

ANNEXURE I

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

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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 its 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 Acts, 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.

(H. C. Chaudhary)
Director

**ANNEXURE II
MINERALOGICAL COMPOSITION OF PARTICULATE MATTER**

Sl. No.	Location	Mineralogical Composition (%)						
		Cr ₂ O ₃	Fe ₂ O ₃	MnO ₂	SiO ₂	Al ₂ O ₃	MgO	CaO
1.	COB Plant	18.9	6.7	1.3	23.8	11.9	13.1	3.1
2.	Stack Yard	21.1	7.0	1.5	21.8	11.1	13.7	2.6
3.	Laboratory Top	18.1	7.0	1.2	24.9	11.1	13.1	2.9
4.	Hospital Top	15.1	6.6	1.0	23.5	11.0	12.3	2.5
5.	Mining Complex	21.5	7.3	1.7	24.9	10.5	11.9	3.2
6.	Tailing Pond	17.0	7.4	1.1	20.9	10.5	12.2	3.4
7.	Residential Colony (Qtr No.L2/R-73)	15.6	6.7	0.8	22.8	12.8	11.3	3.5

**ANNEXURE III
PERSONAL RESPIRABLE DUST**

Date	Sampler Attached to the Person	Personal Respirable Dust in µg/m ³	Respirable Free Silica (%)
08.03.2016	Mr. Amulya Nayak	0.512	4.7
16.03.2016	Mr. Batakrushna Dehury	0.438	4.8
22.03.2016	Mr. Birbal Honaga	0.449	4.6

**ANNEXURE IV
COVERING OF LOADED TRUCK BY TARPAULIN**



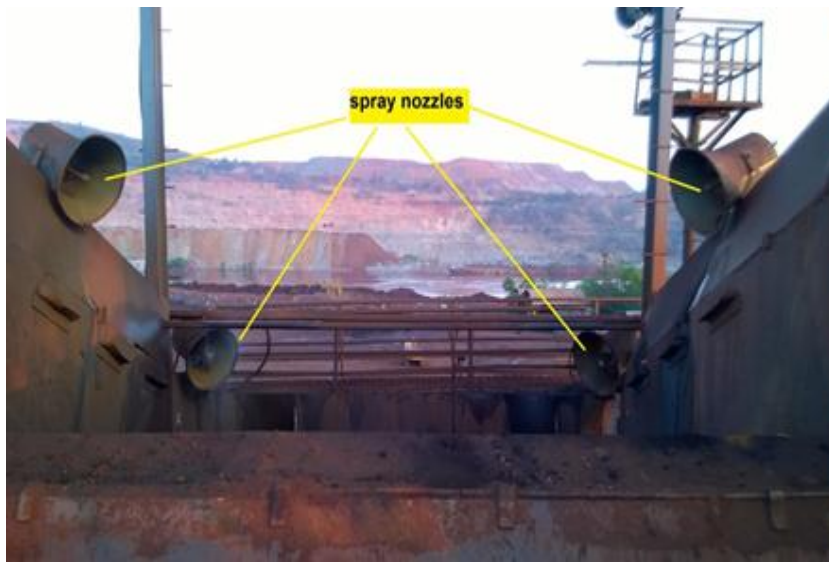
ANNEXURE V
DUST CONTROLLING MAJORS



Concrete Path



Stationary Water Sprinkler



Dust Suppression System at Hopper



Water Sprinkling



Concentrate Stack Covered With Tarpaulin



COVERING OF TRUCK BY TARPAULIN

Truck Covered With Tarpaulin

ANEXURE-VI
TATA STEEL LIMITED, SUKINDA CHROMITE MINE
AMBIENT AIR QUALITY PARAMETERS (October'15 to March'16)

