

Ref. No. A/492 /2023-24

Dated—01.06.2024
(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 October-2023 to March-2024 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

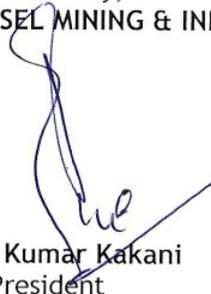
Sir,

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 October-2023 to March-2024.

This is for favour of your kind information.

Thanking you,

Yours Faithfully,
For ESSEL MINING & INDUSTRIES LTD.


Pavan Kumar Kakani
Joint President
Head - Iron Ore, Beneficiation & Pelletization

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@ospcbboard.org
3. Regional Director, Central Pollution Control Board, Kolkata. e-mail: zokolkatta.cpcb@nic.in, mkbiswas.cpcb@nic.in

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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: October-2023 to March-2024

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.	<p>Consent to Establish obtained from OSPCB vide letter no-22029/Ind-II-NOC-4812 dated on 24.12.2010 and the latest Consent to Operate is obtained from OSPCB vide letter no-4886/IND-I-CON-6459 dated 28.03.2023 with validity up to 31.03.2024.</p> <p>The conditions stipulated in the Consent order issued from SPCB, Odisha are being implemented effectively.</p>
(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.	<p>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.</p> <p>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.</p> <p>Hence, the probability of natural water resources are getting affected by spill water is zero.</p>

Sl. No.	Conditions	Compliance
(iii)	The project proponent shall carry out conditioning of the ore with water to mitigate fugitive dust emission.	<p>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.</p> <p>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.</p> <p>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.</p>
(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.	<p>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 conveyor are equipped with Dry Fog System. SP is operational at Indurating Furnace area and Bag Filter arrangement have been made at proportionating Building to control the fugitive dust emission.</p> <p>All the necessary air pollution control measures are being strictly followed to 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.</p>

Sl. No.	Conditions	Compliance
(vii)	<p>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.</p>	<p>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.</p> <p>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.</p> <p>The compliance reports are being submitted to the MoEF Regional Office, BBSR and MoEF &CC, New Delhi on six monthly basis.</p>
(viii)	<p>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 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</p>	<p>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.</p> <p>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.</p> <p>No water is discharged outside the plant premises.</p> <p>One Rain Water Harvesting structure having holding capacity of 212250 m³ 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.</p>

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	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.	
(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.	<p>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.</p> <p>Based on the predominant wind direction, one AAQ monitoring location has been established within 500m of the project site in Nediguth Village.</p>
(x)	The tailing pond/slime pond shall be lined with impervious lining.	<p>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.</p> <p>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.</p>
(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.

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(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	<p>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.</p> <p>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.</p> <p>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.</p>
(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.	<p>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.</p> <p>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.</p>
(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 times in a	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.

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	<p>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.</p>	<p>The reservoir is serving the dual purpose of storage as well as augmentation of ground water potential through recharge.</p> <p>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.</p>
(xviii)	<p>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.</p>	<p>Dept. of Water Resources, Govt. of Odisha allocated 0.305cusec of surface water from the river Baitarani for meeting the requirement of process water.</p> <p>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</p>
(xix)	<p>Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.</p>	<p>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.</p> <p>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.</p> <p>One number of rain water harvesting structure having capacity of 212250 m³ has been constructed. During rainy season, surface runoff of the plant area is channelized & collected in the reservoir for use in plant operation.</p>

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.	<p>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.</p> <p>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.</p>
(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.	<p>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.</p> <p>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.</p> <p>ESP is operational at Indurating Furnace area and Bag Filter arrangement have been made at proportionating Building to control the fugitive dust emission.</p> <p>Periodical maintenance of the Pollution Control Equipments are being undertaken in-house for their smooth operation.</p>

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 .	<p>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.</p> <p>All the process water is being recycled to the process through Concentrate thickener so construction of ETP is not needed.</p> <p>The waste water (i.e. Slime Water) generated from the beneficiation process is being recycled to the process completely for re-use.</p>
(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.	<p>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.</p> <p>Periodical health Check-up is being organised in the nearby villages through mobile Health Care Unit supported with doctors & paramedics.</p>
(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.	<p>Health Surveillance Programme in frequent interval for all the employees and workers are being carried out and records are being maintained.</p> <p>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.</p>
(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 NRR. 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. The existing R& R Plan of the State Govt. is not applicable to the project. No SC/ST Land or Home stead land is involved in the project area, So R&R Plan is not envisaged.
(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.
(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 temporary structures to be removed after the completion of the project.	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.
(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	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.

Sl. No.	Conditions	Compliance
	<p>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.</p>	<p>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.</p> <p>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.</p>
General Conditions		
(i)	<p>No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.</p>	<p>Approval will be sought from MoEF&CC before any expansion / modification of the plant.</p>
(ii)	<p>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., PM₁₀), NO_x 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.</p>	<p>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.</p>
(iii)	<p>Data on ambient air quality RSPM (Particulate matter with size less than 10 micron i.e., PM₁₀), & NO_x 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.</p>	<p>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.</p>

Sl. No.	Conditions	Compliance
(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.	<p>All the Plant machineries have been designed as per Industrial specification to control the noise level within the limit.</p> <p>Adequate measures are being taken to limit the noise level within the prescribed limit given by statutory authorities.</p> <p>Ear plugs and Ear muffs are being provided to the workers and employees engaged in operations of HEMM and high noise generating machines / locations.</p>
(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.	<p>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.</p> <p>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.</p> <p>No water is discharged outside the plant premises.</p> <p>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.</p>

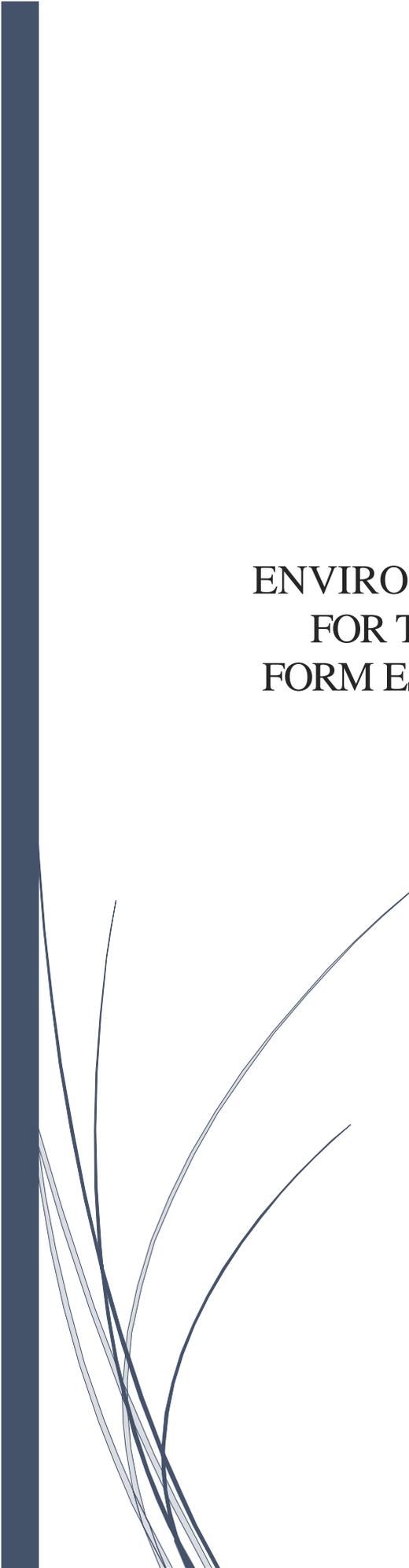
Sl. No.	Conditions	Compliance
(vi)	<p>Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.</p>	<p>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.</p> <p>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.</p> <p>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.</p>
(vii)	<p>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.</p>	<p>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.</p>
(viii)	<p>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.</p>	<p>The Consent to Establish from the State Pollution Board, Bhubaneswar was granted on 24/12/2010.</p> <p>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.</p> <p>Consent to Operate has been obtained on dated 01.05.2013 and subsequently renewed on dated 28.03.2023 valid till 31.03.2024.</p>
(ix)	<p>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.</p>	<p>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.</p> <p>The entire environmental pollution control infrastructure has already been installed. Expenditure occurred towards environment management during the year 2023-24 is given in Annexure-C.</p>

Sl. No.	Conditions	Compliance
(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.	<p>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.</p> <p>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.</p> <p>However, one LED type electronic display board has been installed in front of the main gate in public domain for display of monitored data.</p>
(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, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	<p>The copy of the environmental Clearance letter was submitted in the office Basantpur GP.</p> <p>The clearance letter has also been put on the website of the Company.</p>
(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.

Sl. No.	Conditions	Compliance
	to the concerned State Pollution Control Board as prescribed under the Environment Protection) Rule, 1986 as amended subsequently shall also be put in the website of the company along with the status of the compliance of the environment conditions and shall also be sent to the respective regional office of MoEF, Bhubaneswar by email.	Pollution Control Board by 30 th September every year for the previous financial year. It is also being submitted to the regional office, Bhubaneswar by email.
(xv)	The project proponent shall inform to the public that the project has been accorded environmental clearance by the ministry and the copies of the clearance letter are available with the SPCB and may also be seen in the web site of the Ministry of Environment and Forests at http://envfor.nic.in . This shall be advertised within seven days from the date of issue clearance letter, at least in two local newspaper that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and the copy of the same should be forwarded to the Regional Office at Bhubaneswar.	Advertisement was given in the local newspapers (both English and Oriya) regarding grant of Clearance within 7 days from the date of issuance of Environmental Clearance. A copy of the said Environmental Clearance was also sent to the MoEF, Regional Office, Bhubaneswar.
(xvi)	The project authority shall inform to the Regional Officer as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and date of commencing the land development work.	The Consent to Establish from State Pollution Control Board, Bhubaneswar has been obtained on 1 st October 2012 and the construction activities commenced following such CTE order. The commercial production started on obtaining the consent to operate order from OSPCB.

Pavan Kumar Kakani
Joint President

Head - Iron Ore, Beneficiation & Pelletization

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ENVIRONMENTAL MONITORING REPORT
FOR THE MONTH OF OCTOBER-2023
FORM ESSELMINING & INDUSTRIES LTD.

M/S ESSEL MINING & INDUSTRIES LTD.

VILL-BASANTPUR, PO-DUBUNA, TEHSIL-JHUMPURA,
KEONJHAR

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AMBIENT AIR MONITORING REPORT FOR THE MONTH OF OCTOBER-2023

AMBIENT AIR MONITORING DATA

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near ECR-1		✓			✓		
Near Canteen		✓			✓		
Near Admin Building		✓			✓		
Nadiguth Village		✓			✓		

SUMMARY SHEET OF SAMPLING

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	Near ECR-1	02.10.2023	OCPL/AAQ/EMIL/01/10/23
2.	Sample02	Near Canteen	02.10.2023	OCPL/AAQ/EMIL/02/10/23
3.	Sample03	Near Admin Building	02.10.2023	OCPL/AAQ/EMIL/03/10/23
4.	Sample04	Nedigutha Village	03.10.2023	OCPL/AAQ/EMIL/04/10/23
5.	Sample05	Near ECR-1	05.10.2023	OCPL/AAQ/EMIL/05/10/23
6.	Sample06	Near Canteen	05.10.2023	OCPL/AAQ/EMIL/06/10/23
7.	Sample07	Near Admin Building	05.10.2023	OCPL/AAQ/EMIL/07/10/23
8.	Sample08	Nedigutha Village	06.10.2023	OCPL/AAQ/EMIL/08/10/23
9.	Sample09	Near ECR-1	09.10.2023	OCPL/AAQ/EMIL/09/10/23
10.	Sample10	Near Canteen	09.10.2023	OCPL/AAQ/EMIL/10/10/23
11.	Sample11	Near Admin Building	09.10.2023	OCPL/AAQ/EMIL/11/10/23
12.	Sample12	Nedigutha Village	10.10.2023	OCPL/AAQ/EMIL/12/10/23
13.	Sample13	Near ECR-1	12.10.2023	OCPL/AAQ/EMIL/13/10/23
14.	Sample14	Near Canteen	12.10.2023	OCPL/AAQ/EMIL/14/10/23
15.	Sample15	Near Admin Building	12.10.2023	OCPL/AAQ/EMIL/15/10/23
16.	Sample16	Nedigutha Village	13.10.2023	OCPL/AAQ/EMIL/16/10/23

17.	Sample17	NearECR-1	16.10.2023	OCPL/AAQ/EMIL/17/10/23
18.	Sample18	Near Canteen	16.10.2023	OCPL/AAQ/EMIL/18/10/23
19.	Sample19	Near Admin Building	16.10.2023	OCPL/AAQ/EMIL/19/10/23
20.	Sample20	Nedigutha Village	17.10.2023	OCPL/AAQ/EMIL/20/10/23
21.	Sample21	NearECR-1	19.10.2023	OCPL/AAQ/EMIL/21/10/23
22.	Sample22	Near Canteen	19.10.2023	OCPL/AAQ/EMIL/22/10/23
23.	Sample23	Near Admin Building	19.10.2023	OCPL/AAQ/EMIL/23/10/23
24.	Sample24	Nedigutha Village	20.10.2023	OCPL/AAQ/EMIL/24/10/23
25.	Sample25	NearECR-1	23.10.2023	OCPL/AAQ/EMIL/25/10/23
26.	Sample26	Near Canteen	23.10.2023	OCPL/AAQ/EMIL/26/10/23
27.	Sample27	Near Admin Building	23.10.2023	OCPL/AAQ/EMIL/27/10/23
28.	Sample28	Nedigutha Village	24.10.2023	OCPL/AAQ/EMIL/28/10/23
29.	Sample29	NearECR-1	26.10.2023	OCPL/AAQ/EMIL/29/10/23
30.	Sample30	Near Canteen	26.10.2023	OCPL/AAQ/EMIL/30/10/23
31.	Sample31	Near Admin Building	26.10.2023	OCPL/AAQ/EMIL/31/10/23
32.	Sample32	Nedigutha Village	27.10.2023	OCPL/AAQ/EMIL/32/10/23
33.	Sample33	NearECR-1	30.10.2023	OCPL/AAQ/EMIL/33/10/23
34.	Sample34	Near Canteen	30.10.2023	OCPL/AAQ/EMIL/34/10/23
35.	Sample35	Near Admin Building	30.10.2023	OCPL/AAQ/EMIL/35/10/23
36.	Sample36	Nedigutha Village	31.10.2023	OCPL/AAQ/EMIL/36/10/23

LOCATION: NEAR ECR-1

Parameters	Limit(μg/M ³)	Date									
		02.10.23	05.10.23	09.10.23	12.10.23	16.10.23	19.10.23	23.10.23	26.10.23	30.10.23	Avg
PM10	100	86.6	84	80.8	84.6	82	84.8	91.2	85.6	85	84.95
PM2.5	60	58.4	54.6	50.4	51	50.4	51.8	59.8	52.6	52.2	54.57
Sulphur Dioxide (SO ₂)	80	26.1	28	24.4	29.6	26	25.4	38	28.5	29	28.33
Oxide of Nitrogen (NO ₂)	80	20.5	22	24.8	25.4	23.4	21	29.8	24	22.8	23.74
Lead(Pb)	1	N D	ND	ND	ND						
Carbon Monoxide (CO) (8Hrs)	200 0	164	162	158	158	165.4	161.4	189.5	160. 8	164. 2	164.81
Ozone(O ₃)	180	ND	ND	ND							
Ammonia (NH ₃)	400	31.2	30	32.4	26	28.4	27.5	27	26.2	24.5	28.13
Benzene(C ₆ H ₆)	05	ND	ND	ND							
Benzo(a)Pyrene (BaP) Particulate phase only(ng/m ³)	01	ND	ND	ND							
Arsenic(As) (ng/m ³)	06	ND	ND	ND							
Nickel(Ni) (ng/m ³)	20	ND	ND	ND							

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5},SO₂,NO₂,&CO has been done as per the IS Code IS:5182

Part IV, II, VI, X & XVII respectively

LOCATION: NEAR CANTEEN

Parameters	Limit (µg/ M ³)	DATE									
		02.10.23	05.10.23	09.10.23	12.10.23	16.10.23	19.10.23	23.10.23	26.10.23	30.10.23	Avg
PM10	100	78.4	76.2	78.6	94.8	84.5	88.4	91.2	89.6	88.5	85.57
PM2.5	60	44	43.4	42	58.6	57.4	51.4	59.8	51.4	50.6	58.73
Sulphur Dioxide (SO ₂)	80	15.2	16.4	15.8	46	45.5	37.8	38	37.9	39.2	32.42
Oxide of Nitrogen (NO ₂)	80	18.2	17.6	16.2	44.8	41	32.2	29.8	28	31.5	28.81
Lead(Pb)	1.0	ND	ND								
Carbon Monoxide(CO)(8Hrs)	2000	182	182.6	178.8	176	180	182.6	189.5	191	194.2	184.07
Ozone(O ₃)	180	ND	ND								
Ammonia(NH ₃)	400	48	45.2	52.4	30.8	30.2	47.8	30.2	56	30.2	41.2
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyrene(BaP)Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic(As)(ng/m ³)	06	ND	ND								
Nickel(Ni)(ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5},SO₂,NO₂,&CO has been done as per the ISCodeIS:5182

PartIV,II,VI,X&XVII respectively

LOCATION: NEAR ADMIN. BUILDING

Parameters	Limit (µg/M ³)	DATE									
		02.10.23	05.10.23	09.10.23	12.10.23	16.10.23	19.10.23	23.10.23	26.10.23	30.10.23	Avg
PM10	100	80.6	85.2	81.8	80.5	88.5	79.4	78.4	76.4	89.4	82.24
PM2.5	60	60	54.5	55	57.2	57.5	56	49.5	51	47.8	54.3
Sulphur Dioxide (SO ₂)	80	24.5	22	19.6	20.7	35.4	30.8	28.5	21.6	25.5	25.4
Oxide of Nitrogen(NO ₂)	80	32	26.4	28.2	25	30.2	24.9	22.5	24.1	30.8	27.12
Lead(Pb)	1.0	ND	ND								
Carbon Monoxide (CO)(8Hrs)	2000	138.8	156.2	165.4	175.4	185	166	148.6	152.2	132.5	157.78
Ozone(O ₃)	180	ND	ND								
Ammonia(NH ₃)	400	34.6	42	40.5	36.5	28	46.6	44	43.4	48	40.4
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a) Pyrene(BaP)	01	ND	ND								
Particulate phase only(ng/m ³)											
Arsenic(As) (ng/m ³)	06	ND	ND								
Nickel(Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5},SO₂,NO₂,&CO has been done as per the IS Code IS:5182

Part IV, II, VI, X & XVII respectively

LOCATION: NEDIGUTHA VILLAGE

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	DATE									
		03.10.23	06.10.23	10.10.23	13.10.23	17.10.23	20.10.23	24.10.23	27.10.23	31.10.23	Avg
PM10	100	42.5	44.4	52.8	62	56	42.6	52.1	50.4	48	50.08
PM2.5	60	48.5	51	42.2	47.9	54	38.4	36.8	38.8	42	44.4
Sulphur Dioxide (SO ₂)	80	14.6	22.5	21	26.4	20.5	16	12.4	14.5	18.5	18.4
Oxide of Nitrogen (NO ₂)	80	20.6	24	16.5	21.4	18	14.2	18.6	15.4	11.6	17.8
Lead (Pb)	1.0	ND	ND								
Carbon Monoxide (CO)(8Hrs)	2000	142.4	144.2	139.5	136	144.5	126.4	128	139	144	138.22
Ozone(O ₃)	180	ND	ND								
Ammonia (N H ₃)	400	12.2	14.2	9.4	11.2	10.5	12.5	12.9	9.4	14.6	11.87
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyrene (BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic (As) (ng/m ³)	06	ND	ND								
Nickel (Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀& PM_{2.5}, SO₂, NO₂, &CO has been done as per the IS Code IS: 5182 Part IV, II, VI, X&XVII respectively

NOISE LEVEL MONITORING REPORT FOR THE MONTH OF OCTOBER-2023

NOISE LEVEL MONITORING RESULT (IN DBA) FOR THE MONTH OF OCTOBER LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near Main Gate Area		✓		✓			
Near Back Gate Area		✓		✓			
Near Pellet Plant Area		✓		✓			
Near IOBP Area		✓		✓			

SUMMARY SHEET OF SAMPLING

SI No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	Near Main Gate Area	02.10.2023	OCPL/NL/EMIL/01/10/23
2.	Sample02	Near Back Gate Area	02.10.2023	OCPL/NL/EMIL/02/10/23
3.	Sample03	Near Pellet Plant Area	02.10.2023	OCPL/NL/EMIL/03/10/23
4.	Sample04	Near IOBP Area	02.10.2023	OCPL/NL/EMIL/04/10/23
5.	Sample05	Near Main Gate Area	04.10.2023	OCPL/NL/EMIL/05/10/23
6.	Sample06	Near Back Gate Area	04.10.2023	OCPL/NL/EMIL/06/10/23
7.	Sample07	Near Pellet Plant Area	04.10.2023	OCPL/NL/EMIL/07/10/23
8.	Sample08	Near IOBP Area	04.10.2023	OCPL/NL/EMIL/08/10/23
9.	Sample09	Near Main Gate Area	09.10.2023	OCPL/NL/EMIL/09/10/23
10.	Sample10	Near Back Gate Area	09.10.2023	OCPL/NL/EMIL/10/10/23
11.	Sample11	Near Pellet Plant Area	09.10.2023	OCPL/NL/EMIL/11/10/23
12.	Sample12	Near IOBP Area	09.10.2023	OCPL/NL/EMIL/12/10/23
13.	Sample13	Near Main Gate Area	11.10.2023	OCPL/NL/EMIL/13/10/23
14.	Sample14	Near Back Gate Area	11.10.2023	OCPL/NL/EMIL/14/10/23
15.	Sample15	Near Pellet Plant Area	11.10.2023	OCPL/NL/EMIL/15/10/23

16.	Sample16	Near IOBP Area	11.10.2023	OCPL/NL/EMIL/16/10/23
17.	Sample17	Near Main Gate Area	16.10.2023	OCPL/NL/EMIL/17/10/23
18.	Sample18	Near Back Gate Area	16.10.2023	OCPL/NL/EMIL/18/10/23
19.	Sample19	Near Pellet Plant Area	16.10.2023	OCPL/NL/EMIL/19/10/23
20.	Sample20	Near IOBP Area	16.10.2023	OCPL/NL/EMIL/20/10/23
21.	Sample21	Near Main Gate Area	18.10.2023	OCPL/NL/EMIL/21/10/23
22.	Sample22	Near Back Gate Area	18.10.2023	OCPL/NL/EMIL/22/10/23
23.	Sample23	Near Pellet Plant Area	18.10.2023	OCPL/NL/EMIL/23/10/23
24.	Sample24	Near IOBP Area	18.10.2023	OCPL/NL/EMIL/24/10/23
25.	Sample25	Near Main Gate Area	23.10.2023	OCPL/NL/EMIL/25/10/23
26.	Sample26	Near Back Gate Area	23.10.2023	OCPL/NL/EMIL/26/10/23
27.	Sample27	Near Pellet Plant Area	23.10.2023	OCPL/NL/EMIL/27/10/23
28.	Sample28	Near IOBP Area	23.10.2023	OCPL/NL/EMIL/28/10/23
29.	Sample29	Near Main Gate Area	25.10.2023	OCPL/NL/EMIL/29/10/23
30.	Sample30	Near Back Gate Area	25.10.2023	OCPL/NL/EMIL/30/10/23
31.	Sample31	Near Pellet Plant Area	25.10.2023	OCPL/NL/EMIL/31/10/23
32.	Sample32	Near IOBP Area	25.10.2023	OCPL/NL/EMIL/32/10/23
33.	Sample33	Near Main Gate Area	31.10.2023	OCPL/NL/EMIL/33/10/23
34.	Sample34	Near Back Gate Area	31.10.2023	OCPL/NL/EMIL/34/10/23
35.	Sample35	Near Pellet Plant Area	31.10.2023	OCPL/NL/EMIL/35/10/23
36.	Sample36	Near IOBP Area	31.10.2023	OCPL/NL/EMIL/36/10/23

Date of Monitoring: 02.10.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	55	62.8	65	56.2	36.9
2	Near Back Gate Area	50.6	57.9	56.3	46.8	35
3	Near Pellet PlantArea	46.6	50	52.8	40.1	25.2
4	Near IOBP Area	28	36.8	34	32	22
5	Ambient Noise Standard	Day Time(indB(A))Leq			Night Time(indB(A))Leq	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring:04.10.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	56.2	65.8	62	52.6	40
2	Near Back Gate Area	46	64.6	55.6	46.1	32.4
3	Near Pellet Plant Area	44	67	51.7	48	30
4	Near IOBP Area	30	34	38	25.4	23.5
5	Ambient Noise Standard	Day Time(indB(A))Leq			Night Time(indB(A))Leq	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 09.10.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	54.2	68.6	65.2	44	27.6
2	Near Back Gate Area	48	54.6	56.4	48	30.2
3	Near Pellet Plant Area	42.8	50	52	44.8	34.6
4	Near IOBP Area	30	29.2	35.8	27	22.6
5	Ambient Noise Standard	Day Time(indB(A))Leq			Night Time(indB(A))Leq	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 11.10.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	54	68.6	65.8	45.2	28
2	Near Back Gate Area	45.2	56.2	56	48	30.7
3	Near Pellet Plant Area	40.5	56.9	55.1	44.8	34.6
4	Near IOBP Area	28.4	30.3	35	27	22
5	Ambient Noise Standard	Day Time(indB(A))Leq			Night Time(indB(A))Leq	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 16.10.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	60.2	68.4	56	52.4	32
2	Near Back Gate Area	48.6	54.6	50.4	48.7	28.4
3	Near Pellet Plant Area	50.5	49.7	48.6	38.8	34.6
4	Near IOBP Area	24	34.6	35	26.2	19
5	Ambient Noise Standard	Day Time(indB(A))Leq			Night Time(indB(A))Leq	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 18.10.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	55.2	68	55.4	50.6	34.6
2	Near Back Gate Area	48	54.6	50.9	48.7	32
3	Near Pellet Plant Area	47.6	49.7	48.6	40	34.6
4	Near IOBP Area	29.2	34.6	35	26.9	20.6
5	Ambient Noise Standard	Day Time(indB(A))Leq			Night Time(indB(A))Leq	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 23.10.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	56.2	68	62.6	47.2	34.3
2	Near Back Gate Area	45	48.6	52	46.6	26.8
3	Near Pellet Plant Area	40.8	42.8	48	37.9	23
4	Near IOBP Area	25.3	31.8	34	29	20
5	Ambient Noise Standard	Day Time(indB(A))Leq			Night Time(indB(A))Leq	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 25.10.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	54.8	65.2	62	47.2	34.3
2	Near Back Gate Area	45	48.6	52	46.6	26
3	Near Pellet Plant Area	40.8	42.8	48	37.9	23
4	Near IOBP Area	25.3	31.8	35.4	31.2	20.8
5	Ambient Noise Standard	Day Time(indB(A))Leq			Night Time(indB(A))Leq	
i	Industrial	75.0			70.0	

Instrument used: Larson Devis

Date of Monitoring: 31.10.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	46.8	66	56.4	38	28.4
2	Near Back Gate Area	44	54.6	54	40.8	31
3	Near Pellet Plant Area	52.4	45.9	54	38	30.2
4	Near IOBP Area	31	35.9	38	32.6	29.4
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 REPORT FOR THE MONTH OF OCTOBER-2023

SURFACE WATER ANALYSIS FOR THE MONTH OF OCTOBER2023
SUMMARY SHEET OF SAMPLING (SURFACE WATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	BAITARANI RIVER (DHANURJAYPUR)	04-October-2023	OCPL/SW/01/10/23
2.	Sample02	BAITARANI RIVE (NEARPLANTAREA)	04-October-2023	OCPL/SW/02/10/23
3.	Sample03	RESERVOUR POND INSIDEPLANT	04-October-2023	OCPL/SW/03/10/23
4.	Sample04	DALKI NALA NEAR PLANT	04-October-2023	OCPL/SW/04/10/23
5.	Sample05	NADIGUTH	04-October-2023	OCPL/SW/05/10/23

Location: BAITARANI RIVER(DHANURJAYPUR)

Lab Sample Code: OCPL/SW/01/10/23		Report No.-OCPL/EMIL/01/10/23	
Sample description:		Test method	APHA22 nd edition
Sample location	BAITARANIRIVER (DHANURJAYPUR)	Sample collected by	OCPL representative
Location	Keonjhar,Odisha	Date of Sampling	04-October-2023
Sample quantity	1no.sX1Lit.	Date of sample received	05-October-2023
Sample type	Surface Water	Date of Analysis	05-October-2023
Required parameters	As described in W/O	Date of Issue of report	12-October-2023
EMIL reference	WO No.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSISRESULT

Sl. No.	TESTPARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	23.6
4	pH	-	7.2
5	TotalSuspendedSolids	mg/L	85.8
6	Total Dissolved Solid	mg/L	917
7	Biochemical Oxygen Demand at27°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 Hardnessas CaCO3	mg/L	48.2

14	Electrical Conductivity	µs/cm	156.4
15	Turbidity	NTU	14.8
16	Arsenic asAs	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

Location: BAITARANI RIVER(NEARPLANTAREA)

Lab Sample Code: OCPL/SW/02/10/23		Report No.-OCPL/EMIL/02/10/23	
Sample description:		Test method	APHA22 nd edition
Sample location	BAITARANIRIVER (NEARPLANTAREA)	Sample collected by	OCPL representative
Location	Keonjhar,Odisha	Date of Sampling	04-October-2023
Sample quantity	1no.sX1Lit.	Date of sample received	05-October-2023
Sample type	Surface Water	Date of Analysis	05-October-2023
Required parameters	As described in W/O	Date of Issue of report	12-October-2023
EMIL reference	WONo.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSISRESULT

Sl. No.	TESTPARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	24
4	pH	-	6.9
5	TotalSuspendedSolids	mg/L	82
6	Total Dissolved Solid	mg/L	869
7	Biochemical Oxygen Demand at27°C	mg/L	7.2
8	Chemical Oxygen Demand	mg/L	1.1
9	Total Residual Chlorine	mg/L	0.68
10	Alkalinity	mg/L	86
11	Calcium	mg/L	58.2
12	Magnesium	mg/L	40
13	Total Hardness asCaCO3	mg/L	46.6

14	Electrical Conductivity	μs/cm	144.8
15	Turbidity	NTU	12.6
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	0.11
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	4.2
25	Potassium as K	mg/L	2.4
26	Sulfate	mg/L	1.2
27	Nitrate as NO ₃	mg/L	3.1
28	Total Silica as SiO ₂	mg/L	6.1
29	Total dissolved Solid	mg/L	869

Location: RESERVOIR POND INSIDE PLANT PREMISES

Lab Sample Code: OCPL/SW/03/10/23		Report No.-OCPL/EMIL/03/10/23	
Sample description:		Test method	APHA22 nd edition
Sample location	RESERVOIR POND INSIDE PLANT PREMISES	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	04-October-2023
Sample quantity	1 no. x 1 Lit.	Date of sample received	05-October-2023
Sample type	Surface Water	Date of Analysis	05-October-2023
Required parameters	As described in W/O	Date of Issue of report	12-October-2023
EMIL reference	WONo.- 1060/ADMIN/5500004339	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	Bio chemical 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 CaCO ₃	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

Location: DALKINALA, NEAR PLANT

Lab Sample Code: OCPL/SW/04/10/23		Report No.-OCPL/EMIL/04/10/23	
Sample description:		Test method	APHA22 nd edition
Sample location	DALKI NALA, NEAR PLANT	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	04-October-2023
Sample quantity	1 no. sX1 Lit.	Date of sample received	05-October-2023
Sample type	Surface Water	Date of Analysis	05-October-2023
Required parameters	As described in W/O	Date of Issue of report	12-October-2023
EMIL reference	WONo.- 1060/ADMIN/5500004339	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	23
4	pH	-	6.8
5	Total Suspended Solids	mg/L	44.2
6	Total Dissolved Solid	mg/L	814
7	Biochemical Oxygen Demand at 27°C	mg/L	4.2
8	Chemical Oxygen Demand	mg/L	2.1
9	Total Residual Chlorine	mg/L	0.6
10	Alkalinity	mg/L	38.8
11	Calcium	mg/L	42.5
12	Magnesium	mg/L	50.2
13	Total Hardness as CaCO ₃	mg/L	48.2
14	Electrical Conductivity	µs/cm	82

