ADITYA BIRLA
EMIL

Ref. No. A/ 421/2022-23

Dated–09.12.2022
(By e-mail)

To

The Director,
Ministry of Environment, Forests & Climate Change
3rd Floor, Vayu Wing, Indira Paryavaran Bhavan
Jor Bagh Road, New Delhi - 110 003
INDIA (diriapolicy-moefcc@gov.in; s.kerketta66@gov.in)

Sub: Submission of half-yearly EC compliance status for the period April-2022 to September-2022 in respect of 1 MTPA Iron Ore Beneficiation Plant at Village-Basantapur, Tehsil-Jhumpura, District-Keonjhar of Essel Mining & Industries Limited.

Ref: 1. Environment Clearance (EC) Vide letter F. No. J-11015/51/2008-IA-II (M) on dated 30.03.2022.
2. S.O. 5845(E), dated the 26th November, 2018

Sir,

With reference to the letters and on the subject cited above, we are submitting herewith the half-yearly EC compliance status along with environmental monitoring report and other relevant documents in respect of 1 MTPA Iron Ore Beneficiation Plant at Village-Basantapur, Tehsil-Jhumpura, District-Keonjhar for the period of **April-2022 to September-2022.**

This is for favour of your kind perusal.

Thanking you,

Yours Faithfully,
For **ESSEL MINING & INDUSTRIES LTD.**

Sh. Ravindra Ku Sahu
Vice President & Plant Head

Encl: As above.

Cc: 1. Ministry of Env., Forest and Climate Change, Eastern Regional Office, Bhubaneswar, e-mail: roez.bsr-mef@nic.in
2. The Member Secretary, State Pollution Control Board, Odisha.
e-mail: membersecretary@ospcboard.org
3. Regional Director, Central Pollution Control Board, Kolkata.
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Regd. Office: Industry House, 18th Floor, 10, Camac Street, Kolkata – 700017

HALF YEARLY COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE CONDITIONS

Name of the Project: Compliances to the conditions of the Environmental Clearance for Iron Ore Beneficiation Plant located in Village – Basantpur, Sub-division – Champua, Tehsil- Barbil, District – Keonjhar, Odisha of M/s. Essel Mining & Ind. Ltd.

EC Approval Letter: F. No. J-11015/51/2008-IA-II (M) on dated 18.06.2010 (Original), F. No. J-11015/51/2008-IA-II (M) on dated 27.09.2011 (Transfer of EC to PMPL) and F. No. J-11015/51/2008-IA-II (M) on dated 30.03.2022 (Transfer of EC to EMIL)

Period of Compliance Report: April-2022 to September-2022

Sl. No.	Conditions	Compliance
	Specific conditions	
(i)	The project proponent shall obtain prior Consent to Establish and Consent to operate for the project from the State Pollution Control Board, Orissa and shall effectively implement all the conditions stipulated therein.	Consent to Establish obtained from OSPCB vide letter no-22029/Ind-ll-NOC-4812 dated on 24.12.2010 and the latest Consent to Operate is obtained from OSPCB vide letter no-5737/lND-I-CON-6407 dated on 05.04.2022 with validity up to 31.03.2023. The conditions stipulated in the Consent order issued from SPCB, Odisha are being implemented effectively.
(ii)	The water recovery and spill way system shall be so designed that the natural water resources are not affected and that no spill water goes into the nearby Baitarni River.	Zero discharge concept is being adapted in the plant. All the process water is being recycled to the process through concentrate thickener. Adequate safe guard measures have been taken and proper water recovery system /spill way system has been developed for recycle and reuse of the spill water generated from the plant. No water including the surface runoff generated during monsoon is discharged outside the plant premises. The surface runoff is impounded in the rain water harvesting pond within the plant. Hence, the probability of natural water resources are getting affected by spill water is zero.

Sl. No.	Conditions	Compliance
(iii)	The project proponent shall carry out conditioning of the ore with water to mitigate fugitive dust emission.	The raw materials in form of Iron Ore fines of size 0-10mm that are being procured from the nearby mines for beneficiation are already conditioned with water. It is established that the iron ore fines that are reaching at the project site contains 5 to 10% moisture. Fixed water sprinklers arrangement have been made at material stack yard area, loading and unloading points for conditioning of the ore as well as to control the fugitive dust emission. Besides, material feeding point to the beneficiation plant and discharge chutes of the conveyor are fitted with dry fog system to prevent the fugitive dust emission.
(iv)	No activity relating to the project shall be undertaken within 500m of HFL of River Baitarni.	The Plant is far away from the bank of river Baitarani. No activity has been carried out within 500 meter of HFL of the river Baitarani.
(v)	Raw material for beneficiation shall be obtained from the mines existing within 30 km of the plant.	Efforts have been made to procure the raw materials especially iron ore fines from the nearby mines located within 30 km of the plant site. Other raw materials like coke, limestone, Bentonite etc. being not available in the locality, same are procured from outside the state.
(vi)	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as crusher zone, loading and unloading point and all transfer points during handling of the ore. Extensive water sprinkling shall be carried out on roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	The dust control measures at haulage roads, approach road to material stack yard and loading & unloading areas is being carried out with fixed type water sprinklers. In addition to above, mobile water is also deployed to arrest the dust getting airborne due to vehicular movement. All the material feeding points to the plant and discharge chutes of the conveyer are equipped with Dry Fog System. ESP is operational at Indurating Furnace area and Bag Filter arrangement have been made at proportionating Building to control the fugitive dust emission. All the necessary air pollution control measures are being strictly followed to

Sl. No.	Conditions	Compliance
		control the air pollutant emission to maintain it well within the norms prescribed by CPCB. The air quality at the plant site is well within the prescribed standards of OSPCB /CPCB. Ambient air quality report attached as **Annexure - A.**
(vii)	The reject generated during the beneficiation process shall be stacked at earmarked dump site only and it should not be kept active for a long period and their phase-wise stabilization shall be carried out. There shall be one external reject dump in an area of 12.536ha. The maximum height of the dumps shall not exceed 30m having 3 terraces of 10m each and the overall slope of the dump shall be maintained to 28°. The dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. The reject dump shall be suitably rehabilitated with coco-coir/geo textile to prevent erosion and prevention of fine particles getting airborne. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.	12.536 Ha area within plant premise earmarked for dumping of rejects generated during iron ore beneficiation process and the rejects are being stacked in the area taking all adequate environment protection measures such as the reject dump is being compacted and conditioned in regular interval of time to avoid any sort of fugitive emission getting airborne. The maximum height of the dumps is being kept within 30 m having 3 terraces of 10 m each and the overall slope of the dump is being maintained at below 28°. The dump will be scientifically vegetated with suitable native species once it attains the maturity the same shall be suitably rehabilitated with coco-coir/geo textile to prevent erosion and prevention of fine particles getting airborne. The compliance reports are being submitted to the MoEF Regional Office, BBSR and MoEF &CC, New Delhi on six monthly basis.
(viii)	Catch drains and siltation ponds of appropriate size shall be constructed around the reject dump to prevent run off of water and flow of sediments directly into the Baitarni River and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after the monsoon and maintained properly. Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the reject dump to prevent run off of water and flow of sediments directly into the Baitarni River and other water bodies	Retaining wall (150mtr Length, 200mm width & 2mtr height), catch drains/garland drain (60mtr Length, 500mm width & 500mm depth), with Siltation pond (2mtr Length, 2mtr width & 2.5mtr depth), has been constructed around the earmarked reject dump/tailing cake disposal area to collect the runoff water during rain. The water collected in the siltation pond is being recycled and reused in the plant. The drains and pond is cleaned regularly to accommodate the surface runoff water collection more effective. No water is discharged outside the plant premises.

Sl. No.	Conditions	Compliance
	and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.	One Rain Water Harvesting structure having holding capacity of 212250 m^3 have been constructed to store the surface runoff water within the plant premise. This water thus collected is being used inside the plant premises for different purposes.
(ix)	As part of the post project monitoring of ambient air quality, there shall be at least one monitoring station within 500m of the project in predominant down wind direction.	Ambient Air Quality (AAQ) monitoring has been carried out in core as well as buffer zone at 4 locations and these locations has been decided in consultation with Regional Officer, SPCB, Odisha. Based on the predominant wind direction, one AAQ monitoring location has been established within 500m of the project site in Nediguth Village.
(x)	The tailing pond/slime pond shall be lined with impervious lining.	Filter Press with concentrated thickener are being used in place of Tailing Pond to handle slime water but an emergency tailing pond has been constructed to collect the slime water during excessive flow of slime water in to the Thickener & Filter Press. The Emergency tailing pond has been constructed with Cement Concrete. The tailings generated from the filter press in form of dry cake are being disposed off in the earmarked tailing disposal area. The tailing disposal area is properly lined with impervious clay liner.
(xi)	The ground water quality around the tailing pond/slime pond shall be monitored regularly and records maintained.	One monitoring station is established in between the emergency slime pond area and nearby Baitarani river. Ground Water quality monitoring is being carried out on regular interval inside the plant premises and records are maintained. Ground Water Quality Monitoring Report is attached in **Annexure- A.**

Sl. No.	Conditions	Compliance
(xii)	The garland drain shall be constructed around the tailing/slime pond.	Concentrated thickener & Filter Press are being used in the plant for handling slime water /tailing water. The slime water is being sent to the concentrated thickener and from there the recovered water is being recycled to the process and concentrated tailing is being sent to filter press from thickener for the formation of filter cake for onward disposal at the earmarked site inside the plant premises. However, an emergency tailing slime pond has been constructed to handle any sort of emergency situation and pond is made with Cement Concrete.
(xiii)	The decanted water from the tailing/ slime pond shall be re-circulated and there should be zero discharge from the slime/tailing pond.	Filter Press technology and concentrated thickener has been used in process to handle the slime water generated from the process. The slime water is being recycled to the process through the concentrated thickener and the tailings are being sent to filter press for making tailing cake. No slime pond is required for the plant. Only an emergency slime pond has been made to handle any sort of emergency situation. The plant is designed with zero effluent discharge. The decanted water from the emergency slime pond is being recycled to the process through concentrated thickener.

Sl. No.	Conditions	Compliance
(xiv)	The groundwater quality around the tailing/ slime pond shall be monitored regularly. The monitoring network shall be designed in consultation with State Ground Water Board /Central Ground Water Authority. There shall be at least one monitoring station between the tailing/slime pond and the river	Concentrated thickener & Filter Press are used in the plant for handling slime water /tailing water. The slime water is being sent to the concentrated thickener and from there the recovered water is being recycled to the process and concentrated tailing is being sent to filter press from thickener for the formation of filter cake for onward disposal at a earmarked site inside the plant premises. No tailing pond/slime pond is required for the plant. However, an emergency slime pond has been constructed to handle any sort of emergency situation and pond is made with Cement Concrete to avoid any seepage / percolation to contaminate the ground water. Presently, Ground Water monitoring is being carried out inside the plant premises to check the quality of ground water. One monitoring station is in between the emergency slime pond area and river which has been constructed with consultation of the OSPCB officials.
(xv)	Plantation shall be raised in an area of 10.65ha including a green belt of at least 10m width all around the plant by planting the native species in consultation with the local DFO/Agriculture Department.	Total project area of our integrated plant is 79.77 Acres. 33% of total area which is 26.32 acres which is covered with plantation of about 26,500 saplings of different varieties. The major plantation area is along the boundary of the plant covering 10 m width. This is done in consultation with the local forest dept. officials.
(xvi)	The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	A Report on Rain Water Harvesting in the project area has been prepared in consultation with the Regional Director, CGWA, Bhubaneswar and same have been implemented at the site.
(xvii)	Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers in and around the project area during the beneficiation process. The periodic monitoring [(at least four	One number of water Reservoir having holding capacity of 212250 m^3 have been constructed. During rainy season, surface runoff of the plant area is channelized & collected in the reservoir for industrial use.

Sl. No.	Conditions	Compliance
	times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.	The reservoir is serving the dual purpose of storage as well as augmentation of ground water potential through recharge. A Hydro-geological study has also been carried out in consultation with CGWB, Odisha. The area is falling under Safe Category as per CGWA notification. Both ground water level & quality are being monitored in and around the plant premises on quarterly basis and the results are being submitted to the Regional Office, MoEF&CC, Bhubaneswar and MoEFCC, New Delhi, Regional Director, CGWB, Bhubaneswar and Member Secretary, Central Ground Water Authority, New Delhi.
(xviii)	The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and groundwater) required for the project.	Dept. of Water Resources, Govt. of Odisha allocated 0.305cusec of surface water from the river Baitarani for meeting the requirement of process water. Requisite NOC obtained from the Central Ground Water Authority, New Delhi for withdrawal of Ground water to the tune of 0.35 cusec for the project. NOC obtained from CGWA Attached in **Annexure-B**
(xix)	Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.	Hydro-geological study has been carried out in consultation with CGWB, Odisha for the Plant site covering the core and buffer zone. The area is falling under Safe Category as per the CGWA notification. A Report on Rain Water Harvesting in the project area has been prepared in consultation with the Regional Director, CGWB, Bhubaneswar which is being implemented. One number of rain water harvesting structure having capacity of 212250 m^3 has been constructed. During rainy season, surface runoff of the plant area is channelized & collected in the reservoir for use in plant operation.

Sl. No.	Conditions	Compliance
		The reservoir is serving the dual purpose of storage as well as augmentation of ground water potential through recharge.
(xx)	Appropriate mitigative measures shall be taken to prevent pollution of the Baitarni River in consultation with the State Pollution Control Board.	The plant is designed with Zero Discharge Concept. No effluent / runoff water is being discharged from the plant premises to the Baitarani River. In consultation with the OSPCB officials, appropriate measures have been taken to recycle & re-use the waste water to prevent pollution of Baitarani river.
(xxi)	Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.	The vehicles are maintained properly to ensure emission levels within permissible limit and the monitoring is done regularly for the emission of the vehicles to ascertain that the emissions from vehicles meet the pollution norms. Mineral carrying trucks are not allowed to entry/exit the plant premises without tarpaulin cover and is being monitored by security personnel at the exit gate. Similarly, Security personnel also do not allow the vehicle to enter into the premise without having valid PUC. The overloading matter is being checked at the Govt. managed weigh bridge at the exit point of the plant.
(xxii)	Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	The dust control measures at mineral stack yard and loading & unloading areas are being carried out with fixed type water sprinklers. In addition to above, mobile water sprinklers are also deployed to arrest the dust getting airborne along the haulage road. All the material feeding points to the plant and discharge chutes of the conveyer are equipped with Dry Fog System to arrest the suspended dust. ESP is operational at Indurating Furnace area and Bag Filter arrangement have been made at proportionating Building to control the fugitive dust emission. Periodical maintenance of the Pollution Control Equipments are being undertaken in-house for their smooth operation.

Sl. No.	Conditions	Compliance
(xxiii)	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and the wastewater generated during the beneficiation process .	Staff quarters or Colony has not been constructed yet within the plant premise. However, a very negligible quantity of effluents/sewage generated from the Plant office/Admin Office (i.e. from the daily water use of employees and workers) is being discharged to the soak pit via septic tank constructed as per BIS specification. All the process water is being recycled to the process through Concentrate thickener so construction of ETP is not needed. The waste water (i.e. Slime Water) generated from the beneficiation process is being recycled to the process completely for re-use.
(xxiv)	The project authorities should undertake sample survey to generate data on pre-project community health status within a radius of 1 km from the proposed project.	Sample survey to generate data on pre-project community health status within a radius of 1 km from the project was carried out during EIA study. Periodical health Check-up is being organised in the nearby villages through mobile Health Care Unit supported with doctors & paramedics.
(xxv)	Occupational health surveillance program of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed. Health records of the workers shall be maintained.	Health Surveillance Programme in frequent interval for all the employees and workers are being carried out and records are being maintained. The beneficiation process is wet beneficiation process. No such health hazards have been reported related to dust. Moreover, adequate measures has been taken to abate the dust generation in material stack yard, loading and unloading point, discharge chutes of conveyor etc.
(xxvi)	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.	Pre-employment and Periodical medical check-up for all the employees and workers are being carried out and records are being maintained.

Sl. No.	Conditions	Compliance
(xxvii)	The R&R of the project affected people shall be carried out as per the NPRR. The plan shall be prepared within three months in consultation with State Government and a copy submitted.	The private lands involved in the project site have been purchased with the mutual agreement with the local villagers and Gram panchayat. Though the existing R& R Plan of the State Govt. is not applicable to the project, however the company has made a commitment to give employment at least to 1(One) member form the families from whom the land was purchased besides rendering other services. No SC/ST Land or Home stead land is involved in the project area, So R&R Plan is not envisaged. However, we have agreed to give compensation as per the Orissa Resettlement and Rehabilitation Policy 2006 if required.
(xxviii)	The project proponent shall take all precautionary measures during mining operation for conservation and protection of flora and endangered fauna namely elephant, sloth bear, python, peacock etc. spotted in the study area. Action plan for conservation of flora and fauna prepared shall be implemented in consultation with the State Forest and Wildlife Department. All the safeguard measures brought out in the Wildlife Conservation Plan so prepared specific to this project site shall be effectively implemented. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of action plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.	This is not a mining unit. On the other hand, it is an industry for production of iron ore pellets and no such endangered fauna noticed in the plant premises. A site specific wild life Conservation Plan has been prepared and duly approved from PCCF-cum-Chief Wild Life Warden, Odisha for the conservation of Schedule-I fauna living in the 10 km radius of the buffer zone of the plant site. The measures proposed in the Plan for the core zone are being implemented in consultation with the concerned Forest Department.
(xxix)	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of	For construction worker all necessary arrangements such as infrastructure facilities i.e. temporary housing/shelter room, toilets, fuel for cooking, drinking water facility, First-aid facility were made. At present the plant is in operational stage.

Sl. No.	Conditions	Compliance
	temporary structures to be removed after the completion of the project.	
(xxx)	The critical parameters such as RSPM (Particulate matter with size less than 10micron i.e., PM_{10}), NO_X in the ambient air within the impact zone shall be monitored periodically. Further, quality of discharged water shall also be monitored [TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.	Ambient Air Quality (AAQ) monitoring is being carried out at 4 locations covering core and buffer zone which is observed to be well within the NAAQ Standards. The process water being used is recycled and reused in the process itself. Hence, there is no discharge of any effluents out site the plant premises. However, the surface water quality monitoring is being carried out at 5 locations including the reservoir pond within the plant premise. The status of compliance of the environmental clearance conditions, including results of monitored data are being uploaded in our company's website and the URL is http://www.esselmining.com/sustainability/environmental_reports.html and are updated periodically. All the environmental monitoring reports are being displayed electronically at the Main Gate of the Plant.
General Conditions		
(i)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Environment clearance (EC) to the project was initially accorded by the Ministry vide letter no. J-11015/51/2008-IA.II (M) dated 18/06/2010 in the name of M/s Hari Machines Limited for Iron Ore Beneficiation Plant. Subsequently, the EC was transferred to M/s. Pro Minerals Private Limited by the Ministry vide letter of even no. dated 27/09/2011. M/s Pro Minerals (P) Limited has been amalgamated with M/s Essel Mining & Industries Limited. Therefore, the said EC was transferred from PMPL to EMIL by the Ministry vide letter of even no. dated 30/03/2022. Approval will be sought from MoEF&CC before any expansion / modification of the plant.

Sl. No.	Conditions	Compliance
(ii)	Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 micron i.e., PM_{10}), NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	Ambient Air Quality (AAQ) monitoring is being carried out at 4 locations twice in a week covering core and buffer zone. The frequency of monitoring, location of monitoring stations is being done in consultation with Regional Officer, OSPCB, Keonjhar. The results are observed to be well within the NAAQ standard.
(iii)	Data on ambient air quality RSPM (Particulate matter with size less than 10 micron i.e., PM_{10}), & NOx should be regularly submitted to the Ministry of Environment and Forests including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.	The AAQ monitoring reports, Water Quality analysis report and Noise Monitoring Reports are being submitted to Ministry of Environment and Forests including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board on six monthly basis.
(iv)	Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. shall be provided with ear plugs / muffs.	All the Plant machineries have been designed as per Industrial specification to control the noise level within the limit. Adequate measures are being taken to limit the noise level within the prescribed limit given by statutory authorities. Ear plugs and Ear muffs are being provided to the workers and employees engaged in operations of HEMM and high noise generating machines / locations.
(v)	Industrial wastewater shall be properly collected and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December, 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.	The plant is designed and being operated with zero discharge concept. The waste water generated from the process is being treated and recycled to the process through concentrated thickener. Adequate safe guard measures have been taken and proper water recovery system /spill way system has been developed for recycle and reuse of the spill water generated from the plant.

Sl. No.	Conditions	Compliance
		No water is discharged outside the plant premises. The domestic waste water generated from the plant (i.e. from the daily water use of employees and workers) is being discharged to the soak pit via septic tank constructed as per specification.
(vi)	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Adequate dust suppression measures are being taken to arrest the dust getting air borne. In addition to above, dust masks are provided to the workers & employees working in these area. The HR & Safety Department is made responsible to create awareness & provide necessary training to the workers and employees with adequate safety appliances for maintaining occupational health and safety in the workplace. Health Surveillance Programme in frequent interval for all the employees and workers are being carried out to observe any contraction due to exposure to dust and if observed, corrective action is being taken immediately.
(vii)	Separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.	A Environment Management Cell with qualified personnel from Environmental back ground is working under the guidance of a Senior Executive for proper management of environment in and around the plant premises and for the compliance of all statutory requirements.
(viii)	The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	The Consent to Establish from the State Pollution Board, Bhubaneswar was granted on 24/12/2010. Environmental Clearance granted in the name of Hari Machine on 18/06/2010 which was transferred to PMPL on 27/09/2011 and subsequently transferred to EMIL on 30/03/2022. Consent to Operate has been obtained on dated 01.05.2013 and subsequently renewed on dated 05.04.2022 valid till 31.03.2023.

Sl. No.	Conditions	Compliance
(ix)	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.	An amount of 5.2 Crores as fixed cost and 0.50 Crores as recurring cost for 5 years was kept separately for environment management in the 1.0 MTPA Iron Ore Beneficiation Plant. The entire environmental pollution control infrastructure has already been installed. Expenditure occurred towards environment management during the year 2021-22 is given in **Annexure-C**.
(x)	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	Six monthly progress status reports to the conditions given in the Environment Clearance are being submitted to the Regional Office of MoEF with a copy to MoEF&CC, New Delhi as stipulated.
(xi)	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by email) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board.	Six monthly progress status report to the conditions given in the Environment Clearance and monitoring results of different environment parameters carried out are being submitted to the Regional Office of MoEF at Bhubaneswar with a copy to MoEF, New Delhi, Zonal Office of CPCB at Kolkata, West Bengal and SPCB, Odisha as stipulated. The status of compliance of the environmental clearance conditions, including results of monitored data are being uploaded in our company's website (http://esselmining.com/sustainability/environmental_reports.html) and are updated periodically. However, one LED type electronic display board has been installed in front of the main gate in public domain for display of monitored data.
(xii)	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,	The copy of the environmental Clearance letter was submitted in the office Basantpur GP. The clearance letter has also been put on the website of the Company.

