52	-	6.5 to 8.5	No Relaxation
2	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	324.00	mg/l	500	2000
3	Total Alkalinity (as CaCO3)	IS: 3025 (Part 23): 1986, Reaff. 2019	197.80	mg/l	200	600
4	Total Hardness (as CaCO3)	IS: 3025 (Part 21): 2009, Reaff. 2019	218.36	mg/l	200	600
5	Nitrate (as NO3)	IS: 3025 (Part 34): 1988, Reaff. 2019	2.63	mg/l	45	No Relaxation
6	Chloride (as CI)	IS: 3025 (Part 32): 1988, Reaff. 2019	57.43	mg/l	250	1000
7	Sulphate (as SO4)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	17.23	mg/l	200	400
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019	79.26	mg/l	75	200
9	Magnesium (as Mg)	IS: 3025 (Part 46): 1994, Reaff. 2009 (EDTA method)	5.01	mg/l	30	100
10	Fluorides (as F)	APHA 23rd Edition 2017, 4500 FD	0.35	mg/l	1.0	1.5
11	Total Iron (as Fe)	IS 3025(P-53): 2003 Reaffirm 2019	0.23	mg/l	0.3	No Relaxation
12	Arsenic (as As)	APHA (23rd edition-2017), 3114 C	*BDL(**DL-0.005 mg/l)	mg/l	0.01	0.05
13	Copper (as Cu)	APHA 23rd Edition Year 2017 Method No. 3111B	*BDL(**DL-0.02 mg/l)	mg/l	0.05	1.5
14	Zinc (as Zn)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.20 mg/l)	mg/l	5.0	15
15	Selenium (as Se)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.005 mg/l)	mg/l	0.01	No Relaxation
16	Turbidity	IS 3025 (Part 10): 1984, Ref: 2017, (Nephelometeric Method)	*BDL(**DL 1.0 NTU)	NTU	1	5
17	Aluminium	IS 3025 (Part-55): 2003, Reaff. 2019	*BDL(**DL-0.03 mg/l)	mg/l	0.03	0.2
18	Manganese (as Mn)	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	*BDL(**DL-0.05 mg/l)	mg/l	0.1	0.3
19	Ammonia (as NH3)	IS-3025 (Part-34)- 1988, RA. 2019	*BDL(**DL-0.3 mg/l)	mg/l	0.5	No Relaxation

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ample	Number : VEL/GW//012/20	-02	Report No		: VEL/W/2012	230033/A
S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
20	Boron (as B)	APHA 23rd Edition Year 2017 Method No. 4500B	*BDL(**DL-0.2 mg/l)	mg/l	0.5	1.0
21	Sulphide	IS: 3025 (Part 29): 1986, RA. 2009 Turbidity Method	*BDL(**DL-0.1 mg/l)	mg/l	200	400
22	Phenolic Compound	APHA 23rd Edition 2017, 5530C	*BDL(**DL-0.1 mg/l)	mg/l	0.001	0.002
23	Free Residual Chlorine	IS: 3025 (Part 26): 1986 RA 2019	*BDL(**DL-0.2 mg/l)	mg/l	0.2	1

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*BDL-Below Detection Limit,**DL-Detection Limit.

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Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020 MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Sample Number : VEL/GW//	012/20-02	Report No.	: VEL/W/2012230033/B
Name & Address of the Party	M/s Raipur Energen Limited Formerly GMR Chhattisgarh Energy Ltd. Village: Raikheda, Block - Tilda, Dist. Raipur Chhattisgarh	Format No Party Reference No Report Date Period of Analysis	: 7.8 F-01 : NIL : 01/01/2021 : 23/12/2021-01/01/2021
Sample Description Location Sample Collected by Preservation Sampling and Analysis Protocol	 GROUND WATER Village- Craitara Hand Pump Water VEL Team Suitable Preservation IS 10500 -2012 	Receipt Date Sampling Date Sampling Quantity Sampling Type	: 23/12/2020 : 14/12/2020 : 2 Ltr. : Grab

S.No.	Parameters	rrameters Protocols	Results	Units	IS:10	0500-2012
					Acceptable Limits	Permissible Limits
1	Total Coliform (By MPN Method)	IS:1622	Absent	MPN/10 0 ml	Shall not be Detectable in any 100 ml sample	NA
2	E-Coli	JS:1622	Absent	per 100 ml	Absent/100 ml	Absent/100 ml
3	Cyanide (as CN)	APHA 23rd Edition 2017, 4500CN D	*BDL(**DL-0.05 mg/l)	mg/l	0.05	No Relaxation
4	Colour	IS 3025: 1983 (P-4) RA., 2017	*BDL(**DL 1.0 Hazen)	Hazen Unit	5	15
5	Odour	IS 3025 (P-5): RA. 2018	Agreeable	Qualitat ive	Agreeable	Agreeable
6	Taste	IS 3025(P-8):1984 RA. 2017	Agreeable	Qualitat ive	Agreeable	Agreeable
7	Anionic Surface Active Agent	APHA 23rd Edition 2017, 5540C	*BDL(**DL-0.05 mg/l)	mg/l	0.2	1.0
8	Mineral Oil	IS 3025(P-39)	*BDL(**DL-0.05 mg/l)	mg/l	0.5	No Relaxation
9	Barium as (Ba)	APHA3111B	*BDL(**DL-0.02 mg/l)	mg/l	0.7	No Relaxation
10	Faecal Caliform	IS:1622	Absent	MPN/10 0 ml	Shall not be Detectable in any 100 ml sample	

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Note: Terms & conditions refer on backside of test report.

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Test Report

Sample Number : VEL/GWI/012/20-02 *BDL-Below Detection Limit,**DL-Detection Limit.

Report No.

: VEL/W/2012230033/B

(Checked By)

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Test Report

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Sample Number : VEL/GW//	012/20-03	Report No.	: VEL/W/2012230034/A
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	: 7.8 F-01
	Formerly GMR Chhattisgarh Energy Ltd. Village:	Party Reference No	: NIL
	Raikheda, Block - Tilda, Dist. Raipur Chhattisgarh	Report Date	: 01/01/2021
		Period of Analysis	; 23/12/2021-01/01/2021
		Receipt Date	: 23/12/2020
Sample Description	: GROUND WATER	Sampling Date	: 14/12/2020
Location	: Village- Raikheda Tap Water	Sampling Quantity	:2 Ltr.
Sample Collected by	: VEL Team	Sampling Type	Grab
Preservation	: Suitable Preservation	and the second s	Giab
Sampling and Analysis	: IS 10500 -2012		

S.No.	Parameters	ameters Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pН	IS 3025 (P-11): 1983 Reaff. 2017	7.32	-	6.5 to 8.5	No Relaxation
2	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	360.00	mg/l	500	2000
3	Total Alkalinity (as CaCO3)	IS: 3025 (Part 23): 1986, Reaff. 2019	215.00	mg/l	200	600
4	Total Hardness (as CaCO3)	IS: 3025 (Part 21): 2009, Reaff. 2019	230.72	mg/l	200	600
5	Nitrate (as NO3)	IS: 3025 (Part 34): 1988, Reaff. 2019	2.29	mg/l	45	No Relaxation
6	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	65.09	mg/l	250	1000
7	Sulphate (as SO4)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	18.92	mg/l	200	400
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019	80.91	mg/l	75	200
9	Magnesium (as Mg)	IS: 3025 (Part 46): 1994, Reaff. 2009 (EDTA method)	7.01	mg/l	30	100
10	Fluorides (as F)	APHA 23rd Edition 2017, 4500 FD	0.30	mg/l	1.0	1.5
11	Total Iron (as Fe)	IS 3025(P-53): 2003 Reaffirm 2019	0.15	mg/l	0.3	No Relaxation
12	Arsenic (as As)	APHA (23rd edition-2017), 3114 C	*BDL(**DL-0.005 mg/l)	mg/l	0.01	0.05
13	Copper (as Cu)	APHA 23rd Edition Year 2017 Method No. 3111B	*BDL(**DL-0.02 mg/l)	mg/l	0.05	1.5
14	Zinc (as Zn)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.20 mg/l)	mg/l	5.0	15
15	Selenium (as Se)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.005 mg/l)	mg/l	0.01	No Relaxation
16	Turbidity	IS 3025 (Part 10): 1984, Ref: 2017, (Nephelometeric Method)	*BDL(**DL 1.0 NTU)	NTU	1	5
17	Aluminium	IS 3025 (Part-55): 2003, Reaff. 2019	*BDL(**DL-0.03 mg/l)	mg/l	0.03	0.2
18	Manganese (as Mn)	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	*BDL(**DL-0.05 mg/l)	mg/l	0.1	0.3
19	Ammonia (as NH3)	IS-3025 (Part-34)- 1988, RA. 2019	*BDL(**DL-0.3 mg/l)	mg/l	0.5	No Relaxation

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Test Report

Number : VEL/GW//012/20	0-03	Report No		: VEL/W/2012	230034/A
Parameters	neters Protocols	Results	Units	IS:10500-2012	
				Acceptable Limits	Permissible Limits
Boron (as B)	APHA 23rd Edition Year 2017 Method No. 4500B	*BDL(**DL-0.2 mg/l)	mg/l	0.5	1.0
Sulphide	IS: 3025 (Part 29): 1986, RA. 2009 Turbidity Method	*BDL(**DL-0.1 mg/l)	mg/l	200	400
Phenolic Compound	APHA 23rd Edition 2017, 5530C	*BDL(**DL-0.1 mg/l)	mg/l	0.001	0.002
Free Residual Chlorine	IS: 3025 (Part 26): 1986 RA 2019	*BDL(**DL-0.2 mg/l)	mg/l	0.2	1
	Parameters Boron (as B) Sulphide Phenolic Compound	Parameters Protocols Boron (as B) APHA 23rd Edition Year 2017 Method No. 4500B Sulphide IS: 3025 (Part 29): 1986, RA. 2009 Turbidity Method Phenolic Compound APHA 23rd Edition 2017, 5530C	Parameters Protocols Results Boron (as B) APHA 23rd Edition Year 2017 Method No. 4500B *BDL(**DL-0.2 mg/l) Sulphide IS: 3025 (Part 29): 1986, RA. 2009 Turbidity Method *BDL(**DL-0.1 mg/l) Phenolic Compound APHA 23rd Edition 2017, 5530C *BDL(**DL-0.1 mg/l) Free Residual Chlorine IS: 3025 (Part 26): 1986 RA 2019 *BDL(**DL-0.2	ParametersProtocolsResultsUnitsBoron (as B)APHA 23rd Edition Year 2017 Method No. 4500B*BDL(**DL-0.2 mg/l)mg/lSulphideIS: 3025 (Part 29): 1986, RA. 2009 Turbidity Method*BDL(**DL-0.1 mg/l)mg/lPhenolic CompoundAPHA 23rd Edition 2017, 5530C*BDL(**DL-0.1 mg/l)mg/lFree Residual ChlorineIS: 3025 (Part 26): 1986 RA 2019*BDL(**DL-0.2 mg/l)mg/l	ParametersProtocolsResultsUnitsIS:108Boron (as B)APHA 23rd Edition Year 2017 Method No. 4500B*BDL(**DL-0.2 mg/l)mg/l0.5SulphideIS: 3025 (Part 29): 1986, RA. 2009 Turbidity Method*BDL(**DL-0.1 mg/l)mg/l200Phenolic CompoundAPHA 23rd Edition 2017, 5530C*BDL(**DL-0.1 mg/l)mg/l0.001Free Residual ChlorineIS: 3025 (Part 26): 1986 RA 2019*BDL(**DL-0.2 mg/l)mg/l0.2

*BDL-Below Detection Limit, **DL-Detection Limit.

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Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020 MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Sample Number : VEL/GW//	/012/20-03	Report No.	: VEL/W/2012230034/B
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	: 7.8 F-01
	Formerly GMR Chhattisgarh Energy Ltd. Village:	Party Reference No	: NIL
	Raikheda, Block - Tilda, Dist. Raipur Chhattisgarh	Report Date	: 01/01/2021
		Period of Analysis	: 23/12/2021-01/01/2021
		Receipt Date	: 23/12/2020
Sample Description	: GROUND WATER	Sampling Date	: 14/12/2020
Location	: Village- Raikheda Tap Water	Sampling Quantity	: 2 Ltr.
Sample Collected by	: VEL Team	Sampling Type	Grab
Preservation	: Suitable Preservation	and the state	Grab
Sampling and Analysis Protocol	: IS 10500 -2012		
S No Parameters	Protocols	Poculte Unite	15:10500-2012

S.No.	Parameters	Protocols	Results	Results Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	Total Coliform (By MPN Method)	IS:1622	Absent	MPN/10 0 ml	Shall not be Detectable in any 100 ml sample	NA
2	E-Coli	IS:1622	Absent	per 100 ml	Absent/100 ml	Absent/100 ml
3	Cyanide (as CN)	APHA 23rd Edition 2017, 4500CN D	*BDL(**DL-0.05 mg/l)	mg/l	0.05	No Relaxation
4	Colour	IS 3025: 1983 (P-4) RA 2017	*BDL(**DL 1.0 Hazen)	Hazen Unit	5	15
5	Odour	IS 3025 (P-5): RA. 2018	Agreeable	Qualitat ive	Agreeable	Agreeable
6	Taste	IS 3025(P-8):1984 RA. 2017	Agreeable	Qualitat ive	Agreeable	Agreeable
7	Anionic Surface Active Agent	APHA 23rd Edition 2017, 5540C	*BDL(**DL-0.05 mg/l)	mg/l	0.2	1.0
8	Mineral Oil	IS 3025(P-39)	*BDL(**DL-0.05 mg/l)	mg/l	0.5	No Relaxation
9	Barium as (Ba)	APHA3111B	*BDL(**DL-0.02 mg/l)	mg/l	0.7	No Relaxation
10	Faecal Caliform	IS:1622	Absent	MPN/10 0 ml	Shall not be Detectable in any 100 ml sample	

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Test Report

Sample Number : VEL/GW//012/20-03 *BDL-Below Detection Limit,**DL-Detection Limit

Report No.

: VEL/W/2012230034/B

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Test Report

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Sample Number : VEL/GW	//012/20-03	Report No.	: VEL/W/2012230035/A
Name & Address of the Party	t his hapa Energen Einited	Format No	: 7.8 F-01
	Formerly GMR Chhattisgarh Energy Ltd. Village:	Party Reference No	: NIL
	Raikheda, Block - Tilda, Dist. Raipur Chhattisgarh	Report Date	: 01/01/2021
		Period of Analysis	: 23/12/2021-01/01/2021
And the Address of the		Receipt Date	: 23/12/2020
Sample Description	: GROUND WATER	Sampling Date	: 14/12/2020
Location	: Village- Chicholi Hand Pump Water	Sampling Quantity	:2 Ltr
Sample Collected by	: VEL Team	Sampling Type	: Grab
Preservation	: Suitable Preservation	teres from a synce	· Glab
Sampling and Analysis	: IS 10500 -2012		

S.No.	Parameters	arameters Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	рН	IS 3025 (P-11): 1983 Reaff. 2017	7.56		6.5 to 8.5	No Relaxation
2	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	303.00	mg/l	500	2000
3	Total Alkalinity (as CaCO3)	IS: 3025 (Part 23): 1986, Reaff. 2019	184.90	mg/l	200	600
4	Total Hardness (as CaCO3)	IS: 3025 (Part 21): 2009, Reaff. 2019	189.52	mg/l	200	600
5	Nitrate (as NO3)	IS: 3025 (Part 34): 1988, Reaff. 2019	1.77	mg/l	45	No Relaxation
6	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	53.60	mg/l	250	1000
7	Sulphate (as SO4)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	19.43	mg/l	200	400
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019	66.05	mg/l	75	200
9	Magnesium (as Mg)	IS: 3025 (Part 46): 1994, Reaff. 2009 (EDTA method)	6.01	mg/l	30	100
10	Fluorides (as F)	APHA 23rd Edition 2017, 4500 FD	0.31	mg/l	1.0	1.5
11	Total Iron (as Fe)	IS 3025(P-53): 2003 Reaffirm 2019	0.16	mg/l	0.3	No Relaxation
12	Arsenic (as As)	APHA (23rd edition-2017), 3114 C	*BDL(**DL-0.005 mg/l)	mg/l	0.01	0.05
13	Copper (as Cu)	APHA 23rd Edition Year 2017 Method No. 3111B	*BDL(**DL-0.02 mg/l)	mg/l	0.05	1.5
14	Zinc (as Zn)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.20 mg/l)	mg/l	5.0	15
15	Selenium (as Se)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.005 mg/l)	mg/l	0.01	No Relaxation
16	Turbidity	IS 3025 (Part 10): 1984, Ref: 2017, (Nephelometeric Method)	*BDL(**DL 1.0 NTU)	NTU	1	5
17	Aluminium	IS 3025 (Part-55): 2003, Reaff. 2019	*BDL(**DL-0.03 mg/l)	mg/l	0.03	0.2
18	Manganese (as Mn)	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	*BDL(**DL-0.05 mg/l)	mg/l	0.1	0.3
19	Ammonia (as NH3)	IS-3025 (Part-34)- 1988, RA. 2019	*BDL(**DL-0.3 mg/l)	mg/l	0.5	No Relaxation

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Protocol







Test Report

ample	Number: VEL/GW//012/20	0-03	Report No		: VEL/W/2012	230035/A
S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
20	Boron (as B)	APHA 23rd Edition Year 2017 Method No. 4500B	*BDL(**DL-0.2 mg/l)	mg/l	0.5	1.0
21	Sulphide	IS: 3025 (Part 29): 1986, RA. 2009 Turbidity Method	*BDL(**DL-0.1 mg/l)	mg/l	200	400
22	Phenolic Compound	APHA 23rd Edition 2017, 5530C	*BDL(**DL-0.1 mg/l)	mg/l	0.001	0.002
23	Free Residual Chlorine	IS: 3025 (Part 26): 1986 RA 2019	*BDL(**DL-0.2 mg/l)	mg/l	0.2	1

*BDL-Below Detection Limit, **DL-Detection Limit.

