



TSL/SAR/084/FY24
Date: 28-11-2023

To,
Dy. Director General,
Integrated Regional Office,
Ministry of Environment and Forest & Climate Change, Eastern Region Office,
A/3, Chandrasekharpur, Bhubaneswar-751023

Subject: Submission of half-yearly compliance report on the stipulated environmental clearance terms and conditions in respect of Saruabil Chromite Block of M/s Tata Steel Limited, for the period from April 2023 to September 2023.

Reference:

- 1) MoEF Letter Ref No: J-11015/72/2010-IA-II (M), Dated 20.07.2018
- 2) MoEF&CC's notification vide S.O-5845, dt. 28th Nov 2018

Respected Sir,

We are herewith submitting the six-monthly compliance report on the status of the implementation of the conditions stipulated in environmental clearance vested in favor of Saruabil Chromite Block of M/s Tata Steel Limited vide MoEF Letter Ref No: J-11015/72/2010-IA-II (M), dated 20.07.2018, for the period from April 2023 to September 2023 for your kind perusal.

This is in reference to the MoEF&CC's notification vide S.O-5845, dt. 28th Nov 2018, the six-monthly compliance report is being submitted only in soft copy mode, shared with your good office over e-mail @ roez.bsr-mef@nic.in and is being uploaded in Parivesh portal. As per the Vesting order No. 4174/SM IV(B)SM-11/2020 Dated 29th May' 2020 and amended vesting order No 2066/SM, SM-MC1-MISC-0020-2020, dated 07.03.2022 issued by the Office of Nodal Officer, Steel & Mines Department of Government of Odisha, above environmental clearance has been vested to Tata Steel Mining Limited (merged with Tata Steel Limited from 1st September 2023) for 50years (As per MMDR Act, 2021).

We believe the above submission is in order.

Thanking You.
Yours faithfully,
f: Tata Steel Limited


Mines Manager,
Saruabil Chromite Block

Copy to: 1. Member Secretary, State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakantha Nagar, Bhubaneswar, 751012.

TATA STEEL LIMITED

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Corporate Identity Number L27100MH1907PLC000260



Compliance Report

On

Environmental Clearance Conditions

MoEF Letter Ref No: J-11015/72/2010-IA-II (M), Dated 20.07.2018

Period: April 2023 – September 2023

Submitted By:

Saruabil Chromite Block

M/s. Tata Steel Limited

At: Saruabil, Po: Kalarangiatta, Block-Sukinda

District- Jajpur, Odisha -755028

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A. INTRODUCTION: Lease of Saruabil Chromite Block of M/s Tata Steel Limited was executed over leased area of 246.858Ha in the Sukinda Block of Jajpur District in the State of Odisha, which was previously owned by M/s. Mishrilall Mines Pvt Ltd up to March 2020. As per the Vesting order No. 4174/SM IV(B)SM-11/2020 Dated 29.05.2020 and amended vesting order No 2066/SM, SM-MC1-MISC-0020-2020, dated 07.03.2022 issued by the Office of Nodal Officer, Steel & Mines Department of Government of Odisha, Tata Steel Mining Limited has been vested with all the previous lessee's Statutory Clearances/ permissions/ NOCs for 50years (As per MMDR Act, 2021) (**Annexure - I**). The Environmental Clearance (MoEF Letter Ref No: J-11015/72/2010-IA-II (M), Dated 20.07.2018) was also vested for 50 years starting from the lease deed date on 23.06.2020. Further, Subsequent to the Scheme of Amalgamation of Tata Steel Mining Limited ('TSML' CIN No. U27109OR2004PLC009683) into and with Tata Steel Limited (CIN-L27100MH1907PLC000260) ('Scheme of Amalgamation'), and its approval and sanction by the Hon'ble National Company Law Tribunal, Cuttack Bench vide Order ('NCLT Order'), in terms of Clause 8.1 read with Clause 9.1(h) of Part I of the Scheme of Amalgamation, the captioned Scheme of Amalgamation of Tata Steel Mining Limited ('TSML') into and with Tata Steel Limited has become operative and effective from September 1, 2023 ('Effective Date'). With the above merger the legal entity of Tata Steel Mining limited has now ceased, and all its respective business and operation has become part of Tata Steel Ltd. The schematic representation of the site is depicted in the fig.1 and its layout in fig.2 below.

Fig.1: Location of Saruabil Chromite Block (Tata Steel Limited)

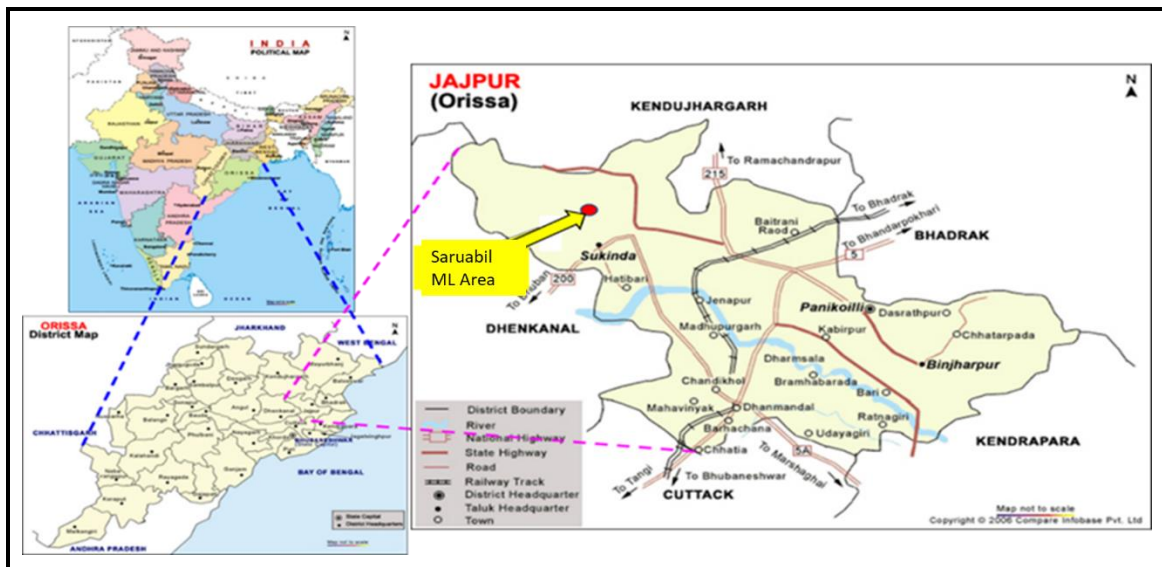
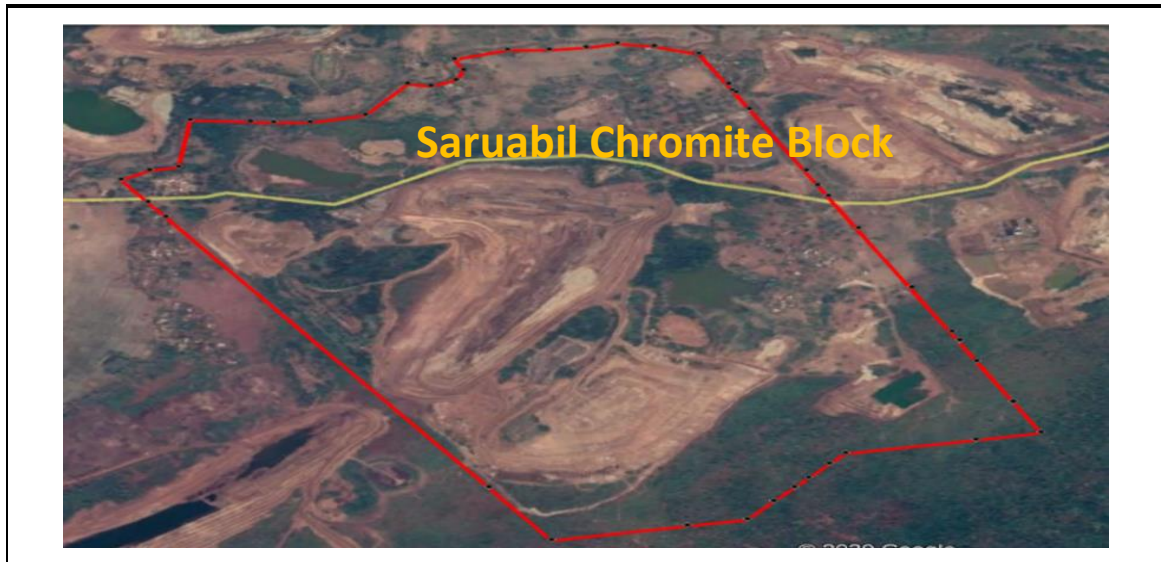


Fig.2 Mine Lay out (Aerial View of Saruabil Chromite Block)



Compliance to the Environment Clearance Letter No: J-11015/72/2010-IA-II (M), Dated 20.07.2018 in respect of Saruabil Chromite Mine for Enhancement of Chrome Ore (ROM) production from 0.136 MTPA to 0.35 MTPA by opencast mining technology located at village Saruabil in Sukinda Tehsil, District Jajpur, Odisha over an area of 246.858 Ha. The EC was vested to M/s. Tata Steel Mining Limited for 50 years as per the MMDR Act, 2021. Subsequent to the Scheme of Amalgamation of Tata Steel Mining Limited into and with Tata Steel and its approval and sanction by the Hon'ble National Company Law Tribunal, Cuttack Bench vide Order, and with Tata Steel Limited has become operative and effective from September 1, 2023 ('Effective Date').

A. Specific Condition:

Sl. No	Condition	Compliance Status (Apr'23 to Sept'23)
1.	The Environmental clearance is granted subject to outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Odisha, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.	Compliance: Agreed & Complied.
2.	This Environmental Clearance will not be operational till such time the Project proponent complies with all the statutory requirements and 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 applicable to this project.	Compliance: This project is not fall under the said Writ petition. However, the said mining lease was acquired after successful bidder in new auction process conducted by Steel & Mines Department, Govt of Odisha as per MMDR Act, 2015. In future, we will obey and complied with all the statutory requirements of the Judgment of Hon'ble Supreme Court.
3.	The Department of Mines and Geology, Government of Odisha shall ensure that mining operation shall not commence till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of judgment of Hon'ble Supreme Court dated 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.	Compliance: All the required fees and statutory payments has been made as per the MMDR Act, 2015. We are also continuously paying the Royalty and Premium amount to Govt as auction rules.

Sl. No	Condition	Compliance Status (Apr'23 to Sept'23)
4.	The Project Proponent shall obtain Consent to Operate from the State Pollution Control Board, Odisha and effectively implement all the conditions stipulated therein.	Tata Steel Limited has obtained the new CTO as consent order No. 2952 issued vide letter No. 3889/IND-I-CON-220, dt. 18/03/2023, valid till 31.03.2024 for production of 0.35 MTPA chromite ore from Saruabil Chromite Block. [Please refer to Annexure-II]
5.	The Project Proponent shall carryout sustainable and scientific mining in conformity with the approved mining plan and accordingly, strict monitoring shall be carried out by MoEF & CC, R.O. Bhubaneswar, Odisha State Pollution Control Board and Department of Mines and Steel, Government of Odisha.	Compliance: We are doing scientific Mining in conformity as per the Approved Mining Plan which was approved by Indian Bureau of Mines, GOI. Strict monitoring of Environmental Parameters, Dump management and Reclamation & rehabilitation work is being done by MoEF&CC, SPCB & DoM time to time.
6.	The Project Proponent shall carryout monitoring of air quality parameters; Letters covered under NAAQS notification, 2009 and Fugitive dust emission monitoring as per the action plan submitted to the Ministry. The frequency of monitoring shall be governed by MoEF & CC circular dated 27.05.2009 and CTO issued by Odisha State Pollution Control Board for ambient air and fugitive dust emission respectively.	Compliance: We are regularly carrying out monitoring of air quality as per NAAQS notification, 2009 and Fugitive dust emission monitoring as per the action plan submitted and CTO obtained. Air quality monitoring data is being submitted on six monthly basis to SPCB & MoEF&CC. [Please refer to Annexure-III]
7.	No mining activities will be allowed in forest area for which the Forest Clearance is not available.	Compliance: We are working only in diverted forest land as per the FC Clearance obtained in 1997, which was vested to TSML for 50 years from lease deed execution. We are already in progress for diversion of the non-diverted forest land of 14.17 ha as identified during Sabik settlement in 2015. [Please refer to Annexure-IV]
8.	The Environmental Clearance is subject to obtaining requisite NBWL Clearance, if any, from the Standing Committee of National Board for Wildlife for Mining project.	Compliance: There is no existing Wildlife Corridor within 10 kms radius of ML area. However, previous lessee has obtained the NBWL clearance and same is vested to TSL. [Please refer to Annexure-V]
9.	Project Proponent should plant only native species for green belt development. Plantation of local species should be carried out during the Monsoon Season	Compliance: In general, we have planted the local species in addition to some common plants (having medicinal values) for development of green belt. The massive plantation programme is carried out as per Approve Mining plan. Plantation of native saplings are carried out during current year monsoon season for green belt development and overburden dump reclamation. The species like Simarua, Teak, Krushna Chuda, Kaju, Bada Chakhunda, Gambhari, Neem, Maha Neem, Arjun, Karanja, Chatiyana, Jamun & Mango are planted. For the FY 2023-24, we have planted 2ha overburden dump and gap plantation is also carried out during monsoon season. [Please refer to Annexure-VI]
10.	The Proponent shall install online Ambient Air Quality Monitoring System and there should be system for display of digital AAQ data within 03 months at least at three locations as per wind direction. Online provisions of pH and turbidity meters at discharge points of STP and ETP and also at water storage ponds in the mining area may be made. Project Proponent should display the result digitally in front of the main Gate of the mine site.	Compliance: a) We are presently carrying out AAQ monitoring in four (04) stations in core zone as per wind direction. b) We have installed online ETP water monitoring station and the Real Time Data is transferred to OSPCB server. c) Both AAQ Data and ETP effluent data are being displayed at Digital Display Board installed at Main Gate of ML Area. [Please refer to Annexure-III]
11.	Project Proponent shall obtain the necessary prior permission from the Central Ground Water Authority (CGWA) in case of intersecting the Ground water table. The intersecting ground	Compliance: We are having the vested CGWA NOC vide letter No. 21-4(73)/CGWA/SER/2008/686 dated 16.07.2019. Report on six monthly basis on changes in Ground water level and quality is being submitted to the Regional Office of the