Sl. No.	Conditions	Compliance
	were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	
(xiii)	The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.	The same had been duly complied post obtaining the EC.
(xiv)	The environmental 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 environmental clearance conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.	Environment Statement in prescribed Form-V for each financial year i.e. ending at 31st March is being submitted to State Pollution Control Board. It is being uploaded in the company's website along with the status of compliance of environmental clearance conditions.
(xv)	The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at **http://envfor.nic.in** and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.	Advertisement of Environment Clearance was published in the local newspapers (both in English and Odia) regarding grant of clearance to the 1.0 MTPA Beneficiation Plant of M/s Pro Minerals Pvt. Ltd. within 7 days from the date of issuance of Environmental Clearance. The detail advertisements are annexed as **Annexure-D**.

Sh. Ravindra Ku Sahu
Vice President & Plant Head

Monthly Report On Environmental Monitoring Data for the Month of April - 2022

For

M/S ESSEL MINING & INDUSTRIES LTD.

P.O. Basantpur, Tahasil- Jhumpura,

Keonjhar, Odisha- 758034

Prepared By:

Orectic Consulting Private Limited
Housing Board Colony, Chandrasekharpur,
Bhubaneswar- 751024, Odisha.

CONTENTS

Weekly Ambient Air Monitoring Data Generated

For the Month of April– 2022

LOCATION AND WEEKLY MONITORING SCHEDULE
(FOR APRIL- 2022)

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near Filter Cake Storage Yard		√				√	
Near Crushing Plant		√				√	
Near Raw Material Stack Yard		√				√	
Nediguth Village		√				√	

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Summary Sheet of Sampling (AAQ):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	Near Filter cake storage yard	01.04.2022	OCPL/ AAQ/EMIL/01/04/22
2.	Sample 02	Near Crushing Plant	01.04.2022	OCPL/ AAQ/EMIL/02/04/22
3.	Sample 03	Near Raw Material Stack Yard	01.04.2022	OCPL/ AAQ/EMIL/03/04/22
4.	Sample 04	Nedigutha Village	05.04.2022	OCPL/ AAQ/EMIL/04/04/22
5.	Sample 05	Near Filter cake storage yard	04.04.2022	OCPL/ AAQ/EMIL/05/04/22
6.	Sample 06	Near Crushing Plant	04.04.2022	OCPL/ AAQ/EMIL/06/04/22
7.	Sample 07	Near Raw Material Stack Yard	04.04.2022	OCPL/ AAQ/EMIL/07/04/22
8.	Sample 08	Nedigutha Village	12.04.2022	OCPL/ AAQ/EMIL/08/04/22
9.	Sample 09	Near Filter cake storage yard	08.04.2022	OCPL/ AAQ/EMIL/09/04/22
10.	Sample 10	Near Crushing Plant	08.04.2022	OCPL/ AAQ/EMIL/10/04/22
11.	Sample 11	Near Raw Material Stack Yard	08.04.2022	OCPL/ AAQ/EMIL/11/04/22
12.	Sample 12	Nedigutha Village	19.04.2022	OCPL/ AAQ/EMIL/12/04/22
13.	Sample 13	Near Filter cake storage yard	11.04.2022	OCPL/ AAQ/EMIL/13/04/22
14.	Sample 14	Near Crushing Plant	11.04.2022	OCPL/ AAQ/EMIL/14/04/22
15.	Sample 15	Near Raw Material Stack Yard	11.04.2022	OCPL/ AAQ/EMIL/15/04/22
16.	Sample 16	Nedigutha Village	23.04.2022	OCPL/ AAQ/EMIL/16/04/22
17.	Sample 17	Near Filter cake storage yard	15.04.2022	OCPL/ AAQ/EMIL/17/04/22
18.	Sample 18	Near Crushing Plant	15.04.2022	OCPL/ AAQ/EMIL/18/04/22
19.	Sample 19	Near Raw Material Stack Yard	15.04.2022	OCPL/ AAQ/EMIL/19/04/22
20.	Sample 20	Nedigutha Village	26.04.2022	OCPL/ AAQ/EMIL/20/04/22
21.	Sample 21	Near Filter cake storage yard	18.04.2022	OCPL/ AAQ/EMIL/21/04/22
22.	Sample 22	Near Crushing Plant	18.04.2022	OCPL/ AAQ/EMIL/22/04/22
23.	Sample 23	Near Raw Material Stack Yard	18.04.2022	OCPL/ AAQ/EMIL/23/04/22
24.	Sample 24	Near Filter cake storage yard	22.04.2022	OCPL/ AAQ/EMIL/24/04/22
25.	Sample 25	Near Crushing Plant	22.04.2022	OCPL/ AAQ/EMIL/25/04/22
26.	Sample 26	Near Raw Material Stack Yard	22.04.2022	OCPL/ AAQ/EMIL/26/04/22
27.	Sample 27	Near Filter cake storage yard	25.04.2022	OCPL/ AAQ/EMIL/27/04/22
28.	Sample 28	Near Crushing Plant	25.04.2022	OCPL/ AAQ/EMIL/28/04/22
29.	Sample 29	Near Raw Material Stack Yard	25.04.2022	OCPL/ AAQ/EMIL/29/04/22
30.	Sample 30	Near Filter cake storage yard	29.04.2022	OCPL/ AAQ/EMIL/30/04/22
31.	Sample 31	Near Crushing Plant	29.04.2022	OCPL/ AAQ/EMIL/31/04/22
32.	Sample 32	Near Raw Material Stack Yard	29.04.2022	OCPL/ AAQ/EMIL/32/04/22

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS FOR THE MONTH OF APRIL–2022

LOCATION: Near Filter Cake Storage Yard

Parameters	Limit ($\mu g/M^3$)	DATE									
		01.04.22	04.04.22	08.04.22	11.04.22	15.04.22	18.04.22	22.04.22	25.04.22	29.04.22	Avg
PM_{10}	100	88.6	90	90.2	88.9	92.4	89	91.2	88.6	92	90.1
$PM_{2.5}$	60	58	60	59	59.6	54	60	59.8	58	51.8	50.13
Sulphur Dioxide (SO_2)	80	38.6	38.2	39	40.2	42	38.6	39	38.4	40.4	39.37
Oxide of Nitrogen (NO_2)	80	32	29.4	30.5	28.3	34.5	32	30.6	29	32.6	30.98
Lead (Pb)	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	184	180.5	178	181.4	185	179	178.4	177	183.5	180.7
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	38.2	38.5	39	41.4	37	38.8	40	41.5	41	39.48
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Environtech- APM -550

Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, &CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsulting.com

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS

FOR THE MONTH OF APRIL–2022

LOCATION: Near Crushing Plant

Parameters	Limit ($\mu g/M^3$)	DATE									
		01.04.22	04.04.22	08.04.22	11.04.22	15.04.22	18.04.22	22.04.22	25.04.22	29.04.22	Avg
PM_{10}	100	89.2	88.8	89.8	91	89	88.4	89.5	92	92.2	89.98
$PM_{2.5}$	60	57.4	59	58.8	58.2	57	56.8	57.6	60	57.4	58.02
Sulphur Dioxide (SO_2)	80	28.8	28	28.4	27.6	27.2	29	28.8	30.2	29.6	28.62
Oxide of Nitrogen (NO_2)	80	28.8	28.6	29.7	28.4	29	27.4	27.8	31	29.6	28.92
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	168.8	171.6	171.4	171	170	169.2	171.8	172.2	169.6	170.62
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	39.2	38	38.8	37.4	39.8	38.4	41.4	42.8	41	39.64
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Envirotech- APM -550

Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsulting.com

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS

FOR THE MONTH OF APRIL–2022

LOCATION: *Near Raw Material Stack Yard*

Parameters	Limit ($\mu g/M^3$)	DATE									
		01.04.22	04.04.22	08.04.22	11.04.22	15.04.22	18.04.22	22.04.22	25.04.22	29.04.22	Avg
PM_{10}	100	87.6	88.8	88.4	89.4	88.4	90.2	88	91.2	89.2	89.02
$PM_{2.5}$	60	58.5	59.2	60	59	51.4	60	59.6	59.5	58.2	60
Sulphur Dioxide (SO_2)	80	28.6	29	28.6	30	30.2	31.8	32.8	31.6	30.2	30.31
Oxide of Nitrogen (NO_2)	80	29.2	32	31.4	30.4	29	30.8	32.5	29	30	30.47
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	179.2	176	178.4	178.2	178.8	177.8	179.6	178	177.5	178.1
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	42.2	40	40.6	41.9	39.6	40	43.4	41.5	42	41.24
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Environtech- APM -550

Measurement of PM_{10}& $PM_{2.5,}$ SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Tested By: OCPL

Sampling By: Mr. Hrusikesh Das

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsulting.com |

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS FOR THE MONTH OF APRIL– 2022

LOCATION: Nedigutha Village

Parameters	**Limit ($\mu g/M^3$)**	Date-05.04.2022	Date-12.04.2022	Date-19.04.2022	Date-23.04.2022	Date-26.04.2022	Avg.
PM_{10}	100	56	55.2	46.4	57.5	55.4	54.1
$PM_{2.5}$	60	48.5	47	47.2	48	49.9	48.12
Sulphur Dioxide (SO_2)	80	19.8	22	21.2	19.4	22	20.88
Oxide of Nitrogen (NO_2)	80	18	22.4	20	21.8	22.2	20.88
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO) (8 Hrs)	2000	144.5	139.8	145.2	147.6	144	144.22
Ozone(O3)	180	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	14.4	12.5	16	15.8	14.6	14.66
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND

*ND: Not Detectable
Name of the calibrated Instrument: RDS – BL – 460 &Environtech- APM -550
Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, &CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsulting.com |

NOISE LEVEL MONITORING RESULT IN dBA

Date of Monitoring: 09.04.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	55	61	59.2	52	40.3
2	First-Aid Room	31	48.5	52.5	45.2	31
3	Security Office	33.4	40.6	54	41.5	29.7
4	Administrative building	29	38.2	31.4	35	23.2
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

REPORT ON SURFACE WATER ANALYSIS
FOR THE MONTH OF APRIL - 2022

Summary Sheet of Sampling (Water):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	JARPADA	06- Apr -2022	OCPL/SW/01/04/22
2.	Sample 02	NANDIGUTU	06- Apr -2022	OCPL/SW/02/04/22
3.	Sample 03	RESERVOUR POND INSIDE PLANT	06- Apr -2022	OCPL/SW/03/04/22
4.	Sample 04	DALKI NALA NEAR PLANT	06- Apr -2022	OCPL/SW/04/04/22
5.	Sample 05	NAIBHANGA	06- Apr -2022	OCPL/SW/05/04/22

Lab Sample Code: OCPL/SW/01/04/22		**Report No.- OCPL/EMIL/01/04/22**	
Name & Address of Client	M/S ESSEL MINING & INDUSTRIES LTD. P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**JARPADA**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	06- Apr -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	07- Apr -2022
Sample type	Surface Water	Date of Analysis	07- Apr -2022
Required parameters	As described in W/O	Date of Issue of report	12- Apr -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	25.2
4	pH	-	6.8
5	Total Suspended Solids	mg/L	35
6	Total Dissolved Solid	mg/L	598
7	Biochemical Oxygen Demand at 27°C	mg/L	6.2
8	Chemical Oxygen Demand	mg/L	2.4
9	Total Residual Chlorine	mg/L	1.98
10	Alkalinity	mg/L	106
11	Calcium	mg/L	44.9

12	Magnesium	mg/L	27
13	Total Hardness as CaCO3	mg/L	57
14	Electrical Conductivity	µs/cm	103.8
15	Turbidity	NTU	6.6
16	Arsenic as As	µg/L	0.21
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	<0.5
19	Total Chromium as Cr	µg/L	0.18
20	Zinc as Zn	µg/L	1.6
21	Fluoride as F	mg/L	0.06
22	Iron as Fe	mg/L	12
23	Nitrate	mg/L	2.2
24	Sodium as Na	mg/L	1.4
25	Potassium as K	mg/L	2.9
26	Sulfate	mg/L	1.6
27	Nitrate as NO_3	mg/L	2.59
28	Total Silica as SiO_2	mg/L	6.4
29	Total dissolved Solid	mg/L	598

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/02/04/22		**Report No.- OCPL/EMIL/02/04/22**	
Name & Address of Client	M/S ESSEL MINING & INDUSTRIES LTD. P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**NANDIGUTU**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	06- Apr -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	07- Apr -2022
Sample type	Surface Water	Date of Analysis	07- Apr -2022
Required parameters	As described in W/O	Date of Issue of report	12- Apr -2022
EMIL reference	WO No.-5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	26.6
4	pH	-	7.0
5	Total Suspended Solids	mg/L	26
6	Total Dissolved Solid	mg/L	652
7	Biochemical Oxygen Demand at 27°C	mg/L	3.38
8	Chemical Oxygen Demand	mg/L	2.1
9	Total Residual Chlorine	mg/L	1.5
10	Alkalinity	mg/L	34.5
11	Calcium	mg/L	21.4

12	Magnesium	mg/L	22.8
13	Total Hardness as CaCO3	mg/L	54.2
14	Electrical Conductivity	µs/cm	75
15	Turbidity	NTU	16.4
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	<0.05
19	Total Chromium as Cr	µg/L	<0.05
20	Zinc as Zn	µg/L	0.17
21	Fluoride as F	mg/L	<0.05
22	Iron as Fe	mg/L	32
23	Nitrate	mg/L	4.2
24	Sodium as Na	mg/L	2.2
25	Potassium as K	mg/L	1.69
26	Sulfate	mg/L	<0.01
27	Nitrate as NO_3	mg/L	1.82
28	Total Silica as SiO_2	mg/L	3.6
29	Total dissolved Solid	mg/L	652

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/03/04/22		**Report No.- OCPL/EMIL/03/04/22**	
Name & Address of Client	M/S ESSEL MINING & INDUSTRIES LTD. P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**RESERVOUR POND INSIDE PLANT PREMISES**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	06- Apr -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	07- Apr -2022
Sample type	Surface Water	Date of Analysis	07- Apr -2022
Required parameters	As described in W/O	Date of Issue of report	12- Apr -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	1.2
2	Odour	-	Agreeable
3	Temperature	°C	26.8
4	pH	-	7.2
5	Total Suspended Solids	mg/L	109
6	Total Dissolved Solid	mg/L	761
7	Biochemical Oxygen Demand at 27°C	mg/L	10.4
8	Chemical Oxygen Demand	mg/L	5.2
9	Total Residual Chlorine	mg/L	4
10	Alkalinity	mg/L	92.5
11	Calcium	mg/L	48.9

12	Magnesium	mg/L	32.98
13	Total Hardness as CaCO3	mg/L	175.6
14	Electrical Conductivity	µs/cm	214
15	Turbidity	NTU	52
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	0.18
18	Cadmium as Cd	µg/L	0.24
19	Total Chromium as Cr	µg/L	0.22
20	Zinc as Zn	µg/L	0.31
21	Fluoride as F	mg/L	<0.05
22	Iron as Fe	mg/L	35.4
23	Nitrate	mg/L	2.6
24	Sodium as Na	mg/L	11.5
25	Potassium as K	mg/L	2.4
26	Sulfate	mg/L	6.2
27	Nitrate as NO_3	mg/L	5.98
28	Total Silica as SiO_2	mg/L	11.8
29	Total dissolved Solid	mg/L	761

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/04/04/22		**Report No.- OCPL/EMIL/04/04/22**	
Name & Address of Client	M/S ESSEL MINING & INDUSTRIES LTD. P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**DALKI NALA, NEAR PLANT**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	06- Apr -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	07- Apr -2022
Sample type	Surface Water	Date of Analysis	07- Apr -2022
Required parameters	As described in W/O	Date of Issue of report	12- Apr -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	1.0
2	Odour	-	Agreeable
3	Temperature	°C	25.4
4	pH	-	6.9
5	Total Suspended Solids	mg/L	29.4
6	Total Dissolved Solid	mg/L	574
7	Biochemical Oxygen Demand at 27°C	mg/L	4.18
8	Chemical Oxygen Demand	mg/L	2.6
9	Total Residual Chlorine	mg/L	1.2
10	Alkalinity	mg/L	75
11	Calcium	mg/L	28
12	Magnesium	mg/L	36.8

13	Total Hardness as CaCO3	mg/L	37.2
14	Electrical Conductivity	µs/cm	114.6
15	Turbidity	NTU	16.5
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	<0.5
19	Total Chromium as Cr	µg/L	0.08
20	Zinc as Zn	µg/L	3.9
21	Fluoride as F	mg/L	0.2
22	Iron as Fe	mg/L	16.6
23	Nitrate	mg/L	8.4
24	Sodium as Na	mg/L	6.0
25	Potassium as K	mg/L	2.2
26	Sulfate	mg/L	11
27	Nitrate as NO_3	mg/L	17.5
28	Total Silica as SiO_2	mg/L	7.1
29	Total dissolved Solid	mg/L	574

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/05/04/22		**Report No.- OCPL/EMIL/05/04/22**	
Name & Address of Client	M/S ESSEL MINING & INDUSTRIES LTD. P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**NAIBHANGA**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	06- Apr -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	07- Apr -2022
Sample type	Surface Water	Date of Analysis	07- Apr -2022
Required parameters	As described in W/O	Date of Issue of report	12- Apr -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	27.2
4	pH	-	7.1
5	Total Suspended Solids	mg/L	22.4
6	Total Dissolved Solid	mg/L	642
7	Biochemical Oxygen Demand at 27°C	mg/L	4.9
8	Chemical Oxygen Demand	mg/L	3.25
9	Total Residual Chlorine	mg/L	0.24
10	Alkalinity	mg/L	31.4
11	Calcium	mg/L	27.5
12	Magnesium	mg/L	31

13	Total Hardness as CaCO3	mg/L	32.8
14	Electrical Conductivity	µs/cm	85.6
15	Turbidity	NTU	24
16	Arsenic as As	µg/L	0.42
17	Lead as Pb	µg/L	0.4
18	Cadmium as Cd	µg/L	ND
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	1.2
21	Fluoride as F	mg/L	0.44
22	Iron as Fe	mg/L	24.6
23	Nitrate	mg/L	2.25
24	Sodium as Na	mg/L	3.5
25	Potassium as K	mg/L	24
26	Sulfate	mg/L	6.1
27	Nitrate as NO_3	mg/L	7.0
28	Total Silica as SiO_2	mg/L	3.5
29	Total dissolved Solid	mg/L	642

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

TEST REPORT

Date: 18 -Apr-2022

Name & address of Client:
M/S ESSEL MINING & INDUSTRIES LTD
P.O. Basantpur, Tahasil- Jhumpura,
Keonjhar, Odisha- 758034

Total no of sample: Five locations.

Sample details: Ground Water

Sample location: M/S ESSEL MINING & INDUSTRIES LTD, Keonjhar, Odisha

Sl. No.	**Sample no.**	**Location details**
1	1	JARPADA
2	2	NANDIGUTU
3	3	NAIBHANGA
4	4	PLANT- 1 (Near Canteen)
5	5	PLANT- 2 (Near Tailing pond)

Sample Ref No.: EMIL/GW/BBSR/308
Report no.: EMIL/BBS/354
Sample description: Ground Water
Date of sample received: 05 -Apr-2022
Date of Analysis: 06 -Apr-2022
Date of Issue of report: 18 -Apr-2022

ANALYSIS RESULT

With drinking water specifications, BIS (As per 10500- 2012 BIS)

Sl. No.	TEST PARAMETER	UOM	Results					BIS Desirable limit	Permissible limit with the absence of alternate source
			1:	2:	3:	4:	5:		
1	Colour	Pt-Co	1.1	1.0	1.1	1.0	1.2		
2	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		
3	Temperature	°C	26.8	28.6	27.5	27.8	28.2		
4	pH	-	7.1	6.9	7.1	6.9	7.1	6.5- 8.5	No relaxation
5	Total Hardness (as $CaCO_3$)	mg/L	58.2	52.5	46.5	41.8	47	300	600
6	Calcium	mg/L	11.2	14.8	12.6	17	12.5	75	200
7	Magnesium	mg/L	1.2	2.6	2.24	3.4	2.4	30	No relaxation
8	Chloride	mg/L	22.8	21	16	17.9	19.5	250	1000
9	Alkalinity	mg/L	11.5	18	21.2	17.08	20	200	600
10	Electrical Conductivity	µs/cm	61.4	46.8	52.4	37.8	48	--	--
11	Arsenic as As	µg/L	ND	ND	0.08	0.04	ND	10	No relaxation
12	Lead as Pb	µg/L	0.05	ND	0.14	0.42	ND	10	No relaxation
13	Cadmium as Cd	µg/L	0.04	0.17	ND	0.25	0.04	3.0	No relaxation
14	Total Chromium as Cr	µg/L	0.24	0.06	0.08	0.14	0.08	50	No relaxation
15	Zinc as Zn	µg/L	51.8	65.4	88.6	82.5	94	5000	No relaxation
16	Fluoride as F	mg/L	ND	0.06	ND	0.04	ND	1.0	1.9
17	Iron as Fe	µg/L	14.8	18.4	6	6.8	17	300	1000
18	Nitrate	mg/L	0.05	1.8	0.06	0.6	0.8	45	100
19	Sodium as Na	mg/L	1.7	0.4	0.5	2.2	3.8	150	No relaxation
20	Potassium as K	mg/L	ND	ND	ND	0.04	0.06	12	No relaxation
21	Sulfate	mg/L	ND	0.26	0.88	0.04	0.86	200	400
22	Total Silica as	mg/L	0.09	0.08	ND	0.05	0.6	--	--

	SiO_2								
23	Total suspended Solid	mg/L	0.48	0.62	1.2	1.8	1.68	--	--
24	Total dissolved Solid	mg/L	62	86	88	186	193	250	2000
25	Turbidity	NTU	0.05	0.02	0.42	0.08	0.06	5	10

Report prepared by:

Signature

Laboratory In-Charge

*ND= Not Detectable
Standards are as per Government Notification Dtd. 19th May '93.
Sampling & testing has been done as per IS Code 3025.