*** End of Report***

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Test Report

access the state of the state of the state of the	012/20-03	Report No.	: VEL/W/2012230035/B
Name & Address of the Party	: M/s Raipur Energen Limited Formerly GMR Chhattisgarh Energy Ltd. Village:	Format No Party Reference No	: 7.8 F-01 : NIL
	Raikheda, Block - Tilda, Dist. Raipur Chhattisgarh	Report Date	: 01/01/2021
		Period of Analysis	: 23/12/2021-01/01/2021
0		Receipt Date	: 23/12/2020
Sample Description	: GROUND WATER	Sampling Date	: 14/12/2020
Location	: Village- Chicholi Hand Pump Water	Sampling Quantity	:2 Ltr
Sample Collected by	: VEL Team	Sampling Type	: Grab
Preservation	: Suitable Preservation	and product of the	· Glab
Sampling and Analysis Protocol	: IS 10500 -2012		
S.No. Parameters	Protocols	Results Units	IS:10500-2012

0.140.	Farameters	Protocols	Results	Units	15:10500-2012		
					Acceptable Limits	Permissible Limits	
1	Total Coliform (By MPN Method)	IS:1622	Absent	MPN/10 0 ml	Shall not be Detectable in any 100 ml sample	NA	
2	E-Coli	IS:1622	Absent	per 100 ml	Absent/100 ml	Absent/100 ml	
3	Cyanide (as CN)	APHA 23rd Edition 2017, 4500CN D	*BDL(**DL-0.05 mg/l)	mg/l	0.05	No Relaxation	
4	Colour	IS 3025: 1983 (P-4) RA 2017	*BDL(**DL 1.0 Hazen)	Hazen Unit	5	15	
5	Odour	IS 3025 (P-5): RA. 2018	Agreeable	Qualitat ive	Agreeable	Agreeable	
6	Taste	IS 3025(P-8):1984 RA. 2017	Agreeable	Qualitat ive	Agreeable	Agreeable	
7	Anionic Surface Active Agent	APHA 23rd Edition 2017, 5540C	*BDL(**DL-0.05 mg/l)	mg/l	0.2	1.0	
8	Mineral Oil	IS 3025(P-39)	*BDL(**DL-0.05 mg/l)	mg/l	0.5	No Relaxation	
9	Barium as (Ba)	APHA3111B	*BDL(**DL-0.02 mg/l)	mg/l	0.7	No Relaxation	
10	Faecal Caliform	IS:1622	Absent	MPN/10 0 ml	Shall not be Detectable in any 100 ml sample		

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Test Report

****End of Report***

Report No.

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: VEL/W/2012230035/B

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(Approved By)

Sample Number : VEL/GW//012/20-03 *BDL-Below Detection Limit,**DL-Detection Limit.

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: IS 10500 -2012

Test Report

TC-6652

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Sample Number : VEL/GW/	/012/20-05	Report No.	: VEL/W/2012230036/A
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	: 7.8 F-01
	Formerly GMR Chhattisgarh Energy Ltd. Village:	Party Reference No	: NIL
	Raikheda, Block - Tilda, Dist. Raipur Chhattisgarh	Report Date	: 01/01/2021
		Period of Analysis	: 23/12/2021-01/01/2021
		Receipt Date	: 23/12/2020
Sample Description	: GROUND WATER	Sampling Date	: 15/12/2020
Location	: Near Field Hostal	Sampling Quantity	: 2 Ltr.
Sample Collected by	: VEL Team	Sampling Type	Grab
Preservation	: Suitable Preservation		- Oldo

S.No. Parameters Protocols IS:10500-2012 Results Units Acceptable Permissible Limits Limits 1 pH IS 3025 (P-11): 1983 Reaff. 2017 7.36 6.5 to 8.5 No Relaxation ---2 **Total Dissolved Solids** IS 3025 (P-16): 1984 Reaff 2017 310.00 2000 mg/l 500 Total Alkalinity (as CaCO3) 163.40 3 IS: 3025 (Part 23): 1986, Reaff. 2019 200 600 mg/l 4 Total Hardness (as CaCO3) IS: 3025 (Part 21): 2009, Reaff. 2019 168.92 200 600 mg/l 5 Nitrate (as NO3) IS: 3025 (Part 34): 1988, Reaff. 2019 45 1.83 No Relaxation mg/l 6 Chloride (as CI) IS: 3025 (Part 32): 1988, Reaff. 2019 63.17 1000 mg/l 250 7 Sulphate (as SO4) IS: 3025 (Part 24): 1986, Reaff. 2019 16.05 mg/l 200 400 **Turbidity Method** Calcium (as Ca) IS: 3025 (Part 40): 1991 Reaff. 2019 200 8 49.54 mg/l 75 9 Magnesium (as Mg) IS: 3025 (Part 46): 1994, Reaff. 2009 11.01 30 100 mg/l (EDTA method) Fluorides (as F) APHA 23rd Edition 2017, 4500 FD 0.26 1.0 1.5 10 mg/l 11 Total Iron (as Fe) IS 3025(P-53): 2003 Reaffirm 2019 0.15 mg/l 0.3 No Relaxation *BDL(**DL-0.005 12 Arsenic (as As) APHA (23rd edition-2017), 3114 C mg/l 0.01 0.05 mg/l) *BDL(**DL-0.02 APHA 23rd Edition Year 2017 13 Copper (as Cu) mg/l 0.05 1.5 Method No. 3111B mg/l) APHA (23rd edition-2017), 3030D, *BDL(**DL-0.20 15 14 Zinc (as Zn) mg/l 5.0 3113 B mg/l) 15 Selenium (as Se) APHA (23rd edition-2017), 3114C *BDL(**DL-0.005 mg/l 0.01 No Relaxation mg/l) *BDL(**DL 1.0 IS 3025 (Part 10): 1984, Ref: 2017, NTU 1 5 16 Turbidity (Nephelometeric Method) NTU) 17 Aluminium IS 3025 (Part-55): 2003, Reaff. 2019 *BDL(**DL-0.03 mg/l 0.03 0.2 mg/l) *BDL(**DL-0.05 18 Manganese (as Mn) IS: 3025 (Part 46): 1994, Reaff. 2019 mg/l 0.1 0.3 (EDTA method) mg/l) Ammonia (as NH3) IS-3025 (Part-34)- 1988, RA. 2019 *BDL(**DL-0.3 0.5 No Relaxation 19 mg/l mg/l)

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Sampling and Analysis

Protocol

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Test Report

ample	Number : VEL/GW//012/20	-05	Report No		: VEL/W/2012	230036/A
S.No.	Parameters	Protocols	Results	Units	IS:10	500-2012
				-	Acceptable Limits	Permissible Limits
20	Boron (as B)	APHA 23rd Edition Year 2017 Method No. 4500B	*BDL(**DL-0.2 mg/l)	mg/l	0.5	1.0
21	Sulphide	IS: 3025 (Part 29): 1986, RA. 2009 Turbidity Method	*BDL(**DL-0.1 mg/l)	mg/l	200	400
22	Phenolic Compound	APHA 23rd Edition 2017, 5530C	*BDL(**DL-0.1 mg/l)	mg/l	0.001	0.002
23	Free Residual Chlorine	IS: 3025 (Part 26): 1986 RA 2019	*BDL(**DL-0.2 mg/l)	mg/l	0.2	1

*BDL-Below Detection Limit, **DL-Detection Limit.

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Qualitat

ive

mg/l

mg/l

mg/l

MPN/10

0 ml

Agreeable

0.2

0.5

0.7

Shall not be

Detectable in any 100 ml sample

Agreeable

*BDL(**DL-0.05

mg/l) *BDL(**DL-0.05

mg/l) *BDL(**DL-0.02

mg/l)

Absent

Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020 MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Sample	Number : VEL/GW//	012/20-05	i.	Report No	b .	: VEL/W/2012	2230036/B	
Name	& Address of the Party	: M/s R	aipur Energen Limited	Format N	0	: 7.8 F-01		
			rly GMR Chhattisgarh Energy Ltd. Village	A PROPERTY AND A PROPERTY	erence No	: NIL		
		Raikh	eda, Block - Tilda, Dist. Raipur Chhattisga	Report Da	ate	: 01/01/2021		
				Period of	Period of Analysis		01/01/2021	
				Receipt D	ate	: 23/12/2020		
Location : Near		: GROL	GROUND WATER		Date	: 15/12/2020		
		: Near F	Field Hostal	Sampling	Quantity	: 2 Ltr.		
Sample	e Collected by	: VEL T	eam	Sampling	Туре	: Grab		
Preser	vation	: Suitab	le Preservation					
Sampli Protoc	ng and Analysis ol	: IS 105	600 -2012					
S.No.	Parameters		neters Protocols	Results	Units	IS:10500-2012		
			1			Acceptable Limits	Permissible Limits	
1	Total Coliform (By MP! Method)	1	IS:1622	Absent	MPN/10 0 ml	Shall not be Detectable in any 100 ml sample	NA	
2	E-Coli		IS:1622	Absent	per 100 ml	Absent/100 ml	Absent/100 ml	
3	Cyanide (as CN)		APHA 23rd Edition 2017, 4500CN D	*BDL(**DL-0.05 mg/l)	mg/l	0.05	No Relaxation	
4	Colour		IS 3025: 1983 (P-4) RA 2017	*BDL(**DL 1.0	Hazen	5	15	
	A 2 December 10		I would be a state of the state of the state	Hazen)	Unit	the second second second		

IS 3025(P-8):1984 RA. 2017

APHA 23rd Edition 2017, 5540C

IS 3025(P-39)

APHA3111B

IS:1622

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10

Taste

Mineral Oil

Barium as (Ba)

Faecal Caliform

Anionic Surface Active Agent





Agreeable

1.0

No Relaxation

No Relaxation



Test Report

Sample Number : VEL/GW//012/20-05 *BDL-Below Detection Limit,**DL-Detection Limit.

Report No.

: VEL/W/2012230036/B

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Note: Terms & conditions refer on backside of test report.

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: IS 10500 -2012

Test Report

Sample Number : VEL/GW//	012/20-04	Report No.	: VEL/W/2012230037/A
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	: 7.8 F-01
	Formerly GMR Chhattisgarh Energy Ltd. Village:	Party Reference No	: NIL
	Raikheda, Block - Tilda, Dist. Raipur Chhattisgarh	Report Date	: 01/01/2021
		Period of Analysis	: 23/12/2021-01/01/2021
and the second se		Receipt Date	: 23/12/2020
Sample Description	: GROUND WATER	Sampling Date	: 14/12/2020
Location	: Village- Mura Hand Pump Water	Sampling Quantity	2 Ltr.
Sample Collected by	: VEL Team	Sampling Type	
Preservation	: Suitable Preservation	ounpung type	: Grab

S.No. Parameters Protocols IS:10500-2012 Results Units Acceptable Permissible Limits Limits 1 pH IS 3025 (P-11): 1983 Reaff. 2017 7.48 6.5 to 8.5 No Relaxation ---2 **Total Dissolved Solids** IS 3025 (P-16): 1984 Reaff 2017 290.00 500 2000 mg/l 3 Total Alkalinity (as CaCO3) IS: 3025 (Part 23): 1986, Reaff. 2019 172.00 mg/l 200 600 Total Hardness (as CaCO3) 4 IS: 3025 (Part 21): 2009, Reaff. 2019 177.16 mg/l 200 600 Nitrate (as NO3) 5 IS: 3025 (Part 34): 1988, Reaff. 2019 1.83 mg/l 45 No Relaxation 6 Chloride (as CI) IS: 3025 (Part 32): 1988, Reaff. 2019 76.57 1000 mg/l 250 7 Sulphate (as SO4) IS: 3025 (Part 24): 1986, Reaff. 2019 20.10 200 400 mq/l **Turbidity Method** 8 Calcium (as Ca) IS: 3025 (Part 40): 1991 Reaff. 2019 62.75 200 ma/l 75 9 Magnesium (as Mg) IS: 3025 (Part 46): 1994, Reaff. 2009 5.01 100 mg/l 30 (EDTA method) 10 Fluorides (as F) APHA 23rd Edition 2017, 4500 FD 0.28 mg/l 1.0 1.5 11 Total Iron (as Fe) IS 3025(P-53): 2003 Reaffirm 2019 0.15 mg/l 0.3 No Relaxation 12 Arsenic (as As) APHA (23rd edition-2017), 3114 C *BDL(**DL-0.005 0.01 0.05 ma/l mg/I)13 Copper (as Cu) APHA 23rd Edition Year 2017 *BDL(**DL-0.02 0.05 mg/l 1.5 Method No. 3111B mg/l) Zinc (as Zn) 14 APHA (23rd edition-2017), 3030D, *BDL(**DL-0.20 mg/l 5.0 15 3113 B mg/l) 15 Selenium (as Se) APHA (23rd edition-2017), 3114C *BDL(**DL-0.005 0.01 No Relaxation mg/l mg/l) 16 Turbidity IS 3025 (Part 10): 1984, Ref: 2017, *BDL(**DL 1.0 NTU 1 5 (Nephelometeric Method) NTU) 17 Aluminium IS 3025 (Part-55): 2003, Reaff. 2019 *BDL(**DL-0.03 0.03 mg/l 0.2 mg/l) 18 Manganese (as Mn) IS: 3025 (Part 46): 1994, Reaff. 2019 *BDL(**DL-0.05 0.1 0.3 mg/l (EDTA method) mg/I)Ammonia (as NH3) 19 IS-3025 (Part-34)- 1988, RA. 2019 *BDL(**DL-0.3 0.5 No Relaxation mg/l mg/l)

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Sampling and Analysis

Protocol

Note: Terms & conditions refer on backside of test report.



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Test Report

ample	Number: VEL/GW//012/20	0-04	Report No	h.	: VEL/W/2012	230037/A
S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
20	Boron (as B)	APHA 23rd Edition Year 2017 Method No. 4500B	*BDL(**DL-0.2 mg/l)	mg/l	0.5	1.0
21	Sulphide	IS: 3025 (Part 29): 1986, RA. 2009 Turbidity Method	*BDL(**DL-0.1 mg/l)	mg/l	200	400
22	Phenolic Compound	APHA 23rd Edition 2017, 5530C	*BDL(**DL-0.1 mg/l)	mg/l	0.001	0.002
23	Free Residual Chlorine	IS: 3025 (Part 26): 1986 RA 2019	*BDL(**DL-0.2 mg/l)	mg/l	0.2	1

*BDL-Below Detection Limit, **DL-Detection Limit.

End of Report

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Ph: 0141-2983404, 9810355569, 9953147268 E-mail: jaipur@vardanenvironet.com

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Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020

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Sample Number : VEL/GW/	/012/20-04	Report No.	: VEL/W/2012230037/B
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	: 7.8 F-01
	Formerly GMR Chhattisgarh Energy Ltd. Village:	Party Reference No	: NIL
	Raikheda, Block - Tilda, Dist. Raipur Chhattisgarh	Report Date	: 01/01/2021
		Period of Analysis	: 23/12/2021-01/01/2021
		Receipt Date	: 23/12/2020
Sample Description	: GROUND WATER	Sampling Date	: 14/12/2020
Location	: Village- Mura Hand Pump Water	Sampling Quantity	: 2 Ltr.
Sample Collected by	: VEL Team	Sampling Type	Grab
Preservation	: Suitable Preservation		. Grab
Sampling and Analysis Protocol	: IS 10500 -2012		

S.No.	Parameters	rameters Protocols		Units	IS:10500-2012		
					Acceptable Limits	Permissible Limits	
1	Total Coliform (By MPN Method)	IS:1622	Absent	MPN/10 0 ml	Shall not be Detectable in any 100 ml sample	NA	
2	E-Coli	IS:1622	Absent	per 100 ml	Absent/100 ml	Absent/100 ml	
3	Cyanide (as CN)	APHA 23rd Edition 2017, 4500CN D	*BDL(**DL-0.05 mg/l)	mg/l	0.05	No Relaxation	
4	Colour	IS 3025: 1983 (P-4) RA 2017	*BDL(**DL 1.0 Hazen)	Hazen Unit	5	15	
5	Odour	IS 3025 (P-5): RA. 2018	Agreeable	Qualitat ive	Agreeable	Agreeable	
6	Taste	IS 3025(P-8):1984 RA. 2017	Agreeable	Qualitat ive	Agreeable	Agreeable	
7	Anionic Surface Active Agent	APHA 23rd Edition 2017, 5540C	*BDL(**DL-0.05 mg/l)	mg/l	0.2	1.0	
8	Mineral Oil	IS 3025(P-39)	*BDL(**DL-0.05 mg/l)	mg/l	0.5	No Relaxation	
9	Barium as (Ba)	APHA3111B	*BDL(**DL-0.02 mg/l)	mg/l	0.7	No Relaxation	
10	Faecal Caliform	IS:1622	Absent	MPN/10 0 ml	Shall not be Detectable in any 100 ml sample		

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Test Report

End of Report

Sample Number : VEL/GWI/012/20-04 *BDL-Below Detection Limit,**DL-Detection Limit.

