



**Deputy Director General of Forests (C),
Ministry of Env., Forest and Climate Change,
Integrated Regional Office,
Bungalow No. A-2, Shyamali Colony,
Ranchi – 834002
Email: ro.ranchi-mef@gov.in**

MD/ENV/ 883 / 103 / 2023
Date: 22.11.2023

**Ref: I. Environmental Clearance letter no. J-11015/104/2011. IA. II (M) dated: 06.09.2021.
II. Environmental Clearance letter no. J-11015/104/2011. IA. II (M) dated: 29.10.2021.**

Sub: Half-yearly compliance status report of Environmental Clearance conditions for the period April 2023 – September 2023 in respect of Noamundi Iron Mine, M/s Tata Steel Limited.

Dear Sir,

Kindly find attached herewith the half-yearly compliance status report in respect of the stipulated Environmental Clearance conditions of Noamundi Iron Mine, M/s Tata Steel Limited for the period from April 2023 – September 2023.

We trust that the measures taken towards environmental safeguards comply with the stipulated environmental conditions. We look forward to your further guidance which shall certainly help us in our endeavor for further improve upon our Environmental Management practices.

Thanking you,

Yours faithfully,
f: M/s Tata Steel Limited

Chief (Mine planning & Projects), OMQ

Encl. : As above

Copy to : The Chairman, Central Pollution Control Board, Southern Conclave, Block 502, 5th & 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700107 (W. B.)

: The Member Secretary, State Pollution Control Board, T.A. Division (Ground Floor), H.E.C. Dhurwa, Ranchi - 834004 (Jharkhand)

TATA STEEL LIMITED

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**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

**ENVIRONMENTAL CLEARANCE NO. J-11015/104/2011-IA. II (M) DATED 06.09.2021 & 29.10.2021
(Period of Compliance: April 2023 to September 2023)**

Sl. No.	Conditions	Compliance
A. Specific conditions		
1.	Implementation of the revised remediation plan, natural resource augmentation plan (NRAP) and community resource augmentation plan (CRAP) which was submitted by PP after the EAC meeting.	Implementation of the revised remediation plan, natural resource augmentation plan (NRAP) and community resource augmentation plan (CRAP) has been initiated. Various activities such as development of safety zone plantation, Miyawaki plot, fruit bearing plots in village area and rainwater harvesting ponds are in progress. Detailed status is shared (Annexure-I)
2.	Implementation of the environmental monitoring plan with emphasis on air quality, noise and vibration, water quality as well as soil degradation to be submitted.	The implementation of the environmental monitoring plan with emphasis on air quality, noise and vibration, water quality as well as soil degradation is enclosed (Annexure-II)
3.	Wildlife conservation plan be augmented with additional points revised in the light of guidance given by EAC during the meeting with more emphasis on wildlife conservation rather than creating infrastructure which cannot be controlled by project proponent.	Noted. It will be done accordingly in consultation with forest department officials.
4.	Public hearing concerns must be addressed as committed.	All the concerns raised in Public Hearing are being addressed. The implementation of action plan has been initiated. Detailed status is enclosed (Annexure-III)
5.	The EMP cost should include plantation within the mine lease area whereas plantation outside the mine lease area will be given to NRAP cost.	Noted. All the cost involved for plantation within mine lease area has been included in EMP cost and plantation outside the mine lease area has already been included in NRAP cost.
6.	No mining activities will be allowed in the forest area for which forest clearance is not available.	Noted and shall be abided.
7.	As the public hearing has been carried out for the entire project area and PP has paid the NPV for entire forest land involved in the project area, PP after taking stage- II Forest Clearance for remaining area i.e. 391.51 Ha; may again approach the Ministry for undertaking mining in the remaining area with the proper mining plan.	After the grant of stage II FC for remaining area of 391.51 Ha, we shall approach the Ministry with proper mining plan for undertaking mining in the remaining area.
B. General Conditions		
I. Statutory Compliance		
(1)	This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.	Noted.
(2)	The Project proponent complies with all the statutory requirements and judgment of Hon'ble	A payment of Rs 56,96,51,093.00/- is made as per demand notice no. 1986/M dated 12.09.2017. The Project

**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

	Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Others before commencing the mining operations.	Proponent is complying with all the statutory requirements and judgements of Hon. Supreme Court dated the 2nd August 2017 in writ petition (civil) no. 114 of 2014 in the matter of common cause vs union of India and Others.
(3)	The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Others.	A payment of Rs 56,96,51,093.00/- is made as per demand notice no. 1986/M dated 12.09.2017. The Project Proponent is complying with all the statutory requirements and judgements of Hon. Supreme Court dated the 2nd August 2017 in writ petition (civil) no. 114 of 2014 in the matter of common cause vs union of India and Others.
(4)	This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.	Not applicable. There are no protected areas/ eco-sensitive zones within 10 km of the mine lease area.
(5)	This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.	Noamundi Iron Mine of TATA Steel has restricted its operations in diverted forest and non-forest area as per approvals obtained. The mine has 1160.06 ha lease area, out of which 762.42 ha is forest land & rest is non-forest land. Out of 762.42 ha, forest land diverted for mining is 370.92 ha vide letter no. 8-279, 1985 FC (Pt) dated 4th Sept., 2014 & for rest 391.51 ha (including safety zone), forest diversion proposal has already been applied & is at advanced stage of clearance.
(6)	Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.	Noamundi Iron Mine of TATA Steel has restricted its operations in diverted forest and non-forest area as per approvals obtained. The mine has 1160.06 ha lease area, out of which 762.42 ha is forest land & rest is non forest land. Out of 762.42 ha, forest land diverted for mining is 370.92 ha vide letter no. 8-279, 1985 FC (Pt) dated 4 th Sept., 2014 & for rest 391.51 ha (including safety zone), forest diversion proposal has already been applied & is at advanced stage of clearance. Complied Attachment: NA
(7)	The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.	Noted and shall be abided.

**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

(8)	The Project Proponent shall obtain consents from all the concerned landowners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.	Since it is an old mine, this is not applicable. Further the expansion is proposed within the mine lease area.
(9)	The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57 /2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".	All the conditions mentioned in the MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014 are being followed. The compliance is indicated later against other standard EC conditions.
(10)	The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.	Only Surface water from Baitarani river is being used for mining and allied activities. No ground water withdrawal is required for this project. Approval for drawing 10.6 MCM water on annual basis (~29000 KLD) from Baitarini river vide letter no: - 1/PMC/VIVIDH/975/2020-514 dated 24.08.2021 has been granted by Water Resources Department, GoJ. Subsequently an agreement was signed on 20.10.2021 with the Executive Engineer, Water ways Division Chaibasa.
(11)	A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.	A copy of EC letter was submitted to local panchayats i.e Noamundi, Balijore, Diriburu, Kadajamda and Mahudi panchayat. (Annexure-IV)
(12)	State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar'sOffice for 30 days	Noted.
(13)	The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded ECand copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.	Details of Environment Clearance with regard to Noamundi Iron Mine were published both in English (Avenue Mail) and Hindi (Prabhat Khabar) in local newspapers on 12.09.2021. The copy of the newspaper advertisement was sent to the Regional Office, MoEF&CC, Ranchi with letter no: MD/ENV/210/97/2021 dated 13.09.2021 (Annexure-V)
(14)	The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall	Noted.


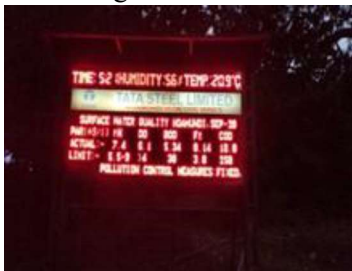
HALF-YEARLY EC COMPLIANCE REPORT FOR NOAMUNDI IRON MINE OF TATA STEEL LIMITED

	only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.	
II. Air quality monitoring and preservation		
(15)	<p>The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2, CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site</p>	<p>Three continuous ambient air quality monitoring stations are installed in the core zone (two nos.) and buffer zone (one no.) of mine lease area. Various parameters such as PM10, PM2.5, SOx, NOx & CO are being monitored as per guidelines.</p> <p>Manual ambient air quality stations are installed at prominent places such as Hospital, Mega Centre, Bottom bin, etc. and monitoring of the NAAQS parameters is done on regular basis.</p> <p>Monitored data is being displayed using electronic display board in front of the main gate of mines site as well as public domain.</p> <p>Average air quality data is enclosed as (Annexure VI)</p> <div style="text-align: center;">  </div> <p style="text-align: center;"><i>CAAQMS station & Display board at Noamundi Mine</i></p>
(16)	<p>Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water- soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board</p>	<p>Fugitive dust emissions from all the sources are being controlled regularly on daily basis.</p> <p>A network of fixed water sprinklers has been laid on permanent haul roads. Two mobile water tankers of large capacity namely 50 KL which can cover the entire width of the haul road has been commissioned.</p> <p>All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system.</p> <p>Mist cannons have placed at strategic points to prevent and control of fugitive dust emission.</p> <p>Ambient air quality conforms to the CPCB norms.</p> <div style="text-align: center;">  </div> <p style="text-align: center;"><i>Dust control measures at Noamundi Iron Mine</i></p>

**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

III. Water quality monitoring and preservation		
(17)	<p>In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area</p>	<p>As per approved mining plan, the mining operations are restricted above the ground water table. The ultimate working depth is 480 mRL while the Ground water table is at 478 mRL. Hence, the mine workings will never intersect ground water during the entire life of the mine. However, in case of working below ground water table prior approval for CGWA shall be taken.</p>
(18)	<p>Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department/ State Pollution Control Board.</p>	<p>Regular monitoring of flow rate of springs and nallahs is carried out and records are maintained. Streams (Balijhore nallah and Jojo nallah) which are present in and around the mine lease area shall not be disturbed. Ground water quality and Ground water level are being monitored periodically in and around the lease area through a network of dug wells and piezometric borewells. Dug wells are located in villages adjacent to the mine lease area while piezometric borewells are located within the mine lease area. All the monitored data is being submitted to various agencies on six monthly basis along with half yearly EC compliance reports.</p>
(19)	<p>Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six- monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department/ State Pollution Control Board.</p>	<p>Ground water quality and Ground water level are being monitored periodically in and around the lease area through network of dug wells and piezometric borewells. All the monitored data is being submitted on six monthly basis along with Half yearly EC compliance reports to the Regional Office of the Ministry, CGWA/CGWB and Jharkhand State Pollution Control Board (Annexure VII)</p>
(20)	<p>The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and</p>	<p>Water quality monitoring of perennial nallahs (upstream and downstream) present inside and outside the mine lease area is done regularly (Annexure VIII) All the water parameters are within the stipulated limits. No obstruction or alteration will be made to water bodies during mining operations.</p>

HALF-YEARLY EC COMPLIANCE REPORT FOR NOAMUNDI IRON MINE OF TATA STEEL LIMITED

<p>maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-a-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC. The monitoring of water courses/bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.</p>	<p>The monitoring is carried out four times in a year and monitoring reports are submitted to Regional Office of Ministry of Environment, Forest and Climate Change, Central Ground Water Authority and Regional Director, Central Ground Water Board, Jharkhand State Pollution Control Board and Central Pollution Control Board as part of EC compliance reports.</p>
<p>(21) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.</p>	<p>There is no wastewater discharge from the mine and mineral processing plant, i.e entire unit is "Zero Discharge Unit".</p> <p>After mineral processing (wet plant) the water is collected in slime pond, where decanted water from the slime dam is completely recycled & reused in the beneficiation plant and slime is recovered and stored for future use. Thus no water is being discharged to environment.</p> <p>The environmental monitoring data is regularly uploaded on the company website as a part of six-monthly EC compliance reports. The link for the same is attached here (https://www.tatasteel.com/corporate/our-organisation/environment/environment-compliance-reports/).</p> <p>In addition to this all the monitored data is shown in display board present at the entrance gate.</p> <div style="display: flex; justify-content: space-around;">   </div>

**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

(22) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.

Rainwater harvesting (RWH) ponds and ground water recharge structures have been constructed and approved by the Ground Water Directorate, Jharkhand, Ranchi. The capacity of RWH ponds is 19,785 cum. The catchment area of the RWH pond complex is approx. 117 Ha hence it has been calculated that the rainwater harvesting potential of the RWH pond structure is approx. 12,50,000 cum/annum.



RWH structure for ground water augmentation in the area

Approval from Ground Water Directorate, Water Resources Dept. Jharkhand for RWH pond structure was received vide letter no. GWD 317/Ranchi, dated 14th Jun, 2012.

Further, the rainwater collected in the mine pits are allowed to be collected in the lowest level sumps to augment the ground water resources gradually. Various RWH structures in the form of Check Dams, Saucer ponds, Gabion Structures, Trenches and contour are also made based on recommendation in available area.



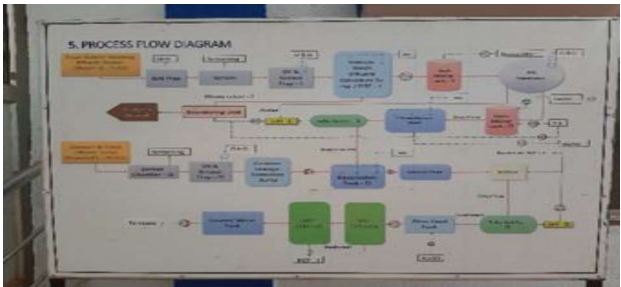

RWH structure for ground water augmentation in the area

To augment the ground water level of surrounding village areas new additional ponds are constructed in buffer zone of Noamundi mine leases.



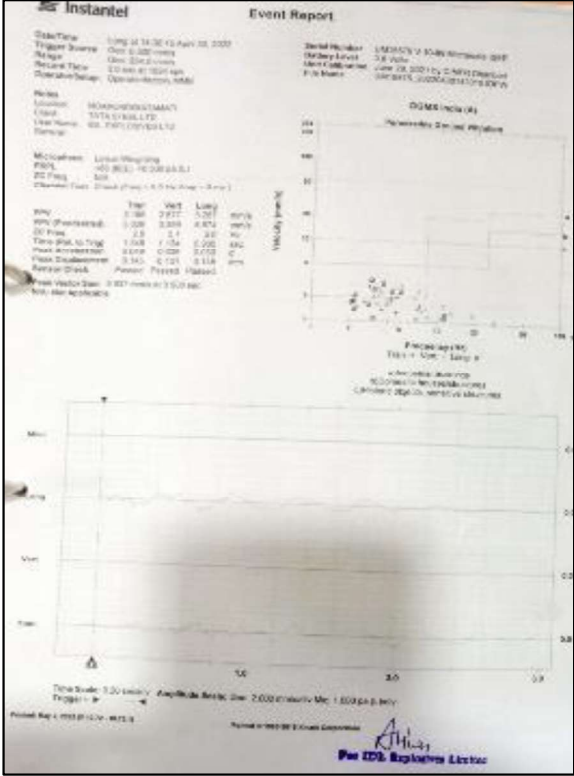
Newly constructed ponds in surrounding villages

**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

<p>(23)</p>	<p>Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.</p>	<p>A 30 KLD CETP along with Oil & grease pit with collection system has been installed at HEMM maintenance area. Oil is separated by gravitational technique and solids settle by sedimentation. Clear water flows to next chamber after passing through baffle wall. Clear water is again re-used. Water quality analysis is done on regular basis.</p>  <p style="text-align: center;"><i>Flow sheet of 30KLD CETP</i></p> <p>Two Effluent Treatment Plant (ETP) of 10 KLD each are also installed & working smoothly in mine lease area of Noamundi. Copy of monitoring reports are enclosed as (Annexure-IX)</p>  <p style="text-align: center;"><i>Sewage & Effluent Treatment Plant at Noamundi</i></p>
<p>(24)</p>	<p>The water balance/ water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.</p>	<p>Noted. Evaluation of water consumption is being carried out and suitable measures for reducing water consumption have been identified such as commissioning of paste thickener etc. There is zero waste-water discharge by the mine and it will be maintained in the future as well. Optimization of the water consumption will be done to reduce the specific water consumption year-on-year.</p>

HALF-YEARLY EC COMPLIANCE REPORT FOR NOAMUNDI IRON MINE OF TATA STEEL LIMITED







IV. Noise and vibration monitoring and prevention

<p>(25) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.</p>	<p>Monitoring of peak particle velocity (ppv) is done after every blast as per DGMS guidelines and the reports are being maintained.</p> <p>The sample report of vibration monitoring done at Noamundi is given herewith:</p> 
<p>(26) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day/night hours</p>	<p>The illumination & sound has been done in such a way that the villagers are not disturbed.</p> <p>In addition to this we are planning to install noise barriers around the railway siding boundary to significantly reduce the noise propagation outside the mine premises.</p>
<p>(27) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health</p>	<p>Adequate measures are taken for control of work noise levels such as all HEMMs have acoustic cabins with air conditioners and the exhaust manifold have silencers. Noisy operations have been identified and persons engaged in such operations are provided with ear plugs/muffs.</p> <p>All persons working in dusty areas are provided with protective dust masks.</p>


**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

	aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.	Adequate training, awareness and information on safety and health aspects are provided on regular basis.
V. Mining plan		
(28)	The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.	Total excavation (quantum of mineral, waste, over burden, inter burden and top soil etc.); mining technology; lease area; scope of working (method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining, concurrent reclamation and reclamation at mine closure, etc. shall be adhered as per the approved mining plan.
(29)	The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.	This is not applicable in this financial year as it is an operational mine.
(30)	The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis- a-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office.	Noted. Land-use of the mine lease area shall be governed as per the approved mining plan. Excavation, backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area are governed as per approved mining plan. Report on plantation activities is being submitted regularly to the Board along with monthly reports.
VI. Land reclamation		
(31)	The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept	Over burden is stacked at the earmarked places only. The slopes of the OB dumps are terraced, and the overall height width and slope angle is maintained as per

**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

	<p>active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.</p>	<p>approved Mining Plan. Generation of topsoil is very minimal because no fresh area is being broken for mining and the top soil generated, is being kept at the earmarked site(s) only inside the mining lease area and is being subsequently used for plantation & other vegetation & grassing activities. The inactive dump slopes are vegetated with native species, vetiver grass and coir matting is done for better slope stabilization.</p> <div style="display: flex; justify-content: space-around;">   </div> <p align="center"><i>Vetiver grass</i> <i>Coir matting</i></p>
(32)	<p>The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.</p>	<p>Reject/waste is stacked at the earmarked places only. The slopes of the dumps are terraced, and the overall height width and slope angle is maintained as per approved Mining Plan.</p>
(33)	<p>The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.</p>	<p>Currently two Over Burden (OB) dumps are made as per plan at earmarked area which are progressively stabilized by native species plantation and grass vegetation as per direction of MoEF&CC.</p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around;">   </div> <p align="center"><i>Plantation on Waste dump D2</i></p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around;">   </div> <p align="center"><i>Local grass plantation on bunds of haul roads at mine.</i></p>

HALF-YEARLY EC COMPLIANCE REPORT FOR NOAMUNDI IRON MINE OF TATA STEEL LIMITED

<p>(34)</p>	<p>The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners/ Bentonite etc. shall be undertaken for stabilization of the dump.</p>	<p>The inactive dump slopes are vegetated with native species, vetiver grass and coir matting is done for better slope stabilization. The dump mass is consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, laying of coir mat along with grass seeding is practiced.</p> <div style="display: flex; justify-content: space-around;">   </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <p><i>Vetiver grass</i></p> <p><i>Coir matting</i></p> </div>
<p>(35)</p>	<p>The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.</p>	<p>Slope stability study has been done for dumps at Noamundi Iron Mine by CSIR-Central Institute of Mining and Fuel Research, Dhanbad. The report has been submitted to Regional Office of MoEF&CC vide letter no: MD/ENV/303/103/2021 dated 19.11.2021.</p>
<p>(36)</p>	<p>Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly</p>	<p>Garland drains with settling pits have been constructed all along the OB dumps. Settling pits have also been provided to arrest the silt flow from area. The de-siltation of these check dams settling pits are done regularly and properly maintained. Sedimentation pits have been constructed at the corners of the garland drains to take care of run off of water even during peak rain fall and they are being de-silted regularly before and after the monsoon. Garland drains, settling tanks and Check dams had been constructed both around the mine pit and over burden dump(s).</p> <div style="display: flex; justify-content: space-around;">   </div> <p style="text-align: center;"><i>garland drains, Settling pits at mine</i></p> <div style="display: flex; justify-content: space-around; margin-top: 20px;">   </div> <p style="text-align: center;"><i>De-siltation of slime & check dams before monsoon.</i></p>

HALF-YEARLY EC COMPLIANCE REPORT FOR NOAMUNDI IRON MINE OF TATA STEEL LIMITED

(37)	Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.	Check dams of appropriate size, gradient and length are constructed along with sedimentation pits as per progressive mine closure plan.
(38)	The top soil, if any, shall temporarily be stored at earmarked sile(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose	Generation of topsoil is very minimal because no fresh area is being broken for mining and the top soil generated, is being kept at the earmarked site(s) only inside the mining lease area and is being subsequently used for plantation & other vegetation & grassing activities.

VII. Miscellaneous

(39)	No Transportation of the minerals shall be allowed in case of roads passing through villages/habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.	<p>All the finished iron ore product is transported to end-users through Noamundi captive railway siding. As an interim arrangement, it is proposed to additionally use the public railway sidings (Bokaro siding and Line no.5 Siding) for dispatch to end users. Therefore the road between Bottom bin and public railway sidings will be used for transporting the material through trucks. This is as per approval granted by MoEFCC.</p> <p>Pollution Under Control (PUC) certificate has been obtained for all the vehicles from authorized pollution testing centers.</p>
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Form 5B
(See rules 115 (2))

Pollution Under Control Certificate

Submitted By: _____
Government of Jharkhand

Date: 09/09/2022
Time: 18:00:00 PM
Validity upto: 04/11/2023

Certificate No.: PUC00210001885
 Registration No.: JH050006
 Date of Registration: 07/JUL/2017
 Make & Year of Manufacturing: Tata/2017
 Make Model Number: *****
 Engine Make: SUZUKI STAGE II
 Fuel: DIESEL
 PUC Code: PUC0001
 Cate: _____
 Area: RAJSHAHIBPUR (as applicable)
 VEH. description: _____

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (after 2 decimal places)
1	Carbon Monoxide (CO)	percentage (%)	5	
2	Hydrocarbons, (C ₁ H ₄)	ppm		
3	CO	percentage (%)		
4	NOx	ppm	2300 ± 300	
5	Smoke Density	LIGHT absorption coefficient	1.4 ± 0.02	
6	Ultrasonic	Ultrasonic	2.45	0.67

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note: 1. Vehicle owners to link their vehicle numbers to registered vehicle by logging to mvaar.pucanalyzer.gov.in

Authorized Signature with stamp of PUC operator
60mm x 30 mm

**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

(40) The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipment's like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions

A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire the entire width of the haul road has been commissioned.



Mobile & Fixed water sprinklers in Noamundi mines



Mist type dust suppression measures



Closed conveyor used in mineral transport

Dust Extraction system is present at Primary crusher.






VIII. Green Belt


(41) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

All feed hoppers where ore is unloaded and all transfer chutes have been provided with dryfog dust suppression system. Mist cannons have placed at strategic points to prevent and control of fugitive dust emission. The beneficiated ore from processing plant to railway sidings being transported through covered conveyors only.


**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

<p>(42)</p>	<p>The Project Proponent shall carryout plantation/afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.</p>	<p>Safety zone of 7.5 meters all along the mine lease boundary is maintained with plantation of saplings.</p> 
<p>(43)</p>	<p>The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.</p>	<p>Plantation of saplings on waste dumps, backfilled area is done as per approved mine plan.</p> <p>Plantation of about saplings is done on Waste dump D2, Kurtha dump. In addition to this Avenue plantation outside the mine lease is also carried out.</p>  <p style="text-align: center;"><i>Plantation on dumps</i></p>  <p style="text-align: center;"><i>Avenue Plantation outside the mine</i></p>
<p>(44)</p>	<p>The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt. and implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation</p>	<p>The site specific wildlife conservation plan (SSWLCP) has been approved by Chief Wildlife Warden on 28.08.2020. The impact of mining project on wildlife of the study area and detailed mitigative measures are part of this plan. The total approved cost for implementation of SSWLCP is Rs.25.26 crores (to be spent over a 10-year period). Site specific wild life conservation plan and its approval has been submitted to the Ministry and its Regional Office.</p>

**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

	status (annual) shall be submitted to the Regional Office of the Ministry.	
IX. Human Health Environment & Public Hearing		
(45)	The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/preventive measures be taken. A status report on the same may be sent to MoEFCC Regional Office and DGMS on half-yearly basis.	<p>Noamundi hospital is well-equipped with an Occupational Health Center OHS center employs a full-time occupational health specialist. Health of the employees through audiometry, x-ray, pathology, ophthalmology, lung-function test, etc monitored. Some of the best practices related to occupational health adopted in mine are:</p> <ul style="list-style-type: none"> • Employees’ health check-up under Wellness @ workplace program • Health awareness classes on weekly basis for shop floor employees • Officers’ health check-up on yearly basis for lifestyle disease • Counseling to high blood pressure, sugar cholesterol, hypertension employees through medical board
(46)	The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.	<p>The company’s commitment in the area of Health & Safety is well supported by implementation of: Safety Principles & Occupational Health Policy Occupational Health & Safety Management System (ISO 45001:2018). Hazards in work place are identified as a part of occupational health policy and appropriate control measures are in place to protect the health and well being of workers.</p> <p>Various awareness programs regarding health, sanitation etc. have been conducted with the help of Tata Steel Rural Development Society(TSRDS).</p> <p>The health related initiatives in place are-</p> <ul style="list-style-type: none"> ▪ Mega health camps, Malaria parasite control programme, Cataract surgery camp, Prenatal care ▪ MANSI project: Reducing infant and maternal mortality ▪ Providing financial assistance and waivers for needy patients, on a case-to-case basis ▪ Preventing and treating communicable diseases like malaria, tuberculosis and HIV / AIDS ▪ Treating and rehabilitating persons with disabilities ▪ RISHTA project: working on adolescent and reproductive sexual health issues
		

**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

		
(47)	<p>The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminum, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).</p>	<p>Noamundi hospital is well-equipped with an Occupational Health Center OHS center employs a full-time occupational health specialist. Health of the employees through audiometry, x-ray, pathology, ophthalmology, lung-function test, etc monitored.</p> <p>Pre-placement medical examination and periodical examination of the workers engaged is being conducted & record maintained. The schedule of Periodical Medical Examination is once in every 3 years for the employees of age more than 45 years and once in 5 years for the employees of age less than 45 years.</p> <p>Some of the best practices related to occupational health adopted in mine are:</p> <ul style="list-style-type: none"> • Employees’ health check-up under Wellness @ workplace program • Health awareness classes on weekly basis for shop floor employees • Officers’ health check-up on yearly basis for lifestyle disease • Counseling to high blood pressure, sugar cholesterol, hypertension employees through medical board • Observation of important health days like World No Tobacco day, AIDS day, Heart day, Diabetic day etc • Display of calorie chart in canteens alongside the menu <p>No adverse cases have been found till date.</p> 
(48)	<p>The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 - 24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities ,{c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced</p>	<p>All the performance indicators for workers during IME and PME are maintained. In addition to health check-ups, health awareness classes on weekly basis for shop floor employees, counselling to high blood pressure, sugar, cholesterol etc is done.</p> <p>No adverse cases have been found till date.</p>

**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

	Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented}, (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.	
(49)	The Project Proponent shall ensure that 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.	All the personnel working in dusty areas are provided with protective respiratory devices such as masks and also provided adequate training and information on safety and health aspects.
(50)	Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.	Township has been developed for workers with all the adequate facilities such as hospital, schools, STP etc.
(51)	The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status report on implementation of action plan shall be submitted to the concerned Regional office of the Ministry along with District Administration.	Shall be complied.
X. Corporate Environment Responsibility (CER)		
(52)	The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road	All the activities proposed during Public Consultation are being implemented. The detailed status (Year-1 compliance) shall be shared in next compliance report.