15	Turbidity	NTU	34.4
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	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	6.4
29	Total dissolved Solid	mg/L	814

Location: NADIGUTH

Lab Sample Code: OCPL/SW/05/10/23		Report No.-OCPL/EMIL/05/10/23	
Sample description:		Test method	APHA22 nd edition
Sample location	NADIGUTH	Sample collected by	OCPL representative
Location	Keonjhar,Odisha	Date of Sampling	04-October-2023
Sample quantity	1no.sX1Lit.	Date of sample received	05-October-2023
Sample type	Surface Water	Date of Analysis	05-October-2023
Required parameters	As described inW/O	Date of Issue of report	12-October-2023
EMILreference	WO No.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSISRESULT

Sl. No.	TESTPARAMETER	UOM	Results
1	Colour	Pt-Co	1.88
2	Odour	-	Agreeable
3	Temperature	°C	23.1
4	pH	-	6.8
5	TotalSuspendedSolids	mg/L	52.4
6	Total Dissolved Solid	mg/L	961
7	Biochemical Oxygen Demand at27°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 CaCO ₃	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	Fluorides 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

GROUND WATER ANALYSIS REPORT FOR THE MONTH OF OCTOBER-2023

GROUNDWATER MONITORING REPORT SUMMARY SHEET OF SAMPLING (GROUNDWATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	MALDA VILLAGE	11-October-2023	OCPL/GW/01/10/23
2.	Sample02	NEDIGUTH	11-October-2023	OCPL/GW/02/10/23
3.	Sample03	TALASAH	11-October-2023	OCPL/GW/03/10/23
4.	Sample04	PLANT-1(Near Canteen)	11-October-2023	OCPL/GW/04/10/23
5.	Sample05	PLANT-2(SLIMEPOND)	11-October-2023	OCPL/GW/05/10/23

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

Sl. No.	TESTPARAMETER	UOM	Results					BIS Desirable limit	Permissible limit with the absence of alternate source
			MALDA VILLAGE	NEDIGUTH	TALASAHI	PLANT- 1 (Near Canteen)	PLANT-2 (SLIMEPOND)		
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	86.4	62	55.8	68	75.4	5000	No relaxation
16	Fluoride as F	mg/L	ND	ND	ND	ND	ND	1.0	1.9
17	Iron as Fe	µg/L	34.2	22	18.4	18.4	35.2	300	1000
18	Nitrate	mg/L	0.02	0.16	0.02	0.16	0.02	45	100
19	Sodium as Na	mg/L	1.1	1.02	1.04	1.01	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	0.02	200	400
22	Total Silica as SiO ₂	mg/L	ND	0.06	0.04	0.06	0.2	--	--
23	Total suspended Solid	mg/L	0.88	0.42	1.2	0.8	0.4	--	--
24	Total dissolved Solid	mg/L	42	84.5	94.6	46	38	250	2000
25	Turbidity	NTU	0.22	0.41	0.12	0.18	0.22	5	10

Sampling By: Mr. Hrusikesh Das

GROUND WATER LEVEL ANALYSIS REPORT FOR THE MONTH OF OCTOBER-2023

**REPORT ON GROUND WATER LEVEL ANALYSIS FOR THE MONTH OF
OCTOBER-2023**

SUMMARY SHEET OF MONITORING:

SI No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
6.	Sample01	MALDA VILLAGE	17-October-2023	OCPL/GWL/01/10/23
7.	Sample02	NEDIGUTH	17-October-2023	OCPL/GWL/02/10/23
8.	Sample03	TALASAHI	17-October-2023	OCPL/GWL/03/10/23
9.	Sample04	PLANT-1(Near Canteen)	17-October-2023	OCPL/GWL/04/10/23
10.	Sample05	PLANT-2(SLIMEPOND)	17-October-2023	OCPL/GWL/05/10/23

MONITORING RESULT

SI No.	Name of the location	Type of well	Dia. (m)	Depth of the well (m)	Depth of the water table BGL(M)	Remarks
1	MALDA VILLAGE	Dugwell	0.8	8.1	6.7	--
2	NEDIGUTH	Dugwell	1.2	9.4	7.12	--
3	TALASAHI	Dugwell	1.0	8.6	7.24	--
4	PLANT-1(Near Canteen)	Bore-well	0.1	62	12.1	--
5	PLANT-2(SLIME POND)	Bore-well	0.1	60	37.9	--

Sampling By: Mr. Hrusikesh Das

STACK MONITORING REPORT FOR THE MONTH OF OCTOBER-2023

**REPORT ON STACK MONITORING FOR THE MONTH OF OCTOBER –
2023**

LOCATION AND MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
DGStack-1						✓	
DGStack-2						✓	
Stack-1 (Pellet Plant Process Stack)							✓
Stack-2 (Pellet Plant Dedusting Stack)							✓

TEST REPORT

Name & Address of the Client:	Report No.: OCPL/BBS/38
M/S ESSEL MINING & INDUSTRIES LTD.	Date :13.10.2023
Keonjhar, Odisha, India	Sample No.: OCPL/EMIL/2023-24/10
	Sample Description: DG Flue Gas Monitoring
	Date of Sampling: 13.10.2023

ANALYSIS RESULT

A.	<u>General information about stack:</u>	
1.	Stack connected to	:DG-1
2.	Emission due to	:Burning of Diesel
3.	Material of construction of stack	:MS
4.	Shape of Stack	:Circular
5.	Serial no.	:N15E226771
6.	Boiler/Furnace/DG/Kiln Capacity	:1250KVA

B.	<u>Physical characteristics of stack:</u>			
1.	Height of the Stack from Ground level	:9m		
2.	Diameter of the stack at sampling point	:400mm		
3.	Height of the Sampling Point from Ground level	:7m		
4.	Type	:HCKI634Z1		
C.	<u>Analysis/Characteristic of stack:</u>			
1.	Fuel used :LDO	2.FuelConsumption:NA		
D.	<u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Limit</u>	<u>Method</u>
1.	Temperature of Emission(°C)	82.4	--	IS11255(PartIII),2008RA 2018
2.	Barometric pressure (mm of Hg)	316	--	USEPAPart2- 25/09/1996
3.	Velocity of gas(m/sec.)	14.5	--	IS11255(PartIII),2008RA 2018
4.	Quantity of Gas Flow(Nm ³ /hr)	968	--	IS11255(PartIII),2008RA 2018
5.	Concentration of Moisture(%)	<2.0	--	USEPA(Part-4)
6.	Concentration of Oxygen(% v/v)	9.6	--	IS13270:1992,Ref:2009
7.	Concentration of Carbon Monoxide (mg/Nm ³)	21.4	--	IS13270:1992,Ref:2009
8.	Concentration of Carbon Dioxide(% v/v)	5.8	--	IS13270:1992,Ref:2009
9.	Concentration of Sulphur Dioxide(mg/Nm ³)	136.6	600	IS11255(PartII),1985RA 2014
10.	Concentration of Nitrogen Dioxide(mg/Nm ³)	88	300	IS11255(Part7),2005RA 2017

11.	Concentration of Particulate Matters(mg/Nm ³)	41.2	50	IS11255(PartI):1985,RA 2014
E.	<u>Pollution control device</u> Details of pollution control devices attached with the stack :NA			
F.	Remarks: Nil			

Sampling By: Mr. Hrusikesh Das

TESTREPORT

Name & Address of the Client:	Report No.: OCPL/BBS/39
M/SESSELMINING&INDUSTRIESLTD	Date :13.10.2023
Keonjhar,Odisha,India	Sample No.: OCPL/EMIL/2023-24/10
	Sample Description: DG Flue Gas Monitoring
	Date of Sampling :13.10.2023

ANALYSISRESULT

A.	<u>General information about stack:</u>		
1.	Stack connected to	:DG-2	
2.	Emission due to	:Burning of Diesel	
3.	Material of construction of stack	:MS	
4.	Shape of Stack	:Circular	
5.	Serial no.	:N15H319963	
6.	Boiler/Furnace/DG/Kiln Capacity	:1250KVA	
B.	<u>Physical characteristics of stack:</u>		
1.	Height of the Stack from Ground level	:9m	
2.	Diameter of the stack at sampling point	:400mm	
3.	Height of the Sampling Point from Ground level	:7m	
4.	Type	:HCKI634Z1	
C.	<u>Analysis/Characteristic of stack:</u>		
1.	Fuel used :LDO	2.FuelConsumption:NA	
D.	<u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Limit</u> <u>Method</u>
1.	Temperature of Emission(°C)	89.8	IS11255(Part III),2008RA2018

2.	Barometric pressure (mm of Hg)	295		USEPA Part 2-25/09/1996
3.	Velocity of gas (m/sec.)	26.2		IS 11255 (Part III), 2008 RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	1651		IS 11255 (Part III), 2008 RA 2018
5.	Concentration of Moisture (%)	<2.0		USEPA (Part-4)
6.	Concentration of Oxygen (% v/v)	8.1		IS 13270:1992, Ref: 2009
7.	Concentration of Carbon Monoxide (mg/Nm ³)	26.8		IS 13270:1992, Ref: 2009
8.	Concentration of Carbon Dioxide (% v/v)	17.6		IS 13270:1992, Ref: 2009
9.	Concentration of Sulphur Dioxide (mg/Nm ³)	158	600	IS 11255 (Part II), 1985 RA 2014
10.	Concentration of Nitrogen Dioxide (mg/Nm ³)	84.2	300	IS 11255 (Part 7), 2005 RA 2017
11.	Concentration of Particulate Matters (mg/Nm ³)	38	50	IS 11255 (Part I): 1985, RA 2014
E.	<u>Pollution control device</u> Details of pollution control devices attached with the stack : NA			
F.	Remarks: Nil			

Sampling By: Mr. Hrusikesh Das

TESTREPORT

Stack No.	Stack Description	Emission due to	Date of Sampling
Stack-1	Pellet plant process stack	Burning of furnace oil	14:10:2023
Stack-2	Pellet plant de-dusting stack	Electricity	14:10:2023

ANALYSISRESULT

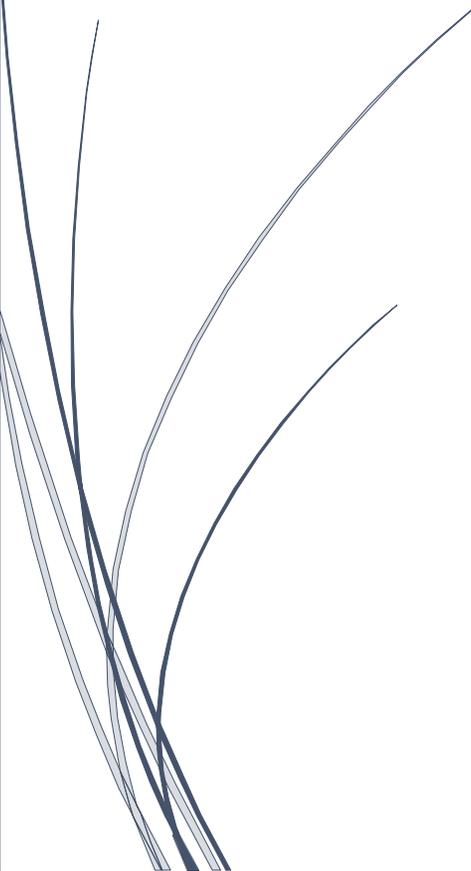
Stack No.	Stack Description	Stack height (in meter)	Emission M ³ /Hr.	Temperature(°C)	VelocityNM ³ /Hr
1	Pellet plant process stack	80	7214	102.4	35946
2	Pellet plant de-dusting stack	60	6841	94.5	36256

Stack No.	Stack Description	Carbon monoxide (CO) Mg/nm ³	Carbon dioxide(CO ₂) %v/v	PM Concentration Mg/nm ³		SO ₂ Mg/nm ³	NO ₂ Mg/nm ³
				PM10	PM 2.5		
Norms as per SPCB		1	NA	150	150	NA	NA
1	Pellet plant process stack	<0.2	8.6	142.8	133.4	183	79.8
2	Pellet plant de-dusting stack	<0.2	7.2	116	129.6	164.5	71

- Measurement of PM has been done as per IS Code IS: 11255 Part 1.
- No. of the calibrated stack kit used: Thermo Environmental Instruments TEI-401



ENVIRONMENTAL MONITORING REPORT
FOR THE MONTH OF NOVEMBER-2023
FOR ESSELMINING & INDUSTRIES LTD.



M/S ESSEL MINING & INDUSTRIES LTD.

VILL-BASANTPUR, PO-DUBUNA, TEHSIL-
JHUMPURA, KEONJHAR

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AMBIENT AIR MONITORING REPORT FOR THE MONTH OF NOVEMBER-2023

AMBIENT AIR MONITORING DATA

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near ECR-1		✓			✓		
Near Canteen		✓			✓		
Near Admin Building		✓			✓		
Nadiguth Village		✓			✓		

SUMMARY SHEET OF SAMPLING

SINo.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	Near ECR-1	02.11.2023	OCPL/AAQ/EMIL/01/11/23
2.	Sample02	Near Canteen	02.11.2023	OCPL/AAQ/EMIL/02/11/23
3.	Sample03	Near Admin Building	02.11.2023	OCPL/AAQ/EMIL/03/11/23
4.	Sample04	Nedigutha Village	01.11.2023	OCPL/AAQ/EMIL/04/11/23
5.	Sample05	Near ECR-1	06.11.2023	OCPL/AAQ/EMIL/05/11/23
6.	Sample06	Near Canteen	06.11.2023	OCPL/AAQ/EMIL/06/11/23
7.	Sample07	Near Admin Building	06.11.2023	OCPL/AAQ/EMIL/07/11/23
8.	Sample08	Nedigutha Village	04.11.2023	OCPL/AAQ/EMIL/08/11/23
9.	Sample09	Near ECR-1	09.11.2023	OCPL/AAQ/EMIL/09/11/23
10.	Sample10	Near Canteen	09.11.2023	OCPL/AAQ/EMIL/10/11/23
11.	Sample11	Near Admin Building	09.11.2023	OCPL/AAQ/EMIL/11/11/23
12.	Sample12	Nedigutha Village	08.11.2023	OCPL/AAQ/EMIL/12/11/23
13.	Sample13	Near ECR-1	13.11.2023	OCPL/AAQ/EMIL/13/11/23
14.	Sample14	Near Canteen	13.11.2023	OCPL/AAQ/EMIL/14/11/23
15.	Sample15	Near Admin Building	13.11.2023	OCPL/AAQ/EMIL/15/11/23
16.	Sample16	Nedigutha Village	11.11.2023	OCPL/AAQ/EMIL/16/11/23

17.	Sample17	NearECR-1	16.11.2023	OCPL/AAQ/EMIL/17/11/23
18.	Sample18	Near Canteen	16.11.2023	OCPL/AAQ/EMIL/18/11/23
19.	Sample19	Near Admin Building	16.11.2023	OCPL/AAQ/EMIL/19/11/23
20.	Sample20	Nedigutha Village	15.11.2023	OCPL/AAQ/EMIL/20/11/23
21.	Sample21	NearECR-1	20.11.2023	OCPL/AAQ/EMIL/21/11/23
22.	Sample22	Near Canteen	20.11.2023	OCPL/AAQ/EMIL/22/11/23
23.	Sample23	Near Admin Building	20.11.2023	OCPL/AAQ/EMIL/23/11/23
24.	Sample24	Nedigutha Village	18.11.2023	OCPL/AAQ/EMIL/24/11/23
25.	Sample25	NearECR-1	23.11.2023	OCPL/AAQ/EMIL/25/11/23
26.	Sample26	Near Canteen	23.11.2023	OCPL/AAQ/EMIL/26/11/23
27.	Sample27	Near Admin Building	23.11.2023	OCPL/AAQ/EMIL/27/11/23
28.	Sample28	Nedigutha Village	22.11.2023	OCPL/AAQ/EMIL/28/11/23
29.	Sample29	NearECR-1	27.11.2023	OCPL/AAQ/EMIL/29/11/23
30.	Sample30	Near Canteen	27.11.2023	OCPL/AAQ/EMIL/30/11/23
31.	Sample31	Near Admin Building	27.11.2023	OCPL/AAQ/EMIL/31/11/23
32.	Sample32	Nedigutha Village	25.11.2023	OCPL/AAQ/EMIL/32/11/23
33.	Sample33	NearECR-1	30.11.2023	OCPL/AAQ/EMIL/33/11/23
34.	Sample34	Near Canteen	30.11.2023	OCPL/AAQ/EMIL/34/11/23
35.	Sample35	Near Admin Building	30.11.2023	OCPL/AAQ/EMIL/35/11/23
36.	Sample36	Nedigutha Village	29.11.2023	OCPL/AAQ/EMIL/36/11/23

LOCATION: NEAR ECR-1

Parameters	Limit(μg/M ³)	Date									
		02.11.23	06.11.23	09.11.23	13.11.23	16.11.23	20.11.23	23.11.23	27.11.23	30.11.23	Avg
PM10	100	88.8	86	84.9	88	86.2	90.6	88.2	88.6	92.6	88.21
PM2.5	60	57.4	58.8	60	58.9	56	59	59.5	54.8	56.4	52.17
Sulphur Dioxide (SO ₂)	80	36.2	34.8	35	38.4	38	36.8	38.4	34.6	38.6	36.75
Oxide of Nitrogen (NO ₂)	80	27.4	28	28.8	36.6	31.5	32.4	30.6	32	34.2	31.27
Lead(Pb)	1	ND	ND								
Carbon Monoxide (CO) (8Hrs)	200	172.4	172	174.8	170.6	171	176.8	177.4	175.8	174.6	173.93
Ozone(O ₃)	180	ND	ND								
Ammonia (NH ₃)	400	35.8	36.4	38	38.2	36.8	36.4	37.2	35.9	38	36.96
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyrene (BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic(As) (ng/m ³)	06	ND	ND								
Nickel(Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5},SO₂,NO₂,&CO has been done as per the IS Code IS:5182

Part IV, II, VI, X & XVII respectively

LOCATION: NEAR CANTEEN

Parameters	Limit (µg/ M ³)	DATE									
		02.11.23	06.11.23	09.11.23	13.11.23	16.11.23	20.11.23	23.11.23	27.11.23	30.11.23	Avg
PM10	100	86.2	84	84.4	86.8	88.6	84.5	86.8	84.8	88.2	86.03
PM2.5	60	55.8	56	60	58	56.8	58.5	56.4	56.2	54.9	56.97
Sulphur Dioxide (SO ₂)	80	41.6	40.2	38.9	42	40.8	42.8	44	41.9	46.2	42.04
Oxide of Nitrogen (NO ₂)	80	38.2	36.4	38.8	42.8	40	41.9	42.6	41.8	44.2	40.74
Lead(Pb)	1.0	ND	ND								
Carbon Monoxide(C O)(8Hrs)	2000	184.8	188	188.4	186.6	185.4	182.4	182.4	186.6	188.2	185.8
Ozone(O ₃)	180	ND	ND								
Ammonia(N H ₃)	400	34.2	36.6	35.4	36.9	36.2	35.8	35.6	34.5	36	35.68
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyre ne(BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic(As) (ng/m ³)	06	ND	ND								
Nickel(Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5},SO₂,NO₂,&CO has been done as per the IS Code IS:5182

PartIV,II,VI,X&XVII respectively

LOCATION: NEAR ADMIN. BUILDING

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	DATE									
		02.11.23	06.11.23	09.11.23	13.11.23	16.11.23	20.11.23	23.11.23	27.11.23	30.11.23	Avg
PM10	100	88.2	86.8	88.6	88.9	90.2	84.6	92.8	92.6	94.2	89.65
PM2.5	60	59.2	58.8	59	58.2	58.8	59.2	58.4	58	56.4	59.33
Sulphur Dioxide (SO ₂)	80	24.8	28	26.2	28.6	28.8	30.2	27.9	32	32.4	28.76
Oxide of Nitrogen(NO ₂)	80	25.8	26	28.4	27.5	28.2	30.4	28	27.8	29	27.9
Lead(Pb)	1.0	ND	ND								
Carbon Monoxide (CO)(8Hrs)	2000	164.6	168	162.4	170.5	172	174.8	169.6	166.4	168	168.4
Ozone(O ₃)	180	ND	ND								
Ammonia(NH ₃)	400	32.8	34	36.2	34.8	34	35.6	36.9	34	38.8	35.23
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a) Pyrene(BaP)	01	ND	ND								
Particulate phase only(ng/m ³)											
Arsenic(As) (ng/m ³)	06	ND	ND								
Nickel(Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5}, SO₂,NO₂,&CO has been done as per the IS Code IS:5182

Part IV, II, VI, X & XVII respectively

LOCATION: NEDIGUTHA VILLAGE

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	DATE									
		01.11.23	04.11.23	08.11.23	11.11.23	15.11.23	18.11.23	22.11.23	25.11.23	29.11.23	Avg
PM10	100	42.2	44.5	45.2	46.4	46.6	45.5	44.2	44	45.8	44.93
PM2.5	60	42.4	44	43.2	44.6	42.5	42.4	42.5	42.8	42	42.93
Sulphur Dioxide (SO ₂)	80	18.4	15.9	20.4	20.4	21.6	18.5	18	17.2	16.5	18.54
Oxide of Nitrogen (NO ₂)	80	17	17.9	18.2	18	17.6	17.5	16.8	17.9	18.8	17.74
Lead(Pb)	1.0	ND	ND								
Carbon Monoxide (CO)(8Hrs)	2000	145.6	146.8	144.4	142.8	144.8	146	140.4	142.6	141.2	143.84
Ozone(O ₃)	180	ND	ND								
Ammonia(NH ₃)	400	12.8	12.6	14	14.4	14.8	16	12.2	11.6	12	13.37
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyrene(BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic(As)(ng/m ³)	06	ND	ND								
Nickel(Ni)(ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀& PM_{2.5}, SO₂, NO₂, &CO has been done as per the IS Code IS:

5182 PartIV,II,VI,X&XVII respectively

NOISE LEVEL MONITORING REPORT FOR THE MONTH OF NOVEMBER-2023

**NOISE LEVEL MONITORING RESULT (IN DBA) FOR THE MONTH OF NOVEMBER
LOCATION AND WEEKLY MONITORING SCHEDULE**

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near Main Gate Area		✓			✓		
Near Back Gate Area		✓			✓		
Near Pellet Plant Area		✓			✓		
Near IOBP Area		✓			✓		

SUMMARY SHEET OF SAMPLING

SI No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	Near Main Gate Area	02.11.2023	OCPL/NL/EMIL/01/11/23
2.	Sample02	Near Back Gate Area	02.11.2023	OCPL/NL/EMIL/02/11/23
3.	Sample03	Near Pellet Plant Area	02.11.2023	OCPL/NL/EMIL/03/11/23
4.	Sample04	Near IOBP Area	02.11.2023	OCPL/NL/EMIL/04/11/23
5.	Sample05	Near Main Gate Area	06.11.2023	OCPL/NL/EMIL/05/11/23
6.	Sample06	Near Back Gate Area	06.11.2023	OCPL/NL/EMIL/06/11/23
7.	Sample07	Near Pellet Plant Area	06.11.2023	OCPL/NL/EMIL/07/11/23
8.	Sample08	Near IOBP Area	06.11.2023	OCPL/NL/EMIL/08/11/23
9.	Sample09	Near Main Gate Area	09.11.2023	OCPL/NL/EMIL/09/11/23
10.	Sample10	Near Back Gate Area	09.11.2023	OCPL/NL/EMIL/10/11/23
11.	Sample11	Near Pellet Plant Area	09.11.2023	OCPL/NL/EMIL/11/11/23
12.	Sample12	Near IOBP Area	09.11.2023	OCPL/NL/EMIL/12/11/23
13.	Sample13	Near Main Gate Area	13.11.2023	OCPL/NL/EMIL/13/11/23
14.	Sample14	Near Back Gate Area	13.11.2023	OCPL/NL/EMIL/14/11/23
15.	Sample15	Near Pellet Plant Area	13.11.2023	OCPL/NL/EMIL/15/11/23

16.	Sample16	Near IOBP Area	13.11.2023	OCPL/NL/EMIL/16/11/23
17.	Sample17	Near Main Gate Area	16.11.2023	OCPL/NL/EMIL/17/11/23
18.	Sample18	Near Back Gate Area	16.11.2023	OCPL/NL/EMIL/18/11/23
19.	Sample19	Near Pellet Plant Area	16.11.2023	OCPL/NL/EMIL/19/11/23
20.	Sample20	Near IOBP Area	16.11.2023	OCPL/NL/EMIL/20/11/23
21.	Sample21	Near Main Gate Area	20.11.2023	OCPL/NL/EMIL/21/11/23
22.	Sample22	Near Back Gate Area	20.11.2023	OCPL/NL/EMIL/22/11/23
23.	Sample23	Near Pellet Plant Area	20.11.2023	OCPL/NL/EMIL/23/11/23
24.	Sample24	Near IOBP Area	20.11.2023	OCPL/NL/EMIL/24/11/23
25.	Sample25	Near Main Gate Area	23.11.2023	OCPL/NL/EMIL/25/11/23
26.	Sample26	Near Back Gate Area	23.11.2023	OCPL/NL/EMIL/26/11/23
27.	Sample27	Near Pellet Plant Area	23.11.2023	OCPL/NL/EMIL/27/11/23
28.	Sample28	Near IOBP Area	23.11.2023	OCPL/NL/EMIL/28/11/23
29.	Sample29	Near Main Gate Area	27.11.2023	OCPL/NL/EMIL/29/11/23
30.	Sample30	Near Back Gate Area	27.11.2023	OCPL/NL/EMIL/30/11/23
31.	Sample31	Near Pellet Plant Area	27.11.2023	OCPL/NL/EMIL/31/11/23
32.	Sample32	Near IOBP Area	27.11.2023	OCPL/NL/EMIL/32/11/23
33.	Sample33	Near Main Gate Area	30.11.2023	OCPL/NL/EMIL/33/11/23
34.	Sample34	Near Back Gate Area	30.11.2023	OCPL/NL/EMIL/34/11/23
35.	Sample35	Near Pellet Plant Area	30.11.2023	OCPL/NL/EMIL/35/11/23
36.	Sample36	Near IOBP Area	30.11.2023	OCPL/NL/EMIL/36/11/23

Date of Monitoring: 02.11.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	63.5	66	52.9	48.2	30.7
2	Near Back Gate Area	41.8	45.2	38.2	35	31.5
3	Near Pellet Plant Area	64.6	65.8	68.8	62.2	24.8
4	Near IOBP Area	52.4	58.9	38.9	46.5	34.6
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:06.11.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	44.3	62.4	58.6	61.2	36
2	Near Back Gate Area	38	50.4	48.5	44.2	28
3	Near Pellet Plant Area	52.6	54	46.2	50.6	34.4
4	Near IOBP Area	57.5	56.2	42.5	45.2	29.6
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:09.11.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	61.4	60.8	62	54.2	38
2	Near Back Gate Area	46.2	52	42	38	38
3	Near Pellet Plant Area	50.6	58.8	62.6	42	34.5
4	Near IOBP Area	55	52.6	41.4	44.9	36.3
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:13.11.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	42.3	62.8	58.8	38.5	27.7
2	Near Back Gate Area	44.9	48.7	51.8	38.5	30.5
3	Near Pellet Plant Area	46.6	62.4	56.2	37.9	40.4
4	Near IOBP Area	48.8	64.8	58.7	42.6	44.8
Ambient Noise Standard						
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: 16.11.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	55.8	64	68.2	50.6	34
2	Near Back Gate Area	46.4	39.2	48	40.8	20.6
3	Near Pellet Plant Area	40.6	40.7	55.6	37.6	36.4
4	Near IOBP Area	38.3	48.7	46.8	38	35
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:20.11.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00-11.00am	Day 3.00-4.00pm	Evening6.00-7.00pm	Night 10.00-11.00pm
1	Near Main Gate Area	55.9	66	64.8	44.6	32
2	Near Back Gate Area	56.4	54.6	54.5	48.7	27.3
3	Near Pellet Plant Area	50.6	52.5	51.2	37.8	32
4	Near IOBP Area	51.8	52	52	55.9	28.6
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:23.11.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	55.4	62.8	64.6	45	27
2	Near Back Gate Area	44.8	54.6	56.4	48.9	20.5
3	Near Pellet Plant Area	48.7	53.4	52.3	46.2	27.5
4	Near IOBP Area	45.6	32.8	44.8	39.8	21.4
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

Date of Monitoring:27.11.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	58.6	65	52.4	38	32.5
2	Near Back Gate Area	46.8	66	54.8	44.9	32.5
3	Near Pellet Plant Area	56.2	62.4	57.8	42.6	28.6
4	Near IOBP Area	45.8	36.8	35	36	30.5
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:30.11.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	57.6	60.5	62.8	56.2	25
2	Near Back Gate Area	50.8	62	60.8	52.2	23.4
3	Near Pellet Plant Area	44.4	61.5	58.4	42	34
4	Near IOBP Area	32	56.7	34.8	48.6	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

SURFACE WATER ANALYSIS REPORT FOR THE MONTH OF NOVEMBER-2023

SURFACE WATER ANALYSIS FOR THE MONTH OF NOVEMBER2023
SUMMARY SHEET OF SAMPLING(SURFACE WATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	BAITARANI RIVER (DHANURJAYPUR)	07-NOVEMBER- 2023	OCPL/SW/01/11/23
2.	Sample02	BAITARANI RIVE (NEARPLANTAREA)	07-NOVEMBER- 2023	OCPL/SW/02/11/23
3.	Sample03	RESERVOUR POND INSIDEPLANT	07-NOVEMBER- 2023	OCPL/SW/03/11/23
4.	Sample04	DALKI NALA NEAR PLANT	07-NOVEMBER- 2023	OCPL/SW/04/11/23
5.	Sample05	NADIGUTH	07-NOVEMBER- 2023	OCPL/SW/05/11/23

Location: BAITARANI RIVER(DHANURJAYPUR)

Lab Sample Code: OCPL/SW/01/11/23		Report No.-OCPL/EMIL/01/11/23	
Sample description:		Test method	APHA22 nd edition
Sample location	BAITARANIRIVER (DHANURJAYPUR)	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07-NOVEMBER- 2023
Sample quantity	1 no.sX1Lit.	Date of sample received	08-NOVEMBER- 2023
Sample type	Surface Water	Date of Analysis	08-NOVEMBER- 2023
Required parameters	As described in W/O	Date of Issue of report	16-NOVEMBER- 2023
EMIL reference	WO No.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	26.8
4	pH	-	7.0
5	Total Suspended Solids	mg/L	9.2
6	Total Dissolved Solid	mg/L	438
7	Biochemical Oxygen Demand at 27°C	mg/L	7.7
8	Chemical Oxygen Demand	mg/L	7.1
9	Total Residual Chlorine	mg/L	6.9
10	Alkalinity	mg/L	134
11	Calcium	mg/L	36.8
12	Magnesium	mg/L	26

13	Total Hardness as CaCO ₃	mg/L	64
14	Electrical Conductivity	μs/cm	188
15	Turbidity	NTU	7.1
16	Arsenic as As	μg/L	1.4
17	Lead as Pb	μg/L	<0.5
18	Cadmium as Cd	μg/L	3.88
19	Total Chromium as Cr	μg/L	<0.5
20	Zinc as Zn	μg/L	8.04
21	Fluoride as F	mg/L	0.22
22	Iron as Fe	mg/L	18.8
23	Nitrate	mg/L	7.6
24	Sodium as Na	mg/L	6.2
25	Potassium as K	mg/L	1.2
26	Sulfate	mg/L	0.48
27	Nitrate as NO ₃	mg/L	4.8
28	Total Silica as SiO ₂	mg/L	11.48
29	Total dissolved Solid	mg/L	438

Location: BAITARANI RIVER (NEARPLANTAREA)

Lab Sample Code: OCPL/SW/02/11/23		Report No.-OCPL/EMIL/02/11/23	
Sample description:		Test method	APHA22 nd edition
Sample location	BAITARANIRIVER (NEARPLANTAREA)	Samplecollectedby	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07-NOVEMBER- 2023
Sample quantity	1no.sX1Lit.	Date of sample received	08-NOVEMBER- 2023
Sample type	Surface Water	Date of Analysis	08-NOVEMBER- 2023
Required parameters	As described in W/O	Date of Issue of report	16-NOVEMBER- 2023
EMIL reference	WONo.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSISRESULT

Sl. No.	TESTPARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	26.6
4	pH	-	7.1
5	Total Suspended Solids	mg/L	10.2
6	Total Dissolved Solid	mg/L	386
7	BiochemicalOxygenDemand at27°C	mg/L	6.4
8	Chemical Oxygen Demand	mg/L	5.1
9	Total Residual Chlorine	mg/L	3.06
10	Alkalinity	mg/L	63.1
11	Calcium	mg/L	10.2
12	Magnesium	mg/L	7.84

13	Total Hardness asCaCO3	mg/L	39.6
14	Electrical Conductivity	µs/cm	179
15	Turbidity	NTU	12.8
16	Arsenic as As	µg/L	0.52
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	4.4
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	18.4
21	Fluoride as F	mg/L	0.43
22	Iron as Fe	mg/L	24.2
23	Nitrate	mg/L	3.08
24	Sodium as Na	mg/L	1.66
25	Potassium as K	mg/L	2.32
26	Sulfate	mg/L	<0.01
27	Nitrate as NO3	mg/L	3.1
28	Total Silica as SiO2	mg/L	1.64
29	Total dissolved Solid	mg/L	386

Location: RESERVOIR POND INSIDE PLANT PREMISES

Lab Sample Code: OCPL/SW/03/11/23		Report No.-OCPL/EMIL/03/11/23	
Sample description:		Test method	APHA22 nd edition
Sample location	RESERVOIR POND INSIDE PLANT PREMISES	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07-NOVEMBER- 2023
Sample quantity	1 no. x 1 Lit.	Date of sample received	08-NOVEMBER- 2023
Sample type	Surface Water	Date of Analysis	08-NOVEMBER- 2023
Required parameters	As described in W/O	Date of Issue of report	16-NOVEMBER- 2023
EMIL reference	WONo.- 1060/ADMIN/5500004339	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	26.6
4	pH	-	7.1
5	Total Suspended Solids	mg/L	35
6	Total Dissolved Solid	mg/L	702
7	Biochemical Oxygen Demand at 27°C	mg/L	31.8
8	Chemical Oxygen Demand	mg/L	14.2
9	Total Residual Chlorine	mg/L	11.4
10	Alkalinity	mg/L	166
11	Calcium	mg/L	42

12	Magnesium	mg/L	29.6
13	Total Hardness as CaCO ₃	mg/L	164.8
14	Electrical Conductivity	μs/cm	284
15	Turbidity	NTU	31.4
16	Arsenic as As	μg/L	3.88
17	Lead as Pb	μg/L	<0.5
18	Cadmium as Cd	μg/L	16.2
19	Total Chromium as Cr	μg/L	<0.5
20	Zinc as Zn	μg/L	<0.5
21	Fluoride as F	mg/L	1.44
22	Iron as Fe	mg/L	32
23	Nitrate	mg/L	4.18
24	Sodium as Na	mg/L	9.2
25	Potassium as K	mg/L	2.84
26	Sulfate	mg/L	8.6
27	Nitrate as NO ₃	mg/L	7.1
28	Total Silica as SiO ₂	mg/L	8.8
29	Total dissolved Solid	mg/L	702

Location: DALKINALA, NEAR PLANT

Lab Sample Code: OCPL/SW/04/11/23		Report No.-OCPL/EMIL/04/11/23	
Sample description:		Test method	APHA22 nd edition
Sample location	DALKI NALA, NEARPLANT	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07-NOVEMBER- 2023
Sample quantity	1no.sX1Lit.	Date of sample received	08-NOVEMBER- 2023
Sample type	Surface Water	Date of Analysis	08-NOVEMBER- 2023
Required parameters	As described in W/O	Date of Issue of report	16-NOVEMBER- 2023
EMIL reference	WONo.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	26.8
4	pH	-	6.9
5	Total Suspended Solids	mg/L	18
6	Total Dissolved Solid	mg/L	598
7	Biochemical Oxygen Demand at 27°C	mg/L	12
8	Chemical Oxygen Demand	mg/L	6.1
9	Total Residual Chlorine	mg/L	2.44
10	Alkalinity	mg/L	174
11	Calcium	mg/L	46
12	Magnesium	mg/L	21.4
13	Total Hardness as CaCO ₃	mg/L	86

14	Electrical Conductivity	μs/cm	226
15	Turbidity	NTU	24
16	Arsenic as As	μg/L	0.36
17	Lead as Pb	μg/L	<0.5
18	Cadmium as Cd	μg/L	0.48
19	Total Chromium as Cr	μg/L	<0.5
20	Zinc as Zn	μg/L	11.2
21	Fluoride as F	mg/L	0.52
22	Iron as Fe	mg/L	25.6
23	Nitrate	mg/L	7.48
24	Sodium as Na	mg/L	6.62
25	Potassium as K	mg/L	4.6
26	Sulfate	mg/L	3.4
27	Nitrate as NO ₃	mg/L	8.2
28	Total Silica as SiO ₂	mg/L	6.4
29	Total dissolved Solid	mg/L	598

Location: NADIGUTH

Lab Sample Code: OCPL/SW/05/11/23		Report No.-OCPL/EMIL/05/11/23	
Sample description:		Test method	APHA22 nd edition
Sample location	NADIGUTH	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07-NOVEMBER-2023
Sample quantity	1 no.sX1Lit.	Date of sample received	08-NOVEMBER-2023
Sample type	Surface Water	Date of Analysis	08-NOVEMBER-2023
Required parameters	As described in W/O	Date of Issue of report	16-NOVEMBER-2023
EMIL reference	WO No.-1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	26.4
4	pH	-	7.1
5	Total Suspended Solids	mg/L	18
6	Total Dissolved Solid	mg/L	572
7	Biochemical Oxygen Demand at 27°C	mg/L	12.8
8	Chemical Oxygen Demand	mg/L	5.6
9	Total Residual Chlorine	mg/L	5.6
10	Alkalinity	mg/L	72.4
11	Calcium	mg/L	9.2
12	Magnesium	mg/L	7.42
13	Total Hardness as CaCO ₃	mg/L	42

14	Electrical Conductivity	µs/cm	92
15	Turbidity	NTU	14.8
16	Arsenic as As	µg/L	<0.5
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	0.64
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	<0.5
21	Fluoride as F	mg/L	0.44
22	Iron as Fe	mg/L	28
23	Nitrate	mg/L	4.42
24	Sodium as Na	mg/L	6.24
25	Potassium as K	mg/L	3.0
26	Sulfate	mg/L	8.7
27	Nitrate as NO ₃	mg/L	4
28	Total Silica as SiO ₂	mg/L	4.86
29	Total dissolved Solid	mg/L	572

GROUND WATER ANALYSIS REPORT FOR THE MONTH OF NOVEMBER-2023

GROUNDWATER MONITORING REPORT SUMMARY SHEET OF SAMPLING (GROUNDWATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	MALDA VILLAGE	10-NOVEMBER-2023	OCPL/GW/01/11/23
2.	Sample02	NEDIGUTH	10-NOVEMBER-2023	OCPL/GW/02/11/23
3.	Sample03	TALASAH	10-NOVEMBER-2023	OCPL/GW/03/11/23
4.	Sample04	PLANT-1(Near Canteen)	10-NOVEMBER-2023	OCPL/GW/04/11/23
5.	Sample05	PLANT-2(SLIMEPOND)	10-NOVEMBER-2023	OCPL/GW/05/11/23

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

Sl. No.	TESTPARAMETER	UOM	Results					BIS Desirable limit	Permissible limit with the absence of alternate source
			MALDA VILLAGE	NEDIGUTH	TALASAHI	PLANT- 1 (Near Canteen)	PLANT-2 (SLIMEPOND)		
1	Colour	Pt-Co	1.1	1.1	1.0	1.1	1.2		
2	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		
3	Temperature	°C	28.2	27.8	28	28.6	27.5		
4	pH	-	6.8	7.1	7.1	6.9	7.2	6.5-8.5	No relaxation
5	Total Hardness (as CaCO ₃)	mg/L	56	52	48.6	58.2	62	300	600
6	Calcium	mg/L	8	7.8	11	12.2	14.8	75	200
7	Magnesium	mg/L	1.4	2	4.2	2.8	1.6	30	No relaxation
8	Chloride	mg/L	16	15.5	11.8	14	20	250	1000
9	Alkalinity	mg/L	18.2	14	22	16.4	22	200	600
10	Electrical Conductivity	µs/cm	65	51	68	76	88	--	--
11	Arsenic as As	µg/L	0.06	ND	0.02	ND	0.12	10	No relaxation
12	Lead as Pb	µg/L	ND	0.31	0.2	0.04	ND	10	No relaxation
13	Cadmium as Cd	µg/L	ND	ND	ND	0.02	0.04	3.0	No relaxation
14	Total Chromium as Cr	µg/L	0.2	ND	0.2	0.08	0.04	50	No relaxation

15	Zinc as Zn	µg/L	87	94.8	88.5	68	102	5000	No relaxation
16	Fluoride as F	mg/L	ND	0.02	ND	0.02	ND	1.0	1.9
17	Iron as Fe	µg/L	18	14.2	32	48	35	300	1000
18	Nitrate	mg/L	1.5	1.2	1.0	1.02	1.2	45	100
19	Sodium as Na	mg/L	2.2	3.6	4.0	5.2	5.8	150	No relaxation
20	Potassium as K	mg/L	ND	0.04	0.12	0.1	0.2	12	No relaxation
21	Sulfate	mg/L	ND	ND	0.05	0.02	0.4	200	400
22	Total Silica as SiO ₂	mg/L	0.5	ND	0.66	ND	1.04	--	--
23	Total suspended Solid	mg/L	0.08	1.06	1.1	0.26	1.2	--	--
24	Total dissolved Solid	mg/L	85	72.4	75	94	79.4	250	2000
25	Turbidity	NTU	0.2	0.46	0.42	0.8	0.65	5	10

Sampling By: Mr. Hrusikesh Das

GROUND WATER LEVEL ANALYSIS REPORT FOR THE MONTH OF NOVEMBER-2023

**REPORT ON GROUND WATER LEVEL ANALYSIS FOR THE MONTH OF
NOVEMBER-2023**

SUMMARY SHEET OF MONITORING:

SI No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
6.	Sample01	MALDA VILLAGE	14-NOVEMBER-2023	OCPL/GWL/01/11/23
7.	Sample02	NEDIGUTH	14-NOVEMBER-2023	OCPL/GWL/02/11/23
8.	Sample03	TALASAH	14-NOVEMBER-2023	OCPL/GWL/03/11/23
9.	Sample04	PLANT-1(Near Canteen)	14-NOVEMBER-2023	OCPL/GWL/04/11/23
10.	Sample05	PLANT-2(SLIMEPOND)	14-NOVEMBER-2023	OCPL/GWL/05/11/23

MONITORING RESULT

SI No.	Name of the location	Type of well	Dia. (m)	Depth of the well (m)	Depth of the water table BGL(M)	Remarks
1	MALDA VILLAGE	Dug well	0.8	8.1	6.69	--
2	NEDIGUTH	Dug well	1.2	9.4	7.11	--
3	TALASAH	Dug well	1.0	8.6	7.19	--
4	PLANT-1(Near Canteen)	Bore-well	0.1	62	12.1	--
5	PLANT-2(SLIME POND)	Bore-well	0.1	60	37.88	--

Sampling By: Mr. Hrusikesh Das

STACK MONITORING REPORT FOR THE MONTH OF NOVEMBER-2023

**REPORT ON STACK MONITORING FOR THE MONTH OF NOVEMBER –
2023**

LOCATION AND MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
DGStack-1					✓		
DGStack-2					✓		
Stack-1 (Pellet Plant Process Stack)						✓	
Stack-2 (Pellet Plant Dedusting Stack)						✓	

TEST REPORT

Name & Address of the Client:	Report No.: OCPL/BBS/38
M/S ESSEL MINING & INDUSTRIES LTD.	Date :09.11.2023
Keonjhar, Odisha, India	Sample No.: OCPL/EMIL/2023-24/10
	Sample Description: DG Flue Gas Monitoring
	Date of Sampling: 09.11.2023

ANALYSIS RESULT

A.	<u>General information about stack:</u>	
1.	Stack connected to	:DG-1
2.	Emission due to	:Burning of Diesel
3.	Material of construction of stack	:MS
4.	Shape of Stack	:Circular
5.	Serial no.	:N15E226771
6.	Boiler/Furnace/DG/Kiln Capacity	:1250KVA

B.	<u>Physical characteristics of stack:</u>			
1.	Height of the Stack from Ground level	:9m		
2.	Diameter of the stack at sampling point	:400mm		
3.	Height of the Sampling Point from Ground level	:7m		
4.	Type	:HCKI634Z1		
C.	<u>Analysis/Characteristic of stack:</u>			
1.	Fuel used : LDO	2.FuelConsumption:NA		
D.	<u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Limit</u>	<u>Method</u>
1.	Temperature of Emission(°C)	76.2	--	IS11255(PartIII),2008RA 2018
2.	Barometric pressure (mm of Hg)	283.4	--	USEPAPart2- 25/09/1996
3.	Velocity of gas(m/sec.)	12.6	--	IS11255(PartIII),2008RA 2018
4.	Quantity of Gas Flow(Nm ³ /hr)	682	--	IS11255(PartIII),2008RA 2018
5.	Concentration of Moisture(%)	<2.0	--	USEPA(Part-4)
6.	Concentration of Oxygen(% v/v)	8.2	--	IS13270:1992,Ref:2009
7.	Concentration of Carbon Monoxide (mg/Nm ³)	20.4	--	IS13270:1992,Ref:2009
8.	Concentration of Carbon Dioxide(% v/v)	6.6	--	IS13270:1992,Ref:2009
9.	Concentration of Sulphur Dioxide(mg/Nm ³)	118.4	600	IS11255(PartII),1985RA 2014
10.	Concentration of Nitrogen Dioxide(mg/Nm ³)	72.4	300	IS11255(Part7),2005RA 2017

11.	Concentration of Particulate Matters(mg/Nm ³)	34.6	50	IS11255(PartI):1985,RA 2014
E.	<u>Pollution control device</u> Details of pollution control devices attached with the stack :NA			
F.	Remarks: Nil			

Sampling By: Mr. Hrusikesh Das

TESTREPORT

Name & Address of the Client:	Report No.: OCPL/BBS/39
M/SESSELMINING&INDUSTRIESLTD	Date :09.11.2023
Keonjhar, Odisha, India	Sample No.: OCPL/EMIL/2023-24/10
	Sample Description: DG Flue Gas Monitoring
	Date of Sampling :09.11.2023

ANALYSISRESULT

A.	<u>General information about stack:</u>		
1.	Stack connected to	:DG-2	
2.	Emission due to	:Burning of Diesel	
3.	Material of construction of stack	:MS	
4.	Shape of Stack	:Circular	
5.	Serial no.	:N15H319963	
6.	Boiler/Furnace/DG/Kiln Capacity	:1250KVA	
B.	<u>Physical characteristics of stack:</u>		
1.	Height of the Stack from Ground level	:9m	
2.	Diameter of the stack at sampling point	:400mm	
3.	Height of the Sampling Point from Ground level	:7m	
4.	Type	:HCKI634Z1	
C.	<u>Analysis/Characteristic of stack:</u>		
1.	Fuel used :LDO	2.FuelConsumption:NA	
D.	<u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Limit</u> <u>Method</u>
1.	Temperature of Emission(°C)	84.6	IS11255(Part III),2008RA2018

2.	Barometric pressure (mm of Hg)	316		USEPA Part 2-25/09/1996
3.	Velocity of gas (m/sec.)	31.2		IS 11255 (Part III), 2008 RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	1643		IS 11255 (Part III), 2008 RA 2018
5.	Concentration of Moisture (%)	<2.0		USEPA (Part-4)
6.	Concentration of Oxygen (% v/v)	8.6		IS 13270:1992, Ref: 2009
7.	Concentration of Carbon Monoxide (mg/Nm ³)	25.8		IS 13270:1992, Ref: 2009
8.	Concentration of Carbon Dioxide (% v/v)	14.8		IS 13270:1992, Ref: 2009
9.	Concentration of Sulphur Dioxide (mg/Nm ³)	147	600	IS 11255 (Part II), 1985 RA 2014
10.	Concentration of Nitrogen Dioxide (mg/Nm ³)	76	300	IS 11255 (Part 7), 2005 RA 2017
11.	Concentration of Particulate Matters (mg/Nm ³)	34.6	50	IS 11255 (Part I): 1985, RA 2014
E.	<u>Pollution control device</u> Details of pollution control devices attached with the stack : NA			
F.	Remarks: Nil			

Sampling By: Mr. Hrusikesh Das

TESTREPORT

Stack No.	Stack Description	Emission due to	Date of Sampling
Stack-1	Pellet plant process stack	Burning of furnace oil	10.11.2023
Stack-2	Pellet plant de-dusting stack	Electricity	10.11.2023

ANALYSISRESULT

Stack No.	Stack Description	Stack height (in meter)	Emission M ³ /Hr.	Temperature(°C)	VelocityNM ³ /Hr
1	Pellet plant process stack	80	7146	94.2	35653
2	Pellet plant de-dusting stack	60	6568	88.4	36497

Stack No.	Stack Description	Carbon monoxide(CO) Mg/nm ³	Carbon dioxide(CO ₂) %v/v	PM Concentration Mg/nm ³		SO ₂ Mg/nm ³	NO ₂ Mg/nm ³
				PM10	PM 2.5		
Norms as per SPCB		1	NA	150	150	NA	NA
1	Pellet plant process stack	<0.2	8.45	154	124.2	182.4	75.6
2	Pellet plant de-dusting stack	<0.2	7.9	121.5	136	178.6	69.2

- Measurement of PM has been done as per IS Code IS: 11255 Part 1.
- No. of the calibrated stack kit used: Thermo Environmental Instruments TEI-401



ENVIRONMENTAL MONITORING REPORT
FOR THE MONTH OF DECEMBER-2023
FOR ESSELMINING & INDUSTRIES LTD.

M/S ESSEL MINING & INDUSTRIES LTD.

VILL-BASANTPUR, PO-DUBUNA, TEHSIL-
JHUMPURA, KEONJHAR

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AMBIENT AIR MONITORING REPORT FOR THE MONTH OF DECEMBER -2023

AMBIENT AIR MONITORING DATA

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near ECR-1			✓				✓
Near Canteen			✓				✓
Near Admin Building			✓				✓
Nadiguth Village		✓			✓		

SUMMARY SHEET OF SAMPLING

SINo.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	Near ECR-1	02.12.2023	OCPL/AAQ/EMIL/01/12/23
2.	Sample02	Near Canteen	02.12.2023	OCPL/AAQ/EMIL/02/12/23
3.	Sample03	Near Admin Building	02.12.2023	OCPL/AAQ/EMIL/03/12/23
4.	Sample04	Nedigutha Village	01.12.2023	OCPL/AAQ/EMIL/04/12/23
5.	Sample05	Near ECR-1	06.12.2023	OCPL/AAQ/EMIL/05/12/23
6.	Sample06	Near Canteen	06.12.2023	OCPL/AAQ/EMIL/06/12/23
7.	Sample07	Near Admin Building	06.12.2023	OCPL/AAQ/EMIL/07/12/23
8.	Sample08	Nedigutha Village	04.12.2023	OCPL/AAQ/EMIL/08/12/23
9.	Sample09	Near ECR-1	09.12.2023	OCPL/AAQ/EMIL/09/12/23
10.	Sample10	Near Canteen	09.12.2023	OCPL/AAQ/EMIL/10/12/23
11.	Sample11	Near Admin Building	09.12.2023	OCPL/AAQ/EMIL/11/12/23
12.	Sample12	Nedigutha Village	08.11.2023	OCPL/AAQ/EMIL/12/11/23
13.	Sample13	Near ECR-1	13.11.2023	OCPL/AAQ/EMIL/13/11/23
14.	Sample14	Near Canteen	13.12.2023	OCPL/AAQ/EMIL/14/12/23
15.	Sample15	Near Admin Building	13.12.2023	OCPL/AAQ/EMIL/15/12/23
16.	Sample16	Nedigutha Village	11.12.2023	OCPL/AAQ/EMIL/16/12/23

17.	Sample17	NearECR-1	16.12.2023	OCPL/AAQ/EMIL/17/12/23
18.	Sample18	Near Canteen	16.12.2023	OCPL/AAQ/EMIL/18/12/23
19.	Sample19	Near Admin Building	16.12.2023	OCPL/AAQ/EMIL/19/12/23
20.	Sample20	Nedigutha Village	15.12.2023	OCPL/AAQ/EMIL/20/12/23
21.	Sample21	NearECR-1	20.12.2023	OCPL/AAQ/EMIL/21/12/23
22.	Sample22	Near Canteen	20.12.2023	OCPL/AAQ/EMIL/22/12/23
23.	Sample23	Near Admin Building	20.12.2023	OCPL/AAQ/EMIL/23/12/23
24.	Sample24	Nedigutha Village	18.12.2023	OCPL/AAQ/EMIL/24/12/23
25.	Sample25	NearECR-1	23.12.2023	OCPL/AAQ/EMIL/25/12/23
26.	Sample26	Near Canteen	23.12.2023	OCPL/AAQ/EMIL/26/12/23
27.	Sample27	Near Admin Building	23.12.2023	OCPL/AAQ/EMIL/27/12/23
28.	Sample28	Nedigutha Village	22.12.2023	OCPL/AAQ/EMIL/28/12/23
29.	Sample29	NearECR-1	27.12.2023	OCPL/AAQ/EMIL/29/12/23
30.	Sample30	Near Canteen	27.12.2023	OCPL/AAQ/EMIL/30/12/23
31.	Sample31	Near Admin Building	27.12.2023	OCPL/AAQ/EMIL/31/12/23
32.	Sample32	Nedigutha Village	25.12.2023	OCPL/AAQ/EMIL/32/12/23
33.	Sample33	NearECR-1	30.12.2023	OCPL/AAQ/EMIL/33/12/23
34.	Sample34	Near Canteen	30.12.2023	OCPL/AAQ/EMIL/34/12/23
35.	Sample35	Near Admin Building	30.12.2023	OCPL/AAQ/EMIL/35/12/23
36.	Sample36	Nedigutha Village	29.12.2023	OCPL/AAQ/EMIL/36/12/23

LOCATION: NEAR ECR-1

Parameters	Limit(μg/M ³)	Date									
		02.12.23	06.12.23	09.12.23	13.12.23	16.12.23	20.12.23	23.12.23	27.12.23	30.12.23	Avg
PM10	100	88.8	86.3	84.9	88	86.2	92.6	88.2	88.6	92.6	88.21
PM2.5	60	57.4	58.8	60	58.2	56	59	59.5	54.8	56.4	52.17
Sulphur Dioxide (SO ₂)	80	36.2	34.8	35.7	38.4	38	36.8	38.4	34.6	38.6	36.75
Oxide of Nitrogen (NO ₂)	80	27.4	28.9	28.8	36.6	31.5	32.4	30.6	32	34.2	31.27
Lead(Pb)	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Monoxide (CO) (8Hrs)	200 0	172. 5	172	174.8	170.6	171	176.8	177.4	175. 8	174.6	173.9 3
Ozone(O ₃)	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ammonia (NH ₃)	400	35.8	36.4	38	38.2	36.7	36.4	37.2	35.9	38	36.96
Benzene(C ₆ H ₆)	05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)Pyre ne (BaP) Particulate phase only(ng/m ³)	01	N D	ND	ND	ND						
Arsenic(As) (ng/m ³)	06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel(Ni) (ng/m ³)	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 PM10&PM2.5,SO2,NO2,&CO has been done aspertheISCodeIS:5182

PartIV,II,VI,X&XVII respectively

LOCATION: NEAR CANTEEN

Parameters	Limit (µg/ M ³)	DATE									
		02.12.23	06.12.23	09.12.23	13.12.23	16.12.23	20.12.23	23.12.23	27.12.23	30.12.23	Avg
PM10	100	86.8	84	84.4	86.8	88.6	84.7	86.8	84.8	88.2	86.03
PM2.5	60	55.8	56	60	58	56.9	58.5	56.4	56.2	54.9	56.97
Sulphur Dioxide (SO ₂)	80	41.6	40.2	38.9	42.8	40.8	42.8	44	41.9	46.2	42.04
Oxide of Nitrogen (NO ₂)	80	38	36.4	38.8	42.8	40	41	42.6	41.8	44.2	40.74
Lead(Pb)	1.0	ND	ND								
Carbon Monoxide(C O)(8Hrs)	2000	184.2	188	188.4	186.6	185.4	182.4	182.4	186.6	188.2	185.8
Ozone(O ₃)	180	ND	ND								
Ammonia(N H ₃)	400	34.2	36.6	35.4	36.9	36.5	35.8	35.6	34.5	36	35.68
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyre ne(BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic(As) (ng/m ³)	06	ND	ND								
Nickel(Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5},SO₂,NO₂,&CO has been done as per the IS Code IS:5182

PartIV,II,VI,X&XVII respectively

LOCATION: NEAR ADMIN. BUILDING

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	DATE									
		02.12.23	06.12.23	09.12.23	13.12.23	16.12.23	20.12.23	23.12.23	27.12.23	30.12.23	Avg
PM10	100	88.2	86	88.6	88.9	90.2	84.6	92.8	92.6	94.2	89.65
PM2.5	60	59.2	58.8	59	58.2	58	59.2	58.4	58	56.4	59.33
Sulphur Dioxide (SO ₂)	80	24.8	28	26.2	28	28.8	30.2	27.9	32	32.4	28.76
Oxide of Nitrogen(NO ₂)	80	25.8	26	28.4	27.5	28	30.4	28	27.8	29	27.9
Lead(Pb)	1.0	ND	ND								
Carbon Monoxide (CO)(8Hrs)	2000	164.6	168	162.4	170.5	172	174.8	169.6	166.4	168	168.4
Ozone(O ₃)	180	ND	ND								
Ammonia(NH ₃)	400	32.8	34	36.2	34	34	35.6	36	34	38.8	35.23
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a) Pyrene(BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic(As) (ng/m ³)	06	ND	ND								
Nickel(Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM10&PM2.5, SO₂,NO₂,&CO has been done as per the IS Code IS:5182

Part IV,II,VI,X&XVII respectively

LOCATION: NEDIGUTHA VILLAGE

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	DATE									
		01.12.23	04.12.23	08.12.23	11.12.23	15.12.23	18.12.23	22.12.23	25.12.23	29.12.23	Avg
PM10	100	42	44.5	45.2	46.4	46	45.5	44.2	44	45.8	44.93
PM2.5	60	42.4	44	43.2	44.6	42.5	42.4	42.5	42.8	42	42.93
Sulphur Dioxide (SO ₂)	80	18.4	15.9	20.4	20.4	21.6	18	18	17.2	16.5	18.54
Oxide of Nitrogen (NO ₂)	80	17	17	18.2	18	17.6	17.5	16.8	17.9	18.8	17.74
Lead(Pb)	1.0	ND	ND								
Carbon Monoxide (CO)(8Hrs)	2000	145.6	146.8	144.4	142.8	144.8	146	140.4	142.6	141.2	143.84
Ozone(O ₃)	180	ND	ND								
Ammonia(NH ₃)	400	12	12.6	14	14.4	14.8	16	12.2	12.6	12	13.37
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyrene(BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic(As)(ng/m ³)	06	ND	ND								
Nickel(Ni)(ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀& PM_{2.5}, SO₂, NO₂, &CO has been done as per the IS Code IS: 5182 PartIV,II,VI,X&XVII respectively

NOISE LEVEL MONITORING REPORT FOR THE MONTH OF DECEMBER-2023

**NOISE LEVEL MONITORING RESULT (IN DBA) FOR THE MONTH OF DECEMBER
LOCATION AND WEEKLY MONITORING SCHEDULE**

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near Main Gate Area			✓				✓
Near Back Gate Area			✓				✓
Near Pellet Plant Area			✓				✓
Near IOBP Area			✓				✓

SUMMARY SHEET OF SAMPLING

SI No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	Near Main Gate Area	02.12.2023	OCPL/NL/EMIL/01/12/23
2.	Sample02	Near Back Gate Area	02.12.2023	OCPL/NL/EMIL/02/12/23
3.	Sample03	Near Pellet Plant Area	02.12.2023	OCPL/NL/EMIL/03/12/23
4.	Sample04	Near IOBP Area	02.12.2023	OCPL/NL/EMIL/04/12/23
5.	Sample05	Near Main Gate Area	06.12.2023	OCPL/NL/EMIL/05/12/23
6.	Sample06	Near Back Gate Area	06.12.2023	OCPL/NL/EMIL/06/12/23
7.	Sample07	Near Pellet Plant Area	06.12.2023	OCPL/NL/EMIL/07/12/23
8.	Sample08	Near IOBP Area	06.12.2023	OCPL/NL/EMIL/08/12/23
9.	Sample09	Near Main Gate Area	09.12.2023	OCPL/NL/EMIL/09/12/23
10.	Sample10	Near Back Gate Area	09.12.2023	OCPL/NL/EMIL/10/12/23
11.	Sample11	Near Pellet Plant Area	09.12.2023	OCPL/NL/EMIL/11/12/23
12.	Sample12	Near IOBP Area	09.12.2023	OCPL/NL/EMIL/12/12/23
13.	Sample13	Near Main Gate Area	13.12.2023	OCPL/NL/EMIL/13/12/23
14.	Sample14	Near Back Gate Area	13.12.2023	OCPL/NL/EMIL/14/12/23
15.	Sample15	Near Pellet Plant Area	13.12.2023	OCPL/NL/EMIL/15/12/23

16.	Sample16	Near IOBP Area	13.12.2023	OCPL/NL/EMIL/16/12/23
17.	Sample17	Near Main Gate Area	16.12.2023	OCPL/NL/EMIL/17/12/23
18.	Sample18	Near Back Gate Area	16.12.2023	OCPL/NL/EMIL/18/12/23
19.	Sample19	Near Pellet Plant Area	16.12.2023	OCPL/NL/EMIL/19/12/23
20.	Sample20	Near IOBP Area	16.12.2023	OCPL/NL/EMIL/20/12/23
21.	Sample21	Near Main Gate Area	20.12.2023	OCPL/NL/EMIL/21/12/23
22.	Sample22	Near Back Gate Area	20.12.2023	OCPL/NL/EMIL/22/12/23
23.	Sample23	Near Pellet Plant Area	20.12.2023	OCPL/NL/EMIL/23/12/23
24.	Sample24	Near IOBP Area	20.12.2023	OCPL/NL/EMIL/24/12/23
25.	Sample25	Near Main Gate Area	23.12.2023	OCPL/NL/EMIL/25/12/23
26.	Sample26	Near Back Gate Area	23.12.2023	OCPL/NL/EMIL/26/12/23
27.	Sample27	Near Pellet Plant Area	23.12.2023	OCPL/NL/EMIL/27/12/23
28.	Sample28	Near IOBP Area	23.12.2023	OCPL/NL/EMIL/28/12/23
29.	Sample29	Near Main Gate Area	27.12.2023	OCPL/NL/EMIL/29/12/23
30.	Sample30	Near Back Gate Area	27.12.2023	OCPL/NL/EMIL/30/12/23
31.	Sample31	Near Pellet Plant Area	27.12.2023	OCPL/NL/EMIL/31/12/23
32.	Sample32	Near IOBP Area	27.12.2023	OCPL/NL/EMIL/32/12/23
33.	Sample33	Near Main Gate Area	30.12.2023	OCPL/NL/EMIL/33/12/23
34.	Sample34	Near Back Gate Area	30.12.2023	OCPL/NL/EMIL/34/12/23
35.	Sample35	Near Pellet Plant Area	30.12.2023	OCPL/NL/EMIL/35/12/23
36.	Sample36	Near IOBP Area	30.12.2023	OCPL/NL/EMIL/36/12/23