Report No.

: VEL/W/2012230037/B

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Environmental Monitoring Report

Raipur Energy Limited Chictoli Talab Legend Suface Water Locations Tchapir Chictoli Talab Chictoli Talab Raikheda Talab Bargoli Dan Raikheda Talab Chotnenga Deogaon Denastur I Notrenga Chotnenga Chocke Earth Denastur I Notrenga Notrenga Water Locations Denastur I Bangoli Notrenga

4.4 Surface water Quality Analysis

Figure. No. 6. Plan Showing Surface Water Quality Monitoring Location Map

Location Code: - SW1. Raikheda Talab SW2. Bangoli Dam SW3. Mura Talab SW4. Chhicholi Talab







			Test Report			
Sampl	le Number : VEL/SW/	//012/20-01		Report No.	: VEL/W/20122300	020/6
Name & Address of the Party : M/s Raipur Energen Li			Limited	Format No	: 7.8 F-01	LOIN
			ttisgarh Energy Ltd. Village:	Party Reference No	: NIL	
		Raikheda, Block - Til	da, Dist. Raipur Chhattisgarh	Report Date	: 01/01/2021	
lame	of the Project	inviteit alt Viertarr E		Period of Analysis	: 23/12/2021-01/01	1/2021
	ab Vardun Criviro	Fill Versing Priving		Receipt Date	: 23/12/2020	ALOL I
	invitol ab Varda			Sampling Date	: 14/12/2020	
	le Description	: SURFACE WATER		Sampling Quantity	: 2 Ltr.	
ocati		: Village- Raikheda (Po	ond Water)	Sampling Type	: Grab	Vardan
aboit	le Collected by leter Required	: VEL Team		Preservation	: Suitable Preserva	ation
	ing and Analysis	: As Per Work Order		di Vardim Envirota		
rotoc	And the second sec	: IS 2296	ing ab Vardan Envirola	ab Vardan Engled		countrol a
S.No	. Test Parameters	ib Varstan Envirol.a Envirol.ab Vardan T Lab Varstan Envirol Virol.ab Varstan Envirol Virol.ab Varstan Envirol	Vardan Enviro Test Meti Nicolati Vardan Enviro Laby	hodin EnviroLab Va ALab Vandan Enviro andan EnviroLab Y Al-Vandan EnviroL	Results	Units
1	pH value	viratab Vardan Cou as Vardan Envirota	IS 3025 (P-11): 198	3 Reaff. 2017	7.31	rotab V
2	Turbidity	InvitoLab Vardan E Lab Vardan Enviro	IS 3025 (Part 10): 1984, Reaff: 2017, (Nephelometeric Method)		2.00	NTU
3	Total Dissolved Solids	EnviroLab Vardar	IS 3025 (P-16): 1984 Reaff 2017		146.00	mg/l
4	Chloride (as Cl)	virulati Yardan Em	IS: 3025 (Part 32): 1988, Reaff. 2019		44.03	mg/l
5	Sulphate as (SO4)	ib Vindon Envirola Feofesi ab Varilas P	IS: 3025 (Part 24): 1986, F	man Environ ab V.s	6.42	mg/l
vira	lab Vardan Enviro	Lab Vardan Invirol	ab Vardan EnviroMetho	a particular a surficiency must a still	ardan Envirol.	ab Varda
6	Total Alkalinity (as Ca	CO3)	IS: 3025 (Part 23): 19	86, Reaff. 2019	98.90	mg/l
7	Total Hardness (CaCo	03) olah Vardan Da	IS: 3025 (Part 21): 20	09, Reaff. 2019	86.52	mg/l
8	Calcium (as Ca)	ib Vardan Erivirota Envirotab Vanian E	IS: 3025 (Part 40): 1991 I method	Reaff. 2019 (EDTA	29.72	mg/l
9	Magnesium	virotah Vandan Pro r Envirotah Vandar	IS: 3025 (Part 46): 1994, method		3.01	mg/l
10	Fluoride (as F)	viratale Vardan Co	APHA 23rd Edition	als Manadam Line of	0.23	mg/l
11	Nitrate (as NO3)	EnviroLab Vandan I Lab Vardan Enviro	IS: 3025 (Part 34): 19 (Chromotropic	and the second of the second se	ardan 1.11 lan E	mg/l
12	Phenolic compounds	virolab Yardan Eju n Envirolab Virolar Virolab Vardao Ere	APHA 23rd Edition	2017, 5530C	*BDL(**DL-0.1 mg/l)	mg/l
13	Dissolved oxygen	th Vardan Duvnel J	IS : 3025 (Part-38) : 1	the second se	5.80	mg/l
14	Iron	Employed and Mandam I	IS:3025(P-53):2003,I	olais Vandars Levin	0.17	type of all
11.11	Zinc as (Zn)	WINDLAG VARIATION	APHA (23rd edition),		*BDL(**DL-0.20	mg/l
15	Luvirot ab Vanta	n Erivînat ale Via dar ninat ale Portfon Fre	Linvirol.ub Vardini Envirol.	at Yardan Lov	mg/l)	mg/l
	Company (Out)		ADLA /09-od a dist.	on) 3111B	*BDL(**DL-0.02	mg/l
15	Copper (Cu)	for the state of t	APHA (23rd edition		mg/l)	

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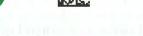
0 AV.*

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Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020 MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

intpie	• Number : VEL/SW//012/20-01	Report No.	: VEL/W/201223002	
S.No.	Test Parameters	Test Method	Results	Units
18	Lead as Pb	APHA (23rd edition), 3030D,3113B, 2017	*BDL(**DL-0.005 mg/l)	mg/l
19	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	*BDL(**DL-0.005 mg/l)	mg/l
20	Boron den Greenslade Vanden Englist. State Varden Englisstate Vanden Englis	APHA (23rd edition) 4500B, 2017	*BDL(**DL-0.2 mg/l)	mg/l
21	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(**DL-0.005 mg/l)	mg/l
22	Cadmium as Cd	APHA (23rd edition), 3030D,3113B, 2017	*BDL(**DL-0.002 mg/l)	mg/l
23	Chromium as Cr	APHA (23rd edition), 3030D,3113B, 2017	*BDL(**DL-0.02 mg/l)	mg/l
24	Mercury as Hg	APHA (23rd edition),3114C, 2017	*BDL(**DL-0.0005 mg/l)	mg/l
25	Biochemical Oxygen Demand (BOD) (3 days at 27°C)	IS: 3025 (Part-44): 1993, Ref: 2019	ta <mark>H Var 3.60 Enviro</mark> V Potab Vardan I r	mg/l
26	Chemical Oxygen Demand (COD)	IS : 3025 (Part 58) : 2006fef: 2017	20.26	mg/l

and a *BDL-Below Detection Limit,**DL-Detection Limit. DANENL EnviroLab Vardan EnviroLab Vardan EnviroLab Var ***End of Report*** Vardan EnviroLab Vardan Enviro dan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan E dan Envirol Ale Vardan (Checked By)

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			Test Report			
ample	Number : VEL/SW//	/012/20-01		Report No.	; VEL/W/20122300	29/B
lame	& Address of the Party	: M/s Raipur Energen Limited Formerly GMR Chhattisgarh Energy Ltd. Village:		Format No	: 7.8 F-01	
				Party Reference No	NIL I I I I I I I I I I I I I I I I I I	
		Raikheda, Block - Tild	a, Dist. Raipur Chhattisgarh	Report Date	: 01/01/2021	
lame of the Project :		Angenerating a Variating the		Period of Analysis	: 23/12/2021-01/01/	/2021
		No Varden Evelval.		Receipt Date	: 23/12/2020	b Varidum
				Sampling Date	: 14/12/2020	
ampl	e Description	: SURFACE WATER		Sampling Quantity	: 2 Ltr.	
ocati	m vardan EnviroLa	: Village- Raikheda (Poi	nd Water)	Sampling Type	Grab	Vardant
ampl	e Collected by	: VEL Team		Preservation	: Suitable Preservation	
aram	eter Required	: As Per Work Order			ab Vardan Envir	OLUD Var
iampli Protoc	ng and Analysis	: IS 2296	EnviroLub Vardan Env iroLab Vardan EnviroL	ncoLub Vardan Env ah Vardan Envirot	iroLah Vardan E ab Vardan Envir	
3.NU.	Test Parameters		Test Met	hodin EnviroLab Va oLab Vardan Enviro Andan EnviroLab V	Results	Units
3.NU.	Colour	Lab Vardan Ervinol Lab Vardan Ervinol Vinol ab Vardan Ervinol EnviroLab Vardan Linol ab Vardan ErvinoLab Vardan ErvinoLab	Test Met IS 3025: 1987 (P⊣	Carrier and the contraction of the	*BDL(**DL 1.0	Units Hazen
lan E virot I Av rdun I Fri	winoLab Vardan E nb Vardan Enviro roLab Vardan Env EnviroLab Vardar InviroLab Vardar	InviroLali Vardan E Lab Vardan Envirol viroLab Vardan EnviroLab Vardan rint ab Vardan EnviroLab Vardan EnviroLal InviroLab Vardan E Lab Vardan EnviroLa	WiroLab Vardan Envin	ol.ab Vardan Envir	*BDL(**DL 1.0 Hazen)	vineLah V Ib Mardap OLab Var EnviroLat
lan E virol i ny i dun i Eni i Eni an E	Colour	e agents (as MBAS)		oLab Vardan Envir i) : 2018	*BDL(**DL 1.0	vineLah V Ib Mardap OLab Var EnviroLat
2	Colour Odour	vicoLab Vacdan Env	IS 3025 (P-5) : 2018 n 2017, 5540C	*BDL(**DL 1.0 Hazen) Agreeable *BDL(**DL-0.05	Hazen
1	Colour Odour Anionic Surface active	vicoLab Vacdan Env	IS 3025 (P-5 APHA 23rd Edition) : 2018 n 2017, 5540C ,RA:2019:1986	*BDL(**DL 1.0 Hazen) Agreeable *BDL(**DL-0.05 mg/l) *BDL(**DL-0.2	Hazen mg/l
1 2 3 4	Colour Odour Anionic Surface active Residual Free Chlorin	vicoLab Vacdan Env	IS 3025 (P-5 APHA 23rd Edition IS:3025(P-26):1986) : 2018 n 2017, 5540C ,RA:2019:1986) CN -D)003, RA 2019	*BDL(**DL 1.0 Hazen) Agreeable *BDL(**DL-0.05 mg/l) *BDL(**DL-0.2 mg/l) *BDL(**DL-0.05	Hazen mg/l mg/l

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Vardan EnviroLab





Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020 MoEF & CC Recognized | ISO 9001 | ISO 45001

			Test Report			
Same	le Number : VEL/SW/	/012/20-03		ditor Edisortycznie War Eada Vinginie Bredica	daro deceniente als Loci y Marriam En	
	& Address of the Party	 M/s Raipur Energen L 	its Constant Constant of Constant	Report No.	; VEL/W/2012230	0030/A
	Envirairt Terdae		imited tisgarh Energy Ltd. Village:	Format No	7.8 F-01	
			a, Dist. Raipur Chhattisgarh	Party Reference No	: NIL	
ame	of the Project	D Will dari Erwü ul ul.	Report Date Period of Analysis Receipt Date		: 01/01/2021	Mardine.
airie	of the Project	all May class FreeTreet.			: 23/12/2021-01/0	1/2021
				Sampling Date	: 23/12/2020 : 14/12/2020	
	le Description	: SURFACE WATER		Sampling Quantity	2 Ltr.	
.ocati	is amount former and	: Village- Chicholi (Pon	d Water)	Sampling Type	Grab	Vardan
or the start of	le Collected by	: VEL Team		Preservation	: Suitable Preserv	ation
	eter Required	: As Per Work Order		b Vandam figwioola	b Varchuy Epsel	ent ab va
rotoc		: IS 2296				
S.No	. Test Parameters	b Vardan finviroLal uviroLab Vardan Fi ab Vardan EriviroL	Test Meti	nodo EnviroLab Vai Lab Vardan Enviro ardan EnviroLab V	Results	Units
rdan 1	pH value	Envirot ali Vardan Frot ali Vardan Env	IS 3025 (P-11): 198	roLah Vardan Env <u>In Vardan Envira</u>	tolab Vardan B Vardan linvi	inviroLa fotati Va
2	Turbidity	nviroLab Vardan E	in the later of the second state of the second state		7.23	Varden
118	ab Vardan Envicol	Lab Vardan Envirol.	IS 3025 (Part 10): 198	andair Envirol ab V	3.00	NTU
3	Total Dissolved Solids	tinviroLab Vardan	IS 3025 (P-16): 198	4 Reaff 2017	213.00	mg/l
4	Chloride (as Cl)	inotab vardan boy b Vandon Souisst al	IS: 3025 (Part 32): 19	88, Reaff. 2019	67.00	mg/l
5	Sulphate as (SO4)	inviroLab Vardan E Lab Vardan EnviroL	IS: 3025 (Part 24): 1986, R Method	eaff. 2019 Turbidity	20.27	mg/l
6	Total Alkalinity (as Ca	CO3)	IS: 3025 (Part 23): 19	86, Reaff. 2019	133.30	mg/l
7	Total Hardness (CaCC	3) ol ab Vardan Env	no Lab IS: 3025 (Part 21): 20	1 VE012 2111 42011 32118	156.56	mg/l
8	Calcium (as Ca)	h Vardan Envirotat Invirotal) Vardan E Jah Vardan Envirot	IS: 3025 (Part 40): 1991 F method	Reaff. 2019 (EDTA	46.24	mg/l
9	Magnesium	frol.ab Vardan Env TrivicoLab Vardan	IS: 3025 (Part 46): 1994, I method	and the Mathematic Charles	10.01	mg/l
10	Fluoride (as F)	h Vardan Lovient at	APHA 23rd Edition	2017, 4500FD	0.29	mg/l
44	Nitrate (as NO3)	nviroLap Hardan I. Lap Vurdan Environ	IS: 3025 (Part 34): 19 (Chromotropic	strend of the life of the life of the life of the life of the	6.24	mg/l
11	and the Manufactor Part	and the state of t		a variant i nvirot		mg/l
11	Phenolic compounds	r EnviroLab Vardan Rol ab Vardan Rol ab Vardan Env	APHA 23rd Edition	2017, 5530C	*BDL(**DL-0.1 mg/l)	vol.ab Vi
vical	Phenolic compounds Dissolved oxygen	r Edviro Lab Vardan Ens Folgab Vardan Ens Folgab Vardan Ens Folgab Vardan Ens	APHA 23rd Edition IS : 3025 (Part-38) : 1	ab Vardan Envirola	mg/l)	rol.nb Vi
12	feplade Vardan En-	inn) de Vardon Eros Erol ab Vardan Ero Erol ab Vardan Ero Er Vardon Eromoter Eronat de Vardan I Lab Vardan Eromoter	litot ab Vardan Emeliota	989, Ref: 2019	mg/l) 6.30	mg/l
12 13	Dissolved oxygen	nt HviroLab Vandan Fol ab Vardan Ens Fol ab Vardan Ens Fol ab Vardan Ens Folgen Ensemble Lab Vardan Ensemble Trouble ab Vardan Folgen Ab Vardan	IS:3025 (Part-38) :1	989, Ref: 2019 RA.2019:2003	mg/l) 6.30 0.24 *BDL(**DL-0.20	rol.nb Vi
12 13 14	Dissolved oxygen Iron	ind als Vardan Ers rt OviroLab Vardan Isol ab Vardan Ers Isol a	IS : 3025 (Part-38) : 1 IS:3025(P-53):2003,F	989, Ref: 2019 RA.2019:2003 3030D,3113B	mg/l) 6.30 0.24	mg/l mg/l

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Note: Terms & conditions refer on backside of test report.