**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

	constructed needs to be submitted to Regional Office MoEFCC annually along with audited statement.	
(53)	Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office.	Funds allocated for environmental management are spent only for environment related purposes and not diverted to any other purpose. Expenditure details of environmental protection measures are reported to MoEF&CC and its Regional Office every year during half yearly compliance submission.
XI. Miscellaneous		
(54)	The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.	The digital processing of entire lease area is being carried out regularly. The current land use pattern is made by M/s Geo Consultants Pvt. Ltd. the authorized agency by ORSAC, Bhubaneswar.
(55)	The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Not applicable. Noamundi is an operational Iron mine of Tata Steel Ltd from last several decades. Thus financial closure & it's approval is not applicable.
(56)	The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.	Six monthly compliance reports are being submitted regularly on the status of implementation of the stipulated environmental safeguards to the MoEF&CC, its Regional Office, Central Pollution Control Board and Jharkhand State Pollution Control Board.
(57)	A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.	A separate environmental management cell is in place with people having relevant qualification on environmental science. Organization has adequate environmental reporting system for adequate decision making.
(58)	The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data/information/ monitoring reports.	Full cooperation shall be extended to the officers in furnishing the requisite data/ information/ monitoring reports.
(59)	After this road is brought into utilization for transport, 6 monthly monitoring report as well as videography of the transportation undertaken to be submitted to Ministry.	It shall be complied after the road is brought into utilization. Currently all the finished iron ore product is transported to end-users through Noamundi captive railway siding.
(60)	The project proponent is advised to undertake a videography of 10.5 km road for those who are already using this road for transportation of the	Videography of the 10.5 km road has been completed. It is being shared herewith through One-drive link. It is requested to click on the link below to view the

**HALF-YEARLY EC COMPLIANCE REPORT FOR
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**

	mineral other than M/s Tata Steel Limited from their respective mines to Jamda site and submit to the Ministry for information.	video. Access has been provided to- ro.ranchi-mef@gov.in Video Noamundi Jamda.mp4
(61)	It was also mentioned by the project proponent that they are willingly accepting not to use Jamda siding and this will stay till the information on Jamda transportation available with the Ministry and within 5 years `project proponent must bring conveyer system till railway siding and stop using road.	Jamda siding shall not be used for transportation of mineral by Noamundi Iron Mine of Tata Steel Limited.

ANNEXURE-I

Status of Remediation Plan: Noamundi Iron Mine

Sl. No.	Description	Area/Department	Qty	Status
1	Wind-shield cum Noise barrier	Bottom Bin	1500 mtr	PO placement is in progress
2	Greenery	NIM	16 Ha	Continuous work and plantation is in progress. Nearly 12152 saplings were planted in FY:23. And 11276 Plantation is done in FY'24.
3	Miyawaki Plot	NIM	1 Ha	This is a continuous job. Plantation is done for an area of 0.25 ha in FY'24.
4	PMCP measures	NIM	Lot	PMCP measures are routine jobs and are in progress

Status of NRAP: NIM

Sl. No	Description	Area/Department	Qty	Status
1	Fruit-bearing trees plot	Hesapi, Dwarsahi	40 acres	<ol style="list-style-type: none"> 1. Land identification done and NOC received for 25 Acres. 2. Agreement executed with Land owners at Dwarsahi. 3. Work to begin in upcoming months.
2	Avenue Plantation	Mahudi to Bhangaon Noamundi to Kutingta Noamundi to Jamda	15 km	<ol style="list-style-type: none"> 1. It is a routine and work is in progress
3	Construction & Maintenance of Rain-water harvesting pond structures	Noamundi Basti, Mahudi, Meralgara, Deogaon	8 nos	<ol style="list-style-type: none"> 1. Sites identified, and NOC received 2. Work completed at 11 locations at Noamundi basti- 03, Meralgara- 01, Deogaon- 03 and Dudhvila-01, Padapahar -01, Kadajamda - 01& Gundijor-01.

CRAP Status: NIM

Sl. No.	Description	Area/Department	Qty	Status
1	Solar lighting	Mahudi, Sialjoda, Meralgara, Baljodi	23 nos	Meralgara-4, Sialjora-10, Sialjora-10, Mahudi-19, Sarbil-8 and Noamundi Basti-25 and others are in progress.
2	Solar-powered bore-well in schools	Mahudi, Sialjoda, Meralgara	3 nos	Sialjoda- 01, others work are in progress and will be executed soon.
3	Installation of RO plants in surrounding schools	Mahudi, Noamundi Basti, Sarbil, Bhangaon, Lepang, Jampani	7 nos	Mahudi- 02 and other works will be executed soon.
4	Sponsoring Eye-camps in collaboration with Shankar Netralaya	Jaganathpur, Sarbil	2 camps	Eye camp organised in Dec'22
5	Lift-irrigation	Kumirta	1 no	1. Site identification done 2. NOC is in progress
6	Construction of check-dams along with feeder canals	Kutingta, Kotgarh	2 nos	1. Site identification done 2. NOC is in progress
7	Construction of Munda /Manki Bhavan	Dukasai, Baljodi, Gundijjoda, Meralgara	4 nos	Work completed in Meralgara Final finishing is under progress in Gundijjoda and Baljodi

ANNEXURE-II



Test Report

Ambient Air Quality Monitoring Report-April-2023

Report No.: AN/AAQ/TS-NIM/2023/3-1		Date: 03/05/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/21042023/ENV-84-1/NIM-CZ/AAQMS-1 and ALPL/21042023/ENV-84-2/NIM-CZ/AAQMS-2
Sample Drawn By:-	Anacon Representative (Mr. Sovan Giri)	Sample Inward Date:-	10, 17, 24 April-2023 & 2-May-2023
Test Started On:-	10, 17, 24 April-2023 & 2-May-2023	Test Completed On:-	10, 17, 24 April-2023 & 3-May-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-1	Near WTP	04/04/2023	52.6	21.6	12.4	17.9	BDL (DL - 0.5)
		07/04/2023	54.1	23.8	11.6	16.3	BDL (DL - 0.5)
		11/04/2023	48.7	16.9	8.7	15.7	BDL (DL - 0.5)
		14/04/2023	52.8	21.4	12.1	21.6	BDL (DL - 0.5)
		18/04/2023	56.3	23.7	11.9	24.1	BDL (DL - 0.5)
		21/04/2023	49.7	16.3	8.4	17.6	BDL (DL - 0.5)
		25/04/2023	51.9	18.2	9.3	16.4	BDL (DL - 0.5)
		28/04/2023	53.6	21.8	9.7	17.1	BDL (DL - 0.5)
Monthly Average Value			52.5	20.5	10.5	18.3	BDL (DL - 0.5)
AAQMS-2	Near Hospital	04/04/2023	51.6	18.3	7.9	17.2	BDL (DL - 0.5)
		07/04/2023	48.3	16.7	8.4	16.1	BDL (DL - 0.5)
		11/04/2023	53.8	21.6	11.3	18.7	BDL (DL - 0.5)
		14/04/2023	56.2	24.9	12.8	21.4	BDL (DL - 0.5)
		18/04/2023	52.9	18.7	9.3	17.2	BDL (DL - 0.5)
		21/04/2023	48.1	16.2	7.6	16.9	BDL (DL - 0.5)
		25/04/2023	51.3	17.1	8.4	17.3	BDL (DL - 0.5)
		28/04/2023	49.1	16.8	6.8	16.2	BDL (DL - 0.5)
Monthly Average Value			51.4	18.8	9.1	17.6	BDL (DL - 0.5)

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Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Snehal Raut

Deputy Technical Manager

Authorized Signatory

S D Garway

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----

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Test Report

Ambient Air Quality Monitoring Report-April-2023

Report No.: AN/AAQ/TS-NIM/2023/3-2		Date: 03/05/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/21042023/ENV-84-3/NIM-CZ/AAQ-3 and ALPL/21042023/ENV-84-4/NIM-CZ/AAQ-4
Sample Drawn By:-	Anacon Representative (Mr. Sovan Giri)	Sample Inward Date:-	10, 17 ,24 April-2023 & 2-May-2023
Test Started On:-	10, 17 ,24 April-2023 & 2-May-2023	Test Completed On:-	10, 17 ,24 April-2023 & 3-May-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³ IS 5182 (Part 23)	PM _{2.5} µg/m ³ USEPA-40 (Part 50)	SO ₂ µg/m ³ IS:5182 (Part-2)	NO ₂ µg/m ³ IS:5182 (Part-6)	CO mg/m ³ IS:5182 (Part-10)
Method Reference							
AAQMS-3	MRSS	04/04/2023	54.7	18.3	11.4	23.7	BDL (DL - 0.5)
		07/04/2023	56.3	21.6	12.7	26.1	BDL (DL - 0.5)
		11/04/2023	61.8	23.9	11.6	24.3	BDL (DL - 0.5)
		14/04/2023	58.2	19.3	9.4	18.7	BDL (DL - 0.5)
		18/04/2023	54.6	18.1	6.8	16.2	BDL (DL - 0.5)
		21/04/2023	63.9	23.6	11.7	21.8	BDL (DL - 0.5)
		25/04/2023	58.3	21.9	9.3	18.3	BDL (DL - 0.5)
		28/04/2023	61.7	19.2	8.4	16.8	BDL (DL - 0.5)
Monthly Average Value			58.7	20.7	10.2	20.7	BDL (DL - 0.5)
AAQMS-4	Bottom Bin	04/04/2023	57.3	23.6	11.4	18.7	BDL (DL - 0.5)
		07/04/2023	61.9	26.1	12.8	23.6	BDL (DL - 0.5)
		11/04/2023	57.2	18.7	9.1	17.2	BDL (DL - 0.5)
		14/04/2023	54.8	16.9	8.7	16.7	BDL (DL - 0.5)
		18/04/2023	62.4	21.4	11.3	21.8	BDL (DL - 0.5)
		21/04/2023	58.5	18.2	8.6	16.4	BDL (DL - 0.5)
		25/04/2023	57.1	17.8	7.2	15.9	BDL (DL - 0.5)
		28/04/2023	61.7	21.6	9.3	18.2	BDL (DL - 0.5)
Monthly Average Value			58.8	20.5	9.8	18.6	BDL (DL - 0.5)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

----End of Report----

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Test Report

Ambient Air Quality Monitoring Report-May-2023

Report No.: AN/AAQ/TS-NIM/2023/3-1		Date: 03/06/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/23052023/ENV-116-1/NIM-CZ/AAQMS-1 and ALPL/23052023/ENV-116-2/NIM-CZ/AAQMS-2
Sample Drawn By:-	Anacon Representative (Mr. Sovan Giri)	Sample Inward Date:-	8, 15, 22 May-2023 & 2-June-2023
Test Started On:-	8, 15, 22 May-2023 & 2-June-2023	Test Completed On:-	9, 16, 23 May-2023 & 3-June-2023
Sampling Procedure	ANtd/7.2/Mon-01		

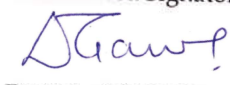
Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-1	Near WTP	02/05/2023	56.2	24.9	11.8	18.3	BDL (DL - 0.5)
		05/05/2023	61.7	26.8	12.4	23.7	BDL (DL - 0.5)
		09/05/2023	54.9	18.3	9.2	17.1	BDL (DL - 0.5)
		12/05/2023	56.8	19.6	11.7	21.8	BDL (DL - 0.5)
		16/05/2023	54.2	21.1	8.6	16.7	BDL (DL - 0.5)
		19/05/2023	52.9	16.9	7.2	16.4	BDL (DL - 0.5)
		23/05/2023	48.3	17.2	8.4	17.3	BDL (DL - 0.5)
		26/05/2023	51.6	16.4	6.8	16.9	BDL (DL - 0.5)
Monthly Average Value			54.6	20.2	9.5	18.5	BDL (DL - 0.5)
AAQMS-2	Near Hospital	02/05/2023	54.7	21.6	8.4	16.9	BDL (DL - 0.5)
		05/05/2023	61.4	23.8	11.6	21.4	BDL (DL - 0.5)
		09/05/2023	58.3	19.2	9.2	18.1	BDL (DL - 0.5)
		12/05/2023	54.7	18.3	8.7	19.6	BDL (DL - 0.5)
		16/05/2023	63.1	24.7	12.8	23.9	BDL (DL - 0.5)
		19/05/2023	58.3	21.6	11.4	21.7	BDL (DL - 0.5)
		23/05/2023	61.8	19.3	9.2	18.2	BDL (DL - 0.5)
		26/05/2023	54.7	18.7	8.4	17.1	BDL (DL - 0.5)
Monthly Average Value			58.4	20.9	10.0	19.6	BDL (DL - 0.5)

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Verified by

 Snehal Raut
 Deputy Technical Manager

Authorized Signatory

 Dr. (Mrs.) S. D. Garway
 Quality Manager

---End of Report---

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Test Report

Ambient Air Quality Monitoring Report-May-2023

Report No.: AN/AAQ/TS-NIM/2023/3-2		Date: 03/06/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/23052023/ENV-116-3/NIM-CZ/AAQ-3 and ALPL/23052023/ENV-116-4/NIM-CZ/AAQ-4
Sample Drawn By:-	Anacon Representative (Mr. Sovan Giri)	Sample Inward Date:-	8, 15, 22 May-2023 & 2-June-2023
Test Started On:-	8, 15, 22 May-2023 & 2-June-2023	Test Completed On:-	9, 16, 23 May-2023 & 3-June-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³ IS 5182 (Part 23)	PM _{2.5} µg/m ³ USEPA-40 (Part 50)	SO ₂ µg/m ³ IS:5182 (Part-2)	NO ₂ µg/m ³ IS:5182 (Part-6)	CO mg/m ³ IS:5182 (Part-10)
Method Reference							
AAQMS-3	MRSS	02/05/2023	61.7	24.8	13.9	26.1	BDL (DL - 0.5)
		05/05/2023	58.3	19.2	11.6	24.7	BDL (DL - 0.5)
		09/05/2023	54.1	18.6	9.2	18.3	BDL (DL - 0.5)
		12/05/2023	49.7	16.1	8.7	16.8	BDL (DL - 0.5)
		16/05/2023	52.6	21.6	11.3	21.9	BDL (DL - 0.5)
		19/05/2023	56.3	23.8	12.1	24.7	BDL (DL - 0.5)
		23/05/2023	48.1	19.2	9.7	16.8	BDL (DL - 0.5)
		26/05/2023	52.8	21.6	11.4	18.3	BDL (DL - 0.5)
Monthly Average Value			54.2	20.6	11.0	21.0	BDL (DL - 0.5)
AAQMS-4	Bottom Bin	02/05/2023	54.7	21.6	12.8	17.9	BDL (DL - 0.5)
		05/05/2023	48.3	16.7	11.3	16.1	BDL (DL - 0.5)
		09/05/2023	56.1	24.6	13.8	19.2	BDL (DL - 0.5)
		12/05/2023	52.8	18.3	9.2	16.7	BDL (DL - 0.5)
		16/05/2023	48.3	19.7	8.4	15.3	BDL (DL - 0.5)
		19/05/2023	56.1	21.4	11.6	18.2	BDL (DL - 0.5)
		23/05/2023	54.2	18.3	9.1	16.7	BDL (DL - 0.5)
		26/05/2023	56.7	19.6	8.4	16.4	BDL (DL - 0.5)
Monthly Average Value			53.4	20.0	10.6	17.1	BDL (DL - 0.5)

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Verified by

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

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Test Report

Ambient Air Quality Monitoring Report-June-2023

Report No.: AN/AAQ/TS-NIM/2023/3-1			Date: 03/07/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)		W. O. No.	4700098928/962
			W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/22062023/ENV-142-1/NIM-CZ/AAQMS-1 and ALPL/22062023/ENV-142-2/NIM-CZ/AAQMS-2	
Sample Drawn By:-	Anacon Representative (Mr. Sovan Giri)	Sample Inward Date:-	12, 19, 26 June-2023 & 3-July-2023	
Test Started On:-	12, 19, 26 June-2023 & 3-July-2023	Test Completed On:-	13, 19, 27 June-2023 & 3-July-2023	
Sampling Procedure	ANtd/7.2/Mon-01			

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³	
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)	
AAQMS-1	Near WTP	02/06/2023	53.9	23.6	12.1	17.6	BDL (DL - 0.5)	
		06/06/2023	57.2	24.9	11.6	18.3	BDL (DL - 0.5)	
		09/06/2023	47.6	16.4	8.2	14.9	BDL (DL - 0.5)	
		13/06/2023	52.7	21.6	9.3	24.7	BDL (DL - 0.5)	
		16/06/2023	49.3	16.8	7.6	21.3	BDL (DL - 0.5)	
		20/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		23/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		27/06/2023	51.7	17.9	8.4	19.7	BDL (DL - 0.5)	
Monthly Average Value			52.1	20.2	9.5	19.4	BDL (DL - 0.5)	
AAQMS-2	Near Hospital	02/06/2023	46.2	16.7	7.6	17.2	BDL (DL - 0.5)	
		06/06/2023	43.9	15.8	6.8	16.1	BDL (DL - 0.5)	
		09/06/2023	51.7	21.6	11.3	21.4	BDL (DL - 0.5)	
		13/06/2023	48.3	17.2	9.1	18.6	BDL (DL - 0.5)	
		16/06/2023	52.8	21.9	11.7	23.1	BDL (DL - 0.5)	
		20/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		23/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		27/06/2023	53.6	21.4	11.3	21.7	BDL (DL - 0.5)	
Monthly Average Value			49.4	19.1	9.6	19.7	BDL (DL - 0.5)	

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Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----

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Test Report

Ambient Air Quality Monitoring Report-June-2023

Report No.: AN/AAQ/TS-NIM/2023/3-2		Date: 03/07/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/22062023/ENV-142-3/NIM-CZ/AAQ-3 and ALPL/22062023/ENV-142-4/NIM-CZ/AAQ-4
Sample Drawn By:-	Anacon Representative (Mr. Sovan Giri)	Sample Inward Date:-	12, 19, 26 June-2023 & 3-July-2023
Test Started On:-	12, 19, 26 June-2023 & 3-July-2023	Test Completed On:-	13, 19, 27 June-2023 & 3-July-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³	
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)	
AAQMS-3	MRSS	02/06/2023	56.3	26.1	12.8	24.9	BDL (DL - 0.5)	
		06/06/2023	64.7	31.6	11.9	26.8	BDL (DL - 0.5)	
		09/06/2023	52.4	24.9	9.7	19.3	BDL (DL - 0.5)	
		13/06/2023	47.6	18.3	8.4	17.1	BDL (DL - 0.5)	
		16/06/2023	54.9	23.6	11.2	21.7	BDL (DL - 0.5)	
		20/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		23/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		27/06/2023	51.7	21.4	9.6	21.2	BDL (DL - 0.5)	
		Monthly Average Value			54.1	24.3	10.6	21.8
AAQMS-4	Bottom Bin	02/06/2023	51.6	18.3	11.9	16.4	BDL (DL - 0.5)	
		06/06/2023	47.2	16.1	9.2	18.6	BDL (DL - 0.5)	
		09/06/2023	42.8	14.7	6.8	16.1	BDL (DL - 0.5)	
		13/06/2023	48.7	16.9	9.1	21.7	BDL (DL - 0.5)	
		16/06/2023	52.1	21.4	11.3	23.9	BDL (DL - 0.5)	
		20/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		23/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		27/06/2023	52.8	21.9	9.2	19.1	BDL (DL - 0.5)	
		Monthly Average Value			49.2	18.2	9.6	19.3

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 Snehal Raut
 Deputy Technical Manager

Authorized Signatory

 Dr. (Mrs.) S. D. Garway
 Quality Manager

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Test Report

Ambient Air Quality Monitoring Report-July-2023

Report No.: AN/AAQ/TS-NIM/2023/3-1			Date: 03/08/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)		W. O. No.	4700098928/962
			W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/20072023/ENV-180-1/NIM-CZ/AAQMS-1 and ALPL/20072023/ENV-180-2/NIM-CZ/AAQMS-2	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	10,17,24 July-2023 & 2-August-2023	
Test Started On:-	10, 17, 24 July-2023 & 2-Aug-2023	Test Completed On:-	11,18,25 July-2023 & 3-August-2023	
Sampling Procedure	ANtd/7.2/Mon-01			

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-1	Near WTP	04/07/2023	48.7	21.7	11.9	16.4	BDL (DL - 0.5)
		07/07/2023	53.6	23.9	12.6	21.3	BDL (DL - 0.5)
		11/07/2023	46.2	15.7	9.2	18.1	BDL (DL - 0.5)
		14/07/2023	51.7	21.6	11.3	19.7	BDL (DL - 0.5)
		18/07/2023	48.3	18.2	8.7	16.3	BDL (DL - 0.5)
		21/07/2023	51.7	19.3	9.2	17.1	BDL (DL - 0.5)
		25/07/2023	47.6	16.7	7.6	16.4	BDL (DL - 0.5)
		28/07/2023	52.9	18.2	9.1	17.6	BDL (DL - 0.5)
Monthly Average Value			50.1	19.4	10.0	17.9	BDL (DL - 0.5)
AAQMS-2	Near Hospital	04/07/2023	47.2	16.9	8.4	18.3	BDL (DL - 0.5)
		07/07/2023	53.6	24.7	11.6	21.6	BDL (DL - 0.5)
		11/07/2023	43.9	18.2	9.2	19.7	BDL (DL - 0.5)
		14/07/2023	46.1	21.6	8.7	18.2	BDL (DL - 0.5)
		18/07/2023	51.7	23.6	12.8	23.6	BDL (DL - 0.5)
		21/07/2023	48.3	19.2	11.4	16.7	BDL (DL - 0.5)
		25/07/2023	52.9	18.7	9.3	17.1	BDL (DL - 0.5)
		28/07/2023	47.2	16.4	8.1	16.3	BDL (DL - 0.5)
Monthly Average Value			48.9	19.9	9.9	18.9	BDL (DL - 0.5)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----





Test Report

Ambient Air Quality Monitoring Report-July-2023

Report No.: AN/AAQ/TS-NIM/2023/3-2			Date: 03/07/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)		W. O. No.	4700098928/962
			W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/20072023/ENV-180-3/NIM-CZ/AAQ-3 and ALPL/20072023/ENV-180-4/NIM-CZ/AAQ-4	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	10,17,24 July-2023 & 2-August-2023	
Test Started On:-	10, 17, 24 July-2023 & 2-Aug-2023	Test Completed On:-	11,18,25 July-2023 & 3-August-2023	
Sampling Procedure	ANtd/7.2/Mon-01			

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-3	MRSS	04/07/2023	52.8	24.7	9.3	21.6	BDL (DL - 0.5)
		07/07/2023	56.3	28.6	11.7	24.9	BDL (DL - 0.5)
		11/07/2023	48.2	19.2	8.4	18.3	BDL (DL - 0.5)
		14/07/2023	52.7	21.7	9.1	17.6	BDL (DL - 0.5)
		18/07/2023	56.3	24.9	12.8	23.1	BDL (DL - 0.5)
		21/07/2023	54.1	19.6	11.3	18.9	BDL (DL - 0.5)
		25/07/2023	47.6	16.4	9.1	17.2	BDL (DL - 0.5)
		28/07/2023	52.8	18.3	8.7	16.4	BDL (DL - 0.5)
Monthly Average Value			52.6	21.7	10.1	19.8	BDL (DL - 0.5)
AAQMS-4	Bottom Bin	04/07/2023	46.2	16.1	8.7	17.3	BDL (DL - 0.5)
		07/07/2023	53.7	18.3	9.4	16.8	BDL (DL - 0.5)
		11/07/2023	57.2	21.6	11.3	18.2	BDL (DL - 0.5)
		14/07/2023	49.3	17.2	8.1	17.8	BDL (DL - 0.5)
		18/07/2023	52.6	19.3	9.4	16.4	BDL (DL - 0.5)
		21/07/2023	47.2	16.9	7.6	17.1	BDL (DL - 0.5)
		25/07/2023	51.7	21.6	11.3	16.9	BDL (DL - 0.5)
		28/07/2023	53.1	18.3	9.1	17.6	BDL (DL - 0.5)
Monthly Average Value			51.4	18.7	9.4	17.3	BDL (DL - 0.5)

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----

Thanks for putting in your faith and trust in our services, We at Anacon Laboratories cherish our relationship. We put in a lot of hard work to ensure that you have a seamless experience at every step of our relationship. in order to ensure that your next experience will be significantly better, we welcome your feedback over email on feedback@anacon.in





Test Report

Ambient Air Quality Monitoring Report-August-2023

Report No.: AN/AAQ/TS-NIM/2023/3-1			Date: 04/09/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)		W. O. No.	4700098928/962
			W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/24082023/ENV-200-1/NIM-CZ/AAQMS-1 and ALPL/24082023/ENV-200-2/NIM-CZ/AAQMS-2	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	7,14,21,28 Aug-2023 & 2-Sept-2023	
Test Started On:-	7,14,21,28 Aug-2023 & 2-Sept-2023	Test Completed On:-	8,14,22,29 Aug-2023 & 4-Sept-2023	
Sampling Procedure	ANtd/7.2/Mon-01			