Monthly Average	PM10 µg/m3						PM2.5µg/m3						SO2 µg/m3						NOX µg/m3						CO						O3										
	C	S	L	H	M	T	C	S	L	H	M	T	C	S	L	H	M	T	C	S	L	H	M	T	C	S	L	H	M	T	C	S	L	H	M	T					
Oct-15	63.00	61.00	55.00	53.00	62.00	52.00	29.00	26.00	23.00	24.00	28.00	23.00	5.20	5.50	5.10	5.00	5.20	4.90	21.40	21.30	19.80	17.90	20.50	18.90	0.26	0.24	0.24	0.21	0.23	0.20	19.62	19.62	19.62	24.90	22.21	25.04					
Nov-15	75.00	74.00	64.00	64.00	70.00	63.00	37.00	37.00	28.00	30.00	35.00	29.00	6.60	6.10	5.70	5.60	5.70	6.00	33.10	29.10	27.80	24.30	28.30	27.70	0.32	0.27	0.29	0.25	0.25	0.27	19.62	19.62	19.62	19.62	19.62	19.62					
Dec-15	73.00	75.00	60.00	64.00	74.00	58.00	36.00	37.00	29.00	30.00	34.00	28.00	6.10	5.60	5.70	5.50	5.10	27.00	24.70	25.20	22.70	26.80	20.20	0.28	0.23	0.23	0.21	0.26	0.21	19.62	19.62	19.62	19.62	19.62	19.62						
Jan-16	75.00	77.00	65.00	57.00	76.00	55.00	40.00	41.00	32.00	31.00	39.00	33.00	5.90	5.70	5.60	5.30	5.80	4.50	25.60	21.10	23.30	23.00	21.90	14.90	0.22	0.20	0.20	0.19	0.21	0.14	19.62	19.62	19.62	19.62	19.62	19.62					
Feb-16	59.63	64.38	55.63	46.5	51.13	41.88	33.4	36.35	31.43	27.33	29.49	24.55	4.68	5.14	4.38	4.08	4.19	BDL	12.18	12.69	11.78	10.71	11.21	10.24	0.20	0.24	0.18	0.13	0.15	0.12	6.40	6.93	5.99	5.28	5.56	5.13					
Mar-16	59.00	65.33	54.44	45.11	49.78	40.56	33.23	36.74	30.89	27.64	28.61	23.87	4.71	5.21	4.38	4.03	4.14	4.00	12.23	12.83	11.71	10.64	11.19	10.17	0.21	0.25	0.17	0.13	0.14	0.11	6.73	7.31	6.19	5.32	5.64	5.10					
Monthly Average	Pb µg/m3						NH3 µg/m3						Benzene µg/m3						Benzo(a)Pyrene ng/m3						Arsenic ng/m3						Nickel ng/m3										
	C	S	L	H	M	T	C	S	L	H	M	T	C	S	L	H	M	T	C	S	L	H	M	T	C	S	L	H	M	T	C	S	L	H	M	T	C	S	L	H	M
Oct-15	BDL	BDL	BDL	BDL	BDL	BDL	13.50	BDL	11.30	12.30	10.10	BDL	2.08	2.08	2.08	2.08	2.08	2.08	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Nov-15	BDL	BDL	BDL	BDL	BDL	BDL	16.00	BDL	11.90	12.30	10.60	BDL	2.08	2.08	2.08	2.08	2.08	2.08	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Dec-15	BDL	BDL	BDL	BDL	BDL	BDL	12.00	BDL	11.20	12.00	10.00	BDL	2.08	2.08	2.08	2.08	2.08	2.08	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Jan-16	BDL	BDL	BDL	BDL	BDL	BDL	10.70	BDL	10.40	10.40	10.00	BDL	2.08	2.08	2.08	2.08	2.08	2.08	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Feb-16	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.80	0.86	0.75	0.63	0.69	0.59	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		
Mar-16	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.79	0.88	0.74	0.62	0.67	0.55	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL		

BDL Values: PM-10 :- 5 µg/m³ ; PM-2.5:- 2.0 µg/m³ ; SO₂ :- 4 µg/m³ ; NOx:- 9µg/m³ ; CO:- 0.1 mg/m³ ;Ozone:- 5µg/m³ ; Ni :- 0.05 ng/m³ ; Pb:- 0.00005 µg/m³ ; As :- 0.05ng/m³ ; NH₃:- 20µg/m³ ; B(a)P :- 2 ng/m³ ; Benzene:- 0.1 µg/m³

