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Compliance

to

Environmental Clearance Conditions

of

Katamati Iron Mine M/s. Tata Steel Limited

For the period: April 2020 - September -2020

(EC Letter No. J-11015/63/2008-IA.II (M) 26/11/2010 & EC Letter No. J-11015/63/2008-IA.II (M) 18/01/2019)

26th Nov., 2020

ENVIRONMENTAL CLEARANCE OF

KATAMATI IRON MINE OF TATA STEEL LIMITED

(Apr 2020 to Sep. 2020)

(MoEF & CC Letter No. J-11015/63/2008.IA.II(M) DATED: 26/11/2010) FOR PRODUCTION OF 8 MTPA (ROM)

Sl. No	EC Conditions	Compliance Status		
Clear	e of Project: Katamati Iron Mine, Tata Steel Ltd. rance Letter no.: J-11015/63/2008.IA.II (M), dated: 2 d of Compliance: April 2020 to September 2020	6/11/2010		
Spec	ific Conditions			
1.	The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Odisha and effectively implement all the conditions stipulated therein.	Being complied with. Consent to Establish has been obtained from the Odisha State Pollution Control Board vide letter no. 12850, dated: 04.08.2010 & no. 11818, dated 18.7.2011. Consent to Operate has also been obtained from State Pollution Control Board, Odisha vide letter No. 4811/IND/I-CON-185, dated: 18.03.2016, which is valid till 31.03.2021. All the conditions are being effectively implemented.		
2.	Environment clearance is subject to grant of Forestry clearance. Necessary Forestry clearance under the Forest (Conservation) Act, 1980 for an area of 199.172 ha forestland involved in the project shall be obtained before starting mining operation in that area. No mining shall be undertaken in the forest area without obtaining requisite prior forestry clearance.	Katamati Iron Mine of TATA Steel has 403.3238 halease area, out of which 360.01 ha forest land & rest is non-forest. Katamati Iron Mine has already received the		
3.	Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No. 460 of 2004, as may be applicable to this project.	Noted down. However, there is no National Park, Sanctuaries, Elephant corridor and tiger reserves within 10 Km radius of lease in the core zone & buffer zone.		
4.	Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the Competent authority, as may be applicable to this project.	Site specific wildlife plan has been approved by Office of Principal Chief Conservator of Forest (Wildlife) and Chief Wildlife Warden: Odisha, Bhubaneswar vide letter no. 5842/1WL (C) SSP-306/2011, dated 29 th August 2011. On compliance of this, various fund Rs. 1.22 Cr for Implementation of the Item of Work prescribed for Project Impact Area in the Site Specific Wild Life Conservation Plan and Rs. 80.66 lakhs for Implementation of Regional Wildlife Management Plan, Rs. 20 lakhs to Forest Department towards construction of Anti-Depression camp building/ barracks were also made. of Rs 10 lakhs in CORPUS fund, Rs. 2 lakhs in SSWLCP have also been deposited. Apart from above an employment of 10 local youth of nearby villages have also been provided for patrolling the jungle – forest area and fire protection incidents. A copy of approval is enclosed as annexure-I.		

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I. No	To committee and the same and t	Compliance Status
Clea	e of Project: Katamati Iron Mine, Tata Steel Ltd. rance Letter no.: J-11015/63/2008.IA.II (M), dated: 2 od of Compliance: April 2020 to September 2020	6/11/2010
Spec	cific Conditions	
5.	The mining operations shall be restricted to above ground water table and it should not intersect the ground water table. In case of working below the ground water table, prior approval of the Ministry of Environment and Forests and the Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.	Currently, the mining operation is restricted above the ground water table and shall not intersect the ground water table, in case of working below prior approval from MoEF&CC & CGWA shall be obtained. For domestic and other purposes, the mine has applied for renewal of CGWA NOC (460m³/day) issued vide no. CGWA /NOC/ MIN/ ORIG/ 2018/4244, dated 15.11.2018.
6.	The project proponent shall ensure that no natural watercourse and / or water resources shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of the first order and the second order streams, if any, emanating from the mine lease area during the course of mining operation.	Complied with. No natural watercourse or water resources are obstructed due to mining operations. Further, no first order and the second order streams are emanating from the mine lease area.
7.	The top soil, if any shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.	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.
8.	The sub grade material, if any shall be stacked at the earmarked sites.	Sub grade material is being stacked at the earmarked sites as per the approved mining plan.
9.	The Over burden (OB) generated during the mining operations shall be stacked at earmarked dump site (s) only and it should not be kept active for a long period of time and its phase-wise stabilisation shall be carried out. Partial backfilling proposed after cessation of mining. The maximum height of the OB dump (s) shall not exceed 30m having three terraces of 10m each and the overall slope of the dumps shall not exceed 27°. It shall be ensured that the OB dump(s) should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dumps. Monitoring and Management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.	Over burden is stacked at the earmarked places only. The slopes of the OB dumps are terraced, and the overall slope angle is maintained and not exceeding 27°. The inactive dump slopes are vegetated with native species and grass and vetiver grass for better slope stabilization. The compliance status is being regularly sent to the Regional office, MoEF&CC, Bhubaneswar and SPCB, Odisha half yearly. *Vegetation & grassing on slime dumps* Vegetation & grassing on mine dumps*

10.

Name of Project: Katamati Iron Mine, Tata Steel Ltd.

Clearance Letter no.: J-11015/63/2008.IA.II (M), dated: 26/11/2010

Period of Compliance: April 2020 to September 2020

Specific Conditions

Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, subgrade, overburden and mineral dump(s) to prevent run off of water and flow of sediments directly into the Mahadev Nallah, Betlata Nallah, Baitarani River and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon maintained properly. Garland drains, settling tanks and check dams of appropriate size, gradient and length shall constructed around the mine pit, overburden dumps and sub-grade and mineral dump(s) to prevent run off of water and flow of sediments into the Mahadev Nallah, Betlata Nallah, Baitarani River and other water bodies and slump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals

Garland drains with settling pits, have been made all along the OB dumps. Three settling ponds of adequate sizes have been constructed. At the end of ponds the garland drains are made to take care of run-off water which are being de-silted regularly before, during and after the monsoon. There is no outside discharge of any industrial effluent. All the garland drains, settling pits and check dams of appropriate size, gradient and length been constructed both around the mine pit and over burden dump(s) to prevent run off of water and flow of sediments directly into water bodies. Photographs of toe wall, garland drain and settling pits are attached. Water Quality reports of Mahadev Nallah and Baitarini river are attached as Annexure I A.





Settling pits at Katamati Iron Mine

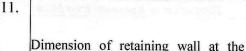




Check dams & Garland drains at Katamati Iron Mine

Complied with

Toe wall and Garland drains have been constructed around the OB dumps to check mine run-off.



Dimension of retaining wall at the toe of the OB dump(s) and the OB benches within the mine to check run-off and siltation should be based on the rainfall data.





Toe wall at Katamati Iron Mine

Trace Metals such as Ni, Co, As and Hg should be analysed in dust fall and soil samples for at least one year during summer, monsoon and winter seasons. If concentrations of these metals are found below the standards then with prior approval of MoEF&CC this specific monitoring could be discontinued.

Plantation shall be raised in an area of 370.155 ha including a 7.5m wide green belt in the safety zone around the mining lease, overburden dump(s), backfilled and reclaimed area, mine benches, around

Complied with

We are monitoring trace metals in dust fall and soil samples. Results of soil and dust fall monitoring are attached herewith as annexure- II.

Plantation over an area of 370.155 ha shall be done at the end of mine life through progressive mine closure plan. However, both fencing and plantation over 7.5m wide area around the mining lease is in progress.

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Clearance Letter no.: J-11015/63/2008.IA.II (M), dated: 26/11/2010

Specific Conditions

water body, roads etc. In consultation with the local DFO/Agriculture Department. The density of the tree should be around 2500 plants per hectare. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years

Period of Compliance: April 2020 to September 2020

Besides the above, concurrent reclamation and rehabilitation program have been proposed in the mining plan.





Safety Zone Plantation

In the year 2020-21 year about 4800 no of sapling planted apart from local grass plantation on dumps with various species. The species include Calotropis gigantean, ficus species, *Pedilanthus, Cynodon dactylon, Saccharum spontaneum*, Bougainvilleas, Yellow durenta, etc. are planted. Saccharum spontaneum planted on slime pond, shown encouraging results, which control the erosion bind the material and adequately covers the ground vegetation and was appreciated by MoEF&CC official during site visit.



Plantation at Katamati Iron Mine

converted into water body. The higher benches of excavated void/mining pit shall be terraced and plantation done to stabilized the slopes. The slope of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out all along the

The void left unfilled in an area of 11.2 ha shall be

Shall be complied with at the end of mine life.

This being the activity at the end of mine life shall be taken up only after the exhaustion of Iron ore as per mine plan.

Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer point. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed

by the Central Pollution Control Board in this regard.

Regular water sprinkling is being done on the haul roads, loading & unloading points for effective dust suppression by mobile and fixed water sprinklers. Dry fog system has also been provided at all transfer point of crushing and screening unit. Photographs of Water Sprinkling and dry fog system are attached. Ambient Air Quality is being monitored regularly as per the norms stipulated in EC granted and the results are well within the prescribed limits. Apart from above four continuous ambient air quality monitoring stations are also installed and are working smoothly.

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excavated area.

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l. No	EC Conditions	Compliance Status
Clear	e of Project: Katamati Iron Mine, Tata Steel Ltd. rance Letter no.: J-11015/63/2008.IA.II (M), dated: 2 rd of Compliance: April 2020 to September 2020	6/11/2010
Spec	cific Conditions	food and mails our names or any late would
	are pa, domb	Mobile Water sprinkler at Katamati
		CAAQMS station of Katamati
		A new fixed water sprinkler line is also unde installation with 1.1km length for haul road dus reductions.
		New additional 1km fixed water sprinkler line at Katamati
16.	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 maintained.	Regular monitoring of the flow rate of Balijhor Nallal which is flowing outside of the mining lease area is carried out and record maintained regularly. The flow of Balijhore nala is enclosed as annexure-III.
	Vi-institut, popular	Complied with.
		Suitable ground water augmentation measure in & around Katamati iron Mine has been implemented by check dams, toe wall, contours bunds etc.
17.	The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	As the mine doesn't have any land for ground water recharge structures creations, as per kind suggestions of CGWA, Bhubaneshwar officials during site visit at adjacent mine; recharge on surrounding village can be also been done. Thus in year 2018-19, eight (08) number of new ponds constructed in and around mine lease in surrounding villages, specially at Kolahundala & Narayanpur Sana Barbil & Jamkundia Panchananpur & DandaGutu to augment the ground water. Deepening of old ponds is also taken up to facilitate for

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SI. No. **EC Conditions Compliance Status** Name of Project: Katamati Iron Mine, Tata Steel Ltd. Clearance Letter no.: J-11015/63/2008.IA.II (M), dated: 26/11/2010 Period of Compliance: April 2020 to September 2020 Specific Conditions Pond at Jamakundia Water harvesting Ponds at nearby villages of Katamati Regular monitoring of ground water level and quality should be carried out in and around the mine lease Ground water quality and Ground water level are being monitored periodically in and around the lease areas. All by establishing a network of existing wells and constructing new piezometers during the mining the monitoring results are being submitted to regulatory agencies. The monitoring details are attached as operation. The periodic monitoring at least four times annexure-IV. in a year - pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) once in in each season) shall be carried out in consultation with the State Ground Water Board/ 18. Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of and Forests Environment and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the ground water table is getting depleted due to the Piezometric bore well at Katamati Iron Mine mining activity; necessary corrective measures shall be carried out. Appropriate mitigative measures should be taken to 19. prevent pollution of the Baitarani River Being complied with consultation with State Pollution Control Board. Complied with The Project proponent shall obtain necessary prior permission of the competent authorities for drawl of For domestic purpose only ground water withdrawal 20. requisite quantity of surface water required for the permission as obtained from Central Ground Water

project. The ground water shall not be used for mining

operations. Prior approval of Central Ground Water

Authority. The mine has already applied for renewal of

CGWA NOC issued vide CGWA /NOC/ MIN/ ORIG/

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Cleara	of Project: Katamati Iron Mine, Tata Steel Ltd. ance Letter no.: J-11015/63/2008.IA.II (M), dated: 20 d of Compliance: April 2020 to September 2020	5/11/2010
	ific Conditions	land and mild out harries a loss of the mass
	Authority shall be obtained for using ground water.	2018/4244, dated 15.11.2018.
21.	Suitable rain water harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.	Being complied with Due to hilly topography and land constraints rainwate harvesting structure are made combinedly for Noamund & Katamati Iron Mine at Noamundi colony area as pe hydrogeology study. As the doesn't have any non-fores area for development of rainwater harvesting (RWH structures, various RWH structures are been made in and around mine in surrounding villages. However, the mine collects all the surface runoff water during monsoon in mine pit and uses for dust suppression and other measures.
22.	Vehicular emission shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.	Complied with Katamati is an operation mine and all the mined mineral is transported to adjacent Noamundi Processing Plant by heavy capacity dumpers. Over loading of trucks it restricted to prevent spillage of material. Emission checks for all the vehicles are carried out half yearly Effective water sprinkling is done on haul roads to control fugitive dust. A wheel washing facility has been installed at exit gat of mine to arrest and control the fugitive emission from mineral transportation. Wheel washing facility at Katamati Mines
23.	Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.	Complied with Blasting is carried out during daytime only. Controlle Blasting is carried out for control of ground vibration and to arrest fly rocks, as per the recommendations of CIMFR, Dhanbad.
24.	Drills shall either be operated with Dust extractors or equipped with water injection system.	Drills have been provided with dust suppression system



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Specific Conditions



Wet drilling at Katamati Mines

The mineral handling plants at Noamundi area is equipped with high efficiency dust suppression systems.