Sl. No	Condition	Compliance Status (Apr'23 to Sept'23)
	water table can only be commence after conducting detailed hydrogeological study and necessary permission from the CGWA/MoEF&CC. The Report on six monthly basis on changes in Ground water level and quality shall be submitted to the Regional Office of the Ministry, CGWA and State Pollution Control Board.	Ministry, CGWA and State Pollution Control Board. We have already conducted comprehensive hydrogeology study of area and applied the fresh application vide application Number: 21-4/2951/OR/MIN/2021, dt 29.09.2021 on the account of M/s. Tata Steel Limited. [Please refer to Annexure-I & III]
12.	The project should also implement community Development and Welfare programme in the area of Health, Education and Environmental Protection.	Compliance: Tata Steel Limited is conducting following CSR activities through Tata Steel Foundation <ul style="list-style-type: none"> ➤ For Education: working on access, learning enhancement & governance of Govt. schools. TSML is working with 159 schools under Sukinda Block. ➤ For ST/SC students fellowship is being provided under the name of "Jyoti Fellowship". Pre matric coaching, spoken English & Computer skill (NIIT foundation), Akansha project and Green school project ➤ Under Health vertical TSL is working on preventive & curative health aspects of community. TSL is running two static clinic one at Sukinda & the other at Saruabil mines. Both the clinic provides free diagnosis & medicine to the community people. Two ambulances are placed for any emergency. ➤ Started a Multiskill training center for youths at Saruabil. ➤ We have also provided Nylon Net & Jhara (handy water sprinkler for kitchen garden). TSML through its CSR activities ensures drinking water supply to villages through tanker in the summer season. Other activities like pond creation, Bio-flock fish cultivation and horticulture plot development are also being carried out in Saruabil mines area. [Please refer to Annexure-VII]
13.	Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented. The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.	Compliance: We have appointed Utkal Poly Clinic, Bhubaneswar (An occupational Health Expert Organisation) for the said Job. The health check-up is going on regular basis. In order to prevent the occupational health hazard, M/s Tata Steel Limited is being carried out entry level and periodical medical examination under Section 69 of the Factories Act by the certified Surgeon and it will be continued. M/s TSL has established one non-bed dispensary to carried out health check-up program by qualified medical Surgeon Day to day basis and fist-add to any injury. Our TSF unit has conducted medical camps in nearby community for malaria, Nutrition, Vector Born disease, cataract etc in recent days. [Please refer to Annexure-VIII]
14.	Project Proponent shall run an awareness campaign on sanitation for women and utilization of Sanitary Napkin and also to distribute the Sanitary Napkin/pads to the women and provide the training for proper disposal.	Compliance: As a part of our CSR activities, TSF (previously TSRDS) dept. of Tata Steel conducted such program with the help different village workers and village development societies in nearby villages and distributed Sanitary Napkin/pads to the women and provide the training for proper disposal.
15.	The Regular monitoring of ground water table to be carried out by establishing a network of existing wells and constructing new piezometers. The reports shall be submitted at interval of six	Compliance: Presently there are three (03) nos. of bore well and one no. of tube well ground water monitoring stations are selected for level and quality analysis in and around Mine lease area. We have Installed two piezometers cum automatic

Sl. No	Condition	Compliance Status (Apr'23 to Sept'23)
	months to the Regional Office of the Ministry and State Pollution Control Board.	water level recorder with data transfer facility in mine lease area. We are also conducting regular monitoring of ground water of the open wells/dug wells located around the nearby villages on quarterly basis and all the data are being submitted to OSPCB on quarterly basis. The data so collected is submitted 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 in half yearly basis. [Please refer to Annexure-III]
16.	The water balance/ water auditing shall be carried out and measures for reducing the consumption of water shall be taken up and regional office of the Ministry and State Pollution Control Board.	Compliance: We have already place work order for the Water Audit to The Energy and Resources Institute (TERI), New Delhi. The work is in progress, after the audit report preparation, copy of the same will be submitted to the Ministry. Necessary water conservation and ground water recharge structures are being constructed in and around the mine lease for recharge of ground water.
17.	The Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted to the at interval of six months to the Regional Office of the Ministry and State Pollution Control Board.	Compliance: Regular monitoring of water quality upstream and downstream of water bodies are being carried out on monthly basis. The monitoring data is being submitted to Regional Office of the Ministry and State Pollution Control Board, Odisha in every six months basis. [Please refer to Annexure-III]
18.	The Plantation/Green belt at the periphery of the water body, particularly on eastern and western boundaries, shall be maintained in the mined-out area in order to reduce the loss of surface water.	Compliance: We do not have any water bodies at eastern, western and southern boundary of our ML area. However, we will be carried out plantation as per approve mining plan to develop 7.5meter green belt around the mine lease area. The safety Zone plantation is being done in an area of 0.8ha around the mines lease area. [Please refer to Annexure-VI]

B. General Conditions of Environmental Clearance

1.	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forest and Climate Change 5 years in advance of final mine closure for approval.	Compliance: Final Mine Closure Plan along with details of Corpus Fund will be submitted to the Ministry of Environment, Forest and Climate Change 2 years in advance of final mine closure for approval.
2.	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment, Forest and Climate Change.	Compliance: There is no change in mining technology and scope of working. Mine is operated within the scope of the present EC. We strictly follow the Approved Mining Plan.
3.	No change in the calendar plan including excavation, quantum of mineral and waste should be made.	Compliance: There is no change in the calendar plan including excavation, quantum of mineral and waste. Aforesaid operations are carried out as per the Approved Mining Plan.
4.	The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) for the project.	Compliance: The previous Central Ground Water Authority NOC is vested to TSL for dewatering and withdrawal of water (ground water) for the project. We have already obtained the ground water allocation letter from Executive Engineer, Irrigation division, Jarka for withdrawal of ground water. Hydrogeology study is carried out and fresh CGWA application was submitted vide application Number: 21-4/2951/OR/MIN/2021, dt 29.09.2021 for fresh CGWA NOC. [Please refer to Annexure-IX]

Sl. No	Condition	Compliance Status (Apr'23 to Sept'23)
5.	Mining shall be carried out as per the provisions outlined in mining plan approved by IBM as well as by abiding to the guidelines of Directorate General Mines Safety (DGMS).	Compliance: Mining operation is being carried out as per the provisions outlined in the Mining Plan approved by IBM as well as by abiding to the guidelines of Directorate General Mines Safety (DGMS).
6.	The project proponent shall carry out scientific investigation in respect of "Blast induced ground vibration, fly rock & air blast". Based on this study, Project Proponent should design an effective blast design to curb blast induced menace and public annoyance. The Report shall be submitted to the Regional Office of the Ministry.	Compliance: We have given the work order to NIT Rourkela for conducting Blast induced ground vibration, fly rock & air blast study. The study is completed, and the report is being submitted to DGMS for approval. The report is also attached as Annexure - X .
7.	The lands which are not owned by Proponent, mining will be carried out only after obtaining the consents from all the concerned land owners as per the provisions of the Mineral Concession Rules, 1960 and MMDR Act, 1957.	Compliance: We follow the provisions as per lease deed execution. The mining activity is being carried out only in leased land as per the provisions of the Mineral Concession Rules, 1960 and MMDR Act, 1957, and amendments thereof.
8.	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, Forest and Climate Change its Regional Office.	Compliance: As per Gazette Notification No. S.O. 719(E) dated 14 th Feb 2023 regarding submission of a copy of the Digital Aerial Images under Rule 34A of MCDR 2017 to the State Government while submitting Digital Aerial Images to Indian Bureau of Mines. We will be submitted the drone image with land use change compared to 2020 vs 2023 to Ministry of Environment, Forest and Climate Change its Regional Office soon.
9.	The critical parameters as per the Notification 2009 such as PM ₁₀ , PM _{2.5} , NO ₂ , and SO ₂ etc. in the ambient air within the impact zone, peak particle velocity at 306m 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, Forest and Climate Change shall also be referred in this regard for its compliance.	Compliance: We are having AAQ monitoring station for monitoring of PM ₁₀ , PM _{2.5} , NO ₂ , and SO ₂ at the nearest habitation Village Saruabil which is within 300 mtrs of ML area. The quality of discharged water is being monitored regularly for the parameters such as pH, Total Suspended Solids (TSS) and Cr(VI) and real-time data will be transferred directly to the SPCB server. All the monitored data is being displayed on a display board at the mines main gate for public domain. [Please refer to Annexure-III]
10.	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM ₁₀ and PM _{2.5} such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all the sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard. Monitoring of Ambient Air Quality to be carried out based on the Notification 2009 as amended from time to time by the Central Pollution Control Board.	Compliance: Regular water sprinkling is being carried out in critical areas such as haul road, loading and unloading point and transfer points to minimize the air pollution like PM ₁₀ and PM _{2.5} . Fugitive dust emissions from all the sources is also controlled regularly by water sprinkling in the operation haul road. The Ambient Air Quality parameters are conformed to the prescribed standards of Central Pollution Control Board and stipulated conditions of Consent to Operate. [Please refer to Annexure-III]
11.	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing	Compliance: Regular monitoring of ground water level and quality is carried out in three (03) bore well inside the mine lease area. Quarterly ground water level and quality is also

Sl. No	Condition	Compliance Status (Apr'23 to Sept'23)
	wells and constructing new piezometers during the mining operation. The project Proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations. The monitoring shall be carried out four times in a year pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board.	monitored from tube well and open wells in buffer zone. The data is being submitted to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board regularly. [Please refer to Annexure-III]
12	Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table.	Compliance: We are not disturbing the local water bodies. We have made water project by constructing water harvesting ponds in different villages to harvest, supply and recharge of water. We are also providing drinking water to the nearby villagers for their use during water scarcity.
13	Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.	Compliance: Monthly monitoring of water quality upstream and downstream of Damsala Nalla is being carried out and record of monitoring data is being maintained and submitted to MoEF&CC, CGWA and SPCB, Odisha six monthly basis. [Please refer to Annexure-III]
14	Transportation of the minerals by road passing through the village shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals so that the impact of sound, dust and accidents could be mitigated. The project proponent shall bear the cost towards the widening and strengthening of existing public road network in case the same is proposed to be used for the Project. No road movement should be allowed on existing village road network without appropriately increasing the carrying capacity of such roads.	Compliance: Ore Transportation is being done by "Tomka-Mangalpur Road" State Highway where all the Chromite Mine Owners are transporting their Chrome ore and maintained by state R&B. No transportation is being done through any inside village road.
15	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ -masks	Compliance: We have control illumination and sound generation at night. We take care not to disturb either villagers or animals in the vicinity during their biological clock hours. We are also carrying out Noise Level Monitoring regularly. We have not installed long-range flood lights within mine. All Lighting masts installed within mine are oriented for optimal illumination within mine lease area.

Sl. No	Condition	Compliance Status (Apr'23 to Sept'23)
	away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.	Safety zone all along the lease periphery is maintained with plantation which also acts as a barrier. [Please refer to Annexure-III]
16	Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers. The material transfer points should invariably be provided with Bag filters and or dry fogging system. In case of Belt-conveyors facilities the system should be fully covered to avoid air borne dust; Use of effective sprinkler system to suppress fugitive dust on haul roads and other transport roads shall be ensured.	Compliance: We have installed 500 mtrs of permanent water sprinklers on the main haulage roads of the mines. We are regularly water spraying in the haul road, ore stack yard, material loading points and weigh bridge area by water tankers. It has also been planned to install dry fogging/ mist canon systems in ore loading and unloading points. [Please refer to Annexure-VI]
17	Sufficient number of Gullies to be provided for better management of water. Regular Monitoring of pH shall be included in the monitoring plan and report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.	Compliance: Enough gullies are provided for management of run-off water. The pH monitoring data is being submitted on six monthly to MoEF&CC. [Please refer to Annexure-III]
18	There shall be planning, developing and implementing facility of rainwater harvesting measures on long term basis and implementation of conservation measures to augment ground water resources in the area in consultation with Central Ground Water Board.	Compliance: We have constructed two (02) nos. of roof-top rainwater harvesting structures in office and temporary structures. As per the hydrogeology study and comply the suggestions and guidelines of Central Ground Water Board to construct rainwater harvesting structures in the lease area and in the local to recharge the ground water. [Please refer to Annexure-VI]
19	The Project Proponent has to take care of gullies formed on slopes. Dump mass should be consolidated with proper filling/levelling with the help of dozer/compactors.	Compliance: It is being practised. Proper care is being taken before monsoon season. The previous year rain cuts are repaired by proper filling/levelling with the help of dozer/compactors.
20	The reclamation at waste dump sites shall be ecologically sustainable scientific reclamation shall be followed. The local species may be encouraged and species are so chosen that the slope bottom of the dumps and top of the dumps are able to sustain these species. The aspect of the dump is also a factor which regulates some climatic parameters and allows only specie adopted to that micro climate.	Compliance: It is being practised and massive plantation for dump reclamation is being carried out with the local species as per approved Mining Plan. For current year we have planted 5956 nos of native saplings for reclamation of 2ha of waste dump area and safety zone, while consult with the forest dept.
21	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. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and should not be kept active for a long period of time. The maximum height of the dumps shall not exceed 8m and width 20 m and overall slope of the dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run of. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the	Compliance: It was a running mine, presently no topsoil is generated during mining operation. The over burden (OB) generated during the mining operations is stacked at earmarked dump site and would be used for dumping as per plan period. The height and width and the slope of the dumps are maintained as per the approved Mining Plan by IBM and it would be followed for future expansion also. The Overburden dumps will be rehabilitated by massive plantation. [Please refer to Annexure-VI]

Sl. No	Condition	Compliance Status (Apr'23 to Sept'23)
	vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.	
22	Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the 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 and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps to prevent run off of water and flow of sediments directly into the river and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide 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.	<p>Compliance: Approximately, 2599 meters of retaining wall, 3472 meters of garland drain and 19 nos. of settling pits are constructed & maintained around the waste dumps to manage the runoff from OB dumps. The catch drains and siltation ponds of appropriate size is constructed around the mine working, mineral and OB dumps to prevent run off water and flow of sediments directly into the river and other water bodies. The drains and settling pits are regularly desilted by mechanized means and maintained properly. The garland drains and sumps are constructed keeping 50% safety margin over and above the peak sudden rainfall. As per mining plan 497 m; 1333m and 1no of retaining wall, garland drain and settling pond respectively, constructed during FY 24.</p> <p style="text-align: right;">[Please refer to Annexure-VI]</p>
23	Plantation shall be raised in a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around water body, along the roads etc. by planting the native species in consultation with the local DFO/Agriculture Department and as per CPCB Guidelines. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.	<p>Compliance: Plantation in 7.5m width green belt in the safety zone around the mining lease was developed by previous lessee. The safety zone plantation is being maintained and gap plantation is being carried out wherever required.</p>
24	Project Proponent shall follow the mitigation measures provided in Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area", if any, applicable to the project.	<p>Compliance: We will follow the guideline and facilitate the mitigation measures to the habitations and villages in and around the mine lease area. We are in process to get new Environmental Clearance for expansion of production level. Proper Odisha state R&R policy, 2013 will be implemented.</p>
25	The Project Proponent shall make necessary alternative arrangements, where required, in consultation with the State Government to provide alternate areas for livestock grazing, if any. In this context, Project Proponent should implement the directions of the Hon'ble Supreme Court with regard to acquiring grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun,	<p>Compliance: The entire mine area of 246.858ha is comprises of 241.773 Ha of forest land and 5.085 Ha private land. No such grazing land have been acquired by the company. In future, if required alternate areas for livestock grazing will be arranged in consultation with the State Government.</p>

