



To
Director (S)
Ministry of Environment, Forest & Climate Change
Eastern Regional Office,
A/3, Chandrasekharpur
Bhubaneswar- 751023

Letter Ref No: SCM/ ENV/ 012 /036/ 18

Date: 29.11.2018

Sub: **Submission of half-yearly compliance report in respect of the stipulated environmental clearance terms and conditions at Sukinda Chromite Mine for the period from April'2018 to September'2018**

Ref.1: MoEF Letter Ref No: J-11015/96/2011-IA. II (M), dated 06.09.2013

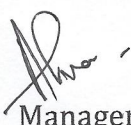
Ref.2: Para 10 (i) of Principal Notification vide S.O. 1533(E)-EIA Notification,2006 dt-14.09.2006.

Respected Sir,

We are herewith submitting the six-monthly compliance report on the status of the implementation of the conditions stipulated in environmental clearance awarded to us vide MoEF Letter Ref No: J-11015/96/2011-IA. II (M), dated 06.09.2013 and environmental safeguards at Sukinda Chromite Mine for the period from April'2018 to September'2018 for your kind perusal.

We, trust the submission herewith is in compliance to the stipulations of environmental clearance and look forward to your kind guidance in this regard for further improvement in this regard.

Thanking you,
Yours faithfully,


Manager
Sukinda Chromite Mine
M/s Tata Steel Limited

Manager (Mines)
Tata Steel Limited
Sukinda Chromite Mine
PO : Kalarangiatta-755 028
Dist : Jajpur (Odisha)

Encl: Six Monthly Compliance Report (with Annexures) for Apr'18 to Sep'18 (63Pages)

CC: 1. MoEFCC, New Delhi
2. CPCB, Zonal Office Kolkata
3. OSPCB, Bhubaneswar 4. Regional office (Kalinganagar)
5. Central Ground Water Authority, 6. Central Ground Water Board (Bhubaneswar)

TATA STEEL LIMITED

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Half-Yearly Compliance Report

On

Environmental Clearance Conditions

(MoEF Letter Ref No: J-11015/96/2011-IA. II (M), dated 06.09.2013)

Period: April'2018 – September'2018

Submitted By:

Sukinda Chromite Mine

M/s. Tata Steel Limited

At/Po: Kalarangiatta, Block-Sukinda

District- Jajpur, Odisha -755028

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Compliance to the Environment Clearance Letter No: J-11015/96/2011-IA. II (M), dated 06.09.2013 in respect of Sukinda Chromite Mine for Mining Lease renewal, increase in production for Chrome Ore (ROM): 2.40 MTPA, Pyroxenite Ore (ROM): 0.50 MTPA, Chrome Concentrate: 0.65 MTPA, change in mining technology to opencast & underground mining, change in beneficiation technology and increase in project area.

A. Specific Condition:

Sl	Specific Condition	Compliance Status (Apr'18 to Sep'2018)
I	No mining activities will be allowed in forest area for which the Forest Clearance is not available	<p style="text-align: center;">Complied.</p> <p>The lease of 406.00ha comprising 404.669ha of forest land (73.697 ha as per HAL + 330.972 ha as per SABIK) and 1.331ha of non-forest land. The details of Forest Clearance granted by MoEF & CC are;</p> <p style="margin-left: 40px;">a) Letter no. 8-78/96-FC dated 27.01.1998 over 73.797 ha. & b) Letter No. 8-15/2016-FC dated 18.05.2018 over 330.972 ha.</p> <p>Presently, mining and allied activities are carried within the lease hold area of 406.0ha within which the entire forest land has been diverted.</p> <p style="text-align: center;">[Copies of forest clearances enclosed as Annexure-I]</p>
II	The project proponent will seek and obtain approval under the FC Act, 1980 for diversion of the entire forest land located within the mining lease within a period of two years from 01.02.2013 i.e. the date of issue of guidelines by FC vide their letter-F. No. 11-362/ 2012-FC, failing which the mining lease area will be reduced to the non-forest area plus the forest area for which the project proponent has been able to obtain the FC at the end of this time period. In the case of reduction in mine lease area, the project proponent will need to get a revised mining plan approved from the competent authority for reduced area and enter into a new mining lease as per reduced lease area. The EC will be construed to be available for the mining lease area as per the revised mining lease deed.	<p style="text-align: center;">Complied.</p> <p>Renewal Forest Diversion Proposal for entire prevailing forest land of 73.697 ha within the Mining Lease area was applied in time. Ministry of Environment & Forests, Govt. of India has granted Stage-I Forest Clearance with one year working permission vide its letter no. 8-78/1996-FC (pt-I), dated 03.11.2014 thus there is no reduction in the lease area of 406.00ha for which the subject EC has been granted.</p> <p style="text-align: center;">[Copy of the letter enclosed as Annexure-II]</p> <p>This was regularised with stage-II/final approval of MoEF & CC vide circular No. F.No.11-51/2015-FC, dated.01.04.2015, for the forest clearance dated 27.01.1998 valid till 31.03.2020.</p> <p>Further, additional forest area of 330.972ha (sabik settlements as on 25.10.1980) as per MoEF&CC circular dated F.No.8-78/1996-FC, dated.10.03.2015 within the mining lease of 406 ha has been diverted with the prior approval (Stage-II/final approval) of MoEF&CC vide its letter No. F.No. 8-15/2016-FC dt. 18th May 2018.</p> <p style="text-align: center;">[Please refer Annexure-II]</p>
III	Till all the clearance are obtained for the proposed tailing pond/dam the project would only use existing tailing dam.	<p style="text-align: center;">Complied.</p> <p>The mine has applied for 73.685 Ha, consisting of 8.370 ha of forest land and 65.315 ha of non-forest land for tailing disposal for which environmental clearance has already been accorded.</p> <p>This proposal is on hold at present in accordance to the verdict passed by Hon'ble Supreme court of India on disposal of WP(Civil) No. 435 of 2012 (Goa Foundation vs Union of India) and till all the applicable clearances are not obtained tailings shall be disposed in the existing facilities.</p>

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl	Specific Condition	Compliance Status (Apr'18 to Sep'2018)
IV	Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the Standing Committee of National Board for Wildlife, as may be applicable to this project.	<p align="center">Not Applicable.</p> The project area neither fall partly/wholly within any protected areas viz. wild life sanctuary, national park, biosphere reserves or other eco sensitive zones nor within 10 Kms from the boundaries of such protected areas, thus clearance under the Wildlife (Protection) Act, 1972 from the Standing Committee of National Board for Wildlife is not applicable.
V	The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Odisha and effectively implement all the conditions stipulated therein.	<p align="center">Complied.</p> The Consent to Establish has already obtained from Odisha State Pollution Control Board vide letter no. 17750/IND-II-NOC-5664 dated 30.09.2013. Consent to Operate had been renewed up to 31 st March 2020 vide letter no. 14781/IND-I-CON-226 dated 01.10.2016. The conditions stipulated in the Consent to Establish and Consent to Operate are effectively implemented as applicable.
VI	Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No. 460 of 2004, as may be applicable to this project.	<p align="center">Noted.</p> Final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No. 460 of 2004, is awaited, however this won't be affecting the legal status of environmental clearance since the project area/ lease area neither falls partly/wholly within any protected areas (wildlife sanctuaries, national parks, biosphere reserves or any other sensitive zones) nor within 10kms from the boundaries of such protected areas.
VII	As part of ambient air quality monitoring during operational phase of the project, the air samples shall also be analysed for their mineralogical composition as may be so prescribed or notified by this Ministry and records maintained.	<p align="center">Complied.</p> The ambient air quality is monitored twice a week at six locations within the Core Zone. The air samples are also analysed for their mineralogical composition on quarterly basis. During the reporting period sampling & analysis has been conducted in the month of June'2018 & September'2018 and the records are maintained. <p align="right">[Please refer Annexure-III]</p>
VIII	The ores and minerals shall be covered by tarpaulin or by such other means when transported out of the mine by road. The vehicles shall not be overloaded.	<p align="center">Complied & Ongoing</p> Mineral and ores which is transported out of the mine lease boundary to the various destinations is completely covered by tarpaulin and well secured with straps. Four weigh bridges have been established to prevent overloading of all the vehicles which are regulated by system generated transit permits. <p align="right">[Photographs enclosed as Annexure-IV]</p>
IX	Effective safeguard measures such as conditioning of ore with water, regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer points. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	<p align="center">Complied & Ongoing</p> To limit the fugitive emissions, following safeguard measures have been implemented: <ol style="list-style-type: none"> 1. Water sprinkling on haul road, transfer points, Ore stack yard, etc is done on regular basis. 2. Deployment of four (04) graders for haul roads maintenance & muck clearance. 3. Deployment of ten (10) water sprinklers (two of 28 KL, four of 25 KL, and four 8 KL) within mine area for haul road dust suppression and at mineral storage yards. 4. Stationary water sprinklers have been installed and are in operation on the main/permanent haul roads with permanent concrete bunds and maintenance areas, stack yard, chrome ore beneficiation plant.

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		<p>5. Plantation zone of 5-20 m width has been created to act as a barrier between mines & colony by arresting airborne fugitive dust.</p> <p>6. Water spraying through pressure water jets at feed hopper, transfer points, discharge chute to prevent dust generation.</p> <p>7. Adoption of wet process at COB Plant eliminates the chance of any dust generation.</p> <p>8. The concentrate stacks are covered using tarpaulin sheets, prevents finer concrete particle from getting air borne.</p> <p align="center">[Photographs enclosed as Annexure-V]</p> <p>The details of concrete road including provision of fixed water sprinkler are as follows:</p> <p align="center">Table I: Concrete and Fixed Water Sprinkler Details</p> <table border="1" data-bbox="813 712 1503 1070"> <thead> <tr> <th>Particulars</th> <th>Location</th> <th>Length (m)</th> <th>Width (m)</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Concrete road</td> <td>Main Haulage road</td> <td>1000</td> <td>13</td> </tr> <tr> <td>COB Plant</td> <td>100</td> <td>10</td> </tr> <tr> <td>LOP Plant</td> <td>200</td> <td>06</td> </tr> <tr> <td>Workshop</td> <td>200</td> <td>06</td> </tr> <tr> <td rowspan="5">Fixed water sprinkling system</td> <td>Main Haulage road</td> <td>1000</td> <td>-</td> </tr> <tr> <td>COB Plant</td> <td>100</td> <td>-</td> </tr> <tr> <td>LOP Plant</td> <td>200</td> <td>-</td> </tr> <tr> <td>Workshop</td> <td>100</td> <td>-</td> </tr> <tr> <td>Mining Road</td> <td>1500</td> <td>11</td> </tr> </tbody> </table> <p>All these majors have been successfully implemented to ensure the ambient air quality conformance with the CPCB specified norms. Ambient air quality is monitored at six locations within the core zone/lease area as per NAAQS-2009 guidelines.</p> <p align="right">[Please refer Annexure III]</p>	Particulars	Location	Length (m)	Width (m)	Concrete road	Main Haulage road	1000	13	COB Plant	100	10	LOP Plant	200	06	Workshop	200	06	Fixed water sprinkling system	Main Haulage road	1000	-	COB Plant	100	-	LOP Plant	200	-	Workshop	100	-	Mining Road	1500	11
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X	<p>The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.</p>	<p align="center">Being Complied.</p> <p>Rain water harvesting measures shall be implemented as required under the NOC from the Central Ground Water Authority wherein inputs from Regional Director, Central Ground Water Board have been incorporated.</p> <p>Presently, a fully functional roof top rain water harvesting project at the Administrative office inaugurated in Oct 2014 is in working stage.</p> <p align="right">[Photograph enclosed as Annexure-VI]</p>																																	
XI	<p>Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the</p>	<p align="center">Complied & Ongoing</p> <p>During Apr'18 to Sep'18, ground water has been monitored by a network of four (04) piezometers constructed on the mine periphery on monthly basis.</p> <p>Apart from this regular monitoring of ground water around nearby villages is conducted on quarterly basis at approx. ten (10) locations through a network of open wells/ dug wells.</p> <p>The data so collected is sent regularly to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board as applicable.</p>																																	

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl	Specific Condition	Compliance Status (Apr'18 to Sep'2018)
	groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out.	The existing network of piezometers within mine lease has been strengthened by four (04) additional piezometers and monitored from October'2018 onwards. Corrective actions shall be ensured as and when depleting status of water table is observed. [Ground water data enclosed as Annexure-VII]
XII	The maximum height of the overburden dumps from its toe to the top of the dump on sloping ground shall not be more than 110 m. The dump slope shall be suitably terraced by leaving berms of adequate width in between lifts such that the overall slope angle (i.e. angle between the line joining the crest to the toe of the dump and across all such lifts with the horizontal) does not exceed 28 degrees.	Complied Presently overburden generated from mine is used for backfilling within the quarry in line with the approved mine plan with benches of adequate slope and berm width. The existing passive dumps have been maintained with maximum height on sloping ground within 110 mtr. The stability aspects have been assessed by engaging reputed institutes such as IIT Kharagpur, CIMFR, Nagpur, etc. from time to time and recommendations thereof have been implemented. It may be noted that the assessments of 2010-11 by IIT, Kharagpur, CIMFR, Nagpur assessment of March-April'18 by IIT Kharagpur conforms to the stability of existing dumps, maintained at ultimate height of 110mtr & slope angle within 28°. [Photographs enclosed as Annexure-VIII]
XIII	The individual slopes and berms of each lift or bench of the overburden dump when completed shall be provided with adequate drainage arrangements or shall be suitably stabilized by such other means to prevent erosion due to surface run-offs.	Complied & Ongoing Adequate stabilization measures have been implemented for the dump slopes maintained with proper drainage network such as: <ol style="list-style-type: none"> 1. Each terrace of dump is provided with garland drains connected via concrete patch path for flow along the benches without creating gullies. 2. Practices like coir matting and vetiver plantation on the slopes to prevent wash off and rain cuts on the surface. 3. Garland drains guided with ten (10) nos. of settling pits of approx. 1.5 mX1.5mX2m constructed on the toe of the dumps for arresting silt & sediments during monsoon season. 4. Toe walls supporting the garland drains constructed all along the dump periphery. 5. Pre-monsoon desilting activities for the drainage network every year. [Please refer Annexure-VIII]
XIV	Adequate precautionary measures shall be taken for strengthening the dump foundation. Particularly while dumping over soft ground, the toe region all along the extremities of such dumps shall be suitably buttressed with hard rocky boulders after excavating the topsoil and soft ground. Dumping operations shall commence only after such preparatory work for the dump foundation is completed in order to prevent its failure, which may trigger a slide of the entire dump.	Complied. Dumping has been carried out only after ensuring the preparatory works for the dump foundation and with careful consideration of the stability aspects. All sorts of precautionary measures as identified during the geotechnical assessments of 2010-11 by IIT, Kharagpur, assessment of the in-situ stress of foundation and dump slope in 2013 by CIMFR, Nagpur and slope stability assessment of March- April 2018 by IIT Kharagpur have been implemented and the dumps are maintained as per the recommended heights of 110mtr (Max.) and benches provided with adequate space/berm width and overall slope angle maintained below 28°. Key precautionary measures are outlined as follows:

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Sl	Specific Condition	Compliance Status (Apr'18 to Sep'2018)
		<ol style="list-style-type: none"> 1. Each terrace is maintained with max. height of 10-15m with adequate berm width to maintain overall slope angle less than 28 degree. 2. Each level of bench is provided with garland drain and water from each level flow to next level via concrete patch path provided to prevent the formation of gullies. 3. Garland drains with 10 nos. of settling pits of 1.5mX1.5mX2m (approx.) for siltation. 4. Toe walls/gabion wall provided along the periphery of the dumps. 5. Practices like coir mating (geotextiles) and Vetiver Plantation along the dump slope has been undertaken. plantation is also followed to stabilize dump. <p align="right">[Please refer Annexure-VIII]</p>
XV	<p>All external over burden dumps at the end of the mine life shall be reclaimed and rehabilitated by afforestation. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.</p>	<p align="center">Agreed & Complying</p> <p>Reclamation and rehabilitation of the all external overburden dumps are done as per the approved Mining Plan & Progressive Mine Closure Plan by biological means. As on. 30.09.2018, area of 63.26ha out of dumping area of 75ha has been rehabilitated by plantation of 466533Nos of plants of native forestry species. Monitoring and management including regular maintenance of the plantation shall be continued till the vegetation becomes self-sustaining. The compliance status on the same is submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.</p> <p align="center">[Photographs enclosed as Annexure-IX]</p>
XVI	<p>Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, soil, mineral and OB dump(s) to prevent run off of water and flow of sediments directly into the Damsala Nallah 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. Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dump(s) to prevent run off of water and flow of sediments directly into the Damsala Nallah and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 20 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>	<p align="center">Complied & Ongoing.</p> <p>Garland drain with 10 nos. of settling pits of approx. 1.5m X 1.5m X 2m has been constructed to arrest the silts and sediments during the washout/runoff from the mine workings/dumps.</p> <p>The adequacy of the surface runoff management has been assessed and validated by NIT Rourkela through a scientific study of drainage pattern and management of surface runoff at Sukinda Chromite Mine. The garland drains have also been designed considering the rainfall data of the region.</p> <p>Entire surface runoff from the mine is guided up to the Effluent Treatment Plant of capacity 4500Kl/hr from where the treated effluent is reused/recycled back for the purpose of greenbelt development & maintenance, dust suppression, beneficiation, etc. Discharge of effluent beyond the mine lease is allowed only after proper treatment preventing the silt/sediment surging into the adjoin areas/Dumsala Nallah.</p> <p>Desilting of settling pits and drains are undertaken at regular interval particularly pre-monsoon and post monsoon period.</p>
XVII	<p>Retaining wall having adequate dimensions shall be constructed at the toe of the over burden dumps to check run-off and siltation.</p>	<p align="center">Complied.</p> <p>Toe wall along with garland drain having cross section of 1.5m X 1.5m X 2m have been constructed all around periphery of the dump.</p>

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

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XVII I	Plantation shall be raised in an area of 384.44 ha including a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around the higher benches of excavated void etc. after the completion of opencast mining activity by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.	<p align="center">[Please refer Annexure-VIII]</p> <p align="center">Complied & Ongoing</p> <p>The plantation programme is carried out as per the approved Mining Plan & Progressive Mine Closure Plan. During the Apr'2018 to September'2018, total 44869Nos of plants consisting 27 different native forestry species were planted and as on 30.09.2018, total area of 119.02ha (55.76ha within Mining lease & 63.26ha on OB dump) have been covered under plantation of 1187308 Nos of plants (720775Nos within mining lease & 466533Nos on OB dumps). The density of tree in both the cases is more than required density of 2500 trees/ha. Areas covered under plantation includes safety zone of 7.5m width around the mining lease, backfilled and reclaimed area, etc. and carried out in consultation with the state forest department.</p> <p align="center">[Please refer Annexure-IX]</p>
XIX	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RPM such as haul road, loading and unloading point and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard	<p align="center">Complied & Ongoing.</p> <p>To limit the fugitive emissions, following safeguard measures have been implemented:</p> <ol style="list-style-type: none"> 1. Water sprinkling on haul road, transfer points, Ore stack yard, etc is done on regular basis. 2. Deployment of four (04) road graders for haul road maintenance & muck clearance along with ten (10) water sprinklers (two of 28 KL, four of 25 KL, and four 8 KL) m within mine area for haul road dust suppression and at mineral storage yards. 3. Stationary water sprinklers have been installed and are in operation on the main/permanent haul roads, maintenance areas, stack yard, chrome ore beneficiation plant. 4. Plantation zone of 5-20 m width as a barrier between mines & colony by arresting airborne fugitive dust. 5. Water spraying by pressure water jets at feed hopper, transfer points, discharge chute to prevent dust generation. 6. Adoption of wet process at COB Plant eliminates the chance of any dust generation. 7. The concentrate stacks are covered using tarpaulin sheets to prevent finer concrete particle from getting air borne. <p>All these measures have been successfully implemented to ensure the ambient air quality conformance with the CPCB prescribed norms. Ambient air quality is monitored at six locations within the core zone/lease area as per NAAQS-2009 guidelines.</p> <p align="center">[Please refer Annexure-III & Annexure-V]</p>
XX	Mine water discharge and/or any waste water shall be properly treated in an ETP/s for the removal of hexavalent chromium and to meet the prescribed standards before reuse/discharge. The run off from OB dumps and other surface run off shall be analyzed for hexavalent chrome and in case its concentration is found higher than the permissible limit, the waste water should be treated before discharge/reuse.	<p align="center">Complied & Ongoing</p> <p>An Effluent Treatment Plant (ETP) of capacity 4500KL/hr with the state of art technology, designed with automated dosing system, clariflocculator, and flash mixture, dry sludge collection system, multi-bed filtration system etc, is in operation for the purpose of surface runoff/mine water treatment. The effectiveness of the treatment is continuously monitored through real-time online monitoring system with sensor based analysers for parameters like pH, TSS and Cr⁺⁶. FeSO₄ is used as the reductant to ensure removal of Cr⁺⁶. Apart from the continuous effluent monitoring</p>

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		<p>system provisioned with remote surveillance by SPCB. Samples from the Inlet & outlet are also analysed at our laboratory (inhouse facility) on daily basis. Surface water samples are also analysed from the mine pits, runoffs from dumps, etc. by an OSPCB accredited third party on monthly basis and records are being maintained.</p> <p>In addition to this, company has also commissioned one Herbal Treatment Plant in the COB Plant since 2007-08 for the online hexa-chrome treatment of the chrome concentrate. Some of its related processes have been patented and Company has also won DSIR National Award for the same.</p> <p>No discharge of runoff/effluent is done without prior treatment and its conformance with the permissible standards.</p> <p align="right">[Results enclosed as Annexure-X]</p>
XXI	The decanted water from the beneficiation plant shall be re-circulated within the plant and there shall be zero discharge.	<p align="center">Complied.</p> <p>Tailings produced from the plant are fed to thickener to increase the settling rate of particles and thus producing clarified water which is re-circulated to the plant. Thickener's discharge is fed to tailings dewatering plant and tailing pond. Clarified water from the tailing pond & clear water produced from the dewatering plant is re-circulated back to the COB plant ensuring zero discharge from the plant.</p> <p>Recently, company has installed one Tailing dewatering unit at the COB Plant to recover the water from the tailings and then tailings are disposed in the form of dry cake in safe and environment friendly manner.</p> <p align="right">[Photographs enclosed as Annexure-XI]</p>
XXII	Regular monitoring of water quality upstream and downstream of Damsala Nallah shall be carried out and record of monitoring data should be maintained and submitted to Ministry of Environment and Forests, its Regional Office, Bhubneswar, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.	<p align="center">Complied & Ongoing</p> <p>The monitoring of water quality at upstream and downstream of Damsala Nallah is carried out by an OSPCB recognised agency and the records are maintained and also submitted to the State Pollution Control Board on monthly basis. Monitoring results are also submitted along with the compliance report to the MoEFCC (regional Office)</p> <p>In addition to this continuous effluent monitoring system (sensor based analysers) has been installed for the parameters like pH, TSS & Cr+6 at the intake point on the up-stream of the Dumsala Nallah provisioned with remote surveillance by OSPCB on real-time basis.</p> <p align="right">[Monitoring results enclosed as Annexure-XII]</p>
XXII I	Appropriate mitigative measures shall be taken to prevent pollution of Damsala Nallah, if any, in consultation with the State Pollution Control Board.	<p align="center">Complied.</p> <p>Following mitigative measures have been implemented for prevent pollution of Damsala Nallah:</p> <ol style="list-style-type: none"> 1. ETP with capacity of 4500KI/hr, designed with settling pit, flash mixture, clarri-focculator, automatic dosing system, dry sludge collection system, multi sand filters etc. is in operation. 2. Treated water from the ETP is reused /recycled within the mine for various purposes like greenbelt, dust suppression, drinking water treatment, COB operation, etc. to minimize the discharge load on the Damsala Nallah. 3. Effluents discharged from the outlet of ETP is monitored on real-time basis with continuous effluent monitoring system for parameters like pH, TSS, flow and Cr+6.

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Sl	Specific Condition	Compliance Status (Apr'18 to Sep'2018)
		4. No effluent is discharged beyond the mine premises without prior treatment and its conformance with the permissible discharge norms.
XXI V	The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water for the project.	<p align="center">Complied.</p> <p>An agreement for the drawl of 2100 Cu.M of surface water from Damsala Nalla has been signed with Executive Engineer, Jaraka Irrigation Division on December'15 for a period of three (03) years i.e up to 30th Nov. 2018.</p> <p>However, viewing the effectiveness of the treatment facility the treated effluent is reused for even drinking water purpose with suitable treatment thereafter resulting in minimal dependency on the Dumsala Nallah.</p>
XXV	Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with Regional Director, Central Ground Water Board.	<p align="center">Complied & Ongoing</p> <p>Rainwater harvesting study has been conducted and findings submitted to Regional Office, CGWB, Bhubaneswar. In accordance with the findings of the report one roof top rain water harvesting structure has been constructed at GM office building which is in working stage.</p> <p align="center">[Please refer Annexure-VI]</p> <p>Further, A feasibility study has also been carried out to assess the water harvesting potential in the mine periphery by KRG Foundation, which shall be implemented in future in phased manner.</p>
XXV I	Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral from mine face to the beneficiation plant. The vehicles shall not be overloaded.	<p align="center">Complied.</p> <p>Monitoring of vehicular emission is done on six monthly basis for the HEMMs deployed in Mining through a third party recognised by state transport authority. The K factor for all the vehicles is found to be below 0.33. Regular conditioning monitoring of the HEMMs is also carried out to keep the vehicle in good condition.</p> <p>Transport vehicles are regulated by certificate of PUC from RTO office and system generated permits ensuring load under permissible limit.</p>
XXV II	Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.	<p align="center">Complied & Ongoing</p> <p>The blasting operation is carried out during the lean hours of the day i.e during 13:30hrs to 14:30hrs only. Practices like pre-wetting of blast area to control dust generation. Controlled blasting methods like use of both SME and NONEL, delay detonators are practiced controlling ground vibration, improved fragmentation arresting fly rock & boulders.</p> <p>Further, blast vibration study has been conducted through CIMFR, Dhanbad and recommendations thereof are followed.</p>
XXV III	Drills shall either be operated with dust extractors or equipped with water injection system.	<p align="center">Complied.</p> <p>All the drills deployed within mine are equipped with wet drilling arrangements to reduce dust generation. Apart from this, the drill operators as well as workmen working in the dust prone areas have been provided with necessary PPEs.</p>
XXI X	Mineral handling plant shall be provided with either adequate number of high efficiency dust extraction system or water injection system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	<p align="center">Complied.</p> <p>The process at mineral handing plant (COB Plant) is totally wet and eliminates the chance of any dust generation. Roads in COB plant has been concreted fitted with stationary water sprinklers. Spraying by pressure water jets at feed hopper, transfer points, discharge chute is done on regular basis to prevent dust generation.</p>

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Sl	Specific Condition	Compliance Status (Apr'18 to Sep'2018)
XXX	Consent to operate shall be obtained from State Pollution Control Board prior to start of enhanced production from the mine.	<p align="center">Complied.</p> Consent to operate has been renewed vide OSPCB's letter no. 14781/IND-I-CON-226 dt. 01.10.16 valid till 31 st March 2020 for the enhanced production capacities of 1.948670MTPA, 0.5MTPA & 0.65MTPA for ROM, Pyroxenite & Throughput from COB respectively.
XXX I	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for workshop and wastewater generated during mining operation.	<p align="center">Complied.</p> A Sewage Treatment Plant has been constructed as per BIS standard for domestic effluent/sewerage & the treated effluent is being reused for garden development. An oil and grease trap system has been provided in the workshop to remove oil and grease from the workshop effluents. Similar type oil and grease separation pit has also been provided at contractor workshop also. The effluents free from oil and grease is completely recycled back for vehicle washing purpose. An ETP with capacity of 4500 Kl/hr having the facilities like, settling pit, flash mixture, clarri-focculator, automated dosing system, dry sludge collection system, multi sand filters etc as has been installed for the treatment of effluents/waste water generated from the mining operations.
XXX II	Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment and Forests and its Regional Office, Bhubaneswar.	<p align="center">Complied.</p> Digital processing of the entire lease area using remote sensing technique was carried out for baseline information of land use pattern and the report was submitted to Ministry of Environment, Forests & Climate Change and its Regional Office, Bhubaneswar vide letter no. SCM/MPP/39/16 dated 24.11.2016. Monitoring shall be continued periodically every three years and submitted accordingly.
XXX III	Regular monitoring of ambient air quality including free silica shall be carried out and records maintained.	<p align="center">Complied & Ongoing</p> Regular monitoring of ambient air quality is carried out at six locations as per NAAQS-2009 and the free silica in ambient air is monitored by personal dust sampling to assess the exposure of RPM in air and %free silica content in it.
XXX IV	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.	<p align="center">Complied.</p> Pre-Employment/Pre-placement medical examination is mandatorily ensured for employees prior to their joining and apart from this periodical medical examination (PME) is conducted for all in every five years and for those with age of 45years or more PME is conducted once in every three (03) years. During Fiscal year 2018-19, total 113 nos. persons were covered under PME. Health examination is conducted following a definite schedule. Besides this the company also undertakes various initiatives for the improvement in the occupational health and removing the safety hazards at industrial workplace, by forming 3 ACT (Advice, Connect & Transform) teams under Wellness@ Workplace programme. The health surveillance program was carried out for both permanent and contractual employees for the period 2000 to 2011 in which 994 permanent and 744 contractual employees were examined. The chromium level in the blood samples of all the employees was found to be normal.

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SI	Specific Condition	Compliance Status (Apr'18 to Sep'2018)
XXX V	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna such as elephant etc. spotted in the buffer zone of the mine and contribute towards the cost of implementation of the plan and/or Regional Wildlife Management Plan for conservation of flora and fauna so prepared by the State Forest and Wildlife Department. The amount so contributed shall be included in the project cost. A copy of action plan shall be submitted to the Ministry and its Regional Office, Bhubaneswar within 3 months.	<p align="center">Complied.</p> <p>All precautionary measures for the conservation and protection of endangered fauna shall be implemented as per the state forest dept.'s directives/instructions, etc.</p> <p>We have deposited sum of Rs 81,20,000/- vide DD No 111682 dated 21.07.2009 and differential cost of Rs 24,36,000/- through RTGS dated 7.03.2014 respectively in the State Specific CAMPA account towards the cost of implementation of Regional Wildlife Management Plan, Further, site specific wild life conservation Plan has already been submitted to DFO, Cuttack vide our letter no. SCM/ENV/091/13, dated 18.12.2013, which was finally approved by PCCF (WL) Odisha vide letter No. 4895/1 WL-SSP-92/2015, dated 10.06.2015 following the recommendation by RCCF, Angul vide his letter no. 1197, dated 19.03.2015. We have also deposited sum of Rs 6,86,86,240/-in RTGS Mode in State Specific CAMPA Fund towards contribution for Site Specific Wildlife Conservation Plan on 7.12.2015</p>
XXX VI	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	<p align="center">Complied.</p> <p>In accordance to the Rule 24 of MCDR 2017, the final mine closure plan is liable for submission 2 year prior to the expiry of lease i.e 31st March 2020 (as per MMDR Amendment Act 2015). Accordingly, the Final Mine Closure Plan had been approved by Indian Bureau of Mines, Bhubaneswar vide letter no. FMCP/FM/32-ORI/BHU/2018-19/1580, dt. 28.09.2018.</p> <p>Presently, the approved mine plan for the period 2018-20 is under review and modification is in process, subsequent to the approval of the modified mine plan by the competent authority, necessary modifications shall be introduced/incorporated in the Final Mine Closure Plan & shall be submitted for further approval of IBM subsequent to which a copy of the approved final mine closure plan shall be submitted to MoEF &CC.</p> <p>Regarding corpus fund: During the approval of Review of Mining Plan for the period 2018-20, we have deposited a sum of Rs. 12.18 Cr. (Lease Area - 406 ha. X Rs.3,00,000/- ha) with the Regional Controller of Mines, Bhubaneswar vide bank guarantee No, 089BGR0018118 as a part of financial assurance for the mine closure activities.</p>