C:COB Plant
S:Stackyard
M:Mining Complex
T: Tailing Dam

Residential Area: L: Laboratory Top
Sensitive Area : H: Hospital

BUFFER ZONE AAQ

SIX MONTHS AVERAGES

Sl. No	Location	PM 10 µgm/ m ³	PM 2.5 µgm/ m ³	SO2 µgm/ m ³	NOx µgm/ m ³	CO mg/ m ³	O3 µg/m ³	Pb µg/m ³	NH3 µg/m ³	Benzene µg/m ³	Benzo(a) Pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/ m ³
1	Birasa Birasal	50.50	27.90	4.70	16.50	0.19	6.10	BDL	BDL	0.76	BDL	BDL	BDL
2	Kanehipal	49.50	25.80	4.50	13.60	0.13	5.50	BDL	BDL	0.69	BDL	BDL	BDL
3	Kalarangiatta	55.50	29.90	4.85	15.40	0.23	6.40	BDL	BDL	0.83	BDL	BDL	BDL
4	Kaliapani	54.50	28.10	5.80	17.30	0.15	5.20	BDL	BDL	0.67	BDL	BDL	BDL
5	Kakudia	44.00	22.35	4.30	16.15	0.14	BDL	BDL	BDL	0.62	BDL	BDL	BDL
6	Sendashara	46.50	25.15	5.60	16.05	0.15	BDL	BDL	BDL	0.55	BDL	BDL	BDL
7	Laxmidharpur	49.00	25.30	5.20	14.65	0.15	5.60	BDL	BDL	0.71	BDL	BDL	BDL
8	Sukarangi	52.00	27.90	4.65	16.55	0.19	6.40	BDL	BDL	0.80	BDL	BDL	BDL
9	Muruabil	46.00	24.60	4.80	23.50	0.21	BDL	BDL	BDL	0.57	BDL	BDL	BDL
10	Kharkhari	47.00	26.55	5.30	14.80	0.15	BDL	BDL	BDL	0.64	BDL	BDL	BDL

BDL Values: PM-10 :- 5 µg/m³; PM-2.5:- 2.0 µg/m³; SO2 :- 4 µg/m³; NOx:- 9µg/m³; CO:- 0.1 mg/m³; Ozone:- 5µg/m³; Ni :- 0.05 ng/m³; Pb:- 0.00005 µg/m³; As :- 0.05ng/m³; NH₃:- 20µg/m³; B(a)P :- 2 ng/m³;

Ambient Air Quality in Buffer Zone Data of Dcember'15 & March'16

Sl.No	Location	Month of Monitoring	PM10 µg/m ³	PM2.5 µg/m ³	SO2 µg/m ³	NOx µg/m ³	CO mg/m ³	O3 µg/m ³	Pb µg/m ³	NH3 µg/m ³	Benzene µg/m ³	Benzo(a)Pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³
1	Birasal	Dec'15	48	25.0	4.7	21.4	0.2	<19.62	BDL	BDL	<2.08	BDL	BDL	BDL
		March'16	53	30.8	BDL	11.6	0.17	6.1	BDL	BDL	0.76	BDL	BDL	BDL
2	Kanehipal	Dec'15	51	24.0	4.5	16.8	0.13	<19.62	BDL	BDL	<2.08	BDL	BDL	BDL
		March'16	48	27.6	BDL	10.4	0.13	5.5	BDL	BDL	0.69	BDL	BDL	BDL
3	Kalarangiatta	Dec'15	50	26.0	5	18.6	0.22	<19.62	BDL	BDL	<2.08	BDL	BDL	BDL
		March'16	61	33.8	4.7	12.2	0.23	6.4	BDL	BDL	0.83	BDL	BDL	BDL
4	Kaliapani	Dec'15	64	29.0	5.8	24.7	0.18	<19.62	BDL	BDL	<2.08	BDL	BDL	BDL
		March'16	45	27.2	BDL	9.9	0.12	5.2	BDL	BDL	0.67	BDL	BDL	BDL
5	Kakudia	Dec'15	49	22.0	4.3	22.7	0.16	<19.62	BDL	BDL	<2.08	BDL	BDL	BDL
		March'16	39	22.7	BDL	9.6	0.11	BDL	BDL	BDL	0.62	BDL	BDL	BDL
6	Sendashara	Dec'15	61	32.0	5.6	22.9	0.15	<19.62	BDL	BDL	<2.08	BDL	BDL	BDL
		March'16	32	18.3	BDL	9.2	BDL	BDL	BDL	BDL	0.55	BDL	BDL	BDL
7	Laxmidharpur	Dec'15	50	23.0	5.2	19.2	0.16	<19.62	BDL	BDL	<2.08	BDL	BDL	BDL
		March'16	48	27.6	BDL	10.1	0.13	5.6	BDL	BDL	0.71	BDL	BDL	BDL
8	Sukarangi	Dec'15	47	24.0	4.9	20.9	0.19	<19.62	BDL	BDL	<2.08	BDL	BDL	BDL
		March'16	57	31.8	4.4	12.2	0.19	6.4	BDL	BDL	0.8	BDL	BDL	BDL
9	Muruabil	Dec'15	57	30.0	4.8	23.5	0.21	<19.62	BDL	BDL	<2.08	BDL	BDL	BDL
		March'16	35	19.2	BDL	BDL	BDL	BDL	BDL	BDL	0.57	BDL	BDL	BDL
10	Kharkhari	Dec'15	52	28.0	5.3	19.8	0.17	<19.62	BDL	BDL	<2.08	BDL	BDL	BDL
		March'16	42	25.1	BDL	9.8	0.12	BDL	BDL	BDL	0.64	BDL	BDL	BDL