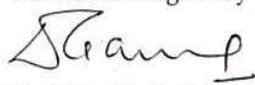
Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-1	Near WTP	01/08/2023	53.6	23.9	12.4	17.6	BDL (DL - 0.5)
		04/08/2023	48.3	21.4	9.2	16.1	BDL (DL - 0.5)
		08/08/2023	56.1	26.3	13.9	21.7	BDL (DL - 0.5)
		11/08/2023	54.7	23.7	12.4	18.3	BDL (DL - 0.5)
		18/08/2023	46.3	16.9	9.2	17.6	BDL (DL - 0.5)
		22/08/2023	52.8	17.6	11.6	18.1	BDL (DL - 0.5)
		25/08/2023	56.3	21.9	12.8	23.7	BDL (DL - 0.5)
		29/08/2023	49.2	18.3	9.1	16.4	BDL (DL - 0.5)
Monthly Average Value			52.2	21.3	11.3	18.7	BDL (DL - 0.5)
AAQMS-2	Near Hospital	01/08/2023	53.8	17.2	9.2	16.8	BDL (DL - 0.5)
		04/08/2023	49.3	16.1	7.6	15.4	BDL (DL - 0.5)
		08/08/2023	51.7	17.9	11.7	21.9	BDL (DL - 0.5)
		11/08/2023	53.6	21.6	12.9	23.4	BDL (DL - 0.5)
		18/08/2023	48.3	16.7	9.2	18.3	BDL (DL - 0.5)
		22/08/2023	47.1	16.2	8.4	16.7	BDL (DL - 0.5)
		25/08/2023	53.7	21.8	11.6	21.9	BDL (DL - 0.5)
		29/08/2023	56.2	23.4	12.8	24.1	BDL (DL - 0.5)
Monthly Average Value			51.7	18.9	10.4	19.8	BDL (DL - 0.5)

NOTES: ● Please see watermark: "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

 Snehal Raut
 Deputy Technical Manager

Authorized Signatory

 Dr. (Mrs.) S. D. Garway
 Quality Manager

----End of Report----





Test Report

Ambient Air Quality Monitoring Report-August-2023

Report No.: AN/AAQ/TS-NIM/2023/3-2			Date: 04/09/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)		W. O. No.	4700098928/962
			W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/24082023/ENV-200-3/NIM-CZ/AAQ-3 and ALPL/24082023/ENV-200-4/NIM-CZ/AAQ-4	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	7,14,21,28 Aug-2023 & 2-Sept-2023	
Test Started On:-	7,14,21,28 Aug-2023 & 2-Sept-2023	Test Completed On:-	8,14,22,29 Aug-2023 & 4-Sept-2023	
Sampling Procedure	ANtd/7.2/Mon-01			

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-3	MRSS	01/08/2023	53.7	21.6	11.3	26.7	BDL (DL - 0.5)
		04/08/2023	54.9	23.7	12.8	27.1	BDL (DL - 0.5)
		08/08/2023	47.3	16.3	7.9	19.3	BDL (DL - 0.5)
		11/08/2023	52.8	18.4	8.4	21.9	BDL (DL - 0.5)
		18/08/2023	56.2	24.7	11.3	23.6	BDL (DL - 0.5)
		22/08/2023	54.9	19.3	9.1	18.3	BDL (DL - 0.5)
		25/08/2023	49.2	18.6	8.4	16.7	BDL (DL - 0.5)
		29/08/2023	51.7	21.7	9.7	18.4	BDL (DL - 0.5)
Monthly Average Value			52.6	20.5	9.9	21.5	BDL (DL - 0.5)
AAQMS-4	Bottom Bin	01/08/2023	47.3	18.3	9.2	16.9	BDL (DL - 0.5)
		04/08/2023	51.6	17.1	11.6	18.2	BDL (DL - 0.5)
		08/08/2023	48.1	21.6	12.9	23.8	BDL (DL - 0.5)
		11/08/2023	56.3	24.7	11.3	24.9	BDL (DL - 0.5)
		18/08/2023	54.7	19.2	8.4	18.3	BDL (DL - 0.5)
		22/08/2023	49.3	16.7	7.3	17.2	BDL (DL - 0.5)
		25/08/2023	52.8	21.9	9.2	21.6	BDL (DL - 0.5)
		29/08/2023	51.6	18.2	8.4	18.3	BDL (DL - 0.5)
Monthly Average Value			51.5	19.7	9.8	19.9	BDL (DL - 0.5)

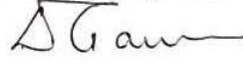
NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by


 Snehal Raut
 Deputy Technical Manager

Authorized Signatory


 Dr. (Mrs.) S. D. Garway
 Quality Manager

----End of Report----





Test Report

Ambient Air Quality Monitoring Report-September-2023

Report No.: AN/AAQ/TS-NIM/2023/3-1		Date: 04/10/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/25092023/ENV-228-1/NIM-CZ/AAQMS-1 and ALPL/25092023/ENV-228-2/NIM-CZ/AAQMS-2
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	11, 18, 25 Sept -2023 & 3-October-2023
Test Started On:-	11, 18, 25 Sept -2023 & 3-Oct-2023	Test Completed On:-	12, 19, 26 Sept -2023 & 4-October-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-1	Near WTP	05/09/2023	56.2	21.9	11.6	18.4	BDL (DL - 0.5)
		08/09/2023	62.8	24.7	12.9	21.6	BDL (DL - 0.5)
		12/09/2023	58.3	18.3	9.2	16.2	BDL (DL - 0.5)
		15/09/2023	52.7	16.9	8.4	17.3	BDL (DL - 0.5)
		19/09/2023	58.1	21.6	11.3	21.9	BDL (DL - 0.5)
		22/09/2023	61.7	23.4	12.9	19.2	BDL (DL - 0.5)
		26/09/2023	57.3	18.3	9.2	18.4	BDL (DL - 0.5)
		29/09/2023	52.8	17.1	8.4	16.7	BDL (DL - 0.5)
Monthly Average Value			57.5	20.3	10.5	18.7	BDL (DL - 0.5)
AAQMS-2	Near Hospital	05/09/2023	54.7	16.9	8.4	17.2	BDL (DL - 0.5)
		08/09/2023	58.3	19.2	9.1	18.7	BDL (DL - 0.5)
		12/09/2023	61.8	21.8	11.6	23.9	BDL (DL - 0.5)
		15/09/2023	58.2	19.1	7.4	19.2	BDL (DL - 0.5)
		19/09/2023	54.7	16.9	8.2	18.7	BDL (DL - 0.5)
		22/09/2023	56.3	21.4	11.7	21.9	BDL (DL - 0.5)
		26/09/2023	61.8	23.6	12.4	24.1	BDL (DL - 0.5)
		29/09/2023	58.3	18.3	9.2	19.7	BDL (DL - 0.5)
Monthly Average Value			58.0	19.7	9.8	20.4	BDL (DL - 0.5)

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Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Snehal Raut

Deputy Technical Manager

Authorized Signatory

S. D. Garway

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----





Test Report

Ambient Air Quality Monitoring Report- September-2023

Report No.: AN/AAQ/TS-NIM/2023/3-2		Date: 04/10/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/25092023/ENV-228-3/NIM-CZ/AAQ-3 and ALPL/25092023/ENV-228-4/NIM-CZ/AAQ-4
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	11, 18, 25 Sept -2023 & 3-October-2023
Test Started On:-	11, 18, 25 Sept -2023 & 3-Oct-2023	Test Completed On:-	12, 19, 26 Sept -2023 & 4-October-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-3	MRSS	05/09/2023	51.6	18.3	9.2	21.8	BDL (DL - 0.5)
		08/09/2023	47.3	16.4	8.4	19.3	BDL (DL - 0.5)
		12/09/2023	56.1	21.6	11.8	23.6	BDL (DL - 0.5)
		15/09/2023	61.7	19.3	9.2	18.7	BDL (DL - 0.5)
		19/09/2023	58.3	16.4	8.4	17.9	BDL (DL - 0.5)
		22/09/2023	54.6	17.6	9.1	21.6	BDL (DL - 0.5)
		26/09/2023	57.3	19.7	11.3	23.1	BDL (DL - 0.5)
		29/09/2023	61.7	21.4	12.8	24.9	BDL (DL - 0.5)
Monthly Average Value			56.1	18.8	10.0	21.4	BDL (DL - 0.5)
AAQMS-4	Bottom Bin	05/09/2023	52.8	16.9	8.4	17.2	BDL (DL - 0.5)
		08/09/2023	53.6	21.4	9.3	19.1	BDL (DL - 0.5)
		12/09/2023	47.2	18.3	11.6	21.7	BDL (DL - 0.5)
		15/09/2023	51.9	21.6	12.7	23.9	BDL (DL - 0.5)
		19/09/2023	48.3	19.2	9.3	18.1	BDL (DL - 0.5)
		22/09/2023	53.6	18.7	8.4	17.9	BDL (DL - 0.5)
		26/09/2023	47.1	17.6	9.1	16.4	BDL (DL - 0.5)
		29/09/2023	52.8	18.3	7.6	17.2	BDL (DL - 0.5)
Monthly Average Value			50.9	19.0	9.6	18.9	BDL (DL - 0.5)

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----





Test Report

Ambient Air Quality Monitoring Report-April-2023

Report No.: AN/AAQ/TS-NIM/2023/3-1		Date: 03/05/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/21042023/ENV-84-1/NIM-CZ/AAQMS-1 and ALPL/21042023/ENV-84-2/NIM-CZ/AAQMS-2
Sample Drawn By:-	Anacon Representative (Mr. Sovan Giri)	Sample Inward Date:-	10, 17, 24 April-2023 & 2-May-2023
Test Started On:-	10, 17, 24 April-2023 & 2-May-2023	Test Completed On:-	10, 17, 24 April-2023 & 3-May-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-1	Near WTP	04/04/2023	52.6	21.6	12.4	17.9	BDL (DL - 0.5)
		07/04/2023	54.1	23.8	11.6	16.3	BDL (DL - 0.5)
		11/04/2023	48.7	16.9	8.7	15.7	BDL (DL - 0.5)
		14/04/2023	52.8	21.4	12.1	21.6	BDL (DL - 0.5)
		18/04/2023	56.3	23.7	11.9	24.1	BDL (DL - 0.5)
		21/04/2023	49.7	16.3	8.4	17.6	BDL (DL - 0.5)
		25/04/2023	51.9	18.2	9.3	16.4	BDL (DL - 0.5)
		28/04/2023	53.6	21.8	9.7	17.1	BDL (DL - 0.5)
Monthly Average Value			52.5	20.5	10.5	18.3	BDL (DL - 0.5)
AAQMS-2	Near Hospital	04/04/2023	51.6	18.3	7.9	17.2	BDL (DL - 0.5)
		07/04/2023	48.3	16.7	8.4	16.1	BDL (DL - 0.5)
		11/04/2023	53.8	21.6	11.3	18.7	BDL (DL - 0.5)
		14/04/2023	56.2	24.9	12.8	21.4	BDL (DL - 0.5)
		18/04/2023	52.9	18.7	9.3	17.2	BDL (DL - 0.5)
		21/04/2023	48.1	16.2	7.6	16.9	BDL (DL - 0.5)
		25/04/2023	51.3	17.1	8.4	17.3	BDL (DL - 0.5)
		28/04/2023	49.1	16.8	6.8	16.2	BDL (DL - 0.5)
Monthly Average Value			51.4	18.8	9.1	17.6	BDL (DL - 0.5)

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Snehal Raut

Deputy Technical Manager

Authorized Signatory

S D Garway

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----

Thanks for putting in your faith and trust in our services, We at Anacon Laboratories cherish our relationship. We put in a lot of hard work to ensure that you have a seamless experience at every step of our relationship. In order to ensure that your next experience will be significantly better, we welcome your feedback over email on feedback@anacon.in





Test Report

Ambient Air Quality Monitoring Report-April-2023

Report No.: AN/AAQ/TS-NIM/2023/3-2		Date: 03/05/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/21042023/ENV-84-3/NIM-CZ/AAQ-3 and ALPL/21042023/ENV-84-4/NIM-CZ/AAQ-4
Sample Drawn By:-	Anacon Representative (Mr. Sovan Giri)	Sample Inward Date:-	10, 17 ,24 April-2023 & 2-May-2023
Test Started On:-	10, 17 ,24 April-2023 & 2-May-2023	Test Completed On:-	10, 17 ,24 April-2023 & 3-May-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³ IS:5182 (Part 23)	PM _{2.5} µg/m ³ USEPA-40 (Part 50)	SO ₂ µg/m ³ IS:5182 (Part-2)	NO ₂ µg/m ³ IS:5182 (Part-6)	CO mg/m ³ IS:5182 (Part-10)
Method Reference							
AAQMS-3	MRSS	04/04/2023	54.7	18.3	11.4	23.7	BDL (DL - 0.5)
		07/04/2023	56.3	21.6	12.7	26.1	BDL (DL - 0.5)
		11/04/2023	61.8	23.9	11.6	24.3	BDL (DL - 0.5)
		14/04/2023	58.2	19.3	9.4	18.7	BDL (DL - 0.5)
		18/04/2023	54.6	18.1	6.8	16.2	BDL (DL - 0.5)
		21/04/2023	63.9	23.6	11.7	21.8	BDL (DL - 0.5)
		25/04/2023	58.3	21.9	9.3	18.3	BDL (DL - 0.5)
		28/04/2023	61.7	19.2	8.4	16.8	BDL (DL - 0.5)
Monthly Average Value			58.7	20.7	10.2	20.7	BDL (DL - 0.5)
AAQMS-4	Bottom Bin	04/04/2023	57.3	23.6	11.4	18.7	BDL (DL - 0.5)
		07/04/2023	61.9	26.1	12.8	23.6	BDL (DL - 0.5)
		11/04/2023	57.2	18.7	9.1	17.2	BDL (DL - 0.5)
		14/04/2023	54.8	16.9	8.7	16.7	BDL (DL - 0.5)
		18/04/2023	62.4	21.4	11.3	21.8	BDL (DL - 0.5)
		21/04/2023	58.5	18.2	8.6	16.4	BDL (DL - 0.5)
		25/04/2023	57.1	17.8	7.2	15.9	BDL (DL - 0.5)
		28/04/2023	61.7	21.6	9.3	18.2	BDL (DL - 0.5)
Monthly Average Value			58.8	20.5	9.8	18.6	BDL (DL - 0.5)

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Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----

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Test Report

Ambient Air Quality Monitoring Report-May-2023

Report No.: AN/AAQ/TS-NIM/2023/3-1		Date: 03/06/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/23052023/ENV-116-1/NIM-CZ/AAQMS-1 and ALPL/23052023/ENV-116-2/NIM-CZ/AAQMS-2
Sample Drawn By:-	Anacon Representative (Mr. Sovan Giri)	Sample Inward Date:-	8, 15, 22 May-2023 & 2-June-2023
Test Started On:-	8, 15, 22 May-2023 & 2-June-2023	Test Completed On:-	9, 16, 23 May-2023 & 3-June-2023
Sampling Procedure	ANtd/7.2/Mon-01		

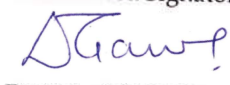
Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-1	Near WTP	02/05/2023	56.2	24.9	11.8	18.3	BDL (DL - 0.5)
		05/05/2023	61.7	26.8	12.4	23.7	BDL (DL - 0.5)
		09/05/2023	54.9	18.3	9.2	17.1	BDL (DL - 0.5)
		12/05/2023	56.8	19.6	11.7	21.8	BDL (DL - 0.5)
		16/05/2023	54.2	21.1	8.6	16.7	BDL (DL - 0.5)
		19/05/2023	52.9	16.9	7.2	16.4	BDL (DL - 0.5)
		23/05/2023	48.3	17.2	8.4	17.3	BDL (DL - 0.5)
		26/05/2023	51.6	16.4	6.8	16.9	BDL (DL - 0.5)
Monthly Average Value			54.6	20.2	9.5	18.5	BDL (DL - 0.5)
AAQMS-2	Near Hospital	02/05/2023	54.7	21.6	8.4	16.9	BDL (DL - 0.5)
		05/05/2023	61.4	23.8	11.6	21.4	BDL (DL - 0.5)
		09/05/2023	58.3	19.2	9.2	18.1	BDL (DL - 0.5)
		12/05/2023	54.7	18.3	8.7	19.6	BDL (DL - 0.5)
		16/05/2023	63.1	24.7	12.8	23.9	BDL (DL - 0.5)
		19/05/2023	58.3	21.6	11.4	21.7	BDL (DL - 0.5)
		23/05/2023	61.8	19.3	9.2	18.2	BDL (DL - 0.5)
		26/05/2023	54.7	18.7	8.4	17.1	BDL (DL - 0.5)
Monthly Average Value			58.4	20.9	10.0	19.6	BDL (DL - 0.5)

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Remark: - All Results are within Limit as per CPCB Standards.

Verified by

 Snehal Raut
 Deputy Technical Manager

Authorized Signatory

 Dr. (Mrs.) S. D. Garway
 Quality Manager

---End of Report---

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Test Report

Ambient Air Quality Monitoring Report-May-2023

Report No.: AN/AAQ/TS-NIM/2023/3-2		Date: 03/06/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/23052023/ENV-116-3/NIM-CZ/AAQ-3 and ALPL/23052023/ENV-116-4/NIM-CZ/AAQ-4
Sample Drawn By:-	Anacon Representative (Mr. Sovan Giri)	Sample Inward Date:-	8, 15, 22 May-2023 & 2-June-2023
Test Started On:-	8, 15, 22 May-2023 & 2-June-2023	Test Completed On:-	9, 16, 23 May-2023 & 3-June-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³ IS 5182 (Part 23)	PM _{2.5} µg/m ³ USEPA-40 (Part 50)	SO ₂ µg/m ³ IS:5182 (Part-2)	NO ₂ µg/m ³ IS:5182 (Part-6)	CO mg/m ³ IS:5182 (Part-10)
Method Reference							
AAQMS-3	MRSS	02/05/2023	61.7	24.8	13.9	26.1	BDL (DL - 0.5)
		05/05/2023	58.3	19.2	11.6	24.7	BDL (DL - 0.5)
		09/05/2023	54.1	18.6	9.2	18.3	BDL (DL - 0.5)
		12/05/2023	49.7	16.1	8.7	16.8	BDL (DL - 0.5)
		16/05/2023	52.6	21.6	11.3	21.9	BDL (DL - 0.5)
		19/05/2023	56.3	23.8	12.1	24.7	BDL (DL - 0.5)
		23/05/2023	48.1	19.2	9.7	16.8	BDL (DL - 0.5)
		26/05/2023	52.8	21.6	11.4	18.3	BDL (DL - 0.5)
Monthly Average Value			54.2	20.6	11.0	21.0	BDL (DL - 0.5)
AAQMS-4	Bottom Bin	02/05/2023	54.7	21.6	12.8	17.9	BDL (DL - 0.5)
		05/05/2023	48.3	16.7	11.3	16.1	BDL (DL - 0.5)
		09/05/2023	56.1	24.6	13.8	19.2	BDL (DL - 0.5)
		12/05/2023	52.8	18.3	9.2	16.7	BDL (DL - 0.5)
		16/05/2023	48.3	19.7	8.4	15.3	BDL (DL - 0.5)
		19/05/2023	56.1	21.4	11.6	18.2	BDL (DL - 0.5)
		23/05/2023	54.2	18.3	9.1	16.7	BDL (DL - 0.5)
		26/05/2023	56.7	19.6	8.4	16.4	BDL (DL - 0.5)
Monthly Average Value			53.4	20.0	10.6	17.1	BDL (DL - 0.5)

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Verified by

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

----End of Report----

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Test Report

Ambient Air Quality Monitoring Report-June-2023

Report No.: AN/AAQ/TS-NIM/2023/3-1		Date: 03/07/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/22062023/ENV-142-1/NIM-CZ/AAQMS-1 and ALPL/22062023/ENV-142-2/NIM-CZ/AAQMS-2
Sample Drawn By:-	Anacon Representative (Mr. Sovan Giri)	Sample Inward Date:-	12, 19, 26 June-2023 & 3-July-2023
Test Started On:-	12, 19, 26 June-2023 & 3-July-2023	Test Completed On:-	13, 19, 27 June-2023 & 3-July-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³	
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)	
AAQMS-1	Near WTP	02/06/2023	53.9	23.6	12.1	17.6	BDL (DL - 0.5)	
		06/06/2023	57.2	24.9	11.6	18.3	BDL (DL - 0.5)	
		09/06/2023	47.6	16.4	8.2	14.9	BDL (DL - 0.5)	
		13/06/2023	52.7	21.6	9.3	24.7	BDL (DL - 0.5)	
		16/06/2023	49.3	16.8	7.6	21.3	BDL (DL - 0.5)	
		20/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		23/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		27/06/2023	51.7	17.9	8.4	19.7	BDL (DL - 0.5)	
Monthly Average Value			52.1	20.2	9.5	19.4	BDL (DL - 0.5)	
AAQMS-2	Near Hospital	02/06/2023	46.2	16.7	7.6	17.2	BDL (DL - 0.5)	
		06/06/2023	43.9	15.8	6.8	16.1	BDL (DL - 0.5)	
		09/06/2023	51.7	21.6	11.3	21.4	BDL (DL - 0.5)	
		13/06/2023	48.3	17.2	9.1	18.6	BDL (DL - 0.5)	
		16/06/2023	52.8	21.9	11.7	23.1	BDL (DL - 0.5)	
		20/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		23/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		27/06/2023	53.6	21.4	11.3	21.7	BDL (DL - 0.5)	
Monthly Average Value			49.4	19.1	9.6	19.7	BDL (DL - 0.5)	

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----

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Test Report

Ambient Air Quality Monitoring Report-June-2023

Report No.: AN/AAQ/TS-NIM/2023/3-2		Date: 03/07/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/22062023/ENV-142-3/NIM-CZ/AAQ-3 and ALPL/22062023/ENV-142-4/NIM-CZ/AAQ-4
Sample Drawn By:-	Anacon Representative (Mr. Sovan Giri)	Sample Inward Date:-	12, 19, 26 June-2023 & 3-July-2023
Test Started On:-	12, 19, 26 June-2023 & 3-July-2023	Test Completed On:-	13, 19, 27 June-2023 & 3-July-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³	
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)	
AAQMS-3	MRSS	02/06/2023	56.3	26.1	12.8	24.9	BDL (DL - 0.5)	
		06/06/2023	64.7	31.6	11.9	26.8	BDL (DL - 0.5)	
		09/06/2023	52.4	24.9	9.7	19.3	BDL (DL - 0.5)	
		13/06/2023	47.6	18.3	8.4	17.1	BDL (DL - 0.5)	
		16/06/2023	54.9	23.6	11.2	21.7	BDL (DL - 0.5)	
		20/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		23/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		27/06/2023	51.7	21.4	9.6	21.2	BDL (DL - 0.5)	
		Monthly Average Value			54.1	24.3	10.6	21.8
AAQMS-4	Bottom Bin	02/06/2023	51.6	18.3	11.9	16.4	BDL (DL - 0.5)	
		06/06/2023	47.2	16.1	9.2	18.6	BDL (DL - 0.5)	
		09/06/2023	42.8	14.7	6.8	16.1	BDL (DL - 0.5)	
		13/06/2023	48.7	16.9	9.1	21.7	BDL (DL - 0.5)	
		16/06/2023	52.1	21.4	11.3	23.9	BDL (DL - 0.5)	
		20/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		23/06/2023	Cancelled due to Rain Fall					BDL (DL - 0.5)
		27/06/2023	52.8	21.9	9.2	19.1	BDL (DL - 0.5)	
		Monthly Average Value			49.2	18.2	9.6	19.3

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Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

----End of Report----



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Test Report

Ambient Air Quality Monitoring Report-July-2023

Report No.: AN/AAQ/TS-NIM/2023/3-1			Date: 03/08/2023		
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)		W. O. No.	4700098928/962	
			W. O. date:	22.03.2022	
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/20072023/ENV-180-1/NIM-CZ/AAQMS-1 and ALPL/20072023/ENV-180-2/NIM-CZ/AAQMS-2		
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	10,17,24 July-2023 & 2-August-2023		
Test Started On:-	10, 17, 24 July-2023 & 2-Aug-2023	Test Completed On:-	11,18,25 July-2023 & 3-August-2023		
Sampling Procedure	ANtd/7.2/Mon-01				

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-1	Near WTP	04/07/2023	48.7	21.7	11.9	16.4	BDL (DL - 0.5)
		07/07/2023	53.6	23.9	12.6	21.3	BDL (DL - 0.5)
		11/07/2023	46.2	15.7	9.2	18.1	BDL (DL - 0.5)
		14/07/2023	51.7	21.6	11.3	19.7	BDL (DL - 0.5)
		18/07/2023	48.3	18.2	8.7	16.3	BDL (DL - 0.5)
		21/07/2023	51.7	19.3	9.2	17.1	BDL (DL - 0.5)
		25/07/2023	47.6	16.7	7.6	16.4	BDL (DL - 0.5)
		28/07/2023	52.9	18.2	9.1	17.6	BDL (DL - 0.5)
Monthly Average Value			50.1	19.4	10.0	17.9	BDL (DL - 0.5)
AAQMS-2	Near Hospital	04/07/2023	47.2	16.9	8.4	18.3	BDL (DL - 0.5)
		07/07/2023	53.6	24.7	11.6	21.6	BDL (DL - 0.5)
		11/07/2023	43.9	18.2	9.2	19.7	BDL (DL - 0.5)
		14/07/2023	46.1	21.6	8.7	18.2	BDL (DL - 0.5)
		18/07/2023	51.7	23.6	12.8	23.6	BDL (DL - 0.5)
		21/07/2023	48.3	19.2	11.4	16.7	BDL (DL - 0.5)
		25/07/2023	52.9	18.7	9.3	17.1	BDL (DL - 0.5)
		28/07/2023	47.2	16.4	8.1	16.3	BDL (DL - 0.5)
Monthly Average Value			48.9	19.9	9.9	18.9	BDL (DL - 0.5)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

----End of Report----





Test Report

Ambient Air Quality Monitoring Report-July-2023

Report No.: AN/AAQ/TS-NIM/2023/3-2			Date: 03/07/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)		W. O. No.	4700098928/962
			W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/20072023/ENV-180-3/NIM-CZ/AAQ-3 and ALPL/20072023/ENV-180-4/NIM-CZ/AAQ-4	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	10,17,24 July-2023 & 2-August-2023	
Test Started On:-	10, 17, 24 July-2023 & 2-Aug-2023	Test Completed On:-	11,18,25 July-2023 & 3-August-2023	
Sampling Procedure	ANtd/7.2/Mon-01			