B. General Conditions of Environmental Clearance

I	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	<p align="center">Complied.</p> <p>There is no change in mining technology and scope of working. Mine is operated within the scope of the present EC. Prior approval from the Ministry would be sought in case of change in scope of working is envisaged in future.</p>
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Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl	Specific Condition	Compliance Status (Apr'18 to Sep'2018)																				
II	The calendar plan quantity of excavation, chrome ore, beneficiated chrome concentrates, pyroxenite ore and waste shall not be exceeded.	<p align="center">Complied.</p> <p>The calendar plan is followed. Production from the proposed UG mine (as per EC) is yet to start.</p> <table border="1"> <thead> <tr> <th align="center" colspan="4">Calendar plan for Year 2018-19</th> </tr> <tr> <th align="center">Particulars in LMT</th> <th align="center">EC Limit</th> <th align="center">Mining Plan Limit</th> <th align="center">Actual (Apr'18-Sep'18)</th> </tr> </thead> <tbody> <tr> <td>Chrome Ore ROM</td> <td align="center">24</td> <td align="center">19.45</td> <td align="center">7.17</td> </tr> <tr> <td>Chrome Concentrate</td> <td align="center">6.50</td> <td align="center">3.31</td> <td align="center">0.72</td> </tr> <tr> <td>Pyroxenite</td> <td align="center">5.50</td> <td align="center">0.94</td> <td align="center">NIL</td> </tr> </tbody> </table> <p><i>LMT: Lakhs of Metric Tonnes.</i></p>	Calendar plan for Year 2018-19				Particulars in LMT	EC Limit	Mining Plan Limit	Actual (Apr'18-Sep'18)	Chrome Ore ROM	24	19.45	7.17	Chrome Concentrate	6.50	3.31	0.72	Pyroxenite	5.50	0.94	NIL
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III	At least four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 micron i.e., PM10) and NOX monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. The data so recorded should be regularly submitted to the Ministry including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.	<p align="center">Complied.</p> <p>Six air quality monitoring stations (four in the work zone, one in residential area and one in hospital i.e. sensitive area) had been established for ambient air quality monitoring in line with CPCB guidelines as per NAAQS-2009.</p> <p>Similarly, quarterly monitoring is done at 10 buffer zone locations for parameters like PM10, PM2.5, SO2, NOx, CO, O3, Pb, NH3, Benzene, benzo(a) Pyrene, Arsenic & Nickel. Monitoring is carried out by engaging an OSPCB recognised laboratory.</p> <p align="right">[Please refer Annexure-III]</p>																				
IV	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.	<p align="center">Complied.</p> <p>Following measures have been implemented to control the noise level below 85dB(A) in the work environment.</p> <ol style="list-style-type: none"> Wherever possible the noise is controlled at the source by replacement of metallic screens by rubber screens & polyurethane panels, etc. at Chrome Ore Beneficiation and Lumpy Ore Processing plant. DG sets with acoustic enclosures. The operator's cabin of all the HEMM's including drills and dozers fitted with air conditioners to act as acoustic barriers. Controlled blasting technique like presplit blasting, use of Nonel and SME (Site Mixed Emulsion) ensures minimal noise generation and controls the ground vibration. People working in the noisy areas are provided with PPEs including earmuffs/ear plugs to minimize the exposure of noise. Periodic/Regular conditioning monitoring and maintenance of HEMMs is done to reduce noise generation. Monitoring of Noise level at workplaces is carried out on quarterly basis. <p align="right">[Noise Monitoring results enclosed as Annexure-XIII]</p>																				
V	There will be zero waste water discharge from the plant	<p align="center">Complied.</p> <p>Tailings produced from the plant are channelized to thickener to promote the settling rate of particles thus producing clarified water, which is re-circulated to the plant. Thickener's discharge is fed to Tailings Dewatering Plant and Tailing pond. Clarified water from the tailing pond</p>																				

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl	Specific Condition	Compliance Status (Apr'18 to Sep'2018)
		& clear water produced from the dewatering plant is re-circulated back to the COB plant. [Photographs enclosed as Annexure-XI]
VI	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.	<p align="center">Complied.</p> Persons working in dusty areas have been provided with DGMS approved dust masks. Regular training programmes are conducted for the employees for raising awareness on health & safety aspects.
VII	Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	<p align="center">Complied.</p> All the employees undergo periodical medical examination (PME) in hospital every five years and those with age of 45years or more undergo PME once in every three (03) years. To improve the occupational health and removing the safety hazards at industrial workplace, 3 ACT (Advice, Connect & Transform) teams have been formed under Wellness@ Workplace programme. Health surveillance program has been carried out for both permanent and contractual employees during 2000 to 2011, in which 994 permanent and 744 contractual employees have been assessed. As of now, no occupational diseases have been reported till date. Total 113 Nos. persons were covered under PME in 2018-19 during Apr'18 to Sep'18. Apart from this, persons engaged in mining operations are also tested for their exposure to free silica content in respirable air (RPM) on quarterly basis.
VIII	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.	<p align="center">Complied.</p> The Environmental Management Cell is headed by the Head (Mine and Production Planning) and is supported by Senior Manager (Mine Planning & Environment), Manager (Environment), Environmental Supervisor and Chemists. The Head (MPP) is directly reporting to the GM, Operations of the Division.

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IX	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.	<p align="center">Complied.</p> <p>Separate budgetary provisions are made for environmental protection measures every year and maintained under a separate cost centre. Funds earmarked for this purpose for the year 2018-19 is outlined below with the planned Vs. actual expenditure:</p> <table border="1" data-bbox="810 405 1501 1397"> <thead> <tr> <th data-bbox="810 405 882 533">Sl No.</th> <th data-bbox="882 405 1198 533">Item</th> <th data-bbox="1198 405 1315 533">Plan FY 18-19 (Lakh)</th> <th data-bbox="1315 405 1501 533">Actual Apr'18 to Oct'18(Lakh)</th> </tr> </thead> <tbody> <tr><td>1</td><td>Afforestation</td><td>55</td><td>45.5</td></tr> <tr><td>2</td><td>Dust suppression</td><td>190</td><td>92.00</td></tr> <tr><td>3</td><td>Treatment of mine discharge & recycling</td><td>150</td><td>80.5</td></tr> <tr><td>4</td><td>Environment & weather exhaust monitoring</td><td>24</td><td>12.6</td></tr> <tr><td>5</td><td>Horticulture development</td><td>65.0</td><td>28.5</td></tr> <tr><td>6</td><td>Drinking water supply</td><td>38.0</td><td>18.5</td></tr> <tr><td>7</td><td>STP Operation & Maintenance</td><td>7.5</td><td>3.7</td></tr> <tr><td>8</td><td>Sanitation</td><td>62.0</td><td>32.0</td></tr> <tr><td>9</td><td>Herbal Treatment</td><td>5.00</td><td>2.00</td></tr> <tr><td>10</td><td>Malaria Eradication</td><td>7.00</td><td>3.5</td></tr> <tr><td>11</td><td>Garland drain & storm water drain</td><td>2.50</td><td>1.2</td></tr> <tr><td>12</td><td>Family planning</td><td>1.00</td><td>00</td></tr> <tr><td>13</td><td>Slime dam management</td><td>12.00</td><td>5.40</td></tr> <tr><td>14</td><td>Environment awareness (EMS)</td><td>12.00</td><td>4.5</td></tr> <tr><td>15</td><td>Community development through TSRDS</td><td>615.0</td><td>305.82#</td></tr> <tr><td>16</td><td>Hazardous waste management</td><td>30.0</td><td>12.90</td></tr> <tr><td>17</td><td>Bio medical waste</td><td>4.00</td><td>2.1</td></tr> <tr><td>18</td><td>Total</td><td>1280.0</td><td>650.72</td></tr> </tbody> </table> <p>#Expenditure incurred under CSR activities during Apr'18 to Oct'18.</p>				Sl No.	Item	Plan FY 18-19 (Lakh)	Actual Apr'18 to Oct'18(Lakh)	1	Afforestation	55	45.5	2	Dust suppression	190	92.00	3	Treatment of mine discharge & recycling	150	80.5	4	Environment & weather exhaust monitoring	24	12.6	5	Horticulture development	65.0	28.5	6	Drinking water supply	38.0	18.5	7	STP Operation & Maintenance	7.5	3.7	8	Sanitation	62.0	32.0	9	Herbal Treatment	5.00	2.00	10	Malaria Eradication	7.00	3.5	11	Garland drain & storm water drain	2.50	1.2	12	Family planning	1.00	00	13	Slime dam management	12.00	5.40	14	Environment awareness (EMS)	12.00	4.5	15	Community development through TSRDS	615.0	305.82#	16	Hazardous waste management	30.0	12.90	17	Bio medical waste	4.00	2.1	18	Total	1280.0	650.72
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X	The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	<p align="center">Agreed.</p> <p>In accordance to the Rule 24 of MCDR 2017, the final mine closure plan is liable for submission 2 year prior to the expiry of lease i.e 31st March 2020 (as per MMDR Amendment Act 2015). Accordingly, the Final Mine Closure Plan had been approved by Indian Bureau of Mines, Bhubaneswar vide letter no. FMCP/FM/32-ORI/BHU/2018-19/1580, dt. 28.09.2018 but presently, the approved mine plan for the period 2018-20 is under review and modification is in process, subsequent to the approval of the modified mine plan by the competent authority, necessary modifications shall be introduced/incorporated in the Final Mine Closure Plan & shall be submitted for further approval of IBM subsequent to which a copy of the approved final mine closure plan shall be submitted to MoEF &CC.</p> <p>Necessary communication with Regional Office MoEFCC, for land development activity as per approved final mine closure plan shall be initiated before commencement of such activities.</p>																																																																															

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Sl	Specific Condition	Compliance Status (Apr'18 to Sep'2018)
XI	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/information/ monitoring reports.	<p align="center">Noted.</p> The mine management shall extend full cooperation to officer(s) of Regional office by furnishing the requisite data/information/ monitoring report as and when required.
XII	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.	<p align="center">Complied & Ongoing.</p> Six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data is submitted to the Ministry of Environment, Forests & Climate Change and it's Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board in both hard copy as well as soft copy. Last EC compliance was submitted vide letter no. SCM/ENV/012/017/18 dated 31.05.2018 and a copy of the same is also uploaded in our company's website. www.tatasteelindia.com . <p align="center">[Snapshot enclosed as Annexure-XIV]</p>
XIII	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	<p align="center">Complied.</p> Environment Clearance letters were sent to concerned Panchayat, Zila Parisad / Municipal Corporation, Urban Local Body and is attached in Annexure XXI . A copy of the same is also uploaded on our website @ www.tatasteelindia.com . <p align="center">[Please refer to Annexure-XIV]</p>
XIV	The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.	<p align="center">Not Applicable to the project proponent.</p> It was informed that due compliance was made by SPCB.
XV	The environmental statement for each financial year ending 31 st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.	<p align="center">Complied.</p> The Environment Statement in Form-V is submitted before 30th Sept of every year and the same is also uploaded in the company website as shown in screenshot in Annexure-XIV . Environment Statement for the year ending 31 st March 2018 was submitted vide letter no. SCM / ENV/ 002 / 30 / 18 dt. 29/Sep/2018 to the State Pollution Control Board and to the Regional Office of MoEF by e-mail.
XVI	The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.	<p align="center">Complied.</p> The grant of Environmental Clearance was advertised in the Oriya daily " The Samaja " (date: 11.09.2013, page-5) and in English daily " The New Indian Express " (date: 11.09.2013, page-5). Copy of the above advertisement was also forwarded to the Eastern Regional Office of the MoEF vide letter no. SCM/ ENV/ 012/066/13, dated 18.06.2013. <p align="center">[Please refer to Annexure-XIV]</p>

C. Additional Conditions as per MoEFCC Letter No. 106-9/11/EPE dt. 02.12.2014 issued to all Non-Coal Mining Projects.

Sl. No.	Stipulated Condition	Compliance Status (Apr'18 to Sep'2018)
a.	The project authority shall adopt best mining practices for given conditions in the mining area, adequate number of check dam, retaining wall/ structure, garland drains and settling ponds should be provided to arrest the wash off with rain water in catchment area.	<p style="text-align: center;">Complied & Ongoing.</p> <p>The mine is operated by opencast mining method using shovel-dumper combination. Production from underground mines has not yet started.</p> <p>Due care is taken during all the aspects of mining operations (starting from excavation till dispatch of the minerals) to ensure feasible sustainable practices are adopted such as:</p> <ol style="list-style-type: none"> 1. Wet drilling (Drills with inbuilt features of wet drilling) for preventing fugitive dust generation at the working face. 2. Controlled blasting by means of pre-split blasts using both NONEL & SME for arresting fly rocks and improved fragmentation with minimal ground vibration is practiced. 3. Pre-wetting is also carried out prior to blasting to minimize dust generating potential of blasts. 4. Deployment of four (04) graders for haul road maintenance and muck clearance along with ten (10) Nos of water sprinklers (two of 28 KL, four of 25 KL, and four 8 KL). 5. Stationary water sprinklers installed and are in operation on the main/permanent haul roads, areas in maintenance, stack yard, chrome ore beneficiation plant, etc. 6. Water spraying through pressure water jets at feed hopper, transfer points, discharge chute to prevent dust generation. 7. The process at COB Plant is totally wet and eliminates the chance of any dust generation. 8. The concentrate stacks are covered using tarpaulin sheets to prevent finer concrete particle from getting air borne. 9. An Effluent treatment plant of 4500kl/hr in operation for treatment of mine water and surface runoff. 10. Slope stability monitoring and its assessment on periodic basis and extensive afforestation for land reclamation. 11. Bench width & height as per the statute provisions are maintained. 12. Garland drains all along the periphery of dumps supported with toe walls/gabion walls and 10nos of settling pits (1.5mX1.5mX2m) for guiding effluents/surface runoff up to ETP. 13. Approx. 85% of the effluents generated is reused/recycled back for various purposes such as greenbelt development, COB operations, dust suppression, etc. 14. No discharge of effluent beyond the mine premises without treatment and its conformance with permissible discharge norms and the quality monitored on real-time basis by means of continuous effluent monitoring system (sensor based analysers, both at inlet & outlet of ETP).