Sl. No	Condition	Compliance Status (Apr'23 to Sept'23)
	should be scrupulously guarded against felling and plantation of such trees should be promoted.	
26	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.	Compliance: We have taken all precautionary measures during mining operation for conservation and protection of endangered flora and fauna found in the core and buffer zones. We are vested with the previous lessee's site-specific wildlife management plan for diverted forest land and we are process for diversion of 17.14ha forest land as per Sabik settlement. A copy of action plan will be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office. We have also taken the Biodiversity Management Plan to act on Net Zero loss to Biodiversity through Environment Research Foundation, New Delhi.
27	Project proponent has to complied the Corporate Environment Responsibility (CER) as per the provisions mentioned in the OM of Ministry no. 22 -65/2017.IA-III dated 1st May, 2018 based on local needs and action plan with financial and physical breakup/details shall be prepared and submitted to the Ministry's Regional Office located at Bhubaneswar. Implementation of such program shall be ensured accordingly in a time bound manner.	Compliance: Corporate Environment Responsibility (CER) is a part of the Tata Steel Mining policy to develop environmental and social standard in and around the project site. Our dedicated unit TSF (Tata Steel Foundation previously TSRDS) is actively involved for the said job. The development work is being carried out in Education, Fellowship for ST/SC students, Health camps and economic development schemes such as fish cultivation and horticulture plot in nearby villages. We have conducted Public Hearing for the expansion of the production capacity, the concern points/ demands will be taken up as a CER activity in coming years. The half-yearly expense towards different activities is given for FY 24 (April 2023 to Aug 2023) [Please refer to Annexure-VII]
28	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Compliance: Majority of the workers are from local areas. We have constructed temporary residential facility with all facilities for the labour within the lease hold area.
29	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.	Compliance: All machineries are properly maintained to avoid generation of noise. Controlled blasting is being carried out. All HEMM operators and those exposed to noise prone areas are provided with ear plugs and muffs. Further regular training is being imparted to the workers to create awareness related to noise. Regularly fitness check of HEMM is maintained the noise level below permissible limit.
30	Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	Compliance: We are operating an Effluent Treatment Plant where the mine drainage water is treated and discharged out of ETP. The standard of discharge water from ETP outlet is within the standard prescribed under GSR 422. Oil and grease trap chamber was constructed for workshop & vehicle washing effluent. The treated water will be recirculated and reused for the process. [Please refer to Annexure-VI]
31	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.	Compliance: Wet drilling is a common practice in the mines. Further all dusty areas are being wetted by water sprinkling arrangement. Staffs and Workers exposed to dust prone areas are provided with all PPEs. Regular training is given to all staff at our VT Centre to educate them on safety and health aspects. [Please refer to Annexure-VI]

Sl. No	Condition	Compliance Status (Apr'23 to Sept'23)
32	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.	Compliance: We have established a separate Environmental Management Cell with qualified persons which is headed by top Management. [Please refer to Annexure-XII]
33	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office.	Compliance: We are not diverting funds allocated for environmental protection measures. As per our Annual Business Plan (ABP), expenditure towards environmental protection measures and actual expenditure accrued is submitted regularly basis to MoEF Regional Office, Bhubaneswar. [Please refer to Annexure-XIII]
34	The project authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Compliance: Agreed and will be informed.
35	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board.	Compliance: Six monthly compliance report on the status of the implementation of the stipulated environmental safeguards is being submitted to the Ministry of Environment, Forest and Climate Change, its Regional Office and CPCB/SPCB as per stipulated time frame.
36	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	Compliance: We will extend all our support and cooperation to any official visiting our mining site for inspection.
37	A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	Compliance: Previous lessee has already submitted the EC letter to all the offices mentioned. In future, after getting fresh EC we will be circulated to Kansa Panchayat / local NGOs.
38	State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.	Compliance: Not Applicable
39	The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at www.environmentclearnce.nic.in and a copy of the same should be forwarded to the Regional Office.	Compliance: Previous lessee has already published both in Odia and English Local News Paper and submitted all the statutory Departments. In future, after getting fresh EC we will be published both in Odia and English Local News Paper and submitted all the statutory Departments. Copy of the same will be submitted to the Ministry of Environment, Forest and Climate Change at www.environmentclearnce.nic.in and a copy of the same would be forwarded to the Regional Office.

**Government of Odisha
Steel and Mines Department**

VESTING ORDER

No. 4174 /SM
IV(B)SM-11/2020

Dated the 29th May 2020

Whereas a mining lease of the following description, which was held by M/s Misrilal Mines Pvt. Ltd. (hereinafter referred to as the previous lessee) with validity period upto 31.03.2020 has been auctioned and M/s TS Alloys Ltd., has been declared as the preferred bidder of the said mine.

Description of the Mining Block

- Name of Mineral(s) - Chromite
- Name of Mining lease - Saruabil Chromite Block.
- Address/location of mining lease - Village Saruabil under Sukinda Tahasil of Jajpur district.
- Area of lease - 246.858 hecets (As per DGPS)/ 246.858 hecets (As per ROR).

And whereas, a letter of intent bearing no 223/SM, dated 06.01.2020 has been issued in favour of the preferred bidder for grant of mining lease for the above mentioned mining block;

And whereas, in terms of section 8B(2) of the MMDR Act, 1957 read with rule 9A(4) of the Mineral (Other than Atomic and Hydrocarbon Energy Minerals) Concession Rules, 2016 [herein after called the Rules'2016], the holder of the letter of intent for the said mining block shall be deemed to have acquired all valid rights, approvals, clearances, licenses and the like vested with the previous lessee.

Now therefore, the undersigned being the Nodal Officer for the State of Odisha having been nominated under rule 9A(1) of the Mineral (Other than Atomic and Hydrocarbon Energy Minerals) Concession Rules, 2016 [herein after called the Rules,2016], do hereby, pursuant to the provisions contained in rule 9A(2) of the Rules,2016 order that all the valid rights, approvals, clearances, licenses and the like vested in the previous lessee in respect of the aforementioned mining block are deemed to have vested in favour of the holder of the letter of intent on the same terms and conditions of every rights, approvals, clearances, licenses, and the like which vested with previous lessee.

Without prejudice to the generality of the provisions of section 8B(2) of the MMDR Act, 1957, the details of the valid rights, approvals, clearances, licenses, and the like held by the previous lessee and vested in favour of the holder of the Letter of Intent are given in the Annexure-I to this order.

This vesting order is valid for a period of two years from the date of execution of lease deed or till the date of getting fresh approvals, clearances, licenses, permits, and the like, whichever is earlier

(S. K. Popli)

Nodal Officer-cum-Special Secretary to Government

Memo No. 4175 / SM

Dated: 29th May 2020

Copy to alongwith Annexure-I forwarded to M/s T S Alloys Ltd., Plot No. N3/24, IRC Village, Nayapalli, Bhubaneswar, Odisha for information and necessary action. It is requested that one copy each of the documents mentioned in the Annexure-I may be collected from the office of the Director Mines, Odisha, Bhubaneswar during office working hours.

Memo No. 4176 / SM

Dated: 29th May 2020

Copy to alongwith Annexure-I forwarded to M/s Misrilal Mines Pvt Ltd, Mineral House, 27A, Camac Street, Kolkata 100016, West Bengal for information and necessary action.

Memo No. 4177 / SM

Dated: 29th May 2020

Copy alongwith Annexure-I forwarded to Indian Bureau of Mines, Bhubaneswar/ MoEF & CC, 534, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi 110003/ MoEF & CC (FC Divison), Indira Paryavaran Bhawan, Aliganj, Jorbagh Road, New Delhi 110003/ SPCB, Parivesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar, Odisha, 751012/ Director General of Mines Safety, Chaibasa Regiona, Chaibasa, 833201 /Ministry of Water Resource, River Development and Ganga Rejuvenation, West Block-2, Wing 3, Sector-1, R.K. Puram, New Delhi-110066 for information and necessary action.

Nodal Officer

Memo No. 4178 / SM

Date: 29th May 2020

Copy alongwith Annexure-I forwarded to Director of Mines, Odisha, Bhubaneswar for information and necessary action. He is requested to provide one copy each of the documents described in the Annexure-I to the authorized representative of the LoI holder with proper acknowledgement and forward a copy of acknowledgement to the Department for record.

Nodal Officer

Memo No. 4179 / SM

Date: 29th May 2020

Copy alongwith Annexure-I forwarded to Collector, Jajpur/ Deputy Director of Mines, Jajpur/ DFO, Cuttack for information and necessary action.

Nodal Officer

Memo No. 4180 / SM

Date: 29th May 2020

Copy alongwith Annexure-I forwarded to Forest and Environment department/ PCCF(Nodal), Bhubaneswar for information and necessary action.

Nodal Officer

ANNEXURE-I

Name of the Block : Saruabil Chromite ore Block
LoI Holder : T S Alloys Ltd
Area of the Lease : 246.858 Hects (As per ROR)
 246.858 hecets (As per DGPS)

SL No	Nature of approval clearance etc	Issuing officer/authority	Reference No./ Date of Issue
1	Mining Plan	Regional Controller of Mines, Bhubaneswar, Govt. of India	MPM/FM/06-ORI/BHU/2018-19, Dated 18.05.2018
2	EC	MoEF & CC, Govt. of India	J-11015/72/2010-IA II(M), Dtd 20.07.2018.
3	FC	MoEF & CC, Govt. of India,	F. No. 8-100/95-FC, Dtd. 16.01.1997 over 224.63 hecets
4	Consent to Establish	State Pollution Control Board, Odisha	17116/IND-II-NOC-5663, Dated 29.11.2016
5	Consent to Operate	State Pollution Control Board, Odisha	14292/IND-I-CON-220, Dated 03.12.2018, Consent Order No.468
6	Surface Right	District Collector, Jajpur	Surface Right granted over 241.606 hecets
7	Deep Hole Blasting & use of HEMM	Directorate General of Mines Safety, Chaibasa Region, Chaibasa, Govt. of India	BBR-CU/CH-5/P-106(2)(b)/2019/360-61, Dated 19.03.2019
8	Ground Water Withdrawal	Member Secretary (CGWA), Central Ground Water Authority , Govt. of India	No. 21-4(73)/CGWA/SER/2008/686, Dtd. 16.07.2019

1. Vesting of clearances/approvals/licences/permissions /rights as above does not have the effect of transfer of ownership of infrastructure established and the ore & minerals raised by the ex-lessee which shall be governed by the provisions of the rules 12(1)(gg) and 12(1)(hh) of the Minerals Concession Rules, 2016. However, on acquisition of such infrastructure from the ex-lessee and submission of evidence thereof, the new lessee may be vested with related clearances/ approvals etc at the relevant time.
2. Vesting of Forest Clearance is subject to payment of NPV as prescribed in letter dtd. 31.03.2020 of Government of India, Ministry of Environment, Forest & Climate Change.

29/5/2020



**Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)**

PARIVESH
*(Pro-Active and Responsive Facilitation by Interactive,
and Virtuous Environment Single-Window Hub)*

File No. : J-11015/72/2010-IA. II(M)
EC Identification No. EC22A001OR141068
Proposal No. IA/OR/MIN/9459/2010
Date:28/02/2022

ACKNOWLEDGEMENT

This is to acknowledge that TATA STEEL MINING LIMITED has been registered in the PARIVESH Portal in respect of transfer of EC vested with previous lessee under the provisions of S.O 2817 (E) dated 13th July , 2021.

Therefore, the prior Environmental Clearance vested with the previous lessee M/s Misrilal Mines Private Limited shall be deemed to have been transferred during its validity period in terms of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957) as amended by the Mines and Minerals (Development and Regulation) Amendment Act, 2021 (16 of 2021) to the successful bidder of the mining leases (TATA STEEL MINING LIMITED), from the date of commencement of new lease for the remaining validity period (Up to 19/07/2027), subject to comply with all the terms and conditions of the Environmental Clearance granted to previous lessee including non-compliance of EC conditions by the previous lessee, if any,

However, if on verification the Ministry or IRO or SPCB or UTPCC, holds that the information submitted found to be false or misleading at any stage, the transfer of EC shall stand revoked.

Remarks by Member Secretary :- The EC is valid till 19th July,2027.

Report URL is Enclosed below :

http://environmentclearance.nic.in/user/MineLease_FormReport.aspx?pid=923920&status=1

Date: 28/02/2022

(e-signed)
Pankaj Verma
Member Secretary
IA - (Non-Coal Mining sector)



Signature valid

Digitally signed by Pankaj Verma
Director
Date: 2/28/2022 12:58:38 PM

Annexure – II - Consent to Operate of Saruabil Chromite Block, M/s. Tata Steel Limited



CONSENT ORDER
SARUABIL CHROMITE BLOCK OF M/S TATA STEEL MINING LTD.

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BY REGD. POST WITH AD

STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVERNMENT OF ODISHA]
A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012

Phone-2561909, Fax: 2562822, 2560955 E-mail: paribesh1@ospcboard.org, Website: www.ospcboard.org

CONSENT ORDER

No. 3889 /

IND-I-CON-220

Dt. 18-03-2023CONSENT ORDER NO. 2952

Sub: **Consent for discharge of sewage and trade effluent under section 25/26 of Water (PCP) Act, 1974 and for existing / new operation of the plant under section 21 of Air (PCP) Act, 1981.**

Ref: **Your online application No.4624300, dated 08-01-2023**

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry: SARUABIL CHROMITE BLOCK OF M/S. TATA STEEL MINING LTD.

Name of the Occupier & Designation: SRI PANKAJ KUMAR SATIJA, MANAGING DIRECTOR

Address: AT: SARUABIL, PO: KANSA, DIST: JAJPUR

This consent order is valid for the period up to **31/03/2024**.

This consent order supersedes the earlier consent orders issued vide letter No.4051 dated 16.03.2022.

Details of Products Manufactured

Sl. No	Product	Quantity
01.	Chrome ore (ROM)	0.35 MTPA

This consent order is valid for the specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated therein.



CONSENT ORDER
SARUABIL CHROMITE BLOCK OF M/S TATA STEEL MINING LTD.

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A. Discharge permitted through the following outlet subject to the standard

Outlet No.	Description of outlet	Point of discharge	Quantity of discharge KL/hr	Pre-scribed Standard						
				pH	TSS (mg/l)	BOD (mg/l)	COD (mg/l)	Oil & Grease (mg/l)	Cr+6 (mg/l)	Total Chromium (mg/l)
01.	Septic tank (Domestic effluent)	Soak pit	--	5.5 to 9.0	200	100	--	--	--	--
02.	Mine drainage water / surface run off/ other wastewater	On land / inland surface water body	400	5.5 to 9.0	100	--	--	10	0.05	2.0

B. Emission permitted through the following stack subject to the prescribed standard

Chimney Stack No.	Description of Stack	Stack height (m)	Quantity of emission	Prescribed Standard				

C. Disposal of solid waste permitted in the following manner

Sl. No.	Type of Solid waste	Quantity generated (TPD)	Quantity to be reused on site (TPD)	Quantity to be reused off site (TPD)	Quantity disposed off (TPD)	Description of disposal site.
01.	Top soil / overburden	As per approved mining plan	--	--	--	As per approved mining plan



CONSENT ORDER
SARUABIL CHROMITE BLOCK OF M/S TATA STEEL MINING LTD.