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-3	MRSS	04/07/2023	52.8	24.7	9.3	21.6	BDL (DL - 0.5)
		07/07/2023	56.3	28.6	11.7	24.9	BDL (DL - 0.5)
		11/07/2023	48.2	19.2	8.4	18.3	BDL (DL - 0.5)
		14/07/2023	52.7	21.7	9.1	17.6	BDL (DL - 0.5)
		18/07/2023	56.3	24.9	12.8	23.1	BDL (DL - 0.5)
		21/07/2023	54.1	19.6	11.3	18.9	BDL (DL - 0.5)
		25/07/2023	47.6	16.4	9.1	17.2	BDL (DL - 0.5)
		28/07/2023	52.8	18.3	8.7	16.4	BDL (DL - 0.5)
Monthly Average Value			52.6	21.7	10.1	19.8	BDL (DL - 0.5)
AAQMS-4	Bottom Bin	04/07/2023	46.2	16.1	8.7	17.3	BDL (DL - 0.5)
		07/07/2023	53.7	18.3	9.4	16.8	BDL (DL - 0.5)
		11/07/2023	57.2	21.6	11.3	18.2	BDL (DL - 0.5)
		14/07/2023	49.3	17.2	8.1	17.8	BDL (DL - 0.5)
		18/07/2023	52.6	19.3	9.4	16.4	BDL (DL - 0.5)
		21/07/2023	47.2	16.9	7.6	17.1	BDL (DL - 0.5)
		25/07/2023	51.7	21.6	11.3	16.9	BDL (DL - 0.5)
		28/07/2023	53.1	18.3	9.1	17.6	BDL (DL - 0.5)
Monthly Average Value			51.4	18.7	9.4	17.3	BDL (DL - 0.5)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----

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Test Report

Ambient Air Quality Monitoring Report-August-2023

Report No.: AN/AAQ/TS-NIM/2023/3-1			Date: 04/09/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962	
		W. O. date:	22.03.2022	
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/24082023/ENV-200-1/NIM-CZ/AAQMS-1 and ALPL/24082023/ENV-200-2/NIM-CZ/AAQMS-2	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	7,14,21,28 Aug-2023 & 2-Sept-2023	
Test Started On:-	7,14,21,28 Aug-2023 & 2-Sept-2023	Test Completed On:-	8,14,22,29 Aug-2023 & 4-Sept-2023	
Sampling Procedure	ANtd/7.2/Mon-01			

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-1	Near WTP	01/08/2023	53.6	23.9	12.4	17.6	BDL (DL - 0.5)
		04/08/2023	48.3	21.4	9.2	16.1	BDL (DL - 0.5)
		08/08/2023	56.1	26.3	13.9	21.7	BDL (DL - 0.5)
		11/08/2023	54.7	23.7	12.4	18.3	BDL (DL - 0.5)
		18/08/2023	46.3	16.9	9.2	17.6	BDL (DL - 0.5)
		22/08/2023	52.8	17.6	11.6	18.1	BDL (DL - 0.5)
		25/08/2023	56.3	21.9	12.8	23.7	BDL (DL - 0.5)
		29/08/2023	49.2	18.3	9.1	16.4	BDL (DL - 0.5)
Monthly Average Value			52.2	21.3	11.3	18.7	BDL (DL - 0.5)
AAQMS-2	Near Hospital	01/08/2023	53.8	17.2	9.2	16.8	BDL (DL - 0.5)
		04/08/2023	49.3	16.1	7.6	15.4	BDL (DL - 0.5)
		08/08/2023	51.7	17.9	11.7	21.9	BDL (DL - 0.5)
		11/08/2023	53.6	21.6	12.9	23.4	BDL (DL - 0.5)
		18/08/2023	48.3	16.7	9.2	18.3	BDL (DL - 0.5)
		22/08/2023	47.1	16.2	8.4	16.7	BDL (DL - 0.5)
		25/08/2023	53.7	21.8	11.6	21.9	BDL (DL - 0.5)
		29/08/2023	56.2	23.4	12.8	24.1	BDL (DL - 0.5)
Monthly Average Value			51.7	18.9	10.4	19.8	BDL (DL - 0.5)

NOTES: ● Please see watermark: "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs.

Remark: - All Results are within Limit as per CPCB Standards.

Verified by

 Snehal Raut
 Deputy Technical Manager

Authorized Signatory

 Dr. (Mrs.) S. D. Garway
 Quality Manager

----End of Report----





Test Report

Ambient Air Quality Monitoring Report-August-2023

Report No.: AN/AAQ/TS-NIM/2023/3-2			Date: 04/09/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)		W. O. No.	4700098928/962
			W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/24082023/ENV-200-3/NIM-CZ/AAQ-3 and ALPL/24082023/ENV-200-4/NIM-CZ/AAQ-4	
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	7,14,21,28 Aug-2023 & 2-Sept-2023	
Test Started On:-	7,14,21,28 Aug-2023 & 2-Sept-2023	Test Completed On:-	8,14,22,29 Aug-2023 & 4-Sept-2023	
Sampling Procedure	ANtd/7.2/Mon-01			

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-3	MRSS	01/08/2023	53.7	21.6	11.3	26.7	BDL (DL - 0.5)
		04/08/2023	54.9	23.7	12.8	27.1	BDL (DL - 0.5)
		08/08/2023	47.3	16.3	7.9	19.3	BDL (DL - 0.5)
		11/08/2023	52.8	18.4	8.4	21.9	BDL (DL - 0.5)
		18/08/2023	56.2	24.7	11.3	23.6	BDL (DL - 0.5)
		22/08/2023	54.9	19.3	9.1	18.3	BDL (DL - 0.5)
		25/08/2023	49.2	18.6	8.4	16.7	BDL (DL - 0.5)
		29/08/2023	51.7	21.7	9.7	18.4	BDL (DL - 0.5)
Monthly Average Value			52.6	20.5	9.9	21.5	BDL (DL - 0.5)
AAQMS-4	Bottom Bin	01/08/2023	47.3	18.3	9.2	16.9	BDL (DL - 0.5)
		04/08/2023	51.6	17.1	11.6	18.2	BDL (DL - 0.5)
		08/08/2023	48.1	21.6	12.9	23.8	BDL (DL - 0.5)
		11/08/2023	56.3	24.7	11.3	24.9	BDL (DL - 0.5)
		18/08/2023	54.7	19.2	8.4	18.3	BDL (DL - 0.5)
		22/08/2023	49.3	16.7	7.3	17.2	BDL (DL - 0.5)
		25/08/2023	52.8	21.9	9.2	21.6	BDL (DL - 0.5)
		29/08/2023	51.6	18.2	8.4	18.3	BDL (DL - 0.5)
Monthly Average Value			51.5	19.7	9.8	19.9	BDL (DL - 0.5)

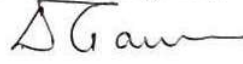
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Remark: - All Results are within Limit as per CPCB Standards.

Verified by


 Snehal Raut
 Deputy Technical Manager

Authorized Signatory


 Dr. (Mrs.) S. D. Garway
 Quality Manager

----End of Report----





Test Report

Ambient Air Quality Monitoring Report-September-2023

Report No.: AN/AAQ/TS-NIM/2023/3-1		Date: 04/10/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/25092023/ENV-228-1/NIM-CZ/AAQMS-1 and ALPL/25092023/ENV-228-2/NIM-CZ/AAQMS-2
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	11, 18, 25 Sept -2023 & 3-October-2023
Test Started On:-	11, 18, 25 Sept -2023 & 3-Oct-2023	Test Completed On:-	12, 19, 26 Sept -2023 & 4-October-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-1	Near WTP	05/09/2023	56.2	21.9	11.6	18.4	BDL (DL - 0.5)
		08/09/2023	62.8	24.7	12.9	21.6	BDL (DL - 0.5)
		12/09/2023	58.3	18.3	9.2	16.2	BDL (DL - 0.5)
		15/09/2023	52.7	16.9	8.4	17.3	BDL (DL - 0.5)
		19/09/2023	58.1	21.6	11.3	21.9	BDL (DL - 0.5)
		22/09/2023	61.7	23.4	12.9	19.2	BDL (DL - 0.5)
		26/09/2023	57.3	18.3	9.2	18.4	BDL (DL - 0.5)
		29/09/2023	52.8	17.1	8.4	16.7	BDL (DL - 0.5)
Monthly Average Value			57.5	20.3	10.5	18.7	BDL (DL - 0.5)
AAQMS-2	Near Hospital	05/09/2023	54.7	16.9	8.4	17.2	BDL (DL - 0.5)
		08/09/2023	58.3	19.2	9.1	18.7	BDL (DL - 0.5)
		12/09/2023	61.8	21.8	11.6	23.9	BDL (DL - 0.5)
		15/09/2023	58.2	19.1	7.4	19.2	BDL (DL - 0.5)
		19/09/2023	54.7	16.9	8.2	18.7	BDL (DL - 0.5)
		22/09/2023	56.3	21.4	11.7	21.9	BDL (DL - 0.5)
		26/09/2023	61.8	23.6	12.4	24.1	BDL (DL - 0.5)
		29/09/2023	58.3	18.3	9.2	19.7	BDL (DL - 0.5)
Monthly Average Value			58.0	19.7	9.8	20.4	BDL (DL - 0.5)

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Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----





Test Report

Ambient Air Quality Monitoring Report- September-2023

Report No.: AN/AAQ/TS-NIM/2023/3-2		Date: 04/10/2023	
Name and Address of Industry:-	M/s Noamundi Iron Mine (M/s TATA Steel Limited)	W. O. No.	4700098928/962
		W. O. date:	22.03.2022
Sample Description/ Type	Ambient Air Quality (Core Zone)	Sample Ref. No.:-	ALPL/25092023/ENV-228-3/NIM-CZ/AAQ-3 and ALPL/25092023/ENV-228-4/NIM-CZ/AAQ-4
Sample Drawn By:-	Anacon Representative	Sample Inward Date:-	11, 18, 25 Sept -2023 & 3-October-2023
Test Started On:-	11, 18, 25 Sept -2023 & 3-Oct-2023	Test Completed On:-	12, 19, 26 Sept -2023 & 4-October-2023
Sampling Procedure	ANtd/7.2/Mon-01		

Sr. No.	LOCATION	Date of sampling	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Method Reference			IS 5182 (Part 23)	USEPA-40 (Part 50)	IS:5182 (Part-2)	IS:5182 (Part-6)	IS:5182 (Part-10)
AAQMS-3	MRSS	05/09/2023	51.6	18.3	9.2	21.8	BDL (DL - 0.5)
		08/09/2023	47.3	16.4	8.4	19.3	BDL (DL - 0.5)
		12/09/2023	56.1	21.6	11.8	23.6	BDL (DL - 0.5)
		15/09/2023	61.7	19.3	9.2	18.7	BDL (DL - 0.5)
		19/09/2023	58.3	16.4	8.4	17.9	BDL (DL - 0.5)
		22/09/2023	54.6	17.6	9.1	21.6	BDL (DL - 0.5)
		26/09/2023	57.3	19.7	11.3	23.1	BDL (DL - 0.5)
		29/09/2023	61.7	21.4	12.8	24.9	BDL (DL - 0.5)
Monthly Average Value			56.1	18.8	10.0	21.4	BDL (DL - 0.5)
AAQMS-4	Bottom Bin	05/09/2023	52.8	16.9	8.4	17.2	BDL (DL - 0.5)
		08/09/2023	53.6	21.4	9.3	19.1	BDL (DL - 0.5)
		12/09/2023	47.2	18.3	11.6	21.7	BDL (DL - 0.5)
		15/09/2023	51.9	21.6	12.7	23.9	BDL (DL - 0.5)
		19/09/2023	48.3	19.2	9.3	18.1	BDL (DL - 0.5)
		22/09/2023	53.6	18.7	8.4	17.9	BDL (DL - 0.5)
		26/09/2023	47.1	17.6	9.1	16.4	BDL (DL - 0.5)
		29/09/2023	52.8	18.3	7.6	17.2	BDL (DL - 0.5)
Monthly Average Value			50.9	19.0	9.6	18.9	BDL (DL - 0.5)

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Remark: - All Results are within Limit as per CPCB Standards.

Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----





Test Report

ULR No.- TC545823000001289F

Test Report No. : ALPL/31052023/3-13A

dated 31/05/2023

Page 1 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/Mon-3/60-GW13	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-13	Location Co-ordinates Lat: 22°9'30.46"N, Long: 85°28'53.38"E
Sample Collected By Anacon Representative Mr. Sovan Giri		Sampling Date 18/05/2023	Quantity Received 5.0 Ltr & 250 ml
		Sampling Time 11.20 am to 4.10 pm	Sampling Location Noamundi Basti (Nr. Play Ground)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I Biological Testing I. Water						
1	<i>Escherichia coli</i>	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent
II Chemical Testing I. Water						
2	Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23) : 1986	200	600	178.57
3	Anionic surface active agents (as MBAS)	mg/l	IS 13428 : (Annex K): 2005	0.2	1.0	BDL (DL - 0.01)
4	Colour	Hazen units	IS 3025 (Part 4) : 2021	5	15	1
5	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.05	No relaxation	BDL (DL - 0.005)
6	Chloride (as Cl)	mg/l	IS 3025 (Part 32) : 1988	250	1000	34.59
7	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	43.62
8	Free residual chlorine	mg/l	IS 3025 (Part 26) : 2021	Min. 0.2	1	BDL (DL - 0.1)
9	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.26
10	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	12.57
11	Nitrate (as NO ₃)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	8.19
12	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
13	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.87 at 25°C
14	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	0.001	0.002	BDL (DL - 0.001)
15	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24) : 2022	200	400	16.32
16	Taste	-	IS 3025 (Part 8) : 1984	Agreeable	Agreeable	Agreeable
17	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	482
18	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.4
19	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21) : 2009	200	600	160.65

□ Please refer last Page for Note and Remarks.

Verified By

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

Thanks For putting in your faith and trust in our services, We at Anacon Laboratories cherish our relationship. We put in a lot of hard work to ensure that you have a seamless experience at every step of our relationship. In order to ensure that your next experience will be significantly better, we welcome your feedback over email on feedback@anacon.in

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Test Report

ULR No.- TC545823000001289F

Test Report No. : ALPL/31052023/3-13A

dated 31/05/2023

Page 2 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/Mon-3/60-GW13	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-13	Location Co-ordinates Lat: 22°9'30.46"N, Long: 85°28'53.38"E
Sample Collected By Anacon Representative Mr. Sovan Giri		Sampling Date 18/05/2023	Quantity Received 5.0 Ltr & 250 ml
		Sampling Time 11.20 am to 4.10 pm	Sampling Location Noamundi Basti (Nr. Play Ground)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
II	Chemical Testing					
	2. Residues In Water					
20	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
21	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL (DL - 0.01)
22	Barium (as Ba)	mg/l	IS 3025 (Part 2) : 2019	0.7	No relaxation	BDL (DL - 0.01)
23	Boron (as B)	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
24	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
25	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
26	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.09
27	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
28	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	BDL (DL - 0.05)
29	Mercury (as Hg)	mg/l	IS 3025 (Part 48) : 1994	0.001	No relaxation	BDL (DL - 0.0005)
30	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL - 0.001)
31	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
32	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)
33	Polynuclear aromatic hydrocarbon (PAH)	µg/l	ANtr/7.2/RES/06: 2018	0.1	No relaxation	BDL(DL-0.03)

☐ Please refer last Page for Note and Remarks.

Verified By

for
Mangesh Fande
Technical Manager

Y. Kombe
Yogesh Kombe
Deputy Technical Manager

Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC54582300001289F

Test Report No. : ALPL/31052023/3-13A

dated 31/05/2023

Page 3 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/Mon-3/60-GW13	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O. 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-13	Location Co-ordinates Lat: 22°9'30.46"N, Long: 85°28'53.38"E
Sample Collected By Anacon Representative Mr. Sovan Giri		Sampling Date 18/05/2023	Quantity Received 5.0 Ltr & 250 ml
		Sampling Time 11.20 am to 4.10 pm	Sampling Location Noamundi Basti (Nr. Play Ground)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
34	Pesticide Residues Organochlorine					
i	Alpha-HCH	µg/l	ANtr/7.2/RES/01: 2018	0.01	No relaxation	BDL (DL - 0.01)
ii	Beta HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
iii	Gamma - HCH (Lindane)	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
iv	Delta- HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
v	Alachlor	µg/l	ANtr/7.2/RES/01: 2018	20	No relaxation	BDL (DL - 0.03)
vi	Aldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
vii	Dieldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
viii	Butachlor	µg/l	ANtr/7.2/RES/01: 2018	125	No relaxation	BDL (DL - 0.03)
ix	p,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
x	o,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xi	p,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xii	o,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiii	o,p'- DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiv	p,p'- DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xv	Monocrotophos	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xvi	Atrazine	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
xvii	Parathion methyl	µg/l	ANtr/7.2/RES/01: 2018	0.3	No relaxation	BDL (DL - 0.03)
xviii	Paraoxon methyl	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xix	Malathion	µg/l	ANtr/7.2/RES/01: 2018	190	No relaxation	BDL (DL - 0.03)
xx	Malaoxon	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xxi	Ethion	µg/l	ANtr/7.2/RES/01: 2018	3	No relaxation	BDL (DL - 0.03)
xxii	Chlorpyrifos	µg/l	ANtr/7.2/RES/01: 2018	30	No relaxation	BDL (DL - 0.03)

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REMARKS: As requested by the client, sample was tested for above parameters only. Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

Verified By

Yogesh Kombe

Authorized Signatory

Dr. (Mrs.) S.D. Garway

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Test Report

Test Report No. : ALPL/31052023/3-13B

dated 31/05/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/Mon-3/60-GW13 Inward Date 23/05/2023 Reference W.O.- 4700098928/962 Reference Date 22.03.2022	Analysis Start 24/05/2023 Analysis End 30/05/2023 Report Issue Date 31/05/2023 Sample Category Water	
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-13	Location Co-ordinates Lat: 22°9'30.46"N, Long: 85°28'53.38"E	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr. Sovan Giri		Sampling Date 18/05/2023	Sampling Time 11.20 am to 4.10 pm	Sampling Location Noamundi Basti (Nr. Play Ground)

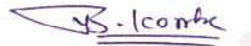
TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
1	Mineral Oil	mg/l	ANtr/7.2/RES/06: 2018	1	No relaxation	BDL (DL - 0.001)

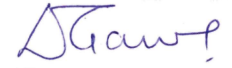
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REMARKS: As requested by the client, sample was tested for above parameters only.

Verified By


Yogesh Kombe
Deputy Technical Manager

Authorized Signatory


Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Test Report

ULR No.- TC545823000001289F

Test Report No. : ALPL/31052023/3-14A

dated 31/05/2023

Page 1 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/Mon-3/60-GW14	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-14	Location Co-ordinates Lat: 22°9'25.41"N, Long: 85°30'21.34"E
Sample Collected By Anacon Representative Mr. Sovan Giri			Quantity Received 5.0 Ltr & 250 ml
Sampling Date 18/05/2023		Sampling Time 11.20 am to 4.10 pm	Sampling Location Noamundi Bazar (Nr. Petrol Pump)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I Biological Testing 1. Water						
1	<i>Escherichia coli</i>	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent
II Chemical Testing 1. Water						
2	Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23) : 1986	200	600	168.29
3	Anionic surface active agents (as MBAS)	mg/l	IS 13428 : (Annex K): 2005	0.2	1.0	BDL (DL - 0.01)
4	Colour	Hazen units	IS 3025 (Part 4) : 2021	5	15	1
5	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.05	No relaxation	BDL (DL - 0.005)
6	Chloride (as Cl)	mg/l	IS 3025 (Part 32) : 1988	250	1000	28.47
7	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	52.91
8	Free residual chlorine	mg/l	IS 3025 (Part 26) : 2021	Min. 0.2	1	BDL (DL - 0.1)
9	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.26
10	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	13.47
11	Nitrate (as NO ₃)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	8.16
12	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
13	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	7.31 at 25°C
14	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	0.001	0.002	BDL (DL - 0.001)
15	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24) : 2022	200	400	17.24
16	Taste	-	IS 3025 (Part 8) : 1984	Agreeable	Agreeable	Agreeable
17	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	309
18	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.4
19	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21) : 2009	200	600	187.57

□ Please refer last Page for Note and Remarks.

Verified By

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC54582300001289F

Test Report No. : ALPL/31052023/3-14A

dated 31/05/2023

Page 2 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/Mon-3/60-GW14	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-14	Location Co-ordinates Lat: 22°9'25.41"N, Long: 85°30'21.34"E
Sample Collected By Anacon Representative Mr. Sovan Giri			Quantity Received 5.0 Ltr & 250 ml
Sampling Date 18/05/2023		Sampling Time 11.20 am to 4.10 pm	Sampling Location Noamundi Bazar (Nr. Petrol Pump)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
II	Chemical Testing 2. Residues In Water					
20	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
21	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL (DL - 0.01)
22	Barium (as Ba)	mg/l	IS 3025 (Part 2) : 2019	0.7	No relaxation	BDL (DL - 0.01)
23	Boron (as B)	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
24	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
25	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
26	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.02
27	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
28	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	BDL (DL - 0.05)
29	Mercury (as Hg)	mg/l	IS 3025 (Part 48) : 1994	0.001	No relaxation	BDL (DL - 0.0005)
30	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL - 0.001)
31	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
32	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)
33	Polyntuclear aromatic hydrocarbon (PAH)	µg/l	ANtr/7.2/RES/06: 2018	0.1	No relaxation	BDL(DL-0.03)

Please refer last Page for Note and Remarks.

Verified By

Mangesh Fande
Technical Manager

Yogesh Kombe
Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC54582300001289F

Test Report No. : ALPL/31052023/3-14A

dated 31/05/2023

Page 3 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No.	ALPL/23052023/Mon-3/60-GW14	Analysis Start	24/05/2023
	Inward Date	23/05/2023	Analysis End	30/05/2023
	Reference	W.O.- 4700098928/962	Report Issue Date	31/05/2023
	Reference Date	22.03.2022	Sample Category	Water

Sample Name	Sample Source	Sample Particulars	Location Co-ordinates	Quantity Received
Ground Water	Dugwell	Sample Code-GW-14	Lat: 22°9'25.41"N, Long: 85°30'21.34"E	5.0 Ltr & 250 ml
Sample Collected By		Sampling Date	Sampling Time	Sampling Location
Anacon Representative Mr. Sovan Giri		18/05/2023	11.20 am to 4.10 pm	Noamundi Bazar (Nr. Petrol Pump)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
34	Pesticide Residues Organochlorine					
i	Alpha-HCH	µg/l	ANtr/7.2/RES/01: 2018	0.01	No relaxation	BDL (DL - 0.01)
ii	Beta HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
iii	Gamma - HCH (Lindane)	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
iv	Delta- HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
v	Alachlor	µg/l	ANtr/7.2/RES/01: 2018	20	No relaxation	BDL (DL - 0.03)
vi	Aldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
vii	Dieldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
viii	Butachlor	µg/l	ANtr/7.2/RES/01: 2018	125	No relaxation	BDL (DL - 0.03)
ix	p,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
x	o,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xi	p,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xii	o,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiii	o,p'- DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiv	p,p'- DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xv	Monocrotophos	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xvi	Atrazine	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
xvii	Parathion methyl	µg/l	ANtr/7.2/RES/01: 2018	0.3	No relaxation	BDL (DL - 0.03)
xviii	Paraoxon methyl	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xix	Malathion	µg/l	ANtr/7.2/RES/01: 2018	190	No relaxation	BDL (DL - 0.03)
xx	Malaoxon	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xxi	Ethion	µg/l	ANtr/7.2/RES/01: 2018	3	No relaxation	BDL (DL - 0.03)
xxii	Chlorpyrifos	µg/l	ANtr/7.2/RES/01: 2018	30	No relaxation	BDL (DL - 0.03)

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REMARKS: As requested by the client, sample was tested for above parameters only. Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

Verified By

Yogesh Kombe

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway

Quality Manager

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Test Report

Test Report No. : ALPL/31052023/3-14B

dated 31/05/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/Mon-3/60-GW14 Inward Date 23/05/2023 Reference W.O.- 4700098928/962 Reference Date 22.03.2022	Analysis Start 24/05/2023 Analysis End 30/05/2023 Report Issue Date 31/05/2023 Sample Category Water	
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-14	Location Co-ordinates Lat: 22°9'25.41"N, Long: 85°30'21.34"E	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr. Sovan Giri		Sampling Date 18/05/2023	Sampling Time 11.20 am to 4.10 pm	Sampling Location Noamundi Bazar (Nr. Petrol Pump)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
1	Mineral Oil	mg/l	ANtr/7.2/RES/06: 2018	1	No relaxation	BDL (DL - 0.001)

NOTE: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● BDL- Below detection limit. ● DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'. ● Result for test no. 8 is not relevant. ● ANtr/7.2/RES -01,06.; Inhouse validated method. ● NT indicates not Tested as sample failed to establish safety concerns.

REMARKS: As requested by the client, sample was tested for above parameters only.

Verified By

Yogesh Kombe
Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Test Report

ULR No.- TC545823000001289F

Test Report No. : ALPL/31052023/3-15A

dated 31/05/2023

Page 1 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/Mon-3/60-GW15	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-15	Location Co-ordinates Lat: 22°8'54.89"N, Long: 85°31'8.03"E
Sample Collected By Anacon Representative Mr. Sovan Giri		Sampling Date 18/05/2023	Quantity Received 5.0 Ltr & 250 ml
		Sampling Time 11.20 am to 4.10 pm	Sampling Location Mahudi Village (Railway Station Road)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	Biological Testing I. Water					
1	<i>Escherichia coli</i>	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent
II	Chemical Testing I. Water					
2	Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23) : 1986	200	600	163.43
3	Anionic surface active agents (as MBAS)	mg/l	IS 13428 : (Annex K): 2005	0.2	1.0	BDL (DL - 0.01)
4	Colour	Hazen units	IS 3025 (Part 4) : 2021	5	15	1
5	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.05	No relaxation	BDL (DL - 0.005)
6	Chloride (as Cl)	mg/l	IS 3025 (Part 32) : 1988	250	1000	32.68
7	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	51.29
8	Free residual chlorine	mg/l	IS 3025 (Part 26) : 2021	Min. 0.2	1	BDL (DL - 0.1)
9	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.16
10	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	12.67
11	Nitrate (as NO ₃)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	5.26
12	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
13	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.87 at 25°C
14	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	0.001	0.002	BDL (DL - 0.001)
15	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24) : 2022	200	400	21.43
16	Taste	-	IS 3025 (Part 8) : 1984	Agreeable	Agreeable	Agreeable
17	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	297
18	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.4
19	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21) : 2009	200	600	180.24

□ Please refer last Page for Note and Remarks.