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Test Report

ample	Number : VEL/SW//012/20-03	Report No.	: VEL/W/201223003	0/A
S.No.	Test Parameters	Test Method	Results	Units
) Varslan Envirotalı Vardım Erwindlar Verstan Vardan Erwicotalı Vardan Erw		n dan Emelie Lativ rolab Vardar Env	fundun Un frot ab Va
18	Lead as Pb. dan EnviroLab Vardan Enviro EnviroLab Vardan Lav Polab Vardan El	APHA (23rd edition), 3030D,3113B, 2017	*BDL(**DL-0.005 mg/l)	mg/l
19	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	*BDL(**DL-0.005 mg/l)	mg/i
20	Boron Han EnviroLab Vurdan Envirol of rotab Vardan EnviroLab Vardan Env	APHA (23rd edition) 4500B, 2017	*BDL(**DL-0.2 mg/l)	mg/l
21	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(**DL-0.005 mg/l)	mg/l
22	Cadmium as Cd	APHA (23rd edition), 3030D,3113B, 2017	*BDL(**DL-0.002 mg/l)	mg/l
23	Chromium as Cr. dan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan Enviro	APHA (23rd edition), 3030D,3113B, 2017	*BDL(**DL-0.02 mg/l)	mg/l
24	Mercury as Hg	APHA (23rd edition),3114C, 2017	*BDL(**DL-0.0005 mg/l)	mg/l
25	Biochemical Oxygen Demand (BOD) (3 days at 27°C)	IS: 3025 (Part-44): 1993, Ref: 2019	15.60 15.60	nt mg/l mytrotab
26	Chemical Oxygen Demand (COD)	IS : 3025 (Part 58) : 2006fef: 2017	50.64	mg/l

*BDL-Below Detection Limit, **DL-Detection Limit. Envirol ab Vardan Envirol ab Vardan Envirol ab Var***End of Report*** Vardan EnviroLab Vardan EnviroLab dan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan Envi Mardan Envis dan Enviro Lab Vardan Enviro Lab ab Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan EnviroL Approved By (Checked By) viroLab Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan 💦



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Note: Terms & conditions refer on backside of test report.

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Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020 MoEF & CC Recognized | ISO 9001 | ISO 45001

ame a ame o ample acatio arame	& Address of the Party of the Project e Description on e Collected by eter Required	Formerly GMR Chhattis	garh Energy Ltd. Village: , Dist. Raipur Chhattisgarh	Report No. Format No Party Reference No Report Date Period of Analysis Receipt Date Sampling Date Sampling Quantity Sampling Type Preservation	: VEL/W/20122300 : 7.8 F-01 : NIL : 01/01/2021 : 23/12/2021-01/01 : 23/12/2020 : 14/12/2020 : 2 Ltr. : Grab : Suitable Preserva	Mate Vinda ovinalisti y ottati Vao di Vinstan finy
rotoco S.No.	ng and Analysis ol Test Parameters	i IS 2296 b Vardan Envirolation ovinolation Vardan Envirolation an Vardan Envirolation an Vardan Envirolation	nviroLab Vardan EnviroLa andan Enviro Test Meti AroLab Vardan Enviro Vardan EnviroLab V al al Vardan EnviroLab V	roLab Vardan EnviroLa b Vardan EnviroLa hod EnviroLah Vardan Enviro ardan EnviroLah V h Vardan EnviroLah V	Results	Units
Lat	Colour	b Vardan EnviroLab Y	IS 3025: 1987 (P-4) Reaff.2017	2.00	Hazen
2	Odour Anionic Surface activ	e agents (as MBAS)	IS 3025 (P-5)	ardan Englestab V	Agreeable *BDL(**DL-0.05 mg/l)	 mg/l
4	Residual Free Chlorin	ero Lini Vardan Enviro 5 Vardan EnviroLat 1 Invirot ab Vardan Env	IS:3025(P-26):1986,	RA:2019:1986	*BDL(**DL-0.2 mg/l)	mg/l
i 5 Envi	Cyanide as CN	Lab Vardan Envirol, a droLab Vardan Enviro	o Vardan Co APHA 4500 o Lab Vardan	CN-D Envirolab	*BDL(**DL-0.05 mg/l)	mg/l
6	Aluminium as Al	viroLab Vardan Envir h Vardan EnviroLab	IS 3025 (P-55) 200	03, RA 2019	*BDL(**DL-0.03 mg/l)	ol mg/l no
17 Li	O&G	orvirot ab Vardan Eliv Lab Vardan Envirot al drot ab Vardan Envir	IS 3025 (P-39) 199	91, RA 2019	*BDL(**DL-0.5 mg/l)	mg/l
	Checked By)	eirul alı Vardim Envir lı Vardan EnviroLab (LuviroLab Vardan Env Lab Vardan EnviroLa drotub Vardan Enviro (Luvirotub Vardan E	***End of Report***	dan Unwiretab Var Lab Vasilan Crwhei Indan Ernsheil ab V Ib Vasdan Ernsteil a Ibd Vasdan Ernsteil a Ibd ab Vardan Cost		Appender By

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Note: Terms & conditions refer on backside of test report.

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Vardan EnviroLab



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Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020 MoEF & CC Recognized | ISO 9001 | ISO 45001

			Test Report			
ame of the ample Des ocation ample Coll arameter R ampling ar	Project cription ected by		mited sgarh Energy Ltd. Village: a, Dist. Raipur Chhattisgarh	Report No. Format No Party Reference No Report Date Period of Analysis Receipt Date Sampling Date Sampling Quantity Sampling Type Preservation	: VEL/W/201223003 : 7.8 F-01 : NIL : 01/01/2021 : 23/12/2021-01/01/ : 23/12/2020 : 14/12/2020 : 2 Ltr. : Grab : Suitable Preservat	2021
rotocol S.No. Test	Parameters	riroLab Vardan Env b Vardan EnviroLa nviroLab Vardan E Lab Vardan Envirol	Test Met	ab Vardan Envirol hodn Envirol ab Va ol ab Vardan Envir Jardan Envirol ab V	Results	Units
10 10 10 10 10	value bidity	notati vandan Env LoviroLub Vardan Ibel ali Vardan Em b Vardan EnviroLal InviroLali Vardan E Lab Vardan Envirol	IS 3025 (P-11): 198 IS 3025 (Part 10): 19	84, Reaff: 2017,	7.32	- NTU
	I Dissolved Solids	dtol ab Vardan Env Envirol ab Vardan	(Nephelometer) IS 3025 (P-16): 190	34 Reaff 2017	207.00	mg/l
50L30 1/3	oride (as Cl) ohate as (SO4)	b Vardan Envirol al Invirol ab Vardan E	IS: 3025 (Part 32): 19 IS: 3025 (Part 24): 1986, F Metho	Reaff. 2019 Turbidity	61.26 30.41	mg/l mg/l
LOAD DIV	l Alkalinity (as Ca	LETYHOLAD VALUED	IS: 3025 (Part 23): 19	986, Reaff. 2019	129.00	mg/l
	l Hardness (CaCC ium (as Ca)	03) oL ab Vardan Env Savirot ab Vardan E	IS: 3025 (Part 21): 20 IS: 3025 (Part 40): 1991 metho	Reaff. 2019 (EDTA	152.44 44.59	mg/l mg/l
9 Mag	nesium	Lan Vardan Envirol AroLah Vardan Inv Amirol ah Vardan	IS: 3025 (Part 46): 1994, metho	Reaff. 2019 (EDTA	10.01	mg/l
CIPCUIP ALD	ride (as F) ite (as NO3)	di Vurdum Envirol at Silvina ab Vurdan E Lab Vurdan Envirol	APHA 23rd Edition IS: 3025 (Part 34): 19 (Chromotropic	2017, 4500FD 988, Reaff. 2019	0.31 5.87	mg/l mg/l
	nolic compounds	r FovigaLab Vardan FovigaLab Vardan Protab Vardas Eos	APHA 23rd Edition	2017, 5530C	*BDL(**DL-0.1 mg/l)	mg/l
13 Diss	olved oxygen	o vardan FaviroLa	IS : 3025 (Part-38) :	1989, Ref: 2019	5.70	mg/l
14 Iron	ardan Enviro	Ab Vardan Envirol	IS:3025(P-53):2003	RA.2019:2003	0.22	mg/l
15 Zinc	as (Zn)	And ab Vasilary Env 1 Invirutali Vantari And ab Vandari	APHA (23rd edition)), 3030D,3113B	*BDL(**DL-0.20 mg/l)	mg/l
16 Cop	per (Cu)	n Nev Tel Loverne Loverne Tel Verone	APHA (23rd edit	ion), 3111B	*BDL(**DL-0.02 mg/l)	mg/l
17 Man	ganese as Mn	n i su san si m	APHA31	118	*BDL(**DL-0.05 mg/l)	mg/l

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Test Report

	• Number : VEL/SW//012/20-04	Report No.	; VEL/W/201223003	1/A
S.No.	Test Parameters	Test Method	Results	Units
18	Lead as Pb	APHA (23rd edition), 3030D,3113B, 2017	*BDL(**DL-0.005	mg/l
19	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	mg/l) *BDL(**DL-0.005 mg/l)	mg/l
20	Boron	APHA (23rd edition) 4500B, 2017	*BDL(**DL-0.2 mg/l)	mg/l
21	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(**DL-0.005 mg/l)	mg/l
22	Cadmium as Cd	APHA (23rd edition), 3030D,3113B, 2017	*BDL(**DL-0.002 mg/l)	mg/l
23	Chromlum as Cr	APHA (23rd edition), 3030D,3113B, 2017	*BDL(**DL-0.02 mg/l)	mg/l
24	Mercury as Hg	APHA (23rd edition),3114C, 2017	*BDL(**DL-0.0005 mg/l)	mg/l
25	Blochemical Oxygen Demand (BOD) (3 days at 27°C)	IS: 3025 (Part-44): 1993, Ref: 2019	13.20	mg/l
26	Chemical Oxygen Demand (COD)	IS : 3025 (Part 58) : 2006fef: 2017	40.51	mg/t

*BDL-Below Detection Limit, **DL-Detection Limit. EnviroLab Vardan EnviroLab Vardan EnviroLab Var ***End of Report*** Vardan EnviroLab Vardan Envirol Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan En Lal Vardan EuviroLab Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Varda dan Lowie Ally vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan E nviroL (Checked By) nviroLab Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan Envirol CApproved B ardan EnviroLah Vardan EnviroLab Vardan EnviroLah Vardan EnviroLah Vardan EnviroLah Vardan Envirolab Vardan Envirolab Vardan Envirolab Vardan Envirolab Vardan Envirolab Vardan Envirol



dan Luvirol ab Vardau Envirol ab Vardan Envirol ab Vardan Envirol ab Vardan Unvirol ab Vardan Bayiro ConductatioNardam Envirol.ab Vardam Envirol.ab Vardam Torinat.ab Vardam Conduct.ab Vardam Lab Vardam Lab Vardam

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Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020 MoEF & CC Recognized | ISO 9001 | ISO 45001

			<u>Test Report</u>			
Sample	Number : VEL/SW//	012/20-04		Report No.	; VEL/W/201223003	31/B
Name a	& Address of the Party	: M/s Raipur Energen L	imited	Format No	; 7.8 F-01	
		Formerly GMR Chhat	tisgarh Energy Ltd. Village:	Party Reference No	NIL'I Vandon Lewirotal	
		Raikheda, Block - Tilo	De La Mai encomente summer ravievente suc		: 01/01/2021	
Jame	of the Project	invirutati Vardan t			; 23/12/2021-01/01/	2021
vanie	lame of the Project :			Receipt Date	; 23/12/2020	
r Covicol ab Vaudan Envirol ab Vardan Enviro			Sampling Date	: 14/12/2020		
Sample	e Description	: SURFACE WATER		Sampling Quantity	: 2 Ltr.	
ocatio	onVarilan Erwienta	: Bangoli Dam	Is Varding EnviroLab Va	Sampling Type	Grab	Vardan Er
Sample	e Collected by	: VEL Team		Preservation	: Suitable Preservat	tion
Sampli	eter Required	: As Per Work Order : I\$ 2296	rouan yardan Engliots Envirolub Vardan Env		ab yardan Envir Trol.ab Vardan E	
-	T	vit ol ab Vonden Ent	frotab Vardan Envirot.	ab Vandan Envirot	ab Vardan Envir	of als Van
Protoc S.No.	ol Test Parameters	virnLah Vardan Em b Vardan Envirol a Invirol ab Vardan E Lab Vardan Envirol AroLah Vardan Envirol	Test Met	ab Vandan Envirol hod EnviroLab Va ordan EnviroLab V andan EnviroLab V av Valdan Envirol	Results	Units
-	T	vinel ab Vordan Em Ib Vardan Envirola Hvirolah Vardan E Lab Vordan Emirol Acolah Vardan Emirol I Diverolah Vardan Em Envirolah Vardan Em Ib Vardan Envirola	Test Met IS 3025: 1987 (P-	otab Vardan Envir Gurdan Envirotab (ab Vardan Envirot Irotab Vardan Envirot ab Vardan Envirot	Results 3.00	Units Hazen
S.No.	Test Parameters	vinnLah Vardan Em b Vardan EnviroLa Lab Vardan Envirol droLab Vardan Envirol droLab Vardan EnviroLa b Vardan EnviroLa EnviroLab Vardan EnviroLa EnviroLab Vardan E	WindLab Vardan Enviro ab Vardan EnviroLab A roLab Vardan Envirot. EnviroLab Vardan Envirot.	4) Reaff.2017	oLab Vurdan Er ardan Erwirol I ib Vardan Erwi iroLab Vardan E	virotab V b Vardan plab Vard avvirotab
S.No.	Test Parameters	a agents (as MBAS)	IS 3025: 1987 (P-	4) Reaff.2017	3.00	virotab V b Vardan plab Vard avvirotab
S.No.	Test Parameters Colour Odour	EnviroLab Vardar	IS 3025: 1987 (P- IS 3025 (P-5	4) Reaff.2017 i) : 2018 n 2017, 5540C	3.00 Agreeable *BDL(**DL-0.05	ViroLab V b Vurdam olah Vard introLab viroLac
S.No.	Test Parameters Colour Odour Anionic Surface active	EnviroLab Vardar	IS 3025: 1987 (P- IS 3025 (P-5 APHA 23rd Edition	4) Reaff.2017 i) : 2018 n 2017, 5540C ,RA:2019:1986	3.00 Agreeable *BDL(**DL-0.05 mg/l) *BDL(**DL-0.2	Hazen
S.No.	Test Parameters Colour Odour Anionic Surface active Residual Free Chlorin	EnviroLab Vardar	IS 3025: 1987 (P-4 IS 3025 (P-5 APHA 23rd Edition IS:3025(P-26):1986	4) Reaff.2017 i) : 2018 n 2017, 5540C ;,RA:2019:1986	3.00 Agreeable *BDL(**DL-0.05 mg/l) *BDL(**DL-0.2 mg/l) *BDL(**DL-0.05	Hazen

"**End of Report***
(Checked By)



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Version Co.







