

Ref: GMR/GWEL/EC/COM/20-21/02  
29<sup>th</sup> Apr. 2021

**The APCC F (C.)**

Ministry of Environment and Forest & Climate Change,  
RO (WCZ) Ground Floor  
East Wing, New Secretariat Building  
Civil Line, Nagpur – 440001  
Maharashtra

**Subject:** EC Compliance Report of GMR Warora Energy Limited 2 x 300 MW (Phase -I & II)

**Ref.:** 1. MoEF, Environment Clearance Letter J-13011/2/2008-IA.II (T) DATED 19th MAY, 2008  
2. MoEF, Environment Clearance Letter J-13011/2/2008-IA.II (T) DATED 4th JUNE, 2009  
3. MoEF, Environment Clearance Letter J-13012/75/2008-IA.II (T) DATED 25th MAY, 2010

**Respected Sir,**

With reference to the above, we are pleased to submit our half yearly Environment Clearance compliance report for Phase I & II of our unit **GMR Warora Energy Limited** situated at MIDC, Warora, Chandrapur for the period of **October 2020 to March 2021**.

Kindly acknowledge the receipt of the same.

Thanking you.

Yours Faithfully,  
For **GMR Warora Energy Ltd.**

  
Dhananjay V. Deshpande  
COO

**Encl.:** As Above

**CC:** 1. The RO, MPCB, Chandrapur, Maharashtra  
2. The SRO, MPCB, Chandrapur, Maharashtra

# COMPLIANCE REPORT



As per conditions stipulated in

## ENVIRONMENT CLEARANCE

Phase—I: ISSUED BY MOEF VIDE LETTER No J-13011/2/2008-IA.II (T) DATED 19th MAY, 2008

And LETTER No J-13011/2/2008-IA.II (T) DATED 4th JUNE, 2009

Phase—II: ISSUED BY MOEF VIDE LETTER No J-13012/75/2008-IA.II (T) DATED 25th MAY, 2010

Of

**MINISTRY OF ENVIRONMENT & FOREST & CLIMATE  
CHANGE, NEW DELHI**

**Compliance Period: OCTOBER 2020 TO MARCH 2021**

For

**2 x 300 MW COAL BASED THERMAL POWER PLANT**

Of

**GMR Warora Energy Limited,**

**Plot No B-1 | MIDC Growth Centre | PO – Warora |**

**Dist – Chandrapur | Maharashtra-442 907**

**SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE CONDITIONS FOR UNIT-I:  
ISSUED BY MOEF VIDE LETTER NO J-13011/2/2008-IA.II (T) DATED 19TH MAY, 2008**

Sl. No	Terms and Conditions	Compliance Status
1	The total land requirement for the project shall be restricted to 114 ha	Total land requirement is restricted to 114 ha only.
2	Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5% and 44% respectively	Sulphur content in coal is 0.35% and ash content is 34% which are well under the prescribed standard.
3	A bi-flue stack of 220 m height with continuous online monitoring Equipment's for SO <sub>x</sub> , NO <sub>x</sub> and Particulate matter shall be provided. Exit velocity of flue gases shall not be less than 25 m/sec	A bi-flue stack of 275 m height with continuous online monitoring system for SO <sub>x</sub> , NO <sub>x</sub> and Particulate matter is duly provided. Exit velocity of flue gases is being maintained above 25 m/sec.
4	High efficiency Electrostatic Precipitator (ESPs) shall be installed to ensure that particulate emission does not exceed 100 mg/Nm <sup>3</sup>	ESPs has been installed with 99.98% efficiency to maintain the emission of particulate matter well below 50 mg/Nm <sup>3</sup> . (Annexure-I)
5	Fly ash shall be collected in dry form and its 100% utilization shall be ensured from day one. Bottom ash shall be disposed in conventional slurry mode in the ash pond	We have constructed 3 Nos. Fly ash silo with capacity of 1500 MT each for collection of Fly ash in dry form which are then sent to cement industries for utilization. Bottom ash is disposed in ash pond in slurry form. (Annexure-II)
6	Ash pond shall be lined with suitable impervious lining. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached	Bottom of the ash pond compacted at high dry density soil and provided with 600mm impervious clay lining. Sides of the ash pond lined with HDPE lining and tiles. Ash pond provided with garland drains to collect run-off water and seepages if any from the pond. Ash water recovery system i.e. the supernatant is collected and treated in settling tank and routed to ash handling system.
7	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	Adequate dust extraction system like bag filters and water spray system is duly provided in dusty areas such as coal handling and ash handling points, transfer areas and other vulnerable dusty areas which are continuously operated to take care of fugitive emission.
8	Water requirement shall not exceed 830 m <sup>3</sup> /hr	Water requirement is well within prescribed limit of 830 m <sup>3</sup> /hr.
9	Closed cycle cooling system with cooling towers shall be provided. The effluent shall be treated to conform to the prescribed norms	Complied.  Induced draft cooling tower (IDCT) is being constructed. Amendment to shift from Natural draft cooling tower (NDCT) to IDCT, MOEF (Gol). Vide letter no. J-13012/75/2008-1A.II (T), dated 30th November, 2010.  State of art ETP is in operation in which Effluent are treated to meet the prescribed norms. (Annexure-III)

10	The treated effluents conforming to the prescribed standards shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon for storm water. Arrangements shall be made so that effluents and storm water do not get mixed	The treated effluents conforming to the prescribed standards are completely recirculated and reused within the plant. Arrangement are made to ensure that no discharge will take place outside the plant boundary except during monsoon season. Storm water and effluent drains are kept separate to arrest any mixing of the both.
11	A sewage treatment plant shall be provided and the treated sewage shall be used for raising greenbelt/plantation	Sewage Treatment Plant with the capacity of 25 KLD has been installed and is in operation. Treated water from STP is used in green Belt development activities/ plantation. <b>(Annexure-IV)</b>
12	Regular monitoring of ground water in and around the ash pond area shall be carried out, records maintained and six monthly reports shall be furnished to the Regional Office of this Ministry	Regular Monitoring of ground water in and around the ash pond area is being monitored and analysis results of the same are also submitted to MPCB on quarterly basis.
13	Rainwater harvesting should be adopted. Central Groundwater Authority/ Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of clearance and details shall be furnished	Rain Water harvesting system is in place as per the recommendation by ground water board for ground water recharge. Regular monitoring of ground water level is done through piezometers. <b>(Annexure-V)</b>
14	A green belt of adequate width and density shall be developed around the plant periphery covering about 42 ha of project area preferably with local species	More than 40% of plant area is under green belt plantation with more than 95% survival rate in and around the periphery and open land of the plant premises. Additionally organic farming is also carried out. <b>(Annexure-VI)</b>
15	LeQ of Noise levels emanating from turbines shall be limited to 75 dB. For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as steam & gas turbines, 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	Being complied. Noise levels generating from turbines are well within the prescribed limits. Personal protective Equipment's like earplugs/ear muffs etc. are provided to people working in the high noise area. Periodic medical checkup conducted for workers engaged in noisy areas such as turbine area, air compressors etc. and their audiometric records are also maintained.



16	A plan for conservation of fauna reported in the study area shall be prepared in consultation with state forests and wildlife depart within 3 months and shall be implemented immediately	GIB and other Schedule-1 wildlife conservation plan for EMCO Energy Ltd for Rs. 24.91 Lakhs has been prepared by Divisional Forest officer, Chandrapur via letter No:Desk-5/survey/Land/2128/ 2013-14, dated 19.03.2014 as per guidelines of Ministry of Environment and forest, New Delhi on the basis of plan sanctioned by P.C.C.F.(Wildlife), M.S, Nagpur. Ref No:-Desk-WL/22(6)/CR69/5370/ 13-14, Nagpur Dated 07.03.2014. As per demand letter No: Desk-5/Survey/Land/2268 dated 26/03/2014 received from Divisional Forest officer-Chandrapur, EMCO Energy Ltd. deposited the amount of Rs. 24.91 in Ad-hoc Compensatory Afforestation Fund Management & Planning Agency (CAMPA)Savings Bank A/c No: SB 01025218 Corporation bank, Lodhi Road, New Delhi IFSC Code- CORP0000371 through RTGS on date 08/07/2014. The UTR no. for the payment done is "BRN-RTGS-UTIBH14189021366-AD HOC COMPENS". Lakhs in CAMPA.
17	Regular monitoring of ground level concentration of SO <sub>2</sub> , NO <sub>x</sub> , Hg, SPM and RSPM 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. Six monthly reports shall be submitted to the Regional Office of this Ministry at Bhopal.	Regular Monitoring of ground level concentration of SPM, SO <sub>2</sub> , NO <sub>x</sub> , PM 2.5 & PM10 and Hg is being carried out continuously by the third party in the impact zone and records maintained. Results of the same are well within the standards.  Monitoring reports are also submitted to the board & regulatory bodies on regular basis.
18	Appropriate safeguard measures shall be taken to guard against fire hazards in coal storage area. DMP shall be prepared to handle such situation.	Fire Hydrant system and water monitors installed around coal stack yard to guard against fire incident. The system is always in pressurized condition through Fire water pump house for ready use. DMP is in place.
19	The Project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the Vernacular language of the locality concerned within seven days from the date of the clearance letter, informing that the project has been accorded EC and copies of clearance letter are available with the state pollution control board/committee and may be also be seen at website of the MoEF at <a href="http://envfor.nic.in">http://envfor.nic.in</a>	Complied
20	A separate Environment Management Cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards	Environment Management Cell has been set up with qualified and competent staff for proper implementation of environment control measures and satisfactory compliance to condition of EC/CTE and CTO.
21	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this Ministry/ Regional Office/CPCB/SPCB	We are regularly submitting six monthly compliance reports to the Board and ministry as per the guidelines. Last report submitted on 30 <sup>th</sup> Oct. 2020.

22	Regional Office of the Ministry of Environment & Forests located at Bhopal 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	Noted
23	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	We have allocated separate budget for Environment Management for implementation of environmental protection measures from which various environmental works is being carried out. The budget is solely dedicated for the purpose of Environment Management only.

**SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE CONDITIONS FOR UNIT-I:  
ISSUED BY MOEF VIDE LETTER No J-13011/2/2008-IA.II(T) DATED 4th JUNE, 2009**

Sr. No	Terms and Conditions	Action to be Taken
1	An amount of Rs.1.6 Crores as capital and Rs.30 Lakhs as recurring expenditure per annum should be earmarked for taking up activities under CSR.	Being Complied
2	Copy of conservation plan of fauna in the study area, reported to be prepared, should be submitted to the Ministry within 15 days of the issue of this letter.	GIB and other Schedule-1 wildlife conservation plan for EMCO Energy Ltd for Rs. 24.91 Lakhs has been prepared by Divisional Forest officer, Chandrapur via letter No:Desk-5/survey/Land/2128/ 2013-14, dated 19.03.2014 as per guidelines of Ministry of Environment and forest, New Delhi on the basis of plan sanctioned by P.C.C.F.(Wildlife), M.S, Nagpur. Ref No:-Desk-WL/22(6)/CR69/5370/ 13-14, Nagpur Dated 07.03.2014. As per demand letter No: Desk-5/Survey/Land/2268 dated 26/03/2014 received from Divisional Forest officer- Chandrapur, EMCO Energy Ltd. deposited the amount of Rs. 24.91 in Ad-hoc Compensatory Afforestation Fund Management & Planning Agency (CAMPA)Savings Bank A/c No: SB 01025218 Corporation bank, Lodhi Road, New Delhi IFSC Code- CORP0000371 through RTGS on date 08/07/2014. The UTR no. for the payment done is "BRN-RTGS-UTIBH14189021366-ADHOC COMPENS". Lakhs in CAMPA.
3	First aid and sanitation arrangements shall be made for the drivers and the contract workers during construction phase.	Full-fledged Occupational Health Centre with experienced MBBS Doctor and Paramedic Staff has been deputed in the plant for first aid arrangement and well devised schedule is developed for carrying out the sanitization.
4	Regular monitoring of ground level concentration of SOx, NOx, Hg, SPM and RSPM shall be carried out in the impact zone and records maintained. If at any stage, these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.	Regular Monitoring of ground level concentration of SOx, NOx, Hg, SPM, PM2.5 & PM10 is being carried out in the impact zone and records are maintained. Results of the same are well within the prescribed limits.  Monitoring reports of the same are also submitted to the board on monthly basis.
5	Provision shall be made for the housing of construction labor within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Complied