Mist type dust suppression measures in process plant

Mineral handling plant shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.





Water jet with mist water spray in Katamati

Moreover, loading and unloading areas including transfer points have been provided with dust suppression facilities. However, in mobile screening & crushing adequate dust control measure are made





Dust suppression system at Katamati

Sewage treatment plant shall be installed for the colony. ETP shall also be provided for workshop and wastewater generated during mining operation.

Being complied with. Two Sewage Treatment Plant (STP) of 50 KLD each and an Two Effluent Treatment Plant (ETP) of 10 KLD each are already installed in common colony area at Noamundi which are working smoothly.

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Clear	e of Project: Katamati Iron Mine, Tata Steel Ltd. rance Letter no.: J-11015/63/2008.IA.II (M), dated: 2 d of Compliance: April 2020 to September 2020	6/11/2010
Spec	ific Conditions	Book was printed and the second and the comment of
Control Contro	The second secon	For the common workshops and all other areas and oil trap is installed with collection system. No wastewater is being generated from mining operations. Sewage Treatment Plant of common colony at Noamundi
27.	Pre-placement of medical examination and periodical examination of the workers engaged in the project shall be carried out and record maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.	Initial medical examination and periodical examination of the workers engaged are being conducted & record maintained. The schedule of Periodical Medical Examination is once in every 3 years for the employees of age more than 40 years and once in 5 years for the employees of age less than 40 years.
28.	Effective safeguard measure shall be taken to ensure that the RSPM levels in the area are well below the prescribed standards.	Effective safeguard measure like Mobile & Stationary water sprinkling, dust suppression systems at loading & unloading point etc. have been provided to minimize fugitive dust emission.
29.	The height of stack shall be as per the prescribed standards/ guidelines.	Katamati Iron Mine has small capacity DG sets used for area illumination. The height of the stack is as per standards. The DG sets are used for area illumination & emergency power backups.
30.	Trace metals such as Fe, Cr+6, Cu, Se, As, Cd, Hg, Pb, Zn and Mn shall be periodically monitored at specific locations in both surface water downstream and in ground water at lower elevations from mine area, in consultation with the SPCB, Odisha and State Ground Water Board. Suitable treatment measures shall be undertaken in case levels are found to be higher than permissible limits.	Trace metals are being monitored periodically both of surface water and ground water and the monitoring reports are being sent to pollution control board regularly. The monitoring details of surrounding nallahs are attached as annexure-II.
31.	Occupational health programme encompassing identification of hazardous, ranking of the risks, plan to handle such risk should be prepared and implemented effectively.	The mine is certified to both ISO 14001 & ISO45001 .Under ISO 45001 & DGMS guidelines, hazard identification, risk assessment and measures to minimise risk have been established and are implemented for all activities.
32.	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora and fauna namely elephant, sloth bear etc.	Complied with. Site specific wildlife plan has been approved by Office of Principal Chief Conservator of Forest (Wildlife) and Chief Wildlife Warden: Odisha, Bhubaneswar vide



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	e of Project: Katamati Iron Mine, Tata Steel Ltd.	C/11/0010
	ance Letter no.: J-11015/63/2008.IA.II (M), dated: 2d of Compliance: April 2020 to September 2020	6/11/2010
	ific Conditions	
	Found in the study area. Action plan for conservation of flora and fauna prepared shall be implemented in consultation with the state forest and Wildlife	letter no. 5842/1WL (C) SSP-306/2011, dated 29 th August 2011. On compliance of this, various fund Rs. 1,22 Cr for
	Department. All the safeguard measures brought out in the Wildlife Conservation plan prepared specific to this project site shall be effectively implemented. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of action plan shall be submitted to the Regional	Implementation of the Item of Work prescribed for Project Impact Area in the Site Specific Wild Life Conservation Plan and Rs. 80.66 lakhs for Implementation of Regional Wildlife Management Plan, Rs. 20 lakhs to Forest Department towards construction of Anti-Depression camp building/ barracks were also made. of Rs 10 lakhs in CORPUS fund, Rs. 2 lakhs in SSWLCP have also been deposited
	Office of the Ministry of Environment and Forests, Bhubaneswar.	Apart from above an employment of 10 local youth of nearby villages have also been provided for patrolling the jungle – forest area and fire protection incidents.
33.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Currently it's been not applicable.
34.	Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment and Forests and its Regional Office, Bhubaneswar.	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, Bhubaneshwar in august 2018. The land use land cover change map as on date is attached as annexure-V.
35.	The critical parameters such as RSPM (Particulate matter with size less than 10 miocron i.e., PM10) and NOx in the ambient Air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored (TDS, DO, PH, and total suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the company in public domain. The circular No. J-20012/1/2006-IA.II(M) dated: 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry	All the critical parameters mentioned are being monitored internally and from third party. All the six monthly compliance data along with Environmental monitoring parameter is being uploaded in the company's website as part of this report, all the monitoring data is being displayed on the display board at the main entrance gate of the mine. Apart from above three continuous ambient air quality monitoring stations are also installed and working smoothly. Various parameters such as PM ₁₀ , PM _{2.5} , SOx, NOx & CO is being monitored for every 15 minutes and the date of same is continuously uploaded in Pollution Control Board server.
	www.envfor.nic.in shall also be referred in this regard for its compliance.	The data is also been displayed using electronic display board in public domain

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Env monitoring data display in public domain at Katamati

A final Mine closure Plan along with details of Corpus

Fund shall be submitted to the Ministry of

Environment & Forests 5 years in advance of final

mine closure for approval.

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The mine has approved mine plan & progressive mine

closure plan from IBM, Ministry of Mines, Gol. The

mine plan and final progressive closure plan shall be

submitted to MoEF&CC before 5 years in advance of

final closure of mine for approval.

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Clear	e of Project: Katamati Iron Mine, Tata Steel Ltd. ance Letter no.: J-11015/63/2008.IA.II (M), dated: 2 d of Compliance: October 2019 to March 2020	26/11/2010
Gener	al Conditions	
1.	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	Being complied with. We are operating as per the approved mining technology and scope of working mentioned in Environmental Clearance granted to us.
2.	No change in the calendar plan including excavation, quantum of iron ore and waste produced should be made.	Being complied with.
3.	At least four ambient air quality- monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10micron i.e., PM ₁₀) and, NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	Ambient Air Quality monitoring is regularly being carried out at four different stations within the core zone which were located in consultation with the visiting officers of State Pollution control Board, Bhubaneswar The ambient air quality reports are being submitted to Regional office, MoEF&CC, Bhubaneswar half yearly and to SPCB, Bhubaneswar monthly. Various parameters such as PM ₁₀ , PM _{2.5} , SOx, NOx, CO are also been monitored for every 15 minutes and the online data is continuously updated at State Pollution Control Board server. The data is same is also been displayed using electronic display board in public domain



SI. No. **EC** Conditions **Compliance Status** Name of Project: Katamati Iron Mine, Tata Steel Ltd. Clearance Letter no.: J-11015/63/2008.IA.II (M), dated: 26/11/2010 Period of Compliance: October 2019 to March 2020 General Conditions CAAQMS station & data connectivity of Katamati Mine Data on ambient air quality [RSPM (Particulate RSPM (Particulate matter with size less than 10 micron matter with size less than 10micron i.e., PM₁₀) and, i.e., PM₁₀) and, NOx in ambient air are being monitored NOx] should be regularly submitted to the Ministry as per standard guidelines and the reports are submitted including its Regional Office at Bhubaneswar and to Regional office, MoEF&CC, Bhubaneswar half to the State Pollution Control Board/ Central yearly and SPCB, Odisha monthly. Ambient Air Quality Pollution Control Board once in six months. Report is attached as Annexure-VI. Effective water sprinkling is being done on haul roads and at loading and unloading points. Dust suppression systems in the drills have been provided for functioning effectively. Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangements on haul roads, loading and unloading 5. and at transfer points should be provided and properly maintained. Water jet with mist water spray in Katamati Dust suppression arrangements at Katamati Measures should be taken for control of noise levels High noise areas are earmarked and people working below 85dBA in the work environment. Workers there are provided with ear protection equipment. All the 6. engaged in operations of HEMM etc. should be HEMM's cabin is air conditioned so that there won't provided with ear plugs/ muffs. be any noise pollution. Industrial waste water (workshop and waste water from the mine) should be properly collected, treated Oil & Grease separation pits have been provided to take so as to conform to the standards prescribed under care of effluents from the workshop. Its water quality is GSR 422 (E) dated 19th May 1993 and 31st 7. being monitored regularly and the parameters meet the December, 1993 or as amended from time to time. prescribed standard. There is no waste water discharge from the mine. Oil and grease trap and retention ponds should be installed before discharge of workshop effluents.

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SI. No. **EC Conditions Compliance Status** Name of Project: Katamati Iron Mine, Tata Steel Ltd. Clearance Letter no.: J-11015/63/2008.IA.II (M), dated: 26/11/2010 Period of Compliance: October 2019 to March 2020 **General Conditions** OIL & GREASE SEPARATION PIT Oil trap at common workshop at Noamundi Adequate dust masks are provided to employees engaged Personnel working in dusty areas should wear in dusty areas. PME of company and contractor protective respiratory devices and they should also employees are organized regularly to observe any be provided with adequate training and information to exposure to dust and other contractions due on safety and health aspects. occupational hazards. Employees also undergo Lung 8. Occupational health surveillance program of the the Periodical Medical Tests during Function workers should be undertaken periodically to observe Examination. The employees are also given regular any contractions due to exposure to dust and take awareness training on safety and health aspects as part of corrective measures, if needed implementation process of ISO:45001 systems. Complied with. A separate Environment Management cell with A separate environmental management cell is in place suitable qualified personnel should be set-up under people having relevant qualification on 9. the control of a Senior Executive, who will report environmental science. Organization has adequate directly to the Head of the Organisation environmental reporting system for adequate decision making. Funds allocated for environmental management are The funds earmarked for environmental protection spent only for environment related purposes and not measures should be kept in separate account and diverted to any other purpose. Expenditure details of 10. should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its environmental protection measures during 2019-20 at Regional Office located at Bhubaneswar. Katamati Iron Mine are attached as annexure-VII. This is a running mine. No specific date of start of land The Project authorities should inform to the Regional Office located at Bhubaneswar regarding date of development work can be assigned. However, the copy of the Environmental Clearance has been sent to the financial closures and final approval of the project by 11. the concerned authorities and the date of start of land Regional Office, MoEF&CC. Bhubaneswar development work. necessary information. The Regional Office of this Ministry located at We extend full co-operation to the officers of the Bhubaneswar shall monitor compliance of the Regional Office during their visit and furnish stipulated conditions. The Project authorities should data, Information and monitoring reports. required 12. extend full co-operation to the officer (s) of the MoEF&CC officials has made the kind visit of the mine Regional Office by furnishing the requisite data/ on 21st May 2020. information/ monitoring reports



The Project proponent shall submit six monthly

reports on the status of compliance of the stipulated

Six monthly compliance reports are being submitted

regularly on the status of implementation of the

SI. No	20 conditions	Compliance Status
l .	e of Project: Katamati Iron Mine, Tata Steel Ltd.	
	rance Letter no.: J-11015/63/2008.IA.II (M), dated:	26/11/2010
	d of Compliance: October 2019 to March 2020	
Genei	ral Conditions	
	environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office, Bhubaneswar, the respective Zonal office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective zonal officer of Central Pollution Control Board and the State Pollution Control Board.	its Regional Office Bhubaneswar, Central Pollution Control Board Kolkata and State Pollution Control Board, Bhubaneswar. Further, the six monthly compliance reports along with the monitoring results is being uploaded on Tata Steel's website www.tatasteelindia.com and updated periodically.
14.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Complied with
15.	The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/Tehsildar's Office for 30 days.	Noted.
16.	The environmental statement for each financial year ending 31 st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by email	The environmental statement for financial year 2018-19 has been submitted to the State Pollution Control Board on vide letter no. MD/ENV/811/120/2020 dated: 16.09.2020 and the same had been hosted on Company's website www.tatasteelindia.com. Further, compliance status on environmental clearance conditions was also sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail on 18.09.2020.
17.	The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.	Details of Environment Clearance with regard to Katamati Iron Mine were published both in English and Hindi in local newspapers. The copy of the newspaper advertisement was sent to the Regional Office, MoEF&CC, Bhubaneswar.