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Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020 MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Sample Number : VEL/SW//	/012/20-02	Report No.	: VEL/W/2012230032/A
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	- 7.8 F-01
	Formerly GMR Chhattisgarh Energy Ltd Village:	Party Reference No	: NIL
	Raikheda, Block - Tilda, Dist. Raipur Chhattisgarh	Report Date	: 01/01/2021
Name of the Project	:	Period of Analysis	: 23/12/2021-01/01/2021
		Receipt Date	: 23/12/2020
0		Sampling Date	: 14/12/2020
Sample Description	: SURFACE WATER	Sampling Quantity	: 2 Ltr.
Location	: Village- Mura (Pond Water)	Sampling Type	Grab
Sample Collected by	: VEL Team	Preservation	
Parameter Required	: As Per Work Order	rieservation	: Suitable Preservation
Sampling and Analysis Protocol	: IS 2296		

S.No.	Test Parameters	Test Method	Results	Units
1	pH value	IS 3025 (P-11): 1983 Reaff. 2017	7.49	-
2	Turbidity	IS 3025 (Part 10): 1984, Reaff: 2017, (Nephelometeric Method)	4.00	NTU
3	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	179.00	mg/l
4	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	47.86	mg/l
5	Sulphate as (SO4)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	11.82	mg/l
6	Total Alkalinity (as CaCO3)	IS: 3025 (Part 23): 1986, Reaff. 2019	81.70	mg/l
7	Total Hardness (CaCO3)	IS: 3025 (Part 21): 2009, Reaff. 2019	90.64	mg/l
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019 (EDTA method)	29.72	mg/l
9	Magnesium	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	4.01	mg/l
10	Fluoride (as F)	APHA 23rd Edition 2017, 4500FD	0.33	mg/l
11	Nitrate (as NO3)	IS: 3025 (Part 34): 1988, Reaff. 2019 (Chromotropic Method)	3.93	mg/l
12	Phenolic compounds	APHA 23rd Edition 2017, 5530C	*BDL(**DL-0.1 mg/l)	mg/l
13	Dissolved oxygen	IS : 3025 (Part-38) : 1989, Ref: 2019	5.60	mg/l
14	Iron	IS:3025(P-53):2003,RA.2019:2003	0.27	mg/l
15	Zinc as (Zn)	APHA (23rd edition), 3030D,3113B	*BDL(**DL-0.20 mg/l)	mg/l
16	Copper (Cu)	APHA (23rd edition), 3111B	*BDL(**DL-0.02 mg/l)	mg/l
17	Manganese as Mn	APHA3111B	*BDL(**DL-0.05 mg/l) Pag	mg/l

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Test Report

ample	Number : VEL/SW//012/20-02	ber : VEL/SW//012/20-02 Report No.					
S.No.	Test Parameters	Test Method	Results	Units			
18	Lead as Pb	APHA (23rd edition), 3030D,3113B, 2017	*BDL(**DL-0.005 mg/l)	mg/l			
19	Arsenic as As	APHA (23rd edition), 3030D,3114C, 2017	*BDL(**DL-0.005 mg/l)	mg/l			
20	Boron	APHA (23rd edition) 4500B, 2017	*BDL(**DL-0.2 mg/l)	mg/l			
21	Selenium as Se	APHA (23rd edition),3114C, 2017	*BDL(**DL-0.005 mg/l)	mg/l			
22	Cadmium as Cd	APHA (23rd edition), 3030D,3113B, 2017	*BDL(**DL-0.002 mg/l)	mg/l			
23	Chromium as Cr	APHA (23rd edition), 3030D,3113B, 2017	*BDL(**DL-0.02 mg/l)	mg/l			
24	Mercury as Hg	APHA (23rd edition),3114C, 2017	*BDL(**DL-0.0005 mg/l)	mg/l			
25	Biochemical Oxygen Demand (BOD) (3 days at 27°C)	IS: 3025 (Part-44): 1993, Ref: 2019	6.00	mg/l			
26	Chemical Oxygen Demand (COD)	IS : 3025 (Part 58) : 2006fef: 2017	30.38	mg/l			

End of Report

*BDL-Below Detection Limit, **DL-Detection Limit.

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Test Report

Sample Number : VEL/SW//	012/20-02	Report No.	: VEL/W/2012230	0032/B
Name & Address of the Party Name of the Project	: M/s Raipur Energen Limited Formerly GMR Chhattisgarh Energy Ltd. Village: Raikheda, Block - Tilda, Dist. Raipur Chhattisgarh	Format No Party Reference No Report Date Period of Analysis	: 7.8 F-01	
Sample Description Location Sample Collected by Parameter Required Sampling and Analysis Protocol	: SURFACE WATER : Village- Mura (Pond Water) : VEL Team : As Per Work Order : IS 2296	Receipt Date Sampling Date Sampling Quantity Sampling Type Preservation	: 23/12/2020 : 14/12/2020 : 2 Ltr. : Grab : Suitable Preserv	ation
S.No. Test Parameters	Test Met	hod	Results	Units

1	Colour	IS 3025: 1987 (P-4) Reaff.2017	4.00	Hazen
2	Odour	IS 3025 (P-5) : 2018	Agreeable	
3	Anionic Surface active agents (as MBAS)	APHA 23rd Edition 2017, 5540C	*BDL(**DL-0.05 mg/l)	mg/l
4	Residual Free Chlorine	IS:3025(P-26):1986,RA:2019:1986	*BDL(**DL-0.2 mg/l)	mg/l
5	Cyanide as CN	APHA 4500 CN -D	*BDL(**DL-0.05 mg/l)	mg/l
6	Aluminium as Al	IS 3025 (P-55) 2003, RA 2019	*BDL(**DL-0.03 mg/l)	mg/l
7	0 & G	IS 3025 (P-39) 1991, RA 2019	*BDL(**DL-0.5 mg/l)	mg/l

*BDL-Below Detection Limit, **DL-Detection Limit.

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End of Report

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Project Name: Raipur Energen Limited Formerly GMR Chhattisgarh Energy Ltd. Village: Raikheda, Block- Tilda, Dist.-Raipur (Chhattisgarh)

Environmental Monitoring Report

4.5 Soil Quality Analysis



Figure No. 8. Plan Showing Soil Sample Monitoring Location Map

Location Code: -

S1- Near Field Hostel







			<u>Test Report</u>				
Sample	Number : VEL/S/12	/20-01		Report No.	: VEL/S0/201223	0004/A	
Name &	& Address of the Party	: M/s Raipur Energen Limited		Format No	• 7.8 F-01	i seed to be to	
		Formerly GMR Chhattisgarh	Formatino		and and Margaret Transm		
		Raikheda, Block - Tilda, Dist	. Raipur Chhattisgarh	Report Date	; 31/12/2020		
				Period of Analysis	: 23/12/2020-31/1	2/2020	
ample	e Description	: SOIL		Receipt Date	: 23/12/2020	LILOLO	
Location : Near Field Hostal Sample Collected by : VEL Team				Sampling Date	: 15/12/2020		
		: VEL Team		Sampling Quantity	: 2 Ka.		
arame	eter Required	: As Per Work Order	rdan Envirolab Və	Sampling Type	: Composite	hVardm	
ampli rotoc	ng and Analysis ol	: IS 2720, APHA & USDA		Packing Status	: Temp. Sealed		
S.No.	Parameters	a EmilioEao Verdan Europa Matalah Vardan Europa	Test Meth	nod Variation Friedrich	Results	Units	
nvind n Eile st 1 a	pH (at 25°C)	aLab Vacdan Enviro Job V ofreitalz Vardan Envirots w Enviro Lab Vardan Env	IS : 2720 (P- 26): 1	987 RA: 2016	3.52	lab Vard Judi ab V Envised	
2	Electrical Conductivit	witch Hardan En inch	IS 14767: 2000 RA:2016		0.149	mS/cn	
3	Bulk density	hb Vardin LoviroLeb Va Envirol ab Varden Lovin	USDA:1954 (Page-	TOBILENVILOLAD VA	1.34 267.34 254.30 139.10	gm/cc mg/kg mg/kg	
4	Chloride	deb Verdan Enviro deb	JSDA:1954 Method 13 (I	Frend and Description of the			
5	Calcium (as Ca)	what ab Vardan Emired a Faultat de Varter Peo	Lab SOP no. VEL/S	30 VALMUL LIVILU			
6	Sodium (as Na)	Wirgeate Vardan Environ	stypestant martinest	The work of the deal			
7	Potassium (as K)	ab Vardan Envirol ab Vo	USDA:1954 Method 10A (Page-96) RA: 2010 Lab SOP no. VEL/STP/01: 2018		89.02	mg/kg	
8	Organic Matter	olab Valdan Enviro ab 1	IS 2720 (P-22) 19	OPDO-PORTERIC LITER	0.33	kg/heo	
9	Magnesium (as Mg)	witel als Vardan Envirol.	ub Vardan Envirol	ab Unerfast Englered	167.55	/% mg/kg	
10	Available Nitrogen (as	N) N SH VI GAO EN 2001	Lab SOP no. VEL/STP/01: 2018 IS : 14684,1999 RA: 2015		255.89	kg. /he	
11	Available Phosphorus	- Ward - Final at the test	Lab SOP no. VEL/STP/01: 2018		41.50	kg. /he	
12	Total Zinc (as Zn)	Lab Vardan Envire ab V	USEPA 3050 B: 1996		41.00	mg/kg	
13	Total Manganese (as I	(In)	USEPA 3	al Marchus Environ	170.05	mg/kg	
14	Total Lead (as Pb)	wirstab Varian En drei	USEPA 3050	nostao varnin Lu	14.02		
15	Total Cadmium (as Co	di Vendan Erretrota b Ma	USEPA 3	Telever Freddingt also be	9.00	mg/kg	
16	Total Copper (as Cu)	riven London Lovier	USEPA 3050	plag varian Linvs	11.99	mg/kg	
	(no ou)		USEFA 3050	0. 1300	11.99	mg/kg	

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Test Report

		Formerly GMR Chhattis Raikheda, Block - Tilda,	garh Energy Ltd. Village: Dist. Raipur Chhattisgarh	Party Reference No Report Date	: 31/12/2020	
iample .ocatio	Description	:SOIL :Near Field Hostal		Period of Analysis Receipt Date Sampling Date	: 23/12/2020-31/1 : 23/12/2020 : 15/12/2020	272020
arame	e Collected by eter Required ng and Analysis	: VEL Team : As Per Work Order : IS 2720, APHA & USDA	mLah Vandun Unvisol Vandan Envirolah Va virni ah Vanlun Envir V Vandun EnviroLah V	Sampling Quantity Sampling Type Packing Status	2 Kg. Composite Temp. Sealed	irot ate Vij - Vardare P ovirutade V Ab Vardar
S.No.	Parameters	vo olini V podan Cred o Environzia Vardim P virot ali Vardan Enviro ali Vardan EnviroLap Envirot ali Vardan Fr	Test Meti	nod Kardan Envirol Vardan Envirol Indan Envirolab Va Indah Vardan Envirolab Va	Results	Units
1	Colour	virol ab Vardan Envirola n EnviroLab Vardan	USDA:1954-Reaf	irmed,2010	Grey	ini varklar pol ab var Unvire/Lul
2	Water holding capacit	Y . Varian Envirot an	USDA:1954-Reaf	firmed,2010	20.97	%
3	Total Chromlum (as C	nvboLab Vardan En	USEPA 3050	B:1996	6.22 m	mg/kg
4	Soil Texture	ined an Andre Shyrrona Meet an Arabitan Frod	IS:2720 (P-4)	RA:2006	Silty Clay	ab Vardar
ndan † Eris rota Ion E		n Envirotab Vardan Wirotab Yardan Envi ab Vardari Envirotab Invirotab Vardan En	***End of Report***	livitali Vardan livi ab Vardan Erivital rdan Erivitotab Va otali Vardan Erivi ordan Erivitatab	rdan Envi	N ENURO

nvirolado Vatkian Envirolado Vardan Envirolado V

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Note: Terms & conditions refer on backside of test report.

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Environmental Monitoring Report

4.6 Effluent Sample Analysis Report



Locations

- 1. STP Outlet
- 2. ETP Outlet





Test Report

S.No. Test Parameters	Test Method	Result	Unit	Prescribed Lim
Protocol	: IS 3025	Packing Status	: Temp. Seal	ed all that day
Sampling and Analysis	: As Per Work Order	Sampling Type	: Grab	
Parameter Required	a Marshawi waini ak Marshaw Incinet ak We	a down i'm a land alla bla	÷ 2 Ltr.	alizabili Manadana
Sample Collected by	: VEL Team	Sampling Quantity		
Location	: STP Outlet	Sampling Date	: 15/12/2020	
Sample Description	: Waste Water	Receipt Date	: 23/12/2020	O STA DOL MORALINA
they have been all the states of		Period of Analysis	: 23/12/2020	-31/12/2020
	neurosta ziosk indu, olsk riaipur ofinatusgan	Report Date	: 31/12/2020	
	Formerly GMR Chhattisgarh Energy Ltd. Village: Raikheda, Block - Tilda, Dist. Raipur Chhattisgarh	Party Reference No	: NIL	
numb a Address of the Party	: M/s Raipur Energen Limited	Format No	: 7.8 F-01	
Name & Address of the Party		Report No.	; VEL/WW/2	012230008/A
Sample Number : VEL/WW	/15/20-02	Benert No.	. VELAMMUN	040000000

oampi	e pescubrion	: Waste Wate	r	Receipt Date	: 23/12/202	0
Locati	on	: STP Outlet	Varabat Analast at Markets room	Sampling Date	: 15/12/202	
Sample	e Collected by	: VEL Team		Sampling Quantity	: 2 Ltr.	
aram	oler Required	: As Per Work	Order	Sampling Type	Grab	rest tels Marriani
ampli Protoc	ing and Analysis ol	: IS 3025		Packing Status	: Temp. Sea	aled
S.No.	Test Parameters	Free Endernoisato Creetros als Var	Test Method	Result	Unit	Prescribed Limit
	o Vanduo Lavius regent di Vanta	n Errutest als b		den EnvicoLab Va Este Vardari Envir	edun Erwi edun Vori	her English All
1	рН	and alab you	IS 3025 (P-11): 1983 RA2017	7.64	ah Vardar	5.5 - 9.0
2	Total Suspended So	olids	IS: 3025 (Part 17): 1984, RA2017	19.3	mg/l	100.0
3	Oil & Grease	d ab Varden E	IS 3025(P-39):1991 RA 2019	1.2	mg/l	10.0
4	BOD (3 days @ 27°C) LoviroLab V	IS: 3025 (Part-44): 1993, RA: 2019	16.5	mg/l	30.0
5	COD	Invit dativa	IS : 3025 (Part 58) : 2006 RA: 2017	91.2	mg/l	250.0
	Envital at Var	tan Contrast ab	***End of Deport***	the state of the s		

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Note: Terms & conditions refer on backside of test report.







Test Report

Sample Number : VEL	WW/15/20-02		Report No.	; VEL/WW/2	2012230009/A	
Name & Address of the P	arty : M/s Raipur I	: M/s Raipur Energen Limited		: 7.8 F-01		
		/IR Chhattisgarh Energy Ltd. Village:	Party Reference No	: NIL		
	Raikheda, E	lock - Tilda, Dist. Raipur Chhattisgarh	Report Date	: 31/12/2020)	
			Period of Analysis	: 23/12/2020	0-31/12/2020	
Sample Description	: ETP Outlet		Receipt Date	: 23/12/2020)	
Location			Sampling Date Sampling Quantity	: 15/12/2020 : 2 Ltr.		
Sample Collected by						
Parameter Required	: As Per Wor	Order	Sampling Type	Grab		
Sampling and Analysis Protocol	: IS 3025		Packing Status	: Temp. Sea	aled	
S.No. Test Parameters	 Contraction and an environment of the second se second second sec	Test Method	Result	Unit	Prescribed Limit	Marri Larri
ir et an Vuedan Envi		wird ab Vandan EnviroLab Van	dan Doured sib V		Induits Variation Us	stra
with als Vardan En	you al Vandau	Friend ab Var dau, Frietrot als M	Ardan Employ also	Landau Ers	A REPORT OF A REPORT OF A	ENU
1 pH Monda	Emmer di Uni	IS 3025 (P-11): 1983 RA2017	7.75	ah Vædar	5.5 - 9.0	ant
2 Total Suspended	Solids	IS: 3025 (Part 17): 1984, RA2017	8.5	ma/l	100.0	VLIV

1	pH the state in the state in the state	IS 3025 (P-11): 1983 RA2017	1.10	ID V. AUDIO	5.5 - 9.0
2	Total Suspended Solids	IS: 3025 (Part 17): 1984, RA2017	8.5	mg/l	100.0
3	Oil & Grease	IS 3025(P-39):1991 RA 2019	1.5	mg/l	10.0
4	BOD (3 days @ 27°C)	IS: 3025 (Part-44): 1993, RA: 2019	13.5	mg/l	30.0
5	COD	IS : 3025 (Part 58) : 2006 RA: 2017	70.9	mg/l	250.0

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Note: Terms & conditions refer on backside of test report.