6	<p>The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall be sent to the Regional office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels, namely SPM, RSPM, SO<sub>2</sub>, NO<sub>x</sub> (ambient levels as well as stack emissions) or critical sectorial parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.</p>	<p>EC compliance report are sent to MoEF &amp; CC regional office as well as to regional offices of MPCB &amp; CPCB every six monthly.</p> <p>The pollutant levels, namely SPM, RSPM, SO<sub>2</sub>, NO<sub>x</sub> (ambient levels as well as stack emissions) are being monitored and displayed at the main gate of the company in the public domain.</p>
7	<p>The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well by email) to the respective Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB.</p>	<p>Six monthly EC Compliance report including results of monitoring data are being submitted to the respective regional office of MoEF, the respective Zonal office of CPCB, SPCB.</p> <p>Last compliance report was submitted on 30<sup>th</sup> Oct. 2020.</p>
8	<p>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 (stack and ambient levels of NO<sub>x</sub>) will be displayed at the main gate of the power plant.</p>	<p>The criteria pollutant levels, namely SPM, RSPM, SO<sub>2</sub>, NO<sub>x</sub> (ambient levels as well as stack emissions) are being monitored and displayed at the main gate of the company continuously.</p>

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE CONDITIONS FOR UNIT-II:  
ISSUED BY MOEF VIDE LETTER No J-13012/75/2008-IA.II (T) DATED 25th MAY, 2010**

Sr. No	Terms and Conditions	Compliance Status
<b>A. Specific Conditions.</b>		
1	<p>Environmental clearance is subjected to submission of a time bound implementation of a wildlife conservation plan particularly with respect to protection of great Indian Bustard and other Schedule-1 species, to be prepared in consultation with the office of the Chief Wildlife Warden concerned and the Wildlife Institute of India.</p> <p>The plan shall have an in-built monitoring mechanism and annual audit, report of which shall be submitted to the Regional Office of the Ministry and concerned department in the state government.</p>	<p>GIB and other Schedule-1 wildlife conservation plan for GMR Warora Energy Ltd. of Rs. 24.91 Lakhs has been prepared by Divisional Forest officer, Chandrapur, letter No: Desk-5/survey/Land/2128/2013-14, dated 19.03.2014 as per guidelines of Ministry of Environment and forest, New Delhi on the basis of plan sanctioned by P.C.C.F.(Wildlife), M.S, Nagpur. Ref No:-Desk-WL/22(6)/CR69/5370/13-14, Nagpur Dated 07.03.2014. As per demand letter No: Desk-5/Survey/Land/2268 dated 26/03/2014 received from Divisional Forest officer-Chandrapur, EMCO Energy Ltd. deposited the amount of Rs. 24.91 in Ad-hoc Compensatory Afforestation Fund Management &amp; Planning Agency (CAMPA) Savings Bank A/c No: SB 01025218 Corporation bank, Lodhi Road, New Delhi IFSC Code-CORP0000371 through RTGS on date 08/07/2014. The UTR no. for the payment done is "BRN-RTGS-UTIBH14189021366-AD HOC COMPENS". Lakhs in CAMPA.</p>
2	<p>It shall be ensured that the natural drainage in the region is not disturbed due to activities associated with operation of the plant.</p>	<p>Proper care has been taken to ensure that the natural drainage in the region is not disturbed due to activities with operation of the plant.</p>
3	<p>Provision for installation of FGD shall be provided. High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm<sup>3</sup>. 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.</p>	<p>Provision for installation of FGD have been duly provided. State of art ESPs has been installed with more than 99% efficiency to maintain the emission of particulate matter well below 50 mg/Nm<sup>3</sup>.</p> <p>Adequate dust extraction system installed in coal bunker and dry fog type dust suppression system provided at wagon tippers, coal stock piles, crusher house, and transfer houses to take care of fugitive emissions.</p>
4	<p>The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM (PM<sub>2.5</sub> &amp; PM<sub>10</sub>), SO<sub>2</sub>, NO<sub>x</sub> (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.</p>	<p>Monitoring of the ambient as well as for stack parameters are regularly carried out and data is displayed at main gate of the plant digitally. Six monthly reports on the status of compliance of the stipulated EC conditions including results of monitoring data are submitted to the respective regional office of MoEF, CPCB &amp; MPCB.</p>

5	No irrigation and drinking water requirements out of the Barrage / reservoir shall be diverted for the power plant.	Being Complied.
6	No ground water shall be extracted for use in operation of the power plant even in lean season.	Being Complied. Plant is getting water from MIDC, warora for requirements.
7	Hydro-geological study of the area shall be reviewed annually and results submitted to the Ministry and concerned agency in the State Govt. In case adverse impact on ground water quantity and quality is observed, immediate mitigating steps to contain any adverse impact on ground water shall be undertaken.	Hydrogeological study of the area is being carried out in annual basis and report submitted to Ministry and state board. No adverse impact is observed is ground water quantity and quality. Hydrogeological study report submitted on 25 <sup>th</sup> Feb. 2021.
8	Minimum required environmental flow suggested by the Competent Authority of the State Govt. shall be maintained in the Channel/ Rivers even in lean season.	Plant is getting water from MIDC, Warora. Minimum required environmental flow suggested by the irrigation department is being well maintained in the channel rivers even in lean season.
9	Rainwater harvesting should be adopted. Central Groundwater Authority/ Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of clearance and details shall be furnished.	Rain Water harvesting system is in place for ground water recharge as per the guidelines of the CGWB.
10	Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.	Soil for leveling of the site is generated within the site in order to well protect the natural drainage system of the area.
11	Utilization of 100% Fly Ash generated shall be made from 4th year of operation of the plant. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.	Effective Utilization of Fly ash is in place and same is being sent to the nearby cement plants for cement manufacturing also to brick manufacturers. Ash utilization status is convened to the ministry and state board regularly.
12	Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized fly ash shall be disposed of in the ash pond in the form of slurry form. Mercury and other heavy metals {As, Hg, Cr, Pb etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed of in low lying area.	We have constructed 3 Nos. of Fly ash silo with the capacity of 1500 MT each for storage of fly ash in dry form which are then sent to cement industries for complete utilization. Unutilized ash is sent to captive ash pond in slurry form. Regular monitoring of heavy metals in ash pond water is carried out and reports are also submitted to board on monthly basis.
13	Ash pond shall be lined with HDP/ LDP 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.	Bottom of the ash pond compacted at high dry density soil and provided with 600mm impervious clay lining. Sides of the ash pond lined with HDPE lining and tiles. Ash pond provided with garland drains to collect run-off water and seepages if any from the pond. Ash water recovery system i.e. the supernatant is collected and treated in settling tank and routed to ash handling system is in place.



14	For disposal of Bottom Ash in abandoned mines (if proposed to be undertaken) it shall be ensured that the bottom and sides of the mined out areas are adequately lined with clay before Bottom Ash is filled up. The project proponent shall inform the State Pollution Control Board well in advance before undertaking the activity.	Noted
15	Closed cycle cooling system with natural draft cooling towers shall be provided. The effluents shall be treated as per the prescribed norms.	Induced draft cooling tower (IDCT) is being constructed. Amendment to shift from Natural draft cooling tower (NDCT) to IDCT, MOEF (Gol). Vide letter no. J-13012/75/ 2008-1A.II (T), dated 30th November, 2010.  State of art ETP is in operation in which Effluent are treated to meet the prescribed norms.
16	Shelter Belt consisting of 3 tiers of plantations of native species around plant and at least 100 m width shall be raised. Wherever 100 m width is not feasible a 50 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not less than 2500 per ha with survival rate not less than 70 %. To meet the expenditure of development of this, Shelter Belt, a Green Endowment Fund shall be created out of EMP budget and status of implementation shall be submitted to the Regional Office of the Ministry from time to time.	Complied
17	A good action plan for R&R (if applicable) with package for the project affected persons be submitted and implemented as per prevalent R&R policy within three months from the date of issue of this letter.	Project is in industrial area of MIDC, Warora. Hence not applicable.
18	An amount of Rs 12.0 Crores shall be earmarked as one time capital cost for CSR program. Subsequently a recurring expenditure of Rs 2.5 Crore per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation.	Being Complied. CSR works accrued out by the plant for the FY 20-21 is attached as Annexure- VI.

19	As part of CSR program the company shall conduct need based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such program. Company shall provide separate budget for community development activities and income generating program. This will be in addition to vocational training for individuals Imparted to take up self-employment and jobs. In addition to above a special scheme for upliftment of SC/ST's and marginalized farmers population in the study area out of CSR program shall be formulated and submitted to the Ministry within six months along with firm commitment of implementation. The scheme shall have an in-built monitoring mechanism.	Activities being taken up for the upliftment of SC/ST's and marginalized farmers and poor section of the society.  CSR activities is vigorously carried out by the project proponent through its wing Var Laxmi Foundation. Details of the CSR activities being carried out in last year is attached for reference. <b>(Annexure-VII)</b>
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**B. General Conditions:**

1	The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon. Arrangements shall be made that effluents and storm water do not do not get mixed.	The treated effluents conforming to the prescribed standards are recirculated and reused within the plant. Arrangement has been made to ensure zero discharge outside the plant boundary except during monsoon. Storm water and effluent drains are not allowed to mix. Treated Effluent Analysis Reports of last six months <b>(Annexure-VIII)</b>
2	A sewage treatment plant shall be provided and the treated sewage shall be used for raising greenbelt/plantation.	Sewage Treatment Plant with the capacity of 25 KLD has been installed. Treated water from STP is being use in green Belt development/ plantation. Treated Effluent Analysis Reports of last six months. <b>(Annexure-VIII)</b>
3	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.	Adequate Fire Hydrant system and water monitors are installed around coal stack yard to check/minimize spontaneous fires in coal yard. The system is always in pressurized condition through Fire water pump house to deal with any situation.
4	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.	Storage facilities for auxiliary liquid fuel such as LDO and/ HFO/LSHS are made in the plant area in consultation with Department of Explosives, Nagpur. Storage license obtained. Sulphur content in the liquid fuel is not exceeding 0.5%. Disaster Management Plan is prepared to meet any eventuality in case of an accident taking place due to storage of oil.
5	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	Regular Monitoring of ground water in and around the ash pond area is being done and analysis report of the same are also submitted to MPCB on regular basis. Heavy metals are being analyzed in the ash pond water and report shared with concerned authorities.

	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.	
6	First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase	Full-fledged medical Centre with experienced MBBS Doctor and Paramedic Staff are deputed in the plant for efficient First Aid.
7	Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 db. For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc. shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy/less noisy areas	Noise levels emanating from turbines are controlled and are well within the limits. Personal protective Equipment's like earplugs/ear muffs etc. are provided for people working in the high noise area. Periodic medical checkup conducted for workers engaged in noisy areas such as turbine area, air compressors etc. Audiometric record maintained. Ambient and Work Zone Monitoring reports. (Annexure-IX)
8	Regular monitoring of ground level concentration of SOx, NOx, PM 2.5 & PM10 and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.	Regular Monitoring of ground level concentration of SOx, NOx, Hg, SPM, PM2.5 & PM10 is being carried out in the impact zone and records are maintained. Results of the same are well within the prescribed limits.  Monitoring reports of the same are also submitted to the board on monthly basis. (Annexure-X)
9	Provision shall be made for the housing of construction labor within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Complied
10	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	Complied. Published in Local Newspaper- Hidwada and Lokmat on 30th May, 2010. Copy of the same is already submitted with first half yearly report vide letter no. EMCO/SITE/MoEF/001, 28th August, 2010
11	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad, Municipal Corporation, Urban local Body and the Local NGO, if any, from whom suggestions/representations, if any, received while processing the proposal. The clearance letter shall also be put	Plant is located in notified industrial area (MIDC), Clearance letter is uploaded on the website of the company.

	on the website of the Company by the project proponent	
12	A separate Environment Management Cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	Environmental Management cell with competent & qualified persons, has been established since January, 2010 for implementation of the stipulated environmental measures & subsequent Environmental management in the plant.
13	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well by e-mail) to the respective Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB.	Being complied. Six monthly reports on the status of compliance of the stipulated EC conditions including results of monitoring data are being submitted to the respective regional office of MoEF & CC & the state board.
14	The environment statement for each financial year ending 31st 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 EC conditions and shall also be sent to the respective Regional Offices of the Ministry by e mail.	Being complied. The environment statement for each financial year is submitted regularly. Last Environment statement submitted on 30 <sup>th</sup> Sep. 2020. Six monthly reports on the status of compliance of the stipulated EC conditions including results of monitoring data are being submitted to the respective regional office of MoEF & CC & the state board.
15	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 reports on the status of compliance of the stipulated EC conditions including results of monitoring data are being submitted to the respective regional office of MoEF & CC & the state board. Last Six monthly compliance report was submitted on 30 <sup>th</sup> Oct. 2020.
16	Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring.	Noted.
17	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.	We have allocated separate budget for Environment Control Measures for implementation of environment control measures.  The above budget is dedicated to Environment Management only.

18	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.	Date of Financial closure of the project: October 2009. Final approval by the Concerned authorities: 1) Letter of support from Govt. of Maharashtra dated 1st May 2007 is already submitted with First Compliance report. 2) Environment clearance letter MoEF submitted. 3) Date of start of land development work: June 2010. 4) Unit-I COD- March 2013. 5) Unit-II COD- September 2013.
19	Full cooperation shall be extended to the Scientists/Officers from the Ministry/Regional Office of the Ministry at Bangalore I CPCB/ SPCB who would be monitoring the compliance of environmental status.	Noted.
5	The Ministry of Environment and Forests reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.	Noted.
6	The environmental clearance accorded shall be valid for a period of 5 years to start operations by the power plant.	Noted.
7	Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986	Noted.
8	In case of any deviation or alteration in the project proposed, including coal transportation system from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.	Noted.
9	The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and rules there under, Hazardous Wastes (Management and Handling) Rules, 1989 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.	Noted.
10	Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred, within 30 days as prescribed under Section 11 of the National Environment Appellate Act, 1997.	Noted.