ENVIRONMENTAL CLEARANCE OF

KATAMATI IRON MINE OF TATA STEEL LIMITED

(April 2020 to September 2020)

(MoEF & CC Letter No. J-11015/63/2008.IA.II(M) DATED: 18/01/2019) FOR PRODUCTION OF 08 MTPA (ROM)

Sl. No.	EC Conditions	Compliance
Clear	e of Project: Katamati Iron Mine, Tata Steel Ltd. ance Letter no.: J-11015/63/2008.IA.II (M), dated: 1 d of Compliance: April 2020 to September 2020	8/01/2019 – EC amendment w.r.t. ROM.
	c Conditions	
1.	This Environmental Clearance will not be operation till such time the project proponent complies with all the statutory requirements and judgements of Hon. Supreme Court dated the 2 nd August 2017 in writ petition (civil) no. 114 of 2014 in the matter of common cause vs union of India and Ors.	
2.	Department of Mining & Geology, State Government shall ensure that mining operation shall not commence till the entire compensation levied, 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 the 2 nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.	Complied with.
3.	Monitoring of Ambient Air Quality to be carried out based on the 2009 Notification, as amended from time to time by the Central Pollution Control Board.	Complied. Ambient Air Quality monitoring is regularly being carried out at core & buffer zone, which were located in consultation with the visiting officers of State Pollution Control Board, Bhubaneswar. The monthly monitoring report of same is been submitted regularly. The data of PM ₁₀ , PM _{2.5} , SOx, NOx, CO etc is been submitted online. The data of monitoring by using electronic board displayed in public domain.
4.	The pollution due to transportation load on the environment will be effectively controlled & water sprinkling will also be done regularly. Vehicles with PUCC only will be allowed to ply. The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded. Project should obtain 'PUC certificate for all the vehicles from authorized pollution testing centre. Washing of all transport vehicle should be done inside the mining lease.	and at loading and unloading points. Dust suppression systems in the drills have been provided for functioning effectively.

4. Anles

Sl. No. **EC** Conditions Compliance Name of Project: Katamati Iron Mine, Tata Steel Ltd. Clearance Letter no.: J-11015/63/2008.IA.II (M), dated: 18/01/2019 - EC amendment w.r.t. ROM. Period of Compliance: April 2020 to September 2020 Specific Conditions High pressure mobile water sprinkler of 50kL procured & used for water sprinkling in haul roads. Water sprinkler in Katamati mine Vehicles having valid PUC certificate are only allowed in mines for any operations. The existing HEMM also undergoes periodic PUC checks internally from authorized centres. A wheel washing facility has been installed at exit gate of mine to arrest and control the fugitive emission from mineral transportation. Wheel washing facility at Katamati Mines The activities and budget earmarked for Corporate Environmental Responsibility (CER) shall be as per Ministry's O.M No 22-65/2017-IA. II (M) dated 5. 01.05.2018 and the action plan on the activities Being complied. proposed under CER shall be submitted to the Regional Office of the Ministry and State Pollution

"Anles

Control Board.

W. A.d.

PRINCIPAL CHIEF CONSERVATOR OF FORESTS AND CHIEF WILDLIFE WARDEN: ORISSA: BHUBANESWAR-751012.

Memo No. 58 12 /1WL(C) SSP-306 /2011 Dated, Bhubaneswar the 20 th August, 2011.

The Chief Conservator of Forests (Nodal),

O/O the Principal Chief Conservator of Forests, Orissa,

Bhubaneswar.

Sub: Approval of Site Specific Wildlife Conservation Plan of M/S TATA Steel Limited for Katamati Iron Ore Mine, Barbil, Dist Keonjhar, Orissa of Keonihar Forest Division.

am directed to inform you that the Site Specific Wildlife Conservation Plan of M/S TATA Steel Limited, Katamati Iron Mine of Keonjhar Forest Division in the District of Keonjhar, Orissa has been approved by the Principal Chief Conservator of Forests(WL) & Chief Wildlife Warden, Orissa with financial forecast of Rs.205.00 lakh for the following activities.

> 1. For activities to be implemented by User agency in project area- Rs.83.00 Lakh

2. For activities to be implemented by Rs.122.00 Lakh the DFO, Keonjnar Division in the Project impact area-Total:Rs.205.00 Lakh

Various activities in the lease hold area will be executed by the User Agency themselves under the guidance of D.F.O., Keonjhar Division. Rs.122.00 Lakhs may be deposited with the Divisional Forest Officer, Keonjhar Division under CAMPA for implementation of various activities within the project impact area.

Encl: Two Nos. of approved S.S. WL Conservation Plan. Approved by Principal C.C.F. (WL). Orissa, Bhubaneswar,

Conservator of Forests (WL).

Contd..2

Memo No. 58 43 / Dt. 89.08.2011.

Copy forwarded to the Divisional Forest Officer, Keonjhar Division for information & necessary action with reference to Memo No.751 dt.17.03.2011 of RCCF., Rourkela Circle.

Encl: One No. of approved S.S. WL Conservation Plan

Conservator of Forests (WL).

Memo No. 5844 /Dt. 39.08.2011.
Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle for information & necessary action with reference to his Memo No.749 dt.17.03.2011.

Conservator of Forests (WL).

Memo No.58 45 /dt. .08.2011.

Copy forwarded to M/S TATA Steel Limited, Katamati Iron Mine, Barbil, Dist Keonjhar, Orissa for information & necessary action.

Conservator of Forests (WL).



TEST REPORT

ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 Certifled Organization
Recognized By Ministry of Environment & Forests (MoEF), New Delhi
Accredited By Quality Council of India by - NABET
Approved by :

Food Safety & Standards Authority of India Under FSS Act

Agricultural & Process Food Products Export Development Authority (APEDA)

Export Inspection council (EIC)

Agrank

Test Report No	.: ALPL/25092020/01-7	&8 date	ed 25.09.2020		Pa	ge I of I
M/s Noamundi Iron Mines Inv		ample Inward No. nward Date teference	2020/MON-09/4/12-7&8 18.09.2020 W.O 3000132460/962		Analysis Start Analysis End	18.09.2020 25.09.2020
Noamundi, Jha Postal Code: 8:	rkhand	eference Date	15.05.2020		Sample Category	Water
Sample Name Surface Water			Sample Particulars Sample Code-SW-1 & 2			Quantity Received 2.0 Ltr & 250 ml
Sample Collected By		Sampling Date	Sampling Time			cation
Anacon Repre	esentative Mr. K. Pandey	15.09.2020	Not Mentioned	Mahadev Nallah (Murga Nallah) Upstream (SW-1) Mahadev Nallah (Murga Nallah) Downstream (SW-1)		

TEST RESULTS

S.N.	Test Parameter	Measurement	Test Method	Test Result	
13-14-		Unit	Unit Test Method		SW-2
1	Biological Testing 1.Water				
1	Total Coliforn	MPN/100ml	IS 1622 : 1981	<2	2
11	Chemical Testing 1.Water				
2	pH value		IS 3025 (Part 11): 1983	7.32 at 25°C	7.34 at 25°C
3	Colour	Hazen units	IS 3025 (Part 4): 1983	THE RESERVE OF THE PARTY OF THE	
4	Dissolved Oxygen	mg/l	IS 3025 (Part 38):1989	6.2	6.1
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	4.16	5.82
7	Chemical oxygen demand	rng/l	IS 3025 (Part 58) :2006	12	16
8	Total Dissolved Solids (TDS)	mg/l	IS 3025 (Part 16): 1984	224	236
9	Copper (as Cu)	mg/l	IS 3025 (Part 2): 2019	BDL(DL-0.05)	BDL(DL-0.05)
10	Chloride (as Cl)	mg/l	IS 3025 (Part 32) :1988	64.32	67.38
11	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24): 1986	5.44	6.48
12	Nitrate (as NO ₃)	mg/l	IS 3025 (Part 34): 1988	4.12	3.80
13	Fluoride (as F)	mg/l	IS 3025 (Part 60): 2008	BDL(DL-0.1)	BDL(DL-0.1)
14	Cyanide (as CN)	mg/l	IS 3025 (Part 27): 1986	BDL(DL-0.005)	BDL(DL-0.005)
15	Phenolic compounds (as C6H5OH)	mg/l	IS 3025 (Part 43) :1001	BDL(DL-0.001)	BDL(DL-0.001)
16	Anionic Detergent	mg/l	IS 13428 : 2005 Annex K	BDL(DL-0.01)	BDL(DL-0.01)
	Chemical Testing 2. Residues In V	Water			
17	Iron (as Fe)	mg/l	IS 3025 (Part 2): 2019	0.18	0.17
18	Cadmium (as Cd)	mg/l	IS 3025 (Part 41): 1992	BDL(DL-0.001)	BDL(DL-0.001)
19	Selenium (as Se)	mg/l	IS 3025 (Part 2): 2019	BDL(DL-0.001)	BDL(DL-0.001)
20	Arsenic (as As)	-mg/l	IS 3025 (Part 37): 1988	BDL(DL-0.01)	BDL(DL-0.01)
21	Lead (as Pb)	mg/l	IS 3025 (Part 47): 2003	BDL(DL-0.001)	BDL(DL-0.001)
22	Zinc (as Zn)	mg/l	IS 3025 (Part 2): 2019	BDL(DL-0.1)	BDL(DL-0.1)
23	Hexa Chromium (as Cr ⁺⁶)	mg/l	IS 3025 (Part 2) :2019	BDL(DL-0.03)	BDL(DL-0.03)
24	Mercury (as Hg)	mg/l	IS: 3025 (Part 48): 1994	BDL(DL-0.0005)	BDL(DL-0.0005
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 Ansoon Labs. • Liability of Ansoon Labs is limited to invoiced amount only. • Non-pershable and pershable 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.

Verified By

Pallavi Harkare

Technical Manager

Pooja Kathane Technical Manager

Dr.(Mrs.) Anupa Tankhiwale Sr.Technical Manager

Swati Shrivastava Technical Manager

Authorized Signatories

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Support Help Lines: Technical (9373287475) Email: labngp@anacon.in, Offer (8698945450) Email: support@anacon.in, Accounts Division (9326960081, 9372960079) Email: accounts@enacon.in You may also visit us at www.anaconlaboratories.com



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Approved by - Food Safety & Standards Antionty of India Under FSS Act - Bureau of Indian Standards (BIS)

Agricultural & Process Food Products Export Development Authority (APEDA) - Export respection council (EIC) - A

Test Report No.: ALPL/30062 Issued To:		dated 30.	2020/EW-219/12-7&8		Page 1 of 1	
M/s Noamundi Iron Mines (M/s TATA Steel Limited) Noamundi, Jharkhand Postal Code: 833217 Sample Name Surface Water	Inward Date Reference Reference Date		22.06.2020 W.O 3000132460.962		Analysis Start Analysis End	22.06,2020 29.06,2020
	Sample F	articulars	Sample Condition		Sample Category Quantity	Water Received
Sample Collected By		Sampling Date	Scaled & Ice Prese	rved	2.0 Lit d	250 ml
Anacon Representative Mr. Krishnendu Pandey		18.06.2020	Sampling Time Sampling Loca Not Mentioned 1 Baitarani River Ups 2 Baitarani River Dov		ion	