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D. GENERAL CONDITIONS FOR ALL UNITS

1. The consent is given by the Board in consideration of the particulars given in the application. Any change or alternation or deviation made in actual practice from the particulars furnished in the application will also be the ground liable for review/variation/revocation of the consent order under section 27 of the Act of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 and to make such variations as deemed fit for the purpose of the Acts.
2. The industry would immediately submit revised application for consent to operate to this Board in the event of any change in the quantity and quality of raw material / and products / manufacturing process or quantity /quality of the effluent rate of emission / air pollution control equipment / system etc.
3. The applicant shall not change or alter either the quality or quantity or the rate of discharge or temperature or the route of discharge without the previous written permission of the Board.
4. The application shall comply with and carry out the directives/orders issued by the Board in this consent order and at all subsequent times without any negligence on his part. In case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order, the applicant shall be liable for legal action as per the provisions of the Law/Act.
5. The applicant shall make an application for grant of fresh consent at least 90 days before the date of expiry of this consent order.
6. The issuance of this consent does not convey any property right in either real or personal property or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State laws or regulation.
7. This consent does not authorize or approve the construction of any physical structure or facilities or the undertaking of any work in any natural water course.
8. The applicant shall display this consent granted to him in a prominent place for perusal of the public and inspecting officers of this Board.
9. An inspection book shall be opened and made available to Board's Officers during the visit to the factory.
10. The applicant shall furnish to the visiting officer of the Board any information regarding the construction, installation or operation of the plant or of effluent treatment system / air pollution control system / stack monitoring system any other particulars as may be pertinent to preventing and controlling pollution of Water / Air.
11. Meters must be affixed at the entrance of the water supply connection so that such meters are easily accessible for inspection and maintenance and for other purposes of the Act provided that the place where it is affixed shall in no case be at a point before which water has been tapped by the consumer for utilization for any purposes whatsoever.
12. Separate meters with necessary pipe-line for assessing the quantity of water used for each of the purposes mentioned below:
 - a) Industrial cooling, spraying in mine pits or boiler feed,
 - b) Domestic purpose
 - c) Process
13. The applicant shall display suitable caution board at the place where the effluent is entering into any water-body or any other place to be indicated by the Board, indicating therein that the area into which the effluents are being discharged is not fit for the domestic use/bathing.
14. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.
15. The applicant shall maintain good house-keeping both within the factory and the premises. All pipes, valves, sewers and drains shall be leak-proof. Floor washing shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
16. The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems install or used by him to achieve with the term(s) and conditions of the consent.
17. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilized as mere stagnation ponds. The anaerobic lagoons should be fed with the required nutrients for effective digestion. Lagoons should be constructed with sides and bottom made impervious.
18. The utilization of treated effluent on factory's own land, if any, should be completed and there should be no possibility of the effluent gaining access into any drainage channel or other water courses either directly or by overflow.
19. The effluent disposal on land, if any, should be done without creating any nuisance to the surroundings or inundation of the lands at any time.
20. If at any time the disposal of treated effluent on land becomes incomplete or unsatisfactory or create any problem or becomes a matter of dispute, the industry must adopt alternate satisfactory treatment and disposal measures.
21. The sludge from treatment units shall be dried in sludge drying beds and the drained liquid shall be taken to equalization tank.
22. The effluent treatment units and disposal measures shall become operative at the time of commencement of production.



CONSENT ORDER
SARUABIL CHROMITE BLOCK OF M/S TATA STEEL MINING LTD.

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23. The applicant shall provide port holes for sampling the emissions and access platform for carrying out stack sampling and provide electrical outlet points and other arrangements for chimneys/stacks and other sources of emissions so as to collect samples of emission by the Board or the applicant at any time in accordance with the provision of the Act or Rules made therein.
24. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples / stack monitoring / inspection.
25. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without the previous written permission of the Board.
26. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.
27. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner and to ion of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as amended).
28. The stack monitoring system employed by the applicant shall be opened for inspection to this Board at any time.
29. There shall not be any fugitive or episodal discharge from the premises.
30. In case of such episodal discharge/emissions the industry shall take immediate action to bring down the emission within the limits prescribed by the Board in conditions/stop the operation of the plant. Report of such accidental discharge /emission shall be brought to the notice of the Board within 24 hours of occurrence.
31. The applicant shall keep the premises of the industrial plant and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.
32. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air pollutants and / or result in violation of the standards mentioned above shall be reported to the Headquarters and Regional Office of the Board by fax / speed post within 24 hours of its occurrence.
33. The industry has to ensure that minimum three varieties of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the industries or industrial premises. This plantation is stipulated over and above the bulk plantation of trees in that area.
34. The solid waste such as sweeping, wastage packages, empty containers residues, sludge including that from air pollution control equipments collected within the premises of the industrial plants shall be disposed off scientifically to the satisfaction of the Board, so as no to cause fugitive emission, dust problems through leaching etc., of any kind.
35. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by :
 - i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.
 - ii) Controlled incineration, wherever possible in case of combustible organic material.
 - iii) Composting, in case of bio-degradable material.
36. Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of this Board in writing. The detoxication or sealing and burying shall be carried out in the presence of Board's authorized persons only. Letter of authorization shall be obtained for handling and disposal of hazardous wastes.
37. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.
38. The applicant, his/heirs/legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.
39. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.
40. Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.
41. The conditions imposed as above shall continue to be in force until revoked under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 A of Air (Prevention & Control of Pollution) Act, 1981.
42. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.
43. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/ stipulate additional conditions as deemed appropriate.



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SARUABIL CHROMITE BLOCK OF M/S TATA STEEL MINING LTD.

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GENERAL CONDITIONS FOR UNITS WITH INVESTMENT OF MORE THAN Rs 50 CRORES, AND 17 CATEGORIES OF HIGHLY POLLUTING INDUSTRIES (RED A).

1. The applicant shall analyse the emissions every month for the parameters indicated in TABLE . B & C as mentioned in this order and shall furnish the report thereof to the Board by the 10th of the succeeding month.
2. The applicant shall provide and maintain at his own cost three ambient air quality monitoring stations for monitoring Suspended Particulate Matter, Sulphur Dioxide, Oxides of Nitrogen, Hydro-Carbon, Carbon-Monoxide and monitor the same once in a day/week/fortnight/month. The data collected shall be maintained in a register and a monthly extract be furnished to the Board.
3. The applicant shall provide and maintain at his own cost a meteorological station to collect the data on wind velocity, direction, temperature, humidity, rainfall, etc. and the daily reading shall be recorded and the extract sent to the Board once in a month.
4. The applicant shall forward the following information to the Member Secretary, State Pollution Control Board, Odisha, Bhubaneswar regularly.
 - a. Report of analysis of stack monitoring, ambient air quality monitoring meteorological data as required every month.
 - b. Progress on planting of trees quarterly.
5. The applicant shall install mechanical composite sampling equipment and continuous flow measuring / recording devices on the effluent drains of trade as well as domestic effluent. A record of daily discharge shall be maintained.
6. The following information shall be forwarded to the Member Secretary on or before 10th of every month.
 - a. Performance / progress of the treatment plant.
 - b. Monthly statement of daily discharge of domestic and/or trade effluent.
7. **Non-compliance with effluent limitations**
 - a) If for any reason the applicant does not comply with or is unable to comply with any effluent limitations specified in this consent, the applicant shall immediately notify the consent issuing authority by telephone and provide the consent issuing authority with the following information in writing within 5 days of such notification.
 - i) Causes of non-compliance
 - ii) A description of the non-compliance discharge including its impact on the receiving waters.
 - iii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration or period of non-compliance.
 - iv) Steps taken by the applicant to reduce and eliminate the non-complying discharge and
 - v) Steps to be taken by the applicant to prevent the condition of non-compliance.
 - b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.
 - c) Nothing in this consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non-compliance is due to factors beyond his control, such as break-down, electric failure, accident or natural disaster.
8. The applicant shall at his own cost get the effluent samples collected both before and after treatment and get them analysed at an approval laboratory every month for the parameters indicated in Part-D and shall submit in duplicate the report thereof to the Board.
9. The addition of various treatment chemicals should be done only with mechanical dosers and proper equipment for regulation of correct dosages determined daily and for proper uniform feeding. Crude practices such as dumping of chemicals in drains or sumps or trickling of acids or alkalis arbitrarily and utilizing poles for stirring etc. should not be resorted to.
10. In the disposal of treated effluent on land for irrigation, the industry shall keep in view of the need for;
 - Rotation of crops
 - Change of point of application of effluent on land
 - A portion of land kept fallow.
11. The adoption of these would avoid soil becoming sick or slate, the industry may ensure this in consultation with the Agriculture Department.
12. It is the sole responsibility of the industry to ensure that there are no complaints at any time from the royats in the surrounding areas as a result of discharge of sewage or trade effluent if any.
13. Proper housekeeping shall be maintained by a dedicated team.
14. The industry must constitute a team of responsible and technically qualified personnel who will ensure continuous operation of all pollution control devices round the clock (including night hours) and should be in a position to explain the status of operation of the pollution control measures to the inspecting officers of the Board at any point of time. The name of these persons with their contact telephone numbers shall be intimated to the concerned. Regional Officer and Head Office of the Board and in case of any change in the team it shall be intimated to the Board immediately.



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4. The applicant shall forward the following information to the Member Secretary, State Pollution Control Board, Odisha, Bhubaneswar regularly.
- a. Report of analysis of stack monitoring, ambient air quality monitoring meteorological data as required every month.
 - b. Progress on planting of trees quarterly.
5. The applicant shall install mechanical composite sampling equipment and continuous flow measuring / recording devices on the effluent drains of trade as well as domestic effluent. A record of daily discharge shall be maintained.
6. The following information shall be forwarded to the Member Secretary on or before 10th of every month.
- a. Performance / progress of the treatment plant.
 - b. Monthly statement of daily discharge of domestic and/or trade effluent.
7. **Non-compliance with effluent limitations**
- a) If for any reason the applicant does not comply with or is unable to comply with any effluent limitations specified in this consent, the applicant shall immediately notify the consent issuing authority by telephone and provide the consent issuing authority with the following information in writing within 5 days of such notification.
 - i) Causes of non-compliance
 - i) A description of the non-compliance discharge including its impact on the receiving waters.
 - ii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration or period of non-compliance.
 - iii) Steps taken by the applicant to reduce and eliminate the non-complying discharge and
 - iv) Steps to be taken by the applicant to prevent the condition of non-compliance.
 - b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.
 - c) Nothing in this consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non-compliance is due to factors beyond his control, such as break-down, electric failure, accident or natural disaster.
8. The applicant shall at his own cost get the effluent samples collected both before and after treatment and get them analysed at an approval laboratory every month for the parameters indicated in Part-D and shall submit in duplicate the report thereof to the Board.
9. The addition of various treatment chemicals should be done only with mechanical dosers and proper equipment for regulation of correct dosages determined daily and for proper uniform feeding. Crude practices such as dumping of chemicals in drains or sumps or trickling of acids or alkalis arbitrarily and utilizing poles for stirring etc. should not be resorted to.
10. In the disposal of treated effluent on land for irrigation, the industry shall keep in view of the need for;
- Rotation of crops
 - Change of point of application of effluent on land
 - A portion of land kept fallow.
11. The adoption of these would avoid soil becoming sick or slate, the industry may ensure this in consultation with the Agriculture Department.
12. It is the sole responsibility of the industry to ensure that there are no complaints at any time from the royats in the surrounding areas as a result of discharge of sewage or trade effluent if any.
13. Proper housekeeping shall be maintained by a dedicated team.
14. The industry must constitute a team of responsible and technically qualified personnel who will ensure continuous operation of all pollution control devices round the clock (including night hours) and should be in a position to explain the status of operation of the pollution control measures to the inspecting officers of the Board at any point of time. The name of these persons with their contact telephone numbers shall be intimated to the concerned, Regional Officer and Head Office of the Board and in case of any change in the team it shall be intimated to the Board immediately.



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E. SPECIAL CONDITIONS:

1. Mining operation is subject to availability of all other statutory clearances required under relevant Acts/Rules.
2. Wet drilling shall be practiced or suitably designed dust extractor shall be provided for dry drilling to prevent generation of dust.
3. Pre-wetting of blasting site and controlled blasting shall be practiced.
4. Water sprinkling through mobile water tankers / fixed sprinklers shall be carried out at the desired intervals on mine haulage roads to keep the roads in wet condition so as to prevent generation of fugitive dust. The vehicles carrying ore for transportation from the mine shall be covered with tarpaulin (both bottom & top).
5. Fixed auto sprinklers shall be provided on both sides of rest part of major haul road of the mine by 31.03.2022.
6. Regular water sprinkling on mineral transportation roads passing through the habitation area as well as other strategic point on the National Highway shall be done jointly by the mining lessees in consultation with the Regional Officer.
7. All mine haulage roads and other transportation roads shall be maintained properly to avoid creation of ruts and pot holes.
8. Mechanized wheel washing facility for the ore transport vehicles shall be provided at the exit point of the mine. The wheel washing facility shall be integrated with complete recirculation system.
9. Regular monitoring of ambient air quality shall be carried out at the appropriate places (at least three places) and monitoring report shall be furnished to the Board once in six months. The permanent monitoring stations shall be fixed in consultation with the Regional Officer of the Board.
10. Ambient air quality of the mine shall meet the prescribed standards for industrial area.
11. Overburden / waste rock shall be properly stacked in the earmarked areas approved by IBM and shall be suitably terraced and stabilized through vegetative cover or otherwise.
12. Retention wall shall be constructed at the toe of OB dump & mineral stockyard. The existing runoff management facilities shall also be renovated. The runoff from OB, ore stack yard and other areas of the mine shall be diverted to the ETP for necessary treatment before its discharge to outside. There shall not be any discharge of wastewater or runoff water to outside without adequate treatment. Garland drains, channels and



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sedimentation pits constructed for the purpose shall be desilted as and when required and after monsoon.

13. Mine drainage water shall be discharged into surface water body after adequate treatment in the ETP. The treated wastewater of ETP shall also be utilized for sprinkling activities at various sources of generation of dust.
14. The ETP, online continuous monitoring system at the inlet & outlet of ETP with data transfer facility to SPCB server shall be effectively operated and the quality of treated wastewater shall not exceed the prescribed standards (Part A, Sl. No. 2). The online continuous monitoring system shall be properly maintained and calibrated from time to time to ensure that spurious data are not transmitted to the SPCB server and correct data shall be transmitted continuously to the SPCB server. This shall be done by 15.03.2022.
15. The slime generated earlier, from the ore beneficiation plant, shall be disposed of safely as per mining plan and action shall be taken to prevent the contamination of ground water due to its disposal.
16. Domestic effluents shall be treated in a sewage treatment plant (STP) and or shall be discharged to soak pit via septic tank constructed as BIS specification. The treated wastewater quality of STP shall remain within the following standards and shall be used for plantation:

pH	-	6.5 -9.0
TSS	-	<100 mg/l
BOD	-	30 mg/l
Fecal Coliform	-	<1000 MPN/100 ml
17. Oil and grease trap (ETP) with sedimentation pit shall be provided for treatment of workshop effluent and treated effluent shall remain within the prescribed standards. Efforts shall be made to reuse the treated wastewater from the workshop. Till the ETP of workshop is made functional, there shall not be any vehicle washing inside the mine lease area.
18. Seasonal monitoring of ground water level and its quality shall be carried out four times a year and report shall be submitted to the Board.
19. Adequate measures shall be taken for control of noise levels below the following limits.

(6.00 AM - 9.00 PM) - Leq 75 dB(A)
(9.00PM - 6.00 AM) - Leq 70 dB(A)



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20. Ambient Air Quality monitoring data, Noise Monitoring data & Water/Waste Water Quality Monitoring data shall be electronically displayed at the entry point of the mine or at a suitable location of the mine.
21. Plantation of trees shall be undertaken in the colony/ township, over top soil dumps, OB dumps, back filled areas, along the side of haul road and in other areas of the mines not being utilized for mining activities. The mine shall take up avenue plantation and plantation in nearby village areas in consultation with DFO/Horticulture Department. The plantation details shall be submitted to the Board before end of April every year.
22. A copy of the annual return (annual return submitted to IBM, Govt. of India/ Directorate of Mines, Govt. of Odisha) shall be submitted to the Board every year.
23. The environmental statement report for the financial year ending 31st March shall be submitted to the Board in form-V on or before 30th September every year
24. The mine shall submit a declaration by 30th April every year that all pollution control systems are in good condition, are operated efficiently and ambient air quality as well as wastewater quality are conforming to the prescribed standards.