BDL Values: PM-10 :- 5 µg/m³; PM-2.5:- 2.0 µg/m³; SO2 :- 4 µg/m³; NOx:- 9µg/m³; CO:- 0.1 mg/m³; Ozone:- 5µg/m³; Ni :- 0.05 ng/m³; Pb:- 0.00005 µg/m³; As :- 0.05ng/m³; NH₃:- 20µg/m³; B(a)P :- 2 ng/m³;

ANNEXURE VII- Roof Top Rain water Harvesting

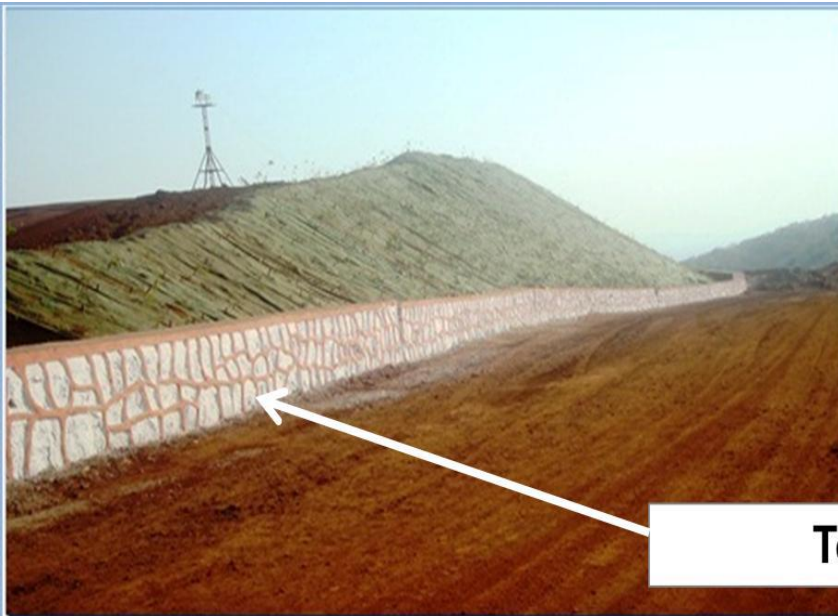


ANEXURE-VIII
Ground Water Quality in Villages (October' 15 to March' 16)