S.N.	Test Parameter	Measurement		Standards as	Tes	t Result
1	Piete d. Lin	Unit	Test Method	per IS 2296:1992	SW-1	SW-2
-	Biological Testing 1.Water Total Coliforn			Class C		
E	Charles Conton	MPN/100ml	IS 1622 : 1981	-		
2	Chemical Testing 1.Water		10 1062 : 1701	5000	Absent	Absent
3	Colour	-	IS 3025 (Part 11): 1983			
4		Hazen units	IS 3025 (Part 4): 1983	6.0 to 9.0	7.44 at 25°C	7.48 at 25%
5	Dissolved Oxygen	mg/l	IS 3025 (Part 38) :1989	300	1	T
6	Total Suspended Solid (as TSS)	mg/l	IS 3025 (Part 17) :1984	4.0	6.1	6.0
7	BOD (3 days at 27°C)	mg/I	IS 3025 (Part 44):1993	**	BDL(DL-10)	BDL(DL-10
8	Chemical oxygen demand	mg/l	IS 3025 (Part 58) :2006	3.0	4.80	5.94
9	Total Dissolved Solids (TDS)	mg/l	IS 3025 (Part 16): 1984		14.12	16.88
0	Copper (as Cu)	ma/l	IS 3025 (Part 2) : 2004	1500	210	225
	Chiloride (as Cl)	mg/l	19 3025 (Part 2) : 2004	1.5	BDL(DL-0.03)	BDL(DL-0.03
1	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 32) :1988	600	54.42	57.6
2	Nitrate (as NO ₁)	mg/l	IS 3025 (Part 24) : 1986	400	6.24	5.86
3	Fluoride (as F)	mg/l	IS 3025 (Part 34): 1988	50	4.12	3.96
4	Cyanide (as CN)	mg/l	IS 3025 (Part 60): 2008	1.5	0.30	0.38
5	Phenolic compounds	11(8/1	IS 3025 (Part 27): 1986	0.05	BDL(DL-0.005)	
	(as C6H5OH)	mg/l	IS 3025 (Part 43):100)	0.005		BDL(DL-0.00
5	Anionic Detergent	mg/l			BDL(DL-0.001)	BDI (DL-0.001
,	Chemical Testing 2. Residues 1	n Water	IS 13428 : 2005 Annex K	1.0	BDL(DL-0.01)	BDL(DL-0.01
	fron (as Fe)	mg/l	IS 3025 (Part 2) : 2004			
3	Cadmium (as Cd)	mg/l		0.5	0.11	0.15
	Selenium (as Se)	mg/l	18 3025 (Part 41): 1992	0.01	BDL(DL-0.001)	BDL(DL-0.001
	Arsenic (as As)	mg/l	IS 3025 (Part 2) : 2004	0.05	BDL(DL-0.001)	BDL(DL-0.001
	Lead (as Pb)	mg/l	IS 3025 (Part 37) : 1988	0.2	BDL(DL-0.001)	BDL(DL-0.001
	Zinc (as Zn)	mg/l	IS 3025 (Part 47): 2003	0.1	BDL(DL-0.05)	BDL(DL-0.05)
	Hexa Chromium (as Cr+6)	mg/i	IS 3025 (Part 2) : 2004	15	BDL(DL-0.05)	BDL(DL-0.05)
	Mercury (as Hg)	The state of the s	IS 3025 (Part 2) :2004	1.0	BDL(DL-0.001)	
	Manganese (as Mn)	mg/l	IS: 3025 (Part 48): 1994	-	BDL(DL-0.005)	BDL(DL-0.001
	Please see waternark "Criginal Test Report st abali not be reproduced asserted."	11132/1	IS 3075 (Pour 2) - 2004		BDL(DL-0.05)	BDL(DL-0.005)

NOTES: 9 Please see watercard: "Criginal Test Report" to confirm the authenticity of this report. 9 Results shall be referred to rested cample(s) and applicable to tested perameters only.

9 Test report shall not be reproduced except an full without prior written approval of Anacou Laba, 9 Liability of Anacou Labs is limited to invoiced amount only. 9 Non-personable and Below detection liant 9 DL-Indicates detection limit of instruments method and shall be considered as "about."

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

Swati Shrivistava Pallavi Harkare Poja Kathane Dr. (Mrs.) Anupa Tankhiwale Dr. (Mrs.) S.D. Garway
Lab: FP 36-35, Food Park, Five Star Estate, MFO Butbott, Nappur -441122, Meb. No. 9373287475, Ernal: labrage Ganascon in Accounts Division (9373287475) Ernal: athony-garancon in Office (8888945450) Ernal: supporting anagon in Starting of Charting accounts Division (9320800031, 9372903079) Ernal: athony-garancon in Office (8888945450) Ernal: supporting anagon in Branches: Maharashira | Ghhattisgarh | Madhya Pradesh | Jharkhand | Delki



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Agricultural & Process Food Products Export Development Authority (APEDA) \$ Export Inspection council (EIC) \$ Agmark

DUST FALL MONITORING REPORT FOR THE MONTH OF SEPTEMBER-2020

Report No.: AN/MC/TS-JEIN	Date: 03/10/2020		
Name and Address of	M/c Katar	nati Iron Mine	W. O. No.
Industry:-		A Steel Limited)	3000132460/962 15 05 2020
Sample Description/Type	Dust Fall	Sample Ref. No.:	2020/Mon 183/DF/ 1
Sample Drawn By:-	Anacon Representativ	e	EGGST - Francisco

			Analysis Results
Sr. No.	Parameters	s Unit 01.09.2020	01.09.2020 to 30.09.2020
			DF-1
1.	Nickel as Ni	%	0.021
2.	Cobalt as Co	%	.0.06
3.	Mercury as Hg	%	< 0.001
4.	Arsenic as As	%	< 0.001
5.	Iron as Fe	%	1.4

Total Dust Fall for the month of September-2020 is 2.7 t/km²/month.

For ANACON LABORATORIES PVT.LTD.

Verified by

Shashikant Satdeve (Sr. Chemist) **Authorized Signatory**

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

Head Office: 60, Bajiprabhu Nagar, Nagpur - 440033 India. Ph. No. 9372404924, Email: support@anacon.in
Lab: FP 34-35, Food Park, 5 Star Estate, MIDC Butibori, Nagpur - 441122. Mob. No. 9373287475, Email: labngp@anacon.in
Support Help Lines: Technical (9373287475) Email: labngp@anacon.in, Offer (8698945450) Email: support@anacon.in,
Accounts Division (9326960081, 9372960079) Email: accounts@anacon.in
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Agricultural & Process Food Products Export Development Authority (APEDA) & Export inspection council (EIC) & Agmark

Test Report No. : ALPL/250920	20/01-1 dated 25.09.2	2020	Page 1 of 3	
	Sample Inward No.	2020/MON-09/4/14-1	Analysis Start	18.09.2020
Issued To:	Inward Date	18.09.2020	Analysis End	25.09.2020
M/s Katamati Iron Mines (M/s TATA Steel Limited)	Reference Reference Date	W.O 3000132460/962 15.05.2020	Sample Category	Soil
Sample Name Soil		Sampling Date : 15.09.2020 Sampling Time : 11.30 am		eceived
	Collected By tive Mr. Priyansh Jain	Sampling Location SI-Mines Area		

TEST RESULTS Measurement S.N. Test Parameter Test Method Test Result Unit Colour Visual Brown Type of soil pH meter Neutral Method Manual, Soil testing in India (Department of agriculture & corporation, Govt of India) 3 pH (1:2.5 Aq. Extract) at 25°C 6.41 at 25°C Method Manual, Soil testing in India 4 Texture Sandy loam (Department of agriculture & corporation, Govt of India) IS 2720 (Part 29) Bulk density g/cm3 1.427 Electrical Conductivity Method Manual, Soil testing in India µs/cm (1:2.5 Aq. Extract) 163.8 (Department of agriculture & corporation, Govt of India)

Method Manual, Soil testing in India 1 % Moisture Content 12.84 ment of agriculture & corporation, Govt of India) Method Manual, Soil testing in India 8 Water soluble Chloride (as Cl) mg/Kg 6827 (Department of agriculture & corporation, Govt of India) Method Manual, Soil testing in India 9 Water soluble Sulphate (as SO₄) mg/Kg 1926 (Department of agriculture & corporation, Govt of India)
Method Manual, Soil testing in India 10 Water soluble Potassium (as K) mg/Kg 580 Department of agriculture & corporation, Govt of India) Method Manual, Soil testing in India 11 Available Phosphorous (as P) Kg/hec 410 (Department of agriculture & corporation, Govt of India) Method Manual, Soil testing in India 12 Available Nitrogen (as N) Kg/hec 340 (Department of agriculture & corporation, Govt of India) Method Manual, Soil testing in India 13 Total Organic matter % 2.15 (Department of agriculture & corporation, Govt of India) Method Manual, Soil testing in India 14 Total Organic Carbon % 1.23 (Department of agriculture & corporation, Govt of India) Method Manual, Soil testing in India (Department of agriculture & corporation, Govt of India) Method Manual, Soil testing in India 15 Available Iron (Fe) mg/Kg 3.08 16 Total Nickel (Ni) mg/Kg Absent (Department of agriculture & corporation, Govt of India)
Method Manual, Soil testing in India 17 Mercury (Hg) % Absent (Department of agriculture & corporation, Govt of India) Method Manual, Soil testing in India (Department of agriculture & corporation, Govt of India) 18 Total Cobalt (Co) mg/Kg Absent Method Manual, Soil testing in India Total Arsenic (As) mg/Kg Absent (Department of agriculture & corporation, Govt of India)

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

Verified By

Authorized Signatory

Shashikant Satdeve

Mangesh Fande

Dr. (Mrs.) S.D. Garway

Sr.Chemist Technical Manager
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Flow Rate of Balijhor Nalla

(April 2020 – September 2020)

ANALYSIS OF WATER QUALITY Sample collected from Balijhore Nalla

Parameter	Apr- 20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Flow Rate Cum/hr	263	191	324	351.6	796.3	161.52

There is no any industrial effluents discharge from the mine.

HAMER

Ground Water level details for Pre-Monsoon (May) & Monsoon (August)

Katamati Iron Mine, M/s Tata Steel Ltd.

EC condition no. (xviii), vide no. J-11015/63/2008-IA.II (M) dated 26th November, 2010.

(xi) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new plezometers during the mining operation. The periodic monitoring (at least four times in a year - premonsoon (April- May), monsoon (August), post — monsoon (November) and winter (January); once in each season) shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the ground water table is getting depleted due to mining activity, necessary corrective measures shall be carried out.

Katamati Iron Mine of M/s Tata Steel Limited is an operational opencast captive iron mine. Regular monitoring of ground water level in and around the mine lease of existing well is regularly been done in desired frequency. The detailed quality report is attached herewith. The Katamati Iron Mine has received NOC from CGWA for ground water withdrawal of 460m³/day recently vide letter no. CGWA/NOC/MIN/ORIG/2018/4244, dated 10th Oct 2018.

As per recent hydro-geological study & regulatory approval, few additional locations are also incorporated along with proposed plezometers in the area. Monitored water level for of area for the month of November 2019 and February 2020 are as follows:

SI.	2 (2.4.4.1)	Mo	NTH
No.	LOCATION	May 2020	August 2020
Exis	ting Dug Well Locations:		
1.	Mahadevnasa Village, Near Pond	3 m 65 cm	1 m 21 cm
2.	Dalafiri Sahi (well-2) Near Road	3 m 67 cm	2 m
3.	Tata Sponge – Galuri Sahi	6 m 67 cm	2 m 33 cm
4.	Murga, Near Temple	2 m 90 cm	1 m 85 cm
5.	Dalagiri-1, Near Road	6 m 90 cm	2 m 24 cm
New F	Plezometer Locations:		
6	Murga Village, Near Security Gate	17m	16 m
7	Near pit office, Katamati Iron Mine	42m 13 cm	41 m
8	Near METSO Office, Katamati Mine	61m 40 cm	60 m 18 cm





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Revenue of Indian Standards (IRS)

Agricultural & Process Food Products Export Development Authority (APEDA)

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Food Indian Standards (IRS)

issued To:

Test Report No. : ALPL/25092020701-1 dated 25.09.2020 Page I of 3 Sample Inward No. 2020/MR3N-00-4/14-1 18,09 2020 M/s Katamati Iron Mines Inward Date 18 09 2020 Analysis End 25 09 2020 (M's TATA Steel Limited) Reference W,O - 3000132460 962 Sample Category Reference Date 15.05.2020 Water

Sample Name Sample Source Sample Particulars Sample Condition Quantity Received Ground Water Dugwell Sample Code-GW-1 Sesied & Ice Preserved 2.0 Lar & 250 ml Sample Collected By Sampling Date Sampling Location Sampling Time Anacon Representative Mr. K. Pandey 15.09.2020 Not Mentioned Mahadev Nasha Villago