Environmental Monitoring Report

4.7 Stack Emission Analysis Report

Locations

- 1. TPP (Unit-1)
- 2. TPP (Unit-2)







		<u>Test Repor</u>	t an included tweltor.				
ample Number : 🕚	VEL/\$/01		Report No.	· VEL/S/201223	30007/A		
ame & Address of t		A MARKED AND A MARKED AND A	• 7.8 F-01	al de la deret ma			
dan Ouvloot.eb		R Chhattisgarh Energy Ltd. Village:	Format No Party Reference No	: NIL			
		ck - Tilda, Dist. Raipur Chhattisgar		: 31/12/2020			
			Period of Analysis	: 23/12/2020-31	1/12/2020		
emple Deceription	indim Envirol.ett.V.a.	(13) 1. theo al. 20. Manuface Cor-	Receipt Date	· 23/12/2020	Lawler, D Ward		
ample Description	Stack Emissi	on Monitoring	stub Tanba Envira	JI VJUVIAU I A			
	Information Location	: TPP (Unit-I)					
Sample C	Collected by	: VEL Team	vardan towhot ab Vin	Carrenvirol	ab Vardan Envir		
Date of S	ampling	: 15/12/2020					
Samplinç	duration (Minutes)	: 26 Min. (16.10 to 16.36	hrs.)				
Stack atta	ached to	: ESP	minoLab Varcian Env				
Make of s	tack Environ als Vanda	: MS Plate & RCC					
Diameter	of stack(m)	: 7.5 M			ab Vardan Envir		
Height of	stack(m)	: 275 M	: 275 M				
Instrume	nt calibration status	: Calibrated					
Meteorological Condition		Calibrated					
Meteorol		: Clear Sky			winoLab Vandary M EnviroLab Van		
					wino Lab Vandary n EnviroLab Vin winoLab Varelin		
Ambient	ogical Condition	: Clear Sky : 27	ot ab Vablan Kovinsta nvicoLab Vardan Envirot of ab Vardan Envirot Vardan Envirotab Vav vicol ab Vardan Enviro		wind ab Vardan n Envirol ab Vardan wind ab Vardan ab Vardan Envir		
Ambient Temperat	ogical Condition Temperature - Ta (°C)	: Clear Sky : 27	ot ab Vablan Körinda nvicoLab Vardan EnvicoL ot ab Vardan EnvicoL Vardan EnvicoLab Va vicoLab Vardan Envico b Vardan EnvicoLab V	ab Vardan En IroLab Vardan D dun Eovicut oLab Vardan Ardan Enviro	wind ab Vardan n Envirol ab Vardan wirol ab Vardan ab Vardan Envir Envirol ab Vard al ab Vardan Envirol ab Vard		
Ambient Temperat Velocity (ogical Condition Temperature - Ta (°C) ture of Stack Gases - Ts (: Clear Sky : 27 °C) : 131 : 27.4 : 52	ot ab Vahlan Kovinsta nviroLab Vardan Envirot of ah Vardan Envirot Vardan EnviroLab Va viroLab Vardan Enviro h Vardan EnviroLab V ollab Vardan Envirot	ab Vardam En IroLab Vardan IroLab Vardam Cardan Eoviru L Dab Vordam Cardan Enviru Ardan Enviru Ardan Enviru	winnLab Vandan of Envirol ab Vandan ab Vandan Envir Envirol ab Vandan Kab Vandan Envirol ab Vandan Marol ab Vandan		
Ambient Temperat Velocity o Flow rate	ogical Condition Temperature - Ta (°C) ture of Stack Gases - Ts (of Stack Gases (m/sec.)	: Clear Sky : 27 °C) : 131 : 27.4	ot ab Vablan Kovinsta ovicoLab Vardan Envirot of ab Vardan Envirot Vardan Envirot ab Va viroLab Vardan Envirot b Vardan Envirot.al) V of ab Vardan Envirot. ovicoLab Vardan Envirot.	ab Vinrelim En IroLab Vardan IroLab Vardan Dr rdim Eoviru Di ab Vardan Arclan Erwic ah Vardan Erwic Rolab Vardan IroLab Vardan	wind ab Vardan of EnviroLab Var ab Vardan Envir EnviroLab Vardan EnviroLab Vardan Lab Vardan Env of EnviroLab Vardan of EnviroLab Vardan		
Ambient Temperat Velocity o Flow rate Flow rate	ogical Condition Temperature - Ta (°C) ture of Stack Gases - Ts (of Stack Gases (m/sec.) of PM (LPM)	: Clear Sky : 27 °C) : 131 : 27.4 : 52	ot ab Vablan Kovinsta nvicoLab Vardan EnvicoL Vardan EnvicoLab Var vicoLab Vardan Enviro h Vardan EnviroLab Va of ab Vardan Envirot. nvicoLab Vardan Envirot. otab Vardan Envirot. Vardan Envirot.ab Var	ab Vintelim En Irol.ab Vardan Irol.ab Vardan Irolm Eowholt Arclan Enviro Irol.ab Vardan Irol.ab Vardan Irol.ab Vardan Irol.ab Vardan Irol.ab Vardan	wireLab Vardan in EnviroLab Vardan ab Vardan Envir EnviroLab Vardan Lab Vardan En- miroLab Vardan in EnviroLab Vardan in EnviroLab Vardan wiroLab Vardan to Vardan Envir		
Ambient Temperat Velocity o Flow rate Flow rate	ogical Condition Temperature - Ta (°C) ture of Stack Gases - Ts (of Stack Gases (m/sec.) of PM (LPM) of Gas (LPM) g condition	: Clear Sky : 27 °C) : 131 : 27.4 : 52 : 2.0	ot ab Vahlan Kovinsta nviroLab Vardan Envirot Vardan Envirot ab Var viroLab Vardan Enviro Is Vardan Envirotab Var otab Vardan Envirotab Dub Vardan Envirot Dub Vardan Envirot Vardan Envirotab Var virol ab Vardan Envirot	ab Vinnim En Irol.ab Vardan Er rdim Eoxitut ol.ab Vardan Ardan Envira Irol.ab Vardan Eo Vindan Er rdan Envirol. ol.ab Vardan	wind ab Vardan N Envirot ab Vardan ab Vardan Envir Envirot ab Vardan Envirot ab Vardan Motab Vardan wirot ab Vardan wirot ab Vardan wirot ab Vardan b Vardan Envir Envirot ab Vardan		
Ambient Temperat Velocity of Flow rate Flow rate Sampling Protocol	ogical Condition Temperature - Ta (°C) ture of Stack Gases - Ts (of Stack Gases (m/sec.) of PM (LPM) of Gas (LPM) g condition	 Clear Sky 27 *C) : 131 27.4 52 2.0 Ok 	Results	Units	A Finite Lab Var dan A Finite Lab Var dan ab Var dan Easin Emirot ab Var dan Emirot ab Var dan A Var dan Easin A Var dan A Var dan A Var dan A Var dan A Var dan A Var dan A Var dan A Var		
Ambient Temperat Velocity of Flow rate Flow rate Sampling Protocol	ogical Condition Temperature - Ta (°C) ture of Stack Gases - Ts (of Stack Gases (m/sec.) of PM (LPM) of Gas (LPM) g condition	: Clear Sky : 27 °C) : 131 : 27.4 : 52 : 2.0 : Ok : IS 11255 & EPA	Varian Envirolation Envirolatio	Units	wind ab Vardan Ninot ab Vardan ab Vardan Eawin Emmot ab Vardan Lab Vardan Enwin Cab Vardan Enwin Lab Vardan Envir Ninot ab Vardan Ib Vardan Envir Envirot ab Vardan Ninot ab Vardan Ib Vardan Envir		
Ambient Temperat Velocity of Flow rate Sampling Protocol S.No. Parameters	ogical Condition Temperature - Ta (°C) ture of Stack Gases - Ts (of Stack Gases (m/sec.) of PM (LPM) of Gas (LPM) o condition used	: Clear Sky : 27 °C) : 131 : 27.4 : 52 : 2.0 : 0k : IS 11255 & EPA Test Method	orvirot ab Vardan Env otab Vardan Envirot	rotab Varia vb Varidan ti	m EnviroLab Vardin wiroLab Vard in		
Ambient Temperat Velocity of Flow rate Flow rate Sampling Protocol	ogical Condition Temperature - Ta (°C) ture of Stack Gases - Ts (of Stack Gases (m/sec.) of PM (LPM) of Gas (LPM) o condition used	: Clear Sky : 27 °C) : 131 : 27.4 : 52 : 2.0 : Ok : IS 11255 & EPA	014 39.92	Units mg/Nm3	Limits		
Ambient Temperal Velocity of Flow rate Sampling Protocol S.No. Parameters	ogical Condition Temperature - Ta (°C) ture of Stack Gases - Ts (of Stack Gases (m/sec.) of PM (LPM) of Gas (LPM) o condition used	: Clear Sky : 27 °C) : 131 : 27.4 : 52 : 2.0 : 0k : IS 11255 & EPA Test Method	114 39.92	rotab Varia vb Varidan ti	m EnviroLab Vardin wiroLab Vard in		
Ambient Temperal Velocity of Flow rate Sampling Protocol S.No. Parameters 1 Particulate M	ogical Condition Temperature - Ta (°C) ture of Stack Gases - Ts (of Stack Gases (m/sec.) of PM (LPM) of Gas (LPM) o condition used	: Clear Sky : 27 °C) : 131 : 27.4 : 52 : 2.0 : Ok : IS 11255 & EPA Test Method IS: 11255 (Part1) : 1985,RA 2	014 39.92 14 1153.63	mg/Nm3	m EnviroLab Vardin wiroLab Vard in		
Ambient Temperal Velocity of Flow rate Sampling Protocol S.No. Parameters 1 Particulate M 2 Sulphur Diox	ogical Condition Temperature - Ta (°C) ture of Stack Gases - Ts (of Stack Gases (m/sec.) of PM (LPM) of Gas (LPM) o condition used atter (as PM) ide (as SO2) NH3)	: Clear Sky : 27 °C) : 131 : 27.4 : 52 : 2.0 : Ok : IS 11255 & EPA Test Method IS: 11255 (Part1) : 1985,RA 2 IS: 11255(P- 2): 1985, RA.20	014 39.92 14 1153.63 14 8.20	mg/Nm3 mg/Nm3	m EnviroLab Vardin wiroLab Vard in		

BDL-Below Detection Limit DL Detection Limit

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Note: Terms & conditions refer on backslde of test report.





		Test Report				
lame :	Formerly G Raikheda, I	Energen Limited MR Chhattisgarh Energy Ltd. Village: Block - Tilda, Dist. Raipur Chhattisgarh	Report No. Format No Party Reference No Report Date Period of Analysis Receipt Date	: VEL/S/2012: : 7.8 F-01 : NIL : 31/12/2020 : 23/12/2020-3 : 23/12/2020	n bar alı de regan n bar alı de regan n bar alı alı de Var minti alı Cantha alı Dardar barih	
vannpr	General Information Sampling Location	sion Monitoring : TPP (Unit-I)	shirulan Envirouta of ab Varilan Lovi	u Wardan Ta rotain Wards		
	Sample Collected by	: VEL Team	an Envirolab Var	dan Unetral	ab Varalan Paul	
m Gr	Date of Sampling	: 15/12/2020				
	Sampling duration (Minutes)	: 26 Min. (16.10 to 16.36 hrs.)				
	Stack attached to	: ESP				
	Make of stack	The second				
	Dlameter of stack(m)	lameter of stack(m) : 7.5 M eight of stack(m) : 275 M				
	Height of stack(m)					
	Instrument calibration status					
	Meteorological Condition	Clear Sky				
	Ambient Temperature - Ta (°C)	an Envirolation Envirolation				
	Temperature of Stack Gases - T	a before the second state of the second state			ab Vurdan Epvir	
	Velocity of Stack Gases (m/sec.)	: 27.4				
	Flow rate of PM (LPM)	an Enviro 52 la Vardam Envirolada	Vardan Envirot a			
	Flow rate of Gas (LPM)	Vardan EmgroLab Vardan Euvin	oLab Yardan Envi			
	Sampling condition			ib Vindan E	nyirotab vardar	
in Er	Protocol used	I IS 11255 & EPA	ab Vardan Griving		EnviroLab Vard	
3.No.	Parameters dan Envirot ab Vard	Test Method	Results	Units	Limits	
410	Water Vapor	Gas Analyzer	3.10	%	an verdan en di	
2	Carbon Monoxide (as CO)	Co By Analyzer	7.44	mg/Nm3	classification (
3	Carbon Dioxide	IS:13270, Orsat Analysis, RA:2005	7.40	%	wirel. h varge	
4	Oxygen	SOP, SP-188, Issue No.01:2018	6.40	%	an <u>to site of also</u> g hvittel u b storid o	
5	Mercury as Hg	APHA 3rd edition 2017, 303A (Page No 365)	BDL(DL 0.005)	mg/Nm3	0.03	

BDL-Below Detection Limit DL Detection Limit ***End of Report***
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Note: Terms & conditions refer on backside of test report.

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				Test Report			
HINL			R Chhattis	nited garh Energy Ltd. Villag e : Dist. Ralpur Chhattisgarh	Report No. Format No Party Reference No Report Date Period of Analysis	: VEL/S/2012; : 7.8 F-01 : NIL : 31/12/2020 : 23/12/2020-;	the second secon
ample	e Description ·	Stack Emissi	on Monit		Receipt Date	: 23/12/2020	51/12/2020
Ever	General Informatio			and window finding a		h Vardan Er	
	Sampling Location	VitioLab Va Isali Mauria	r dan tu	TPP (Unit-II)			in EnviroLab Va
1.611	Sample Collected by	anian Envi		VEL Team	ing Envirotali Vare	tan Proversit	ah Vardan Erol
	Date of Sampling		lan Env	15/12/2020		tab Vardun	
	Sampling duration (M	linutes)	VILOL 21	33 Min. (15.25 to 15.58 hrs.)			
	Stack attached to		ndan B	ESP ab Vordan Emil			
	Make of stack	Lub Vandy	Linvin	MS Plate & RCC			whole6 Vardai
	Diameter of stack(m)		rolab.	7.5 M	ian EnviroLab Vara		als Variden Envi
	Height of stack(m)		: 275 M			Enveriou an Vare	
	Instrument calibration	n status	tan Envision Calibrated and Environab Yourdan Environab Versian Dovinor				
	Meteorological Condi		rdan in	Clear Sky			
	Ambient Temperature	are an Find	rol ab \	28		12. WIT GATT ET	
т Бт	Temperature of Stack	100000 4016	°C) :	133 Jandan Envirol	ab Vardan Enviro	Lab Vardan	EnviroLab Vara
	Velocity of Stack Gas		VIroLa	21.5 en Enviról als Va	ralan Envirol.ab Va		otab Vardan En
	Flow rate of PM (LPM	And the second s	relam ha	41	y var dan Envarota mbah Mandam Travit		
	Flow rate of Gas (LPN	Lab Varda	Envir	2.0 Vardan Envirota	b Varihan Enviroi.a		
pl.ab	Sampling condition	ardan Envi	vol abiv	Oklan EnviroLab Van	lan EnviroLab Vari	san Enviról.	ab Vandan Envi
in tau iront a	Protocol used	Vardan Fo	Ian Eisv	I\$ 11255 & EPA	Lab Vardan Enviro	Lali Vardan	EnviroLab Vara
S.No.	Parameters	Lah Varda viroLah Va Lah Varda	r E(ivi) u Indan Eu	Test Method	ot ib Vardan Lovi	Units	n Envirol ab Va
11	Particulate Matter (as PM)	ardan En d	IS: 11	255 (Part1) : 1985,RA 2014	44.18	mg/Nm3	50.0
2	Sulphur Dioxide (as SO2	Wardan En	IS: 1	1255(P- 2): 1985, RA.2014	1159.34	mg/Nm3	oLab Varidan Fa
3	Ammonia (as NH3)	Lab Varitin	18: 1	1255 (P-6) : 1999,RA.2014	7.42	mg/Nm3	wholab Varda
4	Hydrogen Sulphide	Lab Varda	IS: 11	255(Part 4): 2006 RA: 2017	2.30	mg/Nm3	aviral als Varet
5	Oxide of Nitrogen as NO2	A COLORADOR OF THE		S-11255 P-7, RA 2017	456.68	mg/Nm3	THE STREAM PRACE UP

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Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020 MoEF & CC Recognized | ISO 9001 | ISO 45001

Test	Re	port

ample	e Number : VEL/S/02			Banat Na	. VEL/9/20122	20009/0
GBC 151	& Address of the Party : M/s Raipur Formerly Gl Raikheda, E	Report No. Format No Party Reference No Report Date Period of Analysis	: VEL/\$/20122 : 7.8 F-01 : NIL : 31/12/2020 : 23/12/2020-3			
ample	e Description : Stack Emis	Receipt Date	: 23/12/2020			
	General Information Sampling Location	an chuin Varcian X Ian Envi	TPP (Unit-II)		ib Wardan Fin Yol ab Varda di Vardin L	
WINI	Sample Collected by	virial alta)	VEL Team VII of all Varia	m EnviroLah Vor	dan Envirol	als Varrian Enver
un Er drod, Enwine Enwine Enwine dan Er dan Er d	Date of Sampling Sampling duration (Minutes) Stack attached to Make of stack Diameter of stack(m) Height of stack(m) Instrument calibration status Meteorological Condition Ambient Temperature - Ta (°C) Temperature of Stack Gases (m/sec.) Flow rate of PM (LPM) Flow rate of Gas (LPM) Sampling condition Protocol used	an Envirol an Envirol vinolat r dan Envirol vinolat van Envirol van Envirol an Envirol an Envirol var dan an Envirol var dan var dan var dan var dan var dan var dan	15/12/2020 33 Min. (15.25 to 15.58 hrs.) ESP MS Plate & RCC 7.5 M 275 M Calibrated Clear Sky 28 133 21.5 41 2.0 Ok IS 11255 & EPA	b Vardan Enviro dau EnviroLab V Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Vardan EnviroLab Var dan EnviroLab Var	et als Verdan ardau Enviro le Vardan Enviro dan Envirot dan Envirot dan Enviro dan Enviro	EnviroLab Varda Lab Vardan Envir viroLab Vardan ab Vardan Envir EnviroLab Vardan Stab Vardan Envir ViroLab Vardan EnviroLab Vardan LoviroLab Vardan UniroLab Vardan MiroLab Vardan MiroLab Vardan MiroLab Vardan EnviroLab Vardan EnviroLab Vardan
8.No.	Parameters	an Envir fardan E	Test Method	Results	Units	Limits
Env	roLab Vardan EnviroLab Vard	an Envir	oLab Vardan EnviroLab	Vardan EnviroL	b Vardan fr	winol ab Vard m
	Water Vapor	Gas Analyzer		3.30	%	at vargan Enter
	Carbon Monoxide (as CO)	notes ab Co By Analyzer		d 11 En 8.24 Lab V	mg/Nm3	stab Vandan Law
2	the second s	IS:13270, Orsat Analysis, RA:2005		7.60	%	ovicitad vardin
2	Carbon Dioxide	CONTRACTOR -				
	Carbon Dioxide Oxygen	orden 1	SP-188, Issue No.01:2018	6.80	%	rybol. D Vardur

dan CBDL - Below Detection Limit DL Detection Limit Environment and an Vandan Environtab Vandau European and Vandan Environ***End of Report*** concluse Vand A (Checked By) Convi (Conto Vall



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Note: Terms & conditions refer on backside of test report.