Date of Monitoring: 02.12.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	63	66	52.9	48.2	30.7
2	Near Back Gate Area	41.8	45.2	38.2	35	31.5
3	Near Pellet Plant Area	64.6	65.8	68.8	62.2	24.8
4	Near IOBP Area	52.4	58	38.9	46.5	34.6
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:06.12.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	44.3	62	58.6	61.2	36
2	Near Back Gate Area	38	50.4	48.5	44.2	28
3	Near Pellet Plant Area	52.6	54	46	50.6	34.4
4	Near IOBP Area	57.5	56.2	42.5	45.2	29.6
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:09.12.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	61.7	60.8	62	54.2	38
2	Near Back Gate Area	46.2	52	42	38	38
3	Near Pellet Plant Area	50.6	58.8	62	42	34.5
4	Near IOBP Area	55	52.6	41.4	44.9	36.3
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:13.12.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	42.9	62.9	59	38.5	27.8
2	Near Back Gate Area	44.9	48.7	51.8	38.5	30.5
3	Near Pellet Plant Area	46.6	62.8	56.2	37.9	40.4
4	Near IOBP Area	48.8	64.8	58.7	42.6	44.8
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: 16.12.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	58.9	64	68.2	52	34
2	Near Back Gate Area	46.3	39.2	48	40.8	20.6
3	Near Pellet Plant Area	40.6	40.5	55.6	37.6	36.4
4	Near IOBP Area	38.3	48.7	46.9	38	35
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:20.12.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	58.2	66	64.8	44.6	32
2	Near Back Gate Area	56.4	54.6	54.5	48.7	27.3
3	Near Pellet Plant Area	50.6	52.5	51	37.8	32
4	Near IOBP Area	51.8	52	52	55.9	28.6
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:23.12.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00-11.00am	Day 3.00-4.00pm	Evening6.00-7.00pm	Night 10.00-11.00pm
1	Near Main Gate Area	60.3	62.8	64.6	45	27
2	Near Back Gate Area	44.8	54.6	56.4	48.9	20.5
3	Near Pellet Plant Area	48.7	53.4	52.3	46.2	27.5
4	Near IOBP Area	45.6	32.8	44.8	39.8	21.4
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

Date of Monitoring:27.12.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	58.6	65.7	52.4	38	32.5
2	Near Back Gate Area	46.8	65	54.8	44.5	32.5
3	Near Pellet Plant Area	56.2	62.4	57.8	42	28.6
4	Near IOBP Area	45.8	36.8	35	36	30.5
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:30.12.2023

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	57.3	60.2	62.8	56.2	25
2	Near Back Gate Area	50.8	62	60.8	52.2	23.4
3	Near Pellet Plant Area	44.4	61.5	58	42	34
4	Near IOBP Area	32	56.7	34.8	48.6	24.9
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 REPORT FOR THE MONTH OF DECEMBER-2023

SURFACE WATER ANALYSIS FOR THE MONTH OF DECEMBER2023
SUMMARY SHEET OF SAMPLING(SURFACE WATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	BAITARANI RIVER (DHANURJAYPUR)	07-DECEMBER- 2023	OCPL/SW/01/12/23
2.	Sample02	BAITARANI RIVE (NEARPLANTAREA)	07-DECEMBER- 2023	OCPL/SW/02/12/23
3.	Sample03	RESERVOUR POND INSIDEPLANT	07-DECEMBER- 2023	OCPL/SW/03/12/23
4.	Sample04	DALKI NALA NEAR PLANT	07-DECEMBER- 2023	OCPL/SW/04/12/23
5.	Sample05	NADIGUTH	07-DECEMBER- 2023	OCPL/SW/05/12/23

Location: BAITARANI RIVER(DHANURJAYPUR)

Lab Sample Code: OCPL/SW/01/12/23		Report No.-OCPL/EMIL/01/12/23	
Sample description:		Test method	APHA22 nd edition
Sample location	BAITARANIRIVER (DHANURJAYPUR)	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07-DECEMBER- 2023
Sample quantity	1 no.sX1Lit.	Date of sample received	08-DECEMBER- 2023
Sample type	Surface Water	Date of Analysis	08-DECEMBER- 2023
Required parameters	As described in W/O	Date of Issue of report	16-DECEMBER- 2023
EMIL reference	WO No.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	35.9
4	pH	-	7.0
5	Total Suspended Solids	mg/L	9.1
6	Total Dissolved Solid	mg/L	439
7	Biochemical Oxygen Demand at 27°C	mg/L	7.7
8	Chemical Oxygen Demand	mg/L	7.1
9	Total Residual Chlorine	mg/L	6.9
10	Alkalinity	mg/L	134
11	Calcium	mg/L	36.8
12	Magnesium	mg/L	26

13	Total Hardness as CaCO ₃	mg/L	64
14	Electrical Conductivity	μs/cm	188
15	Turbidity	NTU	7.1
16	Arsenic as As	μg/L	1.4
17	Lead as Pb	μg/L	<0.5
18	Cadmium as Cd	μg/L	3.88
19	Total Chromium as Cr	μg/L	<0.5
20	Zinc as Zn	μg/L	8.04
21	Fluoride as F	mg/L	0.22
22	Iron as Fe	mg/L	18.9
23	Nitrate	mg/L	7.6
24	Sodium as Na	mg/L	6.2
25	Potassium as K	mg/L	1.2
26	Sulfate	mg/L	0.48
27	Nitrate as NO ₃	mg/L	4.8
28	Total Silica as SiO ₂	mg/L	11.48
29	Total dissolved Solid	mg/L	439

Location: BAITARANI RIVER (NEARPLANTAREA)

Lab Sample Code: OCPL/SW/02/12/23		Report No.-OCPL/EMIL/02/12/23	
Sample description:		Test method	APHA22 nd edition
Sample location	BAITARANIRIVER (NEARPLANTAREA)	Samplecollectedby	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07-DECEMBER- 2023
Sample quantity	1no.sX1Lit.	Date of sample received	08-DECEMBER- 2023
Sample type	Surface Water	Date of Analysis	08-DECEMBER- 2023
Required parameters	As described in W/O	Date of Issue of report	16-DECEMBER- 2023
EMIL reference	WONo.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSISRESULT

Sl. No.	TESTPARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	26.9
4	pH	-	7.1
5	Total Suspended Solids	mg/L	10.2
6	Total Dissolved Solid	mg/L	487
7	BiochemicalOxygenDemand at27°C	mg/L	6.4
8	Chemical Oxygen Demand	mg/L	5.1
9	Total Residual Chlorine	mg/L	3.06
10	Alkalinity	mg/L	63.1
11	Calcium	mg/L	10.2
12	Magnesium	mg/L	7.84

13	Total Hardness asCaCO3	mg/L	39.6
14	Electrical Conductivity	µs/cm	179
15	Turbidity	NTU	12.8
16	Arsenic as As	µg/L	0.52
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	4.4
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	18.4
21	Fluoride as F	mg/L	0.43
22	Iron as Fe	mg/L	24.2
23	Nitrate	mg/L	3.08
24	Sodium as Na	mg/L	1.66
25	Potassium as K	mg/L	2.32
26	Sulfate	mg/L	<0.01
27	Nitrate as NO3	mg/L	3.1
28	Total Silica as SiO2	mg/L	1.64
29	Total dissolved Solid	mg/L	487

Location: RESERVOIR POND INSIDE PLANT PREMISES

Lab Sample Code: OCPL/SW/03/12/23		Report No.-OCPL/EMIL/03/12/23	
Sample description:		Test method	APHA22 nd edition
Sample location	RESERVOIR POND INSIDE PLANT PREMISES	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07-DECEMBER- 2023
Sample quantity	1 no. x 1 Lit.	Date of sample received	08-DECEMBER- 2023
Sample type	Surface Water	Date of Analysis	08-DECEMBER- 2023
Required parameters	As described in W/O	Date of Issue of report	16-DECEMBER- 2023
EMIL reference	WONO.- 1060/ADMIN/5500004339	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	26.6
4	pH	-	7.1
5	Total Suspended Solids	mg/L	35.2
6	Total Dissolved Solid	mg/L	712
7	Biochemical Oxygen Demand at 27°C	mg/L	31.8
8	Chemical Oxygen Demand	mg/L	14.2
9	Total Residual Chlorine	mg/L	11.4
10	Alkalinity	mg/L	166
11	Calcium	mg/L	42

12	Magnesium	mg/L	29.6
13	Total Hardness as CaCO ₃	mg/L	164.8
14	Electrical Conductivity	μs/cm	284
15	Turbidity	NTU	31.4
16	Arsenic as As	μg/L	3.88
17	Lead as Pb	μg/L	<0.5
18	Cadmium as Cd	μg/L	16.2
19	Total Chromium as Cr	μg/L	<0.5
20	Zinc as Zn	μg/L	<0.5
21	Fluoride as F	mg/L	1.44
22	Iron as Fe	mg/L	32
23	Nitrate	mg/L	4.18
24	Sodium as Na	mg/L	9.2
25	Potassium as K	mg/L	2.84
26	Sulfate	mg/L	8.6
27	Nitrate as NO ₃	mg/L	7.1
28	Total Silica as SiO ₂	mg/L	8.8
29	Total dissolved Solid	mg/L	702

Location: DALKINALA, NEAR PLANT

Lab Sample Code: OCPL/SW/04/12/23		Report No.-OCPL/EMIL/04/12/23	
Sample description:		Test method	APHA22 nd edition
Sample location	DALKINALA, NEARPLANT	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07-DECEMBER- 2023
Sample quantity	1no.sX1Lit.	Date of sample received	08-DECEMBER- 2023
Sample type	Surface Water	Date of Analysis	08-DECEMBER- 2023
Required parameters	As described in W/O	Date of Issue of report	16-DECEMBER- 2023
EMIL reference	WONo.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	26.8
4	pH	-	6.9
5	Total Suspended Solids	mg/L	18.2
6	Total Dissolved Solid	mg/L	598
7	Biochemical Oxygen Demand at 27°C	mg/L	12
8	Chemical Oxygen Demand	mg/L	6.1
9	Total Residual Chlorine	mg/L	2.44
10	Alkalinity	mg/L	165
11	Calcium	mg/L	46
12	Magnesium	mg/L	21.4
13	Total Hardness as CaCO ₃	mg/L	86

14	Electrical Conductivity	µs/cm	226
15	Turbidity	NTU	24
16	Arsenic as As	µg/L	0.36
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	0.48
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	11.2
21	Fluoride as F	mg/L	0.52
22	Iron as Fe	mg/L	25.6
23	Nitrate	mg/L	7.48
24	Sodium as Na	mg/L	6.62
25	Potassium as K	mg/L	4.6
26	Sulfate	mg/L	3.4
27	Nitrate as NO ₃	mg/L	8.2
28	Total Silica as SiO ₂	mg/L	6.4
29	Total dissolved Solid	mg/L	597

Location: NADIGUTH

Lab Sample Code: OCPL/SW/05/12/23		Report No.-OCPL/EMIL/05/12/23	
Sample description:		Test method	APHA22 nd edition
Sample location	NADIGUTH	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07-DECEMBER-2023
Sample quantity	1 no.sX1Lit.	Date of sample received	08-DECEMBER-2023
Sample type	Surface Water	Date of Analysis	08-DECEMBER-2023
Required parameters	As described in W/O	Date of Issue of report	16-DECEMBER-2023
EMIL reference	WO No.-1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	26.4
4	pH	-	7.1
5	Total Suspended Solids	mg/L	18.1
6	Total Dissolved Solid	mg/L	574
7	Biochemical Oxygen Demand at 27°C	mg/L	12.8
8	Chemical Oxygen Demand	mg/L	5.6
9	Total Residual Chlorine	mg/L	5.6
10	Alkalinity	mg/L	72.4
11	Calcium	mg/L	9.2
12	Magnesium	mg/L	7.3
13	Total Hardness as CaCO ₃	mg/L	42

14	Electrical Conductivity	μs/cm	92
15	Turbidity	NTU	14.8
16	Arsenic as As	μg/L	<0.5
17	Lead as Pb	μg/L	<0.5
18	Cadmium as Cd	μg/L	0.64
19	Total Chromium as Cr	μg/L	<0.5
20	Zinc as Zn	μg/L	<0.5
21	Fluoride as F	mg/L	0.44
22	Iron as Fe	mg/L	28
23	Nitrate	mg/L	4.43
24	Sodium as Na	mg/L	6.24
25	Potassium as K	mg/L	3.0
26	Sulfate	mg/L	8.7
27	Nitrate as NO ₃	mg/L	4
28	Total Silica as SiO ₂	mg/L	4.86
29	Total dissolved Solid	mg/L	574

GROUND WATER ANALYSIS REPORT FOR THE MONTH OF DECEMBER-2023

GROUNDWATER MONITORING REPORT SUMMARY SHEET OF SAMPLING (GROUNDWATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	MALDA VILLAGE	10-DECEMBER-2023	OCPL/GW/01/12/23
2.	Sample02	NEDIGUTH	10-DECEMBER-2023	OCPL/GW/02/12/23
3.	Sample03	TALASAH	10-DECEMBER-2023	OCPL/GW/03/12/23
4.	Sample04	PLANT-1(Near Canteen)	10-DECEMBER-2023	OCPL/GW/04/12/23
5.	Sample05	PLANT-2(SLIMEPOND)	10-DECEMBER-2023	OCPL/GW/05/12/23

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

Sl. No.	TESTPARAMETER	UOM	Results					BIS Desirable limit	Permissible limit with the absence of alternate source
			MALDA VILLAGE	NEDIGUTH	TALASAHI	PLANT-1 (Near Canteen)	PLANT-2 (SLIMEPOND)		
1	Colour	Pt-Co	1.1	1.1	1.0	1.1	1.2		
2	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		
3	Temperature	°C	28	27.8	28	28.6	27		
4	pH	-	6.8	7.1	7	6.9	7.2	6.5-8.5	No relaxation
5	Total Hardness (as CaCO ₃)	mg/L	56	52	48	58.2	62	300	600
6	Calcium	mg/L	8	7	11	12.2	14.8	75	200
7	Magnesium	mg/L	1.4	2	4	2.8	1.6	30	No relaxation
8	Chloride	mg/L	16	15.5	11.8	14	20	250	1000
9	Alkalinity	mg/L	18	14	22	16.4	22	200	600
10	Electrical Conductivity	µs/cm	67	51	68	76	88	--	--
11	Arsenic as As	µg/L	0.06	ND	0.02	ND	0.12	10	No relaxation
12	Lead as Pb	µg/L	ND	0.31	0.2	0.04	ND	10	No relaxation
13	Cadmium as Cd	µg/L	ND	ND	ND	0.02	0.04	3.0	No relaxation
14	Total Chromium as Cr	µg/L	0.2	ND	0.2	0.08	0.04	50	No relaxation

15	Zinc as Zn	µg/L	87	94.8	88.5	68	102	5000	No relaxation
16	Fluoride as F	mg/L	ND	0.02	ND	0.02	ND	1.0	1.9
17	Iron as Fe	µg/L	18	14.2	32	48	35	300	1000
18	Nitrate	mg/L	1.5	1.2	1.0	1.02	1.2	45	100
19	Sodium as Na	mg/L	2.2	3.6	4.0	5.2	5.8	150	No relaxation
20	Potassium as K	mg/L	ND	0.04	0.12	0.1	0.2	12	No relaxation
21	Sulfate	mg/L	ND	ND	0.05	0.02	0.4	200	400
22	Total Silica as SiO ₂	mg/L	0.5	ND	0.66	ND	1.04	--	--
23	Total suspended Solid	mg/L	0.08	1.06	1.1	0.26	1.2	--	--
24	Total dissolved Solid	mg/L	85	72.4	75	94	79.4	250	2000
25	Turbidity	NTU	0.2	0.46	0.42	0.8	0.65	5	10

Sampling By: Mr. Hrusikesh Das

GROUND WATER LEVEL ANALYSIS REPORT FOR THE MONTH OF DECEMBER-2023

**REPORT ON GROUND WATER LEVEL ANALYSIS FOR THE MONTH OF
DECEMBER-2023**

SUMMARY SHEET OF MONITORING:

SI No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
6.	Sample01	MALDA VILLAGE	14-DECEMBER-2023	OCPL/GWL/01/12/23
7.	Sample02	NEDIGUTH	14-DECEMBER-2023	OCPL/GWL/02/12/23
8.	Sample03	TALASAHI	14-DECEMBER-2023	OCPL/GWL/03/12/23
9.	Sample04	PLANT-1(Near Canteen)	14-DECEMBER-2023	OCPL/GWL/04/12/23
10.	Sample05	PLANT-2(SLIMEPOND)	14-DECEMBER-2023	OCPL/GWL/05/12/23

MONITORING RESULT

SI No.	Name of the location	Type of well	Dia. (m)	Depth of the well (m)	Depth of the water table BGL(M)	Remarks
1	MALDA VILLAGE	Dug well	0.82	8.1	6.7	--
2	NEDIGUTH	Dug well	1.2	9.4	7.11	--
3	TALASAHI	Dug well	1.0	8.6	7.19	--
4	PLANT-1(Near Canteen)	Bore-well	0.1	62	12.1	--
5	PLANT-2(SLIME POND)	Bore-well	0.1	60	37.8	--

Sampling By: Mr. Hrusikesh Das

STACK MONITORING REPORT FOR THE MONTH OF DECEMBER-2023

**REPORT ON STACK MONITORING FOR THE MONTH OF DECEMBER –
2023**

LOCATION AND MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
DG Stack-1			✓				
DG Stack-2			✓				
Stack-1 (Pellet Plant Process Stack)				✓			
Stack-2 (Pellet Plant Dedusting Stack)				✓			

TEST REPORT

Name & Address of the Client:	Report No.: OCPL/BBS/38
M/S ESSEL MINING & INDUSTRIES LTD.	Date :09.12.2023
Keonjhar, Odisha, India	Sample No.: OCPL/EMIL/2023-24/12
	Sample Description: DG Flue Gas Monitoring
	Date of Sampling: 09.12.2023

ANALYSIS RESULT

A.	<u>General information about stack:</u>	
1.	Stack connected to	:DG-1
2.	Emission due to	:Burning of Diesel
3.	Material of construction of stack	:MS
4.	Shape of Stack	:Circular
5.	Serial no.	:N15E226771
6.	Boiler/Furnace/DG/Kiln Capacity	:1250KVA

B.	<u>Physical characteristics of stack:</u>			
1.	Height of the Stack from Ground level	:9m		
2.	Diameter of the stack at sampling point	:400mm		
3.	Height of the Sampling Point from Ground level	:7m		
4.	Type	:HCKI634Z1		
C.	<u>Analysis/Characteristic of stack:</u>			
1.	Fuel used : LDO	2.FuelConsumption:NA		
D.	<u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Limit</u>	<u>Method</u>
1.	Temperature of Emission(°C)	76.7	--	IS11255(PartIII),2008RA 2018
2.	Barometric pressure (mm of Hg)	282.4	--	USEPAPart2- 25/09/1996
3.	Velocity of gas(m/sec.)	12.5	--	IS11255(PartIII),2008RA 2018
4.	Quantity of Gas Flow(Nm ³ /hr)	685	--	IS11255(PartIII),2008RA 2018
5.	Concentration of Moisture(%)	<2.0	--	USEPA(Part-4)
6.	Concentration of Oxygen(%v/v)	8.3	--	IS13270:1992,Ref:2009
7.	Concentration of Carbon Monoxide (mg/Nm ³)	20.4	--	IS13270:1992,Ref:2009
8.	Concentration of Carbon Dioxide(%v/v)	6.6	--	IS13270:1992,Ref:2009
9.	Concentration of Sulphur Dioxide(mg/Nm ³)	118.2	600	IS11255(PartII),1985RA 2014
10.	Concentration of Nitrogen Dioxide(mg/Nm ³)	72.5	300	IS11255(Part7),2005RA 2017

11.	Concentration of Particulate Matters(mg/Nm ³)	37.6	50	IS11255(PartI):1985,RA 2014
E.	<u>Pollution control device</u> Details of pollution control devices attached with the stack :NA			
F.	Remarks: Nil			

Sampling By: Mr. Hrusikesh Das

TESTREPORT

Name & Address of the Client:	Report No.: OCPL/BBS/39
M/SESSELMINING&INDUSTRIESLTD	Date :09.12.2023
Keonjhar, Odisha, India	Sample No.: OCPL/EMIL/2023-24/13
	Sample Description: DG Flue Gas Monitoring
	Date of Sampling :09.12.2023

ANALYSISRESULT

A.	<u>General information about stack:</u>		
1.	Stack connected to	:DG-2	
2.	Emission due to	:Burning of Diesel	
3.	Material of construction of stack	:MS	
4.	Shape of Stack	:Circular	
5.	Serial no.	:N15H319963	
6.	Boiler/Furnace/DG/Kiln Capacity	:1250KVA	
B.	<u>Physical characteristics of stack:</u>		
1.	Height of the Stack from Ground level	:9m	
2.	Diameter of the stack at sampling point	:400mm	
3.	Height of the Sampling Point from Ground level	:7m	
4.	Type	:HCKI634Z1	
C.	<u>Analysis/Characteristic of stack:</u>		
1.	Fuel used :LDO	2.FuelConsumption:NA	
D.	<u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Limit</u> <u>Method</u>
1.	Temperature of Emission(°C)	84.3	IS11255(Part III),2008RA2018

2.	Barometric pressure (mm of Hg)	317		USEPA Part 2-25/09/1996
3.	Velocity of gas (m/sec.)	31.2		IS 11255 (Part III), 2008 RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	1666		IS 11255 (Part III), 2008 RA 2018
5.	Concentration of Moisture (%)	<2.0		USEPA (Part-4)
6.	Concentration of Oxygen (%v/v)	8.6		IS 13270:1992, Ref: 2009
7.	Concentration of Carbon Monoxide (mg/Nm ³)	25.8		IS 13270:1992, Ref: 2009
8.	Concentration of Carbon Dioxide (%v/v)	14		IS 13270:1992, Ref: 2009
9.	Concentration of Sulphur Dioxide (mg/Nm ³)	149	600	IS 11255 (Part II), 1985 RA 2014
10.	Concentration of Nitrogen Dioxide (mg/Nm ³)	76	300	IS 11255 (Part 7), 2005 RA 2017
11.	Concentration of Particulate Matters (mg/Nm ³)	34.6	50	IS 11255 (Part I): 1985, RA 2014
E.	<u>Pollution control device</u> Details of pollution control devices attached with the stack : NA			
F.	Remarks: Nil			

Sampling By: Mr. Hrusikesh Das

TESTREPORT

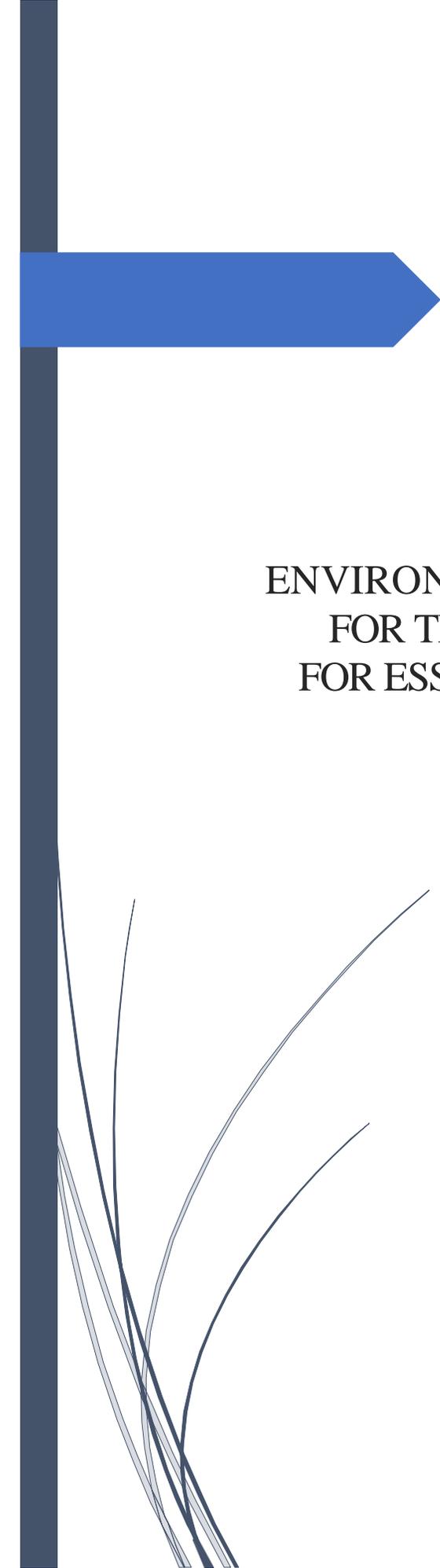
Stack No.	Stack Description	Emission due to	Date of Sampling
Stack-1	Pellet plant process stack	Burning of furnace oil	10.12.2023
Stack-2	Pellet plant de-dusting stack	Electricity	10.12.2023

ANALYSISRESULT

Stack No.	Stack Description	Stack height (in meter)	Emission M ³ /Hr.	Temperature(°C)	VelocityNM ³ /Hr
1	Pellet plant process stack	80	7144	94.5	35655
2	Pellet plant de-dusting stack	60	6565	89.4	36499

Stack No.	Stack Description	Carbon monoxide(CO) Mg/nm ³	Carbon dioxide(CO ₂) %v/v	PM Concentration Mg/nm ³		SO ₂ Mg/nm ³	NO ₂ Mg/nm ³
				PM10	PM 2.5		
Norms as per SPCB		1	NA	150	150	NA	NA
1	Pellet plant process stack	<0.2	8.45	146	125.2	181.4	75
2	Pellet plant de-dusting stack	<0.2	7.8	121.5	136	178.6	69.3

- Measurement of PM has been done as per IS Code IS: 11255 Part 1.
- No. of the calibrated stack kit used: Thermo Environmental Instruments TEI-401



ENVIRONMENTAL MONITORING REPORT
FOR THE MONTH OF JANUARY-2024
FOR ESSELMINING & INDUSTRIES LTD.

M/S ESSEL MINING & INDUSTRIES LTD.

VILL-BASANTPUR, PO-DUBUNA, TEHSIL-
JHUMPURA, KEONJHAR

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AMBIENT AIR MONITORING REPORT FOR THE MONTH OF JANUARY -2024

AMBIENT AIR QUALITY MONITORING DATA

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near ECR-1		✓				✓	
Near Canteen		✓				✓	
Near Admin Building		✓				✓	
Nadiguth Village			✓				✓

SUMMARY SHEET OF SAMPLING

SINo.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	Near ECR-1	01.01.2024	OCPL/AAQ/EMIL/01/01/24
2.	Sample02	Near Canteen	01.01.2024	OCPL/AAQ/EMIL/02/01/24
3.	Sample03	Near Admin Building	01.01.2024	OCPL/AAQ/EMIL/03/01/24
4.	Sample04	Nedigutha Village	02.01.2024	OCPL/AAQ/EMIL/04/01/24
5.	Sample05	Near ECR-1	05.01.2024	OCPL/AAQ/EMIL/05/01/24
6.	Sample06	Near Canteen	05.01.2024	OCPL/AAQ/EMIL/06/01/24
7.	Sample07	Near Admin Building	05.01.2024	OCPL/AAQ/EMIL/07/01/24
8.	Sample08	Nedigutha Village	06.01.2024	OCPL/AAQ/EMIL/08/01/24
9.	Sample09	Near ECR-1	08.01.2024	OCPL/AAQ/EMIL/09/01/24
10.	Sample10	Near Canteen	08.01.2024	OCPL/AAQ/EMIL/10/01/24
11.	Sample11	Near Admin Building	08.01.2024	OCPL/AAQ/EMIL/11/01/24
12.	Sample12	Nedigutha Village	09.01.2024	OCPL/AAQ/EMIL/12/01/24
13.	Sample13	Near ECR-1	12.01.2024	OCPL/AAQ/EMIL/13/01/24
14.	Sample14	Near Canteen	12.01.2024	OCPL/AAQ/EMIL/14/01/24
15.	Sample15	Near Admin Building	12.01.2024	OCPL/AAQ/EMIL/15/01/24
16.	Sample16	Nedigutha Village	13.01.2024	OCPL/AAQ/EMIL/16/01/24

17.	Sample17	NearECR-1	15.01.2024	OCPL/AAQ/EMIL/17/01/24
18.	Sample18	Near Canteen	15.01.2024	OCPL/AAQ/EMIL/18/01/24
19.	Sample19	Near Admin Building	15.01.2024	OCPL/AAQ/EMIL/19/01/24
20.	Sample20	Nedigutha Village	16.01.2024	OCPL/AAQ/EMIL/20/01/24
21.	Sample21	NearECR-1	19.01.2024	OCPL/AAQ/EMIL/21/01/24
22.	Sample22	Near Canteen	19.01.2024	OCPL/AAQ/EMIL/22/01/24
23.	Sample23	Near Admin Building	19.01.2024	OCPL/AAQ/EMIL/23/01/24
24.	Sample24	Nedigutha Village	20.01.2024	OCPL/AAQ/EMIL/24/01/24
25.	Sample25	NearECR-1	22.01.2024	OCPL/AAQ/EMIL/25/01/24
26.	Sample26	Near Canteen	22.01.2024	OCPL/AAQ/EMIL/26/01/24
27.	Sample27	Near Admin Building	22.01.2024	OCPL/AAQ/EMIL/27/01/24
28.	Sample28	Nedigutha Village	23.01.2024	OCPL/AAQ/EMIL/28/01/24
29.	Sample29	NearECR-1	26.01.2024	OCPL/AAQ/EMIL/29/01/24
30.	Sample30	Near Canteen	26.01.2024	OCPL/AAQ/EMIL/30/01/24
31.	Sample31	Near Admin Building	26.01.2024	OCPL/AAQ/EMIL/31/01/24
32.	Sample32	Nedigutha Village	27.01.2024	OCPL/AAQ/EMIL/32/01/24
33.	Sample33	NearECR-1	29.01.2024	OCPL/AAQ/EMIL/33/01/24
34.	Sample34	Near Canteen	29.01.2024	OCPL/AAQ/EMIL/34/01/24
35.	Sample35	Near Admin Building	29.01.2024	OCPL/AAQ/EMIL/35/01/24
36.	Sample36	Nedigutha Village	30.01.2024	OCPL/AAQ/EMIL/36/01/24

LOCATION: NEAR ECR-1

Parameters	Limit(μg/M ³)	Date									
		01.01.24	05.01.24	08.01.24	12.01.24	15.01.24	19.01.24	22.01.24	26.01.24	29.01.24	Avg
PM10	100	86.70	87.32	85.70	89.17	87.09	91.29	92.34	89.53	86.14	88.87
PM2.5	60	57.97	59.98	55.19	58.72	56.83	59.89	59.61	55.64	57.08	53.26
Sulphur Dioxide (SO ₂)	80	36.75	35.48	36.46	39.33	38.52	37.36	39.59	35.73	39.64	37.91
Oxide of Nitrogen (NO ₂)	80	28.37	29.54	29.73	37.44	32.38	33.19	31.28	32.52	34.83	32.03
Lead(Pb)	1	ND	ND								
Carbon Monoxide (CO) (8Hrs)	2000	173.33	173.12	175.43	171.68	171.81	177.54	177.97	176.93	175.55	174.89
Ozone(O ₃)	180	ND	ND								
Ammonia (NH ₃)	400	36.89	37.27	39.11	39.10	37.68	37.08	37.72	37.03	38.91	37.94
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyrene (BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic(As) (ng/m ³)	06	ND	ND								
Nickel(Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5},SO₂,NO₂,&CO has been done as per the IS Code IS:5182

Part IV, II, VI, X & XVII respectively

LOCATION: NEAR CANTEEN

Parameters	Limit (µg/ M ³)	DATE									
		01.01.24	05.01.24	08.01.24	12.01.24	15.01.24	19.01.24	22.01.24	26.01.24	29.01.24	Avg
PM10	100	86.45	86.95	86.09	88.74	86.91	91.34	91.99	89.25	86.34	89.03
PM2.5	60	58.41	59.45	55.87	59.36	56.74	59.55	55.48	55.63	57.10	53.10
Sulphur Dioxide (SO ₂)	80	37.40	35.78	36.70	38.95	38.91	37.50	39.33	35.74	39.21	37.41
Oxide of Nitrogen (NO ₂)	80	28.12	29.42	29.91	37.54	32.42	33.26	31.44	33.14	35.00	32.27
Lead (Pb)	1.0	ND	ND								
Carbon Monoxide (CO)(8Hrs)	2000	173.50	172.89	175.38	171.69	171.60	177.82	178.25	176.50	175.31	174.45
Ozone(O ₃)	180	ND	ND								
Ammonia (N H ₃)	400	36.45	37.36	39.15	38.90	37.48	37.25	37.98	36.68	38.89	37.88
Benzene (C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyrene (BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic (As) (ng/m ³)	06	ND	ND								
Nickel (Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5}, SO₂, NO₂, &CO has been done as per the IS Code IS:5182