ELECTROSTATIC PRECIPITATOR





FLY ASH AND BOTTOM ASH SILOS



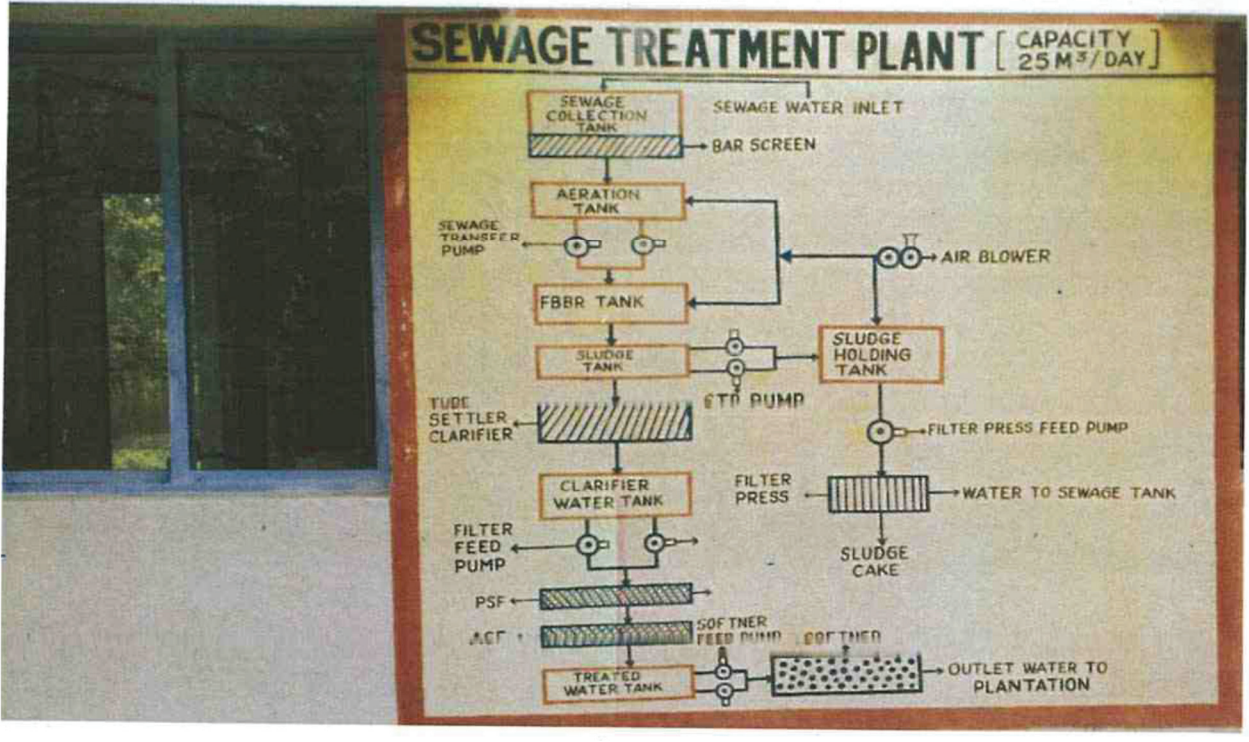


EFFLUENT TREATMENT PLANT





SEWAGE TREATMENT PLANT





RAIN WATER HARVESTING





GREEN BELT





ANNEXURE-VI





**ANNEXURE-VI**





**CSR ANNUAL REPORT**  
**APRIL 2020 TO MARCH 2021**



**CORPORATE SOCIAL RESPONSIBILITY**  
**GMR VARALAKSHMI FOUNDATION**  
**AND**

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## HIGHLIGHTS OF GWEL-CSR ACTIVITIES (APRIL 2020- MARCH 2021)

### Education

- Minor Repairing in Govt schools conducted and installed E-Modules of NEXT Education in 4 ZP Schools benefitting more than 400 students.
- Conducted online classes of After School Learning Centers (ASLCs), E-Centers and Navodaya covering more than 425 students.
- 57% students of ASLC, 64% students of E-Center and 70% Students of Navodaya coaching achieved A Grades in fortnightly test.
- Learning Navigator Tool (GOORU) initiated with the support from Gyan Prakash Foundation at 6 ASLCs covering nearly 131 students.
- Capacitated volunteers & ZP school teachers benefited 19 volunteers and teachers.
- School Bus services benefitted 95 students of Class VIII – X.
- Pratibha Library benefitted 265 youth. One students selected in CRPF this year.
- All educational activities were kept suspended in all villages during the year due to pandemic.

### Health, Hygiene and Sanitation

- Health Clinic in 10 villages provided free treatment and medicines to over 22,000 people.
- Mobile Medicare Unit (MMU) provided free treatment to over 24,000 old aged people.
- Nutrition center benefitted 48 pregnant and lactating mothers from 5 villages.
- RO Water Plant in three villages installed and handed over to community.
- 17 RO Water Plants are functioning well & providing potable drinking water to nearly 5000 HHs.
- 215 ISL constructed in 2019-20 were handed over to community during the pandemic.
- Fogging operation continued in 8 villages to keep villagers safe from vector borne diseases.
- 60 Post Lockdown awareness programs organized in villages that benefitted over 26,000 people.

### COVID RESPONSE:

- Cotton Mask distributed to more than 22,000 health worker and villagers, Govt Officials etc.
- 263.75 litres sanitizer, 420 Surgical & N95 Mask, 715 Litres of hand wash, face shield, PPE kits & Thermal Scanner at Warora Covid Center and various other places.
- Health clinics & MMU provided health services to over 46,000 people during this pandemic.
- Over 600 litres of Hand Wash soap provided at WATER ATMs of 16 villages.
- 1760 dry ration food packets distributed to needy during the lockdown period.
- 5550 snacks packets distributed to patients, transit passengers, Divyangs at Warora & villages.
- Performed spraying of Sodium Hypo Chloride at important public places in Warora.
- Created awareness in lockdown at 20 villages by distributing over 22,000 pamphlets.

### Empowerment & Livelihoods

- Total 97 students successfully completed the vocational training in self-employment courses.
- More than 900 people supported for initiating livelihood activities. Nearly 850 people are earning average Rs. 15,000/- annually from these activities.
- 72 Swadaan programs organized 77 GMRVF beneficiaries that benefitted 884 people.

- ❑ 168 employees participated in different Community development programs and contributed 270 voluntary hours.

## **DETAILS OF CSR ACTIVITIES**

### **BACKGROUND OF THE PROJECT**

GMR Warora Energy limited (GWEL), formerly known as EMCO Energy Limited is a subsidiary of GMR Energy Limited (GEL). GWEL has established a 600 MW Thermal Power Plant at Warora in Chandrapur district of Maharashtra. The GWEL Power Plant has two units each of 300 MWs. Unit 1 of the project was commissioned in March 2013 and Unit 2 was commissioned in September 2013. The project is ideally located in terms of the connectivity by rail, road and air. It is also close to critical infrastructure such as housing, education, and medical facilities.

GMR Varalakshmi Foundation (GMRVF), which is the Corporate Social Responsibility (CSR) arm of the GMR Group was tasked by GWEL to fulfil the corporate social commitments. GMRVF launched Education, Health, Hygiene and Sanitation, Empowerment and Livelihoods and Community Development programs to enhance the quality of life of people dwelling in and around GWEL Plant. The GMRVF team in Warora constitutes of 7 staff members headed by a Senior Program Leader.

As per the Companies Act requirement, a CSR committee is in place at GWEL and CSR Policy of the Company has been formulated and adopted. CSR Committee meetings were held during the reporting period and the Committee approved the annual CSR plan of GWEL as per mandatory CSR funds for this financial year. The following CSR activities undertaken as per CSR Policy are illustrated below:

### **GWEL CSR-PROGRAM COVERAGE AREA**

GWEL initiated its CSR activities since April 2010. Today it works intensively in 10 villages around the power plant covering an approximate population of 21,000. These villages are Naidev, Nimsada, Dahegaon, Dongargaon, Chinora, Marda, Charur Khati, Majra Khurd, Wanoja and Majra Rai. Apart from this, GWEL also covers more than 30 villages that fall under the transmission line reaching out to more than 24,000 people through Mobile Medicare Units (MMU).



## **DETAILED OF PROGRAM ACTIVITIES**

### **EDUCATION**

GWEL-CSR believes that quality education is the most important prerequisite of development. Therefore, providing quality education is one of the important activities. Efforts have focused on reaching out to maximum number of students through multiple need-specific interventions.

The outbreak of coronavirus (COVID-19) and subsequent guidelines from Govt on lockdown and new normal specially in Maharashtra has caused many of our field activities to suspend for almost entire year. During the pandemic situation, all educational institutions were not allowed for face to face learning and therefore virtual mode of delivering education activities have been planned. The outcomes of major educational interventions are highlighted below:

## A. Support to Govt. Schools

**A.1 Govt. School Support:** To promote quality education, various educational materials provided to Zilla Parishad (ZP) Schools such as digital TLM, sanitation kits, wall magazine, repairing of school building, and furniture etc. The E-Module of NEXT Education is installed in 4 ZP schools. NEXT Education is a E-Learning Service Provider specialized in designing e- modules on various topics of school curriculum prescribed by state board. This will enable to conduct computer based classes at ZP schools. Though classes were kept suspended in all schools due to pandemic. Apart from this, minor repairing of computer rooms was performed in 5 ZP schools to keep electronic assets intact and in working conditions.



**A.2 Capacity Building of ZP School Teachers on Computer based Education:** Four trainings organized for 8 Teachers of 4 ZP schools, 12 Volunteers & GMRVF staff with the support from NEXT Education. Subjects like data accessing, downloading and uploading of educational material etc. covered in training. All trainees learned teaching methods and organizing class using E-Modules of Next Education.

## B. Direct support to the children

**B.1 After School Learning Centers (ASLC):** GMRVF has initiated 6 ASLCs in 6 villages to enhance education quality in slow learner students of Std I to VII. This year 235 slow learner students enrolled and out of this, average 216 students have attended the online and offline activities regularly. During the peak period of COVID 19 the teaching activities conducted strictly on online mode. The fortnightly test conducted in each ASLC to gauge the learning level of students. The result of baseline and all fortnightly test evaluated in terms of grades. The Grade A assigned for highest and Grade D assigned for lowest performance. The first and last test result shows:



- The very first test at the time of start of session shows 23% students in Grade A, 26% students in Grade B and 51% students in Grade C&D.
- The last fortnightly test shows that 57% students scored A Grade; 29% students received B Grade and 14% students achieved C&D Grade results.

**B.2 E- Education and Learning Center (EELC):** GMRVF is running 6 EELC in six villages with the objective to provide basic computer education to the school children of the villages. This year due to pandemic online classes conducted in all centers. The online learning material for E-Center is circulated to children through parent's WhatsApp groups. The highlight of EELC is as shown below:

- Total 241 students enrolled for online classes and learned basic computer skills.
- The student's progress measured through fortnightly test conducted in the center before start of the classes and during the year The E-Center results shows that out of 241 students 64% students scored A Grade; 24% students received B Grade and 12% students achieved C&D Grade results.



- The very first test at the time of start of session shows 10% students in Grad A, 17% students in Grade B and 73% Students in Grade C&D.

**B.3 Navodaya Coaching Center:** GMRVF is running Navodaya coaching classes in 3 villages. This year 30 students selected for special coaching for Jawahar Navodaya Vidyalaya entrance test. Navodaya coaching three villages started from 1st August. Considering the COVID 19 pandemic situation volunteers conducted online classes through WhatsApp groups. Each students track for their progress through fortnightly and weekly test. The last test results shows:



- Out of 30 students 70% students achieved A Grade and rest 30% students achieved B Grade marks. No students in Navodaya scored C&D marks

**B.4 Capacity Building of Vidya Volunteers:** 48 weekly trainings with the education volunteers including ASLCs, E-Center and Navodaya was organised regularly during the year. Volunteers were oriented on conducting weekly assessments as per the content 12 Vidya volunteers attended the weekly trainings regularly and conducted online classes as per weekly plans.

**B.5 TLM distribution to students:** Course Workbooks and notebooks were distribution to help students learning, in 8 ZP schools covering all students of class 1 to 7. Volunteers and teachers of school facilitated the distribution following necessary precautions for COVID-19. This act has helped and benefitted more than 600 students of the schools, E-Center, ASLC.