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per 18 10500 : 2012 (Delaking Water Secretications) Including Assendment No. 2		Test Result
	Contact and and	10.6		Acceptable Limit	Permissible Limit "	
_	Biological Testing 1. Water			THE PARTY OF THE P		A
1	Escherichia coli	Per 100 ml	18 15185 : 2016	Absent	Absent	Absent
11	Chemical Testing 1. Water					-
2	pH value		IS 3025 (Part 11): 1983	6.5 to 8.5	No relaxation	7.32 at 25°C
3	Turbidity	NTU	1S 3025 (Part 10): 1984	THE RESERVE	5	0,3
4	Colour	Hazen units	IS 3025 (Part 4): 1983	5	15	1
3	Odour		IS 3025 (Part 5) 2018	Agreeable	Agreeable	Aprecable
6	Taste		I5 3025 (Part 8): 1984	Agrocable	Agreeable	Agreeable
7	Free residual chlorine	mg/l	IS 3025 (Part 26): 1986	Min. 0.2		BDL(DL-0.1)
8	Total dissolved solids	mg/l	IS 3025 (Part 16): 1984	500	2000	218
9	Fluoride (as F)	mg/l	1S 3025 (Part 60) : 2008	1.0	1.5	0.20
10	Cyanide (as CN)	mg/l	IS 3025 (Part 27): 1986	0.05	No relatation	BDL(DL-0.005
11	Chloride (as C1)	mg/l	IS 3025 (Part 32): 1988	250	1000	31.64
12	Total Alkalinity (as CaCO ₃)	mg/1	15 3025 (Part 23): 1986	200	600	132
13	Total hardness (us CaCO ₂)	Figm.	IS 3025 (Part 21): 2009	200	600	140.58
14	Calciom (as Ca)	mg/l	IS 3025 (Part 40): 1991	75	200	41.18
15	Magnestum (as Mg)	mg/l	15 3025 (Part 46): 1994	30	100	9 16
16	Sulphate Las SO _c)	mg/l	IS 3025 (Part 24): 1986	200	4001	6.74
17	Nitrate (as NO ₃)	mg/l	APHA Method 23 rd Edition	45	No relaxation	3.26
18	Phenolic compounds (as C _s H ₂ OH)	mg1	IS 3025 (Part 43): 1992	0.001	0.002	BDL(DL-0.001
19	Anionic deterpents (as MRAS)	mg1	IS 13428 : 2005 Annex K	0,2	1.0	BDL/DL-0.01

NOTES: O Processor a second "Obj. and End Report" to continue on a discount of the content of the following the content of the

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Verified By

Look Swati Shriyastaya

Technical Manager

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Authorized Signaturies

nical Manager

Dr. (Mrs.) S.D. Garway

Quality Manager

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TEST REPORT

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• Agricultural & Process Food Products Expert Development Authority (APEDA) • Expert respection council (EIC) • Agree's

est Report No.: ALPL/25092020-01-1 Issued To: M/s Katamati Iron Mines (M/s TATA Steel Limited)		Sample Inward No. Inward Date Reference	2020 18 09	ned 25.09.2020 MON-09/4/14-1 1,2020 - 3000132460/962	Page 2 of 3 Analysis Start IEC9 Analysis End 25 09	
Section 21			15.05	.2020	Sample Category	Water
Sample Name Ground Water	Sample Source Dugwelt	Sample Particul Sample Code-G		Sample Condition Sealed & for Preserved		Received
Sample Collected By Anacon Representative Mr. K. Pandey		Sampling Date 15.09:2020		Sampling Time Not Mentioned	Sampling Location Multadev Nasha Village	

			TEST RESULTS			
S.N.	Test Parameter	Test Parameter Measurement Unit		Requirem IS 1050 (Drinking Wate Including Am	Test Result	
				Acceptable Limit		
п	Chemical Testing 2. Residues In Water					
20	Iron (as Fe)	mg/1	IS 3025 (Part 2): 2019	1.0	No relaxation	6.22
21	Copper (as Cu)	mg/l	IS 3025 (Part 2): 2019	0.05	1.5	BDL(DL-0.03)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2): 2019	0.1	0.3	BDL(DL-0.05)
23	Mercury (as Hg)	mg/1	IS: 3025 (Part 48): 1994	0.001	No relaxation	BDL(DL-0.0005
24	Cadmium (as Cd)	mg/1	1S: 3025 (Part 41): 1992	8.003	No relaxation	BDL(DL-0.001)
25	Selenium (as Se)	mg/l	IS: 3025 (Part 56): 2003	0,01	No relaxation	BDL(DL-0.001)
26	Arsenic (as As)	mg/t	IS: 3025 (Part 37): 1988	0.01	No relaxation	BDL(DL-0.01)
27	Aluminium (as Al)	mg/l	IS 15302 : 2003	0.03	0.2	BDL(DL-0.01)
28	Lead (as Ph)	mg/l	IS 3025 (Part 47) 2003	0.01	No relaxation	BDL(DL-0.001)
29	Zinc (as Zn)	mg/l	IS 3025 (Part 2): 2019	5	15	BDL(DL-01)
30	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2) : 2019	0.05	No relaxation	BDL(DL-0.03)
31	Boron (as B)	mg1	IS 3025 (Part 2): 2019	0,5	2.4	BDL(DL-0.1)
32	Polynuclear aromatic hydrocarbon (PAH)	μμ1 .	ANar RES-30	0,1	No relaxation	BDL(DL-0.03)
33	Mineral Oil	mg/l	ANur RES-40	0.5	No relaxation	BDL(DL-0.001)

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Verified By

Pallarr Harkare Technical Manager Sonali Gharpure Technical Manager **Authorized Signatury**

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





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ISC 9001 2015, ISO 14861 2015, OHSAS 18001 2017 Certified Organization Recognized By Messity of Environment & Foreign StatEF), New Delta According by Quarty Council of Index StatEF), New Delta According by Quarty Council of Index StatEF), New Delta According by Quarty Council of Index StatEF), New Delta According by Quarty Council of Index StatEF), New Delta According by According by Pool Safety & Standards Authority of Index Croder PSS Act & Bureau of Index States (BIT)

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Test Report No. : AL	1./25092020/01-1		dated 25 09 2020	Pane 3	Page 3 of 3		
Issued To : M/s Katamati Iron Mines (M/s TATA Steel Limited)		Sample forestd No. Inward Date Reference	2026 MON 69/4/14-1 18.06 2026 W.O 300/132466 962	Analysis Start Analysis Fad	18.09.202 25.09.202		
		Reference Date	15.05.2020	Sample Cutegory	Water		
Sample Name Ground Water	annihit anniet		Sample Condition Could be les Preserve	- Consum	Received & 250 ml		
Sample Collected By Anacon Representative Mr. K. Pandey		Sampling Date 15 09 2020	Sampling Time Not Mentioned	Sampling Location Multanes Na ha Villane			

s.n.	Test Parameter	Measurement	Test Method	(Drinking Water	Requirement as pur 15 10500 - 2012 (Drinking Water Specifications) Including Assendment No. 2		
				Acceptable Limit	Permissible	7	
11	Chemical Testing 2. Residues In Water						
34	Pesticide Residues		-				
1	Alpha-HCH	ug/l	ANur RES-28	0.01	No relaxation	BDL(DL-0.01	
ii	Beta HCH	µg/l	ANgr RES-28	6.04	No relaxation	BDL(DL-0.0)	
181	Delta- HCH	µg/l	ANur RES-28	0.04	No relaxation	The state of the s	
iv	Alachio	ир/1	ANgr RES-28	20	No retacation	BDL(DL-0.03	
V	Aldrin / Dieldrin	µg/1	ANur RES-28	0.03	No relaxation		
vi	Atrazine	μg/1	ANgr RES-29	2	No relaxation	BDL(DL-0.0)	
vii	Butachior	ир/1	ANgr RES-29	125	No relaxation	BDL(DL-0.0)	
viii	Chlorpyrifus	ид/1	ANgr RES-28	30	No relaxation	BDL(DL-0.03	
ix	DDT and its Isomers	ид/1	ANgr RES-28	1	No relaxation	BDL(DL 0.03	
X	Gamma - HCH (Lindane)	ид/1	ANgr RES-28	1		BDL(DL-0.03	
Ni	2,4-Dichlorophenoxyacetic acid	ид/1	ANgr RES-29	30	No relaxation	BDL(DL-0.03	
xii.	Endosulphan	Pg4	ANgr RES-28	0.4	No relaxation	BDL(DL-0.03	
xiii	Ethion	µg/l	ANgr RES-29	0.4	No relaxation	BDL(DL-0.03)	
xiv	Isoprotures	µg/l	ANur RES-29	9	No relaxation	BDL(DL-0.01)	
XV	Malothiou	µg/l	ANgr RES-29	190	No relaxation	BDL(DL-0.03)	
xvi	Methyl Parathion	pg/1 .	ANgr RES-29	0.3	No relaxation	BDL(DL-0.03)	
wii	Monocrotophos	µg/1	ANdt RES-29	0,3	No relaxation	BDL(DL-0.03)	
(Viii	Phorate	time!	ANd RFS-29	1	No relaxation	BDL(DL-0.03)	
	*		The second	1	No relaxation	BDL(DL-0.03	

NOTES: 9 Peace on Automatic Uniqued Fact Repent's, a content for a formation of the report of the second to tend to tend of any fact to tend parameter, and the report shall be dependent except or full to find provident group of the second of the report o

Subsect validated method.

REMARKS: As requested by the client, sample one tested for above parameters only flample complies with 15 10500-2012; for tests conducted, indicating that is fit for drinking purpose with respect to tested parameters.

Verified By

Sonali Gharpura Technical Manager Authorized Signatory

Haw Dr. (Mrs.) S.D. Garway Quality Managor

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TEST REPORT

Test Report No. : AL	PL/25092020/01-2		dated 25.09.2020	Page 1 c	of 3
Issued To : M/s Katamati Iron (M/s TATA Steel I		Sample Inward No. Inward Date Reference Reference Date	2020/MON-09/4/14-2 18,09/2020 W.O3000132460/962 15.05/2020	Analysis Start Analysis End Sample Category	18,09,2020 25,09,2020 Water
Sample Name Ground Water			Sample Condition Scaled & Ice Preserve	Quantity	Received & 250 ml
Sample Collected By Anacon Representative Mr. K. Pandev		Sampling Date 15.09.2020	. Sampling Time Not Mentioned	Sampling I Dulatiri-2	

s.n.	Test Parameter	Measurement Unit	Test Method	Requires 18 105 (Drinking Wate Including Am	Test Result	
1 3				Acceptable Limit	Permissible Limit	
1	Biological Testing 1.Water					
1	Escherschia codi	Per 100 ml	IS 15185 2016	Absent	Absent	Absent
11	Chemical Testing 1.Water					
2	pH value	The second second	IS 3025 (Part 11): 1983	6.5 to 8.5	No relevation	7.35 at 25°C
3	Turbidity	NTU	IS 3025 (Part 10): 1984		4	0.4
4	Colour	Hazen units	IS 3025 (Part 4): 1983	5	15	1
5	Odour		IS 3025 (Part 5): 2018	Agreeable	Agrocable	Agrecable
6	Taste		15 3025 (Part 8): 1984	Agreeuble	Agreeable	Agrecable
7	Free residual chlorine	mg/l	IS 3025 (Part 26): 1986	Min. 0.2		BDL(DL-0.1)
E	Total dissolved solids	mg/1	IS 3025 (Part 16): 1984	500	2000	232
9	Fluoride (as F)	mg/l	15 3025 (Part 60) : 2008	1.0	1.5	0.17
10	Cyanide (as CN)	mg/l	15 3025 (Part 27): 1986	0.05	No relaxation	BDL(DL-0.005)
11	Chloride (as Cl)	mg/l	IS 3025 (Part 32):1988	250	1000	34.71
12	Total Alkalimity (as CaCO ₁)	mg/l	IS 3025 (Part 23): 1986	200	600	130
13	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21): 2009	200	600	154.44
14	Calcium (as Co)	l'am	IS 3025 (Part 40): 1991	75	200	41.57
15	Magnesium (as Mg)	mg1	IS 3025 (Part 46): 1994	30	100	12.05
16	Sulphate (as SO ₄)	mg/1	IS 3025 (Part 24): 1986	200	400	4.66
17	Nitrate (as NO ₃)	mg/l	APHA Method 23 rd Edition	45	No relaxation	3.09
18	Phenolic compounds (as C _a H ₂ OH)	mg/l	IS 3025 (Puri 43) : 1992	0 (101	0.002	BDL/DL-6 001)
19	Anionic detergents (as MRAS)	mg1	18 13428 : 2005 Annex K	0,2	1.0	BDL(DL-0,01)

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© Test report shall not be reproduced except in full testions prior screens appeared of Annexes take. © Liabetes of Annexes Lists in landed to exceed annexes on persolate amplitude that he disposed off other 10 days and 15 days respectively from the date of some of Test Report, solving quantital otherwise © mg/" is original to the considered of the DE. Defense detection been © DE. Indicates described instrument method and that he considered go "droop" is original.