PartIV, II, VI, X&XVII respectively

LOCATION: NEAR ADMIN. BUILDING

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	DATE									
		01.01.24	05.01.24	08.01.24	12.01.24	15.01.24	19.01.24	22.01.24	26.01.24	29.01.24	Avg
PM10	100	89.06	86.70	89.13	90.00	91.25	85.28	93.55	93.16	94.74	90.85
PM2.5	60	59.30	59.73	59.51	58.94	58.88	58.30	58.96	58.77	57.28	55.08
Sulphur Dioxide (SO ₂)	80	25.91	28.54	27.12	28.53	29.38	31.26	28.66	32.73	33.33	29.84
Oxide of Nitrogen(NO ₂)	80	26.62	27.17	28.99	28.04	28.63	31.31	28.87	28.79	29.58	28.65
Lead(Pb)	1.0	ND	ND								
Carbon Monoxide (CO)(8Hrs)	2000	165.45	169.11	162.98	171.24	172.69	175.47	170.37	167.02	169.00	169.42
Ozone(O ₃)	180	ND	ND								
Ammonia(NH ₃)	400	33.80	34.97	37.30	34.91	35.13	36.64	37.15	35.04	39.79	36.00
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a) Pyrene(BaP)	01	ND	ND								
Particulate phase only(ng/m ³)											
Arsenic(As) (ng/m ³)	06	ND	ND								
Nickel(Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5}, SO₂,NO₂,&CO has been done as per the IS Code IS:5182

Part IV, II, VI, X & XVII respectively

LOCATION: NEDIGUTHA VILLAGE

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	DATE									
		02.01.24	06.01.24	09.01.24	13.01.24	16.01.24	20.01.24	23.01.24	27.01.24	30.01.24	Avg
PM10	100	42.57	45.17	46.24	47.21	46.72	46.56	45.31	44.72	46.73	45.85
PM2.5	60	43.51	45.09	43.74	45.66	43.52	43.30	43.65	43.62	42.83	43.49
Sulphur Dioxide (SO ₂)	80	19.22	16.98	21.21	21.31	22.71	18.69	18.94	18.13	17.33	19.48
Oxide of Nitrogen (NO ₂)	80	17.98	17.53	18.98	19.17	18.55	18.41	17.76	18.66	19.87	18.34
Lead(Pb)	1.0	ND	ND								
Carbon Monoxide (CO)(8Hrs)	2000	146.68	147.91	145.05	144.00	145.34	147.12	141.00	143.25	142.35	144.43
Ozone(O ₃)	180	ND	ND								
Ammonia(NH ₃)	400	13.00	13.23	15.00	15.04	15.95	16.85	12.83	13.52	12.93	14.05
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyrene(BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic(As)(ng/m ³)	06	ND	ND								
Nickel(Ni)(ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀& PM_{2.5}, SO₂, NO₂, &CO has been done as per the IS Code IS: 5182 PartIV,II,VI,X&XVII respectively

NOISE LEVEL MONITORING REPORT FOR THE MONTH OF JANUARY-2024

NOISE LEVEL MONITORING RESULT (IN DBA) FOR THE MONTH OF JANUARY

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near Main Gate Area		✓			✓		
Near Back Gate Area		✓			✓		
Near Pellet Plant Area		✓			✓		
Near IOBP Area		✓			✓		

SUMMARY SHEET OF SAMPLING

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	Near Main Gate Area	01.01.2024	OCPL/NL/EMIL/01/01/24
2.	Sample02	Near Back Gate Area	01.01.2024	OCPL/NL/EMIL/02/01/24
3.	Sample03	Near Pellet Plant Area	01.01.2024	OCPL/NL/EMIL/03/01/24
4.	Sample04	Near IOBP Area	01.01.2024	OCPL/NL/EMIL/04/01/24
5.	Sample05	Near Main Gate Area	05.01.2024	OCPL/NL/EMIL/05/01/24
6.	Sample06	Near Back Gate Area	05.01.2024	OCPL/NL/EMIL/06/01/24
7.	Sample07	Near Pellet Plant Area	05.01.2024	OCPL/NL/EMIL/07/01/24
8.	Sample08	Near IOBP Area	05.01.2024	OCPL/NL/EMIL/08/01/24
9.	Sample09	Near Main Gate Area	08.01.2024	OCPL/NL/EMIL/09/01/24
10.	Sample10	Near Back Gate Area	08.01.2024	OCPL/NL/EMIL/10/01/24
11.	Sample11	Near Pellet Plant Area	08.01.2024	OCPL/NL/EMIL/11/01/24
12.	Sample12	Near IOBP Area	08.01.2024	OCPL/NL/EMIL/12/01/24
13.	Sample13	Near Main Gate Area	12.01.2024	OCPL/NL/EMIL/13/01/24
14.	Sample14	Near Back Gate Area	12.01.2024	OCPL/NL/EMIL/14/01/24
15.	Sample15	Near Pellet Plant Area	12.01.2024	OCPL/NL/EMIL/15/01/24
16.	Sample16	Near IOBP Area	12.01.2024	OCPL/NL/EMIL/16/01/24

17.	Sample17	Near Main Gate Area	15.01.2024	OCPL/NL/EMIL/17/01/24
18.	Sample18	Near Back Gate Area	15.01.2024	OCPL/NL/EMIL/18/01/24
19.	Sample19	Near Pellet Plant Area	15.01.2024	OCPL/NL/EMIL/19/01/24
20.	Sample20	Near IOBP Area	15.01.2024	OCPL/NL/EMIL/20/01/24
21.	Sample21	Near Main Gate Area	19.01.2024	OCPL/NL/EMIL/21/01/24
22.	Sample22	Near Back Gate Area	19.01.2024	OCPL/NL/EMIL/22/01/24
23.	Sample23	Near Pellet Plant Area	19.01.2024	OCPL/NL/EMIL/23/01/24
24.	Sample24	Near IOBP Area	19.01.2024	OCPL/NL/EMIL/24/01/24
25.	Sample25	Near Main Gate Area	22.01.2024	OCPL/NL/EMIL/25/01/24
26.	Sample26	Near Back Gate Area	22.01.2024	OCPL/NL/EMIL/26/01/24
27.	Sample27	Near Pellet Plant Area	22.01.2024	OCPL/NL/EMIL/27/01/24
28.	Sample28	Near IOBP Area	22.01.2024	OCPL/NL/EMIL/28/01/24
29.	Sample29	Near Main Gate Area	26.01.2024	OCPL/NL/EMIL/29/01/24
30.	Sample30	Near Back Gate Area	26.01.2024	OCPL/NL/EMIL/30/01/24
31.	Sample31	Near Pellet Plant Area	26.01.2024	OCPL/NL/EMIL/31/01/24
32.	Sample32	Near IOBP Area	26.01.2024	OCPL/NL/EMIL/32/01/24
33.	Sample33	Near Main Gate Area	29.01.2024	OCPL/NL/EMIL/33/01/24
34.	Sample34	Near Back Gate Area	29.01.2024	OCPL/NL/EMIL/34/01/24
35.	Sample35	Near Pellet Plant Area	29.01.2024	OCPL/NL/EMIL/35/01/24
36.	Sample36	Near IOBP Area	29.01.2024	OCPL/NL/EMIL/36/01/24

Date of Monitoring: 01.01.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00-11.00am	Day 3.00-4.00pm	Evening6.00-7.00pm	Night 10.00-11.00pm
1	Near Main Gate Area	63.2	66	52.9	48.2	30.7
2	Near Back Gate Area	41.8	45.2	37.2	35	31.5
3	Near Pellet Plant Area	64.6	65.8	68.5	62.2	24.8
4	Near IOBP Area	55.4	58	38.9	46.5	34.6
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:05.01.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	54.3	62.3	55.6	61.2	36
2	Near Back Gate Area	38.3	50.4	48.5	44.2	28
3	Near Pellet Plant Area	55.6	54	46	50.6	34.4
4	Near IOBP Area	57.5	56.2	42.5	45.2	28.6
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:08.01.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00-11.00am	Day 3.00-4.00pm	Evening6.00-7.00pm	Night 10.00-11.00pm
1	Near Main Gate Area	62.22	61.68	62.75	55.23	38.69
2	Near Back Gate Area	47.17	52.58	42.72	38.64	38.95
3	Near Pellet Plant Area	51.65	59.42	62.74	42.95	35.09
4	Near IOBP Area	56.08	53.24	42.59	45.61	37.35
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:12.01.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	62.49	61.33	62.99	54.94	38.65
2	Near Back Gate Area	47.37	53.05	42.61	38.54	39.04
3	Near Pellet Plant Area	51.74	59.90	62.51	42.61	35.09
4	Near IOBP Area	56.02	53.12	42.59	46.08	37.16
Ambient Noise Standard						
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: 15.01.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	62.52	61.60	63.16	55.03	38.82
2	Near Back Gate Area	47.08	53.05	42.89	38.64	38.80
3	Near Pellet Plant Area	51.40	59.30	62.61	42.74	35.53
4	Near IOBP Area	55.93	53.52	41.95	45.47	36.88
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:19.01.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00-11.00am	Day 3.00-4.00pm	Evening6.00-7.00pm	Night 10.00-11.00pm
1	Near Main Gate Area	62.21	61.41	62.96	55.08	38.56
2	Near Back Gate Area	47.20	52.84	42.88	38.89	39.11
3	Near Pellet Plant Area	51.32	59.30	63.10	43.09	35.42
4	Near IOBP Area	55.62	53.62	42.05	46.06	36.92
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:22.01.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	62.40	61.64	62.86	55.30	38.85
2	Near Back Gate Area	46.75	52.88	43.18	38.75	38.84
3	Near Pellet Plant Area	51.53	59.57	63.03	43.11	35.55
4	Near IOBP Area	55.87	53.37	42.09	45.74	37.16
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:26.01.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	59.74	66.28	53.20	39.10	33.43
2	Near Back Gate Area	47.50	65.75	55.52	45.21	33.20
3	Near Pellet Plant Area	57.37	63.18	58.69	43.09	29.39
4	Near IOBP Area	46.49	37.67	35.93	37.20	31.34
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:29.01.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00-11.00am	Day 3.00-4.00pm	Evening6.00-7.00pm	Night 10.00-11.00pm
1	Near Main Gate Area	59.18	66.58	53.36	38.65	33.39
2	Near Back Gate Area	47.32	66.10	55.91	45.03	33.07
3	Near Pellet Plant Area	57.02	63.51	58.88	42.88	29.77
4	Near IOBP Area	46.56	37.86	36.08	37.09	31.61
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 REPORT FOR THE MONTH OF JANUARY-2024

SURFACE WATER ANALYSIS FOR THE MONTH OF JANUARY 2024
SUMMARY SHEET OF SAMPLING(SURFACE WATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	BAITARANI RIVER (DHANURJAYPUR)	10- JANUARY- 2024	OCPL/SW/01/01/24
2.	Sample02	BAITARANI RIVE (NEARPLANTAREA)	10- JANUARY- 2024	OCPL/SW/02/01/24
3.	Sample03	RESERVOUR POND INSIDEPLANT	10- JANUARY- 2024	OCPL/SW/03/01/24
4.	Sample04	DALKI NALA NEAR PLANT	10- JANUARY- 2024	OCPL/SW/04/01/24
5.	Sample05	NADIGUTH	10- JANUARY- 2024	OCPL/SW/05/01/24

Location: BAITARANI RIVER(DHANURJAYPUR)

Lab Sample Code: OCPL/SW/01/01/24		Report No.-OCPL/EMIL/01/01/24	
Sample description:		Test method	APHA22 nd edition
Sample location	BAITARANIRIVER (DHANURJAYPUR)	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	10- JANUARY- 2024
Sample quantity	1 no.sX1Lit.	Date of sample received	11- JANUARY- 2024
Sample type	Surface Water	Date of Analysis	11- JANUARY- 2024
Required parameters	As described in W/O	Date of Issue of report	18- JANUARY- 2024
EMIL reference	WO No.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	37.8
4	pH	-	7.1
5	Total Suspended Solids	mg/L	8.5
6	Total Dissolved Solid	mg/L	459
7	Biochemical Oxygen Demand at 27°C	mg/L	7.6
8	Chemical Oxygen Demand	mg/L	7.1
9	Total Residual Chlorine	mg/L	6.9
10	Alkalinity	mg/L	135
11	Calcium	mg/L	36.6
12	Magnesium	mg/L	26

13	Total Hardness as CaCO ₃	mg/L	64
14	Electrical Conductivity	μs/cm	188
15	Turbidity	NTU	7.1
16	Arsenic as As	μg/L	1.4
17	Lead as Pb	μg/L	<0.5
18	Cadmium as Cd	μg/L	3.88
19	Total Chromium as Cr	μg/L	<0.5
20	Zinc as Zn	μg/L	8.04
21	Fluoride as F	mg/L	0.22
22	Iron as Fe	mg/L	18.9
23	Nitrate	mg/L	7.5
24	Sodium as Na	mg/L	6.2
25	Potassium as K	mg/L	1.2
26	Sulfate	mg/L	0.48
27	Nitrate as NO ₃	mg/L	4.7
28	Total Silica as SiO ₂	mg/L	11.48
29	Total dissolved Solid	mg/L	485

Location: BAITARANI RIVER (NEARPLANTAREA)

Lab Sample Code: OCPL/SW/02/01/24		Report No.-OCPL/EMIL/02/01/24	
Sample description:		Test method	APHA22 nd edition
Sample location	BAITARANIRIVER (NEARPLANTAREA)	Samplecollectedby	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	10- JANUARY- 2024
Sample quantity	1no.sX1Lit.	Date of sample received	11- JANUARY- 2024
Sample type	Surface Water	Date of Analysis	11- JANUARY- 2024
Required parameters	As described in W/O	Date of Issue of report	18- JANUARY- 2024
EMIL reference	WONo.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSISRESULT

Sl. No.	TESTPARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	28.9
4	pH	-	7.2
5	Total Suspended Solids	mg/L	9.2
6	Total Dissolved Solid	mg/L	485
7	BiochemicalOxygenDemand at27°C	mg/L	6.5
8	Chemical Oxygen Demand	mg/L	5.1
9	Total Residual Chlorine	mg/L	3.06
10	Alkalinity	mg/L	63.1
11	Calcium	mg/L	10.2
12	Magnesium	mg/L	7.84

13	Total Hardness asCaCO3	mg/L	39.6
14	Electrical Conductivity	µs/cm	179
15	Turbidity	NTU	12.8
16	Arsenic as As	µg/L	0.52
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	4.4
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	18.4
21	Fluoride as F	mg/L	0.43
22	Iron as Fe	mg/L	24.2
23	Nitrate	mg/L	3.08
24	Sodium as Na	mg/L	1.66
25	Potassium as K	mg/L	2.32
26	Sulfate	mg/L	<0.01
27	Nitrate as NO3	mg/L	3.2
28	Total Silica as SiO2	mg/L	1.64
29	Total dissolved Solid	mg/L	455

Location: RESERVOIR POND INSIDE PLANT PREMISES

Lab Sample Code: OCPL/SW/03/01/24		Report No.-OCPL/EMIL/03/01/24	
Sample description:		Test method	APHA22 nd edition
Sample location	RESERVOIR POND INSIDE PLANT PREMISES	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	10- JANUARY- 2024
Sample quantity	1 no.sX1Lit.	Date of sample received	11- JANUARY- 2024
Sample type	Surface Water	Date of Analysis	11- JANUARY- 2024
Required parameters	As described in W/O	Date of Issue of report	18- JANUARY- 2024
EMIL reference	WONo.- 1060/ADMIN/5500004339	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	26.6
4	pH	-	7.1
5	Total Suspended Solids	mg/L	36.2
6	Total Dissolved Solid	mg/L	568
7	Biochemical Oxygen Demand at 27°C	mg/L	31.8
8	Chemical Oxygen Demand	mg/L	14.2
9	Total Residual Chlorine	mg/L	11.4
10	Alkalinity	mg/L	166
11	Calcium	mg/L	42

12	Magnesium	mg/L	29.6
13	Total Hardness as CaCO ₃	mg/L	164.8
14	Electrical Conductivity	μs/cm	284
15	Turbidity	NTU	31.4
16	Arsenic as As	μg/L	3.88
17	Lead as Pb	μg/L	<0.5
18	Cadmium as Cd	μg/L	16.2
19	Total Chromium as Cr	μg/L	<0.5
20	Zinc as Zn	μg/L	<0.5
21	Fluoride as F	mg/L	1.44
22	Iron as Fe	mg/L	32
23	Nitrate	mg/L	4.18
24	Sodium as Na	mg/L	9.2
25	Potassium as K	mg/L	2.8
26	Sulfate	mg/L	8.6
27	Nitrate as NO ₃	mg/L	7.1
28	Total Silica as SiO ₂	mg/L	8.5
29	Total dissolved Solid	mg/L	685

Location: DALKINALA, NEAR PLANT

Lab Sample Code: OCPL/SW/04/01/24		Report No.-OCPL/EMIL/04/01/24	
Sample description:		Test method	APHA22 nd edition
Sample location	DALKI NALA, NEARPLANT	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	10- JANUARY- 2024
Sample quantity	1no.sX1Lit.	Date of sample received	11- JANUARY- 2024
Sample type	Surface Water	Date of Analysis	11- JANUARY- 2024
Required parameters	As described in W/O	Date of Issue of report	18- JANUARY- 2024
EMIL reference	WONo.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	27.8
4	pH	-	6.9
5	Total Suspended Solids	mg/L	17.2
6	Total Dissolved Solid	mg/L	698
7	Biochemical Oxygen Demand at 27°C	mg/L	12
8	Chemical Oxygen Demand	mg/L	6.1
9	Total Residual Chlorine	mg/L	2.44
10	Alkalinity	mg/L	165
11	Calcium	mg/L	46
12	Magnesium	mg/L	21.4
13	Total Hardness as CaCO ₃	mg/L	86

14	Electrical Conductivity	μs/cm	226
15	Turbidity	NTU	24
16	Arsenic as As	μg/L	0.36
17	Lead as Pb	μg/L	<0.5
18	Cadmium as Cd	μg/L	0.48
19	Total Chromium as Cr	μg/L	<0.5
20	Zinc as Zn	μg/L	11.2
21	Fluoride as F	mg/L	0.52
22	Iron as Fe	mg/L	25.6
23	Nitrate	mg/L	7.45
24	Sodium as Na	mg/L	6.62
25	Potassium as K	mg/L	4.6
26	Sulfate	mg/L	3.4
27	Nitrate as NO ₃	mg/L	8.2
28	Total Silica as SiO ₂	mg/L	6.4
29	Total dissolved Solid	mg/L	599

Location: NADIGUTH

Lab Sample Code: OCPL/SW/05/01/24		Report No.-OCPL/EMIL/05/01/24	
Sample description:		Test method	APHA22 nd edition
Sample location	NADIGUTH	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	10- JANUARY-2024
Sample quantity	1 no.sX1Lit.	Date of sample received	11- JANUARY-2024
Sample type	Surface Water	Date of Analysis	11- JANUARY-2024
Required parameters	As described in W/O	Date of Issue of report	18- JANUARY-2024
EMIL reference	WO No.-1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	25.4
4	pH	-	7.1
5	Total Suspended Solids	mg/L	15.1
6	Total Dissolved Solid	mg/L	685
7	Biochemical Oxygen Demand at 27°C	mg/L	12.85
8	Chemical Oxygen Demand	mg/L	5.6
9	Total Residual Chlorine	mg/L	5.6
10	Alkalinity	mg/L	72.4
11	Calcium	mg/L	9.2
12	Magnesium	mg/L	7.3
13	Total Hardness as CaCO ₃	mg/L	42

14	Electrical Conductivity	μs/cm	92
15	Turbidity	NTU	14.8
16	Arsenic as As	μg/L	<0.5
17	Lead as Pb	μg/L	<0.5
18	Cadmium as Cd	μg/L	0.64
19	Total Chromium as Cr	μg/L	<0.5
20	Zinc as Zn	μg/L	<0.5
21	Fluoride as F	mg/L	0.44
22	Iron as Fe	mg/L	28
23	Nitrate	mg/L	4.43
24	Sodium as Na	mg/L	6.24
25	Potassium as K	mg/L	3.0
26	Sulfate	mg/L	8.7
27	Nitrate as NO ₃	mg/L	4
28	Total Silica as SiO ₂	mg/L	4.86
29	Total dissolved Solid	mg/L	699

GROUND WATER ANALYSIS REPORT FOR THE MONTH OF JANUARY -2024

**GROUND WATER MONITORING REPORT SUMMARY SHEET OF SAMPLING
(GROUNDWATER):**

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	MALDAVILLAGE	11- JANUARY - 2024	OCPL/GW/01/01/24
2.	Sample02	NEDIGUTH	11- JANUARY - 2024	OCPL/GW/02/01/24
3.	Sample03	TALASAHI	11- JANUARY - 2024	OCPL/GW/03/01/24
4.	Sample04	PLANT-1(Near Canteen)	11- JANUARY - 2024	OCPL/GW/04/01/24
5.	Sample05	PLANT-2(SLIMEPOND)	11- JANUARY - 2024	OCPL/GW/05/01/24

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

Sl. No.	TESTPARAMETER	UOM	Results					BIS Desirable limit	Permissible limit with the absence of alternate source
			MALDA VILLAGE	NEDIGUTH	TALASAHI	PLANT- 1 (Near Canteen)	PLANT-2 (SLIMEPOND)		
1	Colour	Pt-Co	1.1	1.1	1.0	1.1	1.2		
2	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		
3	Temperature	°C	28	27.8	28	28.6	27		
4	pH	-	6.8	7.1	7	6.9	7.2	6.5-8.5	No relaxation
5	Total Hardness (as CaCO ₃)	mg/L	56.12	55	48	58.23	62.6	300	600
6	Calcium	mg/L	8	7	11	12.2	14.8	75	200
7	Magnesium	mg/L	1.4	2	4	2.8	1.6	30	No relaxation
8	Chloride	mg/L	16.6	15.5	11.8	14	20	250	1000
9	Alkalinity	mg/L	18	14	22	16.4	22	200	600
10	Electrical Conductivity	µs/cm	67	51	68	76	88	--	--
11	Arsenic as As	µg/L	0.06	ND	0.02	ND	0.12	10	No relaxation
12	Lead as Pb	µg/L	ND	0.31	0.2	0.04	ND	10	No relaxation
13	Cadmium as Cd	µg/L	ND	ND	ND	0.02	0.04	3.0	No relaxation
14	Total Chromium as Cr	µg/L	0.2	ND	0.2	0.08	0.04	50	No relaxation

15	Zinc as Zn	µg/L	87	94.8	88.5	68	102	5000	No relaxation
16	Fluoride as F	mg/L	ND	0.02	ND	0.02	ND	1.0	1.9
17	Iron as Fe	µg/L	18.5	14.2	32	48.6	35	300	1000
18	Nitrate	mg/L	1.5	1.2	1.0	1.02	1.2	45	100
19	Sodium as Na	mg/L	2.2	3.6	4.0	5.2	5.8	150	No relaxation
20	Potassium as K	mg/L	ND	0.04	0.12	0.1	0.2	12	No relaxation
21	Sulfate	mg/L	ND	ND	0.05	0.02	0.4	200	400
22	Total Silica as SiO ₂	mg/L	0.5	ND	0.66	ND	1.04	--	--
23	Total suspended Solid	mg/L	0.08	1.06	1.1	0.26	1.2	--	--
24	Total dissolved Solid	mg/L	85	72.4	75	94	79.4	250	2000
25	Turbidity	NTU	0.2	0.47	0.42	0.8	0.66	5	10

Sampling By: Mr. Hrusikesh Das

GROUND WATER LEVEL ANALYSIS REPORT FOR THE MONTH OF JANUARY - 2024

**REPORT ON GROUND WATER LEVEL ANALYSIS FOR THE MONTH OF
JANUARY -2024**

SUMMARY SHEET OF MONITORING:

SI No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
6.	Sample01	MALDA VILLAGE	14- JANUARY - 2024	OCPL/GWL/01/01/24
7.	Sample02	NEDIGUTH	14- JANUARY - 2024	OCPL/GWL/02/01/24
8.	Sample03	TALASAH	14- JANUARY - 2024	OCPL/GWL/03/01/24
9.	Sample04	PLANT-1(Near Canteen)	14- JANUARY - 2024	OCPL/GWL/04/01/24
10.	Sample05	PLANT-2(SLIME POND)	14- JANUARY - 2024	OCPL/GWL/05/01/24

MONITORING RESULT

SI No.	Name of the location	Type of well	Dia. (m)	Depth of the well (m)	Depth of the water table BGL(M)	Remarks
1	MALDA VILLAGE	Dug well	0.83	8.12	7.7	--
2	NEDIGUTH	Dug well	1.22	9.44	7.2	--
3	TALASAH	Dug well	1.0	8.6	7.19	--
4	PLANT-1(Near Canteen)	Bore-well	0.1	65	12.2	--
5	PLANT-2(SLIME POND)	Bore-well	0.1	61	37.8	--

Sampling By: Mr. Hrusikesh Das

STACK MONITORING REPORT FOR THE MONTH OF JANUARY - 2024

**REPORT ON STACK MONITORING FOR THE MONTH OF JANUARY -
2024**

LOCATION AND MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
DGStack-1			✓				
DGStack-2			✓				
Stack-1 (Pellet Plant Process Stack)				✓			
Stack-2 (Pellet Plant Dedusting Stack)				✓			

TEST REPORT

Name & Address of the Client:	Report No.: OCPL/BBS/38
M/S ESSEL MINING & INDUSTRIES LTD.	Date :09.01.2024
Keonjhar, Odisha, India	Sample No.: OCPL/EMIL/2023-24/01
	Sample Description: DG Flue Gas Monitoring
	Date of Sampling: 09.01.2024

ANALYSIS RESULT

A.	<u>General information about stack:</u>	
1.	Stack connected to	: DG-1
2.	Emission due to	: Burning of Diesel
3.	Material of construction of stack	:MS
4.	Shape of Stack	: Circular
5.	Serial no.	: N15E226771
6.	Boiler/Furnace/DG/Kiln Capacity	:1250KVA

B.	<u>Physical characteristics of stack:</u>			
1.	Height of the Stack from Ground level	:9m		
2.	Diameter of the stack at sampling point	:400mm		
3.	Height of the Sampling Point from Ground level	:7m		
4.	Type	: HCKI634Z1		
C.	<u>Analysis/Characteristic of stack:</u>			
1.	Fuel used : LDO	2. Fuel Consumption: NA		
D.	<u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Limit</u>	<u>Method</u>
1.	Temperature of Emission(°C)	77.7	--	IS11255(PartIII),2008RA 2018
2.	Barometric pressure (mm of Hg)	285	--	USEPAPart2- 25/09/1996
3.	Velocity of gas(m/sec.)	12.52	--	IS11255(PartIII),2008RA 2018
4.	Quantity of Gas Flow(Nm ³ /hr)	665	--	IS11255(PartIII),2008RA 2018
5.	Concentration of Moisture(%)	<2.0	--	USEPA(Part-4)
6.	Concentration of Oxygen(% v/v)	8.31	--	IS13270:1992,Ref:2009
7.	Concentration of Carbon Monoxide (mg/Nm ³)	20.42	--	IS13270:1992,Ref:2009
8.	Concentration of Carbon Dioxide(% v/v)	6.6	--	IS13270:1992,Ref:2009
9.	Concentration of Sulphur Dioxide(mg/Nm ³)	115.3	600	IS11255(PartII),1985RA 2014
10.	Concentration of Nitrogen Dioxide(mg/Nm ³)	72.52	300	IS11255(Part7),2005RA 2017

11.	Concentration of Particulate Matters(mg/Nm ³)	38.4	50	IS11255(PartI):1985, RA2014
E.	<u>Pollution control device</u> Details of pollution control devices attached with the stack :NA			
F.	Remarks: Nil			

Sampling By: Mr. Hrusikesh Das

TESTREPORT

Name & Address of the Client:	Report No.: OCPL/BBS/39
M/SESSELMINING&INDUSTRIESLTD	Date :09.01.2024
Keonjhar, Odisha, India	Sample No.: OCPL/EMIL/2023-24/13
	Sample Description: DG Flue Gas Monitoring
	Date of Sampling :09.01.2024

ANALYSISRESULT

A.	<u>General information about stack:</u>		
1.	Stack connected to	:DG-2	
2.	Emission due to	:Burning of Diesel	
3.	Material of construction of stack	:MS	
4.	Shape of Stack	:Circular	
5.	Serial no.	:N15H319963	
6.	Boiler/Furnace/DG/Kiln Capacity	:1250KVA	
B.	<u>Physical characteristics of stack:</u>		
1.	Height of the Stack from Ground level	:9m	
2.	Diameter of the stack at sampling point	:400mm	
3.	Height of the Sampling Point from Ground level	:7m	
4.	Type	:HCKI634Z1	
C.	<u>Analysis/Characteristic of stack:</u>		
1.	Fuel used :LDO	2.FuelConsumption:NA	
D.	<u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Limit</u> <u>Method</u>
1.	Temperature of Emission(°C)	85.3	IS11255(Part III),2008RA2018

2.	Barometric pressure (mm of Hg)	322		USEPA Part 2-25/09/1996
3.	Velocity of gas (m/sec.)	31.22		IS 11255 (Part III), 2008 RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	1638		IS 11255 (Part III), 2008 RA 2018
5.	Concentration of Moisture (%)	<2.0		USEPA (Part-4)
6.	Concentration of Oxygen (% v/v)	8.63		IS 13270:1992, Ref: 2009
7.	Concentration of Carbon Monoxide (mg/Nm ³)	26.8		IS 13270:1992, Ref: 2009
8.	Concentration of Carbon Dioxide (% v/v)	12		IS 13270:1992, Ref: 2009
9.	Concentration of Sulphur Dioxide (mg/Nm ³)	155	600	IS 11255 (Part II), 1985 RA 2014
10.	Concentration of Nitrogen Dioxide (mg/Nm ³)	77.5	300	IS 11255 (Part 7), 2005 RA 2017
11.	Concentration of Particulate Matters (mg/Nm ³)	35.4	50	IS 11255 (Part I): 1985, RA 2014
E.	<u>Pollution control device</u> Details of pollution control devices attached with the stack : NA			
F.	Remarks: Nil			

Sampling By: Mr. Hrusikesh Das

TESTREPORT

Stack No.	Stack Description	Emission due to	Date of Sampling
Stack-1	Pellet plant process stack	Burning of furnace oil	10.01.2024
Stack-2	Pellet plant de-dusting stack	Electricity	10.01.2024

ANALYSISRESULT

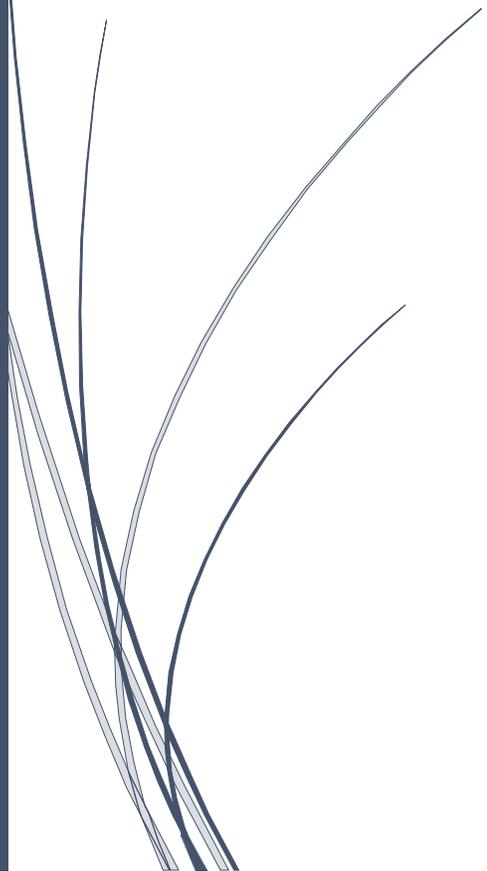
Stack No.	Stack Description	Stack height (in meter)	Emission M ³ /Hr.	Temperature(°C)	VelocityNM ³ /Hr
1	Pellet plant process stack	80	7145	97.5	35665
2	Pellet plant de-dusting stack	60	6568	92.4	36497

Stack No.	Stack Description	Carbon monoxide(CO) Mg/nm ³	Carbon dioxide(CO ₂) %v/v	PM Concentration Mg/nm ³		SO ₂ Mg/nm ³	NO ₂ Mg/nm ³
				PM10	PM 2.5		
Norms as per SPCB		1	NA	150	150	NA	NA
1	Pellet plant process stack	<0.2	8.4	142	123.2	180.4	77.3
2	Pellet plant de-dusting stack	<0.2	7.84	125.5	137.2	178.8	65.32

- Measurement of PM has been done as per IS Code IS: 11255 Part 1.
- No. of the calibrated stack kit used: Thermo Environmental Instruments TEI-401



ENVIRONMENTAL MONITORING REPORT
FOR THE MONTH OF FEBRUARY-2024
FOR ESSELMINING & INDUSTRIES LTD.



M/S ESSEL MINING & INDUSTRIES LTD.