**B.6 Pratibha Center:** The Pratibha library was established in Lokmanya Vidyalaya, Warora town with an objective of providing career counselling services to aspirants for employment opportunities or higher education. The library provides a repository of books and offers services like conducting special classes for different subjects, group discussions on current topics, monthly test, mock interview and counselling sessions. More than 600 are registered in the library.

- This year more than 265 youths attending online and offline classes and benefitted from the center.
- 1 aspirant was successful this year in competitive exam of CRPF.

**B.7 Transportation Facility for Students:** GMRVF is providing school bus service for students of Std. VIII to X from Dongargaon and Dahegaon villages. School bus facility is started this year again as the local schools reopened with due permissions from the district collector and followed all necessary protocols for COVID 2019.



- This year, total 95 students availed the facility and attended schools regularly.

## C. Awareness programs for children

**C.1 Days Celebration:** To imbibe the value and significance of important days, International Literacy Day 2020 celebrated in five Villages with great zeal and enthusiasm. Virtual Storytelling events were conducted in 5 After School Learning Centers facilitated by GWEL employees and Samrudhi Ladies Club members.

- Around 45 children & villagers benefitted from the programs.

**C.2 Awareness Program:** 14 student's awareness sessions on Electrical Safety, Fire safety, 5S, Health, Hygiene & Sanitation, National energy conservation week, conducted online for ZP Schools students. Total 450 students participated and learned basic traffic rules to be observed and health & sanitation practices through these sessions.

## D. Location specific initiatives

**D.1 Learning Navigator - Pilot Program:** GMRVF and Gyan Prakash Foundation have initiated pilot Learning Navigator program using GOORU App. This program is designed to track learning levels of each student at every stages of learning. This helps facilitator and volunteers to plan and provide all necessary input to gain faster learning outputs of individual student. The pilot initiated in Warora location in the month of Oct 2020 and series of capacity building sessions conducted to take off program in 6 ASLCs. A total 131 students enrolled created classrooms in Gooru App for each village and each class and studies started conducting using Gooru App. At end of this FY, 991 competencies have been gained and are in progress among Std 1 to Std 5 students.



## HEALTH, HYGIENE AND SANITATION

Major interventions in the area of health during the reporting period are as follows:

### A. Protective Health Care

**A.1 Health Clinics:** GMRVF is running eight Primary Health Clinics in 8 project affected villages and providing basic health check-up and free medicines. Regular disinfection, Hand wash, Hand sanitizer, PPE Kits, face masks and social distancing were strictly followed during conduct of the clinics. Qualified doctors visited the clinics twice in a week and treated patient.



- This year, over 22,153 people received treatment and free medicines from the clinics.

**A.2 Mobile Medicare Unit (MMU):** The MMU at Warora is offering treatment facility and counselling services to the elders above 50 years of age in 22 surrounding villages of GWEL. MMU serve each village once in a week and treat free of cost to old aged and providing services at their door step. MMU is equipped with all basic healthcare and a team of Doctor, Nurse, Pharmacist and Supervisor who take care of patients. MMU has also aware to villagers to combat COVID-2019 through pamphlets and displaying of posters.



- More than 24,292 Regular, Chronic and Seasonal old aged patients aged 50 and above received treatment and free medicine during this year.

**A.3 Nutrition Centers:** Realizing the importance of proper nutrition during pregnancy and lactating stage for the health of both mother and child, Nutrition Centers running in 6 villages. Nutritious food like chikki, dates, banana, and apple etc. are provided to 55 enrolled Pregnant and Lactating Mothers

(PLM) and providing services such as health check-ups, weight measurements, building awareness on health related issues etc.

- This year total 68 delivery taken place in 6 villages.
- 100% delivery reported institutional delivery.
- Average baby weight at the time of birth reported to 2.8 kg with 95% normal delivery.

## **B. Preventive health care**

**B.1 Fogging Operation:** To control mosquitoes and other vector borne diseases, fogging operation initiated in 9 villages. The fogging is conducting once in a week in each village. This activity has brought down the cases of vector borne diseases and no dengue and malaria patients reported during the year.

**B.2 Providing Potable Drinking Water:** GMRVF and GWEL installed 17 Water ATM in 17 villages in Warora Tehsil. These villages are Yensa, Dongargaon, Dahegaon, Chikini, Charur Khati, Chinora, Majra Rai, Majra Khurd, Mohbala, Marda, Nimsada, Naidev, Wanoja and Bawane Layout, Wandhli, Kondala and Ekona villages. These Water ATM installed in past 4 years and providing clean and fluoride free water to more than 18,000 people (nearly 5000 households).

**B.3 Individual and Community Toilets:** Open defecation in villages of Warora is one of the major causes of community health hazards. To combat this, GWEL CSR initiated Individual Sanitary Lavatories (ISL) construction in the year 2015 in selected households. Later in line with Nirmal Bharat Abhiyan of GOI, GWEL & GMRVF has sponsored the construction of ISL in 14 villages.

- Last year GWEL & GMRVF has supported construction of 215 ISL in 8 villages.
- The created ISL has been handed over to community this year in all villages. This have been delayed due to COVID 19.
- Apart from this, 1 community toilet is running at one village for 60 HHs but it was closed during the year considering COVID emergency.
- These efforts have helped to convert 8 villages as open defecation free (ODF).

**B.4 Hand Wash and Sanitization at Health clinics and Water ATMs:** Hand washing is very essential act in COVID situation to fight with virus. Considering this hand washing arrangement is provided and refilled in WATER ATM in 17 villages on weekly basis to maintain cleanliness and hygiene. Apart from this, Spraying of Sodium Hypo Chloride (HYPO) chemical at Water ATM in villages with the support from village Panchayats was also carried out to disinfect the same to combat COVID-2019. More than 17,000 people used the facility.



## **C. Health Awareness Session**

**C.1 Post Lockdown Awareness:** 60 Post Lockdown Awareness sessions conducted in 8 villages during this year to create community awareness on COVID 2019 precautionary measures at clinic center and other places in villages with the help of volunteers. Around, 24,952 villagers benefitted.

**C.2 Nutrition Center Awareness Program:** Volunteers oriented the pregnant women on GUDIYA model that talks about taking step by step proper nutrition and care for pregnant women at nutrition centers. 42 women benefitted.

**C.3 Immunization Program:** 1 Immunization programs organized at all Anganwadi center with an intention to cover 100% immunization of children and aware mothers and women on various health related issues. Nearly 9 women including children immunized.

## EMPOWERMENT AND LIVELIHOODS

Major interventions under empowerment & livelihood undertaken in reporting period are:

### A. Vocational Training

**A.1 Vocational Training Centre (VTC), Warora:** GMRVF Center for Empowerment and Livelihoods, Warora (CEL-W), Warora, continued two self-employment courses at Warora this year. These are Smartphone Hardware Repairing Technician (SPHRT) and Assistant Beauty Therapist (ABT). The center is affiliated under Sector Skill Councils of National Skill Development Corporation under the 'Pradhan Mantri Kaushal Vikas Yojana Scheme' of the Govt. of India. CEL – W initiated online SPHRT batches this year due to COVID 19 pandemic. Three batches of 55 students have completed the course by the end of Mar 21. The pending assessment of last year's ABT and SPHRT of 47 students were also conducted in the month of Feb 2021. Total 89 students successfully completed the course and 77 students have been settled in self-employment work or joined small shops this year. The training details are given below.



Table: Vocational Training details of VTC Warora.

Name of the course	No. of batches in 20-21	No. Trained in 20-21		No. Settled in 20-21	
		M	F	M	F
Smart Phone & Hardware Repairing Technicians	4	64	0	46	0
Assistant Beauty Therapist	1	0	25	0	31

### B. In village skill training programs

**B.1 Tailoring Hub:** To promote skills in women, GMRVF has provided basic tailoring skills to more than 600 women in Warora in past 7 years. Out of these trained women more than 350 women are engaged in stitching work from their home. To engage these skilled women GMRVF has initiated tailoring hub in two villages. This year due to pandemic 55 women took it as an opportunity and started cotton mask stitching using tailoring hub facility. They have stitched more than 25,000 mask and earned more than 1.25 lakhs from this work.



## C. Self Help Groups

**C.1 SHG Meetings and SHG MIS:** To empower women and make them self-reliance GMRVF is intensively working with 91 Women SHGs (1136 women) and 7 Men SHGs (98 men) in 8 villages. The cumulative saving of all SHGs are more than Rs. 1.10 Cr. All 98 SHGs are linked with banks and maintaining records and involved in inter-lending activities within and outside group. Women of SHG have used their saving money for running income generation activities and also used for meeting their house hold requirement specially during these pandemic.

This year International women day celebrated using online mode and conducted special session with the support from Swyam Shakti organization and GMR Smrudhi Ladies Cub, Warora. The experts have explained group business and power of collective business. Total 58 women from 4 villages benefitted from the event.

## D. Support to micro-enterprises and other livelihood activities

**D.1 Promotion of Small Income Generation Activities through SHGs:** This year GMRVF has conducted a special survey to understand the impact of pandemic on livelihood. The survey findings used to plan livelihood interventions so as to restore it at an earliest. The details of Income Generation Activities (IGA) undertaken this year are attached as Annexure 1.

- There are total 907 people actively engaged in IGA activities.
- 862 out of 907 people are earning an additional income of Rs 7000/- per year.

## E. Agriculture Development

**E.1 Farmers Training:** To improve farmer's income GWEL CSR has organized 18 online and offline trainings on vegetable cultivation, floriculture and System of Wheat Intensification (SWI) practices to farmers of 4 villages. Over 800 farmers attended the trainings and adopted improved agricultural practices.

**E.2 Grain-Cash-Seed Bank:** During this period, GCS Bank at four villages distributed Cotton and Soybean seeds to 385 farmers. This year all GCS banks contributed nearly Rs. 5.75 Lakhs and purchased seeds for distribution to farmers. GMRVF has withdrawn financial support to these banks in 2016-17 and motivated them to invest their money for seeds. GCS bank has distributed cotton seeds (345 packets) and soybean seeds (4091 kgs) in four villages. This will cover more than 136 acres under soybean crop and 294 acres under cotton crop.

The GCS Bank is a group of farmers, formed to take care of seed supply system. This concept invites to integrate marketing with seed supply system. The seed is given to bank/group as one time support and then expects to see continuity of seed purchase and distribution business year after year. Every time bank /group worked out a ratio of seed vs. grain to be returned in lieu of seed. The estimate indicates that if the given Soybean seed is returned at a ratio of 1:4 then for next season's crop, bank can purchase the seed without external support. The estimate also indicates that if the grains of second season crop are returned at a ratio of 1:2 (seed: grain) then bank is in a position to buy more seeds than the first season of year one.





**E.3 Floriculture and Vegetable Cultivation:** GMRVF aims to improve farmer's economic condition and considering this floriculture and vegetable crop cultivation introduced in 6 villages. In line to this, 57 farmers were trained on Floriculture and started cultivation of flowers this year. 14 farmers who have started cultivation of marigold and gaillardia flowers are earning daily Rs. 300 – 400/- from the selling of flowers. Apart from this total 149 women from 6 villages started vegetable cultivation and earning average Rs. 6000 per month from the selling of vegetables.

## F. Other initiatives

**F.1 System of Wheat Intensification (SWI):** This year GMRVF has introduced SWI method of wheat cultivation with 31 farmers from 5 villages. SWI is based on the principle of System of Rice Intensification (SRI) is a new wheat cultivation technique for increasing wheat yield in small holder farming system. Total 250 kg of seeds distributed in equal proportions to the 31 farmers who covered nearly 15 acres of land. The crop yield was assess using 1 Sq. m. techniques which shows average yield of 4.5 quintal per acres, which is about 25% more compare to the average yield of wheat in Warora.



## COMMUNITY DEVELOPMENT:

**A Community Libraries:** GMRVF runs daily 8 libraries in 8 villages, which operates from 0900 to 1100 in the morning and 1600 to 1800 in the evening. The libraries have variety of books from children to elders. Daily newspapers, weekly employment news & monthly magazines are also available for reading. This year due to COVID 19 pandemic all libraries were closed throughout the year.

**B. Community development activities:** GWEL CSR with support from GMRVF has handed over 3 RO Water ATM and 215 ISL to communities of 8 villages. These structures were constructed in 19-20 but could not be handed over on the same year because of lockdown. However, same have been done after completion of lockdown in villages. Details of activities and its coverage is illustrated in below table:

#	Activity	Quantity	Place	Beneficiary
1	RO Water ATMs	3 Units	Kondala, Ekona and Wandhali	More than 3500 people
6	Individual Sanitary Lavotary	215 ISL	Nimsada, Mohbala, Marda, Wanoja, Arjuni, Majra Rai, Majra Khurd, and Charur Khati	Nearly 900 people

**C. Swadaan:** 72 Swadaan programs organized to create a feeling of giving amongst beneficiaries of GMRVF programs and to seek their contribution for various community activities. A total 77 GMRVF beneficiaries have participated in Swadaan activities and helped other beneficiaries in villages by conducting tailoring work, electrical repairing work, organizing tuition classes and benefitted more than 884 people including children.