MEMBER SECRETARY

STATE POLLUTION CONTROL BOARD, ODISHA

TO,

**THE MANAGING DIRECTOR,
SARUABIL CHROMITE BLOCK OF
M/S. TATA STEEL MINING LIMITED,
N-3/24, IRC VILLAGE, NAYAPALLI,
BHUBANESWAR, PIN-751015**

Memo No. _____ /Dt. _____ /

Copy forwarded to :

- i) Regional Officer, State Pollution Control Board, **Kalinganagar.**
- ii) District Collector, **Jajpur**
- iii) Director of Mines, Govt. of Odisha, Bhubaneswar,
- iv) Director, Environment-cum-Special Secretary, F & E. Dept. Govt. of Odisha, Bhubaneswar.
- v) D.F.O., **Cuttack**
- vi) Deputy Director of Mines, **Jajpur Road**
- vii) Addl. Chief. Env. Engineer (Hazardous Waste Management Cell)
- viii) Sr. Env. Scientist, Central Lab. SPCB, Bhubaneswar
- ix) Consent Register


CHIEF ENV. ENGINEER (M)
STATE POLLUTION CONTROL BOARD, ODISHA



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GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS PART -A : EFFLUENTS

Sl.No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Coastal Areas
		(a)	(b)	(c)	(d)
1.	Colour&odour	Colourless/Odourless as far as practicable	-----	See 6 of Annex-1	See 6 of Annex-1
2.	Suspended Solids (mg/l)	100	600	200	For process wastewater -- 100 b. For cooling water effluent 10% above total suspended matter of influent.
3.	Particular size of SS	Shall pass 850	-----	-----	-----
5.	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6.	Temperature	Shall not exceed 5°C above the receiving water temperature	-----	-----	Shall not exceed 5°C above the receiving water temperature
7.	Oil & Grease mg/l max.	10	20	10	20
8.	Total residual chlorine	1.0	---	-----	1.0
9.	Ammonical nitrogen (as N) mg/l max.	50	50	-----	50
10.	Total Kjeldahl nitrogen (as NH ₃) mg/l max.	100	---	-----	100
11.	Free ammonia (as NH ₃) mg/l max.	5.0	---	-----	5.0
12.	Biochemical Oxygen Demand (5 days at 20°C) mg/l max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/l max.	250	---	-----	250
14.	Arsenic (as As) mg/l max.	0.2	0.2	0.2	0.2
15.	Mercury (as Hg) mg/l max.	0.01	0.01	-----	0.001
16.	Lead (as pb) mg/l max.	0.1	1.0	-----	2.0



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17.	Cadmium (as Cd) mg/l max.	2.0	1.0	-----	2.0
18.	Hexavalent Chromium (as Cr + 6) mg/l max.	0.1	2.0	-----	1.0
19.	Total Chromium (as Cr) mg/l max.	2.0	2.0	-----	2.0
20.	Copper (as Cu) mg/l max.	3.0	3.0	-----	3.0
21.	Zinc (as Zn) mg/l max.	5.0	15	-----	15
22.	Selenium (as Se) mg/l max.	0.05	0.05	-----	0.05
23.	Nickel (as Ni) mg/l max.	3.0	3.0	-----	5.0
24.	Cyanide (as CN) mg/l max.	0.2	2.0	0.2	0.02
25.	Fluoride (as F) mg/l max.	2.0	15	-----	15
26.	Dissolved Phosphates (as P) mg/l max.	5.0	-----	-----	-----
27.	Sulphide (as S) mg/l max.	2.0	-----	-----	5.0
28.	Phenolic compounds as (C ₆ H ₅ OH) mg/l max.	1.0	5.0	-----	5.0
29.	Radioactive materials a. Alpha emitter micro curie/ml. b. Beta emitter micro curie/ml.	10 ⁷ 10 ⁶	10 ⁷ 10 ⁶	10 ⁸ 10 ⁷	10 ⁷ 10 ⁶
30.	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
31.	Manganese (as Mn)	2 mg/l	2 mg/l	-----	2 mg/l
32.	Iron (Fe)	3 mg/l	3 mg/l	-----	3 mg/l
33.	Vanadium (as V)	0.2 mg/l	0.2 mg/l	-----	0.2 mg/l
34.	Nitrate Nitrogen	10 mg/l	-----	-----	20 mg/l



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NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutants	Time Weighed Average	Concentrate of Ambient Air		
			Industrial Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO ₂), µg/m ³	Annual * 24 Hours **	50 80	20 80	-Improved west and Gaeke - Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO ₂), µg/m ³	Annual * 24 Hours **	40 80	30 80	- Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
3.	Particulate Matter (size less than 10µm) or PM ₁₀ µg/m ³	Annual * 24 Hours **	60 100	60 100	-Gravimetric - TOEM - Beta Attenuation
4.	Particulate Matter (size less than 2.5µm) or PM _{2.5} µg/m ³	Annual * 24 Hours **	40 60	40 60	-Gravimetric - TOEM - Beta Attenuation
5.	Ozone (O ₃) µg/m ³	8 Hours ** 1 Hours **	100 180	100 180	- UV Photometric - Chemiluminescence - Chemical Method
6.	Lead (Pb) µg/m ³	Annual * 24 Hours **	0.50 1.0	0.50 1.0	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper. - ED-XRF using Teflon filter.
7.	Carbon Monoxide (CO) mg/m ³	8 Hours ** 1 Hours **	02 04	02 04	- Non Dispersive Infra Red (NDIR) Spectroscopy
8.	Ammonia (NH ₃) µg/m ³	Annual* 24 Hours**	100 400	100 400	-Chemiluminescence - Indophenol Blue Method
9.	Benzene (C ₆ H ₆) µg/m ³	Annual *	05	05	-Gas Chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP)-Particulate phase only, ng/m ³	Annual*	01	01	-Solvent extraction followed by HPLC/GC analysis
11.	Arsenic (As), ng/m ³	Annual*	06	06	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12.	Nickel (Ni),ng/m ³	Annual*	20	20	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Annexure - III - Extracts of Environmental Monitoring

EXTRACTS OF ENVIRONMENTAL MONITORING (PERIOD: Apr'2023 to Sept'2023)**1. Air Quality Monitoring: CORE ZONE**

1. OFFICE TOP												
Monthly Average	PM10 µg/m3	PM2.5 µg/m3	SO2 µg/m3	NOx µg/m3	CO mg/m3	O3 µg/m3	NH3 µg/m3	Benzene µg/m3	Benzo(a)Pyrene ng/m3	Pb µg/m3	Arsenic ng/m3	Nickel ng/m3
Apr'23	61.8	33.1	4.75	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
May'23	62.33	33.30	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Jun'23	61.2	32.9	4.75	6.0	0.21	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Jul'23	52.5	28.0	4.55	5.5	52.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aug'23	48.7	27.3	4.20	5.0	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Sep'23	44.6	23.9	4.00	5.0	0.45	BDL	BDL	BDL	BDL	BDL	BDL	BDL

2. ETP TOP												
Monthly Average	PM10 µg/m3	PM2.5 µg/m3	SO2 µg/m3	NOx µg/m3	CO mg/m3	O3 µg/m3	NH3 µg/m3	Benzene µg/m3	Benzo(a)Pyrene ng/m3	Pb µg/m3	Arsenic ng/m3	Nickel ng/m3
Apr'23	62.8	34.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
May'23	60.8	31.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Jun'23	60.8	31.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Jul'23	51.8	27.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aug'23	49.1	27.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Sep'23	45.3	24.1	3.6	4.7	0.11	BDL	BDL	BDL	BDL	BDL	BDL	BDL

3. MECHANICAL GARAGE												
Monthly Average	PM10 µg/m3	PM2.5 µg/m3	SO2 µg/m3	NOx µg/m3	CO mg/m3	O3 µg/m3	NH3 µg/m3	Benzene µg/m3	Benzo(a)Pyrene ng/m3	Pb µg/m3	Arsenic ng/m3	Nickel ng/m3
Apr'23	62.3	33.1	5.2	7.5	0.26	BDL	BDL	BDL	BDL	BDL	BDL	BDL
May'23	62.7	33.9	5.5	7.5	0.24	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Jun'23	60.4	32.0	5.4	7.3	0.22	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Jul'23	51.6	27.6	5.0	6.1	0.21	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aug'23	48.3	26.7	4.6	5.1	0.18	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Sep'23	44.6	23.7	3.5	4.8	0.13	BDL	BDL	BDL	BDL	BDL	BDL	BDL

4. OLD MAGAZINE												
Monthly Average	PM10 µg/m3	PM2.5 µg/m3	SO2 µg/m3	NOx µg/m3	CO mg/m3	O3 µg/m3	NH3 µg/m3	Benzene µg/m3	Benzo(a)Pyrene ng/m3	Pb µg/m3	Arsenic ng/m3	Nickel ng/m3
Apr'23	61.9	32.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
May'23	62.4	33.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Jun'23	60.9	32.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Jul'23	51.3	27.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aug'23	50.2	26.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Sep'23	44.9	23.9	3.9	5.1	0.11	BDL	BDL	BDL	BDL	BDL	BDL	BDL

2. Air Quality Monitoring: BUFFER ZONE

1. BALIPURA VILLAGE													
Monthly Average	PM10 µg/m ³	PM2.5 µg/m ³	SO2 µg/m ³	NOx µg/m ³	CO mg/m ³	O3 µg/m ³	Pb µg/m ³	NH3 µg/m ³	Benzene µg/m ³	Benzo(a)Pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
Jun'23	50.5	26.8	BDL	BDL	BDL	6.6	BDL	BDL	BDL	BDL	BDL	BDL	
Sep'23	44.1	23.5	BDL	BDL	BDL	5.9	BDL	BDL	BDL	BDL	BDL	BDL	

2. SUKARANGI VILLAGE													
Monthly Average	PM10 µg/m ³	PM2.5 µg/m ³	SO2 µg/m ³	NOx µg/m ³	CO mg/m ³	O3 µg/m ³	Pb µg/m ³	NH3 µg/m ³	Benzene µg/m ³	Benzo(a)Pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
Jun'23	47.2	25.3	BDL	BDL	BDL	7.0	BDL	BDL	BDL	BDL	BDL	BDL	
Sep'23	44.9	24.9	BDL	BDL	BDL	5.2	BDL	BDL	BDL	BDL	BDL	BDL	

3. SARUABIL VILLAGE													
Monthly Average	PM10 µg/m ³	PM2.5 µg/m ³	SO2 µg/m ³	NOx µg/m ³	CO mg/m ³	O3 µg/m ³	Pb µg/m ³	NH3 µg/m ³	Benzene µg/m ³	Benzo(a)Pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
Jun'23	48.6	26.1	BDL	BDL	BDL	6.8	BDL	BDL	BDL	BDL	BDL	BDL	
Sep'23	45.7	24.1	BDL	BDL	BDL	6.1	BDL	BDL	BDL	BDL	BDL	BDL	

4. TALANGI VILLAGE													
Monthly Average	PM10 µg/m ³	PM2.5 µg/m ³	SO2 µg/m ³	NOx µg/m ³	CO mg/m ³	O3 µg/m ³	Pb µg/m ³	NH3 µg/m ³	Benzene µg/m ³	Benzo(a)Pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
Jun'23	45.2	24.3	BDL	BDL	BDL	7.2	BDL	BDL	BDL	BDL	BDL	BDL	
Sep'23	43.5	23.7	BDL	BDL	BDL	6.3	BDL	BDL	BDL	BDL	BDL	BDL	

3. AMBIENT NOISE MONITORING: Core Zone**DAY TIME (6.00AM - 10.00PM)**

Sl. No	LOCATION	Apr'23	May'23	Jun'23	Jul'23	Aug'23	Sep'23
		Noise Level in dB(A)					
1	Mines Office	59.2	60.3	59.7	57.5	58.2	57.9
2	COLONY Area	55.7	56.6	53.5	48.8	47.5	48.1
3	Village Saruabil	52.2	51.8	48.8	42.4	41.7	42.4
4	Village Balipura	54.9	50.9	49.6	44.2	42.8	42.2

NIGHT TIME (10.00PM - 6.00AM)

Sl. No	LOCATION	Apr'23	May'23	Jun'23	Jul'23	Aug'23	Sep'23
		Noise Level in dB(A)					
1	Mines Office	53.8	56.2	53.8	55.3	55.6	54.3
2	COLONY Area	50.2	51.8	49.9	46.1	44.7	45.4
3	Village Saruabil	45.8	46.4	44.2	39.7	38.2	40.1
4	Village Balipura	51.2	47.1	46.5	41.5	37.6	39.8

4. WATER QUALITY MONITORING**A. DRINKING WATER****1. Tube Well at Saruabil Village**

Sl. No	Parameter	Jun'23	Sep'23
1	Colour	CL	CL
2	Odour	Agreeable	Agreeable
3	Taste	Agreeable	Agreeable
4	Turbidity	<1	1.2
5	Total Dissolved Solids as TDS	129	142
6	pH at 250C	7.42	7.29
7	Aluminium (as Al)	<0.01	<0.01
8	Ammonia (as total ammonia-N)	<0.1	<0.1
9	Anionic Detergents	<0.2	<0.2
10	Barium as Ba	<0.05	<0.05
11	Boron as B	<0.1	<0.1
12	Calcium as Ca	24.2	28.6
13	Chloride as Cl	23.4	24.1
14	Copper as Cu	<0.02	<0.02
15	Fluoride as F	0.18	0.15
16	Free Residual Chlorine	<0.1	<0.1
17	Iron as Fe	0.31	0.29
18	Magnesium as Mg	5.3	6.6
19	Manganese as Mn	0.024	0.02
20	Mineral Oil	<0.5	<0.5
21	Nitrate as NO3	4.1	4.3
22	Phenolic Compound	<0.05	<0.05
23	Selenium as Se	<0.001	<0.001
24	Silver as Ag	<0.1	<0.1
25	Sulphate as SO4	11.9	12.4
26	Sulphide	4	4.2
27	Total alkalinity as CaCO3	42.1	48.1
28	Total Hardness	82.1	98.4
29	Zinc as Zn	<0.03	<0.03
30	Cadmium as Cd	<0.01	<0.01
31	Cyanide as CN	<0.01	<0.01
32	Lead as Pb	<0.02	<0.02
33	Mercury as Hg	<0.004	<0.004
34	Molybdenum as Mo	<0.05	<0.05
35	Nickel (as Ni)	<0.1	<0.1
36	Pesticide	Absent	Absent
37	Poly aromatic Hydrocarbon as PAH	<0.0001	<0.0001
38	Arsenic as As	<0.004	<0.004
39	Total Chromium as Cr	0.02	0.014
40	Hexa Chromium as Cr +6	<0.02	<0.02
41	Total Coliform	<1.8	<1.8

2. Bore Well near COB Plot

Sl. No	Parameter	Apr'23	May'23	Jun'23	Jul'23	Aug'23	Sep'23
1	Colour	CL	CL	CL	CL	CL	CL
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	1.3	1.5	1.3	1.2	1.6	1.8
5	Total Dissolved Solids as TDS	146	152	154	168	178	186
6	pH at 250C	7.41	7.44	7.39	7.31	7.42	7.35
7	Aluminium (as Al)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
8	Ammonia (as total ammonia-N)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
9	Anionic Detergents	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