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl. No.	Stipulated Condition	Compliance Status (Apr'18 to Sep'2018)
		15. Technical assessments of slope stability, in-situ stress of dump foundation, adequacy of drainage network, etc. are also carried out from time to time.
b.	The natural water bodies and or stream which are flowing in and around the village should not be disturbed. The water table should be nurtured so as not go down below the pre-mining period. In case of any water scarcity in the area, the project authorities have to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug well	<p style="text-align: center;">Complied.</p> <p>No such water bodies exist within mine lease area. Dumsala Nallah being the only water bodies flowing within the buffer zone of mine whereby mining operation doesn't have any direct intervention w.r.t diversion or alteration to its existence. However, effluents from mine is let beyond the lease area on the main land which ultimately confluences with Dumsala Nallah but only after ensuring proper treatment within mine for the purpose of which an ETP of capacity 4500Kl/hr is in operation. The water quality of Dumsala Nallah is regularly monitored both at u/p stream and d/n stream. Surface water drawl is regulated by an agreement with Executive Engineer of Jaraka Irrigation Division and presently very minimal water is drawn as against permitted quantity of 2100Kl/day for domestic consumption. Ground water monitoring is regularly carried out by means of a network of open dug wells at 10 locations in the buffer zone of the mine within nearby villages on quarterly basis. Periodic desilting of the village ponds is also undertaken by TSRDS dept. of Tata Steel. During the period from 2003-04 to 2014-15 total 16 ponds have been desilted in neighbouring villages.</p>
c.	The illumination and sound at night at project sites disturb the village in respect of both human and animal population. Consequent sleeping disorder and stress may affect the health in the village located close to mining operation. Habitations have a right to darkness and minimal noise level at night. The Project Proponents must ensure that the biological clock of the village is not disturbed by orienting the floodlights mask way from the village and keeping the noise levels well within prescribed limits for day/ night hours.	<p style="text-align: center;">Complied.</p> <p>No such long-range flood lights have been installed within mine. All Lighting masts installed within mine are oriented for optimal illumination within mine lease area. There are no such villages located in closed proximity to the mine other than village Kakudia, which is distantly located from the working pits and is near to OB dumps where mining operation (dumping) is no longer carried out since 2014 and more ever there lies a barrier of natural forest b/w dump and the village. Safety zone all along the lease periphery is maintained with plantation which also acts as a barrier.</p>
d.	The project Authority shall make necessary alternative arrangement, where required, in consultation with state Government to provided alternated areas for livestock grazing. In this case context, the Project Authority should implement the direction of Hon'ble Supreme Court with regard to acquiring grazing land. The sparse tress on such grazing ground, which provides mid-day shelter from the scorching sun, should be scrupulously guarded felling lest the cattle abandon the grazing ground or return home by noon.	<p style="text-align: center;">Not Applicable.</p> <p>The entire mine area of 406.00ha is of govt lands (404.669ha of forest land and 1.331ha of non-forest land). No such grazing land have been acquired by the company.</p>

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl. No.	Stipulated Condition	Compliance Status (Apr'18 to Sep'2018)																
e.	Where ever blasting is undertaken as part of mining activity, the Project Authority shall carry out vibration studies well before approaching any such habitats or other building to evaluate the zone of influence and impact of blasting on neighbourhood. Within 500 meters of such sites vulnerable to blasting vibration, avoidance of use of explosives and adoption of alternative means of mineral extraction such as ripper/dozer combination/ rock breakers/ surface mineral etc should be seriously considered and practiced wherever practicable. A provision for monitoring of each blast should be made so that impact of blasting on nearby habitation and dwelling unit could be ascertained. The covenant of lease deed under rule 31 of MCR 1960 provided that no mining operation shall be carried out within 50 meters of public works such as public roads and building or inhabited sites except with prior permission from the competent Authority.	<p align="center">Complied.</p> <p>Vibrations studies have been carried out by CIMFR Dhanbad and recommendations thereof are followed.</p> <p>Controlled blasting with the use of SMS & NONEL and presplit blast is practiced minimizing ground vibration and Peak Particle velocity is monitored during blasting events. Public works such as public roads and building or inhabited sites are well away from the mine lease.</p>																
f.	Main haulage road in the mines should be provided with permanent water sprinkler and other road should be regularly wetted water tanker fitted with sprinkler. Crusher and material transfer points should be invariably be provided with bag filter and or dry fogging system. Belt conveyor fully covered to avoid air borne dust.	<p align="center">Complied.</p> <p>To limit the fugitive emissions, following safeguard measures have been implemented:</p> <ol style="list-style-type: none"> 1. Various control measures like water sprinkling on haul road, transfer points, Ore stack yard, etc is done on regular basis. 2. Ten (10) water sprinklers (two of 28 KL, four of 25 KL, and four 8 KL) have been deployed in the mine area for haul road dust suppression and at mineral storage yards. 3. Stationary water sprinklers have been installed and are in operation on the main/permanent haul roads with permanent concrete bunds and areas in maintenance, stack yard, chrome ore beneficiation plant. 4. Water spraying is done through pressure water jets at feed hopper, transfer points, discharge chute to prevent dust generation. 5. The process at COB Plant is totally wet and eliminates the chance of any dust generation. 6. The concentrate stacks are covered using tarpaulin sheets to prevent finer concrete particle from getting air borne. The details of concrete road including provision of fixed water sprinkler are as follows: <p align="center">Table I: Fixed Water Sprinkler Details</p> <table border="1"> <thead> <tr> <th align="center">Particulars</th> <th align="center">Location</th> <th align="center">Length (m)</th> <th align="center">Width(m)</th> </tr> </thead> <tbody> <tr> <td align="center">Fixed water sprinkling system</td> <td align="center">Main Haulage road</td> <td align="center">1000</td> <td align="center">-</td> </tr> <tr> <td></td> <td align="center">COB Plant</td> <td align="center">100</td> <td align="center">-</td> </tr> <tr> <td></td> <td align="center">LOP Plant</td> <td align="center">200</td> <td align="center">-</td> </tr> </tbody> </table>	Particulars	Location	Length (m)	Width(m)	Fixed water sprinkling system	Main Haulage road	1000	-		COB Plant	100	-		LOP Plant	200	-
Particulars	Location	Length (m)	Width(m)															
Fixed water sprinkling system	Main Haulage road	1000	-															
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Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl. No.	Stipulated Condition	Compliance Status (Apr'18 to Sep'2018)		
		Workshop	100	-
		Mining Road	1500	11
		Mineral is dispatched by means of trucks and which are completely covered with tarpaulins and regulated by system generated permit system which prevents overloading.		
g.	The project Authority shall ensure that productivity of agriculture crops is not affected due to the mining operation. Crop Liability Insurance Policy has to be taken by PP as a precaution to compensate for the crop loss. The impact zone shall be 5 Km from the boundary of mine lease area for insurance policy. In case, several mines are located in cluster mines, formed inter - alia, to sub serve such and objective shall be responsibility for securing such Crop Liability Policy.	Agreed.		
		The mine is surrounded by a number of mines owned by other lessees thus no agricultural land exists in vicinity to a major extent. So far, no such potential adverse impact on the agricultural land has been evidenced, on account of the robust environmental management plan in place. However, in case of any such scenario is envisaged in future the same shall be addressed in desired manner.		
h.	In case any village is located within the mining leasehold which is not likely to be affected due to mining activities during the life of mine, the Expert Appraisal Committee (EAC) should consider the proposal of Environmental Clearance (EC) for reduced mining area. The mining lease may be executed for the area for which EC is accorded. The mining plan also accordingly revised and required stipulation under the MMDR Act 1957 and MCR 1969 met.	Not Applicable.		
		There are no villages within the lease hold area of 406.0ha for which EC has been accorded by MoEFCC.		
i.	Transportation of 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 m) for the purpose of transportation of minerals so that the impact of sound, dust and accidents could be mitigated. The PP shall bear the cost towards the widening and strengthening of existing public road network in case same is proposed to be used for the project. No road movement should be allowed on existing village road network without appropriately increasing carrying capacity of such road	Complied.		
		Mineral is transported via public Tamka-Mangalpur road maintained by state R&B. Transit of mineral is regulated by valid transit permits issued under Odisha Minerals (prevention of theft, smuggling, illegal mining and regulation of possession, storage trading and transportation) Rules,2007.		
		During the construction phase, we have undertaken construction of a major segments of the road from Kaliapani up to Kankadapal of 12Km bearing entire cost of construction.		
j.	Likewise, alteration or re-routing of foot paths, pagdandies, cart road and village infrastructure/ public utilities or roads (for purpose of land acquisition for mining) shall be avoided to extent possible and in such case acquisition is inevitable, alternative arrangements shall be made first and the only the area can be acquired. In these types of cases Inspection reports by site visit by expert may be insisted upon which should be done through reputed Institutes.	Not Applicable.		
		Entire lease area of 406.0ha is govt. land (404.669ha of forest land and 1.331ha of non-forest land thus this project was not subjected to land acquisition.		

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl. No.	Stipulated Condition	Compliance Status (Apr'18 to Sep'2018)
k.	<p>The CSR activates by companies including mining establishment has become mandatory up to 2% their financial turn over, socio Economic Development of neighborhood. Habitats could also be planned and executed by the PPs more systemically based on need based door to door survey by established Social Institute/ Workers on the lines as required under TOR. " R&R Plan// compensation details for Project Affected People (PAP) should be furnished. While preparing the R&R plan, the relevant State/ national Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs and STs and weaker section of society in study, a need bashed sample survey, family-wise, should be undertaken to assess their requirement, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line department of State Government. It may be clearly brought out whether the village including their R&R and socio-economics aspect should be discussed in EIA report.</p>	<p align="center">Complied.</p> <p>CSR activities are undertaken by TSRDS dept. of Tata Steel in and around the mine. During FY 2018-19, budgetary provision of 615.0Lakhs (INR) has been earmarked towards community development activities out of which 305.82Lakhs (INR) has been spent during Apr'18 to Oc'18. However, this mine was not subjected to land acquisition on account of the nature of land involved (govt. land) thus is not subjected to applicability of R&R obligations of the company.</p>


Manager (Mines)
 Tata Steel Limited,
 Sukinda Chromite Mine
 PO : Kalarangiatta-755 028
 Dist : Jajpur (Odisha)

Date: 29th November 2018

Stage-I Forest Clearance & Temporary Working Permits

F. No. 8-78/1996-FC (pt.-I)
Government of India
Ministry of Environment, Forests and Climate Change
(Forest Conservation Division)

Indira Paryavaran Bhawan
Aliganj, Jorbagh Road
New Delhi -110 003
Dated: 3rd November, 2014

To,
The Principal Secretary (Forests),
Government of Odisha,
Bhubaneswar.

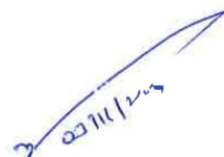
Sub: Diversion of 73.697 hectares of forest land in Sukinda Chromite Mines of M/s. TATA Steel Ltd. In Jajpur district during 3rd Renewal of mining lease (RML) period.

Sir,

I am directed to refer to the Government of Odisha's letter No 10F (Cons) 73/ 2014-8679/ F &E dated 9th May 2014 on the above mentioned subject, seeking prior approval of the Central Government under Section 2 of the Forest (Conservation) Act, 1980, and to say that the said proposal has been examined by the Forest Advisory Committee constituted by the Central Government under section-3 of the aforesaid Act.

2. After careful consideration of the proposal of the State Government of Odisha and on the basis of the recommendations of the Forest Advisory Committee, the Central Government hereby agrees to accord **stage-I approval** for the diversion of 73.697 hectares of forest land in Sukinda Chromite Mines of M/s. TATA Steel Ltd. In Jajpur district during 3rd Renewal of mining lease (RML) period, subject to the following conditions:

- (i) Legal status of the diverted forest land shall remain unchanged;
- (ii) Following activities shall be undertaken by the user agency at the project cost:
 - (a) A plan containing appropriate mitigative measures to minimize soil erosion and choking of streams shall be prepared and implemented;
 - (b) Planting of adequate drought hardy plant species and sowing of seeds in the appropriate area within the mining lease to arrest soil erosion;
 - (c) Construction of check dams, retention / toe walls to arrest sliding down of the excavated material along the contour;
 - (d) Stabilize the overburden dumps by appropriate grading/benching so as to ensure that that angles of repose at any given place is less than 28°; and
 - (e) Strict adherence to the prescribed top soil management.
- (iii) State Government shall charge the Net Present Value (NPV) of the forest area diverted under this proposal from the user agency as per the Orders of the Hon'ble



Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009 in this regard;

- (iv) At the time of payment of the Net Present Value (NPV) at the present rate, the user agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;
- (v) All the funds received from the User Agency under the project shall be transferred to Ad-hoc CAMPA in the concerned Saving Bank Account in Corporation Bank, Indl Road, New Delhi-110003;
- (vi) User agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986;
- (vii) User agency shall maintain 7.50 meters wide strip all along the periphery of the mining lease as safety zone. No mining activity shall be undertaken in the safety zone;
- (viii) State Government shall ascertain the status, as on 25th October 1980, of the area located in the mining lease which has been treated as 'non-forest' as per the Hal (present) record of rights and intimate the same to the Ministry of Environment and Forests, Government of India within a period of one month from the date of grant of stage-I approval;
- (ix) User agency shall prepare a schedule of the surrender of the fully(biologically) reclaimed mined out forest land and submit the same to the Ministry of Environment and Forests before grant to stage-II approval under the FC Act;
- (x) The User Agency shall pay the proportionate cost of implementation of Regional Wildlife Management Plan at revised cost; and
- (xi) The user agency shall pay towards the cost of site specific conservation plan to be approved by the CWLW, Odisha for its implementation in leasehold as well as surrounding area.
- (xii) User agency in consultation with the State Forest Department shall create and maintain alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project. Bird nests artificially made out of eco-friendly materials shall be used in the area, including forest area and human settlements, adjoining the forest area being diverted for the project;
- (xiii) User agency either himself or through the State Forest Department shall undertake fencing, protection and afforestation of the safety zone area (7.5 meter strip all along the outer boundary of the area identified to undertake mining), at the project cost;

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- (xiv) User agency either himself or through the State Forest Department shall undertake afforestation on degraded forest land, one and half time in extent to the area used for safety zone;
- (xv) Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease proposed to be granted under the Mines and Minerals (Development and Regulation) Act, 1957, and the Rules framed there-under, subject to a maximum period of 20 years;
- (xvi) User agency either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.4), if any, located in the area within 100 meters from outer perimeter of the mining lease;
- (xvii) User agency shall undertake de-silting of the village tanks and other water bodies located within five km from the mine lease boundary so as to mitigate the impact of siltation of such tanks/water bodies, whenever required;
- (xviii) User agency shall undertake mining in a phased manner and take due care for reclamation of the mined over area. The concurrent reclamation plan shall be executed by the User Agency as per the approved mining plan/scheme and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, Government of Odisha and the Addl. Principal Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (Eastern Zone), Bhubaneswar. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the user agency, the Nodal Officer or the Addl. Principal Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed;
- (xix) No labour camp shall be established on the forest land;
- (xx) User agency shall provide firewood preferably alternate fuel to the labourers and the staff working at the site so as to avoid any damage and pressure on the adjacent forest areas;
- (xxi) Boundary of the mining lease and safety zone shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing and distance from pillar to pillar;
- (xxii) Forest land shall not be used for any purpose other than that specified in the proposal;
- (xxiii) State Government shall complete settlement of rights, in term of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if

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any, on the forest land to be diverted and submit the documentary evidence as prescribed by this Ministry in it's letter No. 11-9/1998-FC (pt.) dated 3rd August 2009, in support thereof;

- (xxiv) Any other condition that the Regional Office (Eastern Zone), Bhubaneswar of this Ministry, Bhubaneswar may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife; and
- (xxv) User agency and the State Government shall ensure compliance to provisions of the all Act, Rules, Regulations and Guidelines, for the time being in force, as applicable to the project.

3. After receipt of the report on compliance to the conditions stipulated in the paragraph-2 above, from the Government of Odisha, final/ stage-II approval for diversion of the said forest under Section-2 of the Forest (Conservation) Act, 1980 will be issued by this Ministry. Transfer of the said forest land to the user agency shall not be affected by the Government of Odisha till final/stage-II approval for its diversion is issued by this Ministry.

4. However, pending receipt of report on compliance to the conditions stipulated in paragraph-2 above and grant of final/stage-II approval under the Forest (Conservation) Act, 1980 for diversion of the said forest land, State Government may allow the user agency to undertake mining, as per the approved mining plan, in the already broken up forest land being diverted for mining purposes (as per the approved land use plan), for a period not exceeding one year from the date of issue of this letter.

5. Stage-I approval and Working Permission for mining over already broken up area is subject to in-principle decision of the authority in the State Government in terms of section 8(3) of the Mines and minerals (Development and Regulation) Act, 1957 that in the interest of mineral development it is necessary to renew the lease.

Yours faithfully,

SAL
(H. C. Chaudhary)
Director

Copy to:

1. The Principal Chief Conservator of Forests, Government of Odisha, Bhubaneswar.
2. The Nodal Officer, the Forest (Conservation) Act, 1980, the Government of Odisha, Bhubaneswar.
3. The Addl. Principal Chief Conservator of Forests (Central), Regional Office (Eastern Zone), Bhubaneswar.
4. User Agency.
5. Monitoring Cell, FC Division, MoEF, New Delhi.
6. Guard File.

03/11/2018
(H. C. Chaudhary)
Director

Government of Odisha
Forest & Environment Department

-0-

No.10F (Con) 73/2014 14957 / F&E, Dt. 17.07.17

From

Sri Debidutta Biswal, IFS
Special Secretary to Government

To

The Principal Chief Conservator of Forests, Odisha

Sub: Diversion of balance 330.972 ha. of Sabik Kisam Forest land as on 25.10.1980 in addition to already diverted forest land of 73.697 ha for Chromite mining in their Sukinda Chromite mine in Jajpur District under Cuttack Forest Division by M/s TATA Steel Limited.

Sir,

I am directed to enclose herewith the Stage-I approval order of Government of India, MoEF &CC, vide letter F. No. 8-15/2016-FC dt.04.07.2017 for diversion of balance 330.972 ha. of Sabik Kisam Forest land as on 25.10.1980 in addition to already diverted forest land of 73.697 ha for Chromite mining in their Sukinda Chromite mine in Jajpur District under Cuttack Forest Division by M/s TATA Steel Limited. The Stage-I approval order referred to above indicates that Government of India, MoEF &CC, agrees for diversion of above extent of forest land subject to compliance of 25(Twenty-five) no. of conditions by the user agency so as to consider the case for Stage-II(Final) forests clearance.