S.No.	Parameter	Unit	IS-10500	Oct'15 (Village Odisa)	Nov'15 (Village Maruabil)	Dec'15 (Village Sukarangi)	Jan'16 (Village Kanehipal)	Feb'16 (Village Sendhasara)	Mar'16 (Village Laxmidharpur)
1	Colour	Hazen	5	CL	CL	CL	CL	CL	CL
2	Odour	-	U/O	U/O	U/O	U/O	U/O	U/O	U/O
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU max	5	<1	<1	<1	<1	0.67	0.59
5	pH	-	6.5-8.5	7.3	7.0	7.0	7.1	7.3	7.2
6	Dissolved Oxygen	Mg/l	-	6.2	6.5	6.3	6.7	6.5	6.4
7	Total Hardness (as CaCO ₃)	Mg/l	300	51.7	59.7	55.6	53.9	54.6	52.8
8	Iron (as Fe)	Mg/l	0.3	0.11	0.13	0.12	0.13	0.1	0.09
9	Chloride (as Cl)	Mg/l	250	9.8	10.7	10.1	11.6	10.8	9.9
10	Residual free chlorine	Mg/l	0.2	ND	ND	ND	ND	ND	ND
11	Fluorides (as F)	Mg/l	1	0.029	0.022	0.034	0.059	0.05	0.04
12	Total Dissolved Solids	Mg/l	500	134	128	134	125	124	116
13	Calcium as Ca	Mg/l	75	9.4	10.1	9.6	9.9	9.7	9.5
14	Magnesium (as Mg)	Mg/l	30	6.9	8.4	7.7	7.1	7.4	7.1
15	Copper (as Cu)	Mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
16	Manganese (as Mn)	Mg/l	0.1	BDL	BDL	BDL	BDL	BDL	BDL
17	Sulphates (as SO ₄)	Mg/l	200	21.5	22.9	18.3	19.2	17.2	19.8
18	Nitrate (as NO ₃)	Mg/l	45	0.33	0.29	0.30	0.28	0.21	0.25
19	Mercury (as Hg)	Mg/l	0.001	BDL	BDL	BDL	BDL	BDL	BDL
20	Cadmium (as Cd)	Mg/l	0.01	BDL	BDL	BDL	BDL	BDL	BDL
21	Selenium (as Se)	Mg/l	0.01	BDL	BDL	BDL	BDL	BDL	BDL
22	Arsenic (as As)	Mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
23	Cyanide (as CN)	Mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
24	Lead (as Pb)	Mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
25	Zinc (as Zn)	Mg/l	5	0.24	0.20	0.26	0.18	0.19	0.16
26	Chromium (as Cr ⁺⁶)	Mg/l	0.05	BDL	BDL	BDL	BDL	BDL	BDL
27	Mineral Oil	Mg/l	0.01	Nil	Nil	Nil	Nil	Nil	Nil
28	Alkalinity	Mg/l	200	34	31	28	30	26	29
29	Boron	Mg/l	1	BDL	BDL	BDL	BDL	BDL	BDL
30	Ground Water Level	m	-	5.2	5.8	8.2	9.6	10.9	12.8

ANEXURE-IX

Toe wall, Garland Drain and Surface Runoff Channel



Toe Wall



Toe Wall & garland drain



Surface runoff channel

ANEXURE-X
Coir Mating, Vetiver Plantation and Dump Plantation



Vetiver Plantation



ANNEXURE XI : New ETP



CLF 2



Clariflocculator of New ETP



flash Mix Chamber

ANEXURE-XII
Herbal Treatment Plant



ANEXURE-XIII
Recycling of Water At COB Plant



Thickener and Water Recirculation Arrangement



Tailing Dewatering Plant and Water Recirculation Arrangement

ANEXURE-XIV
Water Quality Report At Upstream and Downstream of Damsala Nallah

Hexavalent Chromiums Cr+6 mg/l	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16
Location	Cr+6 mg/l	Cr+6 mg/l	Cr+6 mg/l	Cr+6 mg/l	Cr+6 mg/l	Cr+6 mg/l
MINE WATER of QUARRY No: O.B.- X	0.44	0.49	0.58	0.66	0.24	0.27
DAMSALA RIVER UPSTREAM	0.09	0.09	0.11	0.09	0.029	0.034
DAMSALA RIVER DOWNSTREAM	0.06	0.02	0.06	0.05	0.021	0.028

ANNEXURE XV : Oil Separation Pit



Sewage Treatment Plant



ANEXURE-XVI
Water Quality Report
TATA STEEL LIMITED
SUKINDA CHROMITE MINE
Water Quality Parameters of ETP Inlet (Oct'15 to March'16)