Monthly Report On
Ground water Level Monitoring Data
for the Month of April - 2022

For

M/S ESSEL MINING & INDUSTRIES LTD

P.O. Basantpur, Tahasil- Jhumpura,

Keonjhar, Odisha- 758034

Prepared By:

Orectic Consulting Private Limited

Housing Board Colony, Chandrasekharpur,

BhubaneGWLar- 751024, Odisha.

REPORT ON GROUND WATER LEVEL ANALYSIS
FOR THE MONTH OF APRIL - 2022

Summary Sheet of Monitoring (Water):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	JARPADA	16- Apr-2022	OCPL/GWL/01/04/22
2.	Sample 02	NANDIGUTU	16- Apr-2022	OCPL/GWL/02/04/22
3.	Sample 03	NAIBHANGA	16- Apr-2022	OCPL/GWL/03/04/22
4.	Sample 04	PLANT- 1 (Near Canteen)	16- Apr-2022	OCPL/GWL/04/04/22
5.	Sample 05	PLANT- 2 (Near Tailing pond)	16- Apr-2022	OCPL/GWL/05/04/22

MONITORING RESULT

Sl No.	Name of the location	Type of well	Dia. (m)	Depth of the well (m)	Depth of the water table BGL (M)	Remarks
1	JARPADA	Dugwell	0.8	8.2	6.8	--
2	NANDIGUTU	Dugwell	1.2	9.5	7.26	--
3	NAIBHANGA	Dugwell	1.0	8.6	7.82	--
4	PLANT- 1 (Near Canteen)	Bore-well	0.1	62	12.9	--
5	PLANT- 2 (Near Tailing pond)	Bore-well	0.1	60	46.8	--

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Monthly Report On
Environmental Monitoring Data
for the Month of May - 2022

For

M/S ESSEL MINING & INDUSTRIES LTD.

P.O. Basantpur, Tahasil- Jhumpura,

Keonjhar, Odisha- 758034

Prepared By:

Orectic Consulting Private Limited
Housing Board Colony, Chandrasekharpur,
Bhubaneswar- 751024, Odisha.

CONTENTS

Weekly Ambient Air Monitoring Data Generated

For the Month of May– 2022

LOCATION AND WEEKLY MONITORING SCHEDULE (FOR MAY- 2022)

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near Filter Cake Storage Yard		√				√	
Near Crushing Plant		√				√	
Near Raw Material Stack Yard		√				√	
Nediguth Village		√				√	

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Summary Sheet of Sampling (AAQ):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	Near Filter cake storage yard	02.05.2022	OCPL/ AAQ/EMIL/01/05/22
2.	Sample 02	Near Crushing Plant	02.05.2022	OCPL/ AAQ/EMIL/02/05/22
3.	Sample 03	Near Raw Material Stack Yard	02.05.2022	OCPL/ AAQ/EMIL/03/05/22
4.	Sample 04	Nedigutha Village	03.05.2022	OCPL/ AAQ/EMIL/04/05/22
5.	Sample 05	Near Filter cake storage yard	06.05.2022	OCPL/ AAQ/EMIL/05/05/22
6.	Sample 06	Near Crushing Plant	06.05.2022	OCPL/ AAQ/EMIL/06/05/22
7.	Sample 07	Near Raw Material Stack Yard	06.05.2022	OCPL/ AAQ/EMIL/07/05/22
8.	Sample 08	Nedigutha Village	10.05.2022	OCPL/ AAQ/EMIL/08/05/22
9.	Sample 09	Near Filter cake storage yard	09.05.2022	OCPL/ AAQ/EMIL/09/05/22
10.	Sample 10	Near Crushing Plant	09.05.2022	OCPL/ AAQ/EMIL/10/05/22
11.	Sample 11	Near Raw Material Stack Yard	09.05.2022	OCPL/ AAQ/EMIL/11/05/22
12.	Sample 12	Nedigutha Village	17.05.2022	OCPL/ AAQ/EMIL/12/05/22
13.	Sample 13	Near Filter cake storage yard	13.05.2022	OCPL/ AAQ/EMIL/13/05/22
14.	Sample 14	Near Crushing Plant	13.05.2022	OCPL/ AAQ/EMIL/14/05/22
15.	Sample 15	Near Raw Material Stack Yard	13.05.2022	OCPL/ AAQ/EMIL/15/05/22
16.	Sample 16	Nedigutha Village	24.05.2022	OCPL/ AAQ/EMIL/16/05/22
17.	Sample 17	Near Filter cake storage yard	16.05.2022	OCPL/ AAQ/EMIL/17/05/22
18.	Sample 18	Near Crushing Plant	16.05.2022	OCPL/ AAQ/EMIL/18/05/22
19.	Sample 19	Near Raw Material Stack Yard	16.05.2022	OCPL/ AAQ/EMIL/19/05/22
20.	Sample 20	Nedigutha Village	31.05.2022	OCPL/ AAQ/EMIL/20/05/22
21.	Sample 21	Near Filter cake storage yard	20.05.2022	OCPL/ AAQ/EMIL/21/05/22
22.	Sample 22	Near Crushing Plant	20.05.2022	OCPL/ AAQ/EMIL/22/05/22
23.	Sample 23	Near Raw Material Stack Yard	20.05.2022	OCPL/ AAQ/EMIL/23/05/22
24.	Sample 24	Near Filter cake storage yard	23.05.2022	OCPL/ AAQ/EMIL/24/05/22
25.	Sample 25	Near Crushing Plant	23.05.2022	OCPL/ AAQ/EMIL/25/05/22
26.	Sample 26	Near Raw Material Stack Yard	23.05.2022	OCPL/ AAQ/EMIL/26/05/22
27.	Sample 27	Near Filter cake storage yard	27.05.2022	OCPL/ AAQ/EMIL/27/05/22
28.	Sample 28	Near Crushing Plant	27.05.2022	OCPL/ AAQ/EMIL/28/05/22
29.	Sample 29	Near Raw Material Stack Yard	27.05.2022	OCPL/ AAQ/EMIL/29/05/22
30.	Sample 30	Near Filter cake storage yard	30.05.2022	OCPL/ AAQ/EMIL/30/05/22
31.	Sample 31	Near Crushing Plant	30.05.2022	OCPL/ AAQ/EMIL/31/05/22
32.	Sample 32	Near Raw Material Stack Yard	30.05.2022	OCPL/ AAQ/EMIL/32/05/22

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS FOR THE MONTH OF MAY–2022

LOCATION: Near Filter Cake Storage Yard

Parameters	Limit ($\mu g/M^3$)	DATE									
		02.05.22	06.05.22	09.05.22	13.05.22	16.05.22	20.05.22	23.05.22	27.05.22	30.05.22	Avg
PM_{10}	100	90.8	90	90.2	92.6	92.4	89	92.5	88.6	92	90.9
$PM_{2.5}$	60	59.2	58.4	59	59.6	54	57.6	57.6	58	60	59.71
Sulphur Dioxide (SO_2)	80	39	38.2	42	40.2	42.8	38.6	44.6	38.4	42.5	40.7
Oxide of Nitrogen (NO_2)	80	34	30.4	30.5	30	34.5	32	34.6	31.2	32.6	32.2
Lead (Pb)	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	185.4	182.5	180	181.4	183.5	179	178.4	182	185	181.91
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	40	38.5	40.6	41.4	37	38.8	42	41.5	42.5	40.25
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Environtech- APM -550

Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, &CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsulting.com

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS

FOR THE MONTH OF MAY–2022

LOCATION: Near Crushing Plant

Parameters	Limit (µg/M^3)	DATE									
		02.05.22	06.05.22	09.05.22	13.05.22	16.05.22	20.05.22	23.05.22	27.05.22	30.05.22	Avg
PM_{10}	100	90.5	92	92.8	91	89	88.4	88	92	93.4	90.78
$PM_{2.5}$	60	58	59	58.8	60	57	58.6	57.6	60	60	58.93
Sulphur Dioxide (SO_2)	80	30.5	28	28.4	28.5	28	29	28.8	30.2	31.6	29.22
Oxide of Nitrogen (NO_2)	80	29.4	28.6	29.7	28.4	29	28	27.8	31	32	29.32
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	172.2	170	171.4	171	172.4	169.2	171.8	172.2	174	171.57
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	40.8	38	38.8	38.5	40	38.4	42	42.8	42.4	40.18
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Envirotech- APM -550

Measurement of PM_{10}& $PM_{2.5,}$ SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsulting.com |

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS

FOR THE MONTH OF MAY–2022

LOCATION: *Near Raw Material Stack Yard*

Parameters	Limit ($\mu g/M^3$)	DATE									
		02.05.22	06.05.22	09.05.22	13.05.22	16.05.22	20.05.22	23.05.22	27.05.22	30.05.22	Avg
PM_{10}	100	90	88.8	88.5	91	89.6	90.2	88	91.8	92.2	90.01
$PM_{2.5}$	60	59.6	58.5	60	60	59.4	60	58.6	59	59.5	59.31
Sulphur Dioxide (SO_2)	80	32.4	29	30.5	30	30.2	32	32.8	30.2	34	31.23
Oxide of Nitrogen (NO_2)	80	30	33.8	31.4	30.4	30.4	30.8	32.5	29	32.8	31.23
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	176.8	178	181.2	175.8	178.8	177.8	179.6	181	180.4	178.8
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	43	42.5	40.6	41.9	39.6	40.8	43.4	45.8	44.2	42.42
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Environtech- APM -550

Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsulting.com |

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS FOR THE MONTH OF MAY– 2022

LOCATION: Nedigutha Village

Parameters	**Limit ($\mu g/M^3$)**	Date-03.05.2022	Date-10.05.2022	Date-17.05.2022	Date-24.05.2022	Date-31.05.2022	Avg.
PM_{10}	100	56.8	55.2	50	57.5	52	54.3
$PM_{2.5}$	60	50.2	47	48.6	48	50	48.76
Sulphur Dioxide (SO_2)	80	18	22.6	22.4	23.6	22	21.72
Oxide of Nitrogen (NO_2)	80	19.5	22	21.8	21.8	23	21.62
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO) (8 Hrs)	2000	145	142.6	146	145.8	148	145.48
Ozone(O3)	180	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	16.2	14	16.5	14.8	15.9	15.48
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND

*ND: Not Detectable
Name of the calibrated Instrument: RDS – BL – 460 &Environtech- APM -550
Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, &CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsulting.com |

NOISE LEVEL MONITORING RESULT IN dBA

Date of Monitoring: 05.05.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	56.8	62	56	55	40.6
2	First-Aid Room	32.5	48	55	44.3	29.1
3	Security Office	34	46.6	51.9	42.8	28.8
4	Administrative building	30	38	29.6	32.4	24
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

REPORT ON SURFACE WATER ANALYSIS
FOR THE MONTH OF MAY - 2022

Summary Sheet of Sampling (Water):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	JARPADA	09- May -2022	OCPL/SW/01/05/22
2.	Sample 02	NANDIGUTU	09- May -2022	OCPL/SW/02/05/22
3.	Sample 03	RESERVOUR POND INSIDE PLANT	09- May -2022	OCPL/SW/03/05/22
4.	Sample 04	DALKI NALA NEAR PLANT	09- May -2022	OCPL/SW/04/05/22
5.	Sample 05	NAIBHANGA	09- May -2022	OCPL/SW/05/05/22

Lab Sample Code: OCPL/SW/01/05/22		**Report No.- OCPL/EMIL/01/05/22**	
Name & Address of Client	M/S ESSEL MINING & INDUSTRIES LTD. P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**JARPADA**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	09- May -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	10- May -2022
Sample type	Surface Water	Date of Analysis	10- May -2022
Required parameters	As described in W/O	Date of Issue of report	16- May -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	25.6
4	pH	-	6.8
5	Total Suspended Solids	mg/L	38
6	Total Dissolved Solid	mg/L	577
7	Biochemical Oxygen Demand at 27°C	mg/L	6.5
8	Chemical Oxygen Demand	mg/L	2.2
9	Total Residual Chlorine	mg/L	1.6
10	Alkalinity	mg/L	98
11	Calcium	mg/L	40

12	Magnesium	mg/L	26.2
13	Total Hardness as CaCO3	mg/L	62.8
14	Electrical Conductivity	µs/cm	108
15	Turbidity	NTU	6
16	Arsenic as As	µg/L	0.18
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	<0.5
19	Total Chromium as Cr	µg/L	0.18
20	Zinc as Zn	µg/L	1.2
21	Fluoride as F	mg/L	0.06
22	Iron as Fe	mg/L	11
23	Nitrate	mg/L	2.4
24	Sodium as Na	mg/L	1.8
25	Potassium as K	mg/L	2.2
26	Sulfate	mg/L	1.4
27	Nitrate as NO_3	mg/L	2.8
28	Total Silica as SiO_2	mg/L	5.4
29	Total dissolved Solid	mg/L	577

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/02/05/22		**Report No.- OCPL/EMIL/02/05/22**	
Name & Address of Client	M/S ESSEL MINING & INDUSTRIES LTD. P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**NANDIGUTU**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	09- May -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	10- May -2022
Sample type	Surface Water	Date of Analysis	10- May -2022
Required parameters	As described in W/O	Date of Issue of report	16- May -2022
EMIL reference	WO No.-5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	26.7
4	pH	-	7.1
5	Total Suspended Solids	mg/L	25
6	Total Dissolved Solid	mg/L	533
7	Biochemical Oxygen Demand at 27°C	mg/L	3.8
8	Chemical Oxygen Demand	mg/L	2.4
9	Total Residual Chlorine	mg/L	2.1
10	Alkalinity	mg/L	37
11	Calcium	mg/L	20.8

12	Magnesium	mg/L	26.2
13	Total Hardness as CaCO3	mg/L	42.8
14	Electrical Conductivity	µs/cm	79
15	Turbidity	NTU	14
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	<0.05
19	Total Chromium as Cr	µg/L	<0.05
20	Zinc as Zn	µg/L	0.14
21	Fluoride as F	mg/L	<0.05
22	Iron as Fe	mg/L	36.8
23	Nitrate	mg/L	4.9
24	Sodium as Na	mg/L	2.8
25	Potassium as K	mg/L	1.08
26	Sulfate	mg/L	<0.01
27	Nitrate as NO_3	mg/L	2.1
28	Total Silica as SiO_2	mg/L	2.4
29	Total dissolved Solid	mg/L	533

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/03/05/22		**Report No.- OCPL/EMIL/03/05/22**	
Name & Address of Client	M/S ESSEL MINING & INDUSTRIES LTD. P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**RESERVOUR POND INSIDE PLANT PREMISES**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	09- May -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	10- May -2022
Sample type	Surface Water	Date of Analysis	10- May -2022
Required parameters	As described in W/O	Date of Issue of report	16- May -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	1.2
2	Odour	-	Agreeable
3	Temperature	°C	27
4	pH	-	7.3
5	Total Suspended Solids	mg/L	114.6
6	Total Dissolved Solid	mg/L	825
7	Biochemical Oxygen Demand at 27°C	mg/L	10.8
8	Chemical Oxygen Demand	mg/L	5.8
9	Total Residual Chlorine	mg/L	6.2
10	Alkalinity	mg/L	102.4
11	Calcium	mg/L	42

12	Magnesium	mg/L	34
13	Total Hardness as CaCO3	mg/L	181.8
14	Electrical Conductivity	µs/cm	179
15	Turbidity	NTU	48
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	0.26
18	Cadmium as Cd	µg/L	0.22
19	Total Chromium as Cr	µg/L	0.18
20	Zinc as Zn	µg/L	0.39
21	Fluoride as F	mg/L	<0.05
22	Iron as Fe	mg/L	38.2
23	Nitrate	mg/L	2
24	Sodium as Na	mg/L	14
25	Potassium as K	mg/L	2.2
26	Sulfate	mg/L	5.4
27	Nitrate as NO_3	mg/L	6.6
28	Total Silica as SiO_2	mg/L	14
29	Total dissolved Solid	mg/L	825

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/04/05/22		**Report No.- OCPL/EMIL/04/05/22**	
Name & Address of Client	M/S ESSEL MINING & INDUSTRIES LTD. P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**DALKI NALA, NEAR PLANT**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	09- May -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	10- May -2022
Sample type	Surface Water	Date of Analysis	10- May -2022
Required parameters	As described in W/O	Date of Issue of report	16- May -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	1.0
2	Odour	-	Agreeable
3	Temperature	°C	26
4	pH	-	7.1
5	Total Suspended Solids	mg/L	26
6	Total Dissolved Solid	mg/L	541
7	Biochemical Oxygen Demand at 27°C	mg/L	5.2
8	Chemical Oxygen Demand	mg/L	2.8
9	Total Residual Chlorine	mg/L	1.4
10	Alkalinity	mg/L	84.6
11	Calcium	mg/L	26.4
12	Magnesium	mg/L	44

13	Total Hardness as CaCO3	mg/L	39
14	Electrical Conductivity	µs/cm	98
15	Turbidity	NTU	14.8
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	<0.5
19	Total Chromium as Cr	µg/L	0.21
20	Zinc as Zn	µg/L	3.2
21	Fluoride as F	mg/L	0.08
22	Iron as Fe	mg/L	14
23	Nitrate	mg/L	8.2
24	Sodium as Na	mg/L	5
25	Potassium as K	mg/L	1.8
26	Sulfate	mg/L	8
27	Nitrate as NO_3	mg/L	18.2
28	Total Silica as SiO_2	mg/L	6
29	Total dissolved Solid	mg/L	541

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/05/05/22		**Report No.- OCPL/EMIL/05/05/22**	
Name & Address of Client	M/S ESSEL MINING & INDUSTRIES LTD. P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**NAIBHANGA**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	09- May -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	10- May -2022
Sample type	Surface Water	Date of Analysis	10- May -2022
Required parameters	As described in W/O	Date of Issue of report	16- May -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	27.0
4	pH	-	6.9
5	Total Suspended Solids	mg/L	24
6	Total Dissolved Solid	mg/L	658
7	Biochemical Oxygen Demand at 27°C	mg/L	5.2
8	Chemical Oxygen Demand	mg/L	3.6
9	Total Residual Chlorine	mg/L	0.6
10	Alkalinity	mg/L	36
11	Calcium	mg/L	32
12	Magnesium	mg/L	28.4

13	Total Hardness as CaCO3	mg/L	30.9
14	Electrical Conductivity	µs/cm	82
15	Turbidity	NTU	21
16	Arsenic as As	µg/L	0.36
17	Lead as Pb	µg/L	0.21
18	Cadmium as Cd	µg/L	<0.5
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	2
21	Fluoride as F	mg/L	0.08
22	Iron as Fe	mg/L	22
23	Nitrate	mg/L	1.94
24	Sodium as Na	mg/L	3.8
25	Potassium as K	mg/L	19.6
26	Sulfate	mg/L	5.85
27	Nitrate as NO_3	mg/L	7.1
28	Total Silica as SiO_2	mg/L	3.2
29	Total dissolved Solid	mg/L	658

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Monthly Report On
Environmental Monitoring Data
for the Month of June - 2022

For

M/S ESSEL MINING & INDUSTRIES LTD

P.O. Basantpur, Tahasil- Jhumpura,

Keonjhar, Odisha- 758034

Prepared By:

Orectic Consulting Private Limited
Housing Board Colony, Chandrasekharpur,
Bhubaneswar- 751024, Odisha.

CONTENTS

Weekly Ambient Air Monitoring Data Generated

For the Month of June– 2022

LOCATION AND WEEKLY MONITORING SCHEDULE
(FOR JUNE- 2022)

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near Filter Cake Storage Yard		√			√		
Near Crushing Plant		√			√		
Near Raw Material Stack Yard		√			√		
Nediguth Village		√			√		

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Summary Sheet of Sampling (AAQ):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	Near Filter cake storage yard	02.06.2022	OCPL/ AAQ/EMIL /01/06/22
2.	Sample 02	Near Crushing Plant	02.06.2022	OCPL/ AAQ/EMIL /02/06/22
3.	Sample 03	Near Raw Material Stack Yard	02.06.2022	OCPL/ AAQ/EMIL /03/06/22
4.	Sample 04	Nedigutha Village	01.06.2022	OCPL/ AAQ/EMIL /04/06/22
5.	Sample 05	Near Filter cake storage yard	06.06.2022	OCPL/ AAQ/EMIL /05/06/22
6.	Sample 06	Near Crushing Plant	06.06.2022	OCPL/ AAQ/EMIL /06/06/22
7.	Sample 07	Near Raw Material Stack Yard	06.06.2022	OCPL/ AAQ/EMIL /07/06/22
8.	Sample 08	Nedigutha Village	08.06.2022	OCPL/ AAQ/EMIL /08/06/22
9.	Sample 09	Near Filter cake storage yard	09.06.2022	OCPL/ AAQ/EMIL /09/06/22
10.	Sample 10	Near Crushing Plant	09.06.2022	OCPL/ AAQ/EMIL /10/06/22
11.	Sample 11	Near Raw Material Stack Yard	09.06.2022	OCPL/ AAQ/EMIL /11/06/22
12.	Sample 12	Nedigutha Village	15.06.2022	OCPL/ AAQ/EMIL /12/06/22
13.	Sample 13	Near Filter cake storage yard	13.06.2022	OCPL/ AAQ/EMIL /13/06/22
14.	Sample 14	Near Crushing Plant	13.06.2022	OCPL/ AAQ/EMIL /14/06/22
15.	Sample 15	Near Raw Material Stack Yard	13.06.2022	OCPL/ AAQ/EMIL /15/06/22
16.	Sample 16	Nedigutha Village	22.06.2022	OCPL/ AAQ/EMIL /16/06/22
17.	Sample 17	Near Filter cake storage yard	16.06.2022	OCPL/ AAQ/EMIL /17/06/22
18.	Sample 18	Near Crushing Plant	16.06.2022	OCPL/ AAQ/EMIL /18/06/22
19.	Sample 19	Near Raw Material Stack Yard	16.06.2022	OCPL/ AAQ/EMIL /19/06/22
20.	Sample 20	Nedigutha Village	29.06.2022	OCPL/ AAQ/EMIL /20/06/22
21.	Sample 21	Near Filter cake storage yard	20.06.2022	OCPL/ AAQ/EMIL /21/06/22
22.	Sample 22	Near Crushing Plant	20.06.2022	OCPL/ AAQ/EMIL /22/06/22
23.	Sample 23	Near Raw Material Stack Yard	20.06.2022	OCPL/ AAQ/EMIL /23/06/22
24.	Sample 24	Near Filter cake storage yard	23.06.2022	OCPL/ AAQ/EMIL /24/06/22
25.	Sample 25	Near Crushing Plant	23.06.2022	OCPL/ AAQ/EMIL /25/06/22
26.	Sample 26	Near Raw Material Stack Yard	23.06.2022	OCPL/ AAQ/EMIL /26/06/22
27.	Sample 27	Near Filter cake storage yard	27.06.2022	OCPL/ AAQ/EMIL /27/06/22
28.	Sample 28	Near Crushing Plant	27.06.2022	OCPL/ AAQ/EMIL /28/06/22
29.	Sample 29	Near Raw Material Stack Yard	27.06.2022	OCPL/ AAQ/EMIL /29/06/22
30.	Sample 30	Near Filter cake storage yard	30.06.2022	OCPL/ AAQ/EMIL /30/06/22
31.	Sample 31	Near Crushing Plant	30.06.2022	OCPL/ AAQ/EMIL /31/06/22
32.	Sample 32	Near Raw Material Stack Yard	30.06.2022	OCPL/ AAQ/EMIL /32/06/22

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS FOR THE MONTH OF JUNE–2022

LOCATION: Near Filter Cake Storage Yard

Parameters	Limit ($\mu g/M^3$)	DATE									
		02.06.22	06.06.22	09.06.22	13.06.22	16.06.22	20.06.22	23.06.22	27.06.22	30.06.22	Avg
PM_{10}	100	92.6	90	88	90.5	86.8	90.4	87	88.2	90.5	89.33
$PM_{2.5}$	60	58.6	59.4	57.8	60	58.4	59.2	58	58.8	60	59.8
Sulphur Dioxide (SO_2)	80	44	44.2	40.8	42	40	42.6	38.8	40.6	38.2	41.24
Oxide of Nitrogen (NO_2)	80	35.4	34	34.2	35.6	32	30.4	32.8	29.8	30.6	32.75
Lead (Pb)	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	188	184.6	182	176.8	178	178.8	170	181.4	178.2	179.75
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	44.6	44	42.5	43	38	39.5	40.2	40	38.2	41.11
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Environtech- APM -550

Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, &CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsu

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS

FOR THE MONTH OF JUNE–2022

LOCATION: Near Crushing Plant

Parameters	Limit ($\mu g/M^3$)	DATE									
		02.06.22	06.06.22	09.06.22	13.06.22	16.06.22	20.06.22	23.06.22	27.06.22	30.06.22	Avg
PM_{10}	100	94.4	92.6	92.8	94	90.8	91	91.2	92	91.4	92.24
$PM_{2.5}$	60	59	58.6	58	57.2	56	59	56.6	58.4	56.4	58.02
Sulphur Dioxide (SO_2)	80	32.6	29	28.4	28	28.2	27.4	26	26.5	25.4	27.944
Oxide of Nitrogen (NO_2)	80	30.6	31.2	30	29.8	26	27.4	27.8	25	26.2	28.22
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	172.8	172	171.8	171	168	169.2	168.2	166	166.8	169.53
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	41.6	42	40.8	40.6	39	39.6	38	38.2	38.4	39.8
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Envirotech- APM -550

Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsulti..