#### D. COVID 2019 Response

In response to COVID 2019 pandemic, GWEL & GMRVF has accomplished following activities:

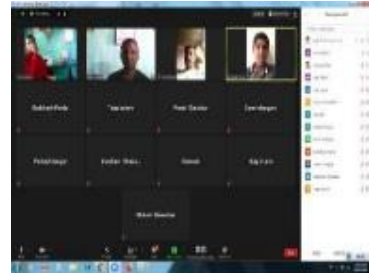
- GWEL CSR distributed more than 22,000 cotton mask to Govt official, Panchayat workers, GPs, Plant labour, Health workers, patients visiting hospitals and all those who are critical and required mask.
- Conducted Fogging Operation in 10 villages and Warora town to slowdown the growth of mosquitoes & thereby vector borne diseases.
- GWLE CSR distributed 175 bottles (50ml) and 510 bottles (500 ml) sanitizer, 425 numbers of Surgical Masks & N95 Mask, 510 Litres of hand wash, 46 face shield, 96 PPE kits & 2 Thermal Scanner at Govt. Hospital, Warora Covid Center, Police Station, Villages, Village clinics and Bus stand so as to equip and support health workers to fight with COVID.
- Primary health clinics in villages provided health services to 10 villages and monitor early detection of COVID. It benefitted more than 22,000 people.
- The Mobile Medicare Unit (MMU) provided health services to Old Aged and treated in 22 villages during the COVID crisis and served more than 24,000 old aged.
- More than 600 litres of Hand Wash soap provided at WATER ATMs of 16 villages.
- 1,760 dry ration food packets (5 kg rice; 1 kg Daal; 1 ltr oil; 1 kg salt; chilli and turmeric powder) handed over to District Collector, Chandrapur' s to Emergency Response Depot. The same will be distributed centrally by Collectorate to all needy and migrant community.
- 5,550 snacks packets were distributed to Govt Hospital, transit passengers at Bus Stand, Warora, Shilpa Hospitality services staff, Divyangs (persons with disabilities) and the utmost needy slum community at Warora village.
- Spraying of Sodium Hypo Chloride (HYPO) at important public places performed in Warora town to disinfect the same.
- Despite a very intensive awareness campaign from Govt. machinery. GWEL CSR has played proactive role and distributed more than 22,000 pamphlets in each household in 20 villages and in Warora and displayed posters and banners in all common place in villages.



#### EMPLOYEE INVOLVEMENT:

GWEL have developed village guardian model and each employees including their families and senior management participated in community development programs. This year 168 employees participated in 39 community development programs and contributed 270 voluntary hours which benefitted more than 29,000 people.

**Celebration of Daan Utsav:** This year JOG was celebrated as Digital Daan Utsav from 2-8 Oct in villages. Total 19 virtual events conducted, in which 82 employees and their family members participated and celebrated the spirit of Daan Utsav with community. 21 GWEL employees and 09 SLC members conducted different virtual sessions. Apart from this, 42 employees from Operation Department of GWEL have contributed Rs 8,400 to provide workbooks to 45 students of Chinora village. Members of GWEL Samriddhi Ladies Club organized Breast Awareness sessions in 4 villages.



**Social Voluntary Project (SVP):** This year, 3 Social Voluntary Projects were implemented by 22 GWEL employees. These employees contributed total of 30 hours of their time to implement projects.

## CHALLENGES

Following are the challenges faced during the reporting period:

- Internet connectivity in villages were challenging in conducting online events.
- Recent Panchayat election and elected bodies creating pressure for more hardware activities.
- Unavailability of smart phone with parents hampered education programs.
- Receiving community contribution and motivating them for IGA is challenging.
- Prolonged COVID 19 in Maharashtra created unfavorable situation to conduct offline activities.
- Volunteer capacity in Mobile App based learning tools was found challenging.
- Involving local villagers in civil work as contractor is good in order to involve stakeholder in the development process but is challenging in delivering the quality construction.
- Local political pressure pushing CSR activities to be conducted in distant places is difficult to manage.

## LEARNINGS

- SWI, Vegetable Cultivation, Poultry, and Floriculture is successfully restored livelihood and helped poor community to faster recovery from the losses due to pandemic.
- GOORU App is a very scientifically and technically developed education tools. It navigates the current education status of each student and found very useful if use appropriately at all level.
- Success in VTC depend on constant & strict follow-up of guidelines of PMKVY.
- Online mode of delivering services is one of the way but need full preparedness at the time of planning so as to gain maximum output from it.
- Business planning and log frame developed based on theory of change principle are key for success of small income generation activities and also implementing small projects.

## WAY FORWARD

- Implementing both online and offline activities as per post-COVID realities, especially education, e-learning classes, health and other programs where social distancing and other preventive measures will affect the functioning.
- Scaling up both on-farm & off-farm livelihood activities with more farmers and promoting collective marketing using online tools.
- Documentation of outcomes of all activities and regular update the same in dashboards.
- Exploring & implementing more online and digital tools in all activities to enhance delivery and effectiveness and sustenance of program even in times like Corona.
- Engaging more employee through Social Volunteering Projects and using online tools.

**ANNEXURE- VIII**

**Effluent Water Analysis (Oct. 2020 to Mar.2021)**

<b>Condensate Cooling Water</b>		
Month	pH	F - Cl
		mg/L
October	8.3	<0.05
November	8.2	<0.05
December	8.1	<0.05
January	8.3	<0.05
February	8.2	<0.05
March	8.2	<0.05

<b>Cooling Tower Blowdown</b>			
F - Cl	PO <sub>4</sub>	Cr	Zn
mg/L			
<0.05	0.994	N.D	0.044
<0.05	0.682	N.D	0.021
<0.05	2.12	N.D	<0.01
<0.05	0.982	N.D	0.044
<0.05	0.984	N.D	0.049
<0.05	3.39	N.D	0.043

<b>Boiler Blowdown</b>			
TSS	OG	Cu	Fe
mg/L			
<5	N.D	<0.04	0.136
8	N.D	N.D.	<0.08
<5	N.D	N.D.	0.258
18	N.D	N.D.	0.316
<5	N.D	N.D.	0.190
<5	N.D	N.D.	<0.08

<b>DM Plant Effluent</b>						
Month	pH	TDS	TSS	BOD	COD	O & G
		mg/L				
October	8.7	458	8	9.7	32	N.D.
November	8.7	490	17	8.7	28	N.D.
December	8.2	851	15	9.4	32	N.D.
January	8.2	489	15	8.7	28	N.D.
February	8.0	610	11	7.5	24	N.D.
March	7.8	651	21	14	44	N.D.

<b>STP- Inlet</b>						
Month	pH	TDS	TSS	BOD	COD	O & G
		mg/L				
October	7.1	768	29	11	36	N.D.
November	7.8	812	13	9.4	32	N.D.
December	7.4	798	14	9.7	32	N.D.
January	7.3	763	19	8.4	28	N.D.
February	7.4	383	27	15	48	N.D.
March	7.5	655	53	16	52	N.D.

<b>STP- Outlet</b>						
Month	pH	TDS	TSS	BOD	COD	O & G
		mg/L				
October	7.3	651	10	8.4	28	N.D
November	8	751	11	7.3	24	N.D
December	7.9	790	7	7.3	24	N.D
January	8.5	368	13	7.3	24	N.D
February	7.7	359	13	6	20	N.D
March	7.2	618	41	8.4	28	N.D





## ANNEXURE-X

Ambient Air Quality Monitoring (Oct. 2020 to Mar.2021)**Oct.-20**

Parameters	Unit	Standard	Near Switch Yard	Near Reservoir	Near CHP
SO <sub>2</sub>	µg/m <sup>3</sup>	80	11.96	11.24	10.75
NO <sub>2</sub>		80	15.58	14.75	14.75
PM <sub>10</sub>		100	40.75	46.00	42.25
PM <sub>2.5</sub>		60	23.50	20.25	16.67

**Nov.-20**

Parameters	Unit	Standard	Near Switch Yard	Near Reservoir	Near CHP
SO <sub>2</sub>	µg/m <sup>3</sup>	80	9.96	11.02	7.43
NO <sub>2</sub>		80	13.18	15.13	12.98
PM <sub>10</sub>		100	44.50	43.00	42.00
PM <sub>2.5</sub>		60	16.50	19.00	17.25

**Dec.-20**

Parameters	Unit	Standard	Near Switch Yard	Near Reservoir	Near CHP
SO <sub>2</sub>	µg/m <sup>3</sup>	80	13.05	11.25	12.03
NO <sub>2</sub>		80	17.08	16.53	15.65
PM <sub>10</sub>		100	31.00	31.25	35.75
PM <sub>2.5</sub>		60	14.67	18.00	16.25

**Jan.-21**

Parameters	Unit	Standard	Near Switch Yard	Near Reservoir	Near CHP
SO <sub>2</sub>	µg/m <sup>3</sup>	80	11.34	11.98	9.69
NO <sub>2</sub>		80	15.20	16.20	14.88
PM <sub>10</sub>		100	36.50	34.25	35.00
PM <sub>2.5</sub>		60	13.75	13.00	13.50

## ANNEXURE-X

Feb.-21

Parameters	Unit	Standard	Near Switch Yard	Near Reservoir	Near CHP
SO <sub>2</sub>	µg/m <sup>3</sup>	80	9.38	10.49	8.70
NO <sub>2</sub>		80	14.63	15.43	12.15
PM <sub>10</sub>		100	43.75	42.00	38.75
PM <sub>2.5</sub>		60	19.25	21.33	18.00

Mar.-21

Parameters	Unit	Standard	Near Switch Yard	Near Reservoir	Near CHP
SO <sub>2</sub>	µg/m <sup>3</sup>	80	9.60	8.26	7.58
NO <sub>2</sub>		80	14.23	14.43	13.88
PM <sub>10</sub>		100	63.00	56.50	62.75
PM <sub>2.5</sub>		60	25.00	21.75	24.25

**Stack Emission Monitoring (Oct. 2020 to Mar.2021)****Unit -I**

Sl. No.	Month	PM	SO <sub>2</sub>	NO <sub>x</sub>
		mg/Nm <sup>3</sup>		
1	October	45.5	1259.0	269.5
2	November	38	1138.5	262.5
3	December	43.0	1177.5	270.5
4	January	42	1109.5	259.5
5	February	42.0	1132.5	284.5
6	March	32.0	1235.5	258.5

**Unit -II**

Sl. No.	Month	PM	SO <sub>2</sub>	NO <sub>x</sub>
		mg/Nm <sup>3</sup>		
1	October	47.0	1165.0	262.0
2	November	41.0	1207.5	259.5
3	December	40.0	1247.0	252.0
4	January	43.0	1205.0	274.0
5	February	43.0	1143.0	271.5
6	March	37.0	1277.0	256.5





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Phone : 91-712-2612162, 2612212 Email: [mahabal.nagpur@gmail.com](mailto:mahabal.nagpur@gmail.com)

## Test Report

<b>Report No.:</b> ME-NG04756-210322-SA-GMR-WARORA		<b>Date:</b> 22.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala, MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)		<b>Order Reference</b>
			4800159131 Dt.:03.02.2021
<b>Sample Description/Type</b>	Stack Emission Monitoring	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	ESP Outlet of Unit No.1	<b>Sample Quantity/Packing</b>	Thimble PM: 1 X 1 No. SO <sub>2</sub> : 30mL X 1 No. PVC Bottle NO <sub>x</sub> :25mL X 1 No. PVC Bottle Hg: 200mL X2 No. PVC Bottle
<b>Date of Sampling</b>	16.03.2021	<b>Date of Receipt of Sample</b>	17.03.2021
<b>Sampling Procedure</b>	As per Method Reference		
<b>Date of Start of Analysis</b>	17.03.2021	<b>Date of Completion of Analysis</b>	22.03.2021

<b>Discipline: Chemical Testing; Product Group: Atmospheric Pollution (Stack Emission)</b>				
<b>Stack Details</b>				
Stack Identity		Unit No. 1		
Stack attached to		ESP		
Material of construction		RCC		
Stack height above ground level (Meter)		275		
Stack diameter (Meter)		5.0		
Stack shape at top		Round		
Type of fuel		Coal		
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>#Limit</b>	<b>Method Reference</b>
Flue gas temperature	°C	130	-	IS:11255 (Part 3):2008
Flue gas velocity	m/s	25.3	-	IS:11255 (Part 3):2008
Total gas quantity	Nm <sup>3</sup> /h	1262523	-	IS:11255 (Part 3):2008
Particulate Matter (PM)	mg/Nm <sup>3</sup>	43	50	IS:11255 (Part 1):1985, RA 2003
Sulphur Dioxide (SO <sub>2</sub> )	mg/Nm <sup>3</sup>	1128	-	IS 11255 (Part 2): 1985, RA 2003
Sulphur Dioxide (SO <sub>2</sub> )	kg/day	34179	-	IS 11255 (Part 2): 1985, RA 2003
Oxides of Nitrogen (NO <sub>x</sub> )	mg/Nm <sup>3</sup>	268	300	IS 11255 (Part 7):2005
Mercury (Hg)	mg/Nm <sup>3</sup>	0.0011	0.03 mg/Nm <sup>3</sup>	USEPA Method 29 Feb 2017
<b>Remark:</b> #:Limit as per Notification on Dt.:07.12.2015				