Verified By

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC54582300001289F

Test Report No. : ALPL/31052023/3-15A

dated 31/05/2023

Page 2 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/Mon-3/60-GW15	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-15	Location Co-ordinates Lat: 22°8'54.89"N, Long: 85°31'8.03"E
Sample Collected By Anacon Representative Mr. Sovan Giri		Sampling Date 18/05/2023	Quantity Received 5.0 Ltr & 250 ml
		Sampling Time 11.20 am to 4.10 pm	Sampling Location Mahudi Village (Railway Station Road)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
II Chemical Testing						
2. Residues In Water						
20	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
21	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL (DL - 0.01)
22	Barium (as Ba)	mg/l	IS 3025 (Part 2) : 2019	0.7	No relaxation	BDL (DL - 0.01)
23	Boron (as B)	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
24	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
25	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
26	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.05
27	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
28	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	BDL (DL - 0.05)
29	Mercury (as Hg)	mg/l	IS 3025 (Part 48) : 1994	0.001	No relaxation	BDL (DL - 0.0005)
30	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL - 0.001)
31	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
32	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)
33	Polynuclear aromatic hydrocarbon (PAH)	µg/l	ANtr/7.2/RES/06: 2018	0.1	No relaxation	BDL(DL-0.03)

Please refer last Page for Note and Remarks.

Verified By

Mangesh Fande
Technical Manager

Yogesh Kombe
Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000001289F

Test Report No. : ALPL/31052023/3-15A

dated 31/05/2023

Page 3 of 3

Table with 3 columns: Issued To (M/s Noamundi Iron Mines), Sample Inward No. (ALPL/23052023/Mon-3/60-GW15), Analysis Start (24/05/2023), Inward Date (23/05/2023), Analysis End (30/05/2023), Reference (W.O.- 4700098928/962), Report Issue Date (31/05/2023), Reference Date (22.03.2022), Sample Category (Water). Includes sample name (Ground Water), source (Dugwell), location (Mahudi Village), and collection date (18/05/2023).

TEST RESULTS

Table with 7 columns: S.N., Test Parameter, Measurement Unit, Test Method, Requirement as per IS 10500 : 2012 (Acceptable Limit, Permissible Limit #), Test Result. Lists 22 pesticide residues (Alpha-HCH to Chlorpyrifos) with their respective measurement units and test results.

NOTE: Please see watermark "Original Test Report" to confirm the authenticity of this report. Results shall be referred to tested sample(s) and applicable to tested parameters only. Test report shall not be reproduced except in full without prior written approval of Anacon Labs. Liability of Anacon Labs is limited to invoiced amount only.

REMARKS: As requested by the client, sample was tested for above parameters only. Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

Verified By

Signature of Yogesh Kombe

Yogesh Kombe

Authorized Signatory

Signature of Dr. (Mrs.) S.D. Garway

Dr. (Mrs.) S.D. Garway

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Test Report

Test Report No. : ALPL/31052023/3-15B

dated 31/05/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/23052023/Mon-3/60-GW15	Analysis Start 24/05/2023
	Inward Date 23/05/2023	Analysis End 30/05/2023
	Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
	Reference Date 22.03.2022	Sample Category Water

Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-15	Location Co-ordinates Lat: 22°8'54.89"N, Long: 85°31'8.03"E	Quantity Received 5.0 Ltr & 250 ml
------------------------------------	---------------------------------	------------------------------------------------	-----------------------------------------------------------------------	----------------------------------------------

Sample Collected By Anacon Representative Mr. Sovan Giri	Sampling Date 18/05/2023	Sampling Time 11.20 am to 4.10 pm	Sampling Location Mahudi Village (Railway Station Road)
--------------------------------------------------------------------	------------------------------------	---------------------------------------------	----------------------------------------------------------------------

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
1	Mineral Oil	mg/l	ANtr/7.2/RES/06: 2018	1	No relaxation	BDL (DL – 0.001)

NOTE: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only.
 ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● Permissible limit in absence of an alternate source for drinking water. ● "mg/l" is equivalent to "ppm". ● "µg/l" is equivalent to "ppb". ● BDL- Below detection limit. ● DL- DL Indicates detection limit of instrument/method and shall be considered as "absent". ● Result for test no. 8 is not relevant. ● ANtr/7.2/RES -01,06.: Inhouse validated method. ● NT indicates not Tested as sample failed to establish safety concerns.

REMARKS: As requested by the client, sample was tested for above parameters only.

Verified By

Yogesh Kombe
 Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
 Quality Manager

-----End of Report-----

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Test Report

ULR No.- TC545823000001289F

Test Report No. : ALPL/31052023/3-16A

dated 31/05/2023

Page 1 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/Mon-3/60-GW16	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O. 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-16	Location Co-ordinates Lat: 22°8'52.58"N, Long: 85°30'28.50"E
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr. Sovan Giri		Sampling Date 18/05/2023	Sampling Time 11.20 am to 4.10 pm
			Sampling Location Bottom Bin (Nr. Barrack)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	Biological Testing 1. Water					
1	<i>Escherichia coli</i>	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent
II	Chemical Testing 1. Water					
2	Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23) : 1986	200	600	182.67
3	Anionic surface active agents (as MBAS)	mg/l	IS 13428 (Annex K): 2005	0.2	1.0	BDL (DL - 0.01)
4	Colour	Hazen units	IS 3025 (Part 4) : 2021	5	15	1
5	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.05	No relaxation	BDL (DL - 0.005)
6	Chloride (as Cl)	mg/l	IS 3025 (Part 32) : 1988	250	1000	23.67
7	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	56.31
8	Free residual chlorine	mg/l	IS 3025 (Part 26) : 2021	Min. 0.2	1	BDL (DL - 0.1)
9	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.28
10	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	11.24
11	Nitrate (as NO ₃)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	8.37
12	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
13	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.71 at 25°C
14	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	0.001	0.002	BDL (DL - 0.001)
15	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24) : 2022	200	400	23.63
16	Taste	-	IS 3025 (Part 8) : 1984	Agreeable	Agreeable	Agreeable
17	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	463
18	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
19	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21) : 2009	200	600	186.92

□ Please refer last Page for Note and Remarks.

Verified By

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000001289F

Test Report No. : ALPL/31052023/3-16A

dated 31/05/2023

Page 2 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/Mon-3/60-GW16	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-16	Location Co-ordinates Lat: 22°8'52.58"N, Long: 85°30'28.50"E
Sample Collected By Anacon Representative Mr. Sovan Giri		Sampling Date 18/05/2023	Quantity Received 5.0 Ltr & 250 ml
		Sampling Time 11.20 am to 4.10 pm	Sampling Location Bottom Bin (Nr. Barrack)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
II	Chemical Testing 2. Residues In Water					
20	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 1988	0.01	No relaxation	BDL (DL - 0.01)
21	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL (DL - 0.01)
22	Barium (as Ba)	mg/l	IS 3025 (Part 2) : 2019	0.7	No relaxation	BDL (DL - 0.01)
23	Boron (as B)	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
24	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
25	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
26	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.10
27	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
28	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	BDL (DL - 0.05)
29	Mercury (as Hg)	mg/l	IS 3025 (Part 48) : 1994	0.001	No relaxation	BDL (DL - 0.0005)
30	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL - 0.001)
31	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
32	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)
33	Polynuclear aromatic hydrocarbon (PAH)	µg/l	ANtr/7.2/RES/06: 2018	0.1	No relaxation	BDL(DL-0.03)

Please refer last Page for Note and Remarks.

Verified By

Mangesh Fande
Technical Manager

Yogesh Kombe
Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC54582300001289F

Test Report No. : ALPL/31052023/3-16A

dated 31/05/2023

Page 3 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/23052023/Mon-3/60-GW16	Analysis Start 24/05/2023		
	Inward Date 23/05/2023	Analysis End 30/05/2023		
	Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023		
	Reference Date 22.03.2022	Sample Category Water		
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-16	Location Co-ordinates Lat: 22°8'52.58"N, Long: 85°30'28.50"E	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr. Sovan Giri		Sampling Date 18/05/2023	Sampling Time 11.20 am to 4.10 pm	Sampling Location Bottom Bin (Nr. Barrack)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
34	Pesticide Residues Organochlorine					
i	Alpha-HCH	µg/l	ANtr/7.2/RES/01: 2018	0.01	No relaxation	BDL (DL - 0.01)
ii	Beta HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
iii	Gamma - HCH (Lindane)	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
iv	Delta- HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
v	Alachlor	µg/l	ANtr/7.2/RES/01: 2018	20	No relaxation	BDL (DL - 0.03)
vi	Aldrin'	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
vii	Dieldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
viii	Butachlor	µg/l	ANtr/7.2/RES/01: 2018	125	No relaxation	BDL (DL - 0.03)
ix	p,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
x	o,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xi	p,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xii	o,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiii	o,p'- DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiv	p,p'- DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xv	Monocrotophos	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xvi	Atrazine	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
xvii	Parathion methyl	µg/l	ANtr/7.2/RES/01: 2018	0.3	No relaxation	BDL (DL - 0.03)
xviii	Paraoxon methyl	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xix	Malathion	µg/l	ANtr/7.2/RES/01: 2018	190	No relaxation	BDL (DL - 0.03)
xx	Malaoxon	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xxi	Ethion	µg/l	ANtr/7.2/RES/01: 2018	3	No relaxation	BDL (DL - 0.03)
xxii	Chlorpyrifos	µg/l	ANtr/7.2/RES/01: 2018	30	No relaxation	BDL (DL - 0.03)

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REMARKS: As requested by the client, sample was tested for above parameters only. Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

Verified By

Y. Kombe

Yogesh Kombe
Deputy Technical Manager

Authorized Signatory

S.D. Garway

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

Test Report No. : ALPL/31052023/3-16B

dated 31/05/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/23052023/Mon-3/60-GW16 Inward Date 23/05/2023 Reference W.O.- 4700098928/962 Reference Date 22.03.2022	Analysis Start 24/05/2023 Analysis End 30/05/2023 Report Issue Date 31/05/2023 Sample Category Water		
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-16	Location Co-ordinates Lat: 22°8'52.58"N, Long: 85°30'28.50"E	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr. Sovan Giri		Sampling Date 18/05/2023	Sampling Time 11.20 am to 4.10 pm	Sampling Location Bottom Bin (Nr. Barrack)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
1	Mineral Oil	mg/l	ANtr/7.2/RES/06: 2018	1	No relaxation	BDL (DL - 0.001)

NOTE: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● BDL- Below detection limit. ● DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'. ● Result for test no. 8 is not relevant. ● ANtr/7.2/RES -01,06.; Inhouse validated method. ● NT* indicates not Tested as sample failed to establish safety concerns.

REMARKS: As requested by the client, sample was tested for above parameters only.

Verified By

Yogesh Kombe
Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

----End of Report----

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-13A

dated 31/08/2023

Page 1 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/Mon-2/60-GW13	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-13	Location Co-ordinates Lat: 22°9'30.46"N, Long: 85°28'53.38"E
		Quantity Received 5.0 Ltr & 250 ml	
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40 am to 4.25 pm
		Sampling Location Noamundi Basti (Nr. Play Ground)	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	Biological Testing I. Water					
1	<i>Escherichia coli</i>	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent
II	Chemical Testing I. Water					
2	Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23) : 1986	200	600	164.28
3	Anionic surface active agents (as MBAS)	mg/l	IS 13428 : (Annex K): 2005	0.2	1.0	BDL (DL - 0.01)
4	Colour	Hazen units	IS 3025 (Part 4) : 2021	5	15	1
5	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.05	No relaxation	BDL (DL - 0.005)
6	Chloride (as Cl)	mg/l	IS 3025 (Part 32) : 1988	250	1000	28.75
7	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	47.53
8	Free residual chlorine	mg/l	IS 3025 (Part 26) : 2021	Min. 0.2	1	BDL (DL - 0.1)
9	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.31
10	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	11.96
11	Nitrate (as NO ₃)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	7.53
12	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
13	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.91 at 25°C
14	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	0.001	0.002	BDL (DL - 0.001)
15	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24) : 2022	200	400	21.43
16	Taste	-	IS 3025 (Part 8) : 1984	Agreeable	Agreeable	Agreeable
17	Total dissolved solids	mg/l	IS 3025 (Part 16) : 2023	500	2000	472
18	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
19	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21) : 2009	200	600	167.92

☐ Please refer last Page for Note and Remarks.

Verified By

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-13A

dated 31/08/2023

Page 2 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/24082023/Mon-2/60-GW13	Analysis Start 24/08/2023
	Inward Date 24/08/2023	Analysis End 31/08/2023
	Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
	Reference Date 22.03.2022	Sample Category Water

Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-13	Location Co-ordinates Lat: 22°9'30.46"N, Long: 85°28'53.38"E	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40 am to 4.25 pm	Sampling Location Noamundi Basti (Nr. Play Ground)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
II	Chemical Testing					
	2. Residues In Water					
20	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
21	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL (DL - 0.01)
22	Barium (as Ba)	mg/l	IS 3025 (Part 2) : 2019	0.7	No relaxation	BDL (DL - 0.01)
23	Boron (as B)	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
24	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
25	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
26	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.15
27	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
28	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	BDL (DL - 0.05)
29	Mercury (as Hg)	mg/l	IS 3025 (Part 48) : 1994	0.001	No relaxation	BDL (DL - 0.0005)
30	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL - 0.001)
31	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
32	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)
33	Polynuclear aromatic hydrocarbon (PAH)	µg/l	ANtr/7.2/RES/06: 2018	0.1	No relaxation	BDL(DL-0.03)
34	Mineral Oil	mg/l	ANtr/7.2/RES/06	1	No relaxation	BDL (DL - 0.1)

□ Please refer last Page for Note and Remarks.

Verified By

Mangesh Fande
Mangesh Fande
Technical Manager

Radha Pawar
Radha Pawar
Chemist

Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-13A

dated 31/08/2023

Page 3 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/Mon-2/60-GW13	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-13	Location Co-ordinates Lat: 22°9'30.46"N, Long: 85°28'53.38"E
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40 am to 4.25 pm
			Sampling Location Noamundi Basti (Nr. Play Ground)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
35	Pesticide Residues Organochlorine					
i	Alpha-HCH	µg/l	ANtr/7.2/RES/01: 2018	0.01	No relaxation	BDL (DL - 0.01)
ii	Beta HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
iii	Gamma - HCH (Lindane)	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
iv	Delta- HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
v	Alachlor	µg/l	ANtr/7.2/RES/01: 2018	20	No relaxation	BDL (DL - 0.03)
vi	Aldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
vii	Dieldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
viii	Butachlor	µg/l	ANtr/7.2/RES/01: 2018	125	No relaxation	BDL (DL - 0.03)
ix	p,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
x	o,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xi	p,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xii	o,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiii	o,p'- DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiv	p,p'- DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xv	Monocrotophos	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xvi	Atrazine	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
xvii	Parathion methyl	µg/l	ANtr/7.2/RES/01: 2018	0.3	No relaxation	BDL (DL - 0.03)
xviii	Paraoxon methyl	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xix	Malathion	µg/l	ANtr/7.2/RES/01: 2018	190	No relaxation	BDL (DL - 0.03)
xx	Malaaxon	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xxi	Ethion	µg/l	ANtr/7.2/RES/01: 2018	3	No relaxation	BDL (DL - 0.03)
xxii	Chlorpyrifos	µg/l	ANtr/7.2/RES/01: 2018	30	No relaxation	BDL (DL - 0.03)

NOTE: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● BDL- Below detection limit. ● DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'. ● Result for test no. 8 is not relevant. ● ANtr/7.2/RES-01,06,: Inhouse validated method. ● NT' indicates not Tested as sample failed to establish safety concerns.

REMARKS: As requested by the client, sample was tested for above parameters only. Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

Verified By

Radha Pawar
Chemist

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-14A

dated 31/08/2023

Page 1 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/Mon-2/60-GW14	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-14	Location Co-ordinates Lat: 22°9'25.41"N, Long: 85°30'21.34"E
		Quantity Received 5.0 Ltr & 250 ml	
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40 am to 4.25 pm
		Sampling Location Noamundi Bazar (Nr. Petrol Pump)	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I Biological Testing I. Water						
1	<i>Escherichia coli</i>	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent
II Chemical Testing I. Water						
2	Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23) : 1986	200	600	183.76
3	Anionic surface active agents (as MBAS)	mg/l	IS 13428 : (Annex K): 2005	0.2	1.0	BDL (DL - 0.01)
4	Colour	Hazen units	IS 3025 (Part 4) : 2021	5	15	1
5	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.05	No relaxation	BDL (DL - 0.005)
6	Chloride (as Cl)	mg/l	IS 3025 (Part 32) : 1988	250	1000	27.43
7	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	51.64
8	Free residual chlorine	mg/l	IS 3025 (Part 26) : 2021	Min. 0.2	1	BDL (DL - 0.1)
9	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.31
10	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	12.58
11	Nitrate (as NO ₃)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	9.36
12	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
13	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.81 at 25°C
14	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	0.001	0.002	BDL (DL - 0.001)
15	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24) : 2022	200	400	18.43
16	Taste	-	IS 3025 (Part 8) : 1984	Agreeable	Agreeable	Agreeable
17	Total dissolved solids	mg/l	IS 3025 (Part 16) : 2023	500	2000	428
18	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.6
19	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21) : 2009	200	600	180.74

☐ Please refer last Page for Note and Remarks.

Verified By

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-14A

dated 31/08/2023

Page 2 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/24082023/Mon-2/60-GW14	Analysis Start 24/08/2023
	Inward Date 24/08/2023	Analysis End 31/08/2023
	Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
	Reference Date 22.03.2022	Sample Category Water

Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-14	Location Co-ordinates Lat: 22°9'25.41"N, Long: 85°30'21.34"E	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40 am to 4.25 pm	Sampling Location Noamundi Bazar (Nr. Petrol Pump)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
II	Chemical Testing					
	2. Residues In Water					
20	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
21	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL (DL - 0.01)
22	Barium (as Ba)	mg/l	IS 3025 (Part 2) : 2019	0.7	No relaxation	BDL (DL - 0.01)
23	Boron (as B)	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
24	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
25	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
26	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.06
27	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
28	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	BDL (DL - 0.05)
29	Mercury (as Hg)	mg/l	IS 3025 (Part 48) : 1994	0.001	No relaxation	BDL (DL - 0.0005)
30	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL - 0.001)
31	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
32	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)
33	Polynuclear aromatic hydrocarbon (PAH)	µg/l	ANtr/7.2/RES/06: 2018	0.1	No relaxation	BDL(DL-0.03)
34	Mineral Oil	mg/l	ANtr/7.2/RES/06	1	No relaxation	BDL (DL - 0.1)

□ Please refer last Page for Note and Remarks.

Verified By

Mangesh Fande
Technical Manager

Radha Pawar
Chemist

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

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Test Report No. : ALPL/31082023/3-14A

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Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/Mon-2/60-GW14	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-14	Location Co-ordinates Lat: 22°9'25.41"N, Long: 85°30'21.34"E
		Quantity Received 5.0 Ltr & 250 ml	
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40 am to 4.25 pm
		Sampling Location Noamundi Bazar (Nr. Petrol Pump)	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
35	Pesticide Residues Organochlorine					
i	Alpha-HCH	µg/l	ANtr/7.2/RES/01: 2018	0.01	No relaxation	BDL (DL - 0.01)
ii	Beta HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
iii	Gamma - HCH (Lindane)	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
iv	Delta- HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
v	Alachlor	µg/l	ANtr/7.2/RES/01: 2018	20	No relaxation	BDL (DL - 0.03)
vi	Aldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
vii	Dieldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
viii	Butachlor	µg/l	ANtr/7.2/RES/01: 2018	125	No relaxation	BDL (DL - 0.03)
ix	p,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
x	o,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xi	p,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xii	o,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiii	o,p'-DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiv	p,p'- DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xv	Monocrotophos	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xvi	Atrazine	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
xvii	Parathion methyl	µg/l	ANtr/7.2/RES/01: 2018	0.3	No relaxation	BDL (DL - 0.03)
xviii	Paraoxon methyl	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xix	Malathion	µg/l	ANtr/7.2/RES/01: 2018	190	No relaxation	BDL (DL - 0.03)
xx	Malaoxon	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xxi	Ethion	µg/l	ANtr/7.2/RES/01: 2018	3	No relaxation	BDL (DL - 0.03)
xxii	Chlorpyrifos	µg/l	ANtr/7.2/RES/01: 2018	30	No relaxation	BDL (DL - 0.03)

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REMARKS: As requested by the client, sample was tested for above parameters only. Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

Verified By

Radha Pawar
Chemist

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-15A

dated 31/08/2023

Page 1 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/Mon-2/60-GW15	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-15	Location Co-ordinates Lat: 22°8'54.89"N, Long: 85°31'8.03"E
		Quantity Received 5.0 Ltr & 250 ml	
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40 am to 4.25 pm
		Sampling Location Mahudi Village (Railway Station Road)	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I Biological Testing 1. Water						
1	<i>Escherichia coli</i>	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent
II Chemical Testing 1. Water						
2	Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23) : 1986	200	600	176.28
3	Anionic surface active agents (as MBAS)	mg/l	IS 13428 : (Annex K) : 2005	0.2	1.0	BDL (DL - 0.01)
4	Colour	Hazen units	IS 3025 (Part 4) : 2021	5	15	1
5	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.05	No relaxation	BDL (DL - 0.005)
6	Chloride (as Cl)	mg/l	IS 3025 (Part 32) : 1988	250	1000	28.46
7	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	53.91
8	Free residual chlorine	mg/l	IS 3025 (Part 26) : 2021	Min. 0.2	1	BDL (DL - 0.1)
9	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.21
10	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	13.42
11	Nitrate (as NO ₃)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	5.76
12	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
13	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	7.13 at 25°C
14	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	0.001	0.002	BDL (DL - 0.001)
15	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24) : 2022	200	400	18.46
16	Taste	-	IS 3025 (Part 8) : 1984	Agreeable	Agreeable	Agreeable
17	Total dissolved solids	mg/l	IS 3025 (Part 16) : 2023	500	2000	452
18	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.3
19	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21) : 2009	200	600	189.87

□ Please refer last page for Note and Remarks.

Verified By

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-15A

dated 31/08/2023

Page 2 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/Mon-2/60-GW15	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-15	Location Co-ordinates Lat: 22°8'54.89"N, Long: 85°31'8.03"E
		Quantity Received 5.0 Ltr & 250 ml	
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40 am to 4.25 pm
Sampling Location Mahudi Village (Railway Station Road)			

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
II	Chemical Testing 2. Residues In Water					
20	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 2022	0.01	No relaxation	BDL (DL - 0.01)
21	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL (DL - 0.01)
22	Barium (as Ba)	mg/l	IS 3025 (Part 2) : 2019	0.7	No relaxation	BDL (DL - 0.01)
23	Boron (as B)	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
24	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
25	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
26	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.20
27	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
28	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	BDL (DL - 0.05)
29	Mercury (as Hg)	mg/l	IS 3025 (Part 48) : 1994	0.001	No relaxation	BDL (DL - 0.0005)
30	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL - 0.001)
31	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
32	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)
33	Polynuclear aromatic hydrocarbon (PAH)	µg/l	ANtr/7.2/RES/06: 2018	0.1	No relaxation	BDL(DL-0.03)
34	Mineral Oil	mg/l	ANtr/7.2/RES/06	1	No relaxation	BDL (DL - 0.1)

□ Please refer last Page for Note and Remarks.

Verified By

Mangesh Fande
Technical Manager

Radha Pawar
Chemist

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC54582300002497F

Test Report No. : ALPL/31082023/3-15A

dated 31/08/2023

Page 3 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/Mon-2/60-GW15	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-15	Location Co-ordinates Lat: 22°8'54.89"N, Long: 85°31'8.03"E
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40 am to 4.25 pm
			Sampling Location Mahudi Village (Railway Station Road)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
35	Pesticide Residues Organochlorine					
i	Alpha-HCH	µg/l	ANtr/7.2/RES/01: 2018	0.01	No relaxation	BDL (DL - 0.01)
ii	Beta HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
iii	Gamma - HCH (Lindane)	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
iv	Delta- HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
v	Alachlor	µg/l	ANtr/7.2/RES/01: 2018	20	No relaxation	BDL (DL - 0.03)
vi	Aldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
vii	Dieldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
viii	Butachlor	µg/l	ANtr/7.2/RES/01: 2018	125	No relaxation	BDL (DL - 0.03)
ix	p,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
x	o,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xi	p,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xii	o,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiii	o,p'-DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiv	p,p'- DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xv	Monocrotophos	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xvi	Atrazine	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
xvii	Parathion methyl	µg/l	ANtr/7.2/RES/01: 2018	0.3	No relaxation	BDL (DL - 0.03)
xviii	Paraoxon methyl	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xix	Malathion	µg/l	ANtr/7.2/RES/01: 2018	190	No relaxation	BDL (DL - 0.03)
xx	Malaoxon	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xxi	Ethion	µg/l	ANtr/7.2/RES/01: 2018	3	No relaxation	BDL (DL - 0.03)
xxii	Chlorpyrifos	µg/l	ANtr/7.2/RES/01: 2018	30	No relaxation	BDL (DL - 0.03)

NOTE: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● BDL- Below detection limit. ● DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'. ● Result for test no. 8 is not relevant. ● ANtr/7.2/RES-01,06.; Inhouse validated method. ● NT' indicates not Tested as sample failed to establish safety concerns.