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS

FOR THE MONTH OF JUNE–2022

LOCATION: *Near Raw Material Stack Yard*

Parameters	Limit ($\mu g/M^3$)	DATE									
		02.06.22	06.06.22	09.06.22	13.06.22	16.06.22	20.06.22	23.06.22	27.06.22	30.06.22	Avg
PM_{10}	100	90.8	88	86.8	88.4	89	90	87.6	86.4	88.2	88.35
$PM_{2.5}$	60	59.5	60	58.4	59.8	58	59.6	58.5	60	56.8	59.95
Sulphur Dioxide (SO_2)	80	32	32.2	28.4	28	27.8	28.2	26.6	27	28.8	28.77
Oxide of Nitrogen (NO_2)	80	31.5	30	28.4	27	26.2	26	28	28.4	28	28.16
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	178	177.5	176.5	177	175.4	174	176	175.8	178.2	176.4
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	42.4	41	40.8	40	38.8	39	36	37.8	38.2	39.33
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable
Name of the calibrated Instrument: RDS – BL – 460 & Environtech- APM -550
Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsulting.com |

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS FOR THE MONTH OF JUNE– 2022

LOCATION: Nedigutha Village

Parameters	**Limit ($\mu g/M^3$)**	Date-01.06.2022	Date-08.06.2022	Date-15.06.2022	Date-22.06.2022	Date-29.06.2022	Avg.
PM_{10}	100	54	52.4	48	52.7	50	51.42
$PM_{2.5}$	60	48	46.2	46.8	46	48.2	47.04
Sulphur Dioxide (SO_2)	80	20	20.5	18	20.8	22	20.26
Oxide of Nitrogen (NO_2)	80	20.6	20	20.4	19.8	20	20.16
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO) (8 Hrs)	2000	146.8	145	144	142.8	142	144.12
Ozone(O3)	180	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	16	15.2	16.2	14	13	14.88
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND

*ND: Not Detectable
Name of the calibrated Instrument: RDS – BL – 460 &Environtech- APM -550
Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, &CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsultin.

NOISE LEVEL MONITORING RESULT IN dBA

Date of Monitoring: 10.06.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	55.4	63	48	44	42
2	First-Aid Room	35.6	50.8	54	46.8	32
3	Security Office	35	48	53.2	44.6	34.5
4	Administrative building	34.5	36	32.5	34	25.2
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

REPORT ON SURFACE WATER ANALYSIS
FOR THE MONTH OF JUNE - 2022

Summary Sheet of Sampling (Water):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	JARPADA	09- June -2022	OCPL/SW/01/06/22
2.	Sample 02	NANDIGUTU	09- June -2022	OCPL/SW/02/06/22
3.	Sample 03	RESERVOUR POND INSIDE PLANT	09- June -2022	OCPL/SW/03/06/22
4.	Sample 04	DALKI NALA NEAR PLANT	09- June -2022	OCPL/SW/04/06/22
5.	Sample 05	NAIBHANGA	09- June -2022	OCPL/SW/05/06/22

Lab Sample Code: OCPL/SW/01/06/22		**Report No.- OCPL/EMIL /01/06/22**	
Name & Address of Client	ESSEL MINING & INDUSTRIES LTD P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**JARPADA**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07- June -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	08- June -2022
Sample type	Surface Water	Date of Analysis	08- June -2022
Required parameters	As described in W/O	Date of Issue of report	15- June -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	25.2
4	pH	-	6.9
5	Total Suspended Solids	mg/L	42
6	Total Dissolved Solid	mg/L	618
7	Biochemical Oxygen Demand at 27°C	mg/L	5.8
8	Chemical Oxygen Demand	mg/L	2.1
9	Total Residual Chlorine	mg/L	1.4
10	Alkalinity	mg/L	106.4
11	Calcium	mg/L	38.8

12	Magnesium	mg/L	26
13	Total Hardness as CaCO3	mg/L	56.4
14	Electrical Conductivity	µs/cm	124
15	Turbidity	NTU	8.8
16	Arsenic as As	µg/L	0.14
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	<0.5
19	Total Chromium as Cr	µg/L	0.11
20	Zinc as Zn	µg/L	0.8
21	Fluoride as F	mg/L	0.1
22	Iron as Fe	mg/L	14
23	Nitrate	mg/L	2.2
24	Sodium as Na	mg/L	2.5
25	Potassium as K	mg/L	2.8
26	Sulfate	mg/L	1.26
27	Nitrate as NO_3	mg/L	3.1
28	Total Silica as SiO_2	mg/L	5.8
29	Total dissolved Solid	mg/L	618

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/02/06/22		**Report No.- OCPL/EMIL /02/06/22**	
Name & Address of Client	ESSEL MINING & INDUSTRIES LTD P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**NANDIGUTU**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07- June -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	08- June -2022
Sample type	Surface Water	Date of Analysis	08- June -2022
Required parameters	As described in W/O	Date of Issue of report	15- June -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	26.2
4	pH	-	6.4
5	Total Suspended Solids	mg/L	28
6	Total Dissolved Solid	mg/L	586
7	Biochemical Oxygen Demand at 27°C	mg/L	3.2
8	Chemical Oxygen Demand	mg/L	3.6
9	Total Residual Chlorine	mg/L	1.8
10	Alkalinity	mg/L	44.8
11	Calcium	mg/L	25.8

12	Magnesium	mg/L	24
13	Total Hardness as CaCO3	mg/L	44.6
14	Electrical Conductivity	µs/cm	86
15	Turbidity	NTU	16.8
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	<0.05
19	Total Chromium as Cr	µg/L	<0.01
20	Zinc as Zn	µg/L	0.2
21	Fluoride as F	mg/L	<0.05
22	Iron as Fe	mg/L	32
23	Nitrate	mg/L	5.2
24	Sodium as Na	mg/L	2.4
25	Potassium as K	mg/L	1.02
26	Sulfate	mg/L	<0.01
27	Nitrate as NO_3	mg/L	3.6
28	Total Silica as SiO_2	mg/L	4.4
29	Total dissolved Solid	mg/L	586

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/03/06/22		**Report No.- OCPL/EMIL /03/06/22**	
Name & Address of Client	ESSEL MINING & INDUSTRIES LTD P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**RESERVOUR POND INSIDE PLANT PREMISES**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07- June -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	08- June -2022
Sample type	Surface Water	Date of Analysis	08- June -2022
Required parameters	As described in W/O	Date of Issue of report	15- June -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	1.3
2	Odour	-	Agreeable
3	Temperature	°C	26.2
4	pH	-	7.1
5	Total Suspended Solids	mg/L	127
6	Total Dissolved Solid	mg/L	848
7	Biochemical Oxygen Demand at 27°C	mg/L	9.4
8	Chemical Oxygen Demand	mg/L	5.2
9	Total Residual Chlorine	mg/L	5.8
10	Alkalinity	mg/L	92
11	Calcium	mg/L	38

12	Magnesium	mg/L	28.6
13	Total Hardness as CaCO3	mg/L	166
14	Electrical Conductivity	µs/cm	185
15	Turbidity	NTU	56.8
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	0.32
18	Cadmium as Cd	µg/L	0.44
19	Total Chromium as Cr	µg/L	0.36
20	Zinc as Zn	µg/L	0.42
21	Fluoride as F	mg/L	<0.05
22	Iron as Fe	mg/L	44.6
23	Nitrate	mg/L	2.2
24	Sodium as Na	mg/L	16.8
25	Potassium as K	mg/L	2.6
26	Sulfate	mg/L	4
27	Nitrate as NO_3	mg/L	5.2
28	Total Silica as SiO_2	mg/L	14.6
29	Total dissolved Solid	mg/L	848

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/04/06/22		**Report No.- OCPL/EMIL /04/06/22**	
Name & Address of Client	ESSEL MINING & INDUSTRIES LTD P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**DALKI NALA, NEAR PLANT**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07- June -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	08- June -2022
Sample type	Surface Water	Date of Analysis	08- June -2022
Required parameters	As described in W/O	Date of Issue of report	15- June -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	1.1
2	Odour	-	Agreeable
3	Temperature	°C	25.8
4	pH	-	7.1
5	Total Suspended Solids	mg/L	29.6
6	Total Dissolved Solid	mg/L	577
7	Biochemical Oxygen Demand at 27°C	mg/L	4.8
8	Chemical Oxygen Demand	mg/L	2.1
9	Total Residual Chlorine	mg/L	0.8
10	Alkalinity	mg/L	75
11	Calcium	mg/L	24.8
12	Magnesium	mg/L	36

13	Total Hardness as CaCO3	mg/L	35.8
14	Electrical Conductivity	µs/cm	106.5
15	Turbidity	NTU	18
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	ND
19	Total Chromium as Cr	µg/L	0.3
20	Zinc as Zn	µg/L	3.8
21	Fluoride as F	mg/L	0.01
22	Iron as Fe	mg/L	21
23	Nitrate	mg/L	11
24	Sodium as Na	mg/L	6.8
25	Potassium as K	mg/L	2.2
26	Sulfate	mg/L	7.8
27	Nitrate as NO_3	mg/L	22.6
28	Total Silica as SiO_2	mg/L	7.6
29	Total dissolved Solid	mg/L	577

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/05/06/22		**Report No.- OCPL/EMIL /05/06/22**	
Name & Address of Client	ESSEL MINING & INDUSTRIES LTD P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**NAIBHANGA**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07- June -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	08- June -2022
Sample type	Surface Water	Date of Analysis	08- June -2022
Required parameters	As described in W/O	Date of Issue of report	15- June -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	26.5
4	pH	-	6.8
5	Total Suspended Solids	mg/L	35.2
6	Total Dissolved Solid	mg/L	669
7	Biochemical Oxygen Demand at 27°C	mg/L	5.1
8	Chemical Oxygen Demand	mg/L	2.6
9	Total Residual Chlorine	mg/L	1.2
10	Alkalinity	mg/L	32.8
11	Calcium	mg/L	30.8
12	Magnesium	mg/L	29

13	Total Hardness as CaCO3	mg/L	27.6
14	Electrical Conductivity	µs/cm	96.8
15	Turbidity	NTU	34.8
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	0.01
18	Cadmium as Cd	µg/L	<0.5
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	2.1
21	Fluoride as F	mg/L	0.1
22	Iron as Fe	mg/L	19.6
23	Nitrate	mg/L	1.5
24	Sodium as Na	mg/L	4.2
25	Potassium as K	mg/L	16
26	Sulfate	mg/L	4.4
27	Nitrate as NO_3	mg/L	5.8
28	Total Silica as SiO_2	mg/L	4
29	Total dissolved Solid	mg/L	669

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

ORECTIC CONSULTING PRIVATE LIMITED
House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

Ground Water - TEST REPORT

Date: 11 -June-2022

Name & address of Client:
ESSEL MINING & INDUSTRIES LTD
P.O. Basantpur, Tahasil- Jhumpura,
Keonjhar, Odisha- 758034

Total no of sample: Five locations.

Sample details: Ground Water

Sample location: ESSEL MINING & INDUSTRIES LTD., Keonjhar, Odisha

Sl. No.	Sample no.	Location details
1	1	JARPADA
2	2	NANDIGUTU
3	3	NAIBHANGA
4	4	PLANT- 1 (Near Canteen)
5	5	PLANT- 2 (Near Tailing Pond)

Sample Ref No.: EMIL/GW/BBSR/346
Report no.: EMIL/BBS/382
Sample description: Ground Water
Date of sample received: 04 -June-2022
Date of Analysis: 05 -June-2022
Date of Issue of report: 11 -June-2022

ANALYSIS RESULT

With drinking water specifications, BIS (As per 10500- 2012 BIS)

Sl. No.	TEST PARAMETER	UOM	Results					BIS Desirable limit	Permissible limit with the absence of alternate source
			1:	2:	3:	4:	5:		
1	Colour	Pt-Co	1.1	1.1	1.0	1.0	1.2		
2	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		
3	Temperature	°C	26.7	28.4	28.1	27.2	27.7		
4	pH	-	7.1	7.2	7.1	6.8	7.4	6.5- 8.5	No relaxation
5	Total Hardness (as $CaCO_3$)	mg/L	52.8	48.6	46	48.2	51	300	600
6	Calcium	mg/L	15.2	16	14.8	16.8	15	75	200
7	Magnesium	mg/L	1.6	2.8	2.4	3.1	2.6	30	No relaxation
8	Chloride	mg/L	22.4	22	18.4	14	15.8	250	1000
9	Alkalinity	mg/L	16	21.6	18.4	16.5	20.4	200	600
10	Electrical Conductivity	µs/cm	61.5	52	54.4	48	38.5	--	--
11	Arsenic as As	µg/L	ND	ND	ND	0.01	ND	10	No relaxation
12	Lead as Pb	µg/L	ND	ND	ND	ND	0.22	10	No relaxation
13	Cadmium as Cd	µg/L	0.08	0.14	0.12	0.18	0.02	3.0	No relaxation
14	Total Chromium as Cr	µg/L	0.28	0.42	0.22	0.04	0.34	50	No relaxation
15	Zinc as Zn	µg/L	56.8	46	93	77	72.8	5000	No relaxation
16	Fluoride as F	mg/L	ND	0.06	ND	0.02	ND	1.0	1.9
17	Iron as Fe	µg/L	16.2	20.4	8.8	11	18	300	1000
18	Nitrate	mg/L	0.14	1.2	0.02	0.01	0.46	45	100
19	Sodium as Na	mg/L	2.1	2.2	1.4	2.8	2.45	150	No relaxation
20	Potassium as K	mg/L	ND	ND	ND	0.3	0.06	12	No relaxation
21	Sulfate	mg/L	ND	0.14	0.28	ND	0.9	200	400
22	Total Silica as	mg/L	0.62	0.18	ND	0.42	0.44	--	--

Tested By: OCPL

	SiO_2								
23	Total suspended Solid	mg/L	0.4	0.82	1.25	1.22	1.6	--	--
24	Total dissolved Solid	mg/L	114	96.8	105	217	144	250	2000
25	Turbidity	NTU	0.28	0.2	0.34	0.48	0.44	5	10

Report prepared by:

Signature

Laboratory In-Charge

*ND= Not Detectable
Standards are as per Government Notification Dtd. 19th June '93.
Sampling & testing has been done as per IS Code 3025.

REPORT ON GROUND WATER LEVEL ANALYSIS
FOR THE MONTH OF JUNE - 2022

Summary Sheet of Monitoring (Water):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	JARPADA	03- June-2022	OCPL/GWL/01/06/22
2.	Sample 02	NANDIGUTU	03- June-2022	OCPL/GWL/02/06/22
3.	Sample 03	NAIBHANGA	03- June-2022	OCPL/GWL/03/06/22
4.	Sample 04	PLANT- 1 (Near Canteen)	03- June-2022	OCPL/GWL/04/06/22
5.	Sample 05	PLANT- 2 (Near Tailing pond)	03- June-2022	OCPL/GWL/05/06/22

MONITORING RESULT

Sl No.	Name of the location	Type of well	Dia. (m)	Depth of the well (m)	Depth of the water table BGL (M)	Remarks
1	JARPADA	Dugwell	0.8	8.2	6.42	--
2	NANDIGUTU	Dugwell	1.2	9.5	6.65	--
3	NAIBHANGA	Dugwell	1.0	8.6	7.64	--
4	PLANT- 1 (Near Canteen)	Bore-well	0.1	62	12.44	--
5	PLANT- 2 (Near Tailing pond)	Bore-well	0.1	60	44.82	--

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Monthly Report On
Environmental Monitoring Data
for the Month of July - 2022

For

M/S ESSEL MINING & INDUSTRIES LTD

P.O. Basantpur, Tahasil- Jhumpura,

Keonjhar, Odisha- 758034

Prepared By:

Orectic Consulting Private Limited
Housing Board Colony, Chandrasekharpur,
Bhubaneswar- 751024, Odisha.

CONTENTS

Weekly Ambient Air Monitoring Data Generated

For the Month of July– 2022

LOCATION AND WEEKLY MONITORING SCHEDULE
(FOR JULY- 2022)

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near Filter Cake Storage Yard		√				√	
Near Crushing Plant		√				√	
Near Raw Material Stack Yard		√				√	
Nediguth Village		√				√	

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Summary Sheet of Sampling (AAQ):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	Near Filter cake storage yard	01.07.2022	OCPL/ AAQ/PMPL/01/07/22
2.	Sample 02	Near Crushing Plant	01.07.2022	OCPL/ AAQ/PMPL/02/07/22
3.	Sample 03	Near Raw Material Stack Yard	01.07.2022	OCPL/ AAQ/PMPL/03/07/22
4.	Sample 04	Nedigutha Village	05.07.2022	OCPL/ AAQ/PMPL/04/07/22
5.	Sample 05	Near Filter cake storage yard	04.07.2022	OCPL/ AAQ/PMPL/05/07/22
6.	Sample 06	Near Crushing Plant	04.07.2022	OCPL/ AAQ/PMPL/06/07/22
7.	Sample 07	Near Raw Material Stack Yard	04.07.2022	OCPL/ AAQ/PMPL/07/07/22
8.	Sample 08	Nedigutha Village	12.07.2022	OCPL/ AAQ/PMPL/08/07/22
9.	Sample 09	Near Filter cake storage yard	08.07.2022	OCPL/ AAQ/PMPL/09/07/22
10.	Sample 10	Near Crushing Plant	08.07.2022	OCPL/ AAQ/PMPL/10/07/22
11.	Sample 11	Near Raw Material Stack Yard	08.07.2022	OCPL/ AAQ/PMPL/11/07/22
12.	Sample 12	Nedigutha Village	19.07.2022	OCPL/ AAQ/PMPL/12/07/22
13.	Sample 13	Near Filter cake storage yard	11.07.2022	OCPL/ AAQ/PMPL/13/07/22
14.	Sample 14	Near Crushing Plant	11.07.2022	OCPL/ AAQ/PMPL/14/07/22
15.	Sample 15	Near Raw Material Stack Yard	11.07.2022	OCPL/ AAQ/PMPL/15/07/22
16.	Sample 16	Nedigutha Village	26.07.2022	OCPL/ AAQ/PMPL/16/07/22
17.	Sample 17	Near Filter cake storage yard	15.07.2022	OCPL/ AAQ/PMPL/17/07/22
18.	Sample 18	Near Crushing Plant	15.07.2022	OCPL/ AAQ/PMPL/18/07/22
19.	Sample 19	Near Raw Material Stack Yard	15.07.2022	OCPL/ AAQ/PMPL/19/07/22
20.	Sample 20	Nedigutha Village	16.07.2022	OCPL/ AAQ/PMPL/20/07/22
21.	Sample 21	Near Filter cake storage yard	18.07.2022	OCPL/ AAQ/PMPL/21/07/22
22.	Sample 22	Near Crushing Plant	18.07.2022	OCPL/ AAQ/PMPL/22/07/22
23.	Sample 23	Near Raw Material Stack Yard	18.07.2022	OCPL/ AAQ/PMPL/23/07/22
24.	Sample 24	Near Filter cake storage yard	22.07.2022	OCPL/ AAQ/PMPL/24/07/22
25.	Sample 25	Near Crushing Plant	22.07.2022	OCPL/ AAQ/PMPL/25/07/22
26.	Sample 26	Near Raw Material Stack Yard	22.07.2022	OCPL/ AAQ/PMPL/26/07/22
27.	Sample 27	Near Filter cake storage yard	25.07.2022	OCPL/ AAQ/PMPL/27/07/22
28.	Sample 28	Near Crushing Plant	25.07.2022	OCPL/ AAQ/PMPL/28/07/22
29.	Sample 29	Near Raw Material Stack Yard	25.07.2022	OCPL/ AAQ/PMPL/29/07/22
30.	Sample 30	Near Filter cake storage yard	29.07.2022	OCPL/ AAQ/PMPL/30/07/22
31.	Sample 31	Near Crushing Plant	29.07.2022	OCPL/ AAQ/PMPL/31/07/22
32.	Sample 32	Near Raw Material Stack Yard	29.07.2022	OCPL/ AAQ/PMPL/32/07/22