Sl. No	Parameter	Unit	Standards (In land Surface water)	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16
				Inlet	Inlet	Inlet	Inlet	Inlet	Inlet
1	Colour & Odour	Hazan/-	5.0 / U/O	<1.0 & Agreeabe	<1.0 & Agreeabe	<1.0 & Agreeabe	<1.0 & Agreeabe	CL & U/O	CL & U/O
2	Suspended Solids	mg/ltr	100	38.6	30.6	32.4	30.2	47	53
3	Particular Size of Suspended Solids	μ(micron)	<850	<850	<850	<850	<850	<850	<850
4	PH	--	5.5-9.0	8.1	7.9	8.1	7.9	6.7	6.8
5	Temperature	⁰ c.	Shall not exceed 5°C above the receiving water	25	25	25	25	25	25
6	Oil & Grease	mg/ltr	10	<1.4	<1.4	<1.4	<1.4	0.7	0.9
7	Total Residual Chlorine	mg/ltr	1	<0.1	<0.1	<0.1	<0.1	ND	ND
8	Amm. Nitrogen as N	mg/ltr	50	0.22	<0.1	<0.1	<0.1	0.39	0.44
9	Total Kjeldal Nitrogen as NH ₃	mg/ltr	100	1.8	<0.3	<0.3	<0.3	1.27	1.52
10	Free Ammonia as NH ₃	mg/ltr	5	<0.1	<0.1	<0.1	<0.1	0.002	0.003
11	BOD (3) days at 27 ⁰ c.	mg/ltr	30	<2.0	<2.0	<2.0	2.1	2.65	1.96
12	COD	mg/ltr	250	8	<4.0	<4.0	15.94	6.7	5.85
13	Arsenic as As	mg/ltr	0.2	<0.01	<0.01	<0.01	<0.01	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	<0.005	0.26	0.36	0.32	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	0.36	0.42	0.48	0.62	0.23	0.26
18	Total Chromium as Cr	mg/ltr	2	0.46	0.57	0.66	0.82	0.28	0.38
19	Copper as Cu	mg/ltr	3	<0.02	<0.02	<0.02	<0.02	BDL	BDL
20	Zinc as Zn	mg/ltr	5	0.09	<0.02	<0.02	<0.02	0.34	0.43
21	Selenium as Se	mg/ltr	0.05	<0.005	<0.005	<0.005	<0.005	BDL	BDL
22	Nickel as Ni	mg/ltr	3	<0.02	<0.02	<0.02	<0.02	BDL	BDL
23	Cyanide as CN	mg/ltr	0.2	<0.01	<0.01	<0.01	<0.01	BDL	BDL
24	Fluoride as F	mg/ltr	2	0.22	0.23	0.31	0.3	0.06	0.08
25	Diss. Phosphate as P	mg/ltr	5	<0.05	<0.05	<0.05	<0.05	BDL	BDL
26	Sulphide as S	mg/ltr	2	<0.1	<0.1	<0.1	<0.1	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% survival of fish after 96 hours in 100% effluent	100%	100%	100%	100%	97%	97%
29	Manganese as Mn	mg/ltr	2	<0.02	<0.02	<0.02	<0.02	0.029	0.025
30	Iron as Fe	mg/ltr	3	0.16	<0.05	0.12	0.61	0.38	0.41
31	Vanadium as V	mg/ltr	0.2	<0.2	<0.2	<0.2	<0.2	BDL	BDL
32	Nitrate Nitrogen	mg/ltr	10	0.97	1.24	0.89	1.39	0.26	0.33
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, ND- Not Detectable.