-----END-----

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

  
Kishor Yeole

**BRANCH MANAGER**



Note:

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QF/SALE/04/Issue No 03 Dt 05.12.2019, Amd 00 Dt 00

**Plot No. F-7, Road No. 21, MIDC Wagle Estate, Thane West - 400604, Maharashtra**  
 (600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Next to Ashida Electrical - near J B Sawant Bus Stop)  
**Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 [thane@mahabal.com](mailto:thane@mahabal.com)**

ULR- TC748721000004523F



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## Test Report

<b>Report No.:</b> ME-NG04757-210322-SA-GMR-WARORA		<b>Date:</b> 22.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala, MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)		<b>Order Reference</b>
			4800159131 Dt.:03.02.2021
<b>Sample Description/Type</b>	Stack Emission Monitoring	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	ESP Outlet of Unit No.2	<b>Sample Quantity/Packing</b>	Thimble PM: 1 X 1 No. SO <sub>2</sub> : 30mL X 1 No. PVC Bottle NO <sub>x</sub> :25mL X 1 No. PVC Bottle Hg: 200mL X2 No. PVC Bottle
<b>Date of Sampling</b>	16.03.2021	<b>Date of Receipt of Sample</b>	17.03.2021
<b>Sampling Procedure</b>	As per Method Reference		
<b>Date of Start of Analysis</b>	17.03.2021	<b>Date of Completion of Analysis</b>	22.03.2021

<b>Discipline: Chemical Testing; Product Group: Atmospheric Pollution (Stack Emission)</b>				
<b>Stack Details</b>				
Stack Identity		Unit No. 2		
Stack attached to		ESP		
Material of construction		RCC		
Stack height above ground level (Meter)		275		
Stack diameter (Meter)		5.0		
Stack shape at top		Round		
Type of fuel		Coal		
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>#Limit</b>	<b>Method Reference</b>
Flue gas temperature	°C	132	-	IS:11255 (Part 3):2008
Flue gas velocity	m/s	25.0	-	IS:11255 (Part 3):2008
Total gas quantity	Nm <sup>3</sup> /h	1240254	-	IS:11255 (Part 3):2008
Particulate Matter (PM)	mg/Nm <sup>3</sup>	38	50	IS:11255 (Part 1):1985, RA 2003
Sulphur Dioxide (SO <sub>2</sub> )	mg/Nm <sup>3</sup>	1110	-	IS 11255 (Part 2): 1985, RA 2003
Sulphur Dioxide (SO <sub>2</sub> )	kg/day	33040	-	IS 11255 (Part 2): 1985, RA 2003
Oxides of Nitrogen (NO <sub>x</sub> )	mg/Nm <sup>3</sup>	260	300	IS 11255 (Part 7):2005
Mercury (Hg)	mg/Nm <sup>3</sup>	0.0013	0.03 mg/Nm <sup>3</sup>	USEPA Method 29 Feb 2017
<b>Remark: #:</b> Limit as per Notification on Dt.:07.12.2015				

-----END-----

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## Test Report

<b>Report No.:</b> ME-NG05586-210401-SA-GMR-WARORA		<b>Date:</b> 01.04.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala, MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)	<b>Order Reference</b>	
		4800159131 Dt.:03.02.2021	
<b>Sample Description/Type</b>	Stack Emission Monitoring	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	ESP Outlet of Unit No.1	<b>Sample Quantity/Packing</b>	Thimble PM: 1 X 1 No. SO <sub>2</sub> : 30mL X 1 No. PVC Bottle NO <sub>x</sub> :25mL X 1 No. PVC Bottle
<b>Date of Sampling</b>	25.03.2021	<b>Date of Receipt of Sample</b>	26.03.2021
<b>Sampling Procedure</b>	As per Method Reference		
<b>Date of Start of Analysis</b>	26.03.2021	<b>Date of Completion of Analysis</b>	01.04.2021

<b>Discipline: Chemical Testing; Product Group: Atmospheric Pollution (Stack Emission)</b>				
<b>Stack Details</b>				
Stack Identity		Unit No. 1		
Stack attached to		ESP		
Material of construction		RCC		
Stack height above ground level (Meter)		275		
Stack diameter (Meter)		5.0		
Stack shape at top		Round		
Type of fuel		Coal		
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>#Limit</b>	<b>Method Reference</b>
Flue gas temperature	°C	132	-	IS:11255 (Part 3):2008
Flue gas velocity	m/s	25.7	-	IS:11255 (Part 3):2008
Total gas quantity	Nm <sup>3</sup> /h	1275130	-	IS:11255 (Part 3):2008
Particulate Matter (PM)	mg/Nm <sup>3</sup>	21	50	IS:11255 (Part 1):1985, RA 2003
Sulphur Dioxide (SO <sub>2</sub> )	mg/Nm <sup>3</sup>	1343	-	IS 11255 (Part 2): 1985, RA 2003
Sulphur Dioxide (SO <sub>2</sub> )	kg/day	41100	-	IS 11255 (Part 2): 1985, RA 2003
Oxides of Nitrogen (NO <sub>x</sub> )	mg/Nm <sup>3</sup>	249	300	IS 11255 (Part 7):2005
<b>Remark:</b> #:Limit as per Notification on Dt.:07.12.2015				

-----END-----

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

Kishor Yeole

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<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala, MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)	<b>Order Reference</b>	
		4800159131 Dt.:03.02.2021	
<b>Sample Description/Type</b>	Stack Emission Monitoring	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	ESP Outlet of Unit No.2	<b>Sample Quantity/Packing</b>	Thimble PM: 1 X 1 No. SO <sub>2</sub> : 30mL X 1 No. PVC Bottle NO <sub>x</sub> :25mL X 1 No. PVC Bottle
<b>Date of Sampling</b>	25.03.2021	<b>Date of Receipt of Sample</b>	26.03.2021
<b>Sampling Procedure</b>	As per Method Reference		
<b>Date of Start of Analysis</b>	26.03.2021	<b>Date of Completion of Analysis</b>	01.04.2021

<b>Discipline: Chemical Testing; Product Group: Atmospheric Pollution (Stack Emission)</b>				
<b>Stack Details</b>				
Stack Identity		Unit No. 2		
Stack attached to		ESP		
Material of construction		RCC		
Stack height above ground level (Meter)		275		
Stack diameter (Meter)		5.0		
Stack shape at top		Round		
Type of fuel		Coal		
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>#Limit</b>	<b>Method Reference</b>
Flue gas temperature	°C	129	-	IS:11255 (Part 3):2008
Flue gas velocity	m/s	26.0	-	IS:11255 (Part 3):2008
Total gas quantity	Nm <sup>3</sup> /h	1297674	-	IS:11255 (Part 3):2008
Particulate Matter (PM)	mg/Nm <sup>3</sup>	36	50	IS:11255 (Part 1):1985, RA 2003
Sulphur Dioxide (SO <sub>2</sub> )	mg/Nm <sup>3</sup>	1444	-	IS 11255 (Part 2): 1985, RA 2003
Sulphur Dioxide (SO <sub>2</sub> )	kg/day	44972	-	IS 11255 (Part 2): 1985, RA 2003
Oxides of Nitrogen (NO <sub>x</sub> )	mg/Nm <sup>3</sup>	253	300	IS 11255 (Part 7):2005
<b>Remark: #:</b> Limit as per Notification on Dt.:07.12.2015				

-----END-----

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

Kishor Yeole

**BRANCH MANAGER**



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**Plot No. F-7, Road No. 21, MIDC Wagle Estate, Thane West - 400604, Maharashtra**  
 (600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Next to Ashida Electrical - near J B Sawant Bus Stop)  
**Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 [thane@mahabal.com](mailto:thane@mahabal.com)**

ULR- TC748721000005213F



# Mahabal Enviro Engineers Pvt. Ltd.

Engineers, Consultants, Environmental Monitoring Laboratory & Contractors

Plot Nos. 13,14,17,18, Grampanchayat Bokhara, 8 km from Nagpur City,

Opp. Patel Petrol Pump, Chhindwara Road, Koradi, Dist.Nagpur-441111

Phone : 91-712-2612162, 2612212, WP:9326279040 Email: [mahabal.nagpur@gmail.com](mailto:mahabal.nagpur@gmail.com)

## Test Report

<b>Report No.:</b> ME-NG03788-210308-SA-GMR-WARORA		<b>Date:</b> 08.03.2021	
<b>Name and Address of Customer</b>	GMR WARORA ENERGY LIMITED. Plot No. B-1, Mohabala MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)	<b>Order Reference</b>	
		4800159131 Dt.:03.02.2021	
<b>Sample Description/Type</b>	Ambient Air	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	1. Near CHP 2. Near Reservoir 3. Switch Yard	<b>Sample Quantity/Packing</b>	PM <sub>10</sub> : Filter Paper 3 X 3 No. PM <sub>2.5</sub> : Filter Paper 1 X 3 No. SO <sub>2</sub> : 30 mL X 18 No. PVC Bottle NO <sub>2</sub> : 30 mL X 18 No. PVC Bottle CO: Plastic Bulb 3 X 3 No.
<b>Date of Sampling</b>	01.03.2021 To 02.03.2021	<b>Date of Receipt of Sample</b>	02.03.2021
<b>Sampling Procedure</b>	As per method reference		
<b>Date of Start of Analysis</b>	02.03.2021	<b>Date of Completion of Analysis</b>	05.03.2021

Parameter	Unit	Result	#NAAQM Standard	Method Reference
<b>Location</b>	1. Near CHP	<b>Duration of Survey</b>		24 hours
<b>Discipline: Chemical Testing; Product Group: Atmospheric Pollution (Ambient Air)</b>				
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	6.25	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	13.1	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>	µg/m <sup>3</sup>	64	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>	µg/m <sup>3</sup>	33	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1.03	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)
Lead (as Pb)	µg/m <sup>3</sup>	<0.02	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55

ULR- TC748721000003611F

*Report No.03788 Cont...*

Parameter		Unit	Result	#NAAQM Standard	Method Reference
<b>Location</b>	2. Near Reservoir		<b>Duration of Survey</b>	24 hours	
Sulphur Dioxide (SO <sub>2</sub> )		µg/m <sup>3</sup>	9.82	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )		µg/m <sup>3</sup>	16.2	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>		µg/m <sup>3</sup>	60	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>		µg/m <sup>3</sup>	26	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Carbon Monoxide (CO)		mg/m <sup>3</sup>	1.11	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)
Lead (as Pb)		µg/m <sup>3</sup>	<0.02	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
<b>Location</b>	3. Switch Yard		<b>Duration of Survey</b>	24 hours	
Sulphur Dioxide (SO <sub>2</sub> )		µg/m <sup>3</sup>	8.04	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )		µg/m <sup>3</sup>	14.6	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>		µg/m <sup>3</sup>	61	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>		µg/m <sup>3</sup>	19	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Carbon Monoxide (CO)		mg/m <sup>3</sup>	0.99	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)
Lead (as Pb)		µg/m <sup>3</sup>	<0.02	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
<b>Remarks: # - Standard for 24 h. monitoring. 1 h. Standard in case of Carbon Monoxide</b>					

ULR- TC748721000003611F

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**FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.**
  
 Kishor Yeole

**BRANCH MANAGER**


Note:

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Page 2 of 2

QF/SALE/03/Issue No 03 Dt 05.12.2019,Amd 01 Dt 01.03.2020





# Mahabal Enviro Engineers Pvt. Ltd.

Engineers, Consultants, Environmental Monitoring Laboratory & Contractors

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Phone : 91-712-2612162, 2612212, WP:9326279040 Email: [mahabal.nagpur@gmail.com](mailto:mahabal.nagpur@gmail.com)

## Test Report

<b>Report No.:</b> ME-NG04132-210318-SA-GMR-WARORA		<b>Date:</b> 18.03.2021	
<b>Name and Address of Customer</b>	GMR WARORA ENERGY LIMITED. Plot No. B-1, Mohabala MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)	<b>Order Reference</b>	
		4800159131 Dt.:03.02.2021	
<b>Sample Description/Type</b>	Ambient Air	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	1. Near CHP 2. Switch Yard 3. Near Reservoir	<b>Sample Quantity/Packing</b>	PM <sub>10</sub> : Filter Paper 3 X 3 No. PM <sub>2.5</sub> : Filter Paper 1 X 3 No. SO <sub>2</sub> : 30 mL X 18 No. PVC Bottle NO <sub>2</sub> : 30 mL X 18 No. PVC Bottle CO: Plastic Bulb 3 X 3 No.
<b>Date of Sampling</b>	08.03.2021 To 09.03.2021	<b>Date of Receipt of Sample</b>	09.03.2021
<b>Sampling Procedure</b>	As per method reference		
<b>Date of Start of Analysis</b>	09.03.2021	<b>Date of Completion of Analysis</b>	13.03.2021

Parameter	Unit	Result	#NAAQM Standard	Method Reference
<b>Location</b>	1. Near CHP	<b>Duration of Survey</b>		24 hours
<b>Discipline: Chemical Testing; Product Group: Atmospheric Pollution (Ambient Air)</b>				
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	7.14	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	11.6	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>	µg/m <sup>3</sup>	49	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>	µg/m <sup>3</sup>	17	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Carbon Monoxide (CO)	mg/m <sup>3</sup>	0.95	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)

ULR- TC748721000003926F

*Report No.04132 Cont...*

Parameter		Unit	Result	#NAAQM Standard	Method Reference
<b>Location</b>	2. Switch Yard		<b>Duration of Survey</b>	24 hours	
Sulphur Dioxide (SO <sub>2</sub> )		µg/m <sup>3</sup>	11.6	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )		µg/m <sup>3</sup>	12.3	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>		µg/m <sup>3</sup>	50	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>		µg/m <sup>3</sup>	24	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Carbon Monoxide (CO)		mg/m <sup>3</sup>	1.06	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)
<b>Location</b>	3. Near Reservoir		<b>Duration of Survey</b>	24 hours	
Sulphur Dioxide (SO <sub>2</sub> )		µg/m <sup>3</sup>	9.82	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )		µg/m <sup>3</sup>	10.0	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>		µg/m <sup>3</sup>	38	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>		µg/m <sup>3</sup>	15	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Carbon Monoxide (CO)		mg/m <sup>3</sup>	0.98	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)
<b>Remarks: #</b> - Standard for 24 h. monitoring. 1 h. Standard in case of Carbon Monoxide					

ULR- TC748721000003926F

-----END-----

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 Kishor Yeole  
**BRANCH MANAGER**


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## Test Report

<b>Report No.:</b> ME-NG04705-210322-SA-GMR-WARORA		<b>Date:</b> 22.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)		<b>Order Reference</b>
			4800159131 Dt.:03.02.2021
<b>Sample Description/Type</b>	Ambient Air	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	1. Near CHP 2. Near Reservoir 3. Switch Yard	<b>Sample Quantity/Packing</b>	PM <sub>10</sub> : Filter Paper 3 X 3 No. PM <sub>2.5</sub> : Filter Paper 1 X 3 No. SO <sub>2</sub> : 30 mL X 18 No. PVC Bottle NO <sub>2</sub> : 30 mL X 18 No. PVC Bottle CO: Plastic Bulb 3 X 3 No.
<b>Date of Sampling</b>	15.03.2021 To 16.03.2021	<b>Date of Receipt of Sample</b>	16.03.2021
<b>Sampling Procedure</b>	As per method reference		
<b>Date of Start of Analysis</b>	16.03.2021	<b>Date of Completion of Analysis</b>	20.03.2021

Parameter	Unit	Result	#NAAQM Standard	Method Reference
<b>Location</b>	1. Near CHP	<b>Duration of Survey</b>		24 hours
<b>Discipline: Chemical Testing; Product Group: Atmospheric Pollution (Ambient Air)</b>				
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	8.04	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	19.2	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>	µg/m <sup>3</sup>	49	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>	µg/m <sup>3</sup>	17	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1.03	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)

ULR- TC748721000004473F



*Report No.04705 Cont...*

Parameter		Unit	Result	#NAAQM Standard	Method Reference
<b>Location</b>	2. Near Reservoir		<b>Duration of Survey</b>		24 hours
Sulphur Dioxide (SO <sub>2</sub> )		µg/m <sup>3</sup>	7.14	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )		µg/m <sup>3</sup>	14.6	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>		µg/m <sup>3</sup>	52	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>		µg/m <sup>3</sup>	21	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Carbon Monoxide (CO)		mg/m <sup>3</sup>	1.11	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)
<b>Location</b>	3. Switch Yard		<b>Duration of Survey</b>		24 hours
Sulphur Dioxide (SO <sub>2</sub> )		µg/m <sup>3</sup>	7.14	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )		µg/m <sup>3</sup>	16.9	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>		µg/m <sup>3</sup>	54	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>		µg/m <sup>3</sup>	18	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Carbon Monoxide (CO)		mg/m <sup>3</sup>	1.09	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)
<b>Remarks: #</b> - Standard for 24 h. monitoring. 1 h. Standard in case of Carbon Monoxide					

-----END-----

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

  
Kishor Yeole  
**BRANCH MANAGER**



Note:

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Phone : 91-712-2612162, 2612212, WP:9326279040 Email: [mahabal.nagpur@gmail.com](mailto:mahabal.nagpur@gmail.com)

## Test Report

<b>Report No.:</b> ME-NG05106-210331-SA-GMR-WARORA		<b>Date:</b> 31.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)		<b>Order Reference</b>
			4800159131 Dt.:03.02.2021
<b>Sample Description/Type</b>	Ambient Air	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	1. Near CHP 2. Near Reservoir 3. Switch Yard	<b>Sample Quantity/Packing</b>	PM <sub>10</sub> : Filter Paper 3 X 3 No. PM <sub>2.5</sub> : Filter Paper 1 X 3 No. SO <sub>2</sub> : 30 mL X 18 No. PVC Bottle NO <sub>2</sub> : 30 mL X 18 No. PVC Bottle CO: Plastic Bulb 3 X 3 No.
<b>Date of Sampling</b>	22.03.2021 To 23.03.2021	<b>Date of Receipt of Sample</b>	23.03.2021
<b>Sampling Procedure</b>	As per method reference		
<b>Date of Start of Analysis</b>	23.03.2021	<b>Date of Completion of Analysis</b>	27.03.2021

Parameter	Unit	Result	#NAAQM Standard	Method Reference
<b>Location</b>	1. Near CHP	<b>Duration of Survey</b>		24 hours
<b>Discipline: Chemical Testing; Product Group: Atmospheric Pollution (Ambient Air)</b>				
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	8.93	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	11.6	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>	µg/m <sup>3</sup>	89	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>	µg/m <sup>3</sup>	30	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Carbon Monoxide (CO)	mg/m <sup>3</sup>	0.76	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)

ULR- TC748721000004854F

*Report No.05106 Cont...*

Parameter		Unit	Result	#NAAQM Standard	Method Reference
<b>Location</b>	2. Near Reservoir		<b>Duration of Survey</b>		24 hours
Sulphur Dioxide (SO <sub>2</sub> )		µg/m <sup>3</sup>	6.25	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )		µg/m <sup>3</sup>	16.9	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>		µg/m <sup>3</sup>	76	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>		µg/m <sup>3</sup>	25	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Carbon Monoxide (CO)		mg/m <sup>3</sup>	0.93	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)
<b>Location</b>	3. Switch Yard		<b>Duration of Survey</b>		24 hours
Sulphur Dioxide (SO <sub>2</sub> )		µg/m <sup>3</sup>	11.6	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )		µg/m <sup>3</sup>	13.1	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>		µg/m <sup>3</sup>	88	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>		µg/m <sup>3</sup>	32	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Carbon Monoxide (CO)		mg/m <sup>3</sup>	0.94	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)
<b>Remarks: #</b> - Standard for 24 h. monitoring. 1 h. Standard in case of Carbon Monoxide					

-----END-----

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

  
Kishor Yeole  
**BRANCH MANAGER**



Note:

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Phone : 91-712-2612162, 2612212, WP:9326279040 Email: [mahabal.nagpur@gmail.com](mailto:mahabal.nagpur@gmail.com)

## Test Report

<b>Report No.:</b> ME-NG04587-210322-SA-GMR-WARORA		<b>Date:</b> 22.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)		<b>Order Reference</b>
			4800159131 Dt.:03.02.2021
<b>Sample Description/Type</b>	Ambient Air	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	1. Anandwan Warora 2. Temporary Township	<b>Sample Quantity/Packing</b>	PM <sub>10</sub> , Pb: Filter Paper 3 X 2 No. PM <sub>2.5</sub> : Filter Paper 1 X 2 No. SO <sub>2</sub> : 30mL X 12 No. PVC Bottle NO <sub>2</sub> : 30mL X 12 No. PVC Bottle CO: Plastic Bulb 3 X 2 No.
<b>Date of Sampling</b>	13.03.2021 To 14.03.2021	<b>Date of Receipt of Sample</b>	14.03.2021
<b>Sampling Procedure</b>	As per Method Reference		
<b>Date of Start of Analysis</b>	14.03.2021	<b>Date of Completion of Analysis</b>	19.03.2021

Parameter	Unit	Result	#NAAQM Standard	Method Reference
<b>Location</b>	1. Anandwan Warora		<b>Duration of Survey</b>	24 hours
<b>Discipline: Chemical Testing; Product Group: Atmospheric Pollution (Ambient Air)</b>				
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	12.5	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	10.0	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>	µg/m <sup>3</sup>	49	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>	µg/m <sup>3</sup>	27	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30
Lead (Pb)	µg/m <sup>3</sup>	<0.02	01	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1.18	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)

ULR- TC748721000004355F

*Report No.04587 cont...*

Location	2. Temporary Township		Duration of Survey		24 hours
Parameter	Unit	Result	#NAAQM Standard	Method Reference	
Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	9.82	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6	
Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	17.7	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10	
Particulate Matter (size less than 10 µm) or PM <sub>10</sub>	µg/m <sup>3</sup>	47	100	IS 5182 (Part 23): 2006	
Particulate Matter (size less than 2.5 µm) or PM <sub>2.5</sub>	µg/m <sup>3</sup>	20	60	CPCB Guidelines for measurement of Air pollutants Volume 1, Page 15 - 30	
Lead (Pb)	µg/m <sup>3</sup>	<0.02	01	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1.15	04	CPCB Guidelines for the Measurement of Ambient Air Pollutants Volume-II, 2012-13, Page No. 16-22, (NDIR method)	
<b>Remarks: #</b> - Standard for 24 h. monitoring. 1 h. Standard in case of Carbon Monoxide					

-----END-----

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.



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Opp. Patel Petrol Pump, Chhindwara Road, Koradi, Dist.Nagpur-441111

Phone : 91-712-2612162, 2612212, WP:9326279040 Email: [mahabal.nagpur@gmail.com](mailto:mahabal.nagpur@gmail.com)

## Test Report

<b>Report No.:</b> ME-NG04133-210318-SA-GMR-WARORA		<b>Date:</b> 18.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala MIDC Growth Center, Post & Tehsil: Warora , Dist: Chandrapur (M.S.)	<b>Order Reference</b>	
		4800159131 Dt.:03.02.2021	
<b>Sample Description/Type</b>	Fugitive Emission	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	1. Near Wagon Tippler Area 2. Near Crusher House 3. In between Ash silo & Ash Pond Area 4. Ash Pond Near Drive House Area	<b>Sample Quantity/Packing</b>	Filter paper 1 X 4 No. Cyclone Cup: 1 X 4 No.
<b>Date of Sampling</b>	08.03.2021	<b>Date of Receipt of Sample</b>	09.03.2021
<b>Sampling Procedure</b>	As per Method Reference	<b>Duration of Survey</b>	8 hours
<b>Date of Start of Analysis</b>	09.03.2021	<b>Date of Completion of Analysis</b>	12.03.2021

Parameter	Unit	Result				#Limit	Method Reference
		1	2	3	4		
<b>Discipline: Chemical Testing; Product Group: Atmospheric Pollution (Fugitive Emission)</b>							
Suspended Particular Matter	µg/m <sup>3</sup>	1746	1409	2523	1088	2000	IS 5182 (Part 4): 1999
<b>Remarks: #:</b> Limit as per MPCB							

END

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Page 1 of 1

QF/SALE/03/Issue No 03 Dt 05.12.2019, Amd 00 Dt 00

**Plot No. F-7, Road No. 21, MIDC Wagle Estate, Thane West - 400604, Maharashtra**  
 (600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Next to Ashida Electrical - near J B Sawant Bus Stop)  
**Phone: 2582 0658/ 3139/ 1663/ 3154 WP: 8928346894 [thane@mahabal.com](mailto:thane@mahabal.com)**





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Opp. Patel Petrol Pump, Chhindwara Road, Koradi, Dist.Nagpur-441111

Phone: 91-712-2612162 T/Fax: 91-712-2612212 Email: nagpur@mahabal.com

## Test Report

<b>Report No.:</b> ME-NG04969-210331-SA-GMR-WARORA		<b>Date:</b> 31.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala, MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)	<b>Order Reference</b>	
		4800146429 Dt.:30.08.2018	
<b>Sample Description/Type</b>	Workplace Air	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	1. CHP Transformer house 2 2. CHP Penthouse 3. CHP/Crusher House 4. CHP Bunker Floor 5. AHP fly silo area	<b>Sample Quantity/Packing</b>	Filter paper 1 X 5 No.
<b>Date of Sampling</b>	19.03.2021	<b>Date of Receipt of Sample</b>	20.03.2021
<b>Sampling Procedure</b>	As per Method Reference	<b>Duration of Survey</b>	1 hours
<b>Date of Start of Analysis</b>	20.03.2021	<b>Date of Completion of Analysis</b>	25.03.2021

Parameter	Unit	Result					#Limit	Method Reference
		1	2	3	4	5		
Total Dust	mg/m <sup>3</sup>	4.82	3.74	2.04	3.80	8.57	10	NIOSH 0500

**Remarks:** #: Limit from The Factories Act, 1948, The Maharashtra Factory Rules, 1963 for 8 hours TWA (Time Weighted Average)

END

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## Test Report

<b>Report No.:</b> ME-NG04758-210322-SA-GMR-WARORA		<b>Date:</b> 22.03.2021
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala MIDC Growth Center, Post & Tehsil: Warora , Dist: Chandrapur (M.S.)	<b>Order Reference:</b>
		4800159131 Dt.:03.02.2021
<b>Sample Description/Type</b>	Noise Level Monitoring	
<b>Date of Sampling</b>	16.03.2021	
<b>Sampling Procedure</b>	IS 9876:1981 & manufacturer Manual	

<b>Discipline: Chemical Testing; Product Group: Atmospheric Pollution (Ambient Noise)</b>					
<b>Location</b>	<b>Unit</b>	<b>Result</b>		<b>Limit (For industrial Zone)</b>	
		<b>Day Time</b>	<b>Night Time</b>	<b>Day Time</b>	<b>Night Time</b>
Near CHP	dB(A)	65.3	61.3	75	70
Near Switch Yard	dB(A)	62.7	60.4		
Near Reservoir	dB(A)	62.1	61.3		

END

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## Test Report

<b>Report No.:</b> ME-NG03815-210311-SA-GMR-WARORA		<b>Date:</b> 11.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala MIDC Growth Center, Post & Tehsil: Warora , Dist: Chandrapur (M.S.)		<b>Order Reference:</b> 4800159131 Dt.:03.02.2021
	<b>Sample Description/Type</b>	Industrial Effluent	<b>Sample Collected by</b> Laboratory
<b>Sampling Location</b>	Condensate Cooling Water	<b>Sample Quantity/Packing</b>	1 L X 1 No. PVC Can
<b>Date of Sampling</b>	02.03.2021	<b>Date of Receipt of Sample</b>	03.03.2021
<b>Sampling Procedure</b>	IS:3025(Part I): 1987 RA2003, APHA 23 <sup>rd</sup> Ed. 2017, 1060-B, 1-40		
<b>Date of Start of Analysis</b>	03.03.2021	<b>Date of Completion of Analysis</b>	03.03.2021

ULR- TC748721000003631F

Sr. No	Parameter	Unit	Result	Limit as per Consent	Method Reference
<b>Discipline: Chemical Testing; Product Group: Pollution &amp; Environment (Waste Water)</b>					
1	Temperature	°C	30	Not to exceed 5°C higher than the intake water	APHA 23 <sup>rd</sup> Ed. 2017, 2550-B, 2-74
2	pH	-	8.2	6.5 to 8.5	APHA 23 <sup>rd</sup> Ed. 2017, 4500-H <sup>+</sup> - B, 4-95
3	Total Free Chlorine (Residual)	mg/L	<0.05	0.5 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 4500-Cl-G, 4-72
<b>Remark:</b>					

END

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**Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 [thane@mahabal.com](mailto:thane@mahabal.com)**





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Phone : 91-712-2612162, 2612212 Email: [mahabal.nagpur@gmail.com](mailto:mahabal.nagpur@gmail.com)

## Test Report

<b>Report No.:</b> ME-NG03816-210311-SA-GMR-WARORA		<b>Date:</b> 11.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala, MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)	<b>Order Reference</b>	
		4800159131 Dt.:03.02.2021	
<b>Sample Description/Type</b>	Industrial Effluent	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	Cooling Tower Blow Down	<b>Sample Quantity/Packing</b>	1 L X 1 No. PVC Can 500mL X 1 No. PVC Can
<b>Date of Sampling</b>	02.03.2021	<b>Date of Receipt of Sample</b>	03.03.2021
<b>Sampling Procedure</b>	IS:3025(Part I): 1987 RA2003, APHA 23 <sup>rd</sup> Ed. 2017, 1060-B, 1-40		
<b>Date of Start of Analysis</b>	03.03.2021	<b>Date of Completion of Analysis</b>	11.03.2021

ULR- TC748721000003632F

Sr. No.	Parameter	Unit	Result	Limit as Per Consent	Method Reference
<b>Discipline: Chemical Testing; Product Group: Pollution &amp; Environment(Waste Water)</b>					
1	Free Chlorine (Residual)	mg/L	<0.05	0.5 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 4500-Cl-G, 4-72
2	Phosphate Total (as PO <sub>4</sub> )	mg/L	3.39	5.0 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 4500-P E, 4-164
<b>Residues in water (Trace metal Element)</b>					
3	Chromium Total (as Cr)	mg/L	N.D.	0.2 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 3111-B, 3-20
4	Zinc (as Zn)	mg/L	0.043	1.0 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 3111-B, 3-20
<b>Remark:</b>					

-----END-----

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QF/SALE/02/Issue No 03 Dt 05.12.2019,Amd 00 Dt 00

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Phone : 91-712-2612162, 2612212 Email: [mahabal.nagpur@gmail.com](mailto:mahabal.nagpur@gmail.com)

## Test Report

<b>Report No.:</b> ME-NG03817-210311-SA-GMR-WARORA		<b>Date:</b> 11.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala, MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)		<b>Order Reference</b>
			4800159131 Dt.:03.02.2021
<b>Sample Description/Type</b>	Industrial Effluent	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	Boiler Blow Down	<b>Sample Quantity/Packing</b>	1 L X 1 No. PVC Can 500mL X 1 No. PVC Can
<b>Date of Sampling</b>	02.03.2021	<b>Date of Receipt of Sample</b>	03.03.2021
<b>Sampling Procedure</b>	IS:3025(Part I): 1987 RA2003, APHA 23 <sup>rd</sup> Ed. 2017, 1060-B, 1-40		
<b>Date of Start of Analysis</b>	03.03.2021	<b>Date of Completion of Analysis</b>	11.03.2021

ULR- TC748721000003633F

Sr. No.	Parameter	Unit	Result	Limit as Per Consent	Method Reference
<b>Discipline: Chemical Testing; Product Group: Pollution &amp; Environment (Waste Water)</b>					
1	Total Suspended Solids	mg/L	<5	100 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 2540-D, 2-70
2	Oil and Grease	mg/L	N.D.	20 Max.	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
<b>Residues in water (Trace metal Element)</b>					
3	Total Copper (as Cu)	mg/L	N.D.	1.0 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 3111-B, 3-20
4	Iron (as Fe)	mg/L	<0.08	1.0 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 3111-B, 3-20
<b>Remark:</b> N.D. Not Detected					

END

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

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Phone : 91-712-2612162, 2612212 Email: [mahabal.nagpur@gmail.com](mailto:mahabal.nagpur@gmail.com)

## Test Report

<b>Report No.:</b> ME-NG03818-210311-SA-GMR-WARORA		<b>Date:</b> 11.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala, MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)		<b>Order Reference</b>
			4800159131 Dt.:03.02.2021
<b>Sample Description/Type</b>	Industrial Effluent	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	D.M. Plant Effluent	<b>Sample Quantity/Packing</b>	2 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle 100mL X 1 No. PVC Can
<b>Date of Sampling</b>	02.03.2021	<b>Date of Receipt of Sample</b>	03.03.2021
<b>Sampling Procedure</b>	IS:3025(Part I): 1987 RA2003, APHA 23 <sup>rd</sup> Ed. 2017, 1060-B, 1-40		
<b>Date of Start of Analysis</b>	03.03.2021	<b>Date of Completion of Analysis</b>	11.03.2021

ULR- TC748721000003634F

Sr. No.	Parameter	Unit	Result	Limit as Per Consent	Method Reference
<b>Discipline: Chemical Testing; Product Group: Pollution &amp; Environment (Waste Water)</b>					
1.	pH	-	7.8	5.5-9.0	APHA 23 <sup>rd</sup> Ed. 2017, 4500-H <sup>+</sup> - B, 4-95
2.	Total Dissolved Solids	mg/L	651	2100 Max.	IS 3025 (Part 16):1984 RA 2006, Ed.2.1(1999-12)
3.	Total Suspended Solids	mg/L	21	100 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 2540-D, 2-70
4.	Biochemical Oxygen Demand (3 days 27°C)	mg/L	14	30 Max.	IS 3025 (Part 44): 1993, Reaffirmed 2009
5.	Chemical Oxygen Demand	mg/L	44	250 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 5220-B, 5-18
6.	Oil and Grease	mg/L	N.D.	10 Max.	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
<b>Remarks:</b> N.D. – Not Detected					

-----END-----

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

Kishor Yeole

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## Test Report

<b>Report No.:</b> ME-NG03819-210311-SA-GMR-WARORA		<b>Date:</b> 11.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala, MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)		<b>Order Reference</b>
			4800159131 Dt.:03.02.2021
<b>Sample Description/Type</b>	Industrial Effluent	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	Ash Pond Effluent	<b>Sample Quantity/Packing</b>	1 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
<b>Date of Sampling</b>	02.03.2021	<b>Date of Receipt of Sample</b>	03.03.2021
<b>Sampling Procedure</b>	IS:3025(Part I): 1987 RA2003, APHA 23 <sup>rd</sup> Ed. 2017, 1060-B, 1-40		
<b>Date of Start of Analysis</b>	03.03.2021	<b>Date of Completion of Analysis</b>	11.03.2021

Sr. No.	Parameter	Unit	Result	Limit as Per Consent	Method Reference
<b>Discipline: Chemical Testing; Product Group: Pollution &amp; Environment (Waste Water)</b>					
1.	pH	-	8.5	5.5-9.0	APHA 23 <sup>rd</sup> Ed. 2017, 4500-H <sup>+</sup> - B, 4-95
2.	Total Suspended Solids	mg/L	19	100 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 2540-D, 2-70
3.	Oil and Grease	mg/L	N.D.	10 Max.	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
<b>Remarks:</b> N.D. – Not Detected					

-END-

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

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## Test Report

<b>Report No.:</b> ME-NG03820-210311-SA-GMR-WARORA		<b>Date:</b> 11.03.2021	
<b>Name and Address of Customer</b>	<b>GMR WARORA ENERGY LIMITED.</b> Plot No. B-1, Mohabala, MIDC Growth Center, Post & Tehsil: Warora, Dist: Chandrapur (M.S.)		<b>Order Reference</b>
			4800159131 Dt.:03.02.2021
<b>Sample Description/Type</b>	Domestic Effluent	<b>Sample Collected by</b>	Laboratory
<b>Sampling Location</b>	1. STP Inlet 2. STP Outlet	<b>Sample Quantity/Packing</b>	2 L X 2 No. PVC Can 100mL X 2 No. PVC Can 1 L X 2 No. Glass Bottle
<b>Date of Sampling</b>	02.03.2021	<b>Date of Receipt of Sample</b>	03.03.2021
<b>Sampling Procedure</b>	IS:3025(Part I): 1987 RA2003, APHA 23 <sup>rd</sup> Ed. 2017, 1060-B, 1-40		
<b>Date of Start of Analysis</b>	03.03.2021	<b>Date of Completion of Analysis</b>	11.03.2021

ULR- TC748721000003636F

Sr. No.	Parameter	Unit	Result		Limit as Per Consent	Method Reference
			1	2		
<b>Discipline: Chemical Testing; Product Group: Pollution &amp; Environment (Waste Water)</b>						
1.	pH	-	7.5	7.2	5.5-9.0	APHA 23 <sup>rd</sup> Ed. 2017, 4500-H <sup>+</sup> - B, 4-95
2.	Total Dissolved Solids	mg/L	655	618	2100 Max.	IS 3025 (Part 16):1984 RA 2006, Ed.2.1(1999-12)
3.	Total Suspended Solids	mg/L	53	41	50 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 2540-D, 2-70
4.	Biochemical Oxygen Demand (3 days 27°C)	mg/L	16	8.4	30 Max.	IS 3025 (Part 44): 1993, Reaffirmed 2009
5.	Chemical Oxygen Demand	mg/L	52	28	100 Max.	APHA 23 <sup>rd</sup> Ed. 2017, 5220-B, 5-18
6.	Oil and Grease	mg/L	N.D.	N.D.	10 Max.	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
<b>Remarks:</b> N.D. – Not Detected						

END

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

Kishor Yeole

**BRANCH MANAGER**



Note:

- The result listed refers only to the tested sample(s) and applicable parameter(s).
- This report is not to be reproduced except in full, without written approval of the laboratory.

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**Plot No. F-7, Road No. 21, MIDC Wagle Estate, Thane West - 400604, Maharashtra**  
 (600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Next to Ashida Electrical - near J B Sawant Bus Stop)  
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