10	Barium as Ba	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
11	Boron as B	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
12	Calcium as Ca	29.2	29.8	28.5	26.7	29.6	31.2
13	Chloride as Cl	24.5	25.1	26.6	23.4	25.1	26.4
14	Copper as Cu	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
15	Fluoride as F	0.22	0.21	0.2	0.19	0.21	0.19
16	Free Residual Chlorine	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
17	Iron as Fe	0.34	0.32	0.29	0.26	0.31	0.24
18	Magnesium as Mg	6.3	5.7	6.7	8.8	10.9	11.8
19	Manganese as Mn	0.029	0.028	0.026	0.025	0.022	0.019
20	Mineral Oil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
21	Nitrate as NO3	5.1	5.3	4.8	4.4	4.7	5.1
22	Phenolic Compound	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
23	Selenium as Se	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
24	Silver as Ag	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
25	Sulphate as SO4	13.3	12.9	13.2	12.9	14.1	14.9
26	Sulphide	3.2	3.5	3.3	3.5	<0.05	3.8
27	Total alkalinity as CaCO3	32.7	33.1	34.2	35.1	52.2	56.8
28	Total Hardness	98.6	97.5	98.5	102.5	118.7	126.3
29	Zinc as Zn	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
30	Cadmium as Cd	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
31	Cyanide as CN	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
32	Lead as Pb	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
33	Mercury as Hg	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
34	Molybdenum as Mo	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
35	Nickel (as Ni)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
36	Pesticide	Absent	Absent	Absent	Absent	Absent	Absent
37	Poly aromatic Hydrocarbon as PAH	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
38	Arsenic as As	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
39	Total Chromium as Cr	<0.05	0.019	0.018	0.015	0.013	0.01
40	Hexa Chromium as Cr +6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
41	Total Coliform	<1.8	<1.8	<1.8	<1.8	Absent	<1.8

B. GROUND WATER**1. Borewell at Damsala Nalla Site**

Sl. No	Parameter	Apr'23	May'23	Jun'23	Jul'23	Aug'23	Sep'23
1	Colour	CL	CL	CL	CL	CL	CL
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	<1	<1	<1	<1	<1	<1
5	Total Dissolved Solids as TDS	186	188	192	188	196	198
6	pH at 250C	7.39	7.35	7.35	7.28	7.34	7.29
7	Aluminium (as Al)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8	Ammonia (as total ammonia-N)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
9	Anionic Detergents	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
10	Barium as Ba	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
11	Boron as B	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
12	Calcium as Ca	25.9	25.5	25.2	26.5	28.1	26.9
13	Chloride as Cl	40.1	40.5	29.8	28.1	29.4	28.9
14	Copper as Cu	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
15	Fluoride as F	0.37	0.31	0.35	0.32	0.34	0.29

16	Free Residual Chlorine	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
17	Iron as Fe	0.34	0.33	0.33	0.28	0.3	0.28
18	Magnesium as Mg	5.83	4.67	5.77	5.57	5.48	6.2
19	Manganese as Mn	0.29	0.28	0.32	0.3	0.29	0.29
20	Mineral Oil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
21	Nitrate as NO3	3.7	3.5	3.4	3.1	3.5	3.6
22	Phenolic Compound	<0.05	<0.05	<0.05	<0.05	<0.001	<0.05
23	Selenium as Se	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
24	Silver as Ag	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
25	Sulphate as SO4	6.5	6.1	6.2	5.6	5.8	6.6
26	Sulphide	<1.0	<1.0	<1.0	<1.0	<0.05	<1.0
27	Total alkalinity as CaCO3	42.6	42.2	42.4	44.2	52.3	44.5
28	Total Hardness	88.5	82.7	86.5	88.9	92.5	92.5
29	Zinc as Zn	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
30	Cadmium as Cd	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
31	Cyanide as CN	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
32	Lead as Pb	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
33	Mercury as Hg	<0.004	<0.004	<0.004	<0.004	<0.001	<0.004
34	Molybdenum as Mo	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
35	Nickel (as Ni)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
36	Pesticide	Absent	Absent	Absent	Absent	Absent	Absent
37	Poly aromatic Hydrocarbon as PAH	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
38	Arsenic as As	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
39	Total Chromium as Cr	<0.05	0.018	0.017	0.015	0.014	0.015
40	Hexa Chromium as Cr +6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
41	Total Coliform	<1.1	<1.1	<1.1	<1.1	Absent	<1.1

2. Borewell at DB Plot

Sl. No	Parameter	Apr'23	May'23	Jun'23	Jul'23	Aug'23	Sep'23
1	Colour	CL	CL	CL	CL	CL	CL
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	<1	<1	<1	<1	<1	<1
5	Total Dissolved Solids as TDS	137	142	143	142	154	152
6	pH at 250C	7.45	7.44	7.47	7.39	7.41	7.35
7	Aluminium (as Al)	1.3	1.1	1.3	1.1	1.3	1.2
8	Ammonia (as total ammonia-N)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
9	Anionic Detergents	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
10	Barium as Ba	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
11	Boron as B	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
12	Calcium as Ca	28.7	27.9	27.9	28.4	30.4	28.9
13	Chloride as Cl	33.8	34.2	35.4	32.1	33.5	33.2
14	Copper as Cu	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
15	Fluoride as F	0.31	0.29	0.31	0.29	0.27	0.3
16	Free Residual Chlorine	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
17	Iron as Fe	0.29	0.28	0.26	0.22	0.23	0.25
18	Magnesium as Mg	1.73	1.78	3.38	2.11	1.14	3.53
19	Manganese as Mn	0.25	0.23	0.26	0.23	0.22	0.24
20	Mineral Oil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
21	Nitrate as NO3	3.1	3.2	3.1	2.8	2.9	3.2
22	Phenolic Compound	<0.05	<0.05	<0.05	<0.05	<0.001	<0.05
23	Selenium as Se	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001

24	Silver as Ag	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
25	Sulphate as SO ₄	7.2	6.6	7.1	6.4	6.2	7.8
26	Sulphide	<1.0	<1.0	<1.0	<1.0	<0.05	<1.0
27	Total alkalinity as CaCO ₃	39.5	38.6	39.2	38.5	42.6	42.1
28	Total Hardness	78.6	76.8	83.4	79.4	80.4	86.5
29	Zinc as Zn	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
30	Cadmium as Cd	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
31	Cyanide as CN	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
32	Lead as Pb	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
33	Mercury as Hg	<0.004	<0.004	<0.004	<0.004	<0.001	<0.004
34	Molybdenum as Mo	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
35	Nickel (as Ni)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
36	Pesticide	Absent	Absent	Absent	Absent	Absent	Absent
37	Poly aromatic Hydrocarbon as PAH	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
38	Arsenic as As	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
39	Total Chromium as Cr	<0.05	0.02	0.022	0.019	0.02	0.019
40	Hexa Chromium as Cr +6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
41	Total Coliform	<1.1	<1.1	<1.1	<1.1	Absent	<1.1

2. GROUND WATER (BUFFER ZONE)

Sl. No	Parameter	Bore Well at Saruabil Village	Bore Well at Talangi Village	Bore Well at Saruabil Village	Open Well at Talangi Village
		Jun'23		Sep'23	
1	Colour	CL	CL	CL	CL
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable
3	Taste	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	<1	<1	<1	<1
5	Total Dissolved Solids as TDS	160	184	166	188
6	pH at 250C	7.81	7.52	7.61	7.42
7	Aluminium (as Al)	<0.1	1.7	<0.1	1.5
8	Ammonia (as total ammonia-N)	<0.1	<0.1	<0.1	<0.1
9	Anionic Detergents	<0.2	<0.2	<0.2	<0.2
10	Barium as Ba	<0.05	<0.05	<0.05	<0.05
11	Boron as B	<0.1	<0.1	<0.1	<0.1
12	Calcium as Ca	28.5	24.1	30.1	27.5
13	Chloride as Cl	42.6	38.1	36.4	35.1
14	Copper as Cu	<0.1	<0.1	<0.1	<0.1
15	Fluoride as F	0.45	0.32	0.35	0.32
16	Free Residual Chlorine	<0.1	<0.1	<0.1	<0.1
17	Iron as Fe	0.42	0.33	0.34	0.31
18	Magnesium as Mg	5.23	5.17	5.14	4.91
19	Manganese as Mn	0.25	0.23	0.23	0.25
20	Mineral Oil	<0.5	<0.5	<0.5	<0.5
21	Nitrate as NO ₃	3.8	3.2	3.9	3.4
22	Phenolic Compound	<0.05	<0.05	<0.05	<0.05
23	Selenium as Se	<0.001	<0.001	<0.001	<0.001
24	Silver as Ag	<0.1	<0.1	<0.1	<0.1
25	Sulphate as SO ₄	6.3	5.6	6.8	5.9
26	Sulphide	<1.0	<1.0	<1.0	<1.0

27	Total alkalinity as CaCO ₃	38.5	31.2	39.8	34.1
28	Total Hardness	92.5	81.3	96.1	88.7
29	Zinc as Zn	<0.03	<0.03	<0.03	<0.03
30	Cadmium as Cd	<0.01	<0.01	<0.01	<0.01
31	Cyanide as CN	<0.01	<0.01	<0.01	<0.01
32	Lead as Pb	<0.02	<0.02	<0.02	<0.02
33	Mercury as Hg	<0.004	<0.004	<0.004	<0.004
34	Molybdenum as Mo	<0.05	<0.05	<0.05	<0.05
35	Nickel (as Ni)	<0.1	<0.1	<0.1	<0.1
36	Pesticide	Absent	Absent	Absent	Absent
37	Poly aromatic Hydrocarbon as PAH	<0.0001	<0.0001	<0.0001	<0.0001
38	Arsenic as As	<0.004	<0.004	<0.004	<0.004
39	Total Chromium as Cr	0.015	0.021	0.013	0.017
40	Hexa Chromium as Cr +6	<0.01	<0.01	<0.01	<0.01
41	Total Coliform	<1.1	<1.1	<1.1	<1.1

C. SURFACE WATER

Damsala Nallah Water: -

Sl.No	Parameter	Apr'23		May'23		Jun'23	
		Upstream	Down Stream	Upstream	Down Stream	Upstream	Down Stream
1	Colour	<10	<10	<10	<10	<10	<10
2	pH	7.31	7.36	7.34	7.38	7.28	7.35
3	Temperature	29.8	30.2	30.5	31.2	31.5	32.1
4	Suspended Solids	92	96	95	98	92	95
5	Dissolved Oxygen	4.5	5.1	4.2	5.5	4	5.2
6	Turbidity	17.9	19.2	18.1	19.5	13.4	18.6
7	Chloride	28.5	22.7	28.8	23.1	30.1	24.5
8	TDS	262	231	262	231	274	221
9	BOD	<1	<1	<1	<1	<1	<1
10	Arsenic	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
11	Lead	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
12	Cadmium	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
13	Hexavalent Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
14	Copper	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
15	Zinc	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
16	Selenium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
17	Cyanide	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
18	Fluoride	0.26	0.31	0.54	0.4	0.46	0.4
19	Sulphate	0.49	0.53	1.13	0.51	1.15	0.49
20	Phenolic Compound	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Iron	0.32	0.39	0.31	0.36	0.33	0.38
22	Nitrate	5.5	4.1	5.3	4.2	5.1	4.4
23	Anionic Detergents	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
24	Total Coliform	660	720	640	760	660	780
25	Cadmium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26	Conductivity	364	392	378	396	386	391
27	Free carbon Dioxide	3.1	3.4	3.2	3.6	3.1	3.4
28	COD	6.2	6.5	6.1	6.6	6.2	6.9
29	Acidity	4.5	5.2	3.9	4.5	3.7	4.8
30	Alkalinity	90	96	94	98	92	96
31	Calcium	32.1	37.5	31.6	35.4	34.2	36.8

32	Magnesium	15.6	12.8	15.9	14.1	14.3	13.2
33	Manganese	12.6	11.2	11.9	10.5	11.4	10.2
34	Zinc	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
35	Oil & Grease	ND	ND	ND	ND	ND	ND
36	Fecal Coliform	240	260	220	240	240	260

Damsala Nallah Water: -

Sl.No	Parameter	Jul'23		Aug'23		Sep'23	
		Upstream	Down Stream	Upstream	Down Stream	Upstream	Down Stream
1	Colour	<10	<15	<10	<15	<10	<15
2	pH	7.21	7.33	7.29	7.38	7.21	7.32
3	Temperature	30.9	29.8	29.5	28.4	28.5	26.4
4	Suspended Solids	92	96	117	98	124	102
5	Dissolved Oxygen	4.2	5.6	4.6	5.8	4.8	6
6	Turbidity	14.3	19.4	15.4	20.1	16.1	22.4
7	Chloride	31.2	26.5	33.2	37.9	34.2	29.5
8	TDS	285	234	296	242	302	254
9	BOD	<1	<1	<1	<1	<1	<1
10	Arsenic	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
11	Lead	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
12	Cadmium	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
13	Hexavalent Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
14	Copper	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
15	Zinc	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
16	Selenium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
17	Cyanide	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
18	Fluoride	0.42	0.3	0.32	0.44	0.32	0.28
19	Sulphate	1.24	0.43	0.44	1.35	1.31	0.46
20	Phenolic Compound	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Iron	0.31	0.37	0.33	0.39	0.31	0.34
22	Nitrate	4.9	3.8	5.1	4.2	5.5	4.6
23	Anionic Detergents	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
24	Total Coliform	640	760	660	820	640	840
25	Cadmium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26	Conductivity	396.5	402.1	402.5	421.3	429.6	457.8
27	Free carbon Dioxide	2.9	3.3	2.6	3.1	2.2	2.6
28	COD	5.6	6.2	5.8	6.4	5.2	6.6
29	Acidity	3.1	4.5	2.9	4.2	2.4	3.9
30	Alkalinity	85	92	90	98	92	102
31	Calcium	31.2	34.5	32.5	35.3	33.2	36.4
32	Magnesium	16.1	14.6	14.1	15.3	14.9	13.5
33	Manganese	10.2	10.9	10.8	11.1	9.8	10.2
34	Zinc	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
35	Oil & Grease	ND	ND	ND	ND	ND	ND
36	Fecal Coliform	260	280	280	320	260	280

D. WASTE WATER**WW-1: ETP Inlet**

Sl No	Parameter	APRIL-23	MAY-23	JUNE-23	JULY-23	AUG-23	SEPT-23	AVERAGE
1	pH at 250C	7.51	7.73	7.86	7.76	7.98	7.63	7.75
2	Colour	<15	<15	<15	<15	<15	<15	<15
3	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable

4	Temperature	28.5	30.2	32.5	30.5	29.8	28.6	30.0
5	Suspended Solids	27.2	79.7	73.2	26.6	21.9	43.6	45.4
6	Total Residual Chlorine	0.29	0.28	0.21	0.19	0.16	0.15	0.21
7	Oil & Grease	4.9	4.7	4.4	4.2	3.5	3.2	4.15
8	Biochemical Oxygen Demand as BOD at 270C For 3 Days	14.5	14.2	13.6	14.2	15.4	14.4	14.38
9	Chemical Oxygen Demand as COD	64.2	60.0	56.0	58.0	60.0	55.0	58.87
10	Amm. Nitrogen (as N)	2.51	2.58	2.48	2.36	2.29	2.21	2.41
11	Total Kjeldhal Nitrogen	5.3	5.1	5.3	5.1	4.9	4.5	5.03
12	Free Ammonia	0.037	0.034	0.032	0.029	0.027	0.026	0.03
13	Nitrate as NO3	1.63	1.66	1.58	1.46	1.56	1.46	1.56
14	Diss. Phosphate (as P)	0.83	0.79	0.71	0.65	0.72	0.67	0.73
15	Fluoride	0.32	0.30	0.29	0.31	0.35	0.33	0.32
16	Sulphide	ND	ND	ND	ND	ND	ND	ND
17	Phenolic Compound	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Cyanide (as CN)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
19	Hexavalent Chromium as Cr +6	0.48	0.27	0.31	0.41	0.40	0.46	0.39
20	Mercury (as Hg)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
21	Arsenic	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
22	Lead (as Pb)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
23	Cadmium (as Cd)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Total Chromium (as Cr)	2.6	2.2	2.6	2.1	1.9	1.5	2.15
25	Copper (as Cu)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
26	Zinc (as Zn)	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
27	Selenium (as Se)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
28	Nickel (as Ni)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
29	Manganese (as Mn)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
30	Iron (as Fe)	0.42	0.41	0.41	0.43	0.45	0.42	0.42
31	Vanadium (as V)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
32	Bio-assay Test	96%	93%	95%	97%	95%	91%	95%
33	Particle Size of Suspended Solids	< 850	< 850	< 850	< 850	< 850	< 850	< 850
34	Pesticide	Absent	Absent	Absent	Absent	Absent	Absent	Absent