Water Quality Report
TATA STEEL LIMITED
SUKINDA CHROMITE MINE
Water Quality Parameters of ETP Outlet (Oct'15 to March'16)

Sl. No	Parameter	Unit	Standards (In land Surface water)	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16
				Outlet	Outlet	Outlet	Outlet	Outlet	Outlet
2	Colour & Odour	Hazan/-	5.0 / U/O	<0.1 & U/O	<0.1 & U/O	<0.1 & U/O	<0.1 & U/O	CL & U/O	CL & U/O
3	Suspended Solids	mg/ltr	100	31.4	19.7	38.4	47.7	35	44
4	Particular Size of Suspended Solids	μ(micron)	<850	<850	<850	<850	<850	<850	<850
5	PH	--	5.5-9.0	7.6	7.1	7.2	7.1	7.1	7.2
6	Temperature	⁰ c.	Shall not exceed 5°C above the receiving water	25	25	25	25	25	25
7	Oil & Grease	mg/ltr	10	<1.4	<1.4	<1.4	<1.4	ND	ND
8	Total Residual Chlorine	mg/ltr	1.0	<0.1	<0.1	<0.1	<0.1	ND	ND
9	Amm. Nitrogen as N	mg/ltr	50	0.16	<0.1	<0.1	<0.1	0.32	0.36
10	Total Kjeldal Nitrogen as NH ₃	mg/ltr	100	1.19	<0.3	<0.3	<0.3	1.19	1.39
11	Free Ammonia as NH ₃	mg/ltr	5.0	<0.1	<0.1	<0.1	<0.1	0.002	0.003
12	BOD (3) days at 27 ⁰ c.	mg/ltr	30	<2.0	<2.0	<2.0	<2.0	1.47	1.58
13	COD	mg/ltr	250	<4.0	<4.0	<4.0	7.97	5.9	4.73
14	Arsenic as As	mg/ltr	0.2	<0.01	<0.01	<0.01	<0.01	BDL	BDL
15	Mercury as Hg	mg/ltr	0.01	<0.001	<0.001	<0.001	<0.001	BDL	BDL
16	Lead as Pb	mg/ltr	0.1	<0.005	0.09	<0.01	0.07	BDL	BDL
17	Cadmium as Cd	mg/ltr	2.0	<0.001	<0.001	<0.001	<0.001	BDL	BDL
18	Hexa Chromium as Cr ⁺⁶	mg/ltr	0.1	0.04	0.02	0.01	<0.01	BDL	BDL
19	Total Chromium as Cr	mg/ltr	2.0	0.35	0.18	0.32	0.91	0.31	0.29
20	Copper as Cu	mg/ltr	3.0	<0.02	<0.02	<0.02	<0.02	BDL	BDL
21	Zinc as Zn	mg/ltr	5.0	0.07	<0.02	<0.02	<0.02	0.29	0.36
22	Selenium as Se	mg/ltr	0.05	<0.005	<0.005	<0.005	<0.005	BDL	BDL
23	Nickel as Ni	mg/ltr	3.0	<0.02	<0.02	<0.02	<0.02	BDL	BDL
24	Cyanide as CN	mg/ltr	0.2	<0.01	<0.01	<0.01	<0.01	BDL	BDL
25	Fluoride as F	mg/ltr	2.0	0.17	0.14	0.2	0.22	0.05	0.06
26	Diss. Phosphate as P	mg/ltr	5.0	<0.05	<0.05	<0.05	<0.05	BDL	BDL
27	Sulphide as S	mg/ltr	2.0	<0.1	<0.1	<0.1	<0.1	ND	ND
28	Phenolic Compounds as C ₆ H ₅ OH	mg/ltr	1.0	<0.001	<0.001	<0.001	<0.001	BDL	BDL
29	Bio-assay Test	--	90% survival of fish after 96 hours in 100% effluent	100%	100%	100%	100%	98%	98%
30	Manganese as Mn	mg/ltr	2.0	<0.02	<0.02	0.57	<0.02	0.022	0.019
31	Iron as Fe	mg/ltr	3.0	0.68	0.92	1.08	1.54	0.31	0.34
32	Vanadium as V	mg/ltr	0.2	<0.2	<0.2	<0.2	<0.2	BDL	BDL
33	Nitrate Nitrogen	mg/ltr	10	0.48	0.91	0.86	0.72	0.22	0.25
34	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., ND- Not Detectable.

TATA STEEL LIMITED
SUKINDA CHROMITE MINE

Water Quality Parameters at Oil separation System - INLET (Oct'15 to March' 16)

Sl. No	Parameter