Verified By

Technical Manager

Technical Manager

Authorized Signatories

St. Teyh

Dr. (Mrs.) S.D. Garway

Quality Manager

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Test Report No. : ALI	L/25092020-01-2		dated 25.09:2020 Page 2 of 3		
M/s Kutamati Iron Mines (M/s TATA Steel Limited)		Sample Inward No. Inward Date Reference Reference Date	2020/MON-0944-14-2 18-09-2020 W.O 000013246-0962 15-05-2020	Analysis Start Analysis End Suturds Category	18 09 2020 25 09 2020 Water
			art Sample Cundition	Quantity Received	
Sample Co Anacon Representa	Heeted By live Mr. K. Pandey	Sampling that 15 09 2020		Sampling f	Location

			TEST RESULTS			
S.N.	Test Parameter	est Parameter Measurement Unit	Test Method	Requirement of the second of t	Yest Result	
			Table 1937	Acceptable Limit	Permissible	
н	Chemical Testing 2. Residues In Water				10000	
20	iron (as Fe)	mg/l	78 3025 (Part 2) : 2019	1.0	No relaxation	0 16
21	Copper (as Cu)	mg/l	IS 3025 (Part 2): 2019	0.05	1.5	BDL(DL-003)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2): 2019	0.1	0.1	BDL(DL-0.05)
23	Mercury (as Hg)	mg/l	15: 3025 (Part 48): 1994	8.001	No relaxation	BDL/DL-0.0005
24	Cadmium (as Cd)	mg/l	IS: 3025 (Part 41): 1992	0.003	No relaxation	BDL(DL-0.001)
25	Selenium (as Se)	mg1	IS: 3025 (Part 56): 2003	0.01	No relaxation	BDL(DE-8 001)
26	Arsenie (an As)	mg/l	IS: 3025 (Part 37): 1988	0.01	No relaxation	BDL(DL-0.01)
27	Aluminium (as AI)	mg/l	IS 15302 : 2003	0.03	0.2	BDE(DE-0.01)
28	Lend (as Ph)	mg/l	IS 3025 (Part 47) 2003	0.01	No relaxation	HOL4DL-0.001)
29	Zinc (as Zn)	mg/l	IS 3025 (Part 2): 2019	5	15	BDL(DL-0.1)
30	Total Chromium (un Cr)	mg/l	15 3025 (Part 2): 2019	0.05	No relaxation	BDL(DL-0.03)
31	Boron (as B)	mg1	IS 3025 (Part 2): 2019	0.5	2.4	BDL(DL-0.1)
32	Polynuclear aromatic hydrocarbon (PAH)	pg1.	ANur RES-30	0.1	No relaxation	BDL(DL-0.03)
33	Mineral Oil	mg/l	ANUFRES-30	0.5	No relaxation	BDL(DL-0.001)

NOTES: © Press on the local Company of the contract to a state of the contract of the contract

Verified By

wi Harkare **Feelinical Manager**

Technical Manager

Authorized Signatury

) Games Dr. (Mis.) S.D. Garway Quality Munager

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est Report No.: ALP Issued To: M/s Katamati Iron / (M/s TATA Steel Li	Mines	Sample Inward No. Inward Date Reference Reference Date	2020 18.09 W.O.	ed 25.09.2020 MON-09/4/14-2 12020 - 3000132460-962	Analysi Analysi Sample		If 3 IR 09.2020 25.09.2020 Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particu Sample Code-G		Sample Condition Sealed & Ice Preserv			Received & 250 ml
Sample Co Anacon Representat		Sampling Do 15.09.2020		Sampling Time Not Mentioned	i sing	Sampling I Dalafiri-2	

TEST RESULTS

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per ES 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit *	
п	Chemical Testing 2. Residues In Water					
34	Pesticide Residues					
i	Alpha-HCH	µg/l	ANur RES-28	0.01	No relaxation	BDL(DL=0.01)
ii	Beta HCH	µg/l	ANgr RES-28	0.04	No relaxation	BDL(DL-0.03
101	Delta- HCH	µg1	ANgr RES-28	0.04	No relaxation	BDL(DL-0.6)
19	Alachior	µg/l	ANgr RES-28	20)	No relaxation	BDL(DL-0.03
v	Aldrin / Diefdrin	ир/1	ANur RES-28	0.03	No relaxation	BDL(DL-0.03
vi	Atrazine	µg/l	ANyr RES-29	2	No relaxation	BDL(DL-0.03
vii	Butachfor	µg/l	ANgr RES-29	125	No relaxation	BDL(DL-0.03
vili	Chlopyrifiss	μg/1	ANgr RES-28	30	No relaxation	BDL(DL-0.03
IN	DDT and its Isomers	ид/1	ANgr RES-28		No relaxation	BDL(DL-0.03
X	Gamma - HCH (Lindane)	µg/l	ANgr RES-28	3	No relaxation	BDL(DL-0.03
Xi	2.4-Dichlorophenoxyacetle acid	µg/l	ANgr RES-29	30	No relaxation	BDLIDL-0.03
XII	Endosulphan	μη/1	ANur RES-28	0.4	No relaxation	BDL(DL-0.0)
XIII	Ethion	µg/l	ANgr RES-29	3	No relaxation	BDL(DL-0.03
xiv	Isoproturon	ир1	ANgr RFS-29	9	No relaxation	BDL(DL-0.03
XV	Malathion	µg/l	ANgr RES-29	190	· No relaxation	BDL(DL-0.03
xvi	Methyl Parathion	µg/l	ANgr RES-29	0.3	No relaxation	BDL(DL-0.03
NVII.	Monocrotophos	lug1	ANgr RES-29	1	No relaxation	BDL(DL-0.03
xviii	Phorate	µg/l	ANQ RES-29	1	No relaxation	BDI (DI-0.0)

NOTES: © Please one tendertrack "Degrand Test Expost" to confirm the authorized of this cappet. © Results shall be referred to record sample; or an applicable to tested parameters only.
© Test appect shall not be reproduced except as full without prior worder approval of Annais. Labs. © Labelists of Annais. Labs is funded to intensed amount only. © Non-parability and persolable sample(s) shall be disposed off after 10 days and 11 days respectively from the fact of some of Test Report, tudens appelled otherwise. © "mg." is equivalent to "pain." © Result for som are T is not relevant. © BDL. Below detection from © DL. Indicates denoting host of intermediated and shall be considered as "about." © ANge RES-28. 20, 30 dt 40 c. Indicates validated method.

REMARKS: As requested by the cient, sample was tested to above parameters only. Sample complies with IS-19500-2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

Verified By

Sonali Gharpure Technical Manager **Authorized Signatory**

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

Head Office: 60, Bajgrathu Nagar, Naggur - 440033 India. Ph. No. 8372404824, Email: supportigianation in Lab : FP 34-35, Food Park, 5 Star Estate, MIDC Button, Naggur - 441122, Mob. No. 9373287475, Email: statinge@anacon in Support Help Lines: Technical (9373287475; Email: statinge@anacon in Office (9358945450) Email: supportigianacon in Accounts Division (9328960981; 5372960079) Email: accounts@anacon in You may also visit us at www.anaconiaboratories.com





TEST REPORT

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Test Report No. : ALPL/25092020/01-3 dated 25.09.2020 Page Lof 3 Issued To: 2020/MON-09/4/14-3 Sample Reward No. Analysis Stort 18 09 2020 M/s Katamati Iron Mines Inward Date 18,89,2020 Analysis End 25.09.2020 (M/s TATA Steel Limited) Reference W.O.- 3000132460/962 Sample Category Reference Bate 15.05.2020 WMET Sample Name Sample Source Sample Particulars Sample Condition Quantity Received Ground Water Dugweli Sample Code-GW-3 Scaled & Ice Preserved 2.0 Lir & 250 ml Sample Collected By Sampling Time Sampling Date Sampling Location Anacon Representative Mr. K. Pandey 15.09.2020 Not Mentioned PALE ST. S SPORE

			TEST RESULTS			
5.N.	Test Parameter	Measurement Unit	Test Method	Requirer Is 108 (Drinking Wat Including As	Test Result	
			A CONTRACTOR	Assessable	Permissible	
1	Biological Testing 1.Water				Louis	L
1	Escherichia coli	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent
11	Chemical Testing 1.Water				I stronger	1 Appen
2	pH value		IS 3025 (Part 11): 1983	6.5 to 8.5	No relaxation	7.38 at 25°C
3	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	- 4	0.3
4	Colour	Hazen units	IS 3025 (Part 4) 1983	5	15	4.5
5	Odour	THE RESIDENCE	IS 3025 (Part 5): 2018	Agreeable	Agreeable	Agreeable
6	Taste		IS 3025 (Part 8): 1984	Agreeable	Agreeable	Agreeable
7	Free residual chiorine	mg/l	IS 3025 (Part 26): 1986	Min. 0.2	1	BDL(DL-0.1)
8	Total dissolved solids	mg/l	15 3025 (Part 16): 1984	500	2000	250
9	Fluoride (as F)	mg/1	15 3025 (Part 60): 2008	1.0	1.5	BDL(DL-0.1)
10	Cyanide (as CN)	mg/l	15 3025 (Part 27): 1986	0.05	No relaxation	Contract of the last of the la
11	Chloride (as CI)	mg/l	IS 3025 (Part 32):1988	250	1000	BDL(DL-0.005)
12	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23): 1986	200	600	41.85
13	Total hardness (as CaCO ₂)	rng/I	IS 3025 (Part 21): 2009	200	600	144
14	Calcium (as Ca)	mg/l	1S 3025 (Part 40) : 1901	75	200	148.5
15	Magnesium (as Mg)	mg/l	IS 3025 (Part 46): 1994	30	100	The second name of the second
16	Sulphate (as SO _c)	mg/1	18 3025 (Part 24): 1986	200	400	9.16
17	Nitrate (as NO ₃)	mg/I	APHA Method 23 rd Edition	45	THE RESERVE AND ADDRESS OF THE PARTY NAMED IN	7.52
18	Phenolic compounds (as C ₀ H ₂ OH)	mg/l	IS 3025 (Part 43): 1992	0.001	No relaxation 0 002	4 22 BDL(DL-0.001)
19	Anionic detergents (as MBAS)	mgT	IS 13428 2005 Annex K	0.2	1.0	BDL(DL-0.01)

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Verified By

Technical Manager

Technical Manager

Sr. Technical Manager

Dr. (Mrs.) S.D. Garway

Authorized Signaturies

Quality Manager

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TEST REPORT

ISC 9001 2015. ISC 14301 2015. OHSAS 18001 2007 Centified Organization Recognized By Ministry of Environment & Forests (MoEF), New Deth. Accordated By Quality Council of India by - NASET & NASE. Approved by - & Fond Sallery & Standards Authority of India Unique FSS Act. & Bureau of Indian Standards (BIS) - & Agricultural & Process Food Products Export Development Authority (APEDA) & Export respection council (EIC) & Agreest

Test Report No. : AL Issued To : M/s Katamati Iron (M/s TATA Steel L	Mines	Sample Inward No. Inward Date Reference Reference Date	dated 25.09.2020 2020 MON-09.4 14-3 IE09.2020 W.O 3000132460*962 I5.05.2020	Page 2 Analysis Start Analysis End Sample Category	of 3 18 09 2020 25,09,2020 Water
Sample Name Ground Water	Sample Source Dugwell	Sample Particulars Sample Code-GW-3			y Received & 250 ml
Sample Co Anacon Representa	The state of the s	Sampling Date 15.09.2020	Sampling Time Not Mentioned	Sampling Dalofiri-I	Location

TEST DESIGNED

s.n.	Test Parameter	Test Parameter Measurement Unit	Test Method	Requiren IS 1056 (Drinking Wate Including Am	Test Result	
				Acceptable Limit	Permissible	
Ш	Chemical Testing 2. Residues In Water					
20	Iron (as Fe)	mg/l	IS 3025 (Part 2): 2019	1.0	No relaxation	0.14
21	Copper (as Cu)	mg/l	IS 3025 (Part 2): 2019	0.05	1.5	BDL(DL-0.03)
22	Manganese (as Mn)	mg/l	IS 3025 (Part 2): 2019	0.1	0.3	BDL(DL-0.05)
23	Mercury (as Hg)	mg/l	IS: 3025 (Part 48): 1994	0.001	No relaution	BDL(DL-0.0005
24	Cadmium (as Cd)	mg/I	IS: 3025 (Part 41): 1992	0.003	No relaxation	BDL(DL-0.001)
25	Selenium (as Se)	mg/l	IS: 3025 (Part 56) 2003	0.01	No relaxation	BDL(DL-0.001)
26	Arsenic (as As)	mg/l	IS: 3025 (Part 37): 1988	0.01	No relaxation	BDL(DL-0.01)
27	Aluminum (us Ai)	mg/l	IS 15302 : 2003	0.03	0.2	BDL(DL-0.01)
28	Lead (as Pb)	mg/l	IS 3025 (Part 47) : 2003	0.01	No relaxation	BDL(DL-0.001)
29	Zinc (as Zn)	mg/l	IS 3025 (Part 2): 2019	4	15	BDL(DL-0.1)
30	Total Chromium (as Cr)	mg/l	18 3025 (Part 2): 2019	0.05	No relaxation	BDL(DL-0.03)
31	Boron (as B)	mg/l	IS 3025 (Pan 2) : 2019	0.5	2.4	
32	Polynuclear promatic hydrocarbon (PAH)	μg/1 -	ANy RES-30	0.1	No relaxation	BDL(DL-0.03)
33	Mineral Oil	mu/l	ANgr RES-40	0.5	No relaxation	BDL(DL-0.001)

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© UK. Indicates detection limit of instruments suched and shall be considered as 'about' © ANg. HESS-30 & 40: Indicate validated method.