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS FOR THE MONTH OF JULY–2022

LOCATION: Near Filter Cake Storage Yard

Parameters	Limit ($\mu g/M^3$)	DATE									
		01.07.22	04.07.22	08.07.22	11.07.22	15.07.22	18.07.22	22.07.22	25.07.22	29.07.22	Avg
PM_{10}	100	90.4	88.7	88	90.5	84	90.4	87	88.2	87.6	88.31
$PM_{2.5}$	60	58	59.5	59.4	56	58	59.8	57.4	60	56.9	58.77
Sulphur Dioxide (SO_2)	80	40.2	42	38	42	38.8	39	41.2	36	37.5	39.41
Oxide of Nitrogen (NO_2)	80	32.2	30.6	28.4	29	32.5	30.4	28.6	28	27.4	29.67
Lead (Pb)	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	176	179.4	180	177	178	175.5	176.9	172	174.6	176.6
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	42.8	39	41	39.6	38	36.2	35	38.4	33.5	38.16
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Environtech- APM -550

Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, &CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsulting.c

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS

FOR THE MONTH OF JULY–2022

LOCATION: Near Crushing Plant

Parameters	Limit (µg/M^3)	DATE									
		01.07.22	04.07.22	08.07.22	11.07.22	15.07.22	18.07.22	22.07.22	25.07.22	29.07.22	Avg
PM_{10}	100	92.2	88	90.6	87	88.8	90.8	88.2	86	86.7	88.7
$PM_{2.5}$	60	58.8	58	56.2	57.8	55.8	52.5	54	56.2	50.8	55.56
Sulphur Dioxide (SO_2)	80	30.8	31.4	26	29.8	27	26.8	24	28.4	24.8	27.66
Oxide of Nitrogen (NO_2)	80	31.4	28	27.5	28.8	27.6	26	25.8	25	22	26.9
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	170.2	168.5	166	164.8	164	166.8	168.2	166	162.2	166.3
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	36.6	38	41	36	35.8	35.2	34	34.4	33.8	36.08
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Envirotech- APM -550

Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS

FOR THE MONTH OF JULY–2022

LOCATION: *Near Raw Material Stack Yard*

Parameters	Limit ($\mu g/M^3$)	DATE									
		01.07.22	04.07.22	08.07.22	11.07.22	15.07.22	18.07.22	22.07.22	25.07.22	29.07.22	Avg
PM_{10}	100	88.7	86.2	86	85.4	86.8	88	84	87	87.2	86.58
$PM_{2.5}$	60	59.5	58	59.6	58	58.4	56	55.4	55	54.8	57.63
Sulphur Dioxide (SO_2)	80	29.6	28.4	25	26.5	24.5	23.4	25	28.2	27.6	26.46
Oxide of Nitrogen (NO_2)	80	30	30.8	29.4	24.8	26.4	24	25.8	27.4	22	26.73
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	175.6	172	165.8	170	178.4	170.6	170	168	166.8	170.8
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	41.8	38	36.4	34.4	36.2	35	35.8	32	34.6	36.02
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable
Name of the calibrated Instrument: RDS – BL – 460 & Environtech- APM -550
Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Tested By: OCPL

Sampling By: Mr. Hrusikesh Das

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsulting.com

ORECTIC CONSULTING PRIVATE LIMITED

House no 162-C, BDA HIG Duplex Colony, Baramunda
Bhubaneswar, Odisha

AMBIENT AIR MONITORING AS PER NAAQ STANDARDS FOR THE MONTH OF JULY– 2022

LOCATION: Nedigutha Village

Parameters	**Limit ($\mu g/M^3$)**	Date-05.07.2022	Date-12.07.2022	Date-19.07.2022	Date-26.07.2022	Date-16.07.2022	Avg.
PM_{10}	100	48.8	52	50.4	46.2	47	48.88
$PM_{2.5}$	60	46.6	45	46.8	48.5	46.2	46.62
Sulphur Dioxide (SO_2)	80	21	18.8	19	20.8	18.6	19.64
Oxide of Nitrogen (NO_2)	80	21	18.4	17	18.2	17.6	18.44
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO) (8 Hrs)	2000	144	142.8	140.6	138.4	136	140.36
Ozone(O3)	180	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	14.4	15	12.6	12.8	12	13.36
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND

*ND: Not Detectable
Name of the calibrated Instrument: RDS – BL – 460 &Environtech- APM -550
Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, &CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Mobile Number - 9439115280. 09853120125|| Email ID - info@orecticconsu

NOISE LEVEL MONITORING RESULT IN dBA

Date of Monitoring: 07.07.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	52.6	61	50.2	45	39.4
2	First-Aid Room	48	51.4	52	45	33.4
3	Security Office	46.2	45	56.4	40.8	36
4	Administrative building	32	36.8	37	31	26
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

REPORT ON SURFACE WATER ANALYSIS
FOR THE MONTH OF JULY - 2022

Summary Sheet of Sampling (Water):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	JARPADA	06- July -2022	OCPL/SW/01/07/22
2.	Sample 02	NANDIGUTU	06- July -2022	OCPL/SW/02/07/22
3.	Sample 03	RESERVOUR POND INSIDE PLANT	06- July -2022	OCPL/SW/03/07/22
4.	Sample 04	DALKI NALA NEAR PLANT	06- July -2022	OCPL/SW/04/07/22
5.	Sample 05	NAIBHANGA	06- July -2022	OCPL/SW/05/07/22

Lab Sample Code: OCPL/SW/01/07/22		**Report No.- OCPL/PMPL/01/07/22**	
Name & Address of Client	PRO MINERALS PRIVATE LIMITED P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**JARPADA**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	06- July -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	07- July -2022
Sample type	Surface Water	Date of Analysis	07- July -2022
Required parameters	As described in W/O	Date of Issue of report	12- July -2022
PMPL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	24.8
4	pH	-	7.1
5	Total Suspended Solids	mg/L	52
6	Total Dissolved Solid	mg/L	847
7	Biochemical Oxygen Demand at 27°C	mg/L	5
8	Chemical Oxygen Demand	mg/L	1.8
9	Total Residual Chlorine	mg/L	1.1
10	Alkalinity	mg/L	126
11	Calcium	mg/L	42.7

12	Magnesium	mg/L	32.6
13	Total Hardness as CaCO3	mg/L	53
14	Electrical Conductivity	µs/cm	134
15	Turbidity	NTU	9.6
16	Arsenic as As	µg/L	0.11
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	0.02
19	Total Chromium as Cr	µg/L	0.18
20	Zinc as Zn	µg/L	0.88
21	Fluoride as F	mg/L	<0.05
22	Iron as Fe	mg/L	16.8
23	Nitrate	mg/L	1.8
24	Sodium as Na	mg/L	2.2
25	Potassium as K	mg/L	2.5
26	Sulfate	mg/L	1.4
27	Nitrate as NO_3	mg/L	2.8
28	Total Silica as SiO_2	mg/L	6.2
29	Total dissolved Solid	mg/L	847

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/02/07/22		**Report No.- OCPL/PMPL/02/07/22**	
Name & Address of Client	PRO MINERALS PRIVATE LIMITED P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**NANDIGUTU**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	06- July -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	07- July -2022
Sample type	Surface Water	Date of Analysis	07- July -2022
Required parameters	As described in W/O	Date of Issue of report	12- July -2022
PMPL reference	WO No.-5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	1.4
2	Odour	-	Agreeable
3	Temperature	°C	25.5
4	pH	-	6.9
5	Total Suspended Solids	mg/L	34
6	Total Dissolved Solid	mg/L	724
7	Biochemical Oxygen Demand at 27°C	mg/L	3.6
8	Chemical Oxygen Demand	mg/L	2.4
9	Total Residual Chlorine	mg/L	1.22
10	Alkalinity	mg/L	46
11	Calcium	mg/L	26.5

12	Magnesium	mg/L	28.2
13	Total Hardness as CaCO3	mg/L	40
14	Electrical Conductivity	µs/cm	91.5
15	Turbidity	NTU	21.6
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	<0.05
19	Total Chromium as Cr	µg/L	<0.04
20	Zinc as Zn	µg/L	0.2
21	Fluoride as F	mg/L	ND
22	Iron as Fe	mg/L	28.8
23	Nitrate	mg/L	3.2
24	Sodium as Na	mg/L	2.8
25	Potassium as K	mg/L	0.06
26	Sulfate	mg/L	<0.01
27	Nitrate as NO_3	mg/L	2.2
28	Total Silica as SiO_2	mg/L	5.1
29	Total dissolved Solid	mg/L	724

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/03/07/22		**Report No.- OCPL/PMPL/03/07/22**	
Name & Address of Client	PRO MINERALS PRIVATE LIMITED P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**RESERVOUR POND INSIDE PROMINERALS PLANT PREMISES**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	06- July -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	07- July -2022
Sample type	Surface Water	Date of Analysis	07- July -2022
Required parameters	As described in W/O	Date of Issue of report	12- July -2022
PMPL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	1.5
2	Odour	-	Agreeable
3	Temperature	°C	25.2
4	pH	-	7.2
5	Total Suspended Solids	mg/L	144
6	Total Dissolved Solid	mg/L	886
7	Biochemical Oxygen Demand at 27°C	mg/L	8.4
8	Chemical Oxygen Demand	mg/L	4.6
9	Total Residual Chlorine	mg/L	5.2
10	Alkalinity	mg/L	84.5

11	Calcium	mg/L	38.8
12	Magnesium	mg/L	31.2
13	Total Hardness as CaCO3	mg/L	141
14	Electrical Conductivity	µs/cm	188.8
15	Turbidity	NTU	58
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	0.06
19	Total Chromium as Cr	µg/L	0.2
20	Zinc as Zn	µg/L	0.02
21	Fluoride as F	mg/L	ND
22	Iron as Fe	mg/L	34.2
23	Nitrate	mg/L	2.4
24	Sodium as Na	mg/L	14
25	Potassium as K	mg/L	1.8
26	Sulfate	mg/L	3.4
27	Nitrate as NO_3	mg/L	4.2
28	Total Silica as SiO_2	mg/L	16.3
29	Total dissolved Solid	mg/L	886

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Tested By: OCPL

Lab Sample Code: OCPL/SW/04/07/22		**Report No.- OCPL/PMPL/04/07/22**	
Name & Address of Client	PRO MINERALS PRIVATE LIMITED P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**DALKI NALA, NEAR PLANT**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	06- July -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	07- July -2022
Sample type	Surface Water	Date of Analysis	07- July -2022
Required parameters	As described in W/O	Date of Issue of report	12- July -2022
PMPL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	1.6
2	Odour	-	Agreeable
3	Temperature	°C	25.1
4	pH	-	7.3
5	Total Suspended Solids	mg/L	32
6	Total Dissolved Solid	mg/L	642
7	Biochemical Oxygen Demand at 27°C	mg/L	5.1
8	Chemical Oxygen Demand	mg/L	2.6
9	Total Residual Chlorine	mg/L	0.4
10	Alkalinity	mg/L	62
11	Calcium	mg/L	28.4
12	Magnesium	mg/L	39.2

13	Total Hardness as CaCO3	mg/L	38.2
14	Electrical Conductivity	µs/cm	112.5
15	Turbidity	NTU	19.8
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	ND
19	Total Chromium as Cr	µg/L	0.04
20	Zinc as Zn	µg/L	1.8
21	Fluoride as F	mg/L	0.04
22	Iron as Fe	mg/L	26.4
23	Nitrate	mg/L	14.2
24	Sodium as Na	mg/L	7.2
25	Potassium as K	mg/L	2.6
26	Sulfate	mg/L	8.2
27	Nitrate as NO_3	mg/L	24
28	Total Silica as SiO_2	mg/L	7.8
29	Total dissolved Solid	mg/L	642

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Lab Sample Code: OCPL/SW/05/07/22		**Report No.- OCPL/PMPL/05/07/22**	
Name & Address of Client	PRO MINERALS PRIVATE LIMITED P.O. Basantpur, Tahasil- Jhumpura, Keonjhar, Odisha- 758034		
Sample description:		Test method	APHA 22nd edition
Sample location	**NAIBHANGA**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	06- July -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	07- July -2022
Sample type	Surface Water	Date of Analysis	07- July -2022
Required parameters	As described in W/O	Date of Issue of report	12- July -2022
PMPL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	1.4
2	Odour	-	Agreeable
3	Temperature	°C	24.8
4	pH	-	7.2
5	Total Suspended Solids	mg/L	38
6	Total Dissolved Solid	mg/L	794
7	Biochemical Oxygen Demand at 27°C	mg/L	4.8
8	Chemical Oxygen Demand	mg/L	2.2
9	Total Residual Chlorine	mg/L	14
10	Alkalinity	mg/L	34
11	Calcium	mg/L	34.4
12	Magnesium	mg/L	31.8

13	Total Hardness as CaCO3	mg/L	32.6
14	Electrical Conductivity	µs/cm	108.2
15	Turbidity	NTU	38.4
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	0.01
18	Cadmium as Cd	µg/L	ND
19	Total Chromium as Cr	µg/L	0.02
20	Zinc as Zn	µg/L	1.82
21	Fluoride as F	mg/L	ND
22	Iron as Fe	mg/L	24.2
23	Nitrate	mg/L	1.8
24	Sodium as Na	mg/L	4.5
25	Potassium as K	mg/L	12.8
26	Sulfate	mg/L	4.2
27	Nitrate as NO_3	mg/L	5.1
28	Total Silica as SiO_2	mg/L	6.4
29	Total dissolved Solid	mg/L	794

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

REPORT ON GROUND WATER LEVEL ANALYSIS
FOR THE MONTH OF JULY - 2022

Summary Sheet of Monitoring (Water):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	JARPADA	16- July-2022	OCPL/GWL/01/07/22
2.	Sample 02	NANDIGUTU	16- July-2022	OCPL/GWL/02/07/22
3.	Sample 03	NAIBHANGA	16- July-2022	OCPL/GWL/03/07/22
4.	Sample 04	PRO MINERALS PLANT- 1 (Near Canteen)	16- July-2022	OCPL/GWL/04/07/22
5.	Sample 05	PRO MINERALS PLANT- 2 (Near Tailing pond)	16- July-2022	OCPL/GWL/05/07/22

MONITORING RESULT

Sl No.	Name of the location	Type of well	Dia. (m)	Depth of the well (m)	Depth of the water table BGL (M)	Remarks
1	JARPADA	Dugwell	0.8	8.2	6.82	--
2	NANDIGUTU	Dugwell	1.2	9.5	6.95	--
3	NAIBHANGA	Dugwell	1.0	8.6	7.98	--
4	PRO MINERALS PLANT- 1 (Near Canteen)	Bore-well	0.1	62	12.86	--
5	PRO MINERALS PLANT- 2 (Near Tailing pond)	Bore-well	0.1	60	45.2	--

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

8/10/2022

Monthly Report on Environmental Monitoring

FOR M/S ESSEL MINING & INDUSTRIES LTD

M/S ESSEL MINING & INDUSTRIES LTD.
VILL- BASANTPUR, PO-DUBUNA, TEHSIL-JHUMPURA, KEONJHAR

Contents

AMBIENT AIR MONITORING DATA

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON		TUE	WED	THU	FRI	SAT
Near Filter Cake Storage Yard		√				√		
Near Crushing Plant		√				√		
Near Raw Material Stack Yard		√				√		
Nediguth Village				√			√	

SUMMARY SHEET OF SAMPLING

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	Near Filter cake storage yard	01.08.2022	OCPL/ AAQ/EMIL/01/08/22
2.	Sample 02	Near Crushing Plant	01.08.2022	OCPL/ AAQ/EMIL/02/08/22
3.	Sample 03	Near Raw Material Stack Yard	01.08.2022	OCPL/ AAQ/EMIL/03/08/22
4.	Sample 04	Nedigutha Village	02.08.2022	OCPL/ AAQ/EMIL/04/08/22
5.	Sample 05	Near Filter cake storage yard	04.08.2022	OCPL/ AAQ/EMIL/05/08/22
6.	Sample 06	Near Crushing Plant	04.08.2022	OCPL/ AAQ/EMIL/06/08/22
7.	Sample 07	Near Raw Material Stack Yard	04.08.2022	OCPL/ AAQ/EMIL/07/08/22
8.	Sample 08	Nedigutha Village	05.08.2022	OCPL/ AAQ/EMIL/08/08/22
9.	Sample 09	Near Filter cake storage yard	08.08.2022	OCPL/ AAQ/EMIL/09/08/22
10.	Sample 10	Near Crushing Plant	08.08.2022	OCPL/ AAQ/EMIL/10/08/22
11.	Sample 11	Near Raw Material Stack Yard	08.08.2022	OCPL/ AAQ/EMIL/11/08/22
12.	Sample 12	Nedigutha Village	09.08.2022	OCPL/ AAQ/EMIL/12/08/22
13.	Sample 13	Near Filter cake storage yard	11.08.2022	OCPL/ AAQ/EMIL/13/08/22
14.	Sample 14	Near Crushing Plant	11.08.2022	OCPL/ AAQ/EMIL/14/08/22
15.	Sample 15	Near Raw Material Stack Yard	11.08.2022	OCPL/ AAQ/EMIL/15/08/22
16.	Sample 16	Nedigutha Village	12.08.2022	OCPL/ AAQ/EMIL/16/08/22

17.	Sample 17	Near Filter cake storage yard	16.08.2022	OCPL/ AAQ/EMIL/17/08/22
18.	Sample 18	Near Crushing Plant	16.08.2022	OCPL/ AAQ/EMIL/18/08/22
19.	Sample 19	Near Raw Material Stack Yard	16.08.2022	OCPL/ AAQ/EMIL/19/08/22
20.	Sample 20	Nedigutha Village	17.08.2022	OCPL/ AAQ/EMIL/20/08/22
21.	Sample 21	Near Filter cake storage yard	18.08.2022	OCPL/ AAQ/EMIL/21/08/22
22.	Sample 22	Near Crushing Plant	18.08.2022	OCPL/ AAQ/EMIL/22/08/22
23.	Sample 23	Near Raw Material Stack Yard	18.08.2022	OCPL/ AAQ/EMIL/23/08/22
24.	Sample 24	Nedigutha Village	19.08.2022	OCPL/ AAQ/EMIL/24/08/22
25.	Sample 25	Near Filter cake storage yard	22.08.2022	OCPL/ AAQ/EMIL/25/08/22
26.	Sample 26	Near Crushing Plant	22.08.2022	OCPL/ AAQ/EMIL/26/08/22
27.	Sample 27	Near Raw Material Stack Yard	22.08.2022	OCPL/ AAQ/EMIL/27/08/22
28.	Sample 28	Nedigutha Village	23.08.2022	OCPL/ AAQ/EMIL/28/08/22
29.	Sample 29	Near Filter cake storage yard	25.08.2022	OCPL/ AAQ/EMIL/29/08/22
30.	Sample 30	Near Crushing Plant	25.08.2022	OCPL/ AAQ/EMIL/30/08/22
31.	Sample 31	Near Raw Material Stack Yard	25.08.2022	OCPL/ AAQ/EMIL/31/08/22
32.	Sample 32	Nedigutha Village	26.08.2022	OCPL/ AAQ/EMIL/32/08/22
33.	Sample 33	Near Filter cake storage yard	29.08.2022	OCPL/ AAQ/EMIL/33/08/22
34.	Sample 34	Near Crushing Plant	29.08.2022	OCPL/ AAQ/EMIL/34/08/22
35.	Sample 35	Near Raw Material Stack Yard	29.08.2022	OCPL/ AAQ/EMIL/35/08/22
36.	Sample 36	Nedigutha Village	30.08.2022	OCPL/ AAQ/EMIL/36/08/22

LOCATION: Near Filter Cake Storage Yard

Parameters	Limit (µg/M^3)	Date									
		01.08.22	04.08.22	08.08.22	11.08.22	16.08.22	18.08.22	22.08.22	25.08.22	29.08.22	Avg
PM_{10}	100	84.6	86.8	86	90	88.2	86	88	85.4	84.6	86.62
$PM_{2.5}$	60	55.8	56	52.4	54.8	55.7	58	56.4	60	57.2	56.36
Sulphur Dioxide (SO_2)	80	38.5	36	37.8	42	35.4	36.7	38	39.4	37	37.86
Oxide of Nitrogen (NO_2)	80	30.4	28	26.6	28.2	24	28.9	30.4	26.6	27	27.78
Lead (Pb)	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO) (8 Hrs)	2000	177.2	171.8	174.5	178	168.4	170.2	172.3	177.6	169	173.22
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia (NH_3)	400	35.6	36	34.8	32.9	28.2	31	32.4	30.9	29.8	32.4
Benzene(C6 H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel (Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Envirotech- APM -550

Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

LOCATION: Near Crushing Plant

Parameters	Limit (µg/ M^3)	DATE									
		01.08.22	04.08.22	08.08.22	11.08.22	16.08.22	18.08.22	22.08.22	25.08.22	29.08.22	Avg
PM_{10}	100	88.4	89.6	85.4	86	81.4	84.7	85	82.8	84	85.25
$PM_{2.5}$	60	54.6	52.6	54	56.4	48.3	50.6	52	54.4	50.2	52.56
Sulphur Dioxide (SO_2)	80	26.6	28	24.9	25.2	21	22.4	24.8	26	27.2	25.12
Oxide of Nitrogen (NO_2)	80	22.5	22	24.2	23.7	18	22.2	21.6	23.6	21.2	22.11
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	162.8	160.4	165	165.4	155.4	159	161.2	164	158.4	161.28
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	32	34.2	38.4	34.6	29.6	28	31.7	32.2	31.4	32.45
Benzene(C_6H_6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Envirotech- APM -550

Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

LOCATION: Near Raw Material Stack Yard

Parameters	Limit ($\mu g/M^3$)	DATE									
		01.08.22	04.08.22	08.08.22	11.08.22	16.08.22	18.08.22	22.08.22	25.08.22	29.08.22	Avg
PM_{10}	100	86	88.2	85	85.6	80.4	79.8	81	82.6	82	83.4
$PM_{2.5}$	60	58	56.4	55.2	56.6	58.2	60	60	59	58.4	57.71
Sulphur Dioxide (SO_2)	80	28	26.4	31.2	28	22	26.2	24.4	29	25.5	26.74
Oxide of Nitrogen (NO_2)	80	25.8	26	28.4	24	20.4	21.8	26	26.8	27.2	25.15
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	174.2	168.4	166	170.5	154.8	162.7	165	167.2	160.9	165.5
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	34	36.2	30	30.8	24.4	28	28.7	30.4	30	30.27
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 &Environtech- APM -550