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Chapter – 5.0 CONCLUSION

RAIPUR ENERGEN LIMITED., authorities have been taken successful steps in controlling environmental pollution in and around the project. This fact is clear from analytical results of different environmental parameters. A brief conclusion is as follows.

Sr. No.	Environmental Parameters	Conclusion
5.1	Air Environment	After analysis of the samples from five different locations it is observed that both the individuals and average concentration of air pollutants in respect of SO ₂ , NO ₂ , PM ₁₀ , PM _{2.5} , CO and Mercury are well within the prescribed limits of NAAQM standards. People of township and of surrounding villages do not have any problems regarding the air quality and have no grievances because of Thermal Power Plant activities.
5.2	Water Environment	The analytical result of the samples from the ground water of villages, surface water from river, and domestic & industrial effluent after treatment shows that the concentrations of different water parameters are well within prescribed limits and will not cause any adverse impact on human health and on surrounding area. People of surrounding areas express satisfaction about the water quality of That area.
5.3	Noise Environment	The observations taken at four village location during day and night time shows that the noise level are well within prescribed limits of CPCB. Hence there is no possibility of any adverse effect of noise generated due to Thermal Power Plant activities on peoples of Surrounding areas.

All the above details show that Thermal Power Plant of RAIPUR ENERGEN LIMITED. is not causing any adverse impact on the human health and ecological balance.

Annexure II

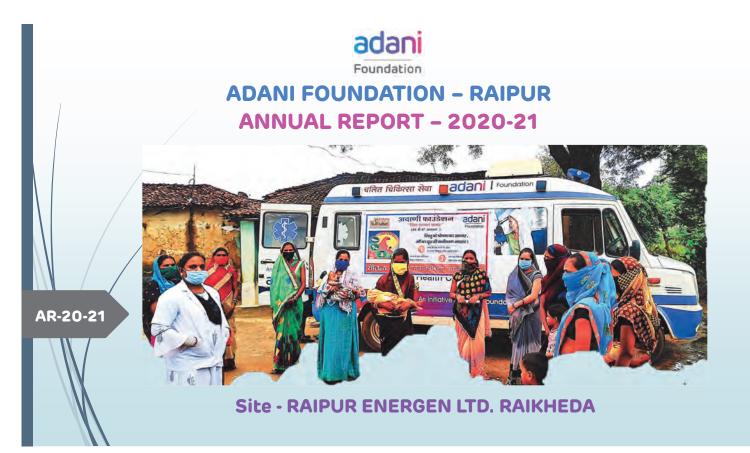
Raipur Energen Limited

	ASH GENERATION AND UTILIZATION (LMT)			MODE OF ASH UTILIZATION AND UTILIZATION IN EACH MODE (in LMT)						
SI. No.	Month	Fly Ash Generation	Fly Ash Utilization	% age Utilization	In making of Fly Ash based Bricks / Blocks / Tiles etc.	In manufacture of Portland Pozzolana Cement	In construction of Highways & Roads including Flyovers	In reclamation of low lying area	In Mine Filing	In Agriculture /Waste Land Development
1	Oct-20	1.8698	1.6962	90.72%	0.0461	1.2731	0.0285	0.3485	0.0000	0.0000
2	Nov-20	1.8002	1.6569	92.04%	0.0388	1.1667	0.0114	0.4325	0.0075	0.0000
3	Dec-20	1.8556	1.8358	98.93%	0.0727	1.3166	0.0175	0.4110	0.0181	0.0000
4	Jan-21	1.8348	2.4818	135.26%	0.0945	1.7951	0.0171	0.5353	0.0397	0.0000
5	Feb-21	0.7704	1.4211	184.47%	0.0684	1.0492	0.0087	0.2824	0.0123	0.0000
6	Mar-21	1.2908	1.3569	105.12%	0.0509	0.9016	0.0097	0.3079	0.0869	0.0000
	Total	9.42154	10.44871	110.90%	0.37143	7.50232	0.0929	2.31762	0.164	0.000

<u>Greenbelt Details</u>

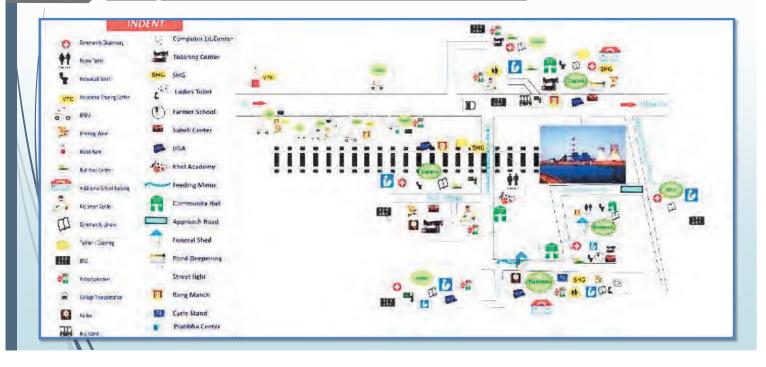
SI. No.	Description	Quantity /Unit
1.	Plantation on 33% land of 850 acre	280 acre
2.	Density of plantation	2500 plants/ Hectare
3.	Area required per plant	4.0 SQM
4.	Total no. of plantation since commissioning	235200 Nos.
5.	Total no. of plantation in FY 2019-20	1,984
6.	Total no. of plantation in FY 2020-21	5,000
7.	Survival Rate	>70%
	Plant species planted at Raipur Energen	Limited, Raipur
SI. No.	Scientific Name	Common Name
1.	Mangifera indica	Mango
2.	Azadirachta indica	Neem
3.	Ficus religiosa	Pipal
4.	Delonix regia	Gulmohar
5.	Millettia pinnata	Karanj
6.	Terminalia arjuna	Arjun
7.	Peltophorum pterocarpum	Peltafarm
8.	Syzygium cumini	Jamun
9.	Acacia mangium	Arkesia
10.	Roystonea regia	Royal Palm
11.	Phyllanthus emblica	Amla
12.	Artocarpus heterophyllus	Jackfruit
13.	Psidium guajava	Guava

Annex IV





AR-20-21 Program Interventions at a Glance

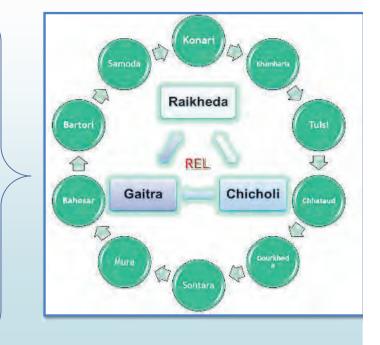




AR-20-21 Project Voyage

Adani power Ltd has acquired, 1370 MW supercritical thermal Power plant at Raikheda baptized Raipur Energen Ltd by. in July 2019 and carried forward the CSR interventions in PAV's & RAV's by Adani Foundation, Ahmedabad (AF) a CSR arm of Adani group of companies. Adani Foundation of Raipur Energen Ltd. (REL) mainly works in 13 villages & 12 Gram Panchayats, name Raikhøda, Chicholi, Gaitra, Gourkheda, Sontara, Murra, Tulsi, Khamharia, Konari, Bartori, Tarashiv Chhataud and Samoda in Tilda and Aarang block of Raipur District in Chhattisgarh. Approximately \mathbf{z} 7,000 individuals are covered in all the villages. The district is intensely dependent on agriculture.

Majority of the population belongs to the other backward caste (OBC) and Scheduled Caste (SC) community. Around 80% of landowners are marginal farmers with less than 2 acres of agricultural land. They depend on single Kharif crop of Paddy.





Pinnacles of CSR Programs AR-20-21

Measures initiated during Covid Pandemic

- 4500 kg Daal & 2500 kg Rice with vegetable & cooking oil donated to the Janpad Tilda & Raipur smart city.
- Total 27000 nose masks disseminated 4 gram panchayats with distt & Block administration & plant workers.
- Chemical sanitization done in 17 surrounding Nagar, Janpad, & Gram Panchayats named Tilda, Kharora, of Raipur district.
- Testing of body temperature to total 1700 workers & villagers conducted successfully
- Awareness banners of COVID-19 displayed at prominent locations of all 13 villages.

Education

- 4 Navodaya Coaching centers for Navodaya Entrance Examination.
- Transportation facility to the girls from the project affected villages to attend the college.
- Prayas career counselling & coaching center for the youths, recruitment in entrance exams.

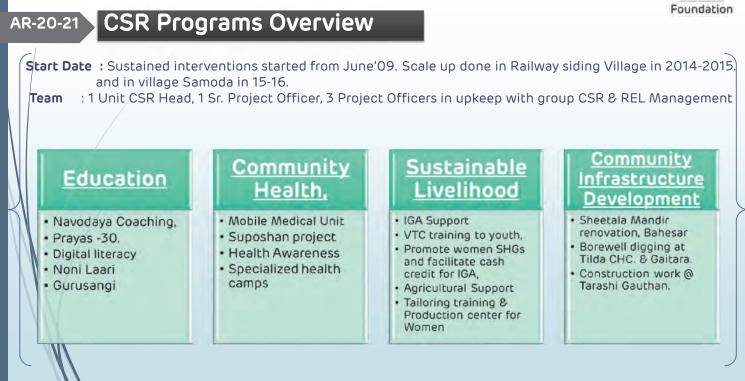
Community Health,

- Mobile Medical Unit Services reached out to 13 PAV's & RAV's villages.
- Provided door to door medical services to elderly people too.
- Suposhan Program for PW,LW,AG & SAM, MAM children in 3 Panchayats under Suposhan.
- Health Awareness Programs & Specialized Health Camps in Community.
- Conducted awareness camps on personal hygiene and sanitation.
- Diyang Swawlamban Yojna conducted for Differently abled. 79 beneficiaries have received equipment's as per .

Empowerment and Livelihoods

- Provided support to youth in computer training at the Computer Literacy Center.
- Women & Girls skilled with an advanced tailoring course runs under ASDC Saksham.
- Women received bulk order to stitch petticoats & nighties from wholesaler of Raipur.
- Women of 4 SHG's supported under IGA for the sustainable livelihood.



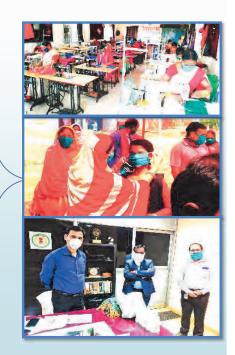




AR-20-21 Measures initiated during Covid Pandemic



- 4500 kg Daal & 2500 kg Rice with vegetable & cooking oil donated to the Janpad Tilda & Raipur smart city in the pandemic
- Total 27000 nose masks disseminated in 4 gram panchayats with distt & Block administration & plant workers stitched at our tailoring production center by 4S SHG group
- Sanitization done in 17 surrounding Nagar, Janpad, & Gram Panchayats named Tilda, Kharora, of Raipur district.
- Testing of body temperature to total 1700 workers & villagers conducted successfully
- Awareness banners of COVID-19 displayed at prominent locations of all 13 villages.

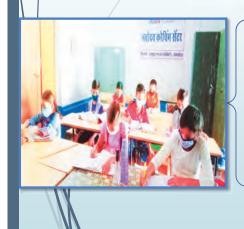




AR-20-21 Education (1/2)

Navodaya **Coaching Centre**

In view of the Jawahar Navodaya school entrance examination foundation has established 4 Navodaya Coaching Centers at Raikheda, Gaitara, Tarashiv and Chicholi in 2010. Till 2019, total 38 students from our coaching centers have secured their seats and currently studying in Jawahar Navodaya school -Mana.



48 Students are registered for the Navodaya Coaching in 2020-21 session at Our NCC. Online classes as well as offline center based classes are continued in our 4 centers. Despites of the Covid pandemic when all schools were closed our faculties have given their input by doing door-todoor meetings with the parents and taught the students by following all Covid guidelines at the child's home and progress report has also being shared with the parents by conducting weekly test in a month. Final exam is awaited to be held.





AR-20-21

Education (2/2)



Noni Laari

Prayas career counselling center was established at village Tarashiv in 2012-13. More than 24 have got selection in various students competitive exams in past 7 years.

A batch of "Prayas-30" was made by selection of 30 students from an entrance exam.

All the beneficiaries girls are continued to teaching free tuition classes to students of standard 1st to 8th at their home under Swa-daan Yojna. As this year education schools has not been started yet.



Transportation facility "Noni Laari" exclusively for girls for their further studies from our 6 Project Affected Villages (PAV) since from 2010.

The girl students who desire to pursue their higher education can opt this facility for going to PG College-Tilda which is about 22 kms. away from PAV.

300 girls from PAV's have completed their graduation from PG College so far as there was not connection to commute the colleges from said villages earlier.



AR-20-21

Community Health (1/2)

Mobile Healthcare Unit

Child	Child Youth		Total	
1750 7198		7336	16284	

The primary health services to the community are being provided free of cost by team of experienced Doctor, Nurse & compounder of MHCU in surrounding 13 villages.

This yr. total 16284 beneficiaries have taken consultation from MHCU at our 13 villages as per below details.

This year 30 Gynecology camps conducted at 5 core villages under suposhan program. In Totality more than 2300 Lactating, Pregnant women & adolescent girls have consulted with the Dr.





Hypertensive Diabetic		Asthmatic	General		
5824	5824 2358		7343		

AR-20-21

Community Health (2/2)

Suposhan Program





Suposhan Program initiated at Raikheda, Bhatapara, Gaitara, Chicholi & Gaurkheda village in the view of proper Care & nutrition to pregnant & lactating mothers.

1475 Anthropometric measurement done for children under age of 5 yrs. 60 health checkup done for Lactating & Pregnant Women along with Adolescent Girls. International Women's Day celebrated by suposhan Sanginis. Poshan messages have given to the beneficiaries with help of Rangolies by family counselling done in Month of March on Suposhan program. Poshan Munadi conducted with help of MMHCU where Sangnis have described about the Poshan in the villages under Poshan Pakhwada amid 27 to 31 March 21

24 Focus Group Discussion done with Lactating &,Pregnant women and Adolescent girls under Suposhan program. Kitchen garden developed at LW & PW house. **Suposhan month**, breastfeeding week & Hand washing day also observed











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AR-20-21

Sustainable Livelihood Development (1/2)

Women Empowerment

To encourage women self help groups for Income Generation Activity. Arranging financial linkages training, exposure visits as per requirement. Encourage bank linkage. 15 women of "Saheli Shashakt Silai Samooh" (4S) & 15 trainee girls are engaged on sewing work in our Tailoring production center.

Income Generation Activities (IGA) :

- 4 SHG's are engaged in IGA and earning income as below.
- 1 SHG is making Sleeper.
- 1 SGH is making dona Pattal.
- 2 SHG's are running Utensil rental Stores.

Tailoring Production Center:

Team of 4S stitched more than 27K nose masks, 10K nighties & petticoats in FY 20-21

New Initiatives:

- MOU signed between Lingo focus techno pvt. Itd , Kondagaon and Chirag Mahila Vikas Samiti Raikheda for raw Material supply and buyback of produced LED bulbs by the CMVS.
- LED Bulb Commercial Production Unit inaugurated on 31st March 21 at Tarashiv by Sarpanch of Tarashiv, President of CMVS Head CSR & AF-REL staff. Tarshiv sarpanch said that It is unique unit in Tilda block and AF has taken excellent initiative to encourage the SHG women for LED bulb manufacturing unit. He also assured for the help to get the orders of bulbs from the panchayats & offices







AR-20-21 Sustainable Livelihood Development (2/2)

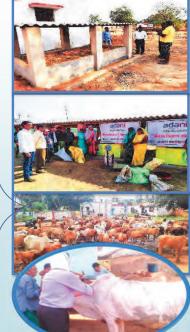
Agriculture & Livestock Care Support



To encourage women self help groups for Income Generation Activity. Arranging financial assistance, training, exposure visits as per requirement. Encourage bank linkage.