VILL-BASANTPUR, PO-DUBUNA, TEHSIL-
JHUMPURA, KEONJHAR

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AMBIENT AIR MONITORING REPORT FOR THE MONTH OF FEBRUARY -2024

AMBIENT AIR QUALITY MONITORING DATA

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near ECR-1		✓				✓	
Near Canteen		✓				✓	
Near Admin Building		✓				✓	
Nadiguth Village			✓				✓

SUMMARY SHEET OF SAMPLING

Sl. No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	Near ECR-1	02.02.2024	OCPL/AAQ/EMIL/01/02/24
2.	Sample02	Near Canteen	02.02.2024	OCPL/AAQ/EMIL/02/02/24
3.	Sample03	Near Admin Building	02.02.2024	OCPL/AAQ/EMIL/03/02/24
4.	Sample04	Nedigutha Village	03.02.2024	OCPL/AAQ/EMIL/04/02/24
5.	Sample05	Near ECR-1	05.02.2024	OCPL/AAQ/EMIL/05/02/24
6.	Sample06	Near Canteen	05.02.2024	OCPL/AAQ/EMIL/06/02/24
7.	Sample07	Near Admin Building	05.02.2024	OCPL/AAQ/EMIL/07/02/24
8.	Sample08	Nedigutha Village	06.02.2024	OCPL/AAQ/EMIL/08/02/24
9.	Sample09	Near ECR-1	09.02.2024	OCPL/AAQ/EMIL/09/02/24
10.	Sample10	Near Canteen	09.02.2024	OCPL/AAQ/EMIL/10/02/24
11.	Sample11	Near Admin Building	09.02.2024	OCPL/AAQ/EMIL/11/02/24
12.	Sample12	Nedigutha Village	10.02.2024	OCPL/AAQ/EMIL/12/02/24
13.	Sample13	Near ECR-1	12.02.2024	OCPL/AAQ/EMIL/13/02/24
14.	Sample14	Near Canteen	12.02.2024	OCPL/AAQ/EMIL/14/02/24
15.	Sample15	Near Admin Building	12.02.2024	OCPL/AAQ/EMIL/15/02/24
16.	Sample16	Nedigutha Village	13.02.2024	OCPL/AAQ/EMIL/16/02/24

17.	Sample17	NearECR-1	16.02.2024	OCPL/AAQ/EMIL/17/02/24
18.	Sample18	Near Canteen	16.02.2024	OCPL/AAQ/EMIL/18/02/24
19.	Sample19	Near Admin Building	16.02.2024	OCPL/AAQ/EMIL/19/02/24
20.	Sample20	Nedigutha Village	17.02.2024	OCPL/AAQ/EMIL/20/02/24
21.	Sample21	NearECR-1	19.02.2024	OCPL/AAQ/EMIL/21/02/24
22.	Sample22	Near Canteen	19.02.2024	OCPL/AAQ/EMIL/22/02/24
23.	Sample23	Near Admin Building	19.02.2024	OCPL/AAQ/EMIL/23/02/24
24.	Sample24	Nedigutha Village	20.02.2024	OCPL/AAQ/EMIL/24/02/24
25.	Sample25	NearECR-1	23.02.2024	OCPL/AAQ/EMIL/25/02/24
26.	Sample26	Near Canteen	23.02.2024	OCPL/AAQ/EMIL/26/02/24
27.	Sample27	Near Admin Building	23.02.2024	OCPL/AAQ/EMIL/27/02/24
28.	Sample28	Nedigutha Village	24.02.2024	OCPL/AAQ/EMIL/28/02/24
29.	Sample29	NearECR-1	26.02.2024	OCPL/AAQ/EMIL/29/02/24
30.	Sample30	Near Canteen	26.02.2024	OCPL/AAQ/EMIL/30/02/24
31.	Sample31	Near Admin Building	26.02.2024	OCPL/AAQ/EMIL/31/02/24
32.	Sample32	Nedigutha Village	27.02.2024	OCPL/AAQ/EMIL/32/02/24

LOCATION: NEAR ECR-1

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	Date								
		02.02.24	05.02.24	09.02.24	12.02.24	16.02.24	19.02.24	23.02.24	26.02.24	Avg
PM10	100	87.90	88.10	86.73	90.25	87.70	92.32	93.04	90.25	89.54
PM2.5	60	58.90	59.00	55.94	59.53	57.45	59.30	59.00	56.61	58.22
Sulphur Dioxide (SO ₂)	80	37.26	36.27	37.03	40.21	39.38	38.45	40.42	36.50	38.19
Oxide of Nitrogen (NO ₂)	80	29.17	30.08	30.61	38.33	32.91	33.78	32.44	33.50	32.60
Lead (Pb)	1	ND	ND							
Carbon Monoxide (CO) (8Hrs)	2000	173.90	174.10	176.00	172.58	172.98	178.56	178.82	177.92	175.61
Ozone(O ₃)	180	ND	ND							
Ammonia (NH ₃)	400	37.68	37.87	39.88	40.05	38.81	37.87	38.40	37.62	38.52
Benzene (C ₆ H ₆)	05	ND	ND							
Benzo(a)Pyrene (BaP) Particulate phase only(ng/m ³)	01	ND	ND							
Arsenic (As) (ng/m ³)	06	ND	ND							
Nickel (Ni) (ng/m ³)	20	ND	ND							

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5}, SO₂, NO₂, &CO has been done as per the IS Code IS:5182 Part IV, II, VI, X&XVII respectively

LOCATION: NEAR CANTEEN

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	Date								
		02.02.24	05.02.24	09.02.24	12.02.24	16.02.24	19.02.24	23.02.24	26.02.24	Avg
PM10	100	88.83	88.86	87.79	90.78	88.73	93.25	93.76	91.38	90.42
PM2.5	60	59.80	58.30	56.93	59.00	58.19	58.95	59.95	57.80	58.62
Sulphur Dioxide (SO ₂)	80	37.78	37.40	37.60	40.72	39.88	39.41	40.94	37.14	38.86
Oxide of Nitrogen (NO ₂)	80	29.83	30.92	31.21	39.29	33.79	34.59	33.14	34.44	33.40
Lead (Pb)	1	ND	ND							
Carbon Monoxide (CO) (8Hrs)	2000	174.73	174.84	176.80	173.65	174.03	179.17	179.55	178.76	176.44
Ozone(O ₃)	180	ND	ND							
Ammonia (NH ₃)	400	38.19	38.39	40.39	40.84	39.63	38.64	39.31	38.36	39.22
Benzene (C ₆ H ₆)	05	ND	ND							
Benzo(a)Pyrene (BaP) Particulate phase only(ng/m ³)	01	ND	ND							
Arsenic (As) (ng/m ³)	06	ND	ND							
Nickel (Ni) (ng/m ³)	20	ND	ND							

*ND: Not Detectable

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

Measurement of PM10&PM2.5, SO₂, NO₂, &CO has been done as per the IS Code IS:5182

PartIV, II, VI, X&XVII respectively

LOCATION: NEAR ADMIN. BUILDING

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	Date								
		02.02.24	05.02.24	09.02.24	12.02.24	16.02.24	19.02.24	23.02.24	26.02.24	Avg
PM10	100	86.05	89.07	87.88	91.10	88.45	93.39	94.15	91.20	90.16
PM2.5	60	59.76	58.30	56.68	59.00	57.97	58.95	58.00	57.39	58.26
Sulphur Dioxide (SO ₂)	80	38.24	36.77	37.57	40.82	40.06	39.05	41.17	37.03	38.84
Oxide of Nitrogen (NO ₂)	80	30.29	31.15	31.33	39.20	33.95	34.85	33.33	34.49	33.57
Lead (Pb)	1	ND	ND							
Carbon Monoxide (CO) (8Hrs)	2000	175.09	174.93	176.75	173.57	173.97	179.57	179.80	178.69	176.55
Ozone(O ₃)	180	ND	ND							
Ammonia (NH ₃)	400	38.68	38.51	40.44	40.75	39.34	38.96	39.02	38.70	39.30
Benzene (C ₆ H ₆)	05	ND	ND							
Benzo(a)Pyrene (BaP) Particulate phase only(ng/m ³)	01	ND	ND							
Arsenic (As) (ng/m ³)	06	ND	ND							
Nickel (Ni) (ng/m ³)	20	ND	ND							

*ND: Not Detectable

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

Measurement of PM10&PM2.5, SO₂,NO₂,&CO has been done as per the IS Code IS:5182

Part IV,II,VI,X&XVII respectively

LOCATION: NEDIGUTHA VILLAGE

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	DATE								
		03.02.24	06.02.24	10.02.24	13.02.24	17.02.24	20.02.24	24.02.24	27.02.24	Avg
PM10	100	43.74	46.29	47.38	48.41	47.81	47.32	46.09	45.24	46.54
PM2.5	60	44.05	45.91	44.93	46.34	44.66	44.02	44.43	44.66	44.88
Sulphur Dioxide (SO ₂)	80	20.00	17.85	21.76	22.02	23.45	19.53	19.97	18.90	20.44
Oxide of Nitrogen (NO ₂)	80	18.69	18.38	20.08	19.94	19.21	19.19	18.38	19.42	19.16
Lead(Pb)	1.0	ND	ND							
Carbon Monoxide (CO)(8Hrs)	2000	147.74	148.60	145.64	145.11	146.37	148.28	141.69	144.33	145.97
Ozone(O ₃)	180	ND	ND							
Ammonia(NH ₃)	400	14.15	13.93	15.55	16.04	16.59	17.89	13.63	14.31	15.26
Benzene(C ₆ H ₆)	05	ND	ND							
Benzo(a)Pyrene(BaP) Particulate phase only(ng/m ³)	01	ND	ND							
Arsenic(As) (ng/m ³)	06	ND	ND							
Nickel(Ni) (ng/m ³)	20	ND	ND							

*ND: Not Detectable

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

Measurement of PM10& PM2.5, SO₂, NO₂, &CO has been done as per the IS Code IS: 5182 PartIV,II,VI,X&XVII respectively

NOISE LEVEL MONITORING REPORT FOR THE MONTH OF FEBRUARY -2024

NOISE LEVEL MONITORING RESULT (IN DBA) FOR THE MONTH OF FEBRUARY

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near Main Gate Area		✓				✓	
Near Back Gate Area		✓				✓	
Near Pellet Plant Area		✓				✓	
Near IOBP Area		✓				✓	

SUMMARY SHEET OF SAMPLING

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	Near Main Gate Area	02.02.2024	OCPL/NL/EMIL/01/02/24
2.	Sample02	Near Back Gate Area	02.02.2024	OCPL/NL/EMIL/02/02/24
3.	Sample03	Near Pellet Plant Area	02.02.2024	OCPL/NL/EMIL/03/02/24
4.	Sample04	Near IOBP Area	02.02.2024	OCPL/NL/EMIL/04/02/24
5.	Sample05	Near Main Gate Area	05.02.2024	OCPL/NL/EMIL/05/02/24
6.	Sample06	Near Back Gate Area	05.02.2024	OCPL/NL/EMIL/06/02/24
7.	Sample07	Near Pellet Plant Area	05.02.2024	OCPL/NL/EMIL/07/02/24
8.	Sample08	Near IOBP Area	05.02.2024	OCPL/NL/EMIL/08/02/24
9.	Sample09	Near Main Gate Area	09.02.2024	OCPL/NL/EMIL/09/02/24
10.	Sample10	Near Back Gate Area	09.02.2024	OCPL/NL/EMIL/10/02/24
11.	Sample11	Near Pellet Plant Area	09.02.2024	OCPL/NL/EMIL/11/02/24
12.	Sample12	Near IOBP Area	09.02.2024	OCPL/NL/EMIL/12/02/24
13.	Sample13	Near Main Gate Area	12.02.2024	OCPL/NL/EMIL/13/02/24
14.	Sample14	Near Back Gate Area	12.02.2024	OCPL/NL/EMIL/14/02/24
15.	Sample15	Near Pellet Plant Area	12.02.2024	OCPL/NL/EMIL/15/02/24
16.	Sample16	Near IOBP Area	12.02.2024	OCPL/NL/EMIL/16/02/24

17.	Sample17	Near Main Gate Area	16.02.2024	OCPL/NL/EMIL/17/02/24
18.	Sample18	Near Back Gate Area	16.02.2024	OCPL/NL/EMIL/18/02/24
19.	Sample19	Near Pellet Plant Area	16.02.2024	OCPL/NL/EMIL/19/02/24
20.	Sample20	Near IOBP Area	16.02.2024	OCPL/NL/EMIL/20/02/24
21.	Sample21	Near Main Gate Area	19.02.2024	OCPL/NL/EMIL/21/02/24
22.	Sample22	Near Back Gate Area	19.02.2024	OCPL/NL/EMIL/22/02/24
23.	Sample23	Near Pellet Plant Area	19.02.2024	OCPL/NL/EMIL/23/02/24
24.	Sample24	Near IOBP Area	19.02.2024	OCPL/NL/EMIL/24/02/24
25.	Sample25	Near Main Gate Area	23.02.2024	OCPL/NL/EMIL/25/02/24
26.	Sample26	Near Back Gate Area	23.02.2024	OCPL/NL/EMIL/26/02/24
27.	Sample27	Near Pellet Plant Area	23.02.2024	OCPL/NL/EMIL/27/02/24
28.	Sample28	Near IOBP Area	23.02.2024	OCPL/NL/EMIL/28/02/24
29.	Sample29	Near Main Gate Area	26.02.2024	OCPL/NL/EMIL/29/02/24
30.	Sample30	Near Back Gate Area	26.02.2024	OCPL/NL/EMIL/30/02/24
31.	Sample31	Near Pellet Plant Area	26.02.2024	OCPL/NL/EMIL/31/02/24
32.	Sample32	Near IOBP Area	26.02.2024	OCPL/NL/EMIL/32/02/24

Date of Monitoring: 02.02.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00-11.00am	Day 3.00-4.00pm	Evening6.00-7.00pm	Night 10.00-11.00pm
1	Near Main Gate Area	64.34	66.93	53.91	49.17	31.21
2	Near Back Gate Area	42.59	45.77	37.87	35.91	32.07
3	Near Pellet Plant Area	65.25	66.91	69.64	63.37	25.80
4	Near IOBP Area	56.36	58.67	39.55	47.46	35.77
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:05.02.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	54.83	63.06	56.61	62.31	37.12
2	Near Back Gate Area	39.03	51.18	49.70	45.34	28.51
3	Near Pellet Plant Area	56.75	55.16	46.70	51.77	35.28
4	Near IOBP Area	58.65	57.15	43.02	46.12	29.31
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:09.02.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	63.20	62.72	63.46	56.39	39.75
2	Near Back Gate Area	48.28	53.26	43.70	39.62	39.68
3	Near Pellet Plant Area	52.56	60.57	63.74	43.99	36.16
4	Near IOBP Area	56.59	54.06	43.47	46.32	38.05
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:12.02.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	63.14	62.30	63.99	56.10	39.52
2	Near Back Gate Area	48.20	54.03	43.53	39.10	39.63
3	Near Pellet Plant Area	52.72	60.83	63.49	43.14	35.68
4	Near IOBP Area	57.13	53.65	43.26	46.98	38.01
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: 16.02.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00-11.00am	Day 3.00-4.00pm	Evening 6.00-7.00pm	Night 10.00-11.00pm
1	Near Main Gate Area	63.54	62.31	64.19	55.79	39.45
2	Near Back Gate Area	47.96	54.08	43.98	39.41	39.72
3	Near Pellet Plant Area	52.28	60.20	63.34	43.48	36.47
4	Near IOBP Area	56.94	54.65	43.08	46.21	37.71
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:19.02.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	62.90	62.00	64.10	55.86	39.64
2	Near Back Gate Area	47.98	53.74	43.89	40.09	40.05
3	Near Pellet Plant Area	52.36	60.28	64.24	43.87	35.96
4	Near IOBP Area	56.43	54.48	42.76	46.64	37.76
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:23.02.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00-11.00am	Day 3.00-4.00pm	Evening6.00-7.00pm	Night 10.00-11.00pm
1	Near Main Gate Area	63.11	62.17	63.56	56.11	39.60
2	Near Back Gate Area	47.70	53.75	44.09	39.68	39.36
3	Near Pellet Plant Area	52.54	60.29	63.96	43.74	36.21
4	Near IOBP Area	56.91	54.57	43.21	46.62	38.15
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:26.02.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00-11.00am	Day 3.00-4.00pm	Evening6.00-7.00pm	Night 10.00-11.00pm
1	Near Main Gate Area	60.26	67.00	54.05	39.68	34.50
2	Near Back Gate Area	48.58	66.73	56.04	46.30	34.09
3	Near Pellet Plant Area	58.46	64.11	59.48	43.64	29.97
4	Near IOBP Area	47.45	38.65	36.70	38.27	32.12
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 REPORT FOR THE MONTH OF FEBRUARY-2024

SURFACE WATER ANALYSIS FOR THE MONTH OF FEBRUARY 2024
SUMMARY SHEET OF SAMPLING (SURFACE WATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	BAITARANI RIVER (DHANURJAYPUR)	10- FEBRUARY - 2024	OCPL/SW/01/02/24
2.	Sample02	BAITARANI RIVER (NEARPLANTAREA)	10- FEBRUARY - 2024	OCPL/SW/02/02/24
3.	Sample03	RESERVOUR POND INSIDEPLANT	10- FEBRUARY - 2024	OCPL/SW/03/02/24
4.	Sample04	DALKI NALA NEAR PLANT	10- FEBRUARY - 2024	OCPL/SW/04/02/24
5.	Sample05	NADIGUTH	10- FEBRUARY - 2024	OCPL/SW/05/02/24

Location: BAITARANI RIVER(DHANURJAYPUR)

Lab Sample Code: OCPL/SW/01/02/24		Report No.-OCPL/EMIL/01/02/24	
Sample description:		Test method	APHA22 nd edition
Sample location	BAITARANIRIVER (DHANURJAYPUR)	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	10- FEBRUARY - 2024
Sample quantity	1 no.s X 1 Lit.	Date of sample received	11- FEBRUARY - 2024
Sample type	Surface Water	Date of Analysis	11- FEBRUARY - 2024
Required parameters	As described in W/O	Date of Issue of report	18- FEBRUARY - 2024
EMIL reference	WO No.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	36.8
4	pH	-	7.1
5	Total Suspended Solids	mg/L	8.4
6	Total Dissolved Solid	mg/L	453
7	Biochemical Oxygen Demand at 27°C	mg/L	7.7
8	Chemical Oxygen Demand	mg/L	7.2
9	Total Residual Chlorine	mg/L	6.9
10	Alkalinity	mg/L	142
11	Calcium	mg/L	36.7
12	Magnesium	mg/L	29.7

13	Total Hardness as CaCO ₃	mg/L	64
14	Electrical Conductivity	µs/cm	185
15	Turbidity	NTU	7.1
16	Arsenic as As	µg/L	1.4
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	3.87
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	8.0
21	Fluoride as F	mg/L	0.225
22	Iron as Fe	mg/L	18.6
23	Nitrate	mg/L	7.1
24	Sodium as Na	mg/L	6.23
25	Potassium as K	mg/L	1.23
26	Sulfate	mg/L	0.485
27	Nitrate as NO ₃	mg/L	4.8
28	Total Silica as SiO ₂	mg/L	11.64
29	Total dissolved Solid	mg/L	487

Location: BAITARANI RIVER (NEAR PLANT AREA)

Lab Sample Code: OCPL/SW/02/02/24		Report No.-OCPL/EMIL/02/02/24	
Sample description:		Test method	APHA22 nd edition
Sample location	BAITARANI RIVER (NEAR PLANT AREA)	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	10- FEBRUARY - 2024
Sample quantity	1 no.sX1 Lit.	Date of sample received	11- FEBRUARY - 2024
Sample type	Surface Water	Date of Analysis	11- FEBRUARY - 2024
Required parameters	As described in W/O	Date of Issue of report	18- FEBRUARY - 2024
EMIL reference	WONo.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	29.5
4	pH	-	7.1
5	Total Suspended Solids	mg/L	9.2
6	Total Dissolved Solid	mg/L	498
7	Biochemical Oxygen Demand at 27°C	mg/L	6.4
8	Chemical Oxygen Demand	mg/L	5.3
9	Total Residual Chlorine	mg/L	3.12
10	Alkalinity	mg/L	65.1
11	Calcium	mg/L	10.23
12	Magnesium	mg/L	7.7

13	Total Hardness asCaCO3	mg/L	45.6
14	Electrical Conductivity	µs/cm	185
15	Turbidity	NTU	12.85
16	Arsenic as As	µg/L	0.51
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	4.7
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	18.45
21	Fluoride as F	mg/L	0.43
22	Iron as Fe	mg/L	26.2
23	Nitrate	mg/L	3.1
24	Sodium as Na	mg/L	1.68
25	Potassium as K	mg/L	2.33
26	Sulfate	mg/L	<0.01
27	Nitrate as NO3	mg/L	3.1
28	Total Silica as SiO2	mg/L	1.65
29	Total dissolved Solid	mg/L	496

Location: RESERVOIR POND INSIDE PLANT PREMISES

Lab Sample Code: OCPL/SW/03/02/24		Report No.-OCPL/EMIL/03/02/24	
Sample description:		Test method	APHA22 nd edition
Sample location	RESERVOIR POND INSIDE PLANT PREMISES	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	10- FEBRUARY - 2024
Sample quantity	1 no.sX1Lit.	Date of sample received	11- FEBRUARY - 2024
Sample type	Surface Water	Date of Analysis	11- FEBRUARY - 2024
Required parameters	As described in W/O	Date of Issue of report	18- FEBRUARY - 2024
EMIL reference	WONo.- 1060/ADMIN/5500004339	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	28.6
4	pH	-	7.2
5	Total Suspended Solids	mg/L	39.2
6	Total Dissolved Solid	mg/L	569
7	Biochemical Oxygen Demand at 27°C	mg/L	35.8
8	Chemical Oxygen Demand	mg/L	15.2
9	Total Residual Chlorine	mg/L	12.4
10	Alkalinity	mg/L	169
11	Calcium	mg/L	45
12	Magnesium	mg/L	28.6

13	Total Hardness as CaCO ₃	mg/L	165.5
14	Electrical Conductivity	µs/cm	268
15	Turbidity	NTU	32.3
16	Arsenic as As	µg/L	3.5
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	16.1
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	<0.5
21	Fluoride as F	mg/L	1.45
22	Iron as Fe	mg/L	35.2
23	Nitrate	mg/L	4.1
24	Sodium as Na	mg/L	9.5
25	Potassium as K	mg/L	2.83
26	Sulfate	mg/L	5.6
27	Nitrate as NO ₃	mg/L	7.3
28	Total Silica as SiO ₂	mg/L	8.5
29	Total dissolved Solid	mg/L	597

Location: DALKINALA, NEAR PLANT

Lab Sample Code: OCPL/SW/04/02/24		Report No.-OCPL/EMIL/04/02/24	
Sample description:		Test method	APHA22 nd edition
Sample location	DALKI NALA, NEARPLANT	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	10- FEBRUARY - 2024
Sample quantity	1no.sX1Lit.	Date of sample received	11- FEBRUARY - 2024
Sample type	Surface Water	Date of Analysis	11- FEBRUARY - 2024
Required parameters	As described in W/O	Date of Issue of report	18- FEBRUARY - 2024
EMIL reference	WONo.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	27.8
4	pH	-	7.1
5	Total Suspended Solids	mg/L	19.2
6	Total Dissolved Solid	mg/L	659
7	Biochemical Oxygen Demand at 27°C	mg/L	15.3
8	Chemical Oxygen Demand	mg/L	6.2
9	Total Residual Chlorine	mg/L	2.5
10	Alkalinity	mg/L	166
11	Calcium	mg/L	49
12	Magnesium	mg/L	21.2
13	Total Hardness as CaCO ₃	mg/L	88.5

14	Electrical Conductivity	µs/cm	258
15	Turbidity	NTU	25
16	Arsenic as As	µg/L	0.36
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	0.48
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	17.2
21	Fluoride as F	mg/L	0.52
22	Iron as Fe	mg/L	29.6
23	Nitrate	mg/L	7.2
24	Sodium as Na	mg/L	6.6
25	Potassium as K	mg/L	4.5
26	Sulfate	mg/L	3.3
27	Nitrate as NO ₃	mg/L	8.22
28	Total Silica as SiO ₂	mg/L	6.5
29	Total dissolved Solid	mg/L	632

Location: NADIGUTH

Lab Sample Code: OCPL/SW/05/02/24		Report No.-OCPL/EMIL/05/02/24	
Sample description:		Test method	APHA22 nd edition
Sample location	NADIGUTH	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	10- FEBRUARY - 2024
Sample quantity	1no.s X 1Lit.	Date of sample received	11- FEBRUARY - 2024
Sample type	Surface Water	Date of Analysis	11- FEBRUARY - 2024
Required parameters	As described in W/O	Date of Issue of report	18- FEBRUARY - 2024
EMIL reference	WO No.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSIS RESULT

Sl. No.	TEST PARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	29.4
4	pH	-	7.1
5	Total Suspended Solids	mg/L	14.1
6	Total Dissolved Solid	mg/L	689
7	Biochemical Oxygen Demand at 27°C	mg/L	12.8
8	Chemical Oxygen Demand	mg/L	5.6
9	Total Residual Chlorine	mg/L	6.2
10	Alkalinity	mg/L	65.4
11	Calcium	mg/L	9.1
12	Magnesium	mg/L	7.1
13	Total Hardness as CaCO ₃	mg/L	45

14	Electrical Conductivity	µs/cm	95.2
15	Turbidity	NTU	16.8
16	Arsenic as As	µg/L	<0.5
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	0.64
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	<0.5
21	Fluoride as F	mg/L	0.44
22	Iron as Fe	mg/L	26
23	Nitrate	mg/L	4.43
24	Sodium as Na	mg/L	6.24
25	Potassium as K	mg/L	3.4
26	Sulfate	mg/L	8.1
27	Nitrate as NO ₃	mg/L	4.2
28	Total Silica as SiO ₂	mg/L	4.8
29	Total dissolved Solid	mg/L	594

GROUND WATER ANALYSIS REPORT FOR THE MONTH OF FEBRUARY -2024

**GROUND WATER MONITORING REPORT SUMMARY SHEET OF SAMPLING
(GROUNDWATER):**

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	MALDAVILLAGE	11- FEBRUARY - 2024	OCPL/GW/01/02/24
2.	Sample02	NEDIGUTH	11- FEBRUARY - 2024	OCPL/GW/02/02/24
3.	Sample03	TALASAH	11- FEBRUARY - 2024	OCPL/GW/03/02/24
4.	Sample04	PLANT-1(Near Canteen)	11- FEBRUARY - 2024	OCPL/GW/04/02/24
5.	Sample05	PLANT-2(SLIMEPOND)	11- FEBRUARY - 2024	OCPL/GW/05/02/24

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

Sl. No.	TESTPARAMETER	UOM	Results					BIS Desirable limit	Permissible limit with the absence of alternate source
			MALDA VILLAGE	NEDIGUTH	TALASAHI	PLANT- 1 (Near Canteen)	PLANT-2 (SLIMEPOND)		
1	Colour	Pt-Co	1.1	1.0	1.1	1.2	1.2		
2	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		
3	Temperature	°C	28.3	29.8	28	27.6	28.3		
4	pH	-	6.8	7.0	7.2	6.9	7.1	6.5-8.5	No relaxation
5	Total Hardness (as CaCO ₃)	mg/L	63.1	58.3	52.3	58.2	48.6	300	600
6	Calcium	mg/L	8.9	8.2	10.6	12.1	10.8	75	200
7	Magnesium	mg/L	1.1	3.2	4.8	3.8	1.9	30	No relaxation
8	Chloride	mg/L	15.6	15.5	14.8	11.2	23.3	250	1000
9	Alkalinity	mg/L	19.3	14.1	22	11.4	20.3	200	600
10	Electrical Conductivity	µs/cm	55	59.3	62.3	69.3	78.2	--	--
11	Arsenic as As	µg/L	0.05	ND	0.02	ND	0.1	10	No relaxation
12	Lead as Pb	µg/L	ND	0.33	0.25	0.04	ND	10	No relaxation
13	Cadmium as Cd	µg/L	ND	ND	ND	0.03	0.05	3.0	No relaxation
14	Total Chromium as Cr	µg/L	0.21	ND	0.22	0.05	0.048	50	No relaxation

15	Zinc as Zn	µg/L	92.3	95.2	78.5	77.3	101.3	5000	No relaxation
16	Fluoride as F	mg/L	ND	0.02	ND	0.02	ND	1.0	1.9
17	Iron as Fe	µg/L	16.5	15.2	30.3	45.6	35.2	300	1000
18	Nitrate	mg/L	1.4	1.2	1.0	1.02	1.3	45	100
19	Sodium as Na	mg/L	2.8	3.2	4.4	4.9	5.1	150	No relaxation
20	Potassium as K	mg/L	ND	0.04	0.1	0.1	0.2	12	No relaxation
21	Sulfate	mg/L	ND	ND	0.05	0.02	0.4	200	400
22	Total Silica as SiO ₂	mg/L	0.6	ND	0.66	ND	1.2	--	--
23	Total suspended Solid	mg/L	0.15	1.2	1.1	0.28	1.2	--	--
24	Total dissolved Solid	mg/L	89	75.4	72.9	95.3	82.4	250	2000
25	Turbidity	NTU	0.2	0.4	0.45	0.5	0.6	5	10

Sampling By: Mr. Hrusikesh Das

GROUND WATER LEVEL ANALYSIS REPORT FOR THE MONTH OF FEBRUARY - 2024

**REPORT ON GROUND WATER LEVEL ANALYSIS FOR THE MONTH OF
FEBRUARY -2024**

SUMMARY SHEET OF MONITORING:

SI No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
6.	Sample01	MALDA VILLAGE	14- FEBRUARY - 2024	OCPL/GWL/01/02/24
7.	Sample02	NEDIGUTH	14- FEBRUARY - 2024	OCPL/GWL/02/02/24
8.	Sample03	TALASAH	14- FEBRUARY - 2024	OCPL/GWL/03/02/24
9.	Sample04	PLANT-1(Near Canteen)	14- FEBRUARY - 2024	OCPL/GWL/04/02/24
10.	Sample05	PLANT-2(SLIME POND)	14- FEBRUARY - 2024	OCPL/GWL/05/02/24

MONITORING RESULT

SI No.	Name of the location	Type of well	Dia. (m)	Depth of the well (m)	Depth of the water table BGL(M)	Remarks
1	MALDA VILLAGE	Dug well	0.83	8.12	7.78	--
2	NEDIGUTH	Dug well	1.22	9.44	7.1	--
3	TALASAH	Dug well	1.0	8.6	7.1	--
4	PLANT-1(Near Canteen)	Bore-well	0.1	65	12.2	--
5	PLANT-2(SLIME POND)	Bore-well	0.1	61	37.9	--

Sampling By: Mr. Hrusikesh Das

STACK MONITORING REPORT FOR THE MONTH OF FEBRUARY - 2024

**REPORT ON STACK MONITORING FOR THE MONTH OF
FEBRUARY -2024**

LOCATION AND MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
DGStack-1		✓					
DGStack-2		✓					
Stack-1 (Pellet Plant Process Stack)			✓				
Stack-2 (Pellet Plant Dedusting Stack)			✓				

TEST REPORT

Name & Address of the Client:	Report No.: OCPL/BBS/SM/02/24-01
M/S ESSEL MINING & INDUSTRIES LTD.	Date :05.02.2024
Keonjhar, Odisha, India	Sample No.: OCPL/EMIL/SM/02-24/01
	Sample Description: DG Flue Gas Monitoring
	Date of Sampling: 05.02.2024

ANALYSIS RESULT

A.	<u>General information about stack:</u>	
1.	Stack connected to	: DG-1
2.	Emission due to	: Burning of Diesel
3.	Material of construction of stack	: MS
4.	Shape of Stack	: Circular
5.	Serial no.	: N15E226771
6.	Boiler/Furnace/DG/Kiln Capacity	: 1250 KVA