Measurement of PM_{10}& $PM_{2.5,}$ SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

LOCATION: Nedigutha Village

Parameters	Limit (µg/M^3)	DATE									
		02.08.22	05.08.22	09.08.22	12.08.22	17.08.22	19.08.22	23.08.22	26.08.22	30.08.22	Avg
PM_{10}	100	46	48.2	44	46.6	44.4	48.6	48.9	48.7	48.1	47.05
$PM_{2.5}$	60	44.8	46	42.5	44.8	45.2	45.6	45.6	44.9	44.2	44.84
Sulphur Dioxide (SO_2)	80	20.4	21	15	18.6	20	18.6	18.5	18.6	19.7	18.93
Oxide of Nitrogen (NO_2)	80	18	17.8	14	16.2	16.5	17.9	18.6	18.1	17.6	17.18
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	132	142.2	134.6	136	138.2	140.2	139.6	141.3	140.6	138.3
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	14	12.6	10.4	11.5	11.8	14.34	13.28	12.92	13.32	12.68
Benzene(C6 H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 &Environtech- APM -550

Measurement of PM_{10}& $PM_{2.5,}$ SO_2, NO_2, &CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

NOISE LEVEL MONITORING RESULT IN dBA

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near Beneficiation Plant Establishment Area	√			√			
First-Aid Room	√			√			
Security Office	√			√			
Administrative building	√			√			

SUMMARY SHEET OF SAMPLING

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	Near Beneficiation Plant Establishment Area	03.08.2022	OCPL/ NL/EMIL/01/08/22
2.	Sample 02	First-Aid Room	03.08.2022	OCPL/ NL/EMIL/02/08/22
3.	Sample 03	Security Office	03.08.2022	OCPL/ NL/EMIL/03/08/22
4.	Sample 04	Administrative building	03.08.2022	OCPL/ NL/EMIL/04/08/22
5.	Sample 05	Near Beneficiation Plant Establishment Area	07.08.2022	OCPL/ NL/EMIL/05/08/22
6.	Sample 06	First-Aid Room	07.08.2022	OCPL/ NL/EMIL/06/08/22
7.	Sample 07	Security Office	07.08.2022	OCPL/ NL/EMIL/07/08/22
8.	Sample 08	Administrative building	07.08.2022	OCPL/ NL/EMIL/08/08/22
9.	Sample 09	Near Beneficiation Plant Establishment Area	10.08.2022	OCPL/ NL/EMIL/09/08/22
10.	Sample 10	First-Aid Room	10.08.2022	OCPL/ NL/EMIL/10/08/22
11.	Sample 11	Security Office	10.08.2022	OCPL/ NL/EMIL/11/08/22
12.	Sample 12	Administrative building	10.08.2022	OCPL/ NL/EMIL/12/08/22
13.	Sample 13	Near Beneficiation Plant Establishment Area	14.08.2022	OCPL/ NL/EMIL/13/08/22
14.	Sample 14	First-Aid Room	14.08.2022	OCPL/ NL/EMIL/14/08/22
15.	Sample 15	Security Office	14.08.2022	OCPL/ NL/EMIL/15/08/22
16.	Sample 16	Administrative building	14.08.2022	OCPL/ NL/EMIL/16/08/22
17.	Sample 17	Near Beneficiation Plant Establishment Area	17.08.2022	OCPL/ NL/EMIL/17/08/22
18.	Sample 18	First-Aid Room	17.08.2022	OCPL/ NL/EMIL/18/08/22
19.	Sample 19	Security Office	17.08.2022	OCPL/ NL/EMIL/19/08/22
20.	Sample 20	Administrative building	17.08.2022	OCPL/ NL/EMIL/20/08/22
21.	Sample 21	Near Beneficiation Plant Establishment Area	21.08.2022	OCPL/ NL/EMIL/21/08/22
22.	Sample 22	First-Aid Room	21.08.2022	OCPL/ NL/EMIL/22/08/22
23.	Sample 23	Security Office	21.08.2022	OCPL/ NL/EMIL/23/08/22

24.	Sample 24	Administrative building	21.08.2022	OCPL/ NL/EMIL/24/08/22
25.	Sample 25	Near Beneficiation Plant Establishment Area	24.08.2022	OCPL/ NL/EMIL/25/08/22
26.	Sample 26	First-Aid Room	24.08.2022	OCPL/ NL/EMIL/26/08/22
27.	Sample 27	Security Office	24.08.2022	OCPL/ NL/EMIL/27/08/22
28.	Sample 28	Administrative building	24.08.2022	OCPL/ NL/EMIL/28/08/22
29.	Sample 29	Near Beneficiation Plant Establishment Area	28.08.2022	OCPL/ NL/EMIL/29/08/22
30.	Sample 30	First-Aid Room	28.08.2022	OCPL/ NL/EMIL/30/08/22
31.	Sample 31	Security Office	28.08.2022	OCPL/ NL/EMIL/31/08/22
32.	Sample 32	Administrative building	28.08.2022	OCPL/ NL/EMIL/32/08/22
33.	Sample 33	Near Beneficiation Plant Establishment Area	31.08.2022	OCPL/ NL/EMIL/33/08/22
34.	Sample 34	First-Aid Room	31.08.2022	OCPL/ NL/EMIL/34/08/22
35.	Sample 35	Security Office	31.08.2022	OCPL/ NL/EMIL/35/08/22
36.	Sample 36	Administrative building	31.08.2022	OCPL/ NL/EMIL/36/08/22

Date of Monitoring: 03.08.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	54.8	66.6	68	58	36.9
2	First-Aid Room	51.2	57.9	56.3	46.8	35
3	Security Office	48	55.2	55	40.1	28.4
4	Administrative building	30	35	34	29.8	26
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 07.08.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	55.3	66	68.9	58.9	41.7
2	First-Aid Room	48.7	60	54	46.1	32.4
3	Security Office	44	58	51.7	45.7	33.8
4	Administrative building	32.9	34	38	28.8	23.5
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 10.08.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	58	69	65.8	48.8	32
2	First-Aid Room	46.4	56.2	56	44.6	32.4
3	Security Office	44	54	55.1	44.8	36
4	Administrative building	30	30.3	31.4	27	21
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 14.08.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	55	66.1	58	48.9	32
2	First-Aid Room	46.9	57.7	54	45.7	36.4
3	Security Office	44	49	51.3	44	45
4	Administrative building	32.2	34	35	26	21.8
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 17.08.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	53.4	66.4	65.8	50.4	36.5
2	First-Aid Room	48.6	54.5	53.9	46.6	27.8
3	Security Office	42.4	46	51	40.2	25.4
4	Administrative building	28.8	32	35.4	29	21.2
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 21.08.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	55.8	65.1	50.2	48	39.4
2	First-Aid Room	48.5	52.8	52	45	35.4
3	Security Office	46.2	45	54.2	40.8	36
4	Administrative building	35.9	36.8	37	32	27.3
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 24.08.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	56.3	64	60	58	46.2
2	First-Aid Room	54.8	50.6	47.4	41.7	32
3	Security Office	58	54.7	52	46.5	28.4
4	Administrative building	31.5	35	34	30.1	24.5
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 28.08.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	56.6	66.1	56.2	48	36
2	First-Aid Room	44.6	51.5	52	45.6	30.5
3	Security Office	46.8	40	54	42.7	31
4	Administrative building	35	39	32.8	29.2	28.5
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 31.08.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	50	62.4	53.6	48	41.5
2	First-Aid Room	52.6	54.2	48	42.5	30.2
3	Security Office	54	56.5	50.8	44	32
4	Administrative building	35	34.4	36.2	29.8	25.8
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

SURFACE WATER ANALYSIS FOR THE MONTH OF AUGUST – 2022

SUMMARY SHEET OF SAMPLING (SURFACE WATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	JARPADA	05- August -2022	OCPL/SW/01/08/22
2.	Sample 02	NANDIGUTU	05- August -2022	OCPL/SW/02/08/22
3.	Sample 03	RESERVOUR POND INSIDE PLANT	05- August -2022	OCPL/SW/03/08/22
4.	Sample 04	DALKI NALA NEAR PLANT	05- August -2022	OCPL/SW/04/08/22
5.	Sample 05	NAIBHANGA	05- August -2022	OCPL/SW/05/08/22

Location: JARPADA

Lab Sample Code: OCPL/SW/01/08/22		**Report No.- OCPL/EMIL/01/08/22**	
Sample description:		Test method	APHA 22nd edition
Sample location	**JARPADA**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	05- August -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	06- August -2022
Sample type	Surface Water	Date of Analysis	06- August -2022
Required parameters	As described in W/O	Date of Issue of report	12- August -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	**TEST PARAMETER**	**UOM**	**Results**
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	24
4	pH	-	6.8
5	Total Suspended Solids	mg/L	65.8
6	Total Dissolved Solid	mg/L	886
7	Biochemical Oxygen Demand at 27°C	mg/L	6.1
8	Chemical Oxygen Demand	mg/L	1.4
9	Total Residual Chlorine	mg/L	0.84
10	Alkalinity	mg/L	106
11	Calcium	mg/L	44
12	Magnesium	mg/L	34.4
13	Total Hardness as CaCO3	mg/L	46.8
14	Electrical Conductivity	µs/cm	149
15	Turbidity	NTU	11.4
16	Arsenic as As	µg/L	<0.05

17	Lead as Pb	µg/L	<0.05
18	Cadmium as Cd	µg/L	ND
19	Total Chromium as Cr	µg/L	0.28
20	Zinc as Zn	µg/L	0.9
21	Fluoride as F	mg/L	<0.05
22	Iron as Fe	mg/L	14.8
23	Nitrate	mg/L	1.4
24	Sodium as Na	mg/L	3.6
25	Potassium as K	mg/L	3.2
26	Sulfate	mg/L	1.6
27	Nitrate as NO_3	mg/L	3.3
28	Total Silica as SiO_2	mg/L	5.8
29	Total dissolved Solid	mg/L	886

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Location: NANDIGUTU

Lab Sample Code: OCPL/SW/02/08/22		**Report No.- OCPL/EMIL/02/08/22**	
Sample description:		Test method	APHA 22nd edition
Sample location	**NANDIGUTU**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	05- August -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	06- August -2022
Sample type	Surface Water	Date of Analysis	06- August -2022
Required parameters	As described in W/O	Date of Issue of report	12- August -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	**TEST PARAMETER**	**UOM**	**Results**
1	Colour	Pt-Co	1.6
2	Odour	-	Agreeable
3	Temperature	°C	24.2
4	pH	-	6.9
5	Total Suspended Solids	mg/L	38.2
6	Total Dissolved Solid	mg/L	769
7	Biochemical Oxygen Demand at 27°C	mg/L	3.2
8	Chemical Oxygen Demand	mg/L	2.6
9	Total Residual Chlorine	mg/L	0.8
10	Alkalinity	mg/L	38
11	Calcium	mg/L	30.2
12	Magnesium	mg/L	39.6
13	Total Hardness as CaCO3	mg/L	34.8
14	Electrical Conductivity	µs/cm	88.6
15	Turbidity	NTU	26

16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	<0.05
19	Total Chromium as Cr	µg/L	<0.05
20	Zinc as Zn	µg/L	1.04
21	Fluoride as F	mg/L	ND
22	Iron as Fe	mg/L	26.4
23	Nitrate	mg/L	2.8
24	Sodium as Na	mg/L	2.1
25	Potassium as K	mg/L	0.14
26	Sulfate	mg/L	<0.01
27	Nitrate as NO_3	mg/L	2.4
28	Total Silica as SiO_2	mg/L	5.8
29	Total dissolved Solid	mg/L	769

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Location: RESERVOUR POND INSIDE PLANT PREMISES

Lab Sample Code: OCPL/SW/03/08/22		**Report No.- OCPL/EMIL/03/08/22**	
Sample description:		Test method	APHA 22nd edition
Sample location	**RESERVOUR POND INSIDE PLANT PREMISES**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	05- August -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	06- August -2022
Sample type	Surface Water	Date of Analysis	06- August -2022
Required parameters	As described in W/O	Date of Issue of report	12- August -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	**TEST PARAMETER**	**UOM**	**Results**
1	Colour	Pt-Co	1.6
2	Odour	-	Agreeable
3	Temperature	°C	23.8
4	pH	-	6.8
5	Total Suspended Solids	mg/L	156.8
6	Total Dissolved Solid	mg/L	1053
7	Biochemical Oxygen Demand at 27°C	mg/L	10.2
8	Chemical Oxygen Demand	mg/L	5.2
9	Total Residual Chlorine	mg/L	3.6
10	Alkalinity	mg/L	82
11	Calcium	mg/L	42.4
12	Magnesium	mg/L	34
13	Total Hardness as CaCO3	mg/L	156
14	Electrical Conductivity	µs/cm	194.2

15	Turbidity	NTU	56.8
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	0.02
19	Total Chromium as Cr	µg/L	ND
20	Zinc as Zn	µg/L	<0.05
21	Fluoride as F	mg/L	ND
22	Iron as Fe	mg/L	32.8
23	Nitrate	mg/L	3.2
24	Sodium as Na	mg/L	16
25	Potassium as K	mg/L	2.2
26	Sulfate	mg/L	4.3
27	Nitrate as NO_3	mg/L	3.88
28	Total Silica as SiO_2	mg/L	16.5
29	Total dissolved Solid	mg/L	1053

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Location: DALKI NALA, NEAR PLANT

Lab Sample Code: OCPL/SW/04/08/22		**Report No.- OCPL/EMIL/04/08/22**	
Sample description:		Test method	APHA 22nd edition
Sample location	**DALKI NALA, NEAR PLANT**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	05- August -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	06- August -2022
Sample type	Surface Water	Date of Analysis	06- August -2022
Required parameters	As described in W/O	Date of Issue of report	12- August -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	**TEST PARAMETER**	**UOM**	**Results**
1	Colour	Pt-Co	1.82
2	Odour	-	Agreeable
3	Temperature	°C	23.6
4	pH	-	7.1
5	Total Suspended Solids	mg/L	38
6	Total Dissolved Solid	mg/L	716
7	Biochemical Oxygen Demand at 27°C	mg/L	4.8
8	Chemical Oxygen Demand	mg/L	2.2
9	Total Residual Chlorine	mg/L	0.2
10	Alkalinity	mg/L	58
11	Calcium	mg/L	24.6
12	Magnesium	mg/L	42
13	Total Hardness as CaCO3	mg/L	36
14	Electrical Conductivity	µs/cm	96.8
15	Turbidity	NTU	22.4

16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	ND
19	Total Chromium as Cr	µg/L	<0.02
20	Zinc as Zn	µg/L	1.2
21	Fluoride as F	mg/L	ND
22	Iron as Fe	mg/L	25.7
23	Nitrate	mg/L	18
24	Sodium as Na	mg/L	6.8
25	Potassium as K	mg/L	3.2
26	Sulfate	mg/L	7.5
27	Nitrate as NO_3	mg/L	28.2
28	Total Silica as SiO_2	mg/L	8.2
29	Total dissolved Solid	mg/L	716

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Location: NAIBHANGA

Lab Sample Code: OCPL/SW/05/08/22		**Report No.- OCPL/EMIL/05/08/22**	
Sample description:		Test method	APHA 22nd edition
Sample location	**NAIBHANGA**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	05- August -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	06- August -2022
Sample type	Surface Water	Date of Analysis	06- August -2022
Required parameters	As described in W/O	Date of Issue of report	12- August -2022
EMIL reference	WO No.- 5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	**TEST PARAMETER**	**UOM**	**Results**
1	Colour	Pt-Co	1.8
2	Odour	-	Agreeable
3	Temperature	°C	23.8
4	pH	-	6.8
5	Total Suspended Solids	mg/L	46.5
6	Total Dissolved Solid	mg/L	847
7	Biochemical Oxygen Demand at 27°C	mg/L	3.8
8	Chemical Oxygen Demand	mg/L	1.2
9	Total Residual Chlorine	mg/L	0.8
10	Alkalinity	mg/L	26
11	Calcium	mg/L	36.5
12	Magnesium	mg/L	38
13	Total Hardness as CaCO3	mg/L	28.7
14	Electrical Conductivity	µs/cm	124
15	Turbidity	NTU	41.6

16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	ND
19	Total Chromium as Cr	µg/L	ND
20	Zinc as Zn	µg/L	1.2
21	Fluoride as F	mg/L	ND
22	Iron as Fe	mg/L	26.4
23	Nitrate	mg/L	2.1
24	Sodium as Na	mg/L	4.1
25	Potassium as K	mg/L	14.6
26	Sulfate	mg/L	3.7
27	Nitrate as NO_3	mg/L	5.8
28	Total Silica as SiO_2	mg/L	5.2
29	Total dissolved Solid	mg/L	847

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

GROUND WATER MONITORING REPORT

SUMMARY SHEET OF SAMPLING (GROUND WATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	JARPADA	11- August -2022	OCPL/SW/01/08/22
2.	Sample 02	NANDIGUTU	11- August -2022	OCPL/SW/02/08/22
3.	Sample 03	NAIBHANGA	11- August -2022	OCPL/SW/03/08/22
4.	Sample 04	PLANT- 1 (Near Canteen)	11- August -2022	OCPL/SW/04/08/22
5.	Sample 05	PLANT- 2 (Near Tailing Pond)	11- August -2022	OCPL/SW/05/08/22

ANALYSIS RESULT

With drinking water specifications, BIS (As per 10500- 2012 BIS)

Sl. No.	TEST PARAMETER	UOM	Results					BIS Desirable limit	Permissible limit with the absence of alternate source
			JARPADA	NANDIGUTU	NAIBHANGA	PLANT- 1 (Near Canteen)	PLANT- 2 (Near Tailing Pond)		
1	Colour	Pt-Co	1.2	1.1	1.1	1.0	1.2		
2	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		
3	Temperature	°C	25.6	25.8	26.2	25.5	25.2		
4	pH	-	7.1	7.1	7.2	7.2	6.9	6.5- 8.5	No relaxation
5	Total Hardness (as $CaCO_3$)	mg/L	50.8	51.6	56.2	61.8	42.4	300	600
6	Calcium	mg/L	12.4	17.5	16.2	16	14.8	75	200
7	Magnesium	mg/L	0.85	2.6	3.5	3.1	2.2	30	No relaxation
8	Chloride	mg/L	14.4	18	12.6	8.2	11.7	250	1000
9	Alkalinity	mg/L	21.4	26	16.8	22.5	14.6	200	600
10	Electrical Conductivity	µs/cm	68	72	59.4	62.6	74	--	--
11	Arsenic as As	µg/L	ND	ND	ND	0.01	ND	10	No relaxation
12	Lead as Pb	µg/L	ND	ND	ND	ND	0.02	10	No relaxation
13	Cadmium as Cd	µg/L	0.08	0.11	0.02	ND	0.02	3.0	No relaxation
14	Total Chromium as Cr	µg/L	ND	ND	0.02	0.04	0.04	50	No relaxation

15	Zinc as Zn	µg/L	78.5	66.8	60.4	84.2	88.4	5000	No relaxation
16	Fluoride as F	mg/L	ND	ND	ND	ND	ND	1.0	1.9
17	Iron as Fe	µg/L	22.8	18.4	14	16.6	28.4	300	1000
18	Nitrate	mg/L	0.04	0.2	0.02	0.14	0.06	45	100
19	Sodium as Na	mg/L	1.08	1.1	1.02	1.02	0.42	150	No relaxation
20	Potassium as K	mg/L	ND	ND	0.01	0.05	ND	12	No relaxation
21	Sulfate	mg/L	ND	0.02	0.08	ND	0.06	200	400
22	Total Silica as SiO_2	mg/L	ND	0.11	0.02	0.02	0.2	--	--
23	Total suspended Solid	mg/L	0.82	0.42	1.4	0.8	0.48	--	--
24	Total dissolved Solid	mg/L	214	186	197	239	227	250	2000
25	Turbidity	NTU	0.3	0.42	0.2	0.18	0.12	5	10

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

REPORT ON GROUND WATER LEVEL ANALYSISFOR THE MONTH OF AUGUST – 2022

SUMMARY SHEET OF MONITORING:

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
6.	Sample 01	JARPADA	12- August-2022	OCPL/GWL/01/08/22
7.	Sample 02	NANDIGUTU	12- August-2022	OCPL/GWL/02/08/22
8.	Sample 03	NAIBHANGA	12- August-2022	OCPL/GWL/03/08/22
9.	Sample 04	PLANT- 1 (Near Canteen)	12- August-2022	OCPL/GWL/04/08/22
10.	Sample 05	PLANT- 2 (Near Tailing Pond)	12- August-2022	OCPL/GWL/05/08/22

MONITORING RESULT

Sl No.	Name of the location	Type of well	Dia. (m)	Depth of the well (m)	Depth of the water table BGL (M)	Remarks
1	JARPADA	Dugwell	0.8	8.2	7.24	--
2	NANDIGUTU	Dugwell	1.2	9.5	7.46	--
3	NAIBHANGA	Dugwell	1.0	8.6	8.15	--
4	PLANT- 1 (Near Canteen)	Bore-well	0.1	62	13.65	--
5	PLANT- 2 (Near Tailing Pond)	Bore-well	0.1	60	46.42	--

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

10/10/2022

Monthly Report on Environmental Monitoring

FOR M/S ESSEL MINING & INDUSTRIES LTD

M/S ESSEL MINING & INDUSTRIES LTD.
VILL- BASANTPUR, PO-DUBUNA, TEHSIL-JHUMPURA, KEONJHAR

Contents

AMBIENT AIR MONITORING DATA

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON		TUE	WED	THU	FRI	SAT
Near Filter Cake Storage Yard		√				√		
Near Crushing Plant		√				√		
Near Raw Material Stack Yard		√				√		
Nediguth Village				√				√