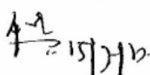
In addition to the conditions stipulated in the in-principle approval order, the user agency is also required to comply with the following additional conditions.

- User Agency has to execute Phased Reclamation Plan at their cost.
- The User Agency shall pay the differential cost towards proportionate cost of implementation of Regional Wildlife Management Plan at revised rate.
- The user agency shall undertake demarcation of the lease area on the ground posting four feet high cement concrete pillars embedded two feet inside the soil with serial number, forward and backward bearings, and distance from pillar to pillar. The user agency shall also submit the map of lease area showing different kinds of forest land using DGPS survey data and latitude and longitude of each pillar to the Divisional Forest Officer, Cuttack for his reference before commencement of work on final forest clearance.
- Lease profile shall be furnished by the lessee.
- The user agency shall provide the relevant safety zone map duly authenticated by competent Forest and Mining Officers concerned. Safety zone area shall therefore be assessed and demarcated on ground. User agency shall maintain safety zone and undertake afforestation activities over 1.5 times of the forest area in safety zone area in degraded forest land elsewhere.

It is requested to take necessary steps for compliance of the conditions imposed in the Stage-I approval order of MoEF &CC, as well as the additional conditions imposed by the State Government. Appropriate instruction in this context may be imparted to the Divisional Forest Officer of Cuttack Forest Division as well as to the user agency for compliance of the conditions. Detailed compliance of all the conditions imposed by MoEF &CC and State Government may be meticulously scrutinized by Addl. PCCF (Forest Diversion) & Nodal Officer, FC Act of your office and further necessary steps may also be taken by him expeditiously to furnish the detailed compliance in this respect to MoEF&CC on behalf of State Government as per authorization of State Government communicated in this regard vide letter No. 10195/F&E dt.16.5.2017 to you, for their consideration for according final forest clearance to this project. A copy of detailed compliance so sent to MoEF&CC may also be marked to State Forest Department unflinching for reference.

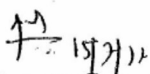
Violation of Forest Conservation Act, 1980, if any, may, however, be reported in detail expeditiously to the State Government as per para 1.9 of F.C. Act guidelines for bringing the same to the notice of Government of India, Ministry of Environment, Forests and Climate Change for further action at their end.

Yours faithfully


Special Secretary to Government

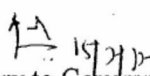
Memo No. 14958/F&E., Dated. 17-07-17

Copy with copy of enclosures forwarded to the PCCF(WL) & CWLW, Odisha for information & necessary action.


Special Secretary to Government

Memo No. 14959/F&E., Dated. 17-07-17

Copy with copy of enclosures forwarded to the Addl. Principal CCF(Forest Diversion) & Nodal Officer, FC Act, O/O PCCF, Odisha for information & necessary follow up action with reference to Government order communicated to PCCF, Odisha in the matter of processing compliance of conditions of Stage-I approval order/State Government vide F&E department letter No. 10195/F&E dt.16.5.2017.


Special Secretary to Government

Stage-II Forest Clearance for Additional Area



F. No. 8-15/2016-FC
Government of India
Ministry of Environment, Forest and Climate Change
(Forest Conservation Division)

Indira Paryavaran Bhawan
Aliganj, Jorbagh Road
New Delhi - 110003

Dated: 18th May, 2018

To,
The Principal Secretary (Forests),
Dept. of Environment & Forests,
Government of Orissa,
Bhubaneswar

Sub: Diversion of balance 330.972 ha of Sabik Kisam forest land as on 25.10.1980 in addition to already diverted forest land of 73.697 ha for Chromite mining in their Sukinda Chromite mine in Jajpur District under Cuttack Forest Division by M/s TATA STEEL LIMITED.

Sir,

I am directed to refer to the State Government's letter no. 10F (Cons) 73/2014-11975F&B, Bhubaneswar, dated 28.06.2016 on the subject mentioned above seeking prior approval of the Central Government under Section-2 of the Forest (Conservation) Act, 1980 and to say that the said proposal has been examined by the Forest Advisory Committee constituted by the Central Government under Section-3 of the aforesaid Act. After careful consideration of the proposal by the Forest Advisory Committee (FAC) constituted under Section-3 of the said Act, *In-principle* approval was granted vide this Ministry's letter of even number dated 04.07.2017 subject to fulfilment of certain conditions. The State Government has furnished compliance report in respect of the conditions stipulated in the approval and has requested the Central Government to grant final approval.

In this connection, I am directed to say that on the basis of the compliance report furnished by the Addl. Pr. Chief Conservation of Forests & Nodal Officer (FCA), State Government of Odisha vide their letter No. 4142/9F(MG)/323/2016 dated 28.02.2018, *Stage-II/Final approval* of the Central Government is hereby granted under Section-2 of the Forest (Conservation) Act, 1980 for diversion of balance 330.972 ha of Sabik Kisam forest land as on 25.10.1980 in addition to already diverted forest land of 73.697 ha for Chromite mining in their Sukinda Chromite mine in Jajpur District under Cuttack Forest Division by M/s TATA STEEL LIMITED subject to the following conditions:

- (i) Legal status of the diverted forest land shall remain unchanged;
- (ii) Compensatory afforestation is exempted in light of submission of documentary evidences submitted by state government that the area is broken prior to 1980.
- (iii) The State Govt. shall ensure that the Safety zone shall be afforested and maintained in accordance with approved scheme of Rs. Rs.90,84,737/- at the cost of user agency in consultation with State Forest Department on the following area:
 - a. 9.26 ha with in the mining lease area
 - b. 15 ha (on south east and south west corner of the lease boundary) outside mining lease area in side Mahagiri DPP.
- (iv) The user agency shall pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;
- (v) Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease proposed to be granted under the Mines and Minerals (Development and Regulation) Act, 1957, as amended and the Rules framed there-under;

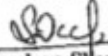
Sd/-

- (vi) The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;
- (vii) The State Govt. shall ensure that no labour camp shall be established on the forest land;
- (viii) The State Govt. shall ensure that the User Agency shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas;
- (ix) The State Govt. shall ensure that the boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS co-ordinates;
- (x) The State Govt. shall ensure that the User Agency shall undertake mining in a phased manner after taking due care for reclamation of the mined over area. The concurrent reclamation plan as per the approved mining plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the Addl. Principle Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities area satisfactorily executed;
- (xi) The State Govt. shall ensure that the layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government;
- (xii) The State Govt. shall ensure that the forest land shall not be used for any purpose other than that specified in the proposal;
- (xiii) The State Govt. shall ensure that the forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government;
- (xiv) The State Govt. shall ensure that no damage to the flora and fauna of the adjoining area shall be caused;
- (xv) The State Govt. shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department;
- (xvi) The State Govt. shall ensure that the following activities shall be undertaken by the User Agency under the supervision of the State Forest Department:
 - a) **The approved scheme of Rs. 28,73,097/-** for mitigative measures to minimize soil erosion and choking of stream shall be implemented **at the cost of user agency** in consultation with State Forest Department.
 - b) **The approved scheme of Rs.28,075/-** for planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion shall be implemented **at the cost of user agency** in consultation with State Forest Department;
 - c) Construction of check dams, retention /toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme;

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- d) The approved scheme of Rs. 24,07,469/- for stabilize the overburden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than 25° , shall be implemented at the cost of user agency in consultation with State Forest Department; and
- e) No damage shall be caused to the top-soil and the user agency will follow the top soil management plan.
- (xvii) The State Govt. shall ensure that the State Forest Department will implement the approved scheme for gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40) located in the area within 100 m. from outer perimeter of the mining lease from the funds of Rs. 64,06,921/- deposited in Ad-hoc CAMPA account by the user agency;
- (xviii) The State Govt. shall ensure that the user agency will implement scheme for de-silting of the village tanks and other water bodies located within five km from the mine lease boundary so as to mitigate the impact of siltation of such tanks/water bodies in accordance with approved scheme of Rs. 33,96,800/- at the cost of user agency in consultation with State Forest Department;
- (xix) The State Govt. shall ensure that the User Agency shall submit the annual self compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year;
- (xx) The State Govt. shall ensure that any other condition that the concerned Regional Office of this Ministry may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife; and
- (xxi) The State Govt. shall ensure that the user agency shall comply all the provisions of the all Acts, Rules, Regulations, Guidelines & Hon'ble Court Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.

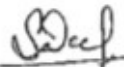
Yours faithfully,


(Sandeep Sharma) 16.5.18

Assistant Inspector General of Forests (FC)

Copy to:

1. The Principal Chief Conservator of Forests, Government of Odisha, Bhubaneswar.
2. The Nodal Officer (FCA), Government of Odisha, Bhubaneswar.
3. The Addl. Principal Chief Conservator of Forests (Central), Regional Office (Eastern Zone), Bhubaneswar.
4. User Agency.
5. Monitoring Cell, FC Division, MoEF, New Delhi.
6. Guard File.


(Sandeep Sharma) 16.5.18

Assistant Inspector General of Forests (FC)

Ambient Air Quality Monitoring Result-Core Zone**Monitoring Station:** Six Locations**Duration:** April'2018 to September'2018**Frequency of Monitoring:** Twice in a Week**Table.1: AAQ-COB Plant**

	Parameters	UoM	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
COB PLANT	PM10	µg/m ³	60.02	50.58	72.44	63.58	58.1	57.30
	PM2.5	µg/m ³	29.39	24.43	36.27	35.24	33.1	30.80
	SO ₂	µg/m ³	4.6	4.28	5.19	4.94	5.1	5.80
	NOX	µg/m ³	11.61	10.7	15.59	14.88	15	16.00
	CO	mg/m ³	5.46	5.55	8.8	8.36	0.4	0.40
	Ozone (O ₃)	µg/m ³	0.37	0.34	0.43	0.38	7.8	8.50
	NH ₃	µg/m ³	21.1	20.8	26.02	22.57	22.2	24
	Lead (Pb)	µg/m ³	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Benzene	µg/m ³	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Benzo(a)Pyrene	ng/m ³	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Arsenic	ng/m ³	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	ng/m ³	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	

Table.2: Stack Yard

	Parameters	UoM	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
STACK YARD	PM10	µg/m ³	63.84	61.38	81.79	71.56	63.40	59.00
	PM2.5	µg/m ³	31.29	30.76	42.7	40.48	36.70	32.10
	SO ₂	µg/m ³	5.1	4.89	6.12	5.94	5.30	5.50
	NOX	µg/m ³	12.69	13.01	18.12	16.32	16.10	16.00
	CO	mg/m ³	6.61	7.27	12.3	11.93	11.80	0.40
	Ozone (O ₃)	µg/m ³	0.43	0.43	0.56	0.5	0.50	15.00
	NH ₃	µg/m ³	23.4	22.86	30.13	27.63	25.7	24.6
	Lead (Pb)	µg/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL
	Benzene	µg/m ³	<0.002	BDL	<0.002	<0.002	BDL	BDL
	Benzo(a)Pyrene	ng/m ³	<0.01	BDL	<0.01	<0.01	BDL	BDL
	Arsenic	ng/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL
	Nickel	ng/m ³	<0.001	BDL	<0.001	<0.001	BDL	

Table.3: Laboratory Top

	Parameters	UoM	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
LABORATORY TOP	PM10	µg/m ³	47.95	45.52	67.43	62.08	57.5	54.10
	PM2.5	µg/m ³	22.93	21.74	33.59	31.48	29.5	28.00
	SO ₂	µg/m ³	4.33	4.3	4.77	4.42	4.8	5.30
	NOX	µg/m ³	10.42	9.75	14.61	14.06	14.6	15.00
	CO	mg/m ³	5.3	BDL	7.49	7.3	5.3	0.40

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

	Parameters	UoM	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
	Ozone (O ₃)	µg/m ³	0.29	0.28	0.41	0.37	0.4	6.00
	NH ₃	µg/m ³	<20.0	BDL	23.12	20.57	22.4	23.3
	Lead (Pb)	µg/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL
	Benzene	µg/m ³	<0.002	BDL	<0.002	<0.002	BDL	BDL
	Benzo(a)Pyrene	ng/m ³	<0.01	BDL	<0.01	<0.01	BDL	BDL
	Arsenic	ng/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL
	Nickel	ng/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL

Table.4: Hospital Building

	Parameters	UoM	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
HOSPITAL BUILDING	PM10	µg/m ³	41.48	39.87	57.53	56.6	53	50.10
	PM2.5	µg/m ³	18.81	18.64	28.49	27.92	27.6	26.40
	SO ₂	µg/m ³	<4.0	BDL	4.33	4.3	4.8	4.80
	NOX	µg/m ³	9.6	BDL	10.33	9.96	11.2	12.20
	CO	mg/m ³	4.8	BDL	5.03	4.2	4.6	0.30
	Ozone (O ₃)	µg/m ³	0.21	0.22	0.31	0.29	0.4	4.80
	NH ₃	µg/m ³	<20.0	BDL	<20.0	<20.0	BDL	BDL
	Lead (Pb)	µg/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL
	Benzene	µg/m ³	<0.002	BDL	<0.002	<0.002	BDL	BDL
	Benzo(a)Pyrene	ng/m ³	<0.01	BDL	<0.01	<0.01	BDL	BDL
	Arsenic	ng/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL
Nickel	ng/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL	

Table.5: Mining Complex

	Parameters	UoM	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
MINING COMPLEX	PM10	µg/m ³	64.18	54.4	76.11	59.9	53.3	52.40
	PM2.5	µg/m ³	31.6	26.29	39.18	33.67	31.8	26.00
	SO ₂	µg/m ³	5	4.58	5.87	5.56	5.3	6.50
	NOX	µg/m ³	12.76	11.84	16.83	15.7	14.7	16.70
	CO	mg/m ³	6.21	6.05	11.66	10.91	0.4	0.34
	Ozone (O ₃)	µg/m ³	0.41	0.37	0.53	0.51	11.8	16.60
	NH ₃	µg/m ³	22.15	21.07	26.8	26.51	25.7	25.90
	Lead (Pb)	µg/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL
	Benzene	µg/m ³	<0.002	BDL	<0.002	<0.002	BDL	BDL
	Benzo(a)Pyrene	ng/m ³	<0.01	BDL	<0.01	<0.01	BDL	BDL
	Arsenic	ng/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL
Nickel	ng/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL	

Table.6: Tailing Pond

	Parameters	UoM	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
NEAR TAILING POND	PM10	µg/m ³	50.48	43.86	65.32	64.88	59.1	55.90
	PM2.5	µg/m ³	24.19	20.71	32.47	31.68	32.1	29.10
	SO ₂	µg/m ³	4.2	BDL	4.23	4.16	4.9	5.80
	NOX	µg/m ³	9.65	9.78	11.09	10.86	13.8	15.00
	CO	mg/m ³	5.2	BDL	5.17	4.4	7	0.30
	Ozone (O ₃)	µg/m ³	0.26	0.23	0.32	0.33	0.4	7.60
	NH ₃	µg/m ³	<20.0	BDL	<20.0	<20.0	BDL	BDL
	Lead (Pb)	µg/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL
	Benzene	µg/m ³	<0.002	BDL	<0.002	<0.002	BDL	BDL
	Benzo(a)Pyrene	ng/m ³	<0.01	BDL	<0.01	<0.01	BDL	BDL
	Arsenic	ng/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL
	Nickel	ng/m ³	<0.001	BDL	<0.001	<0.001	BDL	BDL

Table.7: Ambient Air Quality Monitoring Buffer Zone (frequency: Quarterly)