B.	<u>Physical characteristics of stack:</u>			
1.	Height of the Stack from Ground level	:9m		
2.	Diameter of the stack at sampling point	:400mm		
3.	Height of the Sampling Point from Ground level	:7m		
4.	Type	: HCKI634Z1		
C.	<u>Analysis/Characteristic of stack:</u>			
1.	Fuel used : LDO	2. Fuel Consumption: NA		
D.	<u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Limit</u>	<u>Method</u>
1.	Temperature of Emission(°C)	77.8	--	IS11255(PartIII),2008RA 2018
2.	Barometric pressure (mm of Hg)	284	--	USEPAPart2- 25/09/1996
3.	Velocity of gas(m/sec.)	12.5	--	IS11255(PartIII),2008RA 2018
4.	Quantity of Gas Flow(Nm ³ /hr)	668	--	IS11255(PartIII),2008RA 2018
5.	Concentration of Moisture(%)	<2.0	--	USEPA(Part-4)
6.	Concentration of Oxygen(%v/v)	8.3	--	IS13270:1992, Ref:2009
7.	Concentration of Carbon Monoxide (mg/Nm ³)	23.2	--	IS13270:1992, Ref:2009
8.	Concentration of Carbon Dioxide(%v/v)	6.4	--	IS13270:1992, Ref:2009
9.	Concentration of Sulphur Dioxide(mg/Nm ³)	122.1	600	IS11255(PartII),1985RA 2014
10.	Concentration of Nitrogen Dioxide(mg/Nm ³)	78.2	300	IS11255(Part7),2005RA 2017

11.	Concentration of Particulate Matters(mg/Nm ³)	38.5	50	IS11255(PartI):1985, RA2014
E.	<u>Pollution control device</u> Details of pollution control devices attached with the stack :NA			
F.	Remarks: Nil			

Sampling By: Mr. Hrusikesh Das

TESTREPORT

Name & Address of the Client:	Report No.: OCPL/BBS/SM/02/24-02
M/SESSEL MINING & INDUSTRIES LTD	Date :05.02.2024
Keonjhar, Odisha, India	Sample No.: OCPL/EMIL/SM/02-24/02
	Sample Description: DG Flue Gas Monitoring
	Date of Sampling :05.02.2024

ANALYSISRESULT

A.	<u>General information about stack:</u>			
1.	Stack connected to	:DG-2		
2.	Emission due to	:Burning of Diesel		
3.	Material of construction of stack	:MS		
4.	Shape of Stack	:Circular		
5.	Serial no.	:N15H319963		
6.	Boiler/Furnace/DG/Kiln Capacity	:1250KVA		
B.	<u>Physical characteristics of stack:</u>			
1.	Height of the Stack from Ground level	:9m		
2.	Diameter of the stack at sampling point	:400mm		
3.	Height of the Sampling Point from Ground level	:7m		
4.	Type	:HCKI634Z1		
C.	<u>Analysis/Characteristic of stack:</u>			
1.	Fuel used : LDO	2.FuelConsumption:NA		
D .	<u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Limit</u>	<u>Method</u>
1.	Temperature of Emission(°C)	82.1		IS11255(Part III),2008RA2018

2.	Barometric pressure (mm of Hg)	323		USEPA Part 2-25/09/1996
3.	Velocity of gas (m/sec.)	32.1		IS11255(Part III),2008RA2018
4.	Quantity of Gas Flow(Nm ³ /hr)	1627		IS11255(Part III),2008RA2018
5.	Concentration of Moisture(%)	<2.0		USEPA(Part-4)
6.	Concentration of Oxygen(%v/v)	8.6		IS13270:1992,Ref:2009
7.	Concentration of Carbon Monoxide(mg/Nm ³)	26.1		IS13270:1992,Ref:2009
8.	Concentration of Carbon Dioxide(%v/v)	12.3		IS13270:1992,Ref:2009
9.	Concentration of Sulphur Dioxide(mg/Nm ³)	165	600	IS11255(Part II),1985RA2014
10.	Concentration of Nitrogen Dioxide(mg/Nm ³)	75.2	300	IS11255(Part 7),2005RA2017
11.	Concentration of Particulate Matters (mg/Nm ³)	35.3	50	IS11255(Part I):1985,RA2014
E.	<u>Pollution control device</u> Details of pollution control devices attached with the stack :NA			
F.	Remarks: Nil			

Sampling By: Mr. Hrusikesh Das

TESTREPORT

Stack No.	Stack Description	Emission due to	Date of Sampling
Stack-1	Pellet plant process stack	Burning of furnace oil	06.02.2024
Stack-2	Pellet plant de-dusting stack	Electricity	06.02.2024

ANALYSISRESULT

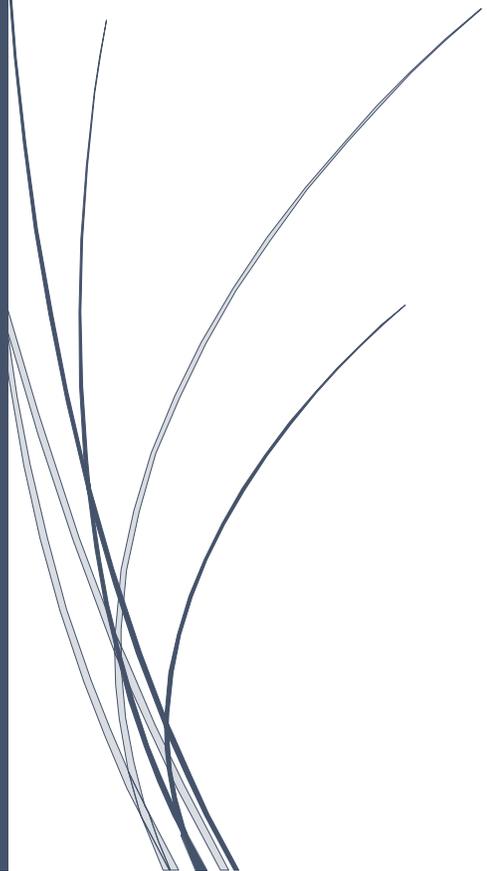
Stack No.	Stack Description	Stack height (in meter)	Emission M ³ /Hr.	Temperature(°C)	VelocityNM ³ /Hr
1	Pellet plant process stack	80	7159	95.3	35658
2	Pellet plant de-dusting stack	60	6562	94.2	36492

Stack No.	Stack Description	Carbon monoxide(CO) Mg/nm ³	Carbon dioxide(CO ₂) %v/v	PM Concentration Mg/nm ³		SO ₂ Mg/nm ³	NO ₂ Mg/nm ³
				PM10	PM 2.5		
Norms as per SPCB		1	NA	150	150	NA	NA
1	Pellet plant process stack	<0.2	8.3	139	122.5	182.4	78.3
2	Pellet plant de-dusting stack	<0.2	7.8	122.7	142.5	178.5	65.1

- Measurement of PM has been done as per IS Code IS: 11255 Part 1.
- No. of the calibrated stack kit used: Thermo Environmental Instruments TEI-401



ENVIRONMENTAL MONITORING REPORT
FOR THE MONTH OF MARCH-2024
FOR ESSELMINING & INDUSTRIES LTD.



M/S ESSEL MINING & INDUSTRIES LTD.

VILL-BASANTPUR, PO-DUBUNA, TEHSIL-
JHUMPURA, KEONJHAR

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AMBIENT AIR MONITORING REPORT FOR THE MONTH OF MARCH -2024

AMBIENT AIR QUALITY MONITORING DATA

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near ECR-1		✓				✓	
Near Canteen		✓				✓	
Near Admin Building		✓				✓	
Nadiguth Village			✓				✓

SUMMARY SHEET OF SAMPLING

SINo.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	Near ECR-1	01.03.2024	OCPL/AAQ/EMIL/01/03/24
2.	Sample02	Near Canteen	01.03.2024	OCPL/AAQ/EMIL/02/03/24
3.	Sample03	Near Admin Building	01.03.2024	OCPL/AAQ/EMIL/03/03/24
4.	Sample04	Nedigutha Village	02.03.2024	OCPL/AAQ/EMIL/04/03/24
5.	Sample05	Near ECR-1	04.03.2024	OCPL/AAQ/EMIL/05/03/24
6.	Sample06	Near Canteen	04.03.2024	OCPL/AAQ/EMIL/06/03/24
7.	Sample07	Near Admin Building	04.03.2024	OCPL/AAQ/EMIL/07/03/24
8.	Sample08	Nedigutha Village	05.03.2024	OCPL/AAQ/EMIL/08/03/24
9.	Sample09	Near ECR-1	08.03.2024	OCPL/AAQ/EMIL/09/03/24
10.	Sample10	Near Canteen	08.03.2024	OCPL/AAQ/EMIL/10/03/24
11.	Sample11	Near Admin Building	08.03.2024	OCPL/AAQ/EMIL/11/03/24
12.	Sample12	Nedigutha Village	09.03.2024	OCPL/AAQ/EMIL/12/03/24
13.	Sample13	Near ECR-1	11.03.2024	OCPL/AAQ/EMIL/13/03/24
14.	Sample14	Near Canteen	11.03.2024	OCPL/AAQ/EMIL/14/03/24
15.	Sample15	Near Admin Building	11.03.2024	OCPL/AAQ/EMIL/15/03/24
16.	Sample16	Nedigutha Village	12.03.2024	OCPL/AAQ/EMIL/16/03/24

17.	Sample17	NearECR-1	15.03.2024	OCPL/AAQ/EMIL/17/03/24
18.	Sample18	Near Canteen	15.03.2024	OCPL/AAQ/EMIL/18/03/24
19.	Sample19	Near Admin Building	15.03.2024	OCPL/AAQ/EMIL/19/03/24
20.	Sample20	Nedigutha Village	16.03.2024	OCPL/AAQ/EMIL/20/03/24
21.	Sample21	NearECR-1	18.03.2024	OCPL/AAQ/EMIL/21/03/24
22.	Sample22	Near Canteen	18.03.2024	OCPL/AAQ/EMIL/22/03/24
23.	Sample23	Near Admin Building	18.03.2024	OCPL/AAQ/EMIL/23/03/24
24.	Sample24	Nedigutha Village	19.03.2024	OCPL/AAQ/EMIL/24/03/24
25.	Sample25	NearECR-1	22.03.2024	OCPL/AAQ/EMIL/25/03/24
26.	Sample26	Near Canteen	22.03.2024	OCPL/AAQ/EMIL/26/03/24
27.	Sample27	Near Admin Building	22.03.2024	OCPL/AAQ/EMIL/27/03/24
28.	Sample28	Nedigutha Village	23.03.2024	OCPL/AAQ/EMIL/28/03/24
29.	Sample29	NearECR-1	25.03.2024	OCPL/AAQ/EMIL/29/03/24
30.	Sample30	Near Canteen	25.03.2024	OCPL/AAQ/EMIL/30/03/24
31.	Sample31	Near Admin Building	25.03.2024	OCPL/AAQ/EMIL/31/03/24
32.	Sample32	Nedigutha Village	26.03.2024	OCPL/AAQ/EMIL/32/03/24
33.	Sample33	NearECR-1	29.03.2024	OCPL/AAQ/EMIL/33/03/24
34.	Sample34	Near Canteen	29.03.2024	OCPL/AAQ/EMIL/34/03/24
35.	Sample35	Near Admin Building	29.03.2024	OCPL/AAQ/EMIL/35/03/24
36.	Sample36	Nedigutha Village	30.03.2024	OCPL/AAQ/EMIL/36/03/24

LOCATION: NEAR ECR-1

Parameters	Limit(µg/M ³)	Date									
		01.03.24	04.03.24	08.03.24	11.03.24	15.03.24	18.03.24	22.03.24	25.03.24	29.03.24	Avg
PM10	100	88.50	80.15	61.77	59.96	52.28	52.02	53.06	50.42	51.15	61.03
PM2.5	60	58.64	59.77	46.17	42.84	41.81	40.50	40.48	41.54	42.84	46.07
Sulphur Dioxide (SO ₂)	80	37.29	36.13	27.31	20.33	25.57	21.46	20.69	26.38	28.27	27.05
Oxide of Nitrogen (NO ₂)	80	32.21	30.06	20.41	28.09	23.57	23.79	22.23	23.61	22.62	25.05
Lead(Pb)	1	ND	ND								
Carbon Monoxide (CO) (8Hrs)	2000	174.20	173.74	145.93	142.82	142.85	148.39	148.81	147.55	145.54	152.20
Ozone(O ₃)	180	ND	ND								
Ammonia (NH ₃)	400	16.66	14.35	12.01	11.74	12.90	12.78	13.49	11.13	11.13	12.91
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyrene (BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic(As) (ng/m ³)	06	ND	ND								
Nickel(Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5}, SO₂, NO₂, &CO has been done as per the IS Code IS:5182 Part IV, II, VI, X&XVII respectively

LOCATION: NEAR CANTEEN

Parameters	Limit (µg/ M ³)	DATE									
		01.03.24	04.03.24	08.03.24	11.03.24	15.03.24	18.03.24	22.03.24	25.03.24	29.03.24	Avg
PM10	100	89.23	80.67	62.34	60.98	52.80	52.73	53.62	51.27	52.23	61.76
PM2.5	60	59.62	60.82	47.04	43.93	42.67	41.04	41.63	42.56	44.62	47.10
Sulphur Dioxide (SO ₂)	80	38.34	36.95	28.23	20.90	26.43	22.41	21.38	27.39	28.34	27.82
Oxide of Nitrogen (NO ₂)	80	32.91	31.25	21.31	28.82	24.44	24.55	23.03	24.79	22.91	26.00
Lead (Pb)	1.0	ND	ND								
Carbon Monoxide (CO)(8Hrs)	2000	173.50	172.89	145.38	141.69	141.60	147.82	148.25	146.50	145.31	151.44
Ozone(O ₃)	180	ND	ND								
Ammonia (N H ₃)	400	36.45	37.36	19.15	18.90	17.48	17.25	17.98	16.68	18.89	22.24
Benzene (C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyrene (BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic (As) (ng/m ³)	06	ND	ND								
Nickel (Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5}, SO₂, NO₂, &CO has been done as per the IS Code IS:5182

PartIV, II, VI, X&XVII respectively

LOCATION: NEAR ADMIN BUILDING

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	DATE									Avg
		01.03.24	04.03.24	08.03.24	11.03.24	15.03.24	18.03.24	22.03.24	25.03.24	29.03.24	
PM10	100	78.23	81.18	64.00	63.11	54.40	54.30	55.50	52.50	52.90	61.79
PM2.5	60	60.16	62.04	48.68	45.60	44.66	42.24	43.94	44.80	49.01	49.01
Sulphur Dioxide (SO ₂)	80	40.38	38.47	29.62	22.01	28.55	24.07	23.36	28.73	29.40	29.40
Oxide of Nitrogen(NO ₂)	80	34.75	33.02	22.42	30.87	25.87	26.51	25.00	26.33	28.10	28.01
Lead(Pb)	1.0	ND	ND								
Carbon Monoxide (CO)(8Hrs)	2000	165.45	169.11	132.98	141.24	132.69	135.47	130.37	137.02	139.00	142.59
Ozone(O ₃)	180	ND	ND								
Ammonia(NH ₃)	400	33.80	34.97	17.30	14.91	15.13	16.64	17.15	15.04	19.79	20.53
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a) Pyrene(BaP)	01	ND	ND								
Particulate phase only(ng/m ³)											
Arsenic(As) (ng/m ³)	06	ND	ND								
Nickel(Ni) (ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀&PM_{2.5}, SO₂,NO₂,&CO has been done as per the IS Code IS:5182

Part IV,II,VI,X&XVII respectively

LOCATION: NEDIGUTHA VILLAGE

Parameters	Limit ($\mu\text{g}/\text{M}^3$)	DATE									
		02.03.24	05.03.24	09.03.24	12.03.24	16.03.24	19.03.24	23.03.24	25.03.24	30.03.24	Avg
PM10	100	44.97	45.76	37.04	37.82	37.25	37.31	36.10	35.62	33.98	38.42
PM2.5	60	43.95	45.79	34.79	36.68	34.21	33.89	34.47	34.22	34.75	36.97
Sulphur Dioxide (SO ₂)	80	20.06	19.91	18.22	15.12	16.61	14.62	15.70	18.77	14.38	17.04
Oxide of Nitrogen (NO ₂)	80	18.85	18.33	16.05	15.21	14.38	13.96	13.59	15.85	12.28	15.38
Lead(Pb)	1.0	ND	ND								
Carbon Monoxide (CO)(8Hrs)	2000	147.19	149.04	135.74	134.62	136.52	137.93	131.59	134.09	135.84	138.06
Ozone(O ₃)	180	ND	ND								
Ammonia(NH ₃)	400	13.00	14.23	11.00	12.04	11.95	12.85	11.83	12.52	11.93	12.37
Benzene(C ₆ H ₆)	05	ND	ND								
Benzo(a)Pyrene(BaP) Particulate phase only(ng/m ³)	01	ND	ND								
Arsenic(As)(ng/m ³)	06	ND	ND								
Nickel(Ni)(ng/m ³)	20	ND	ND								

*ND: Not Detectable

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

Measurement of PM₁₀& PM_{2.5}, SO₂, NO₂, &CO has been done as per the IS Code IS: 5182 PartIV,II,VI,X&XVII respectively

NOISE LEVEL MONITORING REPORT FOR THE MONTH OF MARCH-2024

NOISE LEVEL MONITORING RESULT (IN DBA) FOR THE MONTH OF MARCH

LOCATION AND WEEKLY MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
Near Main Gate Area		✓				✓	
Near Back Gate Area		✓				✓	
Near Pellet Plant Area		✓				✓	
Near IOBP Area		✓				✓	

SUMMARY SHEET OF SAMPLING

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	Near Main Gate Area	01.03.2024	OCPL/NL/EMIL/01/03/24
2.	Sample02	Near Back Gate Area	01.03.2024	OCPL/NL/EMIL/02/03/24
3.	Sample03	Near Pellet Plant Area	01.03.2024	OCPL/NL/EMIL/03/03/24
4.	Sample04	Near IOBP Area	01.03.2024	OCPL/NL/EMIL/04/03/24
5.	Sample05	Near Main Gate Area	04.03.2024	OCPL/NL/EMIL/05/03/24
6.	Sample06	Near Back Gate Area	04.03.2024	OCPL/NL/EMIL/06/03/24
7.	Sample07	Near Pellet Plant Area	04.03.2024	OCPL/NL/EMIL/07/03/24
8.	Sample08	Near IOBP Area	04.03.2024	OCPL/NL/EMIL/08/03/24
9.	Sample09	Near Main Gate Area	08.03.2024	OCPL/NL/EMIL/09/03/24
10.	Sample10	Near Back Gate Area	08.03.2024	OCPL/NL/EMIL/10/03/24
11.	Sample11	Near Pellet Plant Area	08.03.2024	OCPL/NL/EMIL/11/03/24
12.	Sample12	Near IOBP Area	08.03.2024	OCPL/NL/EMIL/12/03/24
13.	Sample13	Near Main Gate Area	11.03.2024	OCPL/NL/EMIL/13/03/24
14.	Sample14	Near Back Gate Area	11.03.2024	OCPL/NL/EMIL/14/03/24
15.	Sample15	Near Pellet Plant Area	11.03.2024	OCPL/NL/EMIL/15/03/24
16.	Sample16	Near IOBP Area	11.03.2024	OCPL/NL/EMIL/16/03/24

17.	Sample17	Near Main Gate Area	15.03.2024	OCPL/NL/EMIL/17/03/24
18.	Sample18	Near Back Gate Area	15.03.2024	OCPL/NL/EMIL/18/03/24
19.	Sample19	Near Pellet Plant Area	15.03.2024	OCPL/NL/EMIL/19/03/24
20.	Sample20	Near IOBP Area	15.03.2024	OCPL/NL/EMIL/20/03/24
21.	Sample21	Near Main Gate Area	18.03.2024	OCPL/NL/EMIL/21/03/24
22.	Sample22	Near Back Gate Area	18.03.2024	OCPL/NL/EMIL/22/03/24
23.	Sample23	Near Pellet Plant Area	18.03.2024	OCPL/NL/EMIL/23/03/24
24.	Sample24	Near IOBP Area	18.03.2024	OCPL/NL/EMIL/24/03/24
25.	Sample25	Near Main Gate Area	22.03.2024	OCPL/NL/EMIL/25/03/24
26.	Sample26	Near Back Gate Area	22.03.2024	OCPL/NL/EMIL/26/03/24
27.	Sample27	Near Pellet Plant Area	22.03.2024	OCPL/NL/EMIL/27/03/24
28.	Sample28	Near IOBP Area	22.03.2024	OCPL/NL/EMIL/28/03/24
29.	Sample29	Near Main Gate Area	25.03.2024	OCPL/NL/EMIL/29/03/24
30.	Sample30	Near Back Gate Area	25.03.2024	OCPL/NL/EMIL/30/03/24
31.	Sample31	Near Pellet Plant Area	25.03.2024	OCPL/NL/EMIL/31/03/24
32.	Sample32	Near IOBP Area	25.03.2024	OCPL/NL/EMIL/32/03/24
33.	Sample33	Near Main Gate Area	29.03.2024	OCPL/NL/EMIL/33/03/24
34.	Sample34	Near Back Gate Area	29.03.2024	OCPL/NL/EMIL/34/03/24
35.	Sample35	Near Pellet Plant Area	29.03.2024	OCPL/NL/EMIL/35/03/24
36.	Sample36	Near IOBP Area	29.03.2024	OCPL/NL/EMIL/36/03/24

Date of Monitoring: 01.03.2024

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day3.00-4.00pm	Evening 6.00-7.00pm	Night1 0.00-11.00pm
1	Near Main Gate Area	63.97	66.80	53.88	49.17	31.88
2	Near Back Gate Area	42.53	46.37	38.08	35.57	32.24
3	Near Pellet Plant Area	65.21	66.44	38.00	62.83	25.85
4	Near IOBP Area	56.49	58.69	37.92	47.67	35.58
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:04.03.2024

S.L No	Station	Day 6.00-7.00am	Day 10.00- 11.00am	Day 3.00- 4.00pm	Evening 6.00-7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	55.22	63.30	56.43	61.82	36.55
2	Near Back Gate Area	39.17	51.04	49.56	45.29	28.82
3	Near Pellet Plant Area	56.18	54.95	47.03	51.62	35.14
4	Near IOBP Area	58.39	57.18	43.05	45.80	29.42
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:08.03.2024

S.L No	Station	Day 6.00-7.00am	Day 10.00- 11.00am	Day 3.00- 4.00pm	Evening 6.00-7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	40.21	42.67	43.69	37.74	30.79
2	Near Back Gate Area	39.77	43.31	40.25	39.50	32.92
3	Near Pellet Plant Area	40.24	42.37	43.29	33.85	30.27
4	Near IOBP Area	40.62	44.07	43.13	36.79	31.94
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:11.03.2024

S.L No	Station	Day 6.00-7.00am	Day 10.00- 11.00am	Day 3.00- 4.00pm	Evening 6.00-7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	41.35	45.43	44.45	38.90	31.95
2	Near Back Gate Area	40.71	48.90	40.84	40.30	34.12
3	Near Pellet Plant Area	41.25	42.93	44.28	34.91	31.11
4	Near IOBP Area	41.18	45.02	43.91	37.62	33.10
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: 15.03.2024

S.L No	Station	Day 6.00-7.00am	Day1 0.00- 11.00am	Day 3.00- 4.00pm	Evening6.00 -7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	41.07	43.80	44.64	38.37	31.68
2	Near Back Gate Area	40.56	48.83	44.70	40.23	33.52
3	Near Pellet Plant Area	41.19	44.91	44.30	34.99	31.19
4	Near IOBP Area	41.63	45.14	44.86	37.40	32.75
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:18.03.2024

S.L No	Station	Day 6.00-7.00am	Day 10.00-11.00am	Day 3.00-4.00pm	Evening6.00-7.00pm	Night 10.00-11.00pm
1	Near Main Gate Area	41.13	45.86	44.39	38.86	31.70
2	Near Back Gate Area	40.45	44.14	44.56	40.40	33.89
3	Near Pellet Plant Area	40.57	48.10	44.54	34.68	31.08
4	Near IOBP Area	40.94	44.93	44.83	37.85	33.10
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:22.03.2024

S.L No	Station	Day 6.00-7.00am	Day 10.00- 11.00am	Day 3.00- 4.00pm	Evening 6.00-7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	41.08	48.58	44.30	38.71	31.96
2	Near Back Gate Area	40.28	44.21	44.60	40.58	34.03
3	Near Pellet Plant Area	40.58	45.01	44.29	34.96	31.14
4	Near IOBP Area	40.28	44.79	44.75	37.48	33.00
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:25.03.2024

S.L No	Station	Day 6.00-7.00am	Day 10.00- 11.00am	Day 3.00- 4.00pm	Evening 6.00-7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	40.87	45.28	44.52	38.66	31.46
2	Near Back Gate Area	40.33	48.86	44.38	40.17	33.96
3	Near Pellet Plant Area	39.55	43.19	44.66	34.64	31.04
4	Near IOBP Area	40.38	44.74	44.66	37.99	32.58
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:29.03.2024

S.L No	Station	Day 6.00-7.00am	Day 10.00- 11.00am	Day 3.00- 4.00pm	Evening 6.00-7.00pm	Night 10.00- 11.00pm
1	Near Main Gate Area	40.92	45.45	44.46	38.92	31.58
2	Near Back Gate Area	40.67	48.89	45.44	40.18	33.85
3	Near Pellet Plant Area	39.02	43.27	44.33	34.74	31.11
4	Near IOBP Area	38.59	44.86	42.36	37.71	32.94
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 REPORT FOR THE MONTH OF MARCH-2024

SURFACE WATER ANALYSIS FOR THE MONTH OF MARCH 2024
SUMMARY SHEET OF SAMPLING(SURFACE WATER):

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	BAITARANI RIVER (DHANURJAYPUR)	07- MARCH-2024	OCPL/SW/01/03/24
2.	Sample02	BAITARANI RIVE (NEARPLANTAREA)	07- MARCH-2024	OCPL/SW/02/03/24
3.	Sample03	RESERVOUR POND INSIDEPLANT	07- MARCH-2024	OCPL/SW/03/03/24
4.	Sample04	DALKI NALA NEAR PLANT	07- MARCH-2024	OCPL/SW/04/03/24
5.	Sample05	NADIGUTH	07- MARCH-2024	OCPL/SW/05/03/24

Location: BAITARANI RIVER(DHANURJAYPUR)

Lab Sample Code: OCPL/SW/01/03/24		Report No.-OCPL/EMIL/01/03/24	
Sample description:		Test method	APHA22 nd edition
Sample location	BAITARANIRIVER (DHANURJAYPUR)	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07- MARCH-2024
Sample quantity	1no.sX1Lit.	Date of sample received	08- MARCH -2024
Sample type	Surface Water	Date of Analysis	08- MARCH -2024
Required parameters	As described in W/O	Date of Issue of report	15- MARCH -2024
EMIL reference	WO No.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSISRESULT

Sl. No.	TESTPARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	36.8
4	pH	-	7.1
5	Total Suspended Solids	mg/L	8.4
6	Total Dissolved Solid	mg/L	453
7	Biochemical Oxygen Demand at 27°C	mg/L	7.7
8	Chemical Oxygen Demand	mg/L	7.2
9	Total Residual Chlorine	mg/L	6.9
10	Alkalinity	mg/L	142
11	Calcium	mg/L	36.7
12	Magnesium	mg/L	29.7
13	Total Hardness as CaCO ₃	mg/L	64

14	Electrical Conductivity	µs/cm	185
15	Turbidity	NTU	7.1
16	Arsenic as As	µg/L	1.4
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	3.87
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	8.0
21	Fluoride as F	mg/L	0.225
22	Iron as Fe	mg/L	18.6
23	Nitrate	mg/L	7.1
24	Sodium as Na	mg/L	6.23
25	Potassium as K	mg/L	1.23
26	Sulfate	mg/L	0.485
27	Nitrate as NO ₃	mg/L	4.8
28	Total Silica as SiO ₂	mg/L	11.64
29	Total dissolved Solid	mg/L	487

Location: BAITARANI RIVER (NEARPLANTAREA)

Lab Sample Code: OCPL/SW/02/03/24		Report No.-OCPL/EMIL/02/03/24	
Sample description:		Test method	APHA 22 nd edition
Sample location	BAITARANIRIVER (NEARPLANTAREA)	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07- MARCH -2024
Sample quantity	1no.sX1Lit.	Date of sample received	08- MARCH -2024
Sample type	Surface Water	Date of Analysis	08- MARCH -2024
Required parameters	As described in W/O	Date of Issue of report	15- MARCH -2024
EMIL reference	WONo.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSISRESULT

Sl. No.	TESTPARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	29.5
4	pH	-	7.1
5	Total Suspended Solids	mg/L	9.2
6	Total Dissolved Solid	mg/L	498
7	Biochemical Oxygen Demand at27°C	mg/L	6.4
8	Chemical Oxygen Demand	mg/L	5.3
9	Total Residual Chlorine	mg/L	3.12
10	Alkalinity	mg/L	65.1
11	Calcium	mg/L	10.23
12	Magnesium	mg/L	7.7
13	Total Hardness asCaCO3	mg/L	45.6
14	Electrical Conductivity	µs/cm	185

15	Turbidity	NTU	12.85
16	Arsenic as As	µg/L	0.51
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	4.7
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	18.45
21	Fluoride as F	mg/L	0.43
22	Iron as Fe	mg/L	26.2
23	Nitrate	mg/L	3.1
24	Sodium as Na	mg/L	1.68
25	Potassium as K	mg/L	2.33
26	Sulfate	mg/L	<0.01
27	Nitrate as NO ₃	mg/L	3.1
28	Total Silica as SiO ₂	mg/L	1.65
29	Total dissolved Solid	mg/L	496

Location: RESERVOIR POND INSIDE PLANT PREMISES

Lab Sample Code: OCPL/SW/03/03/24		Report No.-OCPL/EMIL/03/03/24	
Sample description:		Test method	APHA22 nd edition
Sample location	RESERVOIR POND INSIDE PLANT PREMISES	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07- MARCH-2024
Sample quantity	1no.sX1Lit.	Date of sample received	08- MARCH-2024
Sample type	Surface Water	Date of Analysis	08- MARCH-2024
Required parameters	As described in W/O	Date of Issue of report	15- MARCH-2024
EMIL reference	WONo.- 1060/ADMIN/5500004339	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	28.6
4	pH	-	7.2
5	Total Suspended Solids	mg/L	39.2
6	Total Dissolved Solid	mg/L	569
7	Biochemical Oxygen Demand at 27°C	mg/L	35.8
8	Chemical Oxygen Demand	mg/L	15.2
9	Total Residual Chlorine	mg/L	12.4
10	Alkalinity	mg/L	169
11	Calcium	mg/L	45
12	Magnesium	mg/L	28.6

13	Total Hardness as CaCO ₃	mg/L	165.5
14	Electrical Conductivity	µs/cm	268
15	Turbidity	NTU	32.3
16	Arsenic as As	µg/L	3.5
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	16.1
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	<0.5
21	Fluoride as F	mg/L	1.45
22	Iron as Fe	mg/L	35.2
23	Nitrate	mg/L	4.1
24	Sodium as Na	mg/L	9.5
25	Potassium as K	mg/L	2.83
26	Sulfate	mg/L	5.6
27	Nitrate as NO ₃	mg/L	7.3
28	Total Silica as SiO ₂	mg/L	8.5
29	Total dissolved Solid	mg/L	597

Location: DALKINALA, NEAR PLANT

Lab Sample Code: OCPL/SW/04/03/24		Report No.-OCPL/EMIL/04/03/24	
Sample description:		Test method	APHA22 nd edition
Sample location	DALKI NALA, NEARPLANT	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07- MARCH-2024
Sample quantity	1no.sX1Lit.	Date of sample received	08- MARCH-2024
Sample type	Surface Water	Date of Analysis	08- MARCH-2024
Required parameters	As described in W/O	Date of Issue of report	15- MARCH-2024
EMIL reference	WONo.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSISRESULT

Sl. No.	TESTPARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	27.8
4	pH	-	7.1
5	Total Suspended Solids	mg/L	19.2
6	Total Dissolved Solid	mg/L	659
7	BiochemicalOxygenDemand at27°C	mg/L	15.3
8	Chemical Oxygen Demand	mg/L	6.2
9	Total Residual Chlorine	mg/L	2.5
10	Alkalinity	mg/L	166
11	Calcium	mg/L	49
12	Magnesium	mg/L	21.2
13	Total Hardness as CaCO3	mg/L	88.5
14	Electrical Conductivity	µs/cm	258
15	Turbidity	NTU	25

16	Arsenic as As	µg/L	0.36
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	0.48
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	17.2
21	Fluoride as F	mg/L	0.52
22	Iron as Fe	mg/L	29.6
23	Nitrate	mg/L	7.2
24	Sodium as Na	mg/L	6.6
25	Potassium as K	mg/L	4.5
26	Sulfate	mg/L	3.3
27	Nitrate as NO ₃	mg/L	8.22
28	Total Silica as SiO ₂	mg/L	6.5
29	Total dissolved Solid	mg/L	632