SUMMARY SHEET OF SAMPLING

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	Near Filter cake storage yard	01.09.2022	OCPL/ AAQ/EMIL/01/09/22
2.	Sample 02	Near Crushing Plant	01.09.2022	OCPL/ AAQ/EMIL/02/09/22
3.	Sample 03	Near Raw Material Stack Yard	01.09.2022	OCPL/ AAQ/EMIL/03/09/22
4.	Sample 04	Nedigutha Village	03.09.2022	OCPL/ AAQ/EMIL/04/09/22
5.	Sample 05	Near Filter cake storage yard	05.09.2022	OCPL/ AAQ/EMIL/05/09/22
6.	Sample 06	Near Crushing Plant	05.09.2022	OCPL/ AAQ/EMIL/06/09/22
7.	Sample 07	Near Raw Material Stack Yard	05.09.2022	OCPL/ AAQ/EMIL/07/09/22
8.	Sample 08	Nedigutha Village	06.09.2022	OCPL/ AAQ/EMIL/08/09/22
9.	Sample 09	Near Filter cake storage yard	08.09.2022	OCPL/ AAQ/EMIL/09/09/22
10.	Sample 10	Near Crushing Plant	08.09.2022	OCPL/ AAQ/EMIL/10/09/22
11.	Sample 11	Near Raw Material Stack Yard	08.09.2022	OCPL/ AAQ/EMIL/11/09/22
12.	Sample 12	Nedigutha Village	10.09.2022	OCPL/ AAQ/EMIL/12/09/22
13.	Sample 13	Near Filter cake storage yard	12.09.2022	OCPL/ AAQ/EMIL/13/09/22
14.	Sample 14	Near Crushing Plant	12.09.2022	OCPL/ AAQ/EMIL/14/09/22
15.	Sample 15	Near Raw Material Stack Yard	12.09.2022	OCPL/ AAQ/EMIL/15/09/22
16.	Sample 16	Nedigutha Village	13.09.2022	OCPL/ AAQ/EMIL/16/09/22
17.	Sample 17	Near Filter cake storage	15.09.2022	OCPL/

		yard		AAQ/EMIL/17/09/22
18.	Sample 18	Near Crushing Plant	15.09.2022	OCPL/ AAQ/EMIL/18/09/22
19.	Sample 19	Near Raw Material Stack Yard	15.09.2022	OCPL/ AAQ/EMIL/19/09/22
20.	Sample 20	Nedigutha Village	17.09.2022	OCPL/ AAQ/EMIL/20/09/22
21.	Sample 21	Near Filter cake storage yard	19.09.2022	OCPL/ AAQ/EMIL/21/09/22
22.	Sample 22	Near Crushing Plant	19.09.2022	OCPL/ AAQ/EMIL/22/09/22
23.	Sample 23	Near Raw Material Stack Yard	19.09.2022	OCPL/ AAQ/EMIL/23/09/22
24.	Sample 24	Nedigutha Village	20.09.2022	OCPL/ AAQ/EMIL/24/09/22
25.	Sample 25	Near Filter cake storage yard	22.09.2022	OCPL/ AAQ/EMIL/25/09/22
26.	Sample 26	Near Crushing Plant	22.09.2022	OCPL/ AAQ/EMIL/26/09/22
27.	Sample 27	Near Raw Material Stack Yard	22.09.2022	OCPL/ AAQ/EMIL/27/09/22
28.	Sample 28	Nedigutha Village	24.09.2022	OCPL/ AAQ/EMIL/28/09/22
29.	Sample 29	Near Filter cake storage yard	26.09.2022	OCPL/ AAQ/EMIL/29/09/22
30.	Sample 30	Near Crushing Plant	26.09.2022	OCPL/ AAQ/EMIL/30/09/22
31.	Sample 31	Near Raw Material Stack Yard	26.09.2022	OCPL/ AAQ/EMIL/31/09/22
32.	Sample 32	Nedigutha Village	27.09.2022	OCPL/ AAQ/EMIL/32/09/22
33.	Sample 33	Near Filter cake storage yard	29.09.2022	OCPL/ AAQ/EMIL/33/09/22
34.	Sample 34	Near Crushing Plant	29.09.2022	OCPL/ AAQ/EMIL/34/09/22
35.	Sample 35	Near Raw Material Stack Yard	29.09.2022	OCPL/ AAQ/EMIL/35/09/22
36.	Sample 36	Nedigutha Village	30.09.2022	OCPL/ AAQ/EMIL/36/09/22

LOCATION: Near Filter Cake Storage Yard

Parameters	Limit (µg/M^3)	Date									
		01.09.22	05.09.22	08.09.22	12.09.22	15.09.22	19.09.22	22.09.22	26.09.22	29.09.22	Avg
PM_{10}	100	82	84.2	86.4	82.5	88	80.2	82.6	85.7	83.8	83.93
$PM_{2.5}$	60	54.8	55.6	55	54.2	52	50.4	50	52.5	52	52.94
Sulphur Dioxide (SO_2)	80	35.4	36	38.2	40.6	36.8	36.7	37.5	34.4	36	36.84
Oxide of Nitrogen (NO_2)	80	32.2	30.6	28	32	34.5	30.8	28	26.5	25.4	29.77
Lead (Pb)	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO) (8 Hrs)	2000	168	165.4	166.8	170.4	172	171.6	170.2	166.5	167	168.65
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia (NH_3)	400	28.6	30.4	30	27.8	31.5	32.2	30.5	27.4	28	29.6
Benzene(C6 H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel (Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 & Envirotech- APM -550

Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

LOCATION: Near Crushing Plant

Parameters	Limit (µg/ M^3)	DATE									
		01.09.22	05.09.22	08.09.22	12.09.22	15.09.22	19.09.22	22.09.22	26.09.22	29.09.22	Avg
PM_{10}	100	85.6	85	84.6	82	84.8	81.2	83.5	82	80.4	83.23
$PM_{2.5}$	60	52.6	52.2	51	50.4	51.8	48.6	49	50.8	48	50.48
Sulphur Dioxide (SO_2)	80	28.5	29	29.6	26	25.4	24	24.5	25.4	22	26.04
Oxide of Nitrogen (NO_2)	80	24	22.8	25.4	23.4	21	20.8	20	18.4	16	21.31
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	160.8	164.2	158	165.4	161.4	167.2	155.8	159	151.6	160.37
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	30.8	30	28.4	27.5	27	26.2	24.5	25	22.6	26.88
Benzene(C6 H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable
Name of the calibrated Instrument: RDS – BL – 460 & Envirotech- APM -550
Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

LOCATION: Near Raw Material Stack Yard

Parameters	Limit ($\mu g/M^3$)	DATE									
		01.09.22	05.09.22	08.09.22	12.09.22	15.09.22	19.09.22	22.09.22	26.09.22	29.09.22	Avg
PM_{10}	100	84.2	82.6	82	80.4	78.6	76	75.2	75	74.6	78.73
$PM_{2.5}$	60	52.6	55.2	54	55.8	57	50.4	58.8	54.8	52.4	51.22
Sulphur Dioxide (SO_2)	80	24.2	26	25.8	21	25.7	24.8	24	20	20.4	23.54
Oxide of Nitrogen (NO_2)	80	24	25.2	27.2	24.3	21	22.8	24	20.4	21.8	23.41
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	162.3	160.8	158	157.5	158.6	155	154.6	152	150.8	156.6
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	28.8	28	29.6	30	27.9	26	25.4	26.8	24	27.38
Benzene(C6H6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable
Name of the calibrated Instrument: RDS – BL – 460 &Environtech- APM -550
Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, & CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

LOCATION: Nedigutha Village

Parameters	Limit (µg/M^3)	DATE									
		03.09.22	06.09.22	10.09.22	13.09.22	17.09.22	20.09.22	24.09.22	27.09.22	30.09.22	Avg
PM_{10}	100	44.5	46.6	45	44.8	42	45.6	46.8	47.2	42.5	45
$PM_{2.5}$	60	44	46	42.8	42	45.2	44.6	45.6	44.9	40.5	43.95
Sulphur Dioxide (SO_2)	80	18	20.5	16	17.5	16	17.8	16	18.6	15.2	17.28
Oxide of Nitrogen (NO_2)	80	16.8	15	16.2	17	15.6	17.9	15.4	17.2	14.5	16.17
Lead (Pb)	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO)(8 Hrs)	2000	134.6	140.6	138.8	136	137.7	138.9	139.6	140	135.2	137.93
Ozone(O3)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia(NH_3)	400	14.8	14	15.2	13.6	12	11.8	12.8	10.6	10.8	12.84
Benzene(C_6H_6)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a) Pyrene (BaP) Particulate phase only(ng/m3)	01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As) (ng/m3)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m3)	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*ND: Not Detectable

Name of the calibrated Instrument: RDS – BL – 460 &Environtech- APM -550

Measurement of PM_{10}& $PM_{2.5}$, SO_2, NO_2, &CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X& XVII respectively

NOISE LEVEL MONITORING RESULT (In DbA) FOR THE MONTH OF SEPTEMBER

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near Beneficiation Plant Establishment Area				√		√	
First-Aid Room				√		√	
Security Office				√		√	
Administrative building				√		√	

SUMMARY SHEET OF SAMPLING

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	Near Beneficiation Plant Establishment Area	02.09.2022	OCPL/ NL/EMIL/01/09/22
2.	Sample 02	First-Aid Room	02.09.2022	OCPL/ NL/EMIL/02/09/22
3.	Sample 03	Security Office	02.09.2022	OCPL/ NL/EMIL/03/09/22
4.	Sample 04	Administrative building	02.09.2022	OCPL/ NL/EMIL/04/09/22
5.	Sample 05	Near Beneficiation Plant Establishment Area	07.09.2022	OCPL/ NL/EMIL/05/09/22
6.	Sample 06	First-Aid Room	07.09.2022	OCPL/ NL/EMIL/06/09/22
7.	Sample 07	Security Office	07.09.2022	OCPL/ NL/EMIL/07/09/22
8.	Sample 08	Administrative building	07.09.2022	OCPL/ NL/EMIL/08/09/22
9.	Sample 09	Near Beneficiation Plant Establishment Area	09.09.2022	OCPL/ NL/EMIL/09/09/22
10.	Sample 10	First-Aid Room	09.09.2022	OCPL/ NL/EMIL/10/09/22
11.	Sample 11	Security Office	09.09.2022	OCPL/ NL/EMIL/11/09/22
12.	Sample 12	Administrative building	09.09.2022	OCPL/ NL/EMIL/12/09/22
13.	Sample 13	Near Beneficiation Plant Establishment Area	14.09.2022	OCPL/ NL/EMIL/13/09/22
14.	Sample 14	First-Aid Room	14.09.2022	OCPL/ NL/EMIL/14/09/22
15.	Sample 15	Security Office	14.09.2022	OCPL/ NL/EMIL/15/09/22
16.	Sample 16	Administrative building	14.09.2022	OCPL/ NL/EMIL/16/09/22
17.	Sample 17	Near Beneficiation Plant Establishment Area	16.09.2022	OCPL/ NL/EMIL/17/09/22
18.	Sample 18	First-Aid Room	16.09.2022	OCPL/ NL/EMIL/18/09/22
19.	Sample 19	Security Office	16.09.2022	OCPL/ NL/EMIL/19/09/22
20.	Sample 20	Administrative building	16.09.2022	OCPL/ NL/EMIL/20/09/22
21.	Sample 21	Near Beneficiation Plant Establishment Area	21.09.2022	OCPL/ NL/EMIL/21/09/22
22.	Sample 22	First-Aid Room	21.09.2022	OCPL/ NL/EMIL/22/09/22

23.	Sample 23	Security Office	21.09.2022	OCPL/ NL/EMIL/23/09/22
24.	Sample 24	Administrative building	21.09.2022	OCPL/ NL/EMIL/24/09/22
25.	Sample 25	Near Beneficiation Plant Establishment Area	23.09.2022	OCPL/ NL/EMIL/25/09/22
26.	Sample 26	First-Aid Room	23.09.2022	OCPL/ NL/EMIL/26/09/22
27.	Sample 27	Security Office	23.09.2022	OCPL/ NL/EMIL/27/09/22
28.	Sample 28	Administrative building	23.09.2022	OCPL/ NL/EMIL/28/09/22
29.	Sample 29	Near Beneficiation Plant Establishment Area	28.09.2022	OCPL/ NL/EMIL/29/09/22
30.	Sample 30	First-Aid Room	28.09.2022	OCPL/ NL/EMIL/30/09/22
31.	Sample 31	Security Office	28.09.2022	OCPL/ NL/EMIL/31/09/22
32.	Sample 32	Administrative building	28.09.2022	OCPL/ NL/EMIL/32/09/22
33.	Sample 33	Near Beneficiation Plant Establishment Area	30.09.2022	OCPL/ NL/EMIL/33/09/22
34.	Sample 34	First-Aid Room	30.09.2022	OCPL/ NL/EMIL/34/09/22
35.	Sample 35	Security Office	30.09.2022	OCPL/ NL/EMIL/35/09/22
36.	Sample 36	Administrative building	30.09.2022	OCPL/ NL/EMIL/36/09/22

Date of Monitoring: 02.09.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	55	62.8	65	56.2	36.9
2	First-Aid Room	50.6	57.9	56.3	46.8	35
3	Security Office	46.6	50	52.8	40.1	25.2
4	Administrative building	28	36.8	34	32	22
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 07.09.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	56.2	65.8	62	52.6	40
2	First-Aid Room	46	64.6	55.6	46.1	32.4
3	Security Office	44	67	51.7	48	30
4	Administrative building	30	34	38	25.4	23.5
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 09.09.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	54	68.6	65.8	45.2	28
2	First-Aid Room	45.2	56.2	56	48	30.7
3	Security Office	40.5	56.9	55.1	44.8	34.6
4	Administrative building	28.4	30.3	35	27	22
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 14.09.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	55.2	68	55.4	50.6	34.6
2	First-Aid Room	48	54.6	50.9	48.7	32
3	Security Office	47.6	49.7	48.6	40	34.6
4	Administrative building	29.2	34.6	35	26.9	20.6
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 16.09.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	54.8	65.2	62	47.2	34.3
2	First-Aid Room	45	48.6	52	46.6	26
3	Security Office	40.8	42.8	48	37.9	23
4	Administrative building	25.3	31.8	35.4	29	20
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 21.09.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	45.9	64	51.6	42.9	34
2	First-Aid Room	46	54.6	54	40.2	30.7
3	Security Office	47.9	45.9	50.9	38	32.4
4	Administrative building	36.2	35.9	38	32.6	25.2
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 23.09.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	61.3	64.4	55	48.6	45.2
2	First-Aid Room	58	48.6	47.4	41.7	32
3	Security Office	54.6	50.9	52	44.8	26
4	Administrative building	32.7	35.8	34	30.1	22.5
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 28.09.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	59.4	65.2	55.4	48	36
2	First-Aid Room	48	54	52.8	45.6	30.5
3	Security Office	49.6	38.2	56.2	42.7	31
4	Administrative building	29.8	34.2	36	28.2	26
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 30.09.2022

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00 pm	Night 10.00-11.00 pm
1	Near Beneficiation Plant Establishment Area	50.8	62.4	53.6	48	41.5
2	First-Aid Room	54	54.2	48	42.5	30.2
3	Security Office	56	56.5	50.8	44	32
4	Administrative building	32.6	34.4	32	26	22.4
5	**Ambient Noise Standard**	**Day Time (in dB(A)) Leq**			**Night Time (in dB(A)) Leq**	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

SURFACE WATER ANALYSIS FOR THE MONTH OF SEPTEMBER – 2022

SUMMARY SHEET OF SAMPLING (SURFACE WATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	JARPADA	04- September - 2022	OCPL/SW/01/09/22
2.	Sample 02	NANDIGUTU	04- September - 2022	OCPL/SW/02/09/22
3.	Sample 03	RESERVOUR POND INSIDE PLANT	04- September - 2022	OCPL/SW/03/09/22
4.	Sample 04	DALKI NALA NEAR PLANT	04- September - 2022	OCPL/SW/04/09/22
5.	Sample 05	NAIBHANGA	04- September - 2022	OCPL/SW/05/09/22

Location: JARPADA

Lab Sample Code: OCPL/SW/01/09/22		**Report No.- OCPL/EMIL/01/09/22**	
Sample description:		Test method	APHA 22nd edition
Sample location	**JARPADA**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	04- September -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	06- September -2022
Sample type	Surface Water	Date of Analysis	06- September -2022
Required parameters	As described in W/O	Date of Issue of report	15- September -2022
EMIL reference	WO No.-5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	**TEST PARAMETER**	**UOM**	**Results**
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	23.6
4	pH	-	7.2
5	Total Suspended Solids	mg/L	85.8
6	Total Dissolved Solid	mg/L	917
7	Biochemical Oxygen Demand at 27°C	mg/L	7.4
8	Chemical Oxygen Demand	mg/L	1.2
9	Total Residual Chlorine	mg/L	0.68
10	Alkalinity	mg/L	92
11	Calcium	mg/L	61.5
12	Magnesium	mg/L	40.6
13	Total Hardness as CaCO3	mg/L	48.2
14	Electrical Conductivity	µs/cm	156.4
15	Turbidity	NTU	14.8

16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	<0.05
18	Cadmium as Cd	µg/L	ND
19	Total Chromium as Cr	µg/L	0.12
20	Zinc as Zn	µg/L	0.68
21	Fluoride as F	mg/L	<0.05
22	Iron as Fe	mg/L	16.2
23	Nitrate	mg/L	1.8
24	Sodium as Na	mg/L	4.1
25	Potassium as K	mg/L	2.8
26	Sulfate	mg/L	1.2
27	Nitrate as NO_3	mg/L	3.7
28	Total Silica as SiO_2	mg/L	6.2
29	Total dissolved Solid	mg/L	917

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Location: NANDIGUTU

Lab Sample Code: OCPL/SW/02/09/22		**Report No.- OCPL/EMIL/02/09/22**	
Sample description:		Test method	APHA 22nd edition
Sample location	**NANDIGUTU**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	04- September -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	06- September -2022
Sample type	Surface Water	Date of Analysis	06- September -2022
Required parameters	As described in W/O	Date of Issue of report	15- September -2022
EMIL reference	WO No.-5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	**TEST PARAMETER**	**UOM**	**Results**
1	Colour	Pt-Co	1.8
2	Odour	-	Agreeable
3	Temperature	°C	22.9
4	pH	-	7.3
5	Total Suspended Solids	mg/L	52.6
6	Total Dissolved Solid	mg/L	839
7	Biochemical Oxygen Demand at 27°C	mg/L	4.8
8	Chemical Oxygen Demand	mg/L	2.1
9	Total Residual Chlorine	mg/L	0.82
10	Alkalinity	mg/L	42.
11	Calcium	mg/L	44.2
12	Magnesium	mg/L	53
13	Total Hardness as CaCO3	mg/L	49.6
14	Electrical Conductivity	µs/cm	94

15	Turbidity	NTU	36
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	<0.05
19	Total Chromium as Cr	µg/L	<0.05
20	Zinc as Zn	µg/L	1.21
21	Fluoride as F	mg/L	ND
22	Iron as Fe	mg/L	19.4
23	Nitrate	mg/L	3.1
24	Sodium as Na	mg/L	1.86
25	Potassium as K	mg/L	0.22
26	Sulfate	mg/L	<0.01
27	Nitrate as NO_3	mg/L	3.6
28	Total Silica as SiO_2	mg/L	6.6
29	Total dissolved Solid	mg/L	839

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Location: RESERVOUR POND INSIDE PLANT PREMISES

Lab Sample Code: OCPL/SW/03/09/22		**Report No.- OCPL/EMIL/03/09/22**	
Sample description:		Test method	APHA 22nd edition
Sample location	**RESERVOUR POND INSIDE PLANT PREMISES**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	04- September -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	06- September -2022
Sample type	Surface Water	Date of Analysis	06- September -2022
Required parameters	As described in W/O	Date of Issue of report	15- September -2022
EMIL reference	WO No.-5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	**TEST PARAMETER**	**UOM**	**Results**
1	Colour	Pt-Co	2.1
2	Odour	-	Agreeable
3	Temperature	°C	24.6
4	pH	-	6.7
5	Total Suspended Solids	mg/L	168
6	Total Dissolved Solid	mg/L	1142
7	Biochemical Oxygen Demand at 27°C	mg/L	9.4
8	Chemical Oxygen Demand	mg/L	4.1
9	Total Residual Chlorine	mg/L	3.8
10	Alkalinity	mg/L	88.4
11	Calcium	mg/L	44.8
12	Magnesium	mg/L	42
13	Total Hardness as CaCO3	mg/L	171.4

14	Electrical Conductivity	µs/cm	186.5
15	Turbidity	NTU	62.8
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	0.03
19	Total Chromium as Cr	µg/L	ND
20	Zinc as Zn	µg/L	<0.05
21	Fluoride as F	mg/L	ND
22	Iron as Fe	mg/L	36.6
23	Nitrate	mg/L	3.6
24	Sodium as Na	mg/L	18.2
25	Potassium as K	mg/L	3.4
26	Sulfate	mg/L	4.6
27	Nitrate as NO_3	mg/L	4.4
28	Total Silica as SiO_2	mg/L	22.6
29	Total dissolved Solid	mg/L	1142

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Location: DALKI NALA, NEAR PLANT

Lab Sample Code: OCPL/SW/04/09/22		**Report No.- OCPL/EMIL/04/09/22**	
Sample description:		Test method	APHA 22nd edition
Sample location	**DALKI NALA, NEAR PLANT**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	04- September -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	06- September -2022
Sample type	Surface Water	Date of Analysis	06- September -2022
Required parameters	As described in W/O	Date of Issue of report	15- September -2022
EMIL reference	WO No.-5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	**TEST PARAMETER**	**UOM**	**Results**
1	Colour	Pt-Co	1.9
2	Odour	-	Agreeable
3	Temperature	°C	23.2
4	pH	-	7.3
5	Total Suspended Solids	mg/L	52.6
6	Total Dissolved Solid	mg/L	783
7	Biochemical Oxygen Demand at 27°C	mg/L	4.2
8	Chemical Oxygen Demand	mg/L	1.6
9	Total Residual Chlorine	mg/L	0.18
10	Alkalinity	mg/L	52
11	Calcium	mg/L	28.6
12	Magnesium	mg/L	46.5
13	Total Hardness as CaCO3	mg/L	40

14	Electrical Conductivity	µs/cm	106.8
15	Turbidity	NTU	24
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	ND
19	Total Chromium as Cr	µg/L	<0.02
20	Zinc as Zn	µg/L	1.1
21	Fluoride as F	mg/L	ND
22	Iron as Fe	mg/L	28.2
23	Nitrate	mg/L	21.4
24	Sodium as Na	mg/L	7.2
25	Potassium as K	mg/L	4.4
26	Sulfate	mg/L	6.2
27	Nitrate as NO_3	mg/L	26
28	Total Silica as SiO_2	mg/L	11
29	Total dissolved Solid	mg/L	783

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

Location: NAIBHANGA

Lab Sample Code: OCPL/SW/05/09/22		**Report No.- OCPL/EMIL/05/09/22**	
Sample description:		Test method	APHA 22nd edition
Sample location	**NAIBHANGA**	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	04- September -2022
Sample quantity	1no.s X 1 Lit.	Date of sample received	06- September -2022
Sample type	Surface Water	Date of Analysis	06- September -2022
Required parameters	As described in W/O	Date of Issue of report	15- September -2022
EMIL reference	WO No.-5010/ADMIN/5500000126	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	**TEST PARAMETER**	**UOM**	**Results**
1	Colour	Pt-Co	1.88
2	Odour	-	Agreeable
3	Temperature	°C	23.1
4	pH	-	6.8
5	Total Suspended Solids	mg/L	52.4
6	Total Dissolved Solid	mg/L	961
7	Biochemical Oxygen Demand at 27°C	mg/L	4.18
8	Chemical Oxygen Demand	mg/L	1.4
9	Total Residual Chlorine	mg/L	0.6
10	Alkalinity	mg/L	28.5
11	Calcium	mg/L	40.2
12	Magnesium	mg/L	42.6
13	Total Hardness as CaCO3	mg/L	36
14	Electrical Conductivity	µs/cm	157.8

15	Turbidity	NTU	46.4
16	Arsenic as As	µg/L	ND
17	Lead as Pb	µg/L	ND
18	Cadmium as Cd	µg/L	ND
19	Total Chromium as Cr	µg/L	ND
20	Zinc as Zn	µg/L	0.6
21	Fluoride as F	mg/L	ND
22	Iron as Fe	mg/L	32.4
23	Nitrate	mg/L	2.4
24	Sodium as Na	mg/L	4.66
25	Potassium as K	mg/L	16.2
26	Sulfate	mg/L	3.1
27	Nitrate as NO_3	mg/L	5.2
28	Total Silica as SiO_2	mg/L	4.6
29	Total dissolved Solid	mg/L	961

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

GROUND WATER MONITORING REPORT

SUMMARY SHEET OF SAMPLING (GROUND WATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample 01	JARPADA	08- September - 2022	OCPL/SW/01/09/22
2.	Sample 02	NANDIGUTU	08- September - 2022	OCPL/SW/02/09/22
3.	Sample 03	NAIBHANGA	08- September - 2022	OCPL/SW/03/09/22
4.	Sample 04	PLANT- 1 (Near Canteen)	08- September - 2022	OCPL/SW/04/09/22
5.	Sample 05	PLANT- 2 (Near Tailing Pond)	08- September - 2022	OCPL/SW/05/09/22

ANALYSIS RESULT

With drinking water specifications, BIS (As per 10500- 2012 BIS)

Sl. No.	TEST PARAMETER	UOM	Results					BIS Desirable limit	Permissible limit with the absence of alternate source
			JARPADA	NANDIGUTU	NAIBHANGA	PLANT- 1 (Near Canteen)	PLANT- 2 (Near Tailing Pond)		
1	Colour	Pt-Co	1.1	0.8	1.1	1.0	1.2		
2	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		
3	Temperature	°C	24.8	25.4	24.2	25.5	25.2		
4	pH	-	7.1	7.2	7.2	7.2	6.9	6.5- 8.5	No relaxation
5	Total Hardness (as $CaCO_3$)	mg/L	52	51.8	56.6	61.8	40.2	300	600
6	Calcium	mg/L	11.4	14.5	16.2	16	15.2	75	200
7	Magnesium	mg/L	0.85	1.6	3.8	3.4	2.2	30	No relaxation
8	Chloride	mg/L	8.8	14.8	12.2	8.2	14.5	250	1000
9	Alkalinity	mg/L	22.4	26.8	14	22.5	14.8	200	600
10	Electrical Conductivity	µs/cm	60.5	74	66.2	64	71	--	--
11	Arsenic as As	µg/L	ND	ND	ND	0.01	ND	10	No relaxation
12	Lead as Pb	µg/L	ND	ND	ND	ND	0.02	10	No relaxation

13	Cadmium as Cd	µg/L	0.08	0.11	0.02	ND	ND	3.0	No relaxation
14	Total Chromium as Cr	µg/L	ND	ND	0.02	0.04	0.04	50	No relaxation
15	Zinc as Zn	µg/L	76.5	58.7	55	68	75.6	5000	No relaxation
16	Fluoride as F	mg/L	ND	ND	ND	ND	ND	1.0	1.9
17	Iron as Fe	µg/L	34.2	18.4	18.4	16.6	32.4	300	1000
18	Nitrate	mg/L	0.04	0.16	0.02	0.14	0.04	45	100
19	Sodium as Na	mg/L	1.1	1.02	1.04	1.02	0.32	150	No relaxation
20	Potassium as K	mg/L	ND	ND	0.02	0.05	ND	12	No relaxation
21	Sulfate	mg/L	ND	0.02	0.04	ND	0.06	200	400
22	Total Silica as SiO_2	mg/L	ND	0.2	0.04	0.06	0.2	--	--
23	Total suspended Solid	mg/L	0.88	0.42	1.5	0.8	0.6	--	--
24	Total dissolved Solid	mg/L	26	92	186	18	37	250	2000
25	Turbidity	NTU	0.2	0.42	0.2	0.16	0.12	5	10

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

REPORT ON GROUND WATER LEVEL ANALYSISFOR THE MONTH OF SEPTEMBER – 2022

SUMMARY SHEET OF MONITORING:

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
6.	Sample 01	JARPADA	11- September-2022	OCPL/GWL/01/09/22
7.	Sample 02	NANDIGUTU	11- September-2022	OCPL/GWL/02/09/22
8.	Sample 03	NAIBHANGA	11- September-2022	OCPL/GWL/03/09/22
9.	Sample 04	PLANT- 1 (Near Canteen)	11- September-2022	OCPL/GWL/04/09/22
10.	Sample 05	PLANT- 2 (Near Tailing Pond)	11- September-2022	OCPL/GWL/05/09/22

MONITORING RESULT

Sl No.	Name of the location	Type of well	Dia. (m)	Depth of the well (m)	Depth of the water table BGL (M)	Remarks
1	JARPADA	Dugwell	0.8	8.2	7.28	--
2	NANDIGUTU	Dugwell	1.2	9.5	7.51	--
3	NAIBHANGA	Dugwell	1.0	8.6	8.22	--
4	PLANT- 1 (Near Canteen)	Bore-well	0.1	62	13.69	--
5	PLANT- 2 (Near Tailing Pond)	Bore-well	0.1	60	46.5	--

Sampling By: Mr. Hrusikesh Das

Tested By: OCPL

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001: 2018 CERTIFIED COMPANY)

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CIN : U51109WB1931PTC007007

TC-7815

TEST REPORT

No. AP-FG/22-23/602 **Date: September 12, 2022** **Page 1 of 1**

Issued to : **M/S. ESSEL MINING & INDUSTRIES LIMITED**

Address : Vill - Basantpur, Tehsil, Jhumpura, P.O. - Basantpur, Dist - Keonjhar, Pin - 758034, Odisha.

Your Order No.	: Email, dtd. 06.09.2022	***Parameters Tested***
Sample Description	: Stack Gas	***Physical*** : Temp., Velocity, Gas flow
Date & time of sampling	: 09.09.2022 at 09:30 A.M. to 10:00 A.M.	***Chemical*** : SO_2, NO_2, CO, CO_2 & PM
Test Completed on	: 12.09.2022	

A. General information about stack :

1. Stack connected to : Pellet Plant Process Stack
2. Emission due to : Burning of Furnace Oil
3. Material of construction of stack : M.S.
4. Shape of stack : Circular
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack (a) from ground level : 80.0 M (b) from roof level : ---
2. Diameter of the stack (a) at bottom : --- (b) at top : ---
3. Diameter of the stack at sampling point : 4.2 M
4. No. of Traverse point : 30 Nos.
5. Height of the sampling point from GL : 30.0 M

C. Analysis / Characteristic of stack :

1. Fuel used : Furnace Oil 2. Fuel consumption : 2.6 MT/hr.

D. Results of sampling & analysis of gaseous emission : Barometric pressure : 752 mmHg

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	138
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	10.96
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	377163

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Sulphur dioxide	IS 11255 : Part 2 : 1985	mg/Nm^3	440	Not Available
2.	Oxides of Nitrogen	IS 11255 : Part 7 : 2005	mg/Nm^3	271	Not Available
3.	Carbon monoxide	IS 13270 (By Orsat) : 1992	mg/Nm^3	<0.2	Not Available
4.	Carbon dioxide	IS 13270 (By Orsat) : 1992	% v/v	3.8	Not Available
5.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm^3	39	50

F. Pollution control device

Details of pollution control devices attached with the stack : ESP

-: END OF TEST REPORT :-

S. Mondal.

Report Verified by
S. Mondal

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V.BRIGGS & CO. (P) LTD.

BB

R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

(AN ISO 9001:2015 & ISO 45001: 2018 CERTIFIED COMPANY)

TAHER MANSION, 1ST FLOOR

9, BENTINCK STREET, KOLKATA - 700 001

Phone : (033) 4044-3380/3381/3382 / 3383, Fax : 33 2248-0447

E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com

CIN : U51109WB1931PTC007007

TC-7815

TEST REPORT

No. AP-FG/22-23/603	Date: September 12, 2022	Page 1 of 1

Issued to	**: M/S. ESSEL MINING & INDUSTRIES LIMITED**
Address	: Vill - Basantpur, Tehsil, Jhumpura, P.O. - Basantpur, Dist - Keonjhar, Pin - 758034, Odisha.

Your Order No.	: Email, dtd. 06.09.2022	***Parameters Tested***
Sample Description	: Stack Gas	***Physical*** : Temp., Velocity, Gas flow
Date & time of sampling	: 09.09.2022 at 11:10 A.M. to 11:50 A.M.	***Chemical :*** CO, CO_2 & PM
Test Completed on	: 12.09.2022	

A. General information about stack :

1. Stack connected to : Pellet Plant Dedusting Stack
2. Emission due to : Electricity
3. Material of construction of stack : M.S.
4. Shape of stack : Circular
5. Whether stack is provided with permanent platform & ladder : Yes.

B. Physical characteristics of stack :

1. Height of the stack (a) from ground level : 60.0 M (b) from roof level : ---
2. Diameter of the stack (a) at bottom : --- (b) at top : ---
3. Diameter of the stack at sampling point : 1.54 M
4. No. of Traverse point : 20 Nos.
5. Height of the sampling point from GL : 25.0 M

C. Analysis / Characteristic of stack :

1. Fuel used : Electricity 2. Fuel consumption : ---

D. Results of sampling & analysis of gaseous emission : Barometric pressure : 752 mmHg

Sl No	Test Parameters	Test Method	Unit	Results
1.	Temperature of emission	IS 11255 : Part 3 : 2008	°C	42
2.	Velocity of gas in duct	IS 11255 : Part 3 : 2008	m/sec	6.14
3.	Quantity of gas flow	IS 11255 : Part 3 : 2008	NM^3/hr	37319

E. Results of gaseous emission :

Sl No	Test Parameters	Test Method	Unit	Results	Norms as per CPCB
1.	Carbon monoxide	IS 13270 (By Orsat) : 1992	mg/Nm^3	<0.2	Not Available
2.	Carbon dioxide	IS 13270 (By Orsat) : 1992	% v/v	0.6	Not Available
3.	Particulate Matters	IS 11255 : Part 1 : 1985	mg/Nm^3	31	100

F. Pollution control device

Details of pollution control devices attached with the stack : Bag filter.

-: END OF TEST REPORT :-

S. Mondal.

Report Verified by
S. Mondal

(Dr. R. KARIM)
Technical Manager
Authorised Signatory
For R.V.BRIGGS & CO. (P) LTD.

BB

Annexure - B

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
केन्द्रीय भूमि जल प्राधिकरण
Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)
NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Project Name:	Essel Mining And Industries Ltd		
Project Address:	Basantpur		
Village:	Basantapur	Block:	Jhumpura
District:	Kendujhar	State:	Odisha
Pin Code:			
Communication Address:	Industry House, 18th Floor, 10, Camac Street, Kolkata 700017		
Address of CGWB Regional Office:	Central Ground Water Board South Eastern Region, Bhujal Bhawan, Khandagiri Square, Nh-5, Bhubaneshwar, Khordha, Odisha - 750001		

1.	**NOC No.:**	CGWA/NOC/IND/ORIG/2021/12197			
2.	Application No.:	21-4/1192/OR/IND/2017	3.	Category: (GWRE 2017)	Safe
4.	Project Status:	Existing Project	5.	NOC Type:	New (Name change)
6.	**Valid from:**	12/03/2021	7.	**Valid up to:**	11/03/2024

8. Ground Water Abstraction Permitted:

Fresh Water		Saline Water		Dewatering		Total	
m³/day	m³/year	m³/day	m³/year	m³/day	m³/year	m³/day	m³/year
846.00	263635.00						

9. Details of ground water abstraction /Dewatering structures

	Total Existing No.:6						**Total Proposed No.:0**					
	DW	DCB	BW	TW	MP	MPu	DW	DCB	BW	TW	MP	MPu
Abstraction Structure*	0	0	6	0	0	0	0	0	0	0	0	0

*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit;MPu-Mine Pumps

10.	Ground Water Abstraction/Restoration Charges paid (Rs.):	1581810.00

11.

Number of Piezometers(Observation wells) to be constructed/ monitored & Monitoring mechanism.	No. of Piezometers	Monitoring Mechanism		
		Manual	DWLR**	DWLR With Telemetry
**DWLR - Digital Water Level Recorder	2	0	1	1

(Compliance Conditions given overleaf)

This is an auto generated document & need not to be signed.

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011
Phone: (011) 23383561 Fax: 23382051, 23386743
Website: cgwa-noc.gov.in

Validity of this NOC shall be subject to compliance of the following conditions:

Mandatory conditions:

1) Installation of tamper proof digital water flow meter with telemetry on all the abstraction structure(s) shall be mandatory for all users seeking No Objection Certificate and intimation regarding their installation shall be communicated to the CGWA within 30 days of grant of No Objection Certificate.

2) Proponents shall mandatorily get water flow meter calibrated from an authorized agency once in a year.

3) Construction of purpose-built observation wells (piezometers) for ground water level monitoring shall be mandatory as per Section 14 of Guidelines. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in Annexure-II of the guidelines.

4) Proponents shall monitor quality of ground water from the abstraction structure(s) once in a year. Water samples from bore wells/ tube wells / dug wells shall be collected during April/May every year and analysed in NABL accredited laboratories for basic parameters (cations and anions), heavy metals, pesticides/ organic compounds etc. Water quality data shall be made available to CGWA through the web portal.

5) In case of mining projects, additional key wells shall be established in consultation with the Regional Director, CGWB for ground water level monitoring four (4) times a year (January, May, August and November) in core as well as buffer zones of the mine.

6) In case of mining project the firm shall submit water quality report of mine discharge/ seepage from Govt. approved/ NABL accredited lab.

7) The firm shall report compliance of the NOC conditions online in the website (www.cgwa-noc.gov.in) within one year from the date of issue of this NOC.

8) Industries abstracting ground water in excess of 100 m 3 /d shall undertake annual water audit through certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means.

9) Application for renewal can be submitted online from 90 days before the expiry of NOC. Ground water withdrawal, if any, after expiry of NOC shall be illegal & liable for legal action as per provisions of Environment (Protection) Act, 1986.

10) This NOC is subject to prevailing Central/State Government rules/laws/norms or Court orders related to construction of tube well/ground water abstraction structure / recharge or conservation structure/discharge of effluents or any such matter as applicable.

General conditions:

11) No additional ground water abstraction and/or de-watering structures shall be constructed for this purpose without prior approval of the Central Ground Water Authority (CGWA).

12) The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction (more than that permitted in NOC for specific period).

13) Proponents shall install roof top rain water harvesting in the premise as per the existing building bye laws in the premise.

14) The project proponent shall take all necessary measures to prevent contamination of ground water in the premises failing which the firm shall be responsible for any consequences arising thereupon.

15) In case of industries that are likely to contaminate the ground water, no recharge measures shall be taken up by the firm inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm.

16) Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.

17) Wherever the NOC is for abstraction of saline water and the existing wells (s) is /are yielding fresh water, the same shall be sealed and new tubewell(s) tapping saline water zone shall be constructed within 3 months of the issuance of NOC. The firm shall also ensure safe disposal of saline residue, if any.

18) Unexpected variations in inflow of ground water into the mine pit, if any, shall be reported to the concerned Regional Director, Central Ground Water Board.

19) In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines.

20) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.

21) The issue of this NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and take decisions independently of the NOC.

22) In case of change of ownership, new owner of the industry will have to apply for incorporation of necessary changes in the No Objection Certificate with documentary proof within 60 days of taking over possession of the premises.

23) This NOC is being issued without any prejudice to the directions of the Hon'ble NGT/court orders in cases related to ground water or any other related matters.

24) Proponents, who have installed/constructed artificial recharge structures in compliance of the NOC granted to them previously and have availed rebate of upto 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, shall continue to regularly maintain artificial recharge structures.

25) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, pharmaceutical, other hazardous units etc. (as per CPCB list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution as per Annexure III of the guidelines.

26) In case of new infrastructure projects having ground water abstraction of more than 20 m3/day, the firm/entity shall ensure implementation of dual water supply system in the projects.

27) In case of infrastructure projects, paved/parking area must be covered with interlocking/perforated tiles or other suitable measures to ensure groundwater infiltration/harvesting.

28) In case of coal and other base metal mining projects, the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.

29) The NOC issued is conditional subject to the conditions mentioned in the Public notice dated 27.01.2021 failing which penalty/EC/cancellation of NOC shall be imposed as the case may be.
30) This NOC is issued subject to the clearance of Expert Appraisal Committee (EAC) (if applicable).

(Non-compliance of the conditions mentioned above is likely to result in the cancellation of NOC and legal action against the proponent.)

ANNEXURE-C

YEAR WISE EXPENDITURE FOR ENVIRONMENTAL PROTECTION MEASURES DURING THE YEAR 2021-22

(1.0 MTPA Beneficiation Plant & 1.0 MTPA Pelletization Plant)

Sl. No.	HEAD		EXPENDITURE (In Lacs Rs.)
1	**Pollution Control Measures**		
	i	Over Head Water Sprinkler	13.40
	ii	Water Tanker (dust suppression & drinking)	
	iii	Dry Fog	
	iv	Repairing expenses of ESP	27.00
2	**Pollution Monitoring**		
	i	Air Quality monitoring	18.89
	ii	Ground Water Quality Monitoring	
	iii	Ground Water Level Monitoring	
	iv	Noise Monitoring	
3	**Plantation**		0.30
4	**Others (Training & Awareness Programme)**		
	i	World Environment Day Celebration	2.03
	ii	Health Awareness & Training	
GRAND TOTAL			**61.62**

Sh. Ravindra Ku Sahu
Vice President & Plant Head

Annexure - D

M/S HARI MACHINES LTD.
At : BASANTFUR, Tehsil : BARBIL
Dist : KEONJHAR, ORISSA

PUBLIC NOTICE

This is to inform to the general public that the Ministry of Environment & Forest Govt. of India, IA Division, New Delhi has accorded **Environmental Clearance Vide Letter No. J-11015/51/2008-IA.II (M)** dated **18th June 2010** for the establishment of **1.0 MTPA Iron Ore Beneficiation Plant of M/s Hari Machines Ltd.**, located at village **Basantpur, Tehsil: Barbil, Dist : Keonjhar, Orissa.** Copies of the clearance letter are with State Pollution Control Orissa, Bhubaneswar and may also be seen at the website of Ministry of Environment & Forest i.e. **http://moef.nic.in.**

Sd/-
Sabyasachi Mishra
Director

ବାର୍ଷିକ ୧.୦ ନିଯୁତ ମେଟ୍ରିକ ଟନ୍ ଲୌହ ବିଶୋଧନାଗାର ପ୍ରକଳ୍ପ
ମେସର୍ସ ହରି ମେସିନ୍ସ ଲିମିଟେଡ୍
ସ୍ଥାନ:ବସନ୍ତପୁର, ତହସିଲ:ବଡ଼ବିଲ, ଜିଲ୍ଲା:କେଉଁଝର, ଓଡ଼ିଶା

ସାଧାରଣ ବିଜ୍ଞପ୍ତି

ଏତଦ୍ଦ୍ୱାରା ସର୍ବସାଧାରଣଙ୍କ ଅବଗତି ନିମନ୍ତେ ଜଣାଇଦିଆଯାଉଅଛି ଯେ, ମେସର୍ସ୍ ହରି ମେସିନ୍ସ ଲିମିଟେଡଙ୍କ ଦ୍ୱାରା ଓଡ଼ିଶା ରାଜ୍ୟର କେଉଁଝର ଜିଲ୍ଲା ଅନ୍ତର୍ଗତ ବଡ଼ବିଲ ତହସିଲର ବସନ୍ତପୁର ଗ୍ରାମରେ ବାର୍ଷିକ ୧.୦ ନିଯୁତ ମାଟ୍ରିକ ଟନ୍ କ୍ଷମତା ବିଶିଷ୍ଟ ଏକ ଲୌହ ବିଶୋଧନାଗାର ପ୍ରକଳ୍ପ ପ୍ରତିଷ୍ଠା ନିମନ୍ତେ ଭାରତ ସରକାରଙ୍କ ପରିବେଶ ଓ ଜଙ୍ଗଲ ମନ୍ତ୍ରଣାଳୟ ପକ୍ଷରୁ ଚିଠି ନଂ.: ଜେ-୧୧୦୧୫/୫୧/୨୦୦୮-ଆଇ.ଏ.ଆର.ଆଇ (ଏମ୍) ତା ୧୮.୦୬.୨୦୧୦ ତାରିଖ ଦ୍ୱାରା ପରିବେଶ ସଂକ୍ରାନ୍ତୀୟ ଅନୁମତି ପ୍ରଦାନ କରିଯାଇଛି । ଏହି ଅନୁମତି ସମ୍ବନ୍ଧିତ ଚିଠିର ନକଲ ରାଜ୍ୟ ପ୍ରଦୂଷଣ ନିୟନ୍ତ୍ରଣ ବୋର୍ଡ, ଭୁବନେଶ୍ୱରଙ୍କ ନିକଟରେ ଉପଲବ୍ଧ ଅଟେ । ଏହା ବ୍ୟତୀତ ପରିବେଶ ଓ ଜଙ୍ଗଲ ମନ୍ତ୍ରଣାଳୟ ୱେବସାଇଟ୍ – http://moef.nic.in ଠିକଣାରେ ମଧ୍ୟ ଏହା ଅବଗତ କରାଯାଇ ପାରିବ ।

ସ୍ୱା/-
ସବ୍ୟସାଚୀ ମିଶ୍ର
ପ୍ରକଳ୍ପ ନିର୍ଦ୍ଦେଶକ