WW-2: ETP Outlet

SINo	Parameter	APRIL-23	MAY-23	JUNE-23	JULY-23	AUG-23	SEPT-23	AVERAGE
1	pH at 250C	7.56	7.35	9.11	7.29	6.92	6.75	7.50
2	Colour	<5	<5	<5	<5	<5	<5	<5
3	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Temperature	29.7	29.5	29.8	28.7	28.1	26.7	28.8
5	Suspended Solids	2.87	25	11.37	12.3	9.8	10.8	12.0
6	Total Residual Chlorine	0.23	0.21	0.19	0.13	0.11	0.1	0.16
7	Oil & Grease	2.6	2.3	2.1	1.9	1.4	1.2	1.92
8	Biochemical Oxygen Demand as BOD at 270C For 3 Days	<1	<1	<1	<1	<1	<1	<1

9	Chemical Oxygen Demand as COD	<2	<2	<2	<2	<2	<2	<2
10	Amm. Nitrogen (as N)	0.81	0.84	0.78	0.77	0.68	0.60	0.75
11	Total Kjeldhal Nitrogen	3.7	3.9	3.4	3.2	3.1	2.9	3.37
12	Free Ammonia	0.028	0.029	0.028	0.025	0.023	0.021	0.03
13	Nitrate as NO3	1.48	1.51	1.42	1.38	1.21	1.18	1.36
14	Diss. Phosphate (as P)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
15	Fluoride	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
16	Sulphide	ND	ND	ND	ND	ND	ND	ND
17	Phenolic Compound	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Cyanide (as CN)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
19	Hexavalent Chromium as Cr +6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
20	Mercury (as Hg)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
21	Arsenic	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
22	Lead (as Pb)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
23	Cadmium (as Cd)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Total Chromium (as Cr)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
25	Copper (as Cu)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
26	Zinc (as Zn)	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
27	Selenium (as Se)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
28	Nickel (as Ni)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
29	Manganese (as Mn)	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
30	Iron (as Fe)	0.36	0.32	0.32	0.31	0.32	0.31	0.32
31	Vanadium (as V)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
32	Bio-assay Test	99%	97%	98%	99%	91%	90%	96%
33	Particle Size of Suspended Solids	< 850	< 850	< 850	< 850	< 850	< 850	< 850
34	Pesticide	Absent	Absent	Absent	Absent	Absent	Absent	Absent

5. GROUND WATER LEVEL

Sl.No	Monitoring Location	Apr'23	May'23	Jun'23	Jul'23	Aug'23	Sep'23
		Result (mtr)	Result, (mtr)	Result, (mtr)	Result, (mtr)	Result, (mtr)	Result, (mtr)
Ground Water level (Core Zone – Monthly)							
1	Damsala Nalla Site	8.89	9.08	9.12	7.78	6.83	7.13
2	Open Well Infront of DB Plot	10.55	10.98	13.87	8.9	8.11	9.2
3	Bore Well at DB Plot	12.74	13.56	11.92	10.82	9.54	7.43
Ground Water level (Buffer Zone – Quarterly)							
4	Open well at Saruabil Village	7.98			2.87		
5	Open well at Tailangi	9.25			2.5		
Piezo meter Water level							
6	SAR/PIZO/01 (Telemetry)	10.29	10.92	10.24	9.57	8.77	8.92
7	SAR/PIZO/02(Non-Telemetry)	10.05	10.03	9.86	8.79	9.05	9.38

Annexure - IV - Forest Clearance of Saruabil Chromite Block

Copy of the letter No. B. 100/95-FC 20. 10. 1. 1997 from Sri D. C. Khenduri, Sr. Asst. Inspector General of Forests, Government of India, Ministry of Environment & Forests, Paryavaran Bhawan, C. O. Complex Lodi Road, New Delhi addressed to the Secretary to the Government of Orissa Forest & Environment Department Bhubaneswar.

....

Sub:- Diversion of 224.63 ha. of forest land for Saruabil Chromite Mines in favour of M/s Nishrilal Mines (P) Ltd. under Athapara Forest Division.

I am directed to refer to your letter No. 107(Cons) 95/95 19135/P&H dt. 18th September, 1995 on the above mentioned subject seeking prior approval of the Central Government in accordance with Section 2 of the Forest (Conservation) Act, 1980.

2. After careful consideration of the proposal of the State Government and the compliance reported vide your letter No. 107(Cons) 27/95 26646/P&H dt. 29th November, 1996, the Central Government hereby conveys its approval under Section 2 of the Forest Conservation Act, 1980 for renewal of the mining lease in favour of M/s Nishrilal Mines (P) Ltd. over an area of 224.63 ha. of forest land for Saruabil Chromite Mines in Athapara Forest Division, subject to the following conditions.

- i) The legal status of forest land will remain unchanged.
- ii) Mines over area to be reclaimed/ restored after mining/ quarrying is over as per the reclamation plan.
- iii) With a view to reduce the destruction of forest area for meeting the fuelwood needs of the labourer and staff, while working on the project, the user agency will provide fuelwood/ alternate source of fuelwood to them.
- iv) The user agency will effectually implement Environment Management Plan as submitted by them.
- v) No explosive should be allowed to store in the forest area.
- vi) No construction of additional roads and buildings will be allowed in the leased area other than those already existing.
- vii) After the expiry of the lease, the buildings and roads will be handed over to the Forest Department.
- viii) The lease period shall be co-terminous with the lease granted under FCR Act, subject to maximum of 20 years.
- ix) The forest land shall not be used for any purpose other than those specified in the proposal.
- x) The user agency will abide by any other condition that may be imposed by the State Forest Department in the interest of afforestation and protection of forest.

Contd... (2)

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3. I am further directed to intimate that the Central Government has not accepted the recommendation of the State Government for penal afforestation of 254.62 Ha., which was suggested in lieu of instituting prosecution against defaulting officers. It is, therefore, desired that action against the defaulting officers be taken now and the Ministry informed accordingly.

Government of Orissa
Forest & Natural Environment Department

No. 1071 (Cons) 21/96 /F&E. dt. Bhubaneswar the Jan. '97

Copy forwarded to Principal Chief Conservator of Forests, Orissa for information and necessary action.

DEPUTY SECRETARY TO GOVERNMENT

Home No. _____ /F&E. dt. January '97

Copy forwarded to the Conservator of Forests, Angul Circle/ Director, Similipal Tiger Reserve, Berhampur/ Districtal Forest Officer, Itanagar / Beripada Forest Division for information and necessary action.

DEPUTY SECRETARY TO GOVERNMENT

Home No. _____ /F&E. dt. January '97

Copy forwarded to Klean & Mines Department for information and necessary action.

DEPUTY SECRETARY TO GOVERNMENT

Home No. 1224 /F&E. dt. 25th January '97

Copy forwarded to M/s Vishrtilal Mines (P) Ltd, Jajapur Road for information and necessary action.

DEPUTY SECRETARY TO GOVERNMENT

M. S. /

Annexure - V - Wildlife Clearance Letter

OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS
(WILDLIFE) & CHIEF WILDLIFE WARDEN, ODISHA
BDA APARTMENT, 5TH FLOOR, PRAKRUTI BHAWAN, NILAKANTHA NAGAR, BBSR-12
Ph. No.0674-2564587, FAX No.0674-2565062
(Website:odishawildlife.org, E. mail: odishawildlife@gmail.com)

Memo No. 10/80 /1WL-SSP-55/2016
Dated, Bhubaneswar the 27 Dec, 2016

To

The Divisional Forest Officer,
Cuttack Division

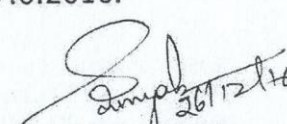
Sub: *Saruabil Chromite Mines of M/s Misrilall Mines (P)
Ltd. in Jajpur District - Authentication of location
map regarding*

Ref: *Your memo No.12385 dt 20.12.2016*

As per the location map provided by you in your memo No. cited above, the proposed tiger corridor in Daitari DPF is at a radial distance of 9.115 km from the above mining lease. No other National Parks/Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant Reserves, etc. exist within 10 km of the above mine lease.

In this regard, I am directed to enclose herewith copies of the location map (in duplicate) duly authenticated by the PCCF (WL) & CWLW, Odisha, in compliance to point No.2 of Govt. of India, MoEF&CC letter No.J-11015/72/2010-IA.II(M) dt 27.6.2016.

Encl: As above


Deputy CF (WLM)

Memo No. 10/81 /date 27-12-2016

Copy forwarded to the Regional Chief Conservator of Forests, Angul Circle for information with reference to memo No.12386 dt 20.12.2016 of the DFO, Cuttack Division.


Deputy CF (WLM)

P.T.O.

-2-

✓ Memo No. 10182 /date 27-12-2016
Copy forwarded to Sri U.K.Sinha, Chief Executive Mines,
M/s Misrilal Mines (P) Ltd., Saruabil, PO - Kansa, Dist. - Jajpur, PIN
- 755028 for favour of information and necessary action.

S. Sinha
26/12/16
Deputy CF (WLM)

Annexure - VI - Environmental Management Practices



Fully Reclaimed OB Dump



Dump runoff management



Garland drain with settling pin & Check dam

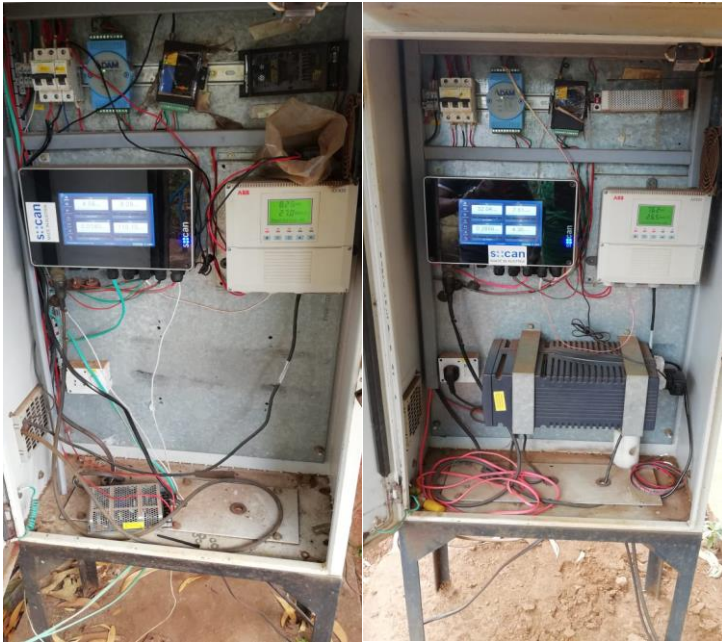


Garland drain with retaining wall cleaned



Mines haul road water sprinkling





Effluent Quality Monitoring System with RT-DAS



Air Monitoring Station



Vehicle washing with Oil & Grease separation pit



Hazardous storage area



Dump Plantation during FY 2022-23 & 23-24



Roof top rainwater harvesting structure



Piezometers installed for Ground water level monitoring

Saruabil Chromite Block

**M/S Tata Steel Limited
Details of Plantation**

YEAR	Total No. of Saplings	Area (ha)	Species of Plants	Survival Rate
2021-22	5410	2 ha (Dump 6 = 0.1889 ha; Dump2 = 0.8252 ha Safety Zone (Boundary Wall Inside and Outside) = 0.6597 ha Safety Zone (Nala Side) = 0.3217 ha)	Simarua, Teak, KrushnaChuda, Kaju, Bada Chakhunda, Gambhari, Neem, Maha Neem, Arjun, Karanja, Chatiyana,	75 % by March 2022
2022-23	5025	2 Ha in dump 6, Terrace 1	Simarua, Sal, Srishi, Sishu, Neem, Mahaneem, Arjun, Karanja, Katha	Freshly planted (95% survival rate)
2023-24	5956	2 Ha in dump 6, Terrace 2 & 3	Badam, Radha Chuda, Bamboo, Amla, Banyan, Peepal, Jamun, Bada Chakhunda,	

Annexure - VII - Half-Yearly CSR Expenditure Tata Steel Limited (Sukinda, Saruabil & Kamarda Block) for the year 2023 – 2024.

Verticals	GL Description	Actual Expenditure up to August'2023 in Lakh
DRINKING WATER	Installation and repair of hand tube wells	1.90
	Supply of drinking water through tanker	19.81
	Others (open well, water storage, mine water pipeline, filtration plant etc)	
DRINKING WATER Total (A)		21.71
LIVELIHOODS (AGRICULTURE)	Water Harvesting structures (ponds)	12.98
	Agriculture Activities (SRI and dryland farming)	3.17
	Promote second crops	0
	Livelihood Agri allied, Livo, Diary, Poultry	20.83
	Capacity Building of Farmers Institutions	0.97
	Promote horticulture in wastelands and dry land crops	11.14
LIVELIHOODS (AGRICULTURE) Total (B)		49.09
ENVIRONMENT	Protection of flora and fauna	5.11
ENVIRONMENT Total (C)		5.11
RURAL INFRASTRUCTURE & URBAN SERVICES	Infrastructural support for Rural Development	18.26
RURAL INFRASTRUCTURE & URBAN SERVICES Total (D)		18.26
	PROJECT EXPENDITURE (A+B+C+D)	94.17
	Admin. Expense	10.47
	TOTAL	104.64

Annexure - VIII- IME & PME of Employees

STATUS OF STATUTORY INITIAL/PERIODICAL MEDICAL EXAMINATION CONDUCTED BY UTKAL POLYCLINIC O&H CENTRE, SUKINDA FROM THE FY 2022-23

KAMARDA CHROMITE MINE, TSML

NAME OF MINES	NAME OF INDUSTRY	CONTRACTOR NAME	IME	PME	TOTAL
KAMARDA CHROMITE MINE	TATA STEEL MINING LTD.	DEPARTMENT	0	1	001
KAMARDA CHROMITE MINE	TATA STEEL MINING LTD.	SECURITY & INTELLIGENCE SERVICES INDIA LTD.	39	0	039
KAMARDA CHROMITE MINE	TATA STEEL MINING LTD.	DHANSAR ENGINEERING CO. PVT. LTD.	14	1	015
KAMARDA CHROMITE MINE	TATA STEEL MINING LTD.	UNITED INFACORE LTD.	13	0	013
KAMARDA CHROMITE MINE	TATA STEEL MINING LTD.	TERRA WALKER DRILLING PVT. LTD.	113	0	113
KAMARDA CHROMITE MINE	TATA STEEL MINING LTD.	ARUN KUMAR MITRA	1	0	001
KAMARDA CHROMITE MINE	TATA STEEL MINING LTD.	NAVYAK ENTERPRISES	1	0	001
TOTAL			181	2	183

SARUABIL CHROMITE MINE, TSML

NAME OF MINES	NAME OF INDUSTRY	CONTRACTOR NAME	IME	PME	TOTAL
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	DEPARTMENT	1	0	001
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	DHANSAR ENGINEERING CO. PVT. LTD.	41	4	045
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	MITRA SK PVT. LTD.	1	0	001
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	CHROMATIC CONSTRUCTION	8	0	008
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	ROUT ENGINEERING	31	0	031
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	NAVYAK ENTERPRISES	1	0	001
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	QUESS CORPORATION LTD.	4	0	004
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	FREBWISE	1	0	001
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	BHUKTA TRANSPORT	3	0	003
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	KANDOI TRANSPORT LTD.	3	0	003
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	NORTH EASTERN CARRYING CORPORATION LTD.	1	0	001
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	EFFWA INFRA & RESEARCH PVT. LTD.	78	0	078
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	R K SAHOO	7	0	007
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	POWER ENGINEERING	37	0	037
SARUABIL CHROMITE MINE	TATA STEEL MINING LTD.	PRIME DRILLING PVT. LTD.	2	0	002
TOTAL			219	4	223



Annexure - IX - Ground Water Allocation

OFFICE OF THE SUPERINTENDING ENGINEER, JARAKA IRRIGATION DIVISION
AT/PO-JARAKA, DIST.JAJPUR, Ph. 06725 283069, FAX-283064
e-Mail-eeidjaraka@yahoo.com

To Lr. No. WT- 162/ 3781
WR

/ Date. 11/11/22

The Special Secretary to Government,
Department of Water Resources,
Rajiv Bhawan, Bhubaneswar

Sub : Approval of agreement for drawal of 0.013488 cusec (33 Cum/day) of ground water for commercial purpose with M/s Tata Steel Mining Limited for Saruabil Chromite Block , AT –Saruabil, P.O.-Kansa, Dist-Jajpur.