REMARKS: As requested by the client, sample was tested for above parameters only. Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

Verified By

Radha Payer
Chemist

Authorized Signatory

Ms. S.P. Gawde
Quality Manager

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-16A

dated 31/08/2023

Page 1 of 3

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/24082023/Mon-2/60-GW16	Analysis Start 24/08/2023		
	Inward Date 24/08/2023	Analysis End 31/08/2023		
	Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023		
	Reference Date 22.03.2022	Sample Category Water		
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-16	Location Co-ordinates Lat: 22°8'52.58"N, Long: 85°30'28.50"E	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40 am to 4.25 pm	Sampling Location Bottom Bin (Nr. Barrack)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
I	Biological Testing I. Water					
1	<i>Escherichia coli</i>	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent
II	Chemical Testing I. Water					
2	Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23) : 1986	200	600	192.36
3	Anionic surface active agents (as MBAS)	mg/l	IS 13428 : (Annex K): 2005	0.2	1.0	BDL (DL - 0.01)
4	Colour	Hazen units	IS 3025 (Part 4) : 2021	5	15	1
5	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.05	No relaxation	BDL (DL - 0.005)
6	Chloride (as Cl)	mg/l	IS 3025 (Part 32) : 1988	250	1000	26.17
7	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	51.29
8	Free residual chlorine	mg/l	IS 3025 (Part 26) : 2021	Min. 0.2	1	BDL (DL - 0.1)
9	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	0.24
10	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	30	100	12.68
11	Nitrate (as NO ₃)	mg/l	APHA method 23rd edition: 2017	45	No relaxation	9.17
12	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
13	pH	-	IS 3025 (Part 11) : 2022	6.5 to 8.5	No relaxation	6.82 at 25°C
14	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	0.001	0.002	BDL (DL - 0.001)
15	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24) : 2022	200	400	24.73
16	Taste	-	IS 3025 (Part 8) : 1984	Agreeable	Agreeable	Agreeable
17	Total dissolved solids	mg/l	IS 3025 (Part 16) : 2023	500	2000	472
18	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	0.6
19	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21) : 2009	200	600	180.28

□ Please refer last Page for Note and Remarks.

Verified By

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

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	Inward Date 24/08/2023	Analysis End 31/08/2023		
	Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023		
	Reference Date 22.03.2022	Sample Category Water		
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-16	Location Co-ordinates Lat: 22°8'52.58"N, Long: 85°30'28.50"E	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40 am to 4.25 pm	Sampling Location Bottom Bin (Nr. Barrack)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
II	Chemical Testing					
	2. Residues In Water					
20	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 1988	0.01	No relaxation	BDL (DL - 0.01)
21	Aluminium (as Al)	mg/l	IS 3025 (Part 2) : 2019	0.03	0.2	BDL (DL - 0.01)
22	Barium (as Ba)	mg/l	IS 3025 (Part 2) : 2019	0.7	No relaxation	BDL (DL - 0.01)
23	Boron (as B)	mg/l	IS 3025 (Part 2) : 2019	0.5	2.4	BDL (DL - 0.1)
24	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	0.05	1.5	BDL (DL - 0.03)
25	Cadmium (as Cd)	mg/l	IS 3025 (Part 2) : 2019	0.003	No relaxation	BDL (DL - 0.001)
26	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	1.0	No relaxation	0.16
27	Lead (as Pb)	mg/l	IS 3025 (Part 2) : 2019	0.01	No relaxation	BDL (DL - 0.001)
28	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	0.1	0.3	BDL (DL - 0.05)
29	Mercury (as Hg)	mg/l	IS 3025 (Part 48) : 1994	0.001	No relaxation	BDL (DL - 0.0005)
30	Selenium (as Se)	mg/l	IS 3025 (Part 56) : 2003	0.01	No relaxation	BDL (DL - 0.001)
31	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL (DL - 0.03)
32	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5	15	BDL (DL - 0.1)
33	Polynuclear aromatic hydrocarbon (PAH)	µg/l	ANtr/7.2/RES/06: 2018	0.1	No relaxation	BDL(DL-0.03)
34	Mineral Oil	mg/l	ANtr/7.2/RES/06	1	No relaxation	BDL (DL - 0.1)

☐ Please refer last Page for Note and Remarks.

Verified By

Mangosh Fande
Mangosh Fande
Technical Manager

Radha Pawar
Radha Pawar
Chemist

Authorized Signatory

S. Garway
Dr. (Mrs.) S.D. Garway
Quality Manager

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		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-16	Location Co-ordinates Lat: 22°8'52.58"N, Long: 85°30'28.50"E
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40 am to 4.25 pm
			Sampling Location Bottom Bin (Nr. Barrack)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4		Test Result
				Acceptable Limit	Permissible Limit #	
35	Pesticide Residues Organochlorine					
i	Alpha-HCH	µg/l	ANtr/7.2/RES/01: 2018	0.01	No relaxation	BDL (DL - 0.01)
ii	Beta HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
iii	Gamma - HCH (Lindane)	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
iv	Delta- HCH	µg/l	ANtr/7.2/RES/01: 2018	0.04	No relaxation	BDL (DL - 0.03)
v	Alachlor	µg/l	ANtr/7.2/RES/01: 2018	20	No relaxation	BDL (DL - 0.03)
vi	Aldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
vii	Dieldrin	µg/l	ANtr/7.2/RES/01: 2018	0.03	No relaxation	BDL (DL - 0.03)
viii	Butachlor	µg/l	ANtr/7.2/RES/01: 2018	125	No relaxation	BDL (DL - 0.03)
ix	p,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
x	o,p'-DDE	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xi	p,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xii	o,p'-DDD	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiii	o,p'- DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xiv	p,p'- DDT	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xv	Monocrotophos	µg/l	ANtr/7.2/RES/01: 2018	1	No relaxation	BDL (DL - 0.03)
xvi	Atrazine	µg/l	ANtr/7.2/RES/01: 2018	2	No relaxation	BDL (DL - 0.03)
xvii	Parathion methyl	µg/l	ANtr/7.2/RES/01: 2018	0.3	No relaxation	BDL (DL - 0.03)
xviii	Paraoxon methyl	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xix	Malathion	µg/l	ANtr/7.2/RES/01: 2018	190	No relaxation	BDL (DL - 0.03)
xx	Malaaxon	µg/l	ANtr/7.2/RES/01: 2018	-	-	BDL (DL - 0.03)
xxi	Ethion	µg/l	ANtr/7.2/RES/01: 2018	3	No relaxation	BDL (DL - 0.03)
xxii	Chlorpyrifos	µg/l	ANtr/7.2/RES/01: 2018	30	No relaxation	BDL (DL - 0.03)

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REMARKS: As requested by the client, sample was tested for above parameters only. Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

Verified By

Radha Pawar
Chemist

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

Test Report No. : ALPL/31052023/3-17

dated 31/05/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/ENV-116- SW-1 & 2	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Surface Water	Sample Source 1. Balijhore Nallah Upstream (SW-15) 2. Balijhore Nallah Downstream (SW-16)	Sample Particulars Sample Code-SW-1 & 2	Sample Condition Sealed & Ice Preserved
			Quantity Received 2.0 Ltr & 250 ml each
Sample Collected By Anacon Representative Mr. Sovan Giri		Sampling Date 18/05/2023	Sampling Time 12.40 & 1.20 pm
		Sampling Location 1. Balijhore Nallah Upstream (SW-1) 2. Downstream (SW-2)	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards as per IS 2296:1992 Class C	Test Result	
					SW-1	SW-2
I Biological Testing 1. Water						
1	Total Coliform	MPN/100ml	IS 1622 : 1981	5000	BDL(DL-2)	BDL(DL-2)
II Chemical Testing 1. Water						
2	pH value	-	IS 3025 (Part 11) : 1983	6.0 to 9.0	8.14 at 25°C	7.98 at 25°C
3	Colour	Hazen units	IS 3025 (Part 4) : 2021	300	6	4
4	Dissolved Oxygen	mg/l	IS 3025 (Part 38) : 1989	4.0	6.8	6.2
5	Total Suspended Solid (as TSS)	mg/l	IS 3025 (Part 17) : 1984	--	BDL(DL-10)	BDL(DL-10)
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) : 1993	3.0	BDL(DL-2)	BDL(DL-2)
7	Chemical oxygen demand	mg/l	IS 3025 (Part 58) : 2006	--	13.6	12.4
8	Total Dissolved Solids (TDS)	mg/l	IS 3025 (Part 16) : 1984	1500	417	392
9	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	1.5	BDL(DL-0.03)	BDL(DL-0.03)
10	Chloride (as Cl)	mg/l	IS 3025 (Part 32) : 1988	600	48.26	43.81
11	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24) : 1986	400	18.24	16.52
12	Nitrate (as NO ₃)	mg/l	IS 3025 (Part 34) : 1988	50	9.27	7.64
13	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.5	0.31	0.28
14	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.05	BDL(DL-0.005)	BDL(DL-0.005)
15	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 1001	0.005	BDL(DL-0.001)	BDL(DL-0.001)
16	Anionic Detergent	mg/l	IS 13428 : 2005 Annex K	1.0	BDL(DL-0.01)	BDL(DL-0.01)
Chemical Testing 2. Residues In Water						
17	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	0.5	0.37	0.26
18	Cadmium (as Cd)	mg/l	IS 3025 (Part 41) : 1992	0.01	BDL(DL-0.001)	BDL(DL-0.001)
19	Selenium (as Se)	mg/l	IS 3025 (Part 2) : 2019	0.05	BDL(DL-0.001)	BDL(DL-0.001)
20	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 1988	0.2	BDL(DL-0.001)	BDL(DL-0.001)
21	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.05)	BDL(DL-0.05)
22	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	15	BDL(DL-0.05)	BDL(DL-0.05)
23	Hexa Chromium (as Cr ⁶⁺)	mg/l	IS 3025 (Part 52) : 2003	1.0	BDL(DL-0.001)	BDL(DL-0.001)
24	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	--	BDL(DL-0.005)	BDL(DL-0.005)
25	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	--	BDL(DL-0.05)	BDL(DL-0.05)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Authorized Signatories

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----



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Test Report

Test Report No. : ALPL/31082023/3-17 dated 31/08/2023 Page 1 of 1

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/ENV-200- SW-1 & 2	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Surface Water	Sample Source 1.Balijhore Nallah Upstream (SW-15) 2.Balijhore Nallah Downstream (SW-16)	Sample Particulars Sample Code-SW-1 & 2	Sample Condition Sealed & Ice Preserved
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Quantity Received 2.0 Ltr & 250 ml each
		Sampling Time 12.10 & 12.50 pm	Sampling Location 1.Balijhore Nallah Upstream (SW-1) 2. Downstream (SW-2)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards as per IS 2296:1992 Class C	Test Result	
					SW-1	SW-2
I Biological Testing 1.Water						
1	Coliform	MPN/100ml	IS 1622 : 1981	5000	BDL(DL-2)	BDL(DL-2)
II Chemical Testing 1.Water						
2	pH value	-	IS 3025 (Part 11) : 1983	6.0 to 9.0	8.21 at 25°C	7.94 at 25°C
3	Colour	Hazen units	IS 3025 (Part 4) : 2021	300	16	12
4	Dissolved Oxygen	mg/l	IS 3025 (Part 38) :1989	4.0	6.7	6.3
5	Total Suspended Solid (as TSS)	mg/l	IS 3025 (Part 17) :1984	--	BDL(DL-10)	BDL(DL-10)
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	3.0	BDL(DL-2)	BDL(DL-2)
7	Chemical oxygen demand	mg/l	IS 3025 (Part 58) :2006	--	14.6	11.9
8	Total Dissolved Solids (TDS)	mg/l	IS 3025 (Part 16) : 2023	1500	1194	953
9	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	1.5	BDL(DL-0.03)	BDL(DL-0.03)
10	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	600	56.27	48.19
11	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24) : 1986	400	23.58	19.57
12	Nitrate (as NO ₃)	mg/l	IS 3025 (Part 34) : 1988	50	12.64	9.26
13	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.5	0.57	0.48
14	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.05	BDL(DL-0.005)	BDL(DL-0.005)
15	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.005	BDL(DL-0.001)	BDL(DL-0.001)
16	Anionic Detergent	mg/l	IS 13428 : 2005 Annex K	1.0	BDL(DL-0.01)	BDL(DL-0.01)
Chemical Testing 2. Residues In Water						
17	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	0.5	0.42	0.36
18	Cadmium (as Cd)	mg/l	IS 3025 (Part 41) : 1992	0.01	BDL(DL-0.001)	BDL(DL-0.001)
19	Selenium (as Se)	mg/l	IS 3025 (Part 2) : 2019	0.05	BDL(DL-0.001)	BDL(DL-0.001)
20	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 1988	0.2	BDL(DL-0.001)	BDL(DL-0.001)
21	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.05)	BDL(DL-0.05)
22	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	15	BDL(DL-0.05)	BDL(DL-0.05)
23	Hexa Chromium (as Cr ⁶⁺)	mg/l	IS 3025 (Part 52) :2003	1.0	BDL(DL-0.001)	BDL(DL-0.001)
24	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	--	BDL(DL-0.005)	BDL(DL-0.005)
25	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	--	BDL(DL-0.05)	BDL(DL-0.05)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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ULR No.- TC54582300000929F

Test Report

Test Report No. : ALPL/29042023/3-9A

dated 29/04/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/21042023/MON-2/24-11&12	Analysis Start 21/04/2023
		Inward Date 21/04/2023	Analysis End 29/04/2023
		Reference W.O.- 4700098928/962	Report Issue Date 29/04/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 14/04/2023	Sampling Time 10.30 am to 4.20 pm
			Sampling Location New Town Ship STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.76 at 25°C	6.82 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	87	42
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	16.3	12.8
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	21.9	14.3
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	30	26	18
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	78	43
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut
Snehal Raut

Deputy Technical Manager

Authorized Signatory

S D Garway

Dr. (Mrs.) S. D. Garway
Quality Manager

----End of Report----

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ULR No.- TC54582300000929F

Test Report

Test Report No. : ALPL/29042023/3-9A

dated 29/04/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/21042023/MON-2/24-11&12	Analysis Start 21/04/2023
		Inward Date 21/04/2023	Analysis End 29/04/2023
		Reference W.O.- 4700098928/962	Report Issue Date 29/04/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 14/04/2023	Sampling Time 10.30 am to 4.20 pm
			Sampling Location New Town Ship STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	1.16	0.37
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56): 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS:13428 : 2005(Annexure L)	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Anacon Laboratories

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Test Report No. : ALPL/29042023/3-9B

Test Report dated 29/04/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/21042023/MON-2/24-11&12	Analysis Start 21/04/2023
		Inward Date 21/04/2023	Analysis End 29/04/2023
		Reference W.O.- 4700098928/962	Report Issue Date 29/04/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 14/04/2023	Sampling Time 10.30 am to 4.20 pm
			Sampling Location New Town Ship STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing 1.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	109	26
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.16	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	4.8	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	74%	92%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 2) : 2019	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • 'mg/l' is equivalent to 'ppm'. • Result for test no. 5 is not relevant. • BDL- Below detection limit • DL- Indicates detection limit of instrument/method and shall be considered as 'absent'.

REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snchal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

ULR No.- TC54582300000929F

Test Report No. : ALPL/29042023/3-11A

dated 29/04/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/21042023/MON-2/24-15&16	Analysis Start 21/04/2023
Inward Date 21/04/2023		Reference W.O.- 4700098928/962	Analysis End 29/04/2023
Reference Date 22.03.2022		Report Issue Date 29/04/2023	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 14/04/2023	Sampling Time 10.30 am to 4.20 pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	
Quantity Received 5.0 Ltr & 250 ml			

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.46 at 25°C	6.97 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	76	32
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	13.6	9.1
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	18.4	13.9
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	30	26	14
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	72	38
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Snehal Raut

Deputy Technical Manager

Authorized Signatory

S. D. Garway

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----

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ULR No.- TC54582300000929F

Test Report

Test Report No. : ALPL/29042023/3-11A

dated 29/04/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/21042023/MON-2/24-15&16 Inward Date 21/04/2023 Reference W.O.- 4700098928/962 Reference Date 22.03.2022	Analysis Start 21/04/2023 Analysis End 29/04/2023 Report Issue Date 29/04/2023 Sample Category Water		
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 14/04/2023	Sampling Time 10.30 am to 4.20 pm	Sampling Location Central Camp STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	1.67	0.53
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56): 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS:13428 : 2005(Annexure L)	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report No. : ALPL/29042023/3-11B

Test Report dated 29/04/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/21042023/MON-2/24-15&16	Analysis Start 21/04/2023
Inward Date 21/04/2023		Reference W.O.- 4700098928/962	Analysis End 29/04/2023
Reference Date 22.03.2023		Report Issue Date 29/04/2023	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 14/04/2023	Sampling Time 10.30 am to 4.20 pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	
Quantity Received 5.0 Ltr & 250 ml			

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing I.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	84	21
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	BDL(DL-0.1)	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	2.94	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	84%	96%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 2) : 2019	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---



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Test Report

ULR No.- TC54582300000929F

Test Report No. : ALPL/29042023/3-10A

dated 29/04/2023

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Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/21042023/MON-2/24-13&14	Analysis Start 21/04/2023
		Inward Date 21/04/2023	Analysis End 29/04/2023
		Reference W.O.- 4700098928/962	Report Issue Date 29/04/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 14/04/2023	Sampling Time 10.30 am to 4.20 pm
		Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.51 at 25°C	6.86 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	92	38
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	50	14.93	11.76
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	26.43	13.82
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) : 1993	30	26	12
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) : 2006	250	74	34
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut
Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. S. D. Garway

Dr. (Mrs.) S. D. Garway
Quality Manager

---End of Report---

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Test Report

ULR No.- TC54582300000929F

Test Report No. : ALPL/29042023/3-10A

dated 29/04/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/21042023/MON-2/24-13&14	Analysis Start 21/04/2023
		Inward Date 21/04/2023	Analysis End 29/04/2023
		Reference W.O.- 4700098928/962	Report Issue Date 29/04/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 14/04/2023	Sampling Time 10.30 am to 4.20 pm
			Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing 2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	1.11	0.16
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56): 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS:13428 : 2005(Annexure L)	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report No. : ALPL/29042023/3-10B

Test Report dated 29/04/2023

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Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/21042023/MON-2/24-13&14	Analysis Start 21/04/2023
		Inward Date 21/04/2023	Analysis End 29/04/2023
		Reference W.O.- 4700098928/962	Report Issue Date 29/04/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 14/04/2023	Sampling Time 10.30 am to 4.20 pm
			Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing I.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	120	34
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.27	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	6.52	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	64%	92%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 2) : 2019	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehil Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

ULR No.- TC54582300000929F

Test Report No. : ALPL/29042023/3-12A

dated 29/04/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/21042023/MON-2/24-17&18	Analysis Start 21/04/2023
		Inward Date 21/04/2023	Analysis End 29/04/2023
		Reference W.O.- 4700098928/962	Report Issue Date 29/04/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 14/04/2023	Sampling Time 10.30 am to 4.20 pm
			Sampling Location Hospital ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.87 at 25°C	7.31 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	87	26
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	24	18
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	32	16
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	30	28	14
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	74	42
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● 'mg/l' is equivalent to 'ppm'. ● BDL- Below detection limit ● DL- Indicates detection limit of instrument/method and shall be considered as 'absent'.

Verified by

 Snehal Raut
 Deputy Technical Manager

Authorized Signatory

 Dr. (Mrs.) S. D. Garway
 Quality Manager

----End of Report----

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Test Report

ULR No.- TC54582300000929F

Test Report No. : ALPL/29042023/3-12A

dated 29/04/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/21042023/MON-2/24-17&18	Analysis Start 21/04/2023
Inward Date 21/04/2023		Analysis End 29/04/2023	Report Issue Date 29/04/2023
Reference W.O.- 4700098928/962		Sample Category Water	
Reference Date 22.03.2022			
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved
Quantity Received 5.0 Ltr & 250 ml			
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 14/04/2023	Sampling Time 10.30 am to 4.20 pm
		Sampling Location Hospital ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	0.52	0.12
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS:13428 : 2005(Annexure L)	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report No. : ALPL/29042023/3-12B

Test Report dated 29/04/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/29042023/MON-2/24-17&18		Analysis Start 21/04/2023	
Inward Date 21/04/2023		Reference W.O.- 4700098928/962		Analysis End 29/04/2023	
Reference Date 22.03.2022				Report Issue Date 29/04/2023	
				Sample Category Water	
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18		Sample Condition Sealed & Ice Preserved	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 14/04/2023	Sampling Time 10.30 am to 4.20 pm		Sampling Location Hospital ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing 1.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	94	33
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.21	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	6.82	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	84%	94%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 2) : 2019	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Test Report

ULR No.- TC545823000001289F

Test Report No. : ALPL/31052023/3-9A

dated 31/05/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/MON-3/60-11&12	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 10.40 am to 4.50 pm
		Sampling Location New Town Ship STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.81 at 25°C	6.93 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	82	24
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	50	17.6	13.9
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	23.8	16.4
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) : 1993	30	28	16
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) : 2006	250	84	46
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut
Snehal Raut

Deputy Technical Manager

Authorized Signatory

S. D. Garway
Dr. (Mrs.) S. D. Garway
Quality Manager

----End of Report----

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Test Report

ULR No.- TC545823000001289F

Test Report No. : ALPL/31052023/3-9A

dated 31/05/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/23052023/MON-3/60-11&12 Inward Date 23/05/2023 Reference W.O.- 4700098928/962 Reference Date 22.03.2022	Analysis Start 24/05/2023 Analysis End 30/05/2023 Report Issue Date 31/05/2023 Sample Category Water		
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 10.40 am to 4.50 pm	Sampling Location New Town Ship STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II Chemical Testing						
2. Residues In Water						
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	1.41	0.11
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56): 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS:13428 : 2005(Annexure L)	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/31052023/3-9B

dated 31/05/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/MON-3/60-11&12	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 10.40 am to 4.50 pm
			Sampling Location New Town Ship STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I Biological Testing I.Water						
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	48	26
II Chemical Testing Pollution & Environment						
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.17	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	4.2	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	76%	92%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Per Mr
Mangesh Fande
Technical Manager

Snehal Raut
Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Test Report

ULR No.- TC545823000001289F

Test Report No. : ALPL/31052023/3-11A

dated 31/05/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/MON-3/60-15&16	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 10.40 am to 4.50 pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.53 at 25°C	6.82 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	84	36
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	14.7	9.8
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	16.3	12.4
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	30	24	12
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	76	38
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut
Snehal Raut

Deputy Technical Manager

Authorized Signatory

S. D. Garway

Dr. (Mrs.) S. D. Garway
Quality Manager

---End of Report---

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Test Report

ULR No.- TC54582300001289F

Test Report No. : ALPL/31052023/3-11A

dated 31/05/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/MON-3/60-15&16	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 10.40 am to 4.50 pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	0.57	0.24
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS:13428 : 2005(Annexure L)	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● 'mg/l' is equivalent to 'ppm'. ● BDL- Below detection limit ● DL- Indicates detection limit of instrument/method and shall be considered as 'absent'.

REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/31052023/3-11B

dated 31/05/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/23052023/MON-3/60-15&16 Inward Date 23/05/2023 Reference W.O.- 4700098928/962 Reference Date 22.03.2022	Analysis Start 24/05/2023 Analysis End 30/05/2023 Report Issue Date 31/05/2023 Sample Category Water		
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 10.40 am to 4.50 pm	Sampling Location Central Camp STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing 1.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	39	26
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	BDL(DL-0.1)	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	3.17	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	86%	94%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Test Report

ULR No.- TC545823000001289F

Test Report No. : ALPL/31052023/3-10A

dated 31/05/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/MON-3/60-13&14	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 10.40 am to 4.50 pm
			Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.57 at 25 ^o C	6.98 at 25 ^o C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	94	42
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	16.21	12.58
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	24.73	11.67
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	30	28	14
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	73	21
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

----End of Report----

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Test Report

ULR No.- TC54582300001289F

Test Report No. : ALPL/31052023/3-10A

dated 31/05/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/MON-3/60-13&14	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 10.40 am to 4.50 pm
			Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	0.79	0.14
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS:13428 : 2005(Annexure L)	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

----End of Report----

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Test Report

Test Report No. : ALPL/31052023/3-10B

dated 31/05/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/MON-3/60-13&14	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 10.40 am to 4.50 pm
			Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing 1.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	40	21
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.26	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	7.13	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	68%	92%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Test Report

ULR No.- TC545823000001289F

Test Report No. : ALPL/31052023/3-12A

dated 31/05/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/MON-3/60-17&18	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 10.40 am to 4.50 pm
			Sampling Location Hospital ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.71 at 25°C	7.14 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	84	34
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	28	16
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	36	18
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	30	24	12
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	76	38
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

---End of Report---

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Test Report

ULR No.- TC54582300001289F

Test Report No. : ALPL/31052023/3-12A

dated 31/05/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/MON-3/60-17&18	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 10.40 am to 4.50 pm
		Sampling Location Hospital ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	0.85	0.47
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS:13428 : 2005(Annexure L)	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/31052023/3-12B

dated 31/05/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/23052023/MON-3/60-17&18 Inward Date 23/05/2023 Reference W.O.- 4700098928/962 Reference Date 22.03.2022	Analysis Start 24/05/2023 Analysis End 30/05/2023 Report Issue Date 31/05/2023 Sample Category Water		
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 10.40 am to 4.50 pm	Sampling Location Hospital ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing 1.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	33	22
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.18	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	7.24	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	82%	94%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● 'mg/l' is equivalent to 'ppm'. ● Result for test no. 5 is not relevant. ● BDL- Below detection limit ● DL- Indicates detection limit of instrument/method and shall be considered as 'absent'.

REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Authorized Signatories

per
Mangesh Fande
Technical Manager

Kaut
Snehal Raut
Deputy Technical Manager

Pooja
Pooja Kathane
Technical Manager

Garway
Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Laboratories**



TC 5458

Test Report

ULR No.- TC54582300001716F

Test Report No. : ALPL/30062023/3-20A

dated 30/06/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/22062023/MON-4/24-11&12	Analysis Start 23/06/2023
		Inward Date 22/06/2023	Analysis End 30/06/2023
		Reference W.O.- 4700098928/962	Report Issue Date 30/06/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 17/06/2023	Sampling Time 11.20 am to 4.55 pm
		Sampling Location New Town Ship STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.76 at 25°C	6.82 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	87	26
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	50	19.2	14.7
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	26.1	18.4
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) : 1993	30	26	18
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) : 2006	250	78	47
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

----End of Report----

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Anacon Laboratories Pvt. Ltd. Nagpur Lab

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Test Report

ULR No.- TC545823000001716F

Test Report No. : ALPL/30062023/3-20A

dated 30/06/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/22062023/MON-4/24-11&12	Analysis Start 23/06/2023
		Inward Date 22/06/2023	Analysis End 30/06/2023
		Reference W.O.- 4700098928/962	Report Issue Date 30/06/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 17/06/2023	Sampling Time 11.20 am to 4.55 pm
			Sampling Location New Town Ship STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing 2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	0.98	0.32
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56): 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/30062023/3-20B

dated 30/06/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/22062023/MON-4/24-11&12	Analysis Start 23/06/2023
		Inward Date 22/06/2023	Analysis End 30/06/2023
		Reference W.O.- 4700098928/962	Report Issue Date 30/06/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 17/06/2023	Sampling Time 11.20 am to 4.55 pm
			Sampling Location New Town Ship STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing I.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	39	32
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.38	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	4.6	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	82%	94%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 2) : 2019	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathage
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Test Report

ULR No.- TC545823000001716F

Test Report No. : ALPL/30062023/3-22A

dated 30/06/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/22062023/MON-4/24-15&16	Analysis Start 23/06/2023
Inward Date 22/06/2023		Reference W.O.- 4700098928/962	Analysis End 30/06/2023
Reference Date 22.03.2022		Report Issue Date 30/06/2023	Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 17/06/2023	Sampling Time 11.20 am to 4.55 pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	
Quantity Received 5.0 Ltr & 250 ml			

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.72 at 25°C	6.91 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	86	42
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	16.3	11.4
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	21.9	16.7
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	30	26	14
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	78	36
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway

Quality Manager

---End of Report---

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Test Report

ULR No.- TC545823000001716F

Test Report No. : ALPL/30062023/3-22A

dated 30/06/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/22062023/MON-4/24-15&16	Analysis Start 23/06/2023
Inward Date 22/06/2023		Reference W.O.- 4700098928/962	Analysis End 30/06/2023
Reference Date 22.03.2022		Report Issue Date 30/06/2023	Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 17/06/2023	Sampling Time 11.20 am to 4.55 pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	
Quantity Received 5.0 Ltr & 250 ml			

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	2.81	0.89
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56): 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/30062023/3-22B

dated 30/06/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/22062023/MON-4/24-15&16	Analysis Start 23/06/2023
		Inward Date 22/06/2023	Analysis End 30/06/2023
		Reference W.O.- 4700098928/962	Report Issue Date 30/06/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 17/06/2023	Sampling Time 11.20 am to 4.55 pm
			Sampling Location Central Camp STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing 1.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	84	34
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.14	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	2.93	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	86%	92%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 2) : 2019	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● 'mg/l' is equivalent to 'ppm'. ● Result for test no. 5 is not relevant. ● BDL- Below detection limit ● DL- Indicates detection limit of instrument/method and shall be considered as 'absent'.

REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathare
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Laboratories**



TC 5458

Test Report

ULR No.- TC545823000001716F

Test Report No. : ALPL/30062023/3-21A

dated 30/06/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/22062023/MON-4/24-13&14		Analysis Start 23/06/2023	
Inward Date 22/06/2023		Reference W.O.- 4700098928/962		Analysis End 30/06/2023	
Reference Date 22.03.2022				Report Issue Date 30/06/2023	
				Sample Category Water	
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14		Sample Condition Sealed & Ice Preserved	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 17/06/2023	Sampling Time 11.20 am to 4.55 pm	Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
1	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.43 at 25°C	6.71 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	87	38
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	50	26.58	14.93
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	21.67	12.31
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) : 1993	30	24	18
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) : 2006	250	72	43
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

----End of Report----

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Anacon Laboratories Pvt. Ltd. Nagpur Lab

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[https:// www.anaconlaboratories.com](https://www.anaconlaboratories.com)





Test Report

ULR No.- TC545823000001716F

Test Report No. : ALPL/30062023/3-21A

dated 30/06/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/22062023/MON-4/24-13&14	Analysis Start 23/06/2023
		Inward Date 22/06/2023	Analysis End 30/06/2023
		Reference W.O.- 4700098928/962	Report Issue Date 30/06/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 17/06/2023	Sampling Time 11.20 am to 4.55 pm
		Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II Chemical Testing						
2. Residues In Water						
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	1.65	0.45
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/30062023/3-21B

dated 30/06/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/22062023/MON-4/24-13&14	Analysis Start 23/06/2023
		Inward Date 22/06/2023	Analysis End 30/06/2023
		Reference W.O.- 4700098928/962	Report Issue Date 30/06/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 17/06/2023	Sampling Time 11.20 am to 4.55 pm
		Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I Biological Testing I.Water						
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	27	21
II Chemical Testing Pollution & Environment						
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.37	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	6.94	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	74%	92%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 2) : 2019	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathgare
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Test Report

ULR No.- TC545823000001716F

Test Report No. : ALPL/30062023/3-23A

dated 30/06/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/22062023/MON-4/24-17&18	Analysis Start 23/06/2023
		Inward Date 22/06/2023	Analysis End 30/06/2023
		Reference W.O.- 4700098928/962	Report Issue Date 30/06/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 17/06/2023	Sampling Time 11.20 am to 4.55 pm
			Sampling Location Hospital ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.87 at 25 ^o C	7.16 at 25 ^o C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	82	36
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	32	21
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	46	28
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	30	28	16
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	81	42
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

---End of Report---

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Test Report

ULR No.- TC545823000001716F

Test Report No. : ALPL/30062023/3-23A

dated 30/06/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/22062023/MON-4/24-17&18	Analysis Start 23/06/2023
Inward Date 22/06/2023		Reference W.O.- 4700098928/962	Analysis End 30/06/2023
Reference Date 22.03.2022			Report Issue Date 30/06/2023
			Sample Category Water
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 17/06/2023	Sampling Time 11.20 am to 4.55 pm
			Sampling Location Hospital ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	1.82	0.54
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/30062023/3-23B

dated 30/06/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/22062023/MON-4/24-17&18	Analysis Start 23/06/2023
Inward Date 22/06/2023		Reference W.O.- 4700098928/962	Analysis End 30/06/2023
Reference Date 22.03.2022		Report Issue Date 30/06/2023	Sample Category Water
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 17/06/2023	Sampling Time 11.20 am to 4.55 pm
			Sampling Location Hospital ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing I.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	43	40
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.28	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	7.93	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	74%	92%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 2) : 2019	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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TC 5458

Test Report

ULR No.- TC545823000002079F

Test Report No. : ALPL/31072023/3-9A

dated 31/07/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25072023/MON-1/24-11&12	Analysis Start 25/07/2023
		Inward Date 25/07/2023	Analysis End 31/07/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/07/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 21/07/2023	Sampling Time 11.50 am to 4.20 pm
		Sampling Location New Town Ship STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.87 at 25 ^o C	7.13 at 25 ^o C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	76	28
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	18.4	13.9
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	24.1	17.6
6	BOD (3 days at 27 ^o C)	mg/l	IS 3025 (Part 44) :1993	30	24	16
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	73	42
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

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TC 5458

Test Report

ULR No.- TC545823000002079F

Test Report No. : ALPL/31072023/3-9A

dated 31/07/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25072023/MON-1/24-11&12	Analysis Start 25/07/2023
		Inward Date 25/07/2023	Analysis End 31/07/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/07/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 21/07/2023	Sampling Time 11.50 am to 4.20 pm
		Sampling Location New Town Ship STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	0.46	0.34
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

----End of Report----

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Test Report

Test Report No. : ALPL/31072023/3-9B

dated 31/07/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25072023/MON-1/24-11&12	Analysis Start 25/07/2023
		Inward Date 25/07/2023	Analysis End 31/07/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/07/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 21/07/2023	Sampling Time 11.50 am to 4.20 pm
			Sampling Location New Town Ship STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing 1.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	40	21
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.26	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	4.3	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	84%	94%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Shehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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TC 5458

Test Report

ULR No.- TC545823000002079F

Test Report No. : ALPL/31072023/3-11A

dated 31/07/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25072023/MON-1/24-15&16	Analysis Start 25/07/2023
		Inward Date 25/07/2023	Analysis End 31/07/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/07/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 21/07/2023	Sampling Time 11.50 am to 4.20 pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.92 at 25°C	7.13 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	87	46
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	50	18.2	12.7
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	23.6	18.2
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) : 1993	30	21	12
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) : 2006	250	68	34
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

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TC 5458

Test Report

ULR No.- TC545823000002079F

Test Report No. : ALPL/31072023/3-11A

dated 31/07/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25072023/MON-1/24-15&16	Analysis Start 25/07/2023
		Inward Date 25/07/2023	Analysis End 31/07/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/07/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 21/07/2023	Sampling Time 11.50 am to 4.20 pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II Chemical Testing						
2. Residues In Water						
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	0.52	0.22
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

----End of Report----

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Test Report

Test Report No. : ALPL/31072023/3-11B

dated 31/07/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25072023/MON-1/24-15&16	Analysis Start 25/07/2023
		Inward Date 25/07/2023	Analysis End 31/07/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/07/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 21/07/2023	Sampling Time 11.50 am to 4.20 pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing I.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	41	21
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.17	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	3.16	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	82%	94%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000002079F

Test Report No. : ALPL/31072023/3-10A

dated 31/07/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25072023/MON-1/24-13&14	Analysis Start 25/07/2023
		Inward Date 25/07/2023	Analysis End 31/07/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/07/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 21/07/2023	Sampling Time 11.50 am to 4.20 pm
		Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.52 at 25 ^o C	6.83 at 25 ^o C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	84	32
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	50	21.92	16.18
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	17.38	14.94
6	BOD (3 days at 27 ^o C)	mg/l	IS 3025 (Part 44) : 1993	30	26	16
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) : 2006	250	78	43
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

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TC 5458

Test Report

ULR No.- TC545823000002079F

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Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25072023/MON-1/24-13&14	Analysis Start 25/07/2023
		Inward Date 25/07/2023	Analysis End 31/07/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/07/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 21/07/2023	Sampling Time 11.50 am to 4.20 pm
		Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II Chemical Testing						
2. Residues In Water						
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	0.67	0.27
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/31072023/3-10B

dated 31/07/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25072023/MON-1/24-13&14	Analysis Start 25/07/2023
		Inward Date 25/07/2023	Analysis End 31/07/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/07/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 21/07/2023	Sampling Time 11.50 am to 4.20 pm
		Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing 1.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	43	27
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.38	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	5.87	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	78%	92%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathare
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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TC 5458

Test Report

ULR No.- TC545823000002079F

Test Report No. : ALPL/31072023/3-12A

dated 31/07/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25072023/MON-1/24-17&18	Analysis Start 25/07/2023
		Inward Date 25/07/2023	Analysis End 31/07/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/07/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 21/07/2023	Sampling Time 11.50 am to 4.20 pm
		Sampling Location Hospital ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
1	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.72 at 25°C	6.97 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	92	38
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	50	31	24
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	53	26
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) : 1993	30	24	18
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) : 2006	250	78	46
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

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TC 5458

Test Report

ULR No.- TC545823000002079F

Test Report No. : ALPL/31072023/3-12A

dated 31/07/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25072023/MON-1/24-17&18		Analysis Start 25/07/2023	
		Inward Date 25/07/2023		Analysis End 31/07/2023	
		Reference W.O.- 4700098928/962		Report Issue Date 31/07/2023	
		Reference Date 22.03.2022		Sample Category Water	
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18		Sample Condition Sealed & Ice Preserved	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 21/07/2023	Sampling Time 11.50 am to 4.20 pm	Sampling Location Hospital ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	1.19	0.47
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/31072023/3-12B

dated 31/07/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/25072023/MON-1/24-17&18 Inward Date 25/07/2023 Reference W.O.- 4700098928/962 Reference Date 22.03.2022	Analysis Start 25/07/2023 Analysis End 31/07/2023 Report Issue Date 31/07/2023 Sample Category Watcr
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18
Sample Condition Sealed & Ice Preserved		Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative	Sampling Date 21/07/2023	Sampling Time 11.50 am to 4.20 pm
Sampling Location Hospital ETP 10 KLD Inlet & Outlet		

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing I.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	48	26
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.21	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	6.53	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	72%	92%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----



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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-9A

dated 31/08/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/MON-2/60-11&12	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40am to 5.10pm
		Sampling Location New Town Ship STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.72 at 25°C	6.94 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	82	34
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	16.24	14.28
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	21.59	18.73
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	30	26	18
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	76	52
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-9A

dated 31/08/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/MON-2/60-11&12	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40am to 5.10pm
		Sampling Location New Town Ship STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing 2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	0.59	0.19
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● 'mg/l' is equivalent to 'ppm'. ● BDL- Below detection limit ● DL- Indicates detection limit of instrument/method and shall be considered as 'absent'.

REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/31082023/3-9B

dated 31/08/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/24082023/MON-2/60-11&12	Analysis Start 24/08/2023		
	Inward Date 24/08/2023	Analysis End 31/08/2023		
	Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023		
	Reference Date 22.03.2022	Sample Category Water		
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40am to 5.10pm	Sampling Location New Town Ship STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing 1.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	40	26
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.42	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	5.6	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	86%	92%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Shehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-11A

dated 31/08/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/MON-2/60-15&16	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40am to 5.10pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
1	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.87 at 25°C	6.98 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	86	52
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	50	17.24	16.48
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	26.58	21.93
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) : 1993	30	24	16
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) : 2006	250	72	48
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut
Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

----End of Report----

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-11A

dated 31/08/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/MON-2/60-15&16	Analysis Start 24/08/2023
Inward Date 24/08/2023		Reference W.O.- 4700098928/962	Analysis End 31/08/2023
Reference Date 22.03.2022		Report Issue Date 31/08/2023	Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40am to 5.10pm
		Quantity Received 5.0 Ltr & 250 ml	
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	1.19	1.06
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

for
Margesh Fande
Technical Manager

Authorized Signatory

Stamp
Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/31082023/3-11B

dated 31/08/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/MON-2/60-15&16	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40am to 5.10pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing 1.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	43	21
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.31	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	4.57	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	84%	92%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----





Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-10A

dated 31/08/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/MON-2/60-13&14	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40am to 5.10pm
		Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
1	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.82 at 25°C	7.13 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	92	46
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	26.57	21.52
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	38.16	24.93
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	30	28	21
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	81	64
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Raut

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Garway

Dr. (Mrs.) S. D. Garway

Quality Manager

----End of Report----

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-10A

dated 31/08/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/MON-2/60-13&14	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40am to 5.10pm
		Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing 2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	2.88	0.37
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56): 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

per
Mangesh Fande
Technical Manager

Authorized Signatory

Stamp
Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/31082023/3-10B

dated 31/08/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/MON-2/60-13&14		Analysis Start 24/08/2023	
		Inward Date 24/08/2023		Analysis End 31/08/2023	
		Reference W.O.- 4700098928/962		Report Issue Date 31/08/2023	
		Reference Date 22.03.2022		Sample Category Water	
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14		Sample Condition Sealed & Ice Preserved	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40am to 5.10pm		Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing I.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	34	17
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.41	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	5.29	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	72%	92%
12	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-12A

dated 31/08/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/MON-2/60-17&18	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40am to 5.10pm
		Sampling Location Hospital ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.93 at 25 ^o C	7.16 at 25 ^o C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	94	46
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	36	28
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	47	32
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	30	28	24
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	87	72
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

----End of Report----

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Test Report

ULR No.- TC545823000002497F

Test Report No. : ALPL/31082023/3-12A

dated 31/08/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/MON-2/60-17&18	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40am to 5.10pm
		Sampling Location Hospital ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	1.41	0.37
11	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
12	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
13	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
14	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
15	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
16	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
17	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
18	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
21	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Manjesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/31082023/3-12B

dated 31/08/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/MON-2/60-17&18 Inward Date 24/08/2023 Reference W.O.- 4700098928/962 Reference Date 22.03.2022		Analysis Start 24/08/2023 Analysis End 31/08/2023 Report Issue Date 31/08/2023 Sample Category Water	
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18		Sample Condition Sealed & Ice Preserved	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Sampling Time 11.40am to 5.10pm		Sampling Location Hospital ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing 1.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	46	22
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
5	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
6	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
7	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
8	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.26	BDL(DL-0.1)
9	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
10	Nitrate Nitrogen	mg/l	APHA Method	10	7.14	BDL(DL-2)
11	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	86%	94%
12	Hexavalent Chromium (as Cr ⁶⁺)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.01)	BDL(DL-0.01)
13	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Mangesh Fande
Technical Manager

Snehal Raut
Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----



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Test Report

ULR No.- TC545823000003000F

Test Report No. : ALPL/30092023/3-20A

dated 30/09/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25092023/MON-2/24-11&12	Analysis Start 26/09/2023
Inward Date 25/09/2023		Reference W.O.- 4700098928/962	Analysis End 30/09/2023
Reference Date 22.03.2022		Report Issue Date 30/09/2023	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
Sample Collected By Anacon Representative		Sampling Date 22/09/2023	Sampling Time 11.35 am to 4.20 pm
		Quantity Received 5.0 Ltr & 250 ml	
		Sampling Location New Town Ship STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.63 at 25 ⁰ C	6.87 at 25 ⁰ C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	76	32
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) :1988	50	18.24	13.91
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	22.86	16.32
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	30	28	16
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) :2006	250	72	48
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000003000F

Test Report No. : ALPL/30092023/3-20A

dated 30/09/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25092023/MON-2/24-11&12	Analysis Start 26/09/2023
Inward Date 25/09/2023		Reference W.O.- 4700098928/962	Analysis End 30/09/2023
Reference Date 22.03.2022		Report Issue Date 30/09/2023	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
Sample Collected By Anacon Representative		Sampling Date 22/09/2023	Sampling Time 11.35 am to 4.20 pm
		Sampling Location New Town Ship STP 50 KLD Inlet & Outlet	
Quantity Received 5.0 Ltr & 250 ml			

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	2.42	1.09
11	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
12	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
13	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
14	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
15	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
16	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
17	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
18	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/30092023/3-20B

dated 30/09/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25092023/MON-2/24-11&12	Analysis Start 26/09/2023
Inward Date 25/09/2023		Reference W.O.- 4700098928/962	Analysis End 30/09/2023
Reference Date 22.03.2022		Report Issue Date 30/09/2023	Sample Category Water
Sample Name Sewage Water	Sample Source New Town Ship STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-11 & 12	Sample Condition Sealed & Ice Preserved
Sample Collected By Anacon Representative		Sampling Date 22/09/2023	Sampling Time 11.35 am to 4.20 pm
Quantity Received 5.0 Ltr & 250 ml			
Sampling Location New Town Ship STP 50 KLD Inlet & Outlet			

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing I.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	43	22
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
5	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
6	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
7	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
8	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
9	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.36	BDL(DL-0.1)
10	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
11	Nitrate Nitrogen	mg/l	APHA Method	10	5.2	BDL(DL-2)
12	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	84%	92%
13	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.01)	BDL(DL-0.01)
14	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----





Test Report

ULR No.- TC545823000003000F

Test Report No. : ALPL/30092023/3-22A

dated 30/09/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25092023/MON-2/24-15&16	Analysis Start 26/09/2023	
Inward Date 25/09/2023		Reference W.O.- 4700098928/962	Analysis End 30/09/2023	
Reference Date 22.03.2022		Report Issue Date 30/09/2023	Sample Category Water	
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 22/09/2023	Sampling Time 11.35 am to 4.20 pm	Sampling Location Central Camp STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.82 at 25 ^o C	7.16 at 25 ^o C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	84	46
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	50	16.43	13.91
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	23.51	18.74
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) : 1993	30	21	16
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) : 2006	250	64	47
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● 'mg/l' is equivalent to 'ppm'. ● BDL- Below detection limit ● DL- Indicates detection limit of instrument/method and shall be considered as 'absent'.

Verified by

Shehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000003000F

Test Report No. : ALPL/30092023/3-22A

dated 30/09/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/25092023/MON-2/24-15&16	Analysis Start 26/09/2023
Inward Date 25/09/2023	Reference W.O.- 4700098928/962	Analysis End 30/09/2023
Reference Date 22.03.2022		Report Issue Date 30/09/2023
		Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16
		Sample Condition Sealed & Ice Preserved
		Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative	Sampling Date 22/09/2023	Sampling Time 11.35 am to 4.20 pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing 2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	2.38	0.78
11	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
12	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
13	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
14	Selenium (as Se)	mg/l	IS : 3025 (Part 56): 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
15	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
16	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
17	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
18	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/30092023/3-22B

dated 30/09/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25092023/MON-2/24-15&16	Analysis Start 26/09/2023
		Inward Date 25/09/2023	Analysis End 30/09/2023
		Reference W.O.- 4700098928/962	Report Issue Date 30/09/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Central Camp STP 50 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-15 & 16	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 22/09/2023	Sampling Time 11.35 am to 4.20 pm
		Sampling Location Central Camp STP 50 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing I.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	27	17
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
5	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
6	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
7	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
8	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
9	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.27	BDL(DL-0.1)
10	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
11	Nitrate Nitrogen	mg/l	APHA Method	10	3.94	BDL(DL-2)
12	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	86%	94%
13	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.01)	BDL(DL-0.01)
14	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

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Test Report

ULR No.- TC545823000003000F

Test Report No. : ALPL/30092023/3-21A

dated 30/09/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25092023/MON-2/24-13&14	Analysis Start 26/09/2023
		Inward Date 25/09/2023	Analysis End 30/09/2023
		Reference W.O.- 4700098928/962	Report Issue Date 30/09/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 22/09/2023	Sampling Time 11.35 am to 4.20 pm
		Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.61 at 25°C	6.93 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	86	53
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	50	23.37	18.34
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	28.19	21.46
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) : 1993	30	26	16
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) : 2006	250	74	48
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Shehal Raut
Shehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Dr. (Mrs.) S. D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000003000F

Test Report No. : ALPL/30092023/3-21A

dated 30/09/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217	Sample Inward No. ALPL/25092023/MON-2/24-13&14	Analysis Start 26/09/2023
Inward Date 25/09/2023	Reference W.O.- 4700098928/962	Analysis End 30/09/2023
Reference Date 22.03.2022		Report Issue Date 30/09/2023
		Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14
		Sample Condition Sealed & Ice Preserved
		Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative	Sampling Date 22/09/2023	Sampling Time 11.35 am to 4.20 pm
		Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing 2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	0.98	0.26
11	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
12	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
13	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
14	Selenium (as Se)	mg/l	IS : 3025 (Part 56): 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
15	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
16	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
17	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
18	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

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Test Report

Test Report No. : ALPL/30092023/3-21B

dated 30/09/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25092023/MON-2/24-13&14	Analysis Start 26/09/2023
		Inward Date 25/09/2023	Analysis End 30/09/2023
		Reference W.O.- 4700098928/962	Report Issue Date 30/09/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Bottom Bin ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-13 & 14	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 22/09/2023	Sampling Time 11.35 am to 4.20 pm
		Sampling Location Bottom Bin ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing I.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	43	21
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
5	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
6	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
7	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
8	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
9	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.43	BDL(DL-0.1)
10	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
11	Nitrate Nitrogen	mg/l	APHA Method	10	4.97	BDL(DL-2)
12	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	82%	94%
13	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.01)	BDL(DL-0.01)
14	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

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REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----





Test Report

ULR No.- TC545823000003000F

Test Report No. : ALPL/30092023/3-23A

dated 30/09/2023

Page 1 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25092023/MON-2/24-17&18	Analysis Start 26/09/2023	
Inward Date 25/09/2023		Reference W.O.- 4700098928/962	Analysis End 30/09/2023	
Reference Date 22.03.2022		Report Issue Date 30/09/2023	Sample Category Water	
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved	Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 22/09/2023	Sampling Time 11.35 am to 4.20 pm	Sampling Location Hospital ETP 10 KLD Inlet & Outlet

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Chemical Testing Pollution & Environment					
1	pH value	-	IS 3025 (Part 11) : 2022	5.5 to 9.0	6.71 at 25°C	6.87 at 25°C
2	Oil & Grease	mg/l	IS 3025 (Part 39) : 1991	10	BDL(DL-4)	BDL(DL-4)
3	Total Suspended Solid (TSS)	mg/l	IS 3025 (Part 17) : 1984	100	86	52
4	Ammonical Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	50	34	26
5	Total Kjeldahl Nitrogen (as N)	mg/l	IS 3025 (Part 34) : 1988	100	52	41
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) : 1993	30	26	16
7	Chemical Oxygen Demand	mg/l	IS 3025 (Part 58) : 2006	250	82	54
8	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.2	BDL(DL-0.1)	BDL(DL-0.1)
9	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) : 2022	1.0	BDL(DL-0.1)	BDL(DL-0.1)

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Verified by

Snehal Raut

Deputy Technical Manager

Authorized Signatory

Dr. (Mrs.) S. D. Garway
Quality Manager

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Test Report

ULR No.- TC545823000003000F

Test Report No. : ALPL/30092023/3-23A

dated 30/09/2023

Page 2 of 2

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25092023/MON-2/24-17&18	Analysis Start 26/09/2023
		Inward Date 25/09/2023	Analysis End 30/09/2023
		Reference W.O.- 4700098928/962	Report Issue Date 30/09/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 22/09/2023	Sampling Time 11.35 am to 4.20 pm
		Sampling Location Hospital ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
II	Chemical Testing					
	2. Residues In Water					
10	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	3.0	1.27	0.41
11	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
12	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	0.01	BDL(DL-0.01)	BDL(DL-0.01)
13	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41) : 1992	2.0	BDL(DL-0.1)	BDL(DL-0.1)
14	Selenium (as Se)	mg/l	IS : 3025 (Part 56) : 2003	0.05	BDL(DL-0.1)	BDL(DL-0.1)
15	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.1)	BDL(DL-0.1)
16	Arsenic (as As)	mg/l	IS : 3025 (Part 37) : 2022	0.2	BDL(DL-0.05)	BDL(DL-0.05)
17	Nickel (as Ni)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-0.1)	BDL(DL-0.1)
18	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	5.0	BDL(DL-0.1)	BDL(DL-0.1)
19	Total Chromium	mg/l	IS 3025 (Part 2) : 2019	2.0	BDL(DL-0.1)	BDL(DL-0.1)
20	Vanadium (as V)	mg/l	IS 3025 (Part 2) : 2019	0.2	BDL(DL-0.1)	BDL(DL-0.1)

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● "mg/l" is equivalent to "ppm". ● BDL- Below detection limit ● DL- Indicates detection limit of instrument/method and shall be considered as 'absent'.

REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway
Quality Manager

---End of Report---

Thank you for instilling your trust and faith in our services. We cherish our relationship with you, and we put in a lot of hard work in making sure that you get a seamless experience at every stage of your interaction with us. In our constant endeavor towards ensuring that your next experienced will be significantly better than the current one, we welcome your feedback on feedback@anacon.in

Anacon Laboratories Pvt. Ltd. Nagpur Lab

📍 FP-34, 35, Food Park, Five Star Industrial Estate, MIDC Butibori, Nagpur, Maharashtra, India - 441 122

☎ + 91 8045685558 ✉ Email : info@anacon.in

🌐 [https:// www.anaconlaboratories.com](https://www.anaconlaboratories.com)





Test Report

Test Report No. : ALPL/30092023/3-23B

dated 30/09/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mine (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/25092023/MON-2/24-17&18	Analysis Start 26/09/2023
		Inward Date 25/09/2023	Analysis End 30/09/2023
		Reference W.O.- 4700098928/962	Report Issue Date 30/09/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Sewage Water	Sample Source Hospital ETP 10 KLD Inlet & Outlet	Sample Particulars Sample Code-WW-17 & 18	Sample Condition Sealed & Ice Preserved
			Quantity Received 5.0 Ltr & 250 ml
Sample Collected By Anacon Representative		Sampling Date 22/09/2023	Sampling Time 11.35 am to 4.20 pm
		Sampling Location Hospital ETP 10 KLD Inlet & Outlet	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards (In Land Surface Water)	Test Result	
					Inlet	Outlet
I	Biological Testing I.Water					
1	Faecal coliform	MPN/100 ml	IS 1622 : 1981	--	46	17
II	Chemical Testing Pollution & Environment					
2	Colour	Hazen units	IS 3025 (Part 4) : 1983	Colourless	2	0 (Colourless)
3	Odour	-	IS 3025 (Part 5) : 2018	Odourless	Disagreeable	Agreeable
4	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	3.0	BDL(DL-5)	BDL(DL-5)
5	Temperature	°C	APHA Method	Shall not exceed 5°C above the receiving water temperature	25°C	25°C
6	Free residual chlorine	mg/l	IS 3025 (Part 26) : 1986	1.0	BDL(DL-0.1)	BDL(DL-0.1)
7	Particulate size of SS		Gravimetric Method	Shall pass 850 micron IS Sieve	<850	<850
8	Free Ammonia (as NH ₃)	mg/l	APHA Method	5	BDL(DL-0.1)	BDL(DL-0.1)
9	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	2.0	0.31	BDL(DL-0.1)
10	Sulphide (as S)	mg/l	IS 3025 (Part 29) : 1986	2.0	BDL(DL-0.03)	BDL(DL-0.03)
11	Nitrate Nitrogen	mg/l	APHA Method	10	6.92	BDL(DL-2)
12	Bio Assay Test	%	APHA 22nd Edition	90% Survival of fish after 96 hours in 100% effluent	84%	92%
13	Hexavalent Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 52) : 2003	0.1	BDL(DL-0.01)	BDL(DL-0.01)
14	Dissolved Phosphate (as P)	mg/l	IS 3025 (Part 31) : 1988	5.0	BDL(DL-0.1)	BDL(DL-0.1)

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● 'mg/l' is equivalent to 'ppm'. ● Result for test no. 5 is not relevant. ● BDL- Below detection limit ● DL- Indicates detection limit of instrument/method and shall be considered as 'absent'.

REMARKS: As requested by the client, sample was tested for above parameters only.

Verified By

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

Thank you for instilling your trust and faith in our services. We cherish our relationship with you, and we put in a lot of hard work in making sure that you get a seamless experience at every stage of your interaction with us. In our constant endeavor towards ensuring that your next experience will be significantly better than the current one, we welcome your feedback on feedback@anacon.in



Annexure-III

Naomundi PH Implementation Status

SL.No	Particulars/ PH Requirements	Quantity	Status
1	Road Maintenance in village area- (Road from Mohudi village to Sarbil Road from Bobonga petrol pump to Dondiya sahi)	8 Km	Work Completed
2	Provision of drinking water with pipeline (Noamundi, Mahudi)	2 Areas	NOC work is in process
3	Providing toilets in schools (5 schools in surrounding villages)	5 Nos.	Finishing work under progress in Mahudi, Jampani, Bara Baljodi. Sialjora and Pachaisai(Mahudi) under progress.
4	Solar-powered micro lift irrigation (Surrounding villages)	5 Nos.	Work in progress
5	Provision of toilet facility (Noamundi Bazaar, DVC Gate Bus Stand)	2 Nos.	Work Completed. Toilet facility provided at two locations
6	Provision of critical care ambulance (Surrounding villages)	2 Nos.	Work completed. 2 numbers of critical care ambulances provided
7	Provision of community toilet and bathing complex (Azad Basti, Lakhansaahi)	2 Nos.	NOC work is in progress
8	Augmentation of solid waste management facility (Noamundi Bazar, Kotgarh)	2 Units	Work completed
9	Installation of electric crematorium for ensuring cleaner ghats (Dukasai)		Yet to start
10	Provision of school bus (Baitarini route)	1 Bus	Work Completed. School bus provided
11	Provision of lab-on-wheels (Noamundi Block)	1 No.	Work Completed. Modification done in existing vehicle. Handed over to Jagannathpur ITI Principal.
12	Construction of Science Lab (Kothghar, Sialjoda)	2 No.	Completed.
13	Construction of rooms, hostel, computer lab and auditorium (Noamundi)	1 Unit	Finishing work on progress
14	Increase in capacity of ITI College, construction & equipping of related infrastructure (Jagannath)	1 Unit	200 mtrs Boundary wall completed. Entrance gate work is on progress.
15	Development of playgrounds for promoting sport activities (Mahudi, Sarbil, Bhangaon)	3 Nos.	NOC is awaited for Mahudi, Sarbil. Bhangaon work is under progress
16	Construction of haat (market sheds) (Bhangaon, Kotgarh, Jetia)	3 Nos.	NOC is awaited
17	Infrastructure support for Mushroom cultivation (Surrounding villages)	100 Nos.	Beneficiary identified. Work to start
18	Provision of Goatery sheds (Surrounding villages)	100 Nos.	Beneficiary identified. Work to start

ANNEXURE-IV



**Mukhiya,
Diriburu Panchayat,
AT/Po Noamundi,
Dist: West Singhbhum, Jharkhand,
Pin-833218**

Ref: MD/ENV/ 215 / 97 /2021

Dated: 08.09.2021

Sub: Environmental Clearance for Expansion of Noamundi Iron Ore Mine from 10 MTPA To 19 MTPA (ROM) with total excavation of 27 MTPA (ML Area 1160.06 Ha) along with increase of Iron Ore Beneficiation Plant Capacity (feed to plant) from 18 MTPA To 27 MTPA in total project area 1230.42 Ha located at Mahudi, Balijore, Korta, Noamundi, Sarbil and Barabalijori Villages, West Singhbhum District, Jharkhand of M/s Tata Steel Limited (File No. J-11015/104/2011-IA.II (M))

Ref: Vide letter ref no. J-11015/104/2011-IA.II (M) Dated 06.09.2021.

Dear Sir,

This is to inform you that Environment Clearance has been granted for expansion of Noamundi Iron Ore Mine from 10 MTPA To 19 MTPA (ROM) with total excavation of 27 MTPA (ML Area 1160.06 Ha) along with increase of Iron Ore Beneficiation Plant Capacity (feed to plant) from 18 MTPA To 27 MTPA in total project area 1230.42 Ha located at Mahudi, Balijore, Korta, Noamundi, Sarbil and Barabalijori Villages, West Singhbhum District, Jharkhand of M/s Tata Steel Limited. A copy of EC is enclosed for reference.

Thanking you,

Yours sincerely,
f: Tata Steel Limited

Chief (Mine Planning & Projects) OMQ

Encl: EC of Noamundi Iron Mine

Received
16/09/2021
मुखिया
शा. पंचायत दिरीबुरु
जखण्ड-नोवापल्ली पो सिंघभुम

TATA STEEL LIMITED

Mines Division Noamundi 833 217 India

Tel 91 9234301340 Fax 91 6596 290737

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001

Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com



Mukhiya,
Kadajamda Panchayat,
AT/Po Noamundi,
Dist: West Singhbhum, Jharkhand,
Pin-833218

Ref: MD/ENV/ 216 / 97 /2021

Dated: 08.09.2021

Sub: Environmental Clearance for Expansion of Noamundi Iron Ore Mine from 10 MTPA To 19 MTPA (ROM) with total excavation of 27 MTPA (ML Area 1160.06 Ha) along with increase of Iron Ore Beneficiation Plant Capacity (feed to plant) from 18 MTPA To 27 MTPA in total project area 1230.42 Ha located at Mahudi, Balijore, Korta, Noamundi, Sarbil and Barabalijori Villages, West Singhbhum District, Jharkhand of M/s Tata Steel Limited (File No. J-11015/104/2011-IA.II (M))

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Thanking you,

Yours sincerely,
f: Tata Steel Limited

Rec
Ramkrishna
मुखिया
कादाजामडा
पंचायत
नोवामुण्डी
Chief (Mine Planning & Projects) OMQ

Encl: EC of Noamundi Iron Mine

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Mukhiya,
Mohudi Panchayat,
AT/Po Noamundi,
Dist: West Singhbhum, Jharkhand,
Pin-833218

Ref: MD/ENV/ 217 / 97 /2021

Dated: 08.09.2021

Sub: Environmental Clearance for Expansion of Noamundi Iron Ore Mine from 10 MTPA To 19 MTPA (ROM) with total excavation of 27 MTPA (ML Area 1160.06 Ha) along with increase of Iron Ore Beneficiation Plant Capacity (feed to plant) from 18 MTPA To 27 MTPA in total project area 1230.42 Ha located at Mahudi, Balijore, Korta, Noamundi, Sarbil and Barabalijori Villages, West Singhbhum District, Jharkhand of M/s Tata Steel Limited (File No. J-11015/104/2011-IA.II (M))

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Thanking you,

Yours sincerely,
f: Tata Steel Limited

Chief (Mine Planning & Projects) OMQ

Encl: EC of Noamundi Iron Mine

Ry Bango
16/9/2021
मुखिया
ग्राम पंचायत-महुदी
प्रखण्ड-नोवामुन्डी
जिला-प० सिंहभूम

TATA STEEL LIMITED

Mines Division Noamundi 833 217 India

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Mukhiya,
Noamundi Panchayat,
AT/Po Noamundi,
Dist: West Singhbhum, Jharkhand,
Pin-833218

Ref: MD/ENV/ 213 /97/2021

Dated: 08.09.2021

Sub: Environmental Clearance for Expansion of Noamundi Iron Ore Mine from 10 MTPA To 19 MTPA (ROM) with total excavation of 27 MTPA (ML Area 1160.06 Ha) along with increase of Iron Ore Beneficiation Plant Capacity (feed to plant) from 18 MTPA To 27 MTPA in total project area 1230.42 Ha located at Mahudi, Balijore, Korta, Noamundi, Sarbil and Barabalijori Villages, West Singhbhum District, Jharkhand of M/s Tata Steel Limited (File No. J-11015/104/2011-IA.II (M))

Ref: Vide letter ref no. J-11015/104/2011-IA.II (M) Dated 06.09.2021.

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Thanking you,

Yours sincerely,
f: Tata Steel Limited

Chief (Mine Planning & Projects) OMQ

Encl: EC of Noamundi Iron Mine

Resving
Munni
16/09/2021
मुखिया
ग्राम पंचायत - नोवमण्डी बस्ती
प्रखण्ड नोवमण्डी

TATA STEEL LIMITED

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Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com



**Mukhiya,
Balijhore Panchayat,
AT/Po Noamundi,
Dist: West Singhbhum, Jharkhand,
Pin-833218**

Ref: MD/ENV/ 214 / 97 /2021

Dated: 08.09.2021

Sub: Environmental Clearance for Expansion of Noamundi Iron Ore Mine from 10 MTPA To 19 MTPA (ROM) with total excavation of 27 MTPA (ML Area 1160.06 Ha) along with increase of Iron Ore Beneficiation Plant Capacity (feed to plant) from 18 MTPA To 27 MTPA in total project area 1230.42 Ha located at Mahudi, Balijore, Korta, Noamundi, Sarbil and Barabalijori Villages, West Singhbhum District, Jharkhand of M/s Tata Steel Limited (File No. J-11015/104/2011-IA.II (M))

Ref: Vide letter ref no. J-11015/104/2011-IA.II (M) Dated 06.09.2021.

Dear Sir,

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Thanking you,

Yours sincerely,
f: Tata Steel Limited

Chief (Mine Planning & Projects) OMQ

Encl: EC of Noamundi Iron Mine

मुखिया
बालीझरन पंचायत
नोवापुड्डी, प० सिंहभूम

TATA STEEL LIMITED

Mines Division Noamundi 833 217 India

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ANNEXURE-V



**Regional Office
Ministry of Environment, Forest & Climate Change
Regional Office (ECZ), Bunglow No. A-2
Shyamali Colony
Ranchi – 834002**

MD/ENV/ 210 / 97 /2021
Date: 13.09.2021

Sub: Advertisement regarding grant of Environmental Clearance for expansion of Noamundi Iron Mine of M/s Tata Steel Limited.

Ref: Environmental Clearance letter no. J-11015/104/2011-IA.II (M) dated: 06.09.2021.

Dear Sir,

In compliance to the standard condition no. 13 in EC granted with vide letter no. J-11015/104/2011-IA.II (M) dated: 06.09.2021 which states that *"The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of clearance letter mentioning that the instant project has been accorded EC and copy of EC letter is available with the State Pollution Control Board/Committee and website of Ministry of Environment, Forest and Climate Change(www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional office for compliance and record"* we hereby advertised in two newspapers i.e Avenue Mail(English) and Prabhat Khabar(Hindi) on 12.09.2021. A copy is enclosed as annexure.

Thanking you,

Yours faithfully,
f: Tata Steel Limited



Chief (Mine Planning & Projects), OMQ

Encl: As above

TATA STEEL LIMITED

Mines Division Noamundi 833 217 India
Tel 91 9234301340 Fax 91 6596 290737
Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001
Tel 91 22 66658282 Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

TATA STEEL



NOTICE

पर्यावरण, वन व जलवायु परिवर्तन मंत्रालय पत्र संख्या : IA-J&11015/104/2011&IA-II (M) दिनांक 06 सितंबर, 2021 के द्वारा मेसर्स टाटा स्टील लिमिटेड के नोआमुंडी आयरन माइन को 10 एम टी पी ए से 19 एम टी पी ए (आर ओ एम) तक लौह अयस्क उत्पादन विस्तार के लिए पर्यावरण मंजूरी दी गई है, जिसमें 27 एम टी पी ए (एम एल एरिया 1160.06 हेक्टेयर) के कुल उत्खनन के साथ-साथ महुदी, बालिजोर, कोरटा, नोआमुंडी, सरबिल और बाराबालिजोरी गांव, पश्चिमी सिंहभूम जिला, झारखंड में स्थित 1230.42 हेक्टेयर के कुल परियोजना क्षेत्र में आयरन और बेनेफिसिएशन प्लांट (फीड टू प्लांट) की 18 एम टी पी ए से 27 एम टी पी ए तक क्षमता बढ़ोतरी भी शामिल है। इसी पत्र की प्रतिलिपि झारखंड राज्य प्रदूषण नियंत्रण बोर्ड और पर्यावरण, वन व जलवायु परिवर्तन मंत्रालय की वेबसाइट (www.parivesh.nic.in) पर भी उपलब्ध है।

Registered Office: Bombay House, 24, Homi Mody Street, Fort, Mumbai 400 001, India
Tel.: 022 66658282 Fax: 022 66657724 (CIN) - L27100MH1907PLC000260
Website: www.tatasteel.com



ANNEXURE-VII



**The Member Secretary
Jharkhand State Pollution Control Board
T A Division Building,
HEC Campus, Dhurwa
Ranchi – 834004**

Sub: Environmental monitoring report for the month of May 2023 of Noamundi Iron Mine, M/s Tata Steel Limited.

MD/ ENV/ 646 /140 - A/2023
Date: 06.06.2023

Dear Sir

In compliance to the conditions stated in the consent order no. JSPCB/HO/RNC/CTO-13904751/2022/1713, dated: 06.12.2022, we are submitting the following reports for Noamundi Iron Mine for your kind perusal.

1. Ambient Air Quality Monitoring Report of Core & Buffer Zone
2. Fugitive Emission Report
3. Drinking Water Quality Report
4. Domestic Effluent Quality Report
5. Ground Water Level
6. Ground water Quality Report
7. Surface water Quality Report
8. Noise Survey Report
9. Meteorological Report
10. Plantation Data

Thanking you,

Yours faithfully
f: Tata Steel Limited

Sr Manager (Environment), OMQ

Encl: As above

**Copy to: The Regional Officer, Jharkhand State Pollution Control Board, MB/12
New Housing Colony, Adityapur, Jamshedpur - 831013, Jharkhand**

TATA STEEL LIMITED

Mines Division Noamundi 833 217 India
Tel 91 9234301340 Fax 91 6596 290737

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India
Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com



**The Member Secretary
Jharkhand State Pollution Control Board
T A Division Building,
HEC Campus, Dhurwa
Ranchi – 834004**

**Sub: Environmental monitoring report for the month of August 2023 of Noamundi
Iron Mine, M/s Tata Steel Limited.**

MD/ ENV/ 801 /140 - A/2023

Date: 07.09.2023

Dear Sir

In compliance to the conditions stated in the consent order no. JSPCB/HO/RNC/CTO-13904751/2022/1713, dated: 06.12.2022, we are submitting the following reports for Noamundi Iron Mine for your kind perusal.

1. Ambient Air Quality Monitoring Report of Core & Buffer Zone
2. Fugitive Emission Report
3. Drinking Water Quality Report
4. Domestic Effluent Quality Report
5. Ground Water Level
6. Ground water Quality report
7. Noise Survey Report
8. Meteorological Report
9. Plantation Data

Thanking you,

Yours faithfully
f: Tata Steel Limited

Priyanshu Kumar
Head (Planning), OMQ

Encl: As above

**Copy to: The Regional Officer, Jharkhand State Pollution Control Board, MB/12
New Housing Colony, Adityapur, Jamshedpur - 831013, Jharkhand**

TATA STEEL LIMITED

Mines Division Noamundi 833 217 India

Tel 91 9234301340 Fax 91 6596 290737

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India

Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

ANNEXURE-VIII



Test Report

Test Report No. : ALPL/31052023/3-17 dated 31/05/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/23052023/ENV-116- SW-1 & 2	Analysis Start 24/05/2023
		Inward Date 23/05/2023	Analysis End 30/05/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/05/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Surface Water	Sample Source 1.Balijhore Nallah Upstream (SW-15) 2.Balijhore Nallah Downstream (SW-16)	Sample Particulars Sample Code-SW-1 & 2	Sample Condition Sealed & Ice Preserved
			Quantity Received 2.0 Ltr & 250 ml each
Sample Collected By Anacon Representative Mr.Sovan Giri		Sampling Date 18/05/2023	Sampling Time 12.40 & 1.20 pm
			Sampling Location 1.Balijhore Nallah Upstream (SW-1) 2. Downstream (SW-2)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards as per IS 2296:1992 Class C	Test Result	
					SW-1	SW-2
I Biological Testing 1.Water						
1	Total Coliform	MPN/100ml	IS 1622 : 1981	5000	BDL(DL-2)	BDL(DL-2)
II Chemical Testing 1.Water						
2	pH value	-	IS 3025 (Part 11) : 1983	6.0 to 9.0	8.14 at 25°C	7.98 at 25°C
3	Colour	Hazen units	IS 3025 (Part 4) : 2021	300	6	4
4	Dissolved Oxygen	mg/l	IS 3025 (Part 38) :1989	4.0	6.8	6.2
5	Total Suspended Solid (as TSS)	mg/l	IS 3025 (Part 17) :1984	--	BDL(DL-10)	BDL(DL-10)
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	3.0	BDL(DL-2)	BDL(DL-2)
7	Chemical oxygen demand	mg/l	IS 3025 (Part 58) :2006	--	13.6	12.4
8	Total Dissolved Solids (TDS)	mg/l	IS 3025 (Part 16) : 1984	1500	417	392
9	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	1.5	BDL(DL-0.03)	BDL(DL-0.03)
10	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	600	48.26	43.81
11	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24) :1986	400	18.24	16.52
12	Nitrate (as NO ₃)	mg/l	IS 3025 (Part 34) : 1988	50	9.27	7.64
13	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.5	0.31	0.28
14	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.05	BDL(DL-0.005)	BDL(DL-0.005)
15	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.005	BDL(DL-0.001)	BDL(DL-0.001)
16	Anionic Detergent	mg/l	IS 13428 : 2005 Annex K	1.0	BDL(DL-0.01)	BDL(DL-0.01)
Chemical Testing 2. Residues In Water						
17	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	0.5	0.37	0.26
18	Cadmium (as Cd)	mg/l	IS 3025 (Part 41) : 1992	0.01	BDL(DL-0.001)	BDL(DL-0.001)
19	Selenium (as Se)	mg/l	IS 3025 (Part 2) : 2019	0.05	BDL(DL-0.001)	BDL(DL-0.001)
20	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 1988	0.2	BDL(DL-0.001)	BDL(DL-0.001)
21	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.05)	BDL(DL-0.05)
22	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	15	BDL(DL-0.05)	BDL(DL-0.05)
23	Hexa Chromium (as Cr ^{VI})	mg/l	IS 3025 (Part 52) :2003	1.0	BDL(DL-0.001)	BDL(DL-0.001)
24	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	--	BDL(DL-0.005)	BDL(DL-0.005)
25	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	--	BDL(DL-0.05)	BDL(DL-0.05)

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● 'mg/l' is equivalent to 'ppm'. ● BDL- Below detection limit ● DL- Indicates detection limit of instrument/method and shall be considered as 'absent'.

REMARKS : As requested by the client, sample was tested for above parameters only.

Verified By

Authorized Signatories

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

Thanks for putting in your faith and trust in our services, We at Anacon Laboratories cherish our relationship. We put in a lot of hard work to ensure that you have a seamless experience at every step of our relationship. in order to ensure that your next experience will be significantly better, we welcome your feedback over email on feedback@anacon.in





Test Report

Test Report No. : ALPL/31082023/3-17 dated 31/08/2023

Page 1 of 1

Issued To : M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217		Sample Inward No. ALPL/24082023/ENV-200- SW-1 & 2	Analysis Start 24/08/2023
		Inward Date 24/08/2023	Analysis End 31/08/2023
		Reference W.O.- 4700098928/962	Report Issue Date 31/08/2023
		Reference Date 22.03.2022	Sample Category Water
Sample Name Surface Water	Sample Source 1.Balijhore Nallah Upstream (SW-15) 2.Balijhore Nallah Downstream (SW-16)	Sample Particulars Sample Code-SW-1 & 2	Sample Condition Sealed & Ice Preserved
Sample Collected By Anacon Representative		Sampling Date 18/08/2023	Quantity Received 2.0 Ltr & 250 ml each
		Sampling Time 12.10 & 12.50 pm	Sampling Location 1.Balijhore Nallah Upstream (SW-1) 2. Downstream (SW-2)

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Standards as per IS 2296:1992 Class C	Test Result	
					SW-1	SW-2
I Biological Testing 1.Water						
1	Colifom	MPN/100ml	IS 1622 : 1981	5000	BDL(DL-2)	BDL(DL-2)
II Chemical Testing 1.Water						
2	pH value	-	IS 3025 (Part 11) : 1983	6.0 to 9.0	8.21 at 25°C	7.94 at 25°C
3	Colour	Hazen units	IS 3025 (Part 4) : 2021	300	16	12
4	Dissolved Oxygen	mg/l	IS 3025 (Part 38) :1989	4.0	6.7	6.3
5	Total Suspended Solid (as TSS)	mg/l	IS 3025 (Part 17) :1984	--	BDL(DL-10)	BDL(DL-10)
6	BOD (3 days at 27°C)	mg/l	IS 3025 (Part 44) :1993	3.0	BDL(DL-2)	BDL(DL-2)
7	Chemical oxygen demand	mg/l	IS 3025 (Part 58) :2006	--	14.6	11.9
8	Total Dissolved Solids (TDS)	mg/l	IS 3025 (Part 16) : 2023	1500	1194	953
9	Copper (as Cu)	mg/l	IS 3025 (Part 2) : 2019	1.5	BDL(DL-0.03)	BDL(DL-0.03)
10	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	600	56.27	48.19
11	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24) : 1986	400	23.58	19.57
12	Nitrate (as NO ₃)	mg/l	IS 3025 (Part 34) : 1988	50	12.64	9.26
13	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.5	0.57	0.48
14	Cyanide (as CN)	mg/l	IS 3025 (Part 27) : 1986	0.05	BDL(DL-0.005)	BDL(DL-0.005)
15	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.005	BDL(DL-0.001)	BDL(DL-0.001)
16	Anionic Detergent	mg/l	IS 13428 : 2005 Annex K	1.0	BDL(DL-0.01)	BDL(DL-0.01)
Chemical Testing 2. Residues In Water						
17	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2019	0.5	0.42	0.36
18	Cadmium (as Cd)	mg/l	IS 3025 (Part 41) : 1992	0.01	BDL(DL-0.001)	BDL(DL-0.001)
19	Selenium (as Se)	mg/l	IS 3025 (Part 2) : 2019	0.05	BDL(DL-0.001)	BDL(DL-0.001)
20	Arsenic (as As)	mg/l	IS 3025 (Part 37) : 1988	0.2	BDL(DL-0.001)	BDL(DL-0.001)
21	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.1	BDL(DL-0.05)	BDL(DL-0.05)
22	Zinc (as Zn)	mg/l	IS 3025 (Part 2) : 2019	15	BDL(DL-0.05)	BDL(DL-0.05)
23	Hexa Chromium (as Cr ⁶⁺)	mg/l	IS 3025 (Part 52) :2003	1.0	BDL(DL-0.001)	BDL(DL-0.001)
24	Mercury (as Hg)	mg/l	IS : 3025 (Part 48) : 1994	--	BDL(DL-0.005)	BDL(DL-0.005)
25	Manganese (as Mn)	mg/l	IS 3025 (Part 2) : 2019	--	BDL(DL-0.05)	BDL(DL-0.05)

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● "mg/l" is equivalent to "ppm". ● BDL- Below detection limit ● DL- Indicates detection limit of instrument/method and shall be considered as 'absent'.

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Technical Manager

Snehal Raut
Deputy Technical Manager

Authorized Signatories

Pooja Kathane
Technical Manager

Dr. (Mrs.) S.D. Garway
Quality Manager

-----End of Report-----

Thank you for instilling your trust and faith in our services. We cherish our relationship with you, and we put in a lot of hard work in making sure that you get a seamless experience at every stage of your interaction with us. In our constant endeavor towards ensuring that your next experience will be significantly better than the current one, we welcome your feedback on feedback@anacon.in