Verified By

Pallert Harkare Technical Manager

Technical Manager

Anthorized Signatory

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

Head Office: 60. Bajoraphic Nagar, Naggor - 440033 India: Pt. No. 8372404924, Email: Supportigionecon in Lab. FF 34-35, Food Pers, 5 Star Estate. MIDC Bustion. Negotr - 441122. Mos. No. 5373287479. Error. letingp@anacon.in. Bupport Help Lines: Technical (9373287475). Error. letingp@anacon.in. Offer (8598)45450). Error. export@anacon.in. Accounts Division (9326960091, 9372960079) Emist: accounts@snacon.m You may also visit us at www.anacontationatories.com





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B Denicul of India Standards (81)

TEST REPORT

Aproved by • Food Salety & Standards Authority of India Lindar FSS Act • Bureau of Indian Standards (BIC)

• Agricultural & Process Food Products Export Development Authority (APEDA) • Export inspection counts (EIC) • Agricultural & Process Food Products Export Development Authority (APEDA) • Export inspection counts (EIC) • Agricultural & Process Food Products Export Development Authority (APEDA) • Export inspection (Incident Standards)

Fest Report No. : ALPE 25002020201-4 dmed 25,09,2020 Page Vot 3 Sample Inward No. 18 09 2020 Issued To: Analysis Start M/s Kutamati Iron Mines loward Date 18.09.2020 Analysis Fad 25 09 2020 (M's TATA Steel Limited) Reference W.O - 3000132468962 Reference Date 15.05.2020 Sample Category Water Sample Name Sample Source Sample Particulars Sample Condition Quantity Received Ground Water Dagwell Sample Code-OW-3 Scaled & Ice Preserved 2.0 Ltr & 250 ml Sample Collected By Sampling Date Sampling Time Sampling Location Anacon Representative Mr. K. Pundey 15.09 2020 Not Mentioned Delafiri-1 Village

			TEST RESULTS			
S.N.	Test Parameter	Measurement Unit	Feet Method	Requirem IS 1686 (Drinking Water Including Am	Test Result	
				Acceptable Limit	Permissible Limit *	
11	Chemical Festing 2. Recidues by Water					
34	Pesticide Residues					
1	Alpha-HCH	µg/l	ANyr RES-28	0.01	No relaxation	BDL(DL-0.0)
10	Beta HCH	ид/1	ANy RES-28	0.04	No relaxation	BDL(DL-0.0
111	Delta-HCH	µg/l	ANgr RES-28	0.04	No relaxation	BDL/DL-0.0
(V	Alachlor	не/1	ANur RES-28	20	No relaxation	BDL(DL-0.0
V	Aldrin / Dicidrin	pg/l	ANgr RES-28	0.03	No relaxation	BDL(DL-0 0
Vi	Atrazine	μ <u>μ</u> /1	ANur RES-29	2	No relaxation	BDL(DL-0.0
vii-	Butachlor	μg/1	ANgr RES-29	125	No relaxation	BDL/DL-0.0
viii	Chlorpyrilas	µg/1	ANgr RES-28	30	No relaxation	BDL(DL-0.0
ix	DDT and its homers	ид/1	ANgr RES-28		No relaxation	BDL(DL-0.0
x	Gamms - HCH (Lindane)	µg/l	ANur RES-28	2	No relexation	BDL(DL-0.0
XI.	2.4-Dichlorophenovyacetie acid	pg/l	ANgr RES-29	30	No relaxation	BDL(DL-0.0
KIÏ	Endosulphan	pg/l	ANur RES-28	0.4	No relaxation	BDL(DL-0.0
viii	Ethion	µg/1	ANgr RES-29	3	No relaxation	BDL(DL-0.0
civ	Isoproturer	µg/l	ANyr RES-29	9	No relaxation	BDL(DL-0.8
NV.	Malubion	ug/l	ANgr RES-29	190	No relaxation	BDL(Dt0.0
(vi	Methyl Paramion	ngl	ANgr RES-20	0.3	No relaxation	BDL(DL-0.0
vii	Monocrotophos	ugil	ANgr RES-29	I Reserved In the second	No relaxation	BDL(DL-0.0
villi	Phorate	ug/t	ANgr RES-29	2 1000	No refusation	BDL(DL-0.0

NOTES © Please of extensive Comment for a financial to antique the authorizes of the comment of the product of the comment of

REMARKS: As requested by the client, sumple was tested for above parameters only Sample compiles with 18-16500-3012, for tests conducted, final using that is is fit for drinking propose with respect to tested param

Verified By

Sonali Gharpure **Technical Manager** **Authorized Signatory**

)Gaw

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

Head Office: 53 Suppreting Negat: Nagatir - 440033 India, Ph. No. 0373404924, Ernat: suppreligenation in Lab. FP 34-35, Food Park, 5 Star Estate, MIDC 8x5bort Nagatir - 441925, Mills. No. 0373287475, Ernat: suppreligenation in Support Help Lines: Technical (8373287475), Ernat: stoppinglenation in Office (869845450), Ernat: suppreligenation in Accounts Division (812698008), 9372980079, Ernat: accounts garagenation. You may also visit us at also share nationatorators





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TEST REPORT

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l'est Report No. : AL	PL/25092020/01-4		dated 25,09,2020		Page 1 of 3		
Issued To: M/s Katamati Iron (M/s TATA Steel I		Sample Inward No. Inward Date Reference Reference Date	2020 MON -09/4/14-4 18/09/2020 W.O 3000132460/962 15:05:2020	Analy	sis Start sis End e Category	IB 09.2620 25.09.2026 Water	
Sample Name Sample Source Ground Water Dugwell		Sample Particulars Sample Code-GW-4				Received & 250 ml	
Sample Collected By Ansenn Representative Mr. K. Pandey		Sampling Date 15.09.2020	Sampling Time Not Mentioned		Sampling Location Village Nr. Tata Sponge		

TEST RESULTS Requirement as per 15 10500 : 2012 Measurement (Drinking Water Specifications) S.N. **Test Parameter Test Method** Test Result Limit Including Amendment No. 2 Acceptable Permissil Limit Limit Biological Testing 1.Water Per 100 mi IS 15185 : 2016 Escherichia cult Absent Absent Absent Chemical Testing 1, Water pH value Turbidity 11 IS 3025 (Part 11): 1983 6.5 to 8.5 40 at 25 (IS 3025 (Part 10): 1984 IS 3025 (Part 4): 1983 NTU Colour Hazen unit 19 IS 3025 (Part 5) 2018 IS 3025 (Part 8) 1984 IS 3025 (Part 26) 1986 IS 3025 (Part 16): 1984 Odour Agreeable Agrecabl Agreeable Agreeable Agrorable Agreeable Free residual chlorine Total desolved solids mg/i Min. 0.2 500 mg/l 2000 Fluoride (as F)
Cyanide (as CN)
Chloride (as Cl)
Total Alkalinity (as CaCO₃) 15 3025 (Part 60) : 2008 15 3025 (Part 27) : 1986 15 3025 (Part 32) : 1988 0.24 mg/l 1.5 0.05 BDL(DL-0.005 mg/l 250 mg/l 1000 IS 3025 (Part 23): 1986 mg/l 200 E450 IS 3025 (Part 21) 2009 Total hardness (as CaCO₃) mg/l 200 600 IS 3025 (Part 40): 1991 Calcium (as Ca) mg/l 200 49.89 Magnesium (as Mg) IS 3025 (Part 46): 1994 30 mg/I 100 8.67 Sulphate (as SO₄) Nitrate (as NO₁) 1S 3025 (Part 24) 1986 APHA Method 23rd Edition 200 mg/i 4000 mg/i 45 5.42 Phenolic compounds 18 mg/l IS 3025 (Part 43): 1992 0.001 0.002 BDL(DL-0.001) (as C_aH_cOH) Anionic detergents 19 mg/l IS 13428 : 2005 Annex K 0.2 BDL(DL-0.01) (as MBAS)

NOTES:

Note the water mark. Uniqued Feel Report" to condition the audienticals of this report. If Exacits chall be referred to benefit completes and applicable to tended parameters out-technical encape in fail without prior scenes approved of Asserts Labs. II Labsitis of Asserts Labs is instead to intend to intend mount only. If Non-providable and disported off offer 10 days and 15 days respectively, from the date of mose of Tee Report, welfare possible otherwise. If 'mg F is expended to 'pg. I'm F is e • Test report shall not be reproduced except on full without prior were perceivable samplexy shall be dispoted off after 30 days and 15 days to fire test no. 7 is not relevant. • BDE: Below detection limit • 14. Indi-

Verified By

Sugh

Technical Manager

Technical Manager

Authorized Signatories

upa Tankhiwalc

Sr. Technical Manager

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

Head Office: 80, Septretho Naper, Nagour - 440103 tons. Ph. No. 9372404024. Email: support@anacon.in. Lab : FP 34-35, Food Park 5 Star Estate: MIDC Sulton Nagyor - 841172 Mids for 9373257475, Erral -lab/goliperacos, in Support Help Lines: Technical (9373267475) Enail: Integrigation in Other (1698)45450; Crest: export@anacus in Accounts Division (9126960081, 617296081%) Empl. accovering analysis You may also visit us at elect shact half-trailiness com-





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\$\Phi\$ Food Safety & Standards Authority of India Chider FSS Act - \$\Phi\$ Bureau of Indian Standards (BIS)

\$\Phi\$ Agricultural & Process Food Products Export Development Authority (APEDA) - \$\Phi\$ Export Impection council (EIC) - \$\Phi\$ Agricultural & Process Food Products (EVC) - \$\Phi\$ Agricultural & Process Food Products (EVC) - \$\Phi\$ Agricultural & \$\Phi\$ A

TEST REPORT

Test Report No.: ALPL 25092020/01-4 dated 25.09:2020 Page 3 of 1 18.09.2020 Issued To: Sample Junard No. 2020/MON-09/4/14-4 M/s Katamati Iron Mines Inward Date 18 (89.2020) Analysis End 25 09 2020 (M's TATA Steel Limited) W Os- 2000132460 962 Reference Sample Category Water 15.05.2020 Reference Date Sample Name Sample Source Sample Particulars Sample Condition Quantity Received

Sample Name Sample Source Sample Particulars Sample Condition Quantity Received
Ground Water Duywell Sample Code-GW-4 Scaled & fee Preserved 2.01 tr & 250 mi
Sample Collected By Sampling Date Sampling Time Sampling Location
Assess Representative Mr. K. Fanday 15 50 2020 Not Meetioned Village Mr. Tata Sponge

TEST RESULTS

s.n.	Test Parameter	Measurement Unit	Test Method	Requirem IS 105d (Drinking Water Including Am	Test Result	
				Acceptable Limit	Permissible Limit	
Ш	Chemical Testing 2. Residues In Water					
20	Iron (as Fc)	mg/l	IS 3025 (Part 2): 2019	1.0	No relaxation	0.13
21	Copper (as Cu)	mg/l	IS 3025 (Part 2): 2019	0.05	1.5	BDL(DL-8 01)
22	Manganese (as Mn)	mg1	IS 3025 (Part 2): 2019	0.1	0.3	BDL(DL-0.05
23	Mercury (as Hg)	mg/l	IS: 3025 (Part 48): 1994	0.001	No relaxation	BDL(DL-0 000)
24	Cadmium (as Cd)	mg/l	IS: 3025 (Part 41): 1992	0.003	No relaxation	BDL(DL-0.00)
25	Selenium (as Se)	mg/l	15 3025 (Part So) : 2003	0.01	No relaxation	BOLIDE-0 001
26	Arsenic (as As)	mg/l	IS:3025 (Part 37):1988	0.01	No relaxation	BDLiDL-0.91
27	Aluminium (as Al)	mg/l	IS 15302 : 2003	0.03	0.2	BDL(DL-0.01
28	Lead (as Ph)	mg/l	IS 3025 (Part 47): 2003	0.01	No relaxation	BOLIDE-0.001
29	Zinc (as Zn)	mg/l	15 3025 (Part 2): 2019	E-13	15	RDL(DL-0.1)
30	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2): 2019	0.05	No relaxation	BDL(DL-0.03)
31	Boron (as H)	mg/l	IS 3025 (Part 2): 2019	0.5	2.4	BDL(DL-0 I)
32	Polymecicar aroundar hydrocarbon (PAII)	при при	ANgr RES-30	0.1	No relaxation	BDL(DL-0.03)
33	Mineral Oil	mg/l	ANgr RES-40	0.5	No relaxation	BDL(DL-0.001)