Sl. No	Location	Month	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	Benzen e µg/m ³	Benzo (a) Pyren e ng/m ³	Arsenic ng/m ³	Nickel ng/m ³
1	Birasal	Mar'18	50.2	24.2	<4.0	9.4	0.24	<4.0	<0.001	<20.0	<0.001	<0.002	<0.001	<0.01
		June,18	50.2	24.2	<4.0	9.4	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
		Sept,18	56	30	BDL	10	0.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2	Kanehipal	Mar'18	53.5	25.8	<4.0	9.5	0.26	<4.0	<0.001	<20.0	<0.001	<0.002	<0.001	<0.01
		June,18	50.2	24.2	<4.0	9.4	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
		Sept,18	41	21	BDL	BDL	0.15	BDL	BDL	BDL	BDL	BDL	BDL	BDL
3	Kalarangiatta	Mar'18	56.2	27.1	<4.0	10.2	0.3	<4.0	<0.001	<20.0	<0.001	<0.002	<0.001	<0.01
		June,18	56.2	27.1	<4.0	10.2	<4.0	0.3	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
		Sept,18	50	26	BDL	10	0.19	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4	Kaliapani	Mar'18	60.8	29.4	4.2	11.6	0.33	<4.0	<0.001	<20.0	<0.001	<0.002	<0.001	<0.01
		June,18	60.8	29.4	4.2	11.6	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
		Sept,18	43	23	BDL	BDL	16	BDL	BDL	BDL	BDL	BDL	BDL	BDL
5	Kakudia	Mar'18	54.6	26.2	<4.0	9.6	0.27	<4.0	<0.001	<20.0	<0.001	<0.002	<0.001	<0.01
		June,18	52.8	28	<4.0	9.2	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
		Sept,18	48	25	BDL	9.4	0.16	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6	Sendashara	Mar'18	52.8	24.6	<4.0	<9.0	0.22	<4.0	<0.001	<20.0	<0.001	<0.002	<0.001	<0.01
		June,18	50.6	23.8	<4.0	<9.0	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
		Sept,18	43	24	BDL	BDL	0.18	BDL	BDL	BDL	BDL	BDL	BDL	BDL
7	Laxmidharpur	Mar'18	49.6	23.8	<4.0	<9.0	0.24	<4.0	<0.001	<20.0	<0.001	<0.002	<0.001	<0.01
		June,18	49.2	23.2	<4.0	<9.0	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
		Sept,18	44	23	BDL	BDL	0.18	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8	Sukarangi	Mar'18	62.8	29.5	4.3	11.8	0.35	5.2	<20.0	<0.001	<0.002	<0.001	<0.01	BDL
		June,18	60.6	25.2	4.1	11.2	5	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl. No	Location	Month	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	Benzen e µg/m ³	Benzo (a) Pyren e ng/m ³	Arsenic ng/m ³	Nickel ng/m ³
		Sept,18	45	24	BDL	BDL	0.17	BDL	BDL	BDL	BDL	BDL	BDL	BDL
9	Muruabil	Mar'18	50.9	23.7	<4.0	<9.0	0.23	<4.0	<20.0	<0.001	<0.002	<0.001	<0.01	BDL
		June,18	51.2	24.1	<4.0	<9.0	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
		Sept,18	51	26	BDL	BDL	0.19	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10	Kharkhari	Mar'18	55.6	26.4	<4.0	9.2	0.25	<4.0	<20.0	<0.001	<0.002	<0.001	<0.01	BDL
		June,18	54.2	25.8	<4.0	9	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001
		Sept,18	47	24	BDL	9.7	0.21	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Table.8: Free Silica Analysis in Ambient Air (Respirable Particulate Matter)

Sl.No	Person Sampled	Employee Code	August'2018		Sep'2018		DGMS Standard For RPM if %silica <5%
			RPM (mg/m ³)	Free silica (%)	RPM (mg/m ³)	Free silica (%)	
01	Mr. Sarat Kumar Behera	P-195701	-	-	0.420	1.9	2.0
02	Mr. Ghasiram Maghi	P-195728	-	-	0.373	1.5	2.0
03	Mr. M B Rana	P-195626	-	-	0.385	1.7	2.0
04	Mr. Kamal Kant Das	P-195750	-	-	0.395	1.8	2.0
05	Mr. Munu Singh	P-195954	-	-	0.392	1.3	2.0
06	Mr. Rabindra Dalai	SCM/720/18	0.415	1.7	-	-	2.0
07	Mr. A K Acharya	P-196003	0.359	1.9	-	-	2.0
08	Mr. Prakash Dhir	P-183734	0.364	1.4	-	-	2.0
09	Mr. Prafulla Ku Mahanta	P-196177	0.403	2.0	-	-	2.0
10	Mr. Bijay Behera	TSP/0618	0.371	1.6	-	-	2.0

Table.9: Mineralogical Composition (Ambient Air Analysis)-September'2018

Parameters	UoM	Cr ₂ O ₃	Fe ₂ O ₃	Cr ₂ O ₃	SiO ₂	Al ₂ O ₃	MgO	CaO
Mining Complex	%	25.2	10.4	3.5	28.1	11.4	13.8	4.0
COB Plant	%	22.4	8	3.2	25.4	12.4	13.8	3.1
Stack Yard	%	24.1	9.2	2.5	23.2	13.2	13.1	3.5
Hospital Top	%	18.9	7.5	1.6	24.1	10.8	11.7	2.9
Laboratory Top	%	21.6	8.4	1.9	24.5	11.7	14.3	3.3

Mineral Storage Yard & Dispatch Practices



Concentrate Stack Covered with Tarpauline

Air Pollution Control Measures

1. Stationary Water Sprinkling arrangements:



2. Concrete Roads outside mine pits:



3. Dust Suppression measures at Hopper:



4. Haul road dust suppression measures:



Rain Water Harvesting Structures

1. Rooftop Rain Water Harvesting structure at GM Office



Ground Water Monitoring (Apr'18 to Sep'18)

Table. 1. Ground Water Monitoring within Core Zone

Hole No.	Ground Water Level Monitoring (Core Zone)			
	SCM/PZ/OB-X/2300E/01	SCM/PZ/OB-X/3900E/09	SCM/PZ/OB-X/3600E/13	SCM/PZ/OB-X/3300E/17
Hole RL (m)	117.63	135.76	130.78	127.4
Latitude	21°01'21.32"	21°01'47.86"	21°01'41.82"	21°01'37.76"
Longitude	85°44'55.08"	85°45'44.16"	85°45'33.75"	85°45'25.64"
Hole Depth (m)	150.00	150	150	150
14-April-18	16.1	70.8	29.2	17.2
15-May-18	16.2	71.8	26	17.2
18-June-18	15.2	68.2	22.8	16.2
17-July-18	14.4	67.2	21.2	15.5
16-Aug-18	13.6	66.3	20.8	14.6
13-Sep-18	10.3	53.8	15.4	11.5

Table.2 Ground Water in Buffer Zone:

Well/Village	May' 2018 (mbgl)	Sep'2018 (mbgl)
Dug well at Birasal	18.6	1.1
Dug well at Sendeswar	12.7	1.2
Dug well at Maruabil	19.1	1.5
Dug well at Kakudia	23.2	2.2
Dug well at Kharakhari	14.9	1.0
Dug well at Kalarangi	17.4	2.6
Dug well at Kaliapani	10.2	2.7
Dug well at Laxmidharpur	14.3	1.1
Dug well at Sukarangi	9.7	1.3
Dug well at Kanheipal	14.9	1.9

Note: mbgl-mtr below ground level.

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Table.3 Ground Water Quality Result:

A. Tube Well Near Market Complex

Sl.No	Parameter	Unit	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
1	Colour	Hazen	CL	CL	CL	CL	CL	CL
2	Odour	--	U/O	U/O	U/O	U/O	U/O	U/O
3	pH Value	--	7.42	5.6	7.36	7.3	7.26	7.24
4	Total Hardness (as CaCO ₃)	mg/l	156	150	168	166	148	140
5	Iron (as Fe)	mg/l	0.29	0.32	0.26	0.24	26	0.22
6	Chloride (as Cl)	mg/l	38	35	36	28	39	35
7	Dissolved Solids	mg/l	236	227	241	184	262	246
8	Suspended Solids	mg/l	Nil	Nil	Nil	Nil	NIL	NIL
9	Dissolved Oxygen	mg/l	5.2	5.6	5.1	5.2	5.5	5.9
10	Calcium (as Ca)	mg/l	41.7	39.7	40.8	32.6	48	44.88
11	Magnesium (as Mg)	mg/l	12.6	12.4	12.8	11.4	6.8	6.8
12	Sulphate (as SO ₄)	mg/l	6.4	6.8	6.2	5.6	7	6.3
13	Fluoride (as F)	mg/l	0.022	0.024	0.016	0.01	0.07	0.06
14	Mercury (as Hg)	mg/l	<0.001	<0.001	<0.001	<0.001	BDL	BDL
15	Chromium (as Cr ⁺⁶)	mg/l	<0.05	<0.05	<0.05	<0.05	BDL	BDL
16	Total Chromium (as Cr)	mg/l	<0.05	<0.05	<0.05	<0.05	0.025	0.021
17	BOD (3) days at 27 °C	mg/l	<1.8	<1.8	<1.8	<1.8	ND	ND
18	COD	mg/l	<3.0	<3.0	<3.0	<3.0	ND	ND
19	Pesticide	mg/l	Absent	Absent	Absent	Absent	Absent	Absent
20	Total Coliform	MPN/100 ml	<1.8	<1.8	<1.8	<1.8	ND	ND

B. Tap Water Near Stack Yard

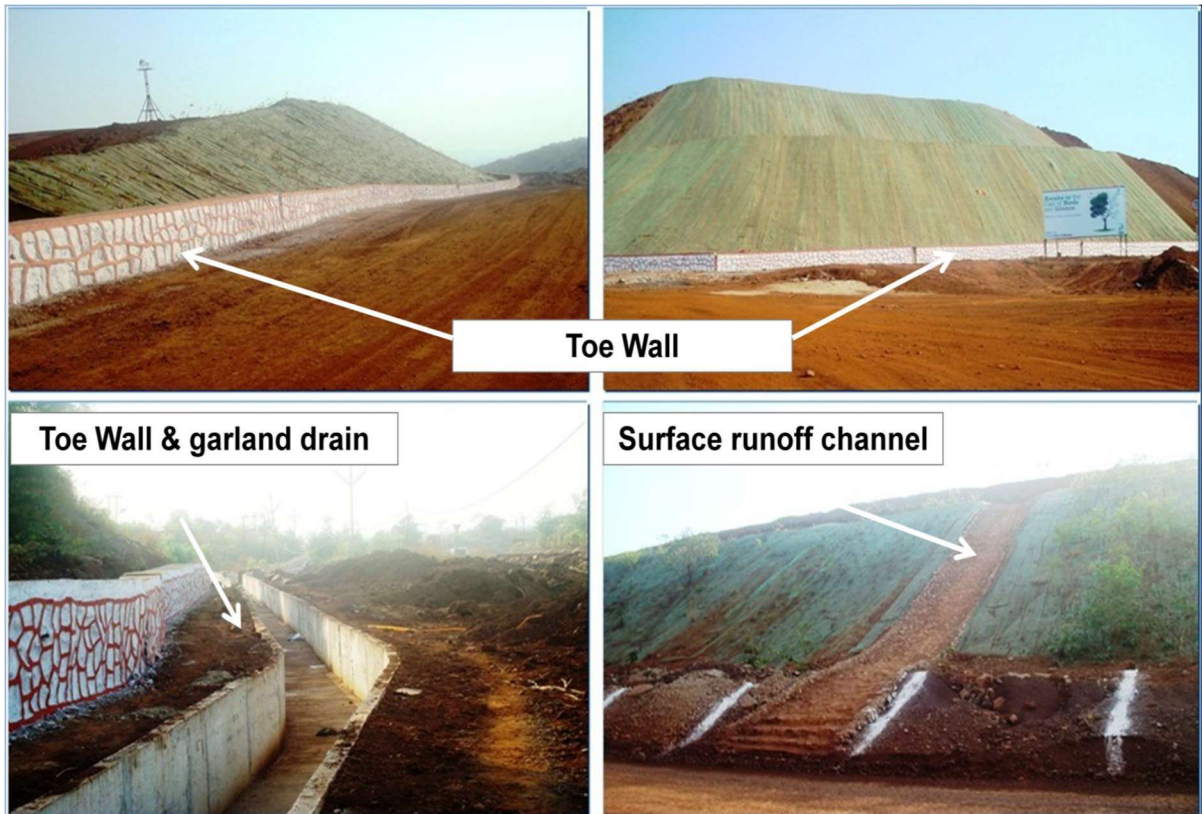
Sl.No	Parameter	Unit	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
1	Colour	Hazen	CL	CL	CL	CL	CL	CL
2	Odour	--	U/O	U/O	U/O	U/O	U/O	U/O
3	pH Value	--	7.24	5.5	7.36	7.22	7.2	7.13
4	Total Hardness (as CaCO ₃)	mg/l	85	80	92	90	92	98
5	Iron (as Fe)	mg/l	0.23	0.25	0.26	0.21	0.18	0.21
6	Chloride (as Cl)	mg/l	27	29	22	21.6	27.5	30
7	Dissolved Solids	mg/l	142	141	152	148	160	174
8	Suspended Solids	mg/l	Nil	Nil	Nil	Nil	NIL	NIL
9	Dissolved Oxygen	mg/l	5.3	5.5	4.6	5.2	5.3	5.7
10	Calcium (as Ca)	mg/l	22.4	21.6	24.8	23.6	24.1	24.84
11	Magnesium (as Mg)	mg/l	7	6.3	7.1	6.8	7.7	8.7
12	Sulphate (as SO ₄)	mg/l	4.5	5	4.2	3.8	4.1	5
13	Fluoride (as F)	mg/l	0.017	0.013	0.014	0.012	0.03	0.04
14	Mercury (as Hg)	mg/l	<0.001	<0.001	<0.001	<0.001	BDL	BDL
15	Chromium (as Cr ⁺⁶)	mg/l	<0.05	<0.05	<0.05	<0.05	BDL	BDL
16	Total Chromium (as Cr)	mg/l	<0.05	<0.05	<0.05	<0.05	0.031	0.027
17	BOD (3) days at 27 °C	mg/l	<1.8	<1.8	<1.8	<1.8	ND	ND
18	COD	mg/l	<3.0	<3.0	<3.0	<3.0	ND	ND
19	Pesticide	mg/l	Absent	Absent	Absent	Absent	Absent	Absent
20	Total Coliform	MPN/100 ml	<1.8	<1.8	<1.8	<1.8	ND	ND

DUMP SLOPE STABILIZATION MEASURES

1. Dump slopes maintained in tier approaches & Backfilling



2. Drainage network & Erosion Control measures:



3. Coir Matting & Plantation on Slopes (Vertiver Plantation on the slopes)



Plantation (Greenbelt Development Activities)

Table.1 Summary on Plantation Status:

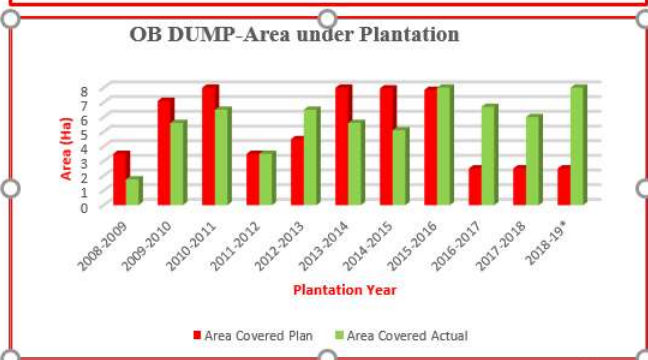
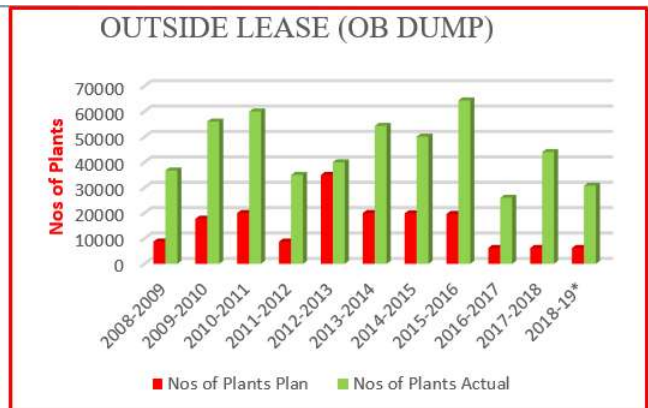
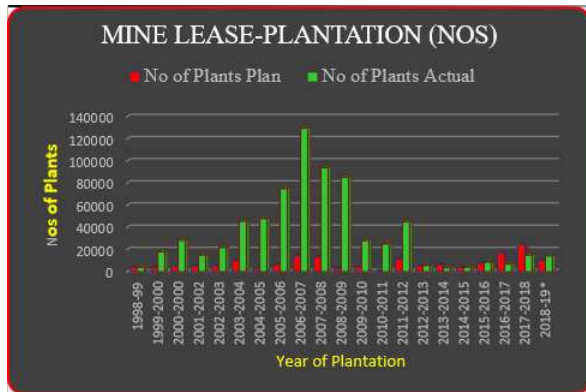
SUKINDA CHROMITE MINE : TATA STEEL LTD.				
Details of Afforestation/ Greenbelt Plantation Carried Out				
Year	Inside Mining lease (Within 406 ha.)		Outside Mining Lease (Within 100 ha)	
	Numbers	Area (ha)	Numbers	Area (ha)
1998-99	4000	1.7		
1999-2K	18000	4		
2000-01	28342	2		
2001-02	15000	0.5		
2002-03	22000	1.5		
2003-04	45500	1.5		
2004-05	48000	1		
2005-06	75000	2.5	Additional Area (100ha) obtained	
2006-07	129500	5.75		
2007-08	94000	4.42		
2008-09	85250	2.94	36750	1.76
2009-10	28000	3.9	56000	5.6
2010-11	25000	2	60000	6.5
2011-12	45000	4.5	35000	3.5
2012-13	5700	1.83	40000	6.5
2013-14	3700	1.32	54326	5.6
2014-15	4050	1.2	50100	5.1
2015-16	8500	1	64357	8
2016-17	7000	2.80	26000	6.70
2017-18	15000	5.00	44000	6.00
2018-19	14233	4.40	30767	8.00
TOTAL	720775	55.76	466533	63.26

Remarks :

- Figures for 2018-19 are till Sept'2018.
- Survival Rate during Plantation year is >90%.
- Avg. Survival Rate ~80%



Fig: Plantation Planned Vs. Achieved





REHABILITATION

32



REHABILITATION

33

Effluent Management at Sukinda Chromite Mines

ETP of 4500KI/hr:



Oil-Water Separation (Workshop)



Sewage Treatment Plant



Effluent Treatment Monitoring:

Table.1: ETP INLET:

Sl. No	Parameter	Unit	Standards (In land Surface water)	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
				Inlet	Inlet	Inlet	Inlet	Inlet	Inlet
1	Colour & Odour	Hazan/-	5.0 / U/O	CL & U/O	CL & U/O	CL & U/O	CL & U/O	CL & U/O	CL & U/O
2	Suspended Solids	mg/ltr	100	96	112	76	74	78	84
3	Particular Size of Suspended Solids	μ(micron)	<850	< 850	< 850	< 850.0	< 850.0	< 850.0	< 850.0
4	PH	--	5.5-9.0	6.42	6.56	6.84	6.92	6.82	6.93
5	Temperature	°c.	Shall not exceed 5°C above the receiving water	24	24	26	25	22	23
6	Oil & Grease	mg/ltr	10	3.2	3.6	2.6	2.1	2.4	5.6
7	Total Residual Chlorine	mg/ltr	1	ND	ND	ND	ND	ND	ND
8	Amm. Nitrogen as N	mg/ltr	50	2.3	2.8	2.1	2.8	1.9	2.1
9	Total Kjeldal Nitrogen as NH ₃	mg/ltr	100	6.4	7.9	5	4.6		3.36

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl. No	Parameter	Unit	Standards (In land Surface water)	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
				Inlet	Inlet	Inlet	Inlet	Inlet	Inlet
10	Free Ammonia	mg/ltr	5	ND	ND	ND	ND	0.006	0.0088
11	BOD (3) days at 27 ^o c.	mg/ltr	30	24	36	18.2	17.8	18	22
12	COD	mg/ltr	250	118	142	98	92	60	62
13	Arsenic as As	mg/ltr	0.2	<0.001	<0.001	<0.001	<0.001	BDL	BDL
14	Mercury as Hg	mg/ltr	0.01	<0.001	<0.001	<0.001	<0.001	BDL	BDL
15	Lead as Pb	mg/ltr	0.1	<0.01	<0.01	<0.01	<0.01	BDL	BDL
16	Cadmium as Cd	mg/ltr	2	<0.001	<0.001	<0.001	<0.001	BDL	BDL
17	Hexa Chromium as Cr ⁺⁶	mg/ltr	0.1	0.28	0.32	0.42	0.36	0.02	0.32
18	Total Chromium as Cr	mg/ltr	2	0.78	0.88	0.68	0.64	0.42	0.48
19	Copper as Cu	mg/ltr	3	0.1	0.12	0.08	0.071	0.031	0.036
20	Zinc as Zn	mg/ltr	5	0.36	0.42	0.32	0.36	0.32	0.41
21	Selenium as Se	mg/ltr	0.05	<0.001	<0.001	<0.001	<0.001	BDL	BDL
22	Nickel as Ni	mg/ltr	3	<0.001	<0.001	<0.001	<0.001	BDL	BDL
23	Cyanide as CN	mg/ltr	0.2	ND	ND	ND	ND	BDL	BDL
24	Fluoride as F	mg/ltr	2	0.18	0.2	0.18	0.22	0.24	0.029
25	Diss. Phosphate as P	mg/ltr	5	0.46	0.4	0.52	0.48	0.6	0.8
26	Sulphide as S	mg/ltr	2	ND	ND	ND	ND	ND	ND
27	Phenolic Compounds as C ₆ H ₅ OH	mg/ltr	1	<0.001	<0.001	<0.001	<0.001	BDL	BDL
28	Bio-assay Test	--	90%	80%	77%	90%	90%	86%	86%
29	Manganese as Mn	mg/ltr	2	<0.005	<0.005	<0.005	<0.005	BDL	BDL
30	Iron as Fe	mg/ltr	3	0.8	0.92	0.66	0.61	0.51	0.47
31	Vanadium as V	mg/ltr	0.2	<0.001	<0.001	<0.001	<0.001	BDL	BDL
32	Nitrate Nitrogen	mg/ltr	10	2.4	2.66	2.68	2.8	1.5	1.2
33	Pesticides (as Benzene hexa chloride), µg/l Max.	µg/l Max	10	Absent	Absent	Absent	Absent	Absent	Absent

NB : C.L. Colourless, O.L – Odourless, BDL- Below Detectable Limit. ND- Not Detectable.

11111Table.2: ETP OUTLET:

Sl. No	Parameter	Unit	Standards (In land Surface water)	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
				Outlet	Outlet	Outlet	Outlet	Outlet	Outlet
1	Colour & Odour	Hazan/-	5.0 / U/O	CL & U/O	CL & U/O	CL & U/O	CL & U/O	CL & U/O	CL & U/O
2	Suspended Solids	mg/ltr	100	14	18	10	12	11	84
3	Particular Size of Suspended Solids	µ(micron)	<850	< 850	< 850	< 850.0	850.0	850.0	850.0
4	PH	--	5.5-9.0	7.04	7.22	7.26	7.18	7.14	7.1
5	Temperature	^o c.	Shall not exceed 5°C above the receiving water	24	24	26	25	22	23

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl. No	Parameter	Unit	Standards (In land Surface water)	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
				Outlet	Outlet	Outlet	Outlet	Outlet	Outlet
6	Oil & Grease	mg/ltr	10	ND	ND	ND	ND	ND	ND
7	Total Residual Chlorine	mg/ltr	1	ND	ND	ND	ND	ND	ND
8	Amm. Nitrogen as N	mg/ltr	50	ND	ND	ND	ND	0.42	0.51
9	Total Kjeldal Nitrogen as NH ₃	mg/ltr	100	0.98	0.84	0.71	0.66		1.12
10	Free Ammonia	mg/ltr	5	ND	ND	ND	ND	0.003	0.0031
11	BOD (3) days at 27 ^o c.	mg/ltr	30	<1.8	<1.8	<1.8	<1.8	ND	ND
12	COD	mg/ltr	250	18	24	12	11.6	ND	ND
13	Arsenic as As	mg/ltr	0.2	<0.001	<0.001	<0.001	<0.001	BDL	BDL
14	Mercury as Hg	mg/ltr	0.01	<0.001	<0.001	<0.001	<0.001	BDL	BDL
15	Lead as Pb	mg/ltr	0.1	<0.01	<0.01	<0.01	<0.01	BDL	BDL
16	Cadmium as Cd	mg/ltr	2	<0.001	<0.001	<0.001	<0.001	BDL	BDL
17	Hexa Chromium as Cr ⁺⁶	mg/ltr	0.1	<0.05	<0.05	<0.05	<0.05	BDL	BDL
18	Total Chromium as Cr	mg/ltr	2	<0.05	<0.05	<0.05	<0.05	0.014	0.011
19	Copper as Cu	mg/ltr	3	<0.05	<0.05	<0.05	<0.05	0.011	0.009
20	Zinc as Zn	mg/ltr	5	<0.05	<0.05	<0.05	<0.05	0.029	0.021
21	Selenium as Se	mg/ltr	0.05	<0.001	<0.001	<0.001	<0.001	BDL	BDL
22	Nickel as Ni	mg/ltr	3	<0.001	<0.001	<0.001	<0.001	BDL	BDL
23	Cyanide as CN	mg/ltr	0.2	ND	ND	ND	ND	BDL	BDL
24	Fluoride as F	mg/ltr	2	0.01	0.009	0.011	0.012	BDL	0.01
25	Diss. Phosphate as P	mg/ltr	5	<0.025	<0.025	<0.025	<0.025	BDL	BDL
26	Sulphide as S	mg/ltr	2	ND	ND	ND	ND	ND	ND
27	Phenolic Compounds as C ₆ H ₅ OH	mg/ltr	1	<0.001	<0.001	<0.001	<0.001	BDL	BDL
28	Bio-assay Test	--	90%	98%	98%	98%	100%	95%	95%
29	Manganese as Mn	mg/ltr	2	<0.005	<0.005	<0.005	<0.005	BDL	BDL
30	Iron as Fe	mg/ltr	3	0.22	0.2	0.18	0.21	0.17	0.13

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl. No	Parameter	Unit	Standards (In land Surface water)	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
				Outlet	Outlet	Outlet	Outlet	Outlet	Outlet
31	Vanadium as V	mg/ltr	0.2	<0.001	<0.001	<0.001	<0.001	BDL	BDL
32	Nitrate Nitrogen	mg/ltr	10	0.28	0.4	0.42	0.36	0.28	0.36
33	Pesticides (as Benzene hexa chloride), µg/l Max.	µg/l Max	10	Absent	Absent	Absent	Absent	Absent	Absent

NB : C.L. Colourless, O.L – Odourless, BDL- Below Detectable Limit. ND- Not Detectable.

Table.3: DOMESTIC EFFLUENT (At Inlet)

Sl. No	Parameter	Unit	Inlan Surface Water Sewers (Part-A Effluents)	Apr'18	May'18	June'18	July'18
1	TSS	mg/l	100	52	64	52	52
2	pH	-	5.5-9.0	6.42	6.58	6.31	6.31
3	BOD (3) days at 27°C	mg/l	30	26.8	28	28	28
4	COD	mg/l	250	164	176	168	168
5	Hexavalent Chromium as Cr ⁺⁶	mg/l	0.1	0.18	0.21	0.18	0.18
6	Total Chromium as Cr	mg/l	2.0	0.52	0.64	0.66	0.66
7	Oil & Grease	mg/l	10	5.8	6.2	5.8	5.8

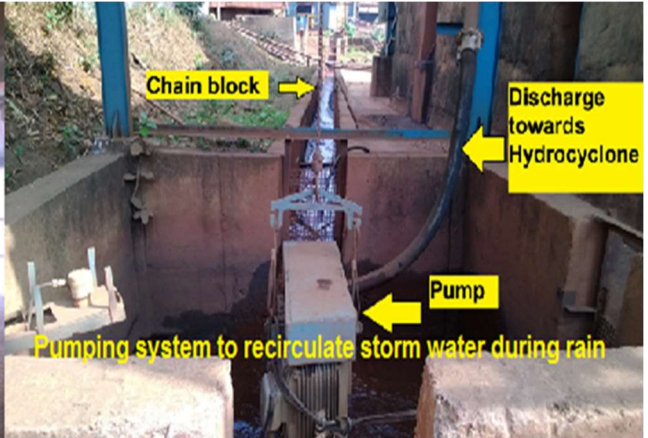
Table.4: DOMESTIC EFFLUENT (At Outlet)

Sl. No	Parameter	Unit	Inlan Surface Water Sewers (Part-A Effluents)	Apr'18	May'18	June'18	July'18
1	TSS	mg/l	100	7	7.6	8.1	7.3
2	pH	-	5.5-9.0	7.84	7.64	7.62	7.6
3	BOD (3) days at 27°C	mg/l	30	4.8	4.2	6.81	3.8
4	COD	mg/l	250	32	30	29.2	28
5	Hexavalent Chromium as Cr ⁺⁶	mg/l	0.1	<0.05	0.06	<0.05	<0.05
6	Total Chromium as Cr	mg/l	2.0	0.056	0.18	0.056	0.048
7	Oil & Grease	mg/l	10	1	ND	1	1.1

WATER MANAGEMENT AT COB PLANT



Tailings Dewatering Plant -Filter Press



Pumping system to recirculate storm water during rain



Thickener



Pantoon carrying Water recirculation system



DUMSALLA WATER QUALITY ANALYSIS

Table.1: P^H:

pH	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
Location	pH	pH	pH	pH	pH	pH
MINE WATER of QUARRY No: O.B.- X	7.31	7.4	7.3	7.24	7.28	7.4
DAMSALA RIVER UPSTREAM	7.26	7.26	7.41	7.38	7.14	7.1
DAMSALA RIVER DOWNSTREAM	7.58	7.6	7.61	7.56	7.05	7.0

Table.2: Hexavalent Chromium:

Cr ⁶⁺	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
Location	Cr ⁶⁺	Cr ⁶⁺	Cr ⁶⁺	Cr ⁶⁺	Cr ⁶⁺	Cr ⁶⁺
MINE WATER of QUARRY No: O.B.- X	0.22	0.16	0.18	0.16	0.27	0.21
DAMSALA RIVER UPSTREAM	<0.05	<0.05	<0.05	<0.05	0.31	0.01
DAMSALA RIVER DOWNSTREAM	<0.05	<0.05	<0.05	<0.05	0.29	0.07

Table.3: Iron as Fe:

Fe	Apr'18	May'18	June'18	July'18	Aug'18	Sep'18
Location	Fe	Fe	Fe	Fe	Fe	Fe
MINE WATER of QUARRY No: O.B.- X	0.33	0.21	0.2	0.18	0.25	0.22
DAMSALA RIVER UPSTREAM	0.32	0.3	0.32	0.28	0.012	0.27
DAMSALA RIVER DOWNSTREAM	0.34	0.32	0.29	0.26	0.09	0.34

Noise Monitoring Result

Sl.No	Time in Hrs.	Location	Noise level in dB(A) June'2018	Noise level in dB(A) Sep'2018	AVERAGE Leq-dB(A)
1	6.00	Canteen Gate	52.8	51.6	52.2
2	6.30	Quarry Pump House	63.2	61.4	62.3
3	7.00	Stack Yard	60.2	62.8	61.5
4	7.30	Lumpy Plot	60.8	58	59.4
5	8.00	40 t. Weigh Bridge	63.1	64.5	63.8
6	8.30	Concentrated Ore Stack Yard	65	63.2	64.1
7	9.00	OB Dump	61.4	64	62.7
8	9.30	OB IX Quarry	47.2	46	46.6
9	10.00	Atwal's Pyroxinate Crusher	66.6	64.8	65.7
10	10.30	Magazine	66.6	69.2	67.9
11	11.00	Pyroxinate Quarry	70.3	69.1	69.7
12	11.30	OB-II Quarry	65	63.2	64.1
13	12.00	OB Dump	61.1	63.7	62.4
14	12.30	Naresh Kumar Crusher	73	70.2	71.6
15	13.00	OB-X Quarry	70.2	71.6	70.9
16	13.30	Old ETP	50.9	49.1	50.0
17	14.00	Mining Complex	68.4	71	69.7
18	14.30	Slime Dam	56.4	55.2	55.8
19	15.00	OB-IX Quarry	62.7	60.9	61.8
20	15.30	Pyroxinate Plot	62.9	61.5	62.2
21	16.00	OB Dump	61	62.6	61.8
22	16.30	Temple Gate	42.9	45.1	44.0
23	17.00	Air Strip	47.7	45.9	46.8
24	17.30	Hauling Gate	57.4	60	58.7
25	18.00	Work Shop	67.2	66	66.6
26	18.30	New ETP	47.5	45.7	46.6