Location: NADIGUTH

Lab Sample Code: OCPL/SW/05/03/24		Report No.-OCPL/EMIL/05/03/24	
Sample description:		Test method	APHA22 nd edition
Sample location	NADIGUTH	Sample collected by	OCPL representative
Location	Keonjhar, Odisha	Date of Sampling	07- MARCH-2024
Sample quantity	1no.sX1Lit.	Date of sample received	08- MARCH-2024
Sample type	Surface Water	Date of Analysis	08- MARCH-2024
Required parameters	As described in W/O	Date of Issue of report	15- MARCH-2024
EMIL reference	WO No.- 1060/ADMIN/5500004339	Sample condition at receipt	Ok

ANALYSISRESULT

Sl. No.	TESTPARAMETER	UOM	Results
1	Colour	Pt-Co	<1
2	Odour	-	Agreeable
3	Temperature	°C	29.4
4	pH	-	7.1
5	Total Suspended Solids	mg/L	14.1
6	Total Dissolved Solid	mg/L	689
7	Biochemical Oxygen Demand at27°C	mg/L	12.8
8	Chemical Oxygen Demand	mg/L	5.6
9	Total Residual Chlorine	mg/L	6.2
10	Alkalinity	mg/L	65.4
11	Calcium	mg/L	9.1
12	Magnesium	mg/L	7.1
13	Total Hardness as CaCO ₃	mg/L	45
14	Electrical Conductivity	µs/cm	95.2
15	Turbidity	NTU	16.8

16	Arsenic as As	µg/L	<0.5
17	Lead as Pb	µg/L	<0.5
18	Cadmium as Cd	µg/L	0.64
19	Total Chromium as Cr	µg/L	<0.5
20	Zinc as Zn	µg/L	<0.5
21	Fluoride as F	mg/L	0.44
22	Iron as Fe	mg/L	26
23	Nitrate	mg/L	4.43
24	Sodium as Na	mg/L	6.24
25	Potassium as K	mg/L	3.4
26	Sulfate	mg/L	8.1
27	Nitrate as NO ₃	mg/L	4.2
28	Total Silica as SiO ₂	mg/L	4.8
29	Total dissolved Solid	mg/L	594

GROUND WATER ANALYSIS REPORT FOR THE MONTH OF MARCH -2024

**GROUND WATER MONITORING REPORT SUMMARY SHEET OF SAMPLING
(GROUNDWATER):**

Sl No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
1.	Sample01	MALDAVILLAGE	12- MARCH - 2024	OCPL/GW/01/03/24
2.	Sample02	NEDIGUTH	12- MARCH - 2024	OCPL/GW/02/03/24
3.	Sample03	TALASAH	12- MARCH - 2024	OCPL/GW/03/03/24
4.	Sample04	PLANT-1(Near Canteen)	12- MARCH - 2024	OCPL/GW/04/03/24
5.	Sample05	PLANT-2(SLIMEPOND)	12- MARCH - 2024	OCPL/GW/05/03/24

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

Sl. No.	TEST PARAMETER	UOM	Results					BIS Desirable limit	Permissible limit with the absence of alternate source
			MALDA VILLAGE	NEDIGUTH	TALASAHI	PLANT- 1 (Near Canteen)	PLANT-2 (SLIMEP OND)		
1	Colour	Pt-Co	1.1	1.0	1.1	1.2	1.2		
2	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		
3	Temperature	°C	28.3	29.8	28	27.6	28.3		
4	pH	-	6.8	7.0	7.2	6.9	7.1	6.5-8.5	No relaxation
5	Total Hardness (as CaCO ₃)	mg/L	63.1	58.3	52.3	58.2	48.6	300	600
6	Calcium	mg/L	8.9	8.2	10.6	12.1	10.8	75	200
7	Magnesium	mg/L	1.1	3.2	4.8	3.8	1.9	30	No relaxation
8	Chloride	mg/L	15.6	15.5	14.8	11.2	23.3	250	1000
9	Alkalinity	mg/L	19.3	14.1	22	11.4	20.3	200	600
10	Electrical Conductivity	µs/cm	55	59.3	62.3	69.3	78.2	--	--
11	Arsenic as As	µg/L	0.05	ND	0.02	ND	0.1	10	No relaxation
12	Lead as Pb	µg/L	ND	0.33	0.25	0.04	ND	10	No relaxation
13	Cadmium as Cd	µg/L	ND	ND	ND	0.03	0.05	3.0	No relaxation
14	Total Chromium as Cr	µg/L	0.21	ND	0.22	0.05	0.048	50	No relaxation

15	Zinc as Zn	µg/L	92.3	95.2	78.5	77.3	101.3	5000	No relaxation
16	Fluoride as F	mg/L	ND	0.02	ND	0.02	ND	1.0	1.9
17	Iron as Fe	µg/L	16.5	15.2	30.3	45.6	35.2	300	1000
18	Nitrate	mg/L	1.4	1.2	1.0	1.02	1.3	45	100
19	Sodium as Na	mg/L	2.8	3.2	4.4	4.9	5.1	150	No relaxation
20	Potassium as K	mg/L	ND	0.04	0.1	0.1	0.2	12	No relaxation
21	Sulfate	mg/L	ND	ND	0.05	0.02	0.4	200	400
22	Total Silica as SiO ₂	mg/L	0.6	ND	0.66	ND	1.2	--	--
23	Total suspended Solid	mg/L	0.15	1.2	1.1	0.28	1.2	--	--
24	Total dissolved Solid	mg/L	89	75.4	72.9	95.3	82.4	250	2000
25	Turbidity	NTU	0.2	0.4	0.45	0.5	0.6	5	10

Sampling By: Mr. Hrusikesh Das

GROUND WATER LEVEL ANALYSIS REPORT FOR THE MONTH OF MARCH - 2024

**REPORT ON GROUND WATER LEVEL ANALYSIS FOR THE MONTH OF
MARCH -2024**

SUMMARY SHEET OF MONITORING:

SI No.	Sample Nos.	Location	Date of Sampling	Lab Sample Code
6.	Sample01	MALDA VILLAGE	23- MARCH - 2024	OCPL/GWL/01/03/24
7.	Sample02	NEDIGUTH	23- MARCH - 2024	OCPL/GWL/02/03/24
8.	Sample03	TALASAHI	23- MARCH - 2024	OCPL/GWL/03/03/24
9.	Sample04	PLANT-1(Near Canteen)	23- MARCH - 2024	OCPL/GWL/04/03/24
10.	Sample05	PLANT-2(SLIMEPOND)	23- MARCH - 2024	OCPL/GWL/05/03/24

MONITORING RESULT

SI No.	Name of the location	Type of well	Dia. (m)	Depth of the well (m)	Depth of the water table BGL(M)	Remarks
1	MALDA VILLAGE	Dug well	0.83	8.12	7.78	--
2	NEDIGUTH	Dug well	1.22	9.44	7.1	--
3	TALASAHI	Dug well	1.0	8.6	7.1	--
4	PLANT-1(Near Canteen)	Bore-well	0.1	65	12.2	--
5	PLANT-2(SLIME POND)	Bore-well	0.1	61	37.9	--

Sampling By: Mr. Hrusikesh Das

STACK MONITORING REPORT FOR THE MONTH OF MARCH - 2024

**REPORT ON STACK MONITORING FOR THE MONTH OF MARCH -
2024**

LOCATION AND MONITORING SCHEDULE

Location	SUN	MON	TUE	WED	THU	FRI	SAT
DGStack-1		✓					
DGStack-2		✓					
Stack-1 (Pellet Plant Process Stack)			✓				
Stack-2 (Pellet Plant Dedusting Stack)			✓				

TEST REPORT

Name & Address of the Client:	Report No.: OCPL/SM/03/01
M/S ESSEL MINING & INDUSTRIES LTD.	Date :04.03.2024
Keonjhar, Odisha, India	Sample No.: OCPL/EMIL/2023-24/01
	Sample Description: DG Flue Gas Monitoring
	Date of Sampling: 04.03.2024

ANALYSIS RESULT

A.	<u>General information about stack:</u>	
1.	Stack connected to	: DG-1
2.	Emission due to	: Burning of Diesel
3.	Material of construction of stack	: MS
4.	Shape of Stack	: Circular
5.	Serial no.	: N15E226771
6.	Boiler/Furnace/DG/Kiln Capacity	: 1250KVA

B.	<u>Physical characteristics of stack:</u>			
1.	Height of the Stack from Ground level	:9m		
2.	Diameter of the stack at sampling point	:400mm		
3.	Height of the Sampling Point from Ground level	:7m		
4.	Type	: HCKI634Z1		
C.	<u>Analysis/Characteristic of stack:</u>			
1.	Fuel used : LDO	2. Fuel Consumption: NA		
D .	<u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Limit</u>	<u>Method</u>
1.	Temperature of Emission(°C)	77.8	--	IS11255(PartIII),2008RA 2018
2.	Barometric pressure (mm of Hg)	284	--	USEPAPart2- 25/09/1996
3.	Velocity of gas(m/sec.)	12.5	--	IS11255(PartIII),2008RA 2018
4.	Quantity of Gas Flow(Nm ³ /hr)	668	--	IS11255(PartIII),2008RA 2018
5.	Concentration of Moisture(%)	<2.0	--	USEPA(Part-4)
6.	Concentration of Oxygen(% v/v)	8.3	--	IS13270:1992,Ref:2009
7.	Concentration of Carbon Monoxide (mg/Nm ³)	23.2	--	IS13270:1992,Ref:2009
8.	Concentration of Carbon Dioxide(% v/v)	6.4	--	IS13270:1992,Ref:2009
9.	Concentration of Sulphur Dioxide(mg/Nm ³)	122.1	600	IS11255(PartII),1985RA 2014
10.	Concentration of Nitrogen Dioxide(mg/Nm ³)	78.2	300	IS11255(Part7),2005RA 2017

11.	Concentration of Particulate Matters(mg/Nm ³)	38.5	50	IS11255(PartI):1985, RA2014
E.	<u>Pollution control device</u> Details of pollution control devices attached with the stack :NA			
F.	Remarks: Nil			

Sampling By: Mr. Hrusikesh Das

TESTREPORT

Name & Address of the Client:	Report No.: OCPL/SM/03/02
M/SESSELMINING&INDUSTRIESLTD	Date :04.03.2024
Keonjhar, Odisha, India	Sample No.: OCPL/EMIL/2023-24/13
	Sample Description: DG Flue Gas Monitoring
	Date of Sampling :04.03.2024

ANALYSISRESULT

A.	<u>General information about stack:</u>			
1.	Stack connected to	:DG-2		
2.	Emission due to	:Burning of Diesel		
3.	Material of construction of stack	:MS		
4.	Shape of Stack	:Circular		
5.	Serial no.	:N15H319963		
6.	Boiler/Furnace/DG/Kiln Capacity	:1250KVA		
B.	<u>Physical characteristics of stack:</u>			
1.	Height of the Stack from Ground level	:9m		
2.	Diameter of the stack at sampling point	:400mm		
3.	Height of the Sampling Point from Ground level	:7m		
4.	Type	:HCKI634Z1		
C.	<u>Analysis/Characteristic of stack:</u>			
1.	Fuel used :LDO	2.FuelConsumption:NA		
D .	<u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Limit</u>	<u>Method</u>
1.	Temperature of Emission(°C)	82.1		IS11255(Part III),2008RA2018

2.	Barometric pressure (mm of Hg)	323		USEPA Part 2-25/09/1996
3.	Velocity of gas (m/sec.)	32.1		IS 11255 (Part III), 2008 RA 2018
4.	Quantity of Gas Flow (Nm ³ /hr)	1627		IS 11255 (Part III), 2008 RA 2018
5.	Concentration of Moisture (%)	<2.0		USEPA (Part-4)
6.	Concentration of Oxygen (% v/v)	8.6		IS 13270:1992, Ref: 2009
7.	Concentration of Carbon Monoxide (mg/Nm ³)	26.1		IS 13270:1992, Ref: 2009
8.	Concentration of Carbon Dioxide (% v/v)	12.3		IS 13270:1992, Ref: 2009
9.	Concentration of Sulphur Dioxide (mg/Nm ³)	165	600	IS 11255 (Part II), 1985 RA 2014
10.	Concentration of Nitrogen Dioxide (mg/Nm ³)	75.2	300	IS 11255 (Part 7), 2005 RA 2017
11.	Concentration of Particulate Matters (mg/Nm ³)	35.3	50	IS 11255 (Part I): 1985, RA 2014
E.	<u>Pollution control device</u> Details of pollution control devices attached with the stack : NA			
F.	Remarks: Nil			

Sampling By: Mr. Hrusikesh Das

TESTREPORT

Stack No.	Stack Description	Emission due to	Date of Sampling
Stack-1	Pellet plant process stack	Burning of furnace oil	05.03.2024
Stack-2	Pellet plant de-dusting stack	Electricity	05.03.2024

ANALYSISRESULT

Stack No.	Stack Description	Stack height (in meter)	Emission M ³ /Hr.	Temperature(°C)	Velocity NM ³ /Hr
1	Pellet plant process stack	80	7159	95.3	35658
2	Pellet plant de-dusting stack	60	6562	94.2	36492

Stack No.	Stack Description	Carbon monoxide(CO) Mg/nm ³	Carbon dioxide(CO ₂) %v/v	PM Concentration Mg/nm ³		SO ₂ Mg/nm ³	NO ₂ Mg/nm ³
				PM10	PM 2.5		
Norms as per SPCB		1	NA	150	150	NA	NA
1	Pellet plant process stack	<0.2	8.3	139	122.5	182.4	78.3
2	Pellet plant de-dusting stack	<0.2	7.8	122.7	142.5	178.5	65.1

- Measurement of PM has been done as per IS Code IS: 11255 Part 1.
- No. of the calibrated stack kit used: Thermo Environmental Instruments TEI-401



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:	Prominerals Private Limited		
Project Address:	Basantpur		
Village:	Basantapur	Block:	Jhumpura
District:	Kendujhar	State:	Odisha
Pin Code:			
Communication Address:	Eco Space Business Park 6th Floor Block 3b, Premises No.iif/11 Action Area li Rajarhat New Town, Kolkata, Rajarhat, 24 Paraganas North, West Bengal - 700156		
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									
6. Valid from:	12/03/2021	7. Valid up to:	11/03/2024									
8. Ground Water Abstraction Permitted:												
	Fresh Water	Saline Water	Dewatering	Total								
	m ³ /day	m ³ /year	m ³ /day	m ³ /year	m ³ /day	m ³ /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

पानी बचाये - जीवन बचाये
SAVE WATER - SAVE LIFE

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 m³/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 CPCPE 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.)

Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)
Application for Issue of NOC to Abstract Ground Water (NOCAP)

**Application for Renew of NOC Issued to Existing Industrial Projects Abstracting GroundWater
(Application For Renewal of NOC)**

Application Number : 21-4/1192/OR/IND/2017

Applied For Renewal : 1st

1. General Information:	
Water Quality:	Fresh Water
Application Type Category/ Type of Application:	Steel Industry
(i) Name of Industry:	Essel Mining and Industries Ltd
(ii) Location Details of the Industrial Unit- (Attach Site Plan and Certified Revenue Sketch) (\$)	
Address Line 1 :	BASANTPUR
Address Line 2 :	
Address Line 3 :	
State:	ODISHA
District:	KENDUJHAR
Sub-District:	JHUMPURA
Village/Town:	Basantapur
Latitude:	
Logitude:	
Area Type :	Non-Notified
Area Type Category :	Safe
Whether industry is MSME:	No
(iii) Communication Address	
Address Line 1:	AT/PO - BARBIL
Address Line 2:	
Address Line 3:	
State:	ODISHA
District:	KENDUJHAR
Sub-District:	JODA
Pincode:	758035
Phone Number with Area Code:	
Mobile Number:	91-9437462601
Fax Number:	
(v) Details of Existing NOC issued by CGWA (enclose copy)	
rajendra.sahoo@adityabirla.com	
NOC Letter No:	CGWA/NOC/IND/ORIG/2021/12197
Date of Issuance:	02/07/2021
Vailidity (Start):	12/03/2021
Validity (End):	11/03/2024

Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
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Application Number : 21-4/1192/OR/IND/2017

Applied For Renewal : 1st

	Reason for not applying for renewal before expiry of NOC Validity (Attach Affidavit):								
(vi)	Purpose of Renewal Application:		Existing Ground Water						
2. Details of Water Requirement (Fresh and Recycled Water Usage): (Please Enclose Water Flow Chart of Activities and Requirement of Water at each Stage) (\$)									
(i)	Total Water Requirement (a+b+c+d) (m3/day)								
			Existing	Additional	Total				
Water Requirement Details (Fresh Water) (m3/day)									
(a)	Ground Water Requirement (m3/day):		846.00	0.00	846.00				
(b)	Surface Water Available (Canal, River, Ponds etc.) (m3/day):		0.00	0.00	0.00				
(c)	Water Supply from Any Agency (m3/day):		0.00	0.00	0.00				
Total Fresh Water Requirement (a+b+c)(m3/day):			846.00	0.00	846.00				
(d)	Recycled Water Usage (m3/day):		0.00	0.00	0.00				
Total Water Requirement : (a+b+c+d)(m3/day)			846.00	0.00	846.00				
(ii)	Breakup of Water Requirement and Usage:								
	Activity	Existing Requirement (m3/day)	Additional Requirement (m3/day)	Total Requirement (m3/day)	No. of Operational Days in a Year	Annual Requirement (m3/year)			
	Industrial Activity	740.00	0.00	740.00	365	270100.00			
	Residential / Domestic	10.00	0.00	10.00	365	3650.00			
	Greenbelt Development /Environment Maintenance	48.00	0.00	48.00	365	17520.00			
	Other Use	48.00	0.00	48.00	365	17520.00			
	Grand Total	846.00	0.00	846.00		308790.00			
(iii)	Details of Water Availability from ETP / STP for Recycle / Resuse usage:								
		Existing		Additional			Total		
		(m3/day)	No. Of Days	(m3/year)	(m3/day)	No. Of Days	(m3/year)	(m3/day)	(m3/year)
	Effluent / Sewerage generated and treated in ETP / STP:	0.00	365	0.00				0.00	0.00
	Availability treated Effluent / Sewerage for usage:	0.00	365	0.00				0.00	0.00

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Application Number : 21-4/1192/OR/IND/2017

Applied For Renewal : 1st

	Effluent / Sewerage discharge after treatment:	0.00	365	0.00				0.00	0.00
(iv)	Availability treated effluent usage : Total quantity same as 2 i (d) and 2 ii (b) above								
					Existing (m3/day)		Additional availability (m3/day)		Total Use + Availability (m3/day)
	Industrial Activity / Commercial Use				0.00		0.00		0.00
	Domestic / Residential Use				0.00		0.00		0.00
	Greenbelt development / Environment maintenance				0.00		0.00		0.00
	Other Use / Flushing Req.				0.00		0.00		0.00
	Total				0.00		0.00		0.00

3. (a). Groundwater Abstraction Structure- Existing:

Number of Existing Structures: 6

SNo.	Type of Structure Name / Year of Construction	Depth (Meter) / Diameter (mm)	Depth to Water Level (Meters below Ground Level)	Discharge (m3/Hour)	Operational Hours (Day) / Days (Year)	Mode of Lift Name	Horse Power of Pump	Whether Fitted with Water Meter	Whether Permission Registered with CGWA / If so Details Thereof
1	Borewell / -	200.00 / 152		6.00	17 / -	Submersible Pump	4.50	Yes	Yes / -
2	Borewell / -	200.00 / 152		6.00	2 / -	Submersible Pump	4.50	Yes	Yes / -
3	Borewell / -	200.00 / 152		6.00	6 / -	Submersible Pump	4.50	Yes	Yes / -
4	Borewell / -	200.00 / 152		6.00	1 / -	Submersible Pump	4.50	Yes	Yes / -
5	Borewell / -	200.00 / 152		6.00	15 / -	Submersible Pump	4.50	Yes	Yes / -
6	Borewell / -	200.00 / 152		6.00	9 / -	Submersible Pump	4.50	Yes	Yes / -

Government of India
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Applied For Renewal : 1st

(b). Groundwater Abstraction Structure- Additional:									
Number of Additional Structures:						2			
SNo.	Type of Structure Name / Year of Construction	Depth (Meter) / Diameter (mm)	Depth to Water Level (Meters below Ground Level)	Discharge (m3/Hour)	Operational Hours (Day) / Days (Year)	Mode of Lift Name	Horse Power of Pump	Whether fitted with Water Meter	Whether Permission Registered with CGWA / If so Details Thereof
1	Borewell / 2024	200.00 / 152		6.00	15 / 305	Submersible Pump	4.50	Yes	No / -
2	Borewell / 2024	200.00 / 152		6.00	15 / 305	Submersible Pump	4.50	Yes	No / -

4. (a). Compliance to the Condition prescribed in the NOC			
SNo.	Conditions given in NOC	Compliance Conditions Applicable	Status of Compliance
1	Area Specific Plantation	No	
2	Domestic Water School Sanitation	No	
3	Groundwater quality monitoring - Pre monsoon and Post monsoon	Yes	Ground Water quality monitoring is being carried out on regular interval inside the plant premises and records are maintained.
4	Maintenance of recharge structures	No	
5	Number of Pizometers as per NOC and Water Level Record	Yes	2 Nos. of Piezometers with Water Level Record are installed as per NOC
6	Number of Tubewells Borewales as per NOC	Yes	4 Nos. of borewells are installed and 2 are under construction
7	Pizometer fitted with AWLRs with telemetry as per NOC	Yes	Piezometers are fitted with AWLRs with telemetry as per NOC
8	Quantum of Groundwater as per NOC	Yes	846 KLD
9	Recharge through ponds	Yes	Attached
10	Recycle and reuse of water	Yes	Attached
11	RWH and AR structures implemented	Yes	Attached
12	Submission of Compliance report to the Region	Yes	Being submitted regularly
13	Water conservation measures	Yes	Attached
14	Water Security Plan of villages	No	
15	Well monitored around the plant premises	Yes	Attached
16	Wells fitted with water meter and its Record	Yes	Attached

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Application Number : 21-4/1192/OR/IND/2017

Applied For Renewal : 1st

(b). Compliance to the Condition prescribed in the NOC - Other		
SNo.	Conditions given in NOC	Status of Compliance
5.	Groundwater Availability (Please Enclose a Comprehensive Report / Note on Groundwater Condition / Groundwater Quality in and Around the Area) Applicable to Industries Consuming Greater Than 500 m3/day and / or having a Land Area of Greater Than 2 Ha.- (\$)	
6.	Details of Rainwater Harvesting and Artificial Recharge Measures for Groundwater Recharge in the Area. If the Firm has Proposed to take up Rainwater Harvesting and Recharge outside the Industrial Unit Premises, then provide NOC from the Concern Authority / Agency where the Harvesting Measures are Proposed, if Already implemented, details may be furnished. (Attach Report on Comprehensive & Feasible Rainwater Harvesting / Recharge Proposal).- (\$)	
	One number of water Reservoir having holding capacity of 212250 cum have been constructed. During rainy season, surface runoff of the plant area is channelized and collected in the reservoir for industrial use. The reservoir is serving the dual purpose of storage as well as augmentation of ground water potential through recharge. We are also implementing the Rain water harvesting structure for all buildings. Photo attached	

INDUSTRIAL USE- Self Declaration

I hereby certify that the data and information furnished above are true to the best of my knowledge and belief and I am aware that if any part of the data / information submitted is found to be false or misleading at any stage, the application will be rejected outright.

I hereby declare that all the mandatory documents prescribed in the application form have been uploaded and no blank /irrelevant documents have been uploaded. I am also aware that any false/ wrong submission /uploading of document will lead to rejection of my application without any notice.

It is to certify that no case related to ground water withdrawal/ contamination is pending against the industry/ project/ unit as on date. Any such case filed against the company/ project/ unit in respect of ground water withdrawal/ contamination during the pendency of this application shall be immediately brought to the notice of CGWA.

I hereby undertake that in case any environmental compensation/ penalty is imposed on the firm by any statutory authority, I shall comply with the decision of such authority.

1. Application proforma is subject to modification from time to time.

2. Application is submitted online on website <http://cgwa-noc.gov.in> to following office.

Regional Director, Central Ground Water Board South Eastern Region, Bhujal Bhawan, Khandagiri Square, NH-5, Bhubaneswar, KHORDHA, ODISHA, 751030

3. Incomplete application will be summarily rejected.

Scanned copy of last page of application with signature and seal should be attached at prescribed place before submission of application.

4. Receipt of Processing Fee of Rs. 5000.00/- (Rupees Five Thousand Only) submitted through NON TAX RECEIPT PORTAL (<https://bharatkosh.gov.in>) should be attached along with hard copy of application.

Processing Fee:-

Bharat Kosh Transaction
Ref. No:-

Bharat Kosh Transaction
Date:-

Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)
Application for Issue of NOC to Abstract Ground Water (NOCAP)

Application for Renew of NOC Issued to Existing Industrial Projects Abstracting GroundWater
(Application For Renewal of NOC)

Application Number : 21-4/1192/OR/IND/2017

Applied For Renewal : 1st

Note:- The Processing Fee is Non-Refundable. Applicant should ensure and Check Eligibility of Submission of Application and Required Documents before Submitting Online Application.

5.	Hard copy of application required:	No		
6.	Ground Water Quality Approved	Not Define	Ground Water Charge Required:	Not Define
	Ground Water Charge Recieve:	No	Ground Water Charge Amount:	
			Ground Water Arear Amount:	

Attached Files:

1). Site Plan : (Refer: 1 (ii))

No Attachment Found!

2). Certified Revenue Sketch : (Refer: 1 (ii))

No Attachment Found!

3). Reason for Not Applying for Renewal before Expiring NOC : (Refer: 1 (v))

No Attachment Found!

4). Existing NOC : (Refer: 1 (vii))

S.No	Attachment Name	File Name
1	NOC	NOC-Ground Water_EMIL.pdf

5). Enclose Flow Chart of Activity and Requirement of Water: (Refer: 2)

No Attachment Found!

6). Groundwater Availability Report : (Refer: 4)

No Attachment Found!

7). Details of Rainwater Harvesting / Artificial Recharge Measures : (Refer: 5)

S.No	Attachment Name	File Name
1	Rainwater Harvesting Photo	Rain WAter Harvesiting Photos.pdf

8). Authorization :

No Attachment Found!

9). Extra Attachment :

No Attachment Found!

10). Compliance to the Condition prescribed in the NOC

	S.No.	Conditions given in NOC	Attachments		
			S.No.	Attachment Name	File Name
	1	Area Specific Plantation	No Attachment Found!		

Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)
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Application Number : 21-4/1192/OR/IND/2017

Applied For Renewal : 1st

2	Domestic Water School Sanitation	No Attachment Found!		
3	Groundwater quality monitoring - Pre monsoon and Post monsoon	1	Ground Water Quality and Level Monitoring	Monitoring Report.pdf
4	Maintenance of recharge structures	No Attachment Found!		
5	Number of Pizometers as per NOC and Water Level Record	No Attachment Found!		
6	Number of Tubewells Borewales as per NOC	No Attachment Found!		
7	Pizometer fitted with AWLRs with telemetry as per NOC	1	Calibration Certificate	Calibration Certificate_Piezometer.pdf
8	Quantum of Groundwater as per NOC	No Attachment Found!		
9	Recharge through ponds	No Attachment Found!		
10	Recycle and reuse of water	No Attachment Found!		
11	RWH and AR structures implemented	No Attachment Found!		
12	Submission of Compliance report to the Region	No Attachment Found!		
13	Water conservation measures	1	Water conservation measures	Water conservation measures.pdf
14	Water Security Plan of villages	No Attachment Found!		
15	Well monitored around the plant premises	1	Monitoring report	Monitoring Report.pdf
16	Wells fitted with water meter and its Record	1	Calibration Certificate	Calibration Certificate_Flow Meter.pdf

11). Compliance to the Condition prescribed in the NOC - Other

S.No.	Conditions given in NOC	Attachments		
		S.No.	Attachment Name	File Name

12). Bharat Kosh Reciept (Porcessing Fee):

S.No	Attachment Name	File Name
1	Application Fee	Transaction Receipt_5000.pdf

13). Application with Signature and Seal:

S.No	Attachment Name	File Name
1	Application with Signature and Seal	Application with Signature and Seal.pdf

14). MSME certificate in case of MSME:

No Attachment Found!

**Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)
Application for Issue of NOC to Abstract Ground Water (NOCAP)**

**Application for Renew of NOC Issued to Existing Industrial Projects Abstracting GroundWater
(Application For Renewal of NOC)**

Application Number : 21-4/1192/OR/IND/2017

Applied For Renewal : 1st

Date :

Name & Signature of the applicant

Place :

(With official seal)

Associated User : PROMINERALS

Submitted By User : PROMINERALS

Submission Date : 14/03/2024

* In case signed by any authorized signatory, the details of the signatory with the authorization shall be enclosed.

Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)
Application for Issue of NOC to Abstract Ground Water (NOCAP)

**Application for Renew of NOC Issued to Existing Industrial Projects Abstracting GroundWater
(Save As Draft Application For Renewal of NOC)**

Application Number : 21-4/1192/OR/IND/2017

Applied For Renewal : 1st

(Scanned copy of this page after signature and seal should be attached at "Application with Signature and Seal" in attachment section before submission of application)

Name of Industry:	Essel Mining and Industries Ltd
Location Details of the Industrial Unit	
Address Line 1 :	BASANTPUR
Address Line 2 :	
Address Line 3 :	
State:	ODISHA
District:	KENDUJHAR
Sub-District:	JHUMPURA
Village/Town:	Basantapur
Net Ground Water(m3/day):	846.00
Area Type Category :	Safe

INDUSTRIAL USE- Self Declaration

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I hereby undertake that in case any environmental compensation/ penalty is imposed on the firm by any statutory authority, I shall comply with the decision of such authority.

मैं यह प्रमाणित करता हूँ कि ऊपर प्रस्तुत किये गये आँकड़े और जानकारी मेरे ज्ञान और विश्वास के अनुसार सही हैं और मुझे पता है कि यदि प्रस्तुत आँकड़े / सूचना का कोई भी भाग किसी भी स्तर पर गलत या भ्रामक पाया जाता है, तो आवेदन बिना किसी पूर्व सूचना के निरस्त कर दिया जाएगा।

मैं इसके द्वारा घोषित करता हूँ कि आवेदन पत्र में निर्धारित सभी अनिवार्य दस्तावेजों को अपलोड किया गया है और कोई रिक्त / अप्रासंगिक दस्तावेज अपलोड नहीं किया गया है। मुझे यह भी पता है कि कोई भी गलत दस्तावेज अपलोड करने पर मेरे आवेदन को बिना किसी सूचना के निरस्त कर दिया जाएगा।

यह प्रमाणित करता हूँ कि उद्योग / परियोजना / इकाई के खिलाफ आज तक भूजल निकासी / प्रदूषण से संबंधित कोई भी मामला किसी भी न्यायालय में लंबित नहीं है। इस आवेदन की प्रक्रिया के दौरान भूजल निकासी / प्रदूषण के संबंध में कंपनी / परियोजना / इकाई के खिलाफ दायर किसी भी मामले को तुरंत के. भू. ज. प्राधिकरण के ध्यान में लाउंगा।

मैं इस बात का वचन देता हूँ कि यदि किसी भी वैधानिक प्राधिकरण द्वारा फर्म पर कोई पर्यावरणीय क्षतिपूर्ति / जुर्माना लगाया जाता है, तो मैं प्राधिकरण के उस निर्णय का पालन करूंगा।

Date : 31/12/2023

Place : Barbil

Associated User : PROMINERALS

Name & Signature of the applicant

(With official seal)

(PAVANI KUMAR RAKANI)

* In case signed by any authorized signatory, the details of the signatory with the authorization shall be enclosed.

ANNEXURE-C

**YEAR WISE EXPENDITURE FOR ENVIRONMENTAL PROTECTION MEASURES
DURING THE YEAR 2023-24**

(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	18.59
	ii	Water Tanker (dust suppression & drinking)	
	iii	Dry Fog	
iv	Repairing expenses of ESP	15.55	
2	Pollution Monitoring		
	i	Air Quality monitoring	17.74
	ii	Ground Water Quality Monitoring	
	iii	Ground Water Level Monitoring	
iv	Noise Monitoring		
3	Plantation	0.21	
4	Others (Training & Awareness Programme)		
	i	World Environment Day Celebration	4.44
	ii	Health Awareness & Training	
GRAND TOTAL		56.53	