Agriculture Support

- Training & Orientation given to 30 women of 3 SHG groups & 26 farmers for Mushroom cultivation & vegetable farming.
- 60 kg Mushroom spawn disseminate to 20 women of 2 SHG group of Bhatapara, Gaitara & Chicholi.
- Vegetable seeds disseminate to 16 Farmer and 10 Poshan Vatika beneficiaries.
- Supported 50 kg Elesia Fetida earth worms with training to 10 farmers of Konari village under the IGA.
- Training given to the sorted Farmers for the Azola & Vermicomposting & Tetra vermin & Azola bed also planned distribution free of cost to increase the income of farmers in RAV's for eco farming.
- Livestock care Support :
- 4 vaccination & treatment camp conducted at Raikheda, Gaitara & Chicholi under Gau Jatan program total 2000 cattle & 500 goats vaccinated with
- Reflective Tags tied to 200 stray cattle under Gau Jatan Program for reducing the road accidents.





AR-20-21 Community Infrastructure Development

Infrastructure Development

Community Infrastructure works initiated at villages Bahesar $\&\mbox{Tilda}.$



- Chaptele Tamele converting week started at village

- Sheetala Temple renovation work started at village Bahesar.
- Borewell digging work initiated at CHC Tilda.







AR-20-21 Events & Othrs (1/3)

Van Mahotsava Week



A tree planting festival observed globally form 1st July to 7th July. It is celebrated to raise awareness among the masses about the importance of trees, their plantation and conservation.

In order to realize this objective, we have taken an initiative to celebrate van Mahotasava week, where we had developed the 4 small garden with the name of Navagrah Vatika & Nakshtra Vatika at the govt. high schools & Middle schools of Tarashiv Bhatapara, Chicholi, & Konari so that children may get the knowledge of each tress and their relations with the various Graha & Nakshatra according to hindu dharma shashtra and might have the reason to care and love the nature and trees divinely.



Teachers Day



The "GURU SAMMAN" Program celebrated on the occasion of Teachers' Day with theme "Teachers: Redefining the Future by leading in Crisis". .

an effort to strengthen the education world and to honor them in front of their family, So that their enthusiasm and morale increase and understand their importance to keep moving forward. Despite of the Covid pandemic situation AF team with employees of REL felicitated 80 teachers of our surrounding village govt. schools with ShreePhal,Diary,Pen,Nose Masks & Hand Sanitizers by visiting at the home of each teachers.





AR-20-21 Events & Othrs (2/3)

Global Hand washing 8 World Food Day



World Toilet Day & New Born Care Week



The Global hand washing day on Oct,15th and World food day on Oct 16th ,2020 have been observed in our 5 adjacent villages.

Around 81 women, girls, kids with Aganwadis supervisors 🗞 workers participated in the program. Block Project Officer of ICDS also witnessed the occasion & informed about 11 steps of hand washing.

Around 150, lactating mothers, pregnant women's and adolescent girls with AWS & AWW participated on the world food day program conducted at Chicholi, Gaitara, Raikheda where the information related to importance of carbohydrates, vitamins, minerals and proteins in food with the right process of food cooking have also aiven.

under the theme of sustainable sanitation and climate change". An awareness program conducted on 19th Nov to Observe world Toilet Day in five villages where 67 people participated in the program.

An awareness among people about the importance of newborn care for eradicating neonatal deaths and increase survival rate. Newborn care is of utmost importance as the first 28 days of baby's Life.

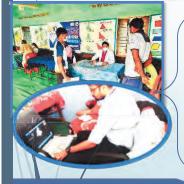




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Events & Othrs (3/3) AR-20-21

Health Camp



4 health Camp conducted Under "Swasth Samudaya & Swasth School"

Specialized health camp conducted in Panchayats Bhavan Gaitara on 12th Ded 2020 for the recipients of Raikheda, Bhatapara, Gaitara, Chicholi, Gaurkheda, Khapari, Gaitara, Tarashiv, Chhatoude, Khamariya Konar, & Bartori 273 patients have been consulted with the Dr's of the Camp as per specialization of Cardiology, Endocrinology, Orthopedic, Urology, Gastroenterology, Nephrology, Patients also had free diagnosis of B.P. Sugar, ECG, Echocardiogram as per Dr's advised.Covid-19 rapid test counter was also available at the camp with the help of CHC Tilda. Following Dr's have given their services in the camp.

Dr. Snehil (Cardiology), Dr. Shivedra Verma (Endocrinology), Dr. Ankur Gupta (Orthopedic), Dr. Varun Sharma (Urology), Dr. Abhishek Jain (Gastroenterology), Dr. Ravi (Nephrology). All the team have felicitated with memento by the Station Head Mr. Rambhav Gattu & Head CSR Mr. Atul Gupta.



Disability Camp

Disability Camp conducted under "Divyang Swawlamban Yojna"



Divyan Swawlamban Yojan program for the differently abled has been conducted at Raikheda on 31st Dec 2020. 79 differently abled have been distributed the equipment's on the program. Before this AF has arranged the Testing & sorting camp by team of expert Dr's at our all 12 PAV's & RAV's. President Janpad Panchayat with all gram sarpanchs graced the program. Following items were disseminated. Wheel chair - 17, Tricycle - 16, Blind stick-07, Elbow Crutches - 03 Hearing machine-25, Stick- 05, Crutch- 04, Walker - 02





AR-20-21

1 Community Sports & Othrs.

Cricket Tournament

Encourage cricket & Other sports within the youths of community

International Women's Day

A cricket tournament was organized under the aegis of "Adani Foundation" and "Youth Cricket Team". In which more than 70 teams participated. Cricket Uniform gave to the teams of 13 villages adopted by the Adani Foundation, In addition, first prize money was also awarded. Hon'ble MLA of Dharswa constituency inaugurates the tournament by batting first ball of the match.

Observed International Women's Day within the community





International Women's day celebrated at Village Sontara where the group of SHG with Raikheda &, Gaitara have participated in sports & cultural Jhhaki competition. Winner of the program was rewarded with award & mementos.



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AR-20-21 Formation of UNNATI MANCH

Khamriya-Konari Unnati Manch



Tarsshiv Unnati Manch

 Image: state state

Village Unnati Manch is planned with theme of various development works associated to Hamlets

The Khamariya-Konari Unnati Manch formed under the presidentship of sarpanchs Nemsing Katariya. Total 15 members out which 3 are women in the group. Unnati Manch meeting held in Tarashiva and Khamharia. All the deputed members were present in the meeting and discussed on Ayushman Yojana, Widow pension, Divyang Pension card to be provided to the beneficiaries by conduction camps.

Village Unnati Manch is planned with theme of various development works associated to Hamlets

Farmers to be identified for Vermicomposting, & SRI etc.Under Tarashiv Unnati Munch Ayushman Card preparation camp conducted at Tarashiv where total 493 cards have been prepared in two days.

Farmers brought for the exposure visit at Krishi Vigyan Kendra Raipur

They have oriented about the various scopes & Techniques farming e.g. vermicomposting, FPO, & SRI, etc.





Media Says about Adani Foundation Raipur AR-20-21 Raipur Media coverage at a Raipur being a capital of the Chhattisgarh state has very aggressive media in every aspects Glance प्रशु टीकाकरण, उपचार एवं जागरूकता कार्यक्रम अदाणी फाउंडेशन ने किया वन महोत्सव सप्ताह का आयोजन शिक्षा, स्वास्थ्य व पर्यावरण सुरक्षा हेतु . वन महोत्सव सप्ताह के अंतर्गत वन सुरक्षा अदाणी फाउंडेशन ने ाराजा, रपारच्य प पपापरण पुर्वता एष विभिन्न जागरूकता अभियान रांचालित तिल्वा-चेवरा. तल्दा-नेवरा. ग्राम रंचायत चिचोली में 'गै व वक्षारोपण पर जागरूगता कार्यक्रम किया वन महोत्सव जतन' कार्यक्रम के 2 0 800 तहत अदा सप्ताह का आयोजन दारा रायखेडा - तिल्खा। राया लिमिटेड रायखेडा रायपुर एनजन व परिवार)। सवपूर एतर्थन (तीमंटेड स्थित हर के सहयोग से का पहोस्तव मलाह का अपने से 7 जुलाई का आपोलित इस सार्थक्रम न मुरक्ष वगक्रकता आपोरित कार्यक्रम चलाएं श अदाणी फाउंडेशन के सह से बन महोत्सव सप्ताह आयोजन किया गया। पश् र अब महिला धनुहों के लिए आत बहुते के सेवाई नार शहरा आते. बाहरा स्वाही की लिए आते. कार्यक्रम चलाए गए। अवाणी फाउंडेशन संयंत्र के स्प्रमेश अ अपना अलगा गिनिस्ट्रिक ति अविती पाउंडियान रायखंड ने तिया अक्षण अलगा गिनिस्ट्रिक ति अविती पाउंडियान रायखंड अखान प्रतान गिनिस्ट्रक ति अवती पाउंडियान रायखंड नहात्र वादिका फीउंडेलन के सहद बाटिका के रूप स्पाहक जियोक महिलाओं को आत्मतिर्मार चलाते उत्तरोजगा वतं देशन द्वारा अपने संघंत्र के मभोप आने का बहालयों में नक्षत्र वाटिका तथा रतग्रह वाटिक में बौधा चेपण किया गढा। विद्यालयीन हालें को प लाने वन सम्पदा वन सुरक्षा पर आधारि ाकारन आगव हर अदाणी फाउंडेशन ने मनाया वन महोत्सव सप्त वन महोत्सव स्वयं फाउंडेशन बारा करताह के जागरूकता कार्यक्रम आयोजि अदाणी फाउंडेशन ने किया वन महोत्सव सप्ताह का आयोजन माउवसा बता पत्र का जात जात बाले चार अलग अलग विद्यालयों में नखत्र वाटिका तथा नवग्रह वाटिका के रूप में पीछा रोपण किया गया. इस रूप म भावा रापणा काचा गया. २७ अवसर पर आयोजित कार्यक्रम मे अवसर पर आवाणण कावभाष ' उपस्थित वक्ताओं ने कहा कि विद्यालय समाल में सुब वॉरे वरण्डर वैराग में रा सेने, वर्शवार प्रदेश्वर की अल्झी वनने में प्रत्याप्रवार प्रियेगी, विरोव रा प्रदर्शिया के स्वतीयक सतीशं उपस्थित रहे



Media Says about Adani Foundation Raipur

Raipur Media coverage at a Glance



असे इन के काफिन की क्यु करने देखका अखित रने इन इंग

AR-20-21

रात्रिकालीन क्रिकेट टूर्नामेंट का आयोजन, 70 टीमें करेंगी शिरकत, 25 दिन तक चलेगा

वाणी फाउंडेशन व युवा क्रिकेट । प्राप्त राष्ट्रवेज्ञ के निराजिज्ञ जिल्लानीन जिल्केट दुर्नामेंट का क्रिया गया। दुर्नामेंट को अद्याणी सीम्प्रस्थाय प्रतिकर्णना । जल्हेट दून ॥ दूर्नामेंट में गर मतितिषि राभी 13 म । को फाउंडे एफॉर्म घेट कि तक जल्हे म पिक सेवि में अधिक टीमें भाग ले रही 1 टीम की 21 हजार का

अदाणी फाउंडेशन ने आयोजित किया निशुल्क स्वास्थ्य जांच शिविर

गवयुः। भार्त्रं कडरेतः १व दास्त व्यप्तश्वरं तातः पुगः लेगल्दी हल्दिताः स्वप्नु रे स्वपुन् राज्यप्रसारं द्वार्त्र क्र रायपुर (विश्व परिवार)। अदाणी फाउंडेशन एवं एनएच एमएमआई नारायणा सपर स्पेशलिटी हॉस्पिटल रायपुर के संयक्त तत्वावधान में ग्राम गैतरा स्थित पंचायत भवन में निःशुल्क स्वास्थ्य शिविर का प्राम गतरा स्थित पंचायत मजन में निःशुल्क स्थास्थ्य शिवर का आयोजन किया गया, जहां 150 से अधिक स्थानीय ग्रामीणों को इसका नाभ मिला। शिविर का शुभारंभ ग्राम चिचोली सरपंच पुनीत राम साहू, सरपंच प्रतिनिधि रायखेड़ाँ, संतोष कुर्रे, अदाणी फाउंडेेंशन सीएसआर हेड अतुल कुमार गुप्ता एवं कैंप में उपस्थित डॉक्टरों द्वारा किया गया। क्ष शिविर को सफल बनाने में रायपुर एनेजेंन लिमिटेड के स्टेशन हेड रामभाव गटट ने सभी डॉक्टरों को स्मृति चिन्ह देर कर सम्मानित किया। कार्यक्रम में बच्चों एवं महिलाओं को शिक्षा, स्वास्थ्य, आत्मनिर्भरता पर भी जोर दिया गया।



क्रिकेट में 70 से अधिक टीमें ले रहीं हिस्सा, विजेता को मिलेंगे ₹२१ हजार

लितंबे क

अदाणी फाउंडेशन ने गैतरा में आयों

किया निःशुल्क स्वास्थ्य जांच शिरि



प्रसित संस्टर हुए कि क अपूस कुमर गुफा गर्व केंध में वहीं कोविट प्रथमनी की व्यभ मे



किया बचा तथा और में स्मृति चिन

हिस्सा, विजेता को मिलेंगे ₹2



अदाणी फाउंडेशन ने

Raipur being a capital of the Chhattisgarh state has very aggressive

स्वास्थ्य जांच शिविर आदि सम्बंधित रोगों की जांच की

आयोजित किया निःशल्क

स्वास्थ्य जांच शिविर खरोरा। अदाणी फाउंडेशन एवं

एनएच एमएमआई नारायण सुपर स्पेशलिटी हॉस्पिटल, रायपुर के संयुक्त तत्वाधान में ग्राम गैतरा स्थित पंचायत भवन में निःशुल्क का आयोजन किया गया। जहां 150 से अधिक स्थानीय ग्रामीणों को लाभान्वित होने का मौका मिला। इस दौरान डॉक्टरों की विशेष टीम द्वारा कोविड-19 समेत हृदय रोग, एण्डोकाइनोलॉजी एवं हड्डी रोग व

अदाणी फाउंडेशन ने आयोजित किया निःशल्क स्वास्थ्य जांच शिविर



रावपुर। अवाणी फार्डवेशन एवं एनएच रायण सुपर रगेशलिटी हॉरिंगटल, रावपुर याधान में ग्राम गैतरर स्थित पंचायत नारपण पुंगर गंगालिंदी देशिगटना भावपुर के प्रमुख ताजवाज में या गान निगर किसा पंचायत भावन में नि मुद्रक स्वार्थ्य जांव सिथिर का अयोजन किया गया जहां 150 से करोक स्वार्थ्य यार्थण की काभिका देशे या गोनग मिता दस नेपाल केंस्टर्स काभिका देशे या गोना मिता दस नेपाल केंस्टर सेग पर्यक्रवहनेकोलों पर वही रोग का आदि स्वविति सेग पर्यक्रवहनेकोलों पर वही रोग का आदि स्वविति सेग केंसरच की पूर्वात साग वहुद सराग वालिनोंद स्वार्थ की प्रमुखे साग पाइ स्रे पाव निलिये कराय की प्रार्थ का प्रार्थ का निल्लास हेड श्री अतुल कुगौर गुप्ता एव केंग में उपस्थित



media in every aspects

आंचलिक 02-02-2021 श्रेम्प क्रिकेट में 70 से अधिक टीमे



AR-20-21 Budget Vs. Actual Exp.

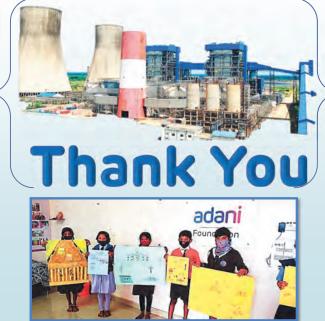
	Sr. No	Particulars	Budget F.Y. 2020-21			Expenses till March 21	Utilization %
			CAPEX	OPEX	Total	A+B	
	1	General Management & Administration	1.07	18.06	19.13	13.09	68.43%
	2	Education	0.05	37.39	37.44	9.74	26.02%
$\left \right $	3	Community Health	0.00	35.09	35.09	31.27	89.11%
$\left \right $	4	Systainable Livelihood Development	0.75	15.25	16.00	8.57	53.54%
	5	community Infrastructure Development	0.05	4.96	5.01	4.26	85.03%
	6	Community Engagments , Sports & Events etc.	0.00	1.42	1.42	0.83	58.45%
		Total	1.92	112.17	114.09	67.76	59.39%

AR-20-21

Annual Report 2020-21 Culminates

Team AF REL

Shri Rambhav Gattu (SH) 1. 2. Mr. Jayanta Mohanty (RCH) 3. Mr. Atul Kumar Gupta (UCH) 4. Mrs. Preeti Prajapati (Sr. PO) Mr. Khileshwar Mahmalla (PO) þ Mr. Daulal Kaushle (PO) Ms. Deepali Das (PO)



AF HO Address

adani Foundation

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