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

Sl.No	Time in Hrs.	Location	Noise level in dB(A) June'2018	Noise level in dB(A) Sep'2018	AVERAGE Leq-dB(A)
27	19.00	20T Weigh Bridge	47.3	49.9	48.6
28	19.30	Engg. Complex	48.4	47.2	47.8
29	20.00	Atwal's Chrome Crusher	55.6	53.8	54.7
30	20.30	New ETP	52.5	50.7	51.6
31	21.00	Canteen Gate	57.5	60.1	58.8
32	21.30	Hauling Gate	52.4	50.6	51.5
33	22.00	Work Shop	54.3	54.7	54.5
34	22.30	Old ETP	46.2	46.9	46.6
35	23.00	Petrol Pump	47	44.7	45.9
36	23.30	Quarry Pump House	45.9	47.9	46.9
37	0.00	Hospital Gate	43.6	42.1	42.9
38	0.30	OB X Quarry	60.7	61.1	60.9
39	1.00	Alwal's chrome crusher	63.5	63.7	63.6
40	1.30	Atwal's Garage	56.2	56.4	56.3
41	2.00	Old OK Line	41.9	42.3	42.1
42	2.30	Air Strip	<40	<40	<40
43	3.00	Stack Yard	58.7	58.6	58.7
44	3.30	40Ton Weigh Bridge	61.8	64.2	63.0
45	4.00	Naresh Kumar Crusher	66.8	64.5	65.7
46	4.30	OB IX Quarry	60.7	60.7	60.7
47	5.00	Work shop	71.5	71.4	71.5
48	5.30	Canteen Gate	50.1	52.5	51.3

Screen Shots of Website Documents for Communication for public Access

1. Letter of Communication of EC to Panchayat/Zillaparishad



Ref: SCM/ ENV/ 61 / 13
Date: 25/09/13

Mrs. Bhagabati Mohanta,
Chairman,
Panchayat Samiti, Sukinda Block,
Sukinda

Sub: Intimation of obtaining Environmental Clearance under EIA Notification, 2006 in respect of Sukinda Chromite Mine having Mining Lease area over 406 ha in Jajpur District.

Dear Madam,

We would like to inform you that Ministry of Environment & Forests (MoEF), Govt. of India has accorded Environmental Clearance in respect of Sukinda Chromite Mine, M/s Tata Steel Limited for renewal of mine lease, expansion of Chrome Ore Beneficiation plant and Pyrocerite ore capacities and change of mining & beneficiation technologies vide its letter no. J-11015/96/2011-IA.II(M), Dated 06.09.2013.

We, therefore request your good self to kindly acknowledge the receipt of the above letter.

Yours Faithfully
F: Tata Steel Limited

Chief (Mining)
&
Manager Cum Agent
Sukinda Chromite Mine

Encl: As above

Bhagabati Mohanta
Chairman
Sukinda

TATA STEEL LIMITED

Sukinda Chromite Mine PO, Khatanguda Dist Jajpur Odisha 751008
Phone No: 91 0676 258763 Fax: 91 0676 268134
Registered Office: Bantley House 24 India Mody Street, Mumbai 400 002
www.tatasteel.com



Ref: SCM/ ENV/ 68 / 13

Date: 25/09/13

Mr. Bidhyadhar Patra
Member,
Zila Parishad, Jajpur

Sub: Intimation of obtaining Environmental Clearance under EIA Notification, 2006 in respect of Sukinda Chromite Mine having Mining Lease area over 406 ha in Jajpur District.

Dear Sir,

We would like to inform you that Ministry of Environment & Forests (MoEF), Govt. of India has accorded Environmental Clearance in respect of Sukinda Chromite Mine, M/s Tata Steel Limited for renewal of mine lease, expansion of Chrome Ore Beneficiation plant and Pyroconite ore capacities and change of mining & beneficiation technologies vide its letter no. J-11015/96/2011-IA.II(M), Dated 06.09.2013.

We, therefore request your good self to kindly acknowledge the receipt of the above letter.

Yours Faithfully
P: Tata Steel Limited

Chief (Mining)
&
Manager Cum Agent
Sukinda Chromite Mine

End: As above

Bidhyadhar Patra
Bidhyadhar Patra 25/9/13
Zilaparisad Member
Jl Zone, Sukinda, Jajpur

TATA STEEL LIMITED

Sukinda-Chromite Mine, PO: Kalarangpatta, Dist: Jajpur, Orissa-755022
Phone no: 91 6726 265765 Fax: 91 6726 265764
Registered Office: Bombay House 24/Thames Street, Mumbai - 400 002
www.tatasteel.com



Ref: SCM/ ENV/ 67 / 13

Date: 25/09/13

Mrs. Jinita Munda,
Sarpanch,
Kaliapuri Grama Panchayat
Kaliapuri

Sub: Intimation of obtaining Environmental Clearance under EIA Notification, 2006 in respect of Sukinda Chromite Mine having Mining Lease area over 406 ha in Jagpur District.

Dear Madam,

We would like to inform you that Ministry of Environment & Forests (MoEF), Govt. of India has accorded Environmental Clearance in respect of Sukinda Chromite Mine, M/s Tata Steel Limited for renewal of mine lease, expansion of Chrome Ore, Beneficiation plant and Pyroxenite ore capacities and change of mining & beneficiation technologies vide its letter no. J-11015/96/2011-IA.II(M), Dated 06.09.2013.

We, therefore request your good self to kindly acknowledge the receipt of the above letter.

Yours Faithfully
F: Tata Steel Limited


Chief (Mining)
&
Manager Cum Agent
Sukinda Chromite Mine

Jinita Munda
Sarpanch of JS
KALIAPURI G.P.

Encl: As above

TATA STEEL LIMITED

Sukinda Chromite Mine-PO: Kaliapuri/Jagpur District-751022
Phone no: 91 6726 267962 Fax: 91 6726 266794
Registered Office: Bombay House 24 Hornby Road, Mumbai - 400 001
www.tatasteel.com



Ref: SCM/ENV/ 71 / 13

Date: 25/09/13

Mrs. Resulita Behari
Sarpanch,
Chingudipal Grama Panchayat,
Chingudipal

Sub: Intimation of obtaining Environmental Clearance under EIA Notification, 2006 in respect of Sukinda Chromite Mine having Mining Lease area over 406 ha in Jajpur District.

Dear Madam,

We would like to inform you that Ministry of Environment & Forests (MoEF), Govt. of India has accorded Environmental Clearance in respect of Sukinda Chromite Mine, M/s Tata Steel Limited for renewal of mine lease, expansion of Chrome Ore, Beneficiation plant and Pyrosenite ore capacities and change of mining & beneficiation technologies vide its letter no. J-11015/96/2011-LA3(M), Dated 06.09.2013.

We, therefore request your good self to kindly acknowledge the receipt of the above letter.

Yours Faithfully
F: Tata Steel Limited


Chief (Mining)
&
Manager Cum Agent
Sukinda Chromite Mine

Encl: As above


Sarpanch
Chingudipal G.P.

TATA STEEL LIMITED

Sukinda Chromite Mine PO, Bolangir Dist, Orissa 755029
Phone no. 01 6726 268763 Fax: 01 6726 268734
Registered Office: Bentley House 24 Broad Street, Mumbai - 400 026
www.tatasteel.com

2. Letter of Intimation of EC Advt to RO (MoEF)



Add. Director(S)
Ministry of Environment & Forests
Eastern Regional Office
A/3, Chandrasekharpur,
Bhubaneswar- 751023

Ref: SCM/ ENV/ 012/066 /13
Date: 18th June' 2013

Sub: Advertisement for grant of Environmental Clearance in respect of Sukinda Chromite Mine in Jajpur District of Odisha (Mining Lease area: 406 ha).

Ref: Ministry of Environment & Forests, Govt. of India letter no. J-11015/96/2011-IA.II(M), Dated 06.09.2013.

Dear Sir,

As per the General Condition no. xvi of the Environmental Clearance granted by Ministry of Environment & Forests, Govt. of India in respect of Sukinda Chromite Mine vide letter no. J-11015/96/2011-IA.II(M), Dated 06.09.2013, the matter was advertised in the Oriya daily "The Samaja" (date: 11.09.2013, page-5) and in English daily "The New Indian Express" (date: 11.09.2013, page-5). Copy of the above advertisement is enclosed as annexure for your ready reference.

Thanking you,

Yours sincerely,
f: Tata Steel Ltd.

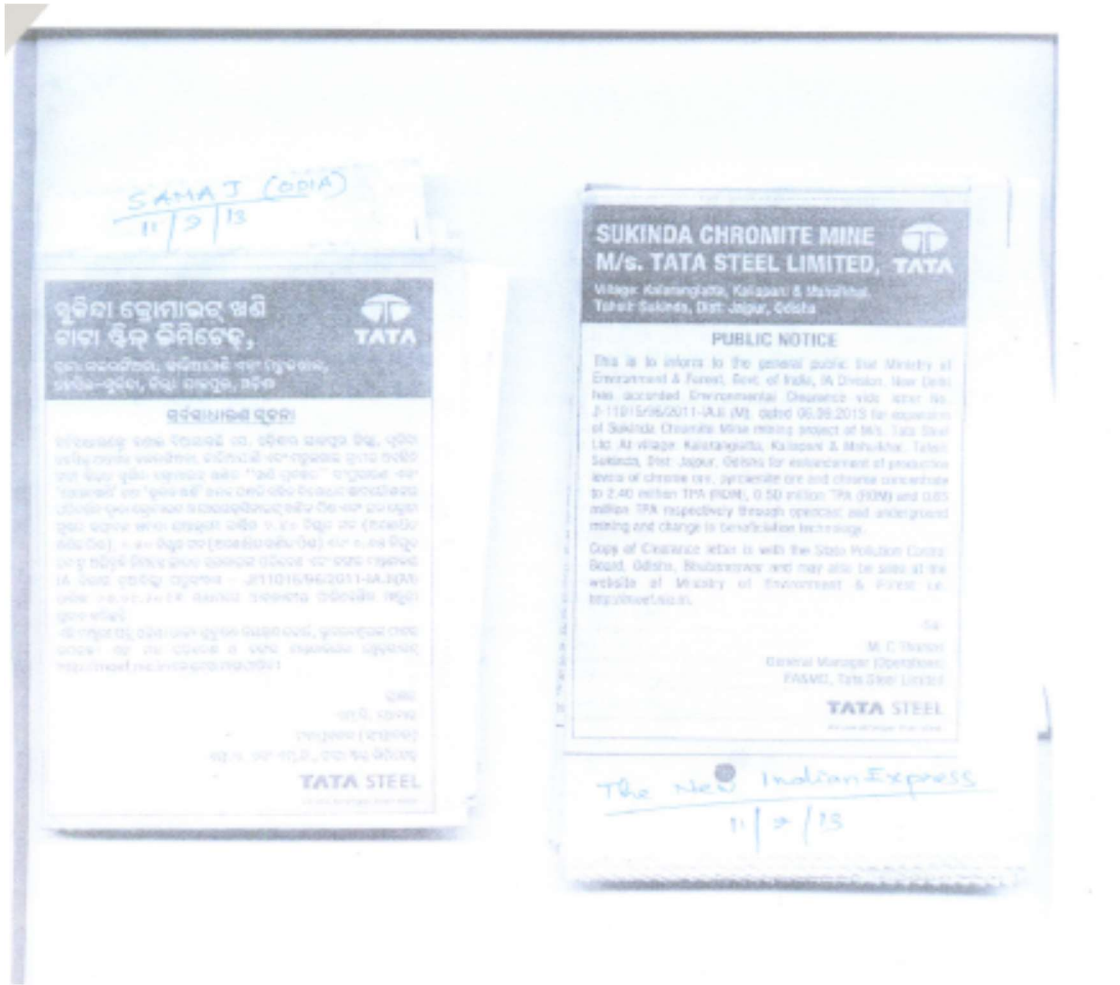

Manager cum Agent
Sukinda Chromite Mine

Encl: as above

TATA STEEL LIMITED

Sukinda Chromite Mine PO, Kalanigatta Dist Jajpur, Orissa 755028
Phone no: 91 6726 268765 Fax: 91 6726 268734
Registered Office: Borebay House 24 Horni Mody Street Mumbai - 400 001

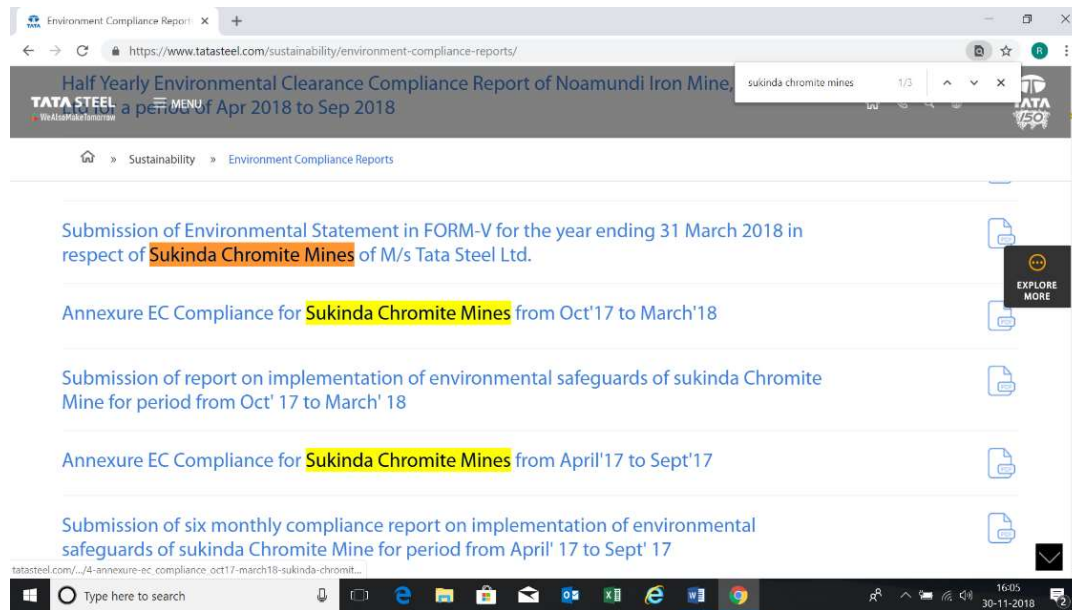
Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18



(News Paper Advertisement)

Six Monthly Compliance Report to EC-Sukinda Chromite Mines, M/s Tata Steel Limited for April'18 to Sep'18

3. Corporate Advt. (EC/Env Statement) in Company's Website:



The screenshot displays a web browser window with the URL <https://www.tatasteel.com/sustainability/environment-compliance-reports/>. The page title is "Half Yearly Environmental Clearance Compliance Report of Noamundi Iron Mine, a period of Apr 2018 to Sep 2018". The breadcrumb navigation shows "Sustainability > Environment Compliance Reports".

The main content area lists several reports, each with a document icon on the right:

- Submission of Environmental Statement in FORM-V for the year ending 31 March 2018 in respect of **Sukinda Chromite Mines** of M/s Tata Steel Ltd.
- Annexure EC Compliance for **Sukinda Chromite Mines** from Oct'17 to March'18
- Submission of report on implementation of environmental safeguards of sukinda Chromite Mine for period from Oct' 17 to March' 18
- Annexure EC Compliance for **Sukinda Chromite Mines** from April'17 to Sept'17
- Submission of six monthly compliance report on implementation of environmental safeguards of sukinda Chromite Mine for period from April' 17 to Sept' 17

The Windows taskbar at the bottom shows the date as 30-11-2018 and the time as 16:05. An "EXPLORE MORE" button is visible on the right side of the report list.