Ref:- 1. DOWR Notification No-Irr-II-WRC-178/18(PHYSICAL)-16476/WR, Bhubaneswar/Dated 21.06.2018.
2. Lr.No-WS-120/17(PT-I)-20118(WE)/Date 30.06.2018 of Head, Directorate of Water Services, Bhubaneswar.

Sir,

With reference to the subject cited above, it is to intimate that the agreement has been executed for drawal of 0.013488 cusec (33 Cum/day) of ground water for commercial purpose from dt 01.11.2022 to dt 31.10. 2023 with M/s Tata Steel Mining Limited for Saruabil Chromite Block , AT –Saruabil, PO-Kansa, Dist-Jajpur. The agreement may kindly be approved. This is favour of kind information & necessary action.

Encl: Copy of Agreement.

Yours faithfully,

KBM
10/11/22

Superintending Engineer
Jaraka Irrigation Division
Jaraka

Memo No.

3782/WR

/Date.

11/11/22

Copy submitted to the Chief Engineer, Water Services, O/o the Engineer-in-Chief, Water Resources(Odisha), Secha Sadan, Bhubaneswar for favour of kind information and necessary action

Encl: Copy of Agreement.

KBM
10/11/22

Superintending Engineer
Jaraka Irrigation Division
Jaraka

Memo No.

3783/WR

/Date.

11/11/22

Copy submitted to the Collector & District Magistrate, Jajpur for favour of kind information and necessary action.

Encl: Copy of Agreement.

KBM
10/11/22

Superintending Engineer
Jaraka Irrigation Division
Jaraka

Memo No.

3784/WR

/Date.

11/11/22

Copy submitted to the Additional Chief Engineer, Eastern Circle-II, Chandikhole for favour of kind information and necessary action.

Encl: Copy of Agreement.

KBM
10/11/22

Superintending Engineer
Jaraka Irrigation Division
Jaraka

Memo No.

3785/WR

/Date.

11/11/22

Copy forwarded to M/s Tata Steel Mining Limited, ATP.O –Kalarangiatta, Dist-Jajpur for information and necessary action .

Encl: Copy of Agreement.

KBM
10/11/22

Superintending Engineer
Jaraka Irrigation Division
Jaraka

Every drop of water is precious.Use optimally by adopting recycle,reuse and zero discharge technology.



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AGREEMENT NO.- 56/2022

FORM-K

(See rule 23-A(2) (e) & Rule 26)

AGREEMENT FOR SUPPLY OF WATER FOR THE
PURPOSE OF OTHER THAN IRRIGATION

THIS AGREEMENT is made on the 10th November Two Thousand –Twenty Two BETWEEN Sri **Gushanta Kumar Mishra** Son of Late Narayana Mishra, AT- Kasipur, P.O.- Keonjhar P.S.- Keonjhar, District-Keonjhar by profession **Senior General Manager** of Saruabil Chromite Block of M/s Tata Steel Mining Limited, AT-Saruabil P.O-Kalarangiatta, Via Kansa., P.S.- Kaliapani, Dist-Jajpur-755028, Odisha (herein after called the "Applicant") of the first part AND in the representative capacity of M/s Tata Steel Mining Limited, AT-Saruabil P.O-Kalarangiatta, Via Kansa., P.S.- Kaliapani, Dist-Jajpur-755028, Odisha (1) **Sri Nishan Mohanty** Son of Yeeshan Mohanty, AT- Sikharapur, P.O- College Square, P.S- Chauliganj, Dist- Cuttack as **Deputy Manager (Administration)** and (2) **Dr. Biswaranjan Dhal** Son of Sri Nilamani Dhal, AT/ PO-Kanpur , P.S.- Soso, District- Keonjhar as **Manager (Environment)** (here in after referred to as the "Sureties") of the second part AND the Governor of Odisha through the Superintending Engineer, Jaraka Irrigation Division, Jaraka, Department of Water Resources, Government of Odisha, which expression unless repugnant to the context shall include his successors and assigns (here in after called 'the Government') of the third part.

WHEREAS, the applicant has made an application for supply of water from the Superintending Engineer, Jaraka Irrigation Division ground/sub soil water source for the period as mentioned in the schedule.

AND WHEREAS the sureties have agreed to give surety for payment of rates leviable for such supply in the manner hereinafter appearing and the Government has agreed to supply water for the [vide allocation order Lr No- WT- 152/3534 Date- 14.10.2020 of Executive Engineer, Jaraka Irrigation Division, Jaraka, purpose specified in the schedule annexed hereto.

K. Ton
10/11/22
Superintending Engineer
Jaraka Irrigation Division
JARAKA
10.11.2022

J. Kancherla
Sr. General Manager (Mining)
Tata Steel Mining Limited

Nishan Mohanty

Biswaranjan Dhal



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SCHEDULE

Purpose for which water will be supplied	Volume of water, if any	Period of supply	The place of which it will be supplied	Remarks
Industrial purpose	0.013488 cusec (33KLD)	01.11.2022 to 31.10.2023	Inside the premises of M/s Tata Steel Mining Limited, AT-Saruabil P.O-Kalarangiatta, Via- Kansa, P.S.- Kaliapani, Dist-Jajpur	

NOW THIS AGREEMENT witnesseth as follows:

In pursuance of the said agreement and in consideration of supply of water to be made to the applicant and the sureties hereby jointly and severally covenant with the Governor as follows:-

1. M/s Tata Steel Mining Limited shall make suitable arrangement to take the water from the Government water source at which it will be supplied, M/s Tata Steel Mining Limited shall not use the water supplied to him for any purpose other than that which is specified in the schedule
2. If the water rate/license fees for the aforesaid quantity of water or any part thereof, is not paid on or before the date specified in agreement it shall become payable at once (unless the Government sanctions for special reason an extension of time) and M/s Tata Steel Mining Limited and the sureties shall be liable jointly and severally to pay the same with compound interest at the rate of two percent *per mensem* from the date of default. All amount due to the Government under terms of these presents shall if not paid in time, be recoverable as a public demand under the Orissa Public Demands Recovery Act, 1962.
3. (i) M/s Tata Steel Mining Limited shall be liable for criminal and civil action if by drawl of water, the rights of any third party are affected and shall indemnify the Government against all claims for damage preferred by person or persons affected by the permission granted.
(ii) M/s Tata Steel Mining Limited shall not without prior permission in writing from the Government to lay pipeline on Government or communal lands. If the pipelines have to pass through Government lands permission of the Government for this shall be taken separately which may be granted subject to the protection of rights of Government or community, as the case may be.

K. M. J. 10/11/22
Superintending Engineer
Jaraka Irrigation Division
10.11.2022 JARAKA

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J. N. S. 10/11/22
Sr. General Manager (Mining)
Tata Steel Mining Limited

Nishan Mohanty

Prasanna Ranjan Dhal



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- (iii) M/s Tata Steel Mining Limited shall not draw or lift water more than the quantity mentioned in the requisition or order and not exceeding the volume mentioned in the Schedule except with the prior approval of the Government. The Superintending Engineer, Jaraka Irrigation Division shall assess the fees to be charged as per Unit/quantity of water drawn or allocated whichever is higher. If drawal is more than the allocation, a penal rate at six times the rate specified in Schedule III shall be charged on the quantity of excess drawal, in addition to the normal bill on allocated quantity. The excess drawal is permissible for a maximum period of six months, within which licensee shall have to apply for a higher allocation of water with reason where the licensee fails to so apply for such higher allocation or where the licensee is refused for such higher allocation, the agreement shall be liable to cancellation and the water supplied shall be stopped thereafter.
- (iv) The permission granted shall not be deemed to exempt M/s Tata Steel Mining Limited from liability to payment of water charges lawfully assessable at the rate as may be prescribed by Govt. from time to time.
- v) Government reserves the right to suspend or cancel the permission in case of violation of any of the covenants.

Nishant Mohanty

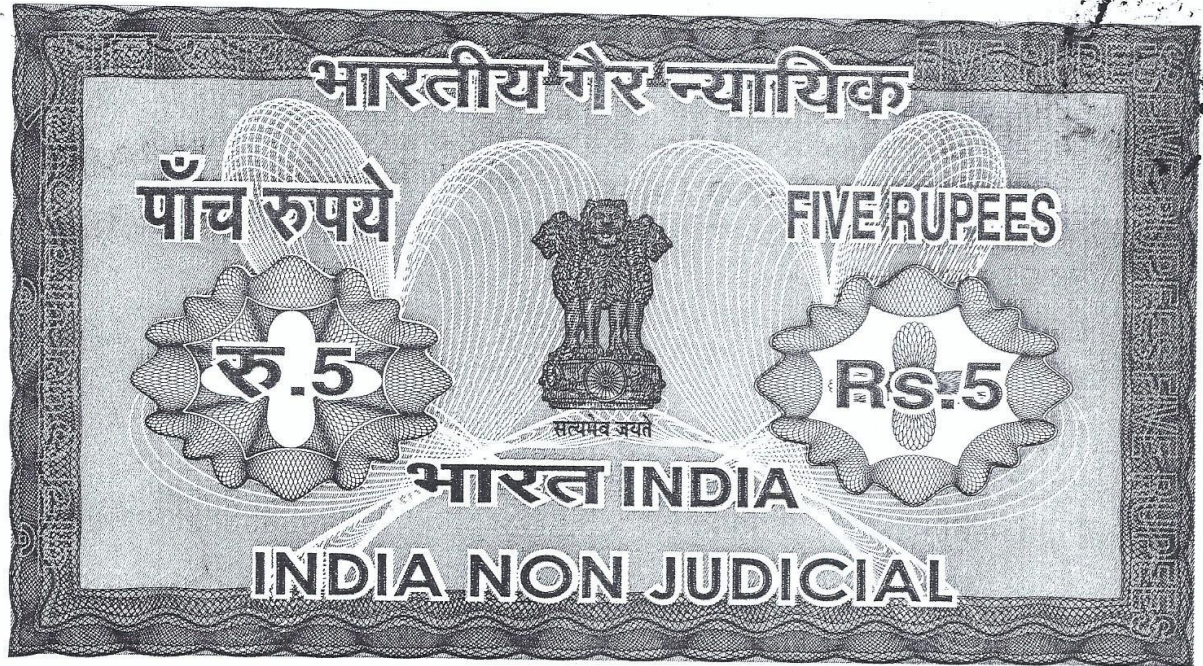
4. M/s Tata Steel Mining Limited at his own cost shall install a Flow Meter or a suitable measuring device for measurement of water drawn or lifted by him from the Govt. water source as per the procedure laid down in rule 23-A(b). The Superintending Engineer, Jaraka Irrigation Division shall visit the location of drawal or lifting of water, verify the quantities of water drawn or lifted by M/s Tata Steel Mining Limited and ensure such control as may be necessary for administering the drawal or lifting of water. Assessment of water rate shall be made as per the quantity of water drawn or allocated whichever is higher. In case of any defect or non-functioning of the Flow Meter, the licensee shall bring the fact to the notice of the Superintending Engineer, Jaraka Irrigation Division forthwith and take appropriate steps to remove the defects in the Meter or for replacement thereof within a period of three months and in such cases the fees shall be charged on the quantity of water allocated for the said period of three months or till the defect in the Meter is removed or the Meter replaced, as the case may be whichever is earlier, and where the licensee fails to bring the defect or non-functioning of the Meter to the notice of the Superintending Engineer, Jaraka Irrigation Division or fails to remove the defects in the Meter or to replace the same, as the case.

Dilipkumar Dhal

K. M. M.
10/11/22
Superintending Engineer
Jaraka Irrigation Division
10.11.2022 JARAKA

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J. K. Singh
Sr. General Manager (Mining)
Tata Steel Mining Limited



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In witness whereof the Parties hereto have put their hands and seals the day and year first above- written.

In the presence of the Witnesses

1.

Signature of the Applicant
Sushanta Kumar Sr. General Manager (Mining)
Tata Steel Mining Limited

2.

Nishan Mohanty
Bikharisingh Dhal

In the presence of the witnesses:

1.

[Signature]
10.11.2022

2.

[Signature]
10/11/22
Superintending Engineer
Irrigation Division
acting in the premises for and on behalf of
the Government of Odisha.

Annexure – X- Environmental Management Cell

**Environmental Cell
Saruabil Chromite Block
M/s. Tata Steel Limited**

Sl. No	Name	Designation	Experience (years)	E-mail	Mobile No.
2	Mr. Naveen Srivastava	Head Mines & Agent	23	naveen@tatasteel.com	6287090160
3	Thakur Ajay Kumar Vishwambharnath	AGM, SHE	17	ajaykr.thakur@tatasteel.com	9238306143
4	Mr. Devraj Tiwari	AGM, Ext. Affairs & Sustainability	12	devraj.tiwari@tatasteel.com	8092000271
5	Mr. P.S. Padhi	Mines Manager	12	priyadarsisuvakanta.padhi@tatasteel.com	8093038829
6	Dr. Biswaranjan Dhal	Manager, Environment	10	biswaranjan.dhal5@tatasteel.com	8114371713
7	Mr. Rajesh Ekka	ADM, Electrical	19	rekka@tatasteel.com	9238087034
8	Mr. Debdip Senapati	Sr. Manager QC	14	debdip.senapati@tatasteel.com	9238087043

Annexure – XI- Environmental Expenditure

Environmental Expenditure Made During Apr' 2023 to Sept' 2023

Sl. No.	Expenditure	Amount (In Lakh)
1	ETP operation cost	
	a) Manpower	14.01
	b) ETP Electricity cost	4.27
	c) Chemical & maintenance cost	8.88
	d) ETP sludge disposal	0.67
2	Water sprinkling cost for haul road management	20.55
3	Display of Board (Env. Management)	0.38
4	Monitoring & Analysis cost of Air, Water & Noise	11.53
5	Plantation expenditure	8.01
6	EQMS Online Analysis	1.77
7	EQMS Online Data Transmission	0.77
	Total	70.84