NOTES Office an internal "logical for the control of the period of the p

Verified By

Pultavi Harkare Fechnical Manager Sonali Gharpare Technical Manager **Authorized Signatury**

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

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Support Help Linea: Touhnical (937387475). Email: labngs-@anacon.in. Clifer (8638945450). Email: support@anacon.in.
Accounts Division (9375896061): 9372950079). Email: accounts @anacon.in.
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TEST REPORT of Products Export Development Authority (APEDA) . Export Inspection council (EIC) . Agmost

est Report No. : At Pt./2509/2020 61-4 Issued To : M/s Katamati Iron Mines (M/s TATA Steel Limited)		Sample Inward No. Inward Date Reference Reference Date	dated 25.09.2020 2020 MON-09-4 14-4 18.09.2020 W.G-3080132460/962 15.05.2020	Page 3 Analysis Start Analysis End Sample Category	18 09 2026 25 09 2020 Water
Sample Name Sample Source Ground Water Dugwell		Sample Particulars Sample Code-GW-4			
Sample Collected By Anacon Representative Mr. K. Pandey		Sampling Date 15.09.2020	Sampling Time Not Mentioned	Sampling I Village Nr. T	

			TEST RESULTS						
S.N.	Yest Parameter	Measurement Unit	Test Method	Requirem 18 1050 (Drinking Wate Including Am	Test Result				
				Acceptable Limit	Permissible Limit *				
н	Chemical Testing 2. Residues In Water								
34	Pesticide Residues								
1	Alpha-HCH	µg/l	ANgr RES-28	0.01	No relaxation	BDL(DL-0.01			
44	Beta HCH	μg/1	ANgr RES-28	0.04	No relaxation	BDL(DL-0.03			
101	Delta-HCH	µg/l	ANgr RES-28	0.04	No relaxation	BDL(DL-0.0)			
IV	Alachfor	Γομ	ANgr RES-28	20	No relaxation	BDL(DL-0.0)			
V	Aldrin / Dieldrin	ug/l	ANgr RES-28	0.03	No relaxation	BDL(DL-0.03			
11	Atrazine	др/1	ANgr RES-29	2	No relaxation	BDL(DL-0.03			
Vii	Butachlor	μg1	ANgr RES-29	125	No relaxation	BDL(DL-0.0)			
VIII	Chlorpyrifos	Lgu Pau	ANgr RES-28	1 ,50	No relaxation	BDL(DL-0.03			
ix	DDT and its Isomers	µg/l	ANgr RES-28		No relaxation	BDL(DL-0.03			
X	Gamma - HCH (Lindane)	μg/1	ANgr RES-28	2	No relaxation	BDL(DL-0.03			
Xi	2,4-Dichlorophenoxyucetic acid	µg1	ANgr RES-29	10	No relaxation	BDL(DL-0.03			
XII	Endosulphan	μg/1	ANgr RES-28	0.4	No relaxation	BDL(DL-0.03			
XIII.	Ethion	µg/l	ANgr RES-29	3	No relaxation	BDL(DL-0.03			
xiv	Isoproturon	ng/l	ANgr RES-29	9	No relaxation	BDL(DL-0.03			
NV	Malathion	ugi	ANyr RES-29	190	"No relaxation	BDL/DL-0.03			
XVI.	Methyl Parathion	µg/l	ANgr RES-29	0.3	No relaxation	BDL(DL-0.03			
XVII	Monocrotophos	µg/1	ANgr RES-29	Name of Street	No relaxation	BDL(DL-0.03			
vviii	Phorate	ндТ	ANgr RES-29	2	No relaxation	BDL/DL-0.03			

NOTES: © Please six voluments. 'Engined Test Report' to confirm the authorizity of this report © Results shall be referred to nated samples; and applicable to total quantoties code © Test report shall not be reproduced except to full voltane prior wristen approval of Assects. Labs. © Liability of Assects. Labs in Seated to invested amount code. © Non-persidable samples shall be disposed off after 30 days and 15 days respectively from the date of some of Test Report, unless specified otherwise. © 'regs' is expressed to 'regs' is expressed to 'regs' in expressed to 'regs' in the test of the test of the code of test of the test of the code of test of the code of the test o

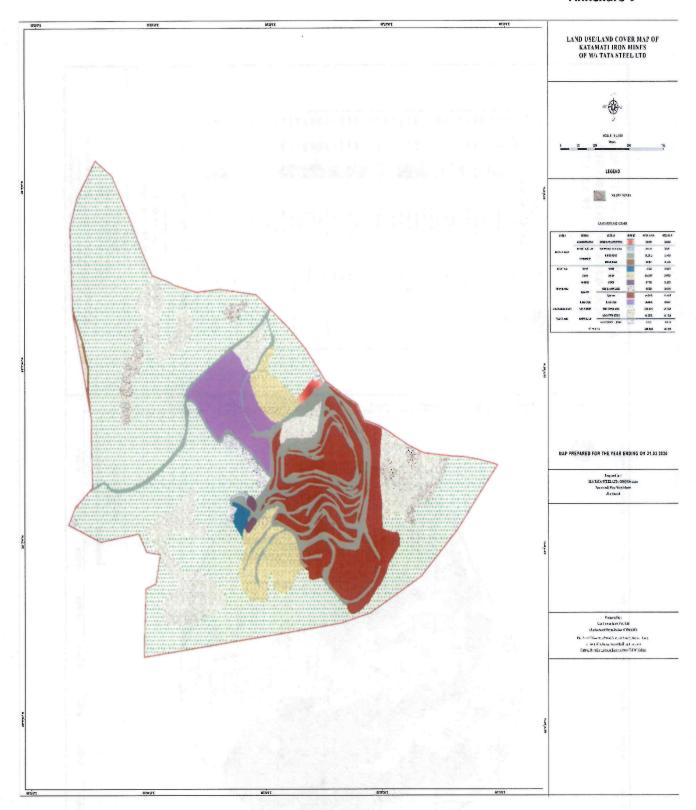
REMARKS: As requested by the client, sample was lested for above parameters only. Sample complies with a\$110500-2012, for taxis conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

Verified By

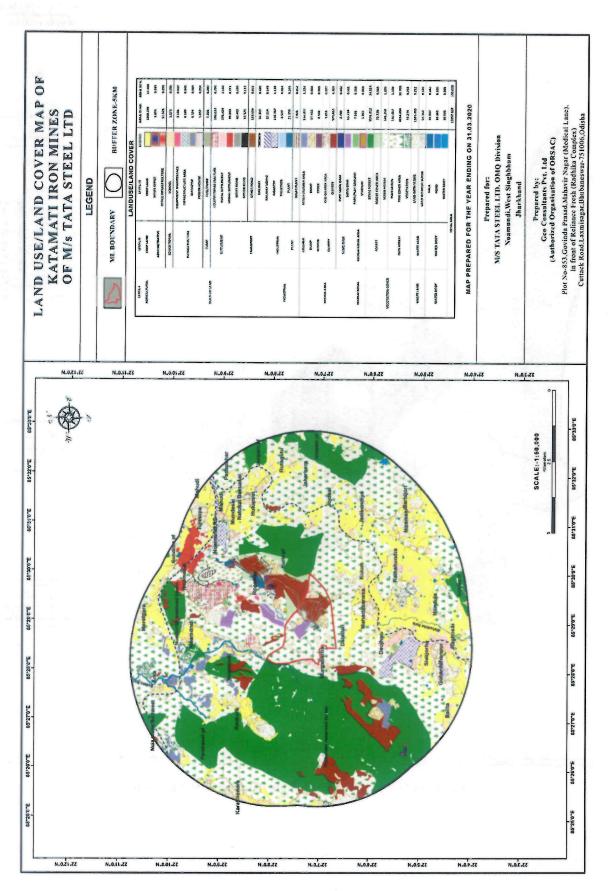
Sonali Gharpure Technical Manager Authorized Signatory

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

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Land use/Land cover (Core Zone) – Katamati Iron Mine



Land use/Land cover (Buffer Zone) - Katamati Iron Min

AVERAGE AIR QUALITY REPORT (CORE ZONE

	Month	PM ₁₀	Apr 20	May 20	Jun 20 58.9	Jul 20 58.9	Aug 20 46.9	Sep 20 56.5
N		PM _{2.5}			29.5	34.0	25.9	25.6
30 3:0	<u>_</u>	202			8.7	8.6	7.0	7.4
9	rice	Š			17.9	17.4	14.8	15.6
		8			0.427	0.353	0.320	0.347
		PM ₁₀			62.2	56.7	50.3	55.9
AVENAGE AIN COALITY REPORT (CORE ZONE)	Near	PM _{2.5}			33.5	28.5	27.7	24.2
	Near Metso Plant	202			9.1	8.0	7.6	7.5
	Plant	NOX			18.2	15.9	14.4	17.3
ALII		8			0.453	0.349	0.314	0.323
		PM ₁₀			63.4	64.9	45.3	59.7
2 2 2 3	Near	PM _{2.5} SO ₂			31.7	34.3	24.9	30.8
2 7 1	Near View Point	202			9.6	8.5	6.1	8.3
ZON NO	oint	NON			19.2	17.1	11.1	16.6
		8			0.470	0.373	0.279	0.339
		PM10			68.5	67.1	49.4	58.6
	Neal	PM _{2.5}			41.2	38.5	26.8	26.0
	Near Murga Gate	202			10.5	9.0	6.4	7.8
		NOX			18.5	18.2	13.2	18.2
		8			0.435	0.362	0.292	0.314

AVERAGE AIR QUALITY REPORT (BUFFER ZONE)

	8			0.321	0.294	0.288	0.284
lage	NOx			18.3	14.1	14.3	14.3
Balita Village	202			8.9	6.7	6.9	6.5
Ba	PM _{2.5}			27.2	23.9	22.1	20.0
	PM ₁₀			60.5	56.0	55.6	54.9
	8			0.335	7.0 15.0 0.327	0.265	0.309
illage	NOX			17.5	15.0	12.3	15.1
Kitabeda Village	202			7.4	7.0	6.5	6.8
Kitab	PM _{2.5}			24.0	22.7	19.4	21.6
	PM ₁₀			57.3	57.8	48.4	54.4
Miralgara Village Kitabeda Village	8			0.304	0.257	0.209	0.201
illage	NOX			20.5	14.1	10.7	8.9
Miralgara Village	202			7.6	8.9	5.5	0.9
Miral	PM _{2.5}			22.0	23.0	16.8	20.1
	PM ₁₀			51.7	52.8	45.6	48.9
	8			0.271	0.319	0.244	0.227
llage	XON			17.1	14.4	11.9	9.7
Tankura Village	SO ₂			8.7	7.6	5.8	6.8
Tanl	PM _{2.5}			25.8	24.7	17.7	19.1
	PM ₁₀			55.0	55.5	43.9	46.5
Month		Apr 20	May 20	Jun 20	Jul 20	Aug 20	Sep 20

Unit of measurement for all parameters except CO $\,$ is $\mu g/m^3$. Co is in mg/m^3





Environmental Expenditure (2019-20)

Katamati Iron Mine, TATA Steel Ltd

SI.		Expenditure (Lakhs)					
No.	Heads / Item	Capital	Recurring				
1.	Development & maintenance of office garden		08,00,000.00				
2.	Development of nursery & sapling for plantation		01,45,000.00				
3.	Tree Planation & maintenance in & around Katamati		04,10,000.00				
4.	Environmental monitoring in & around Katamati		02,95,000.00				
5.	CAAQMS maintenance & operation & display board	and a special	05,45,000.00				
6.	Geo-jute laying & maintenance on slime at Katamati		10,70,000.00				
7.	Operation of mobile water sprinklers		62,87,161.78				
8.	Operation of fixed water sprinklers on Haul road		07,92,000.00				
9.	Cleaning of garland drain & settling pits	And Area	89,521.50				
10.	Annual maintenance of dry fog system at METSO	Acc sized	09,55,000.00				
11.	Toewall extension		03,50,000.00				
12.	HEMM maintenance at mega center for Katamati		04,11,696.00				
	Total 1,21,50,379.2						
Env	Environmental Expenditure for the year 2019-20 at Katamati Iron Mine =~1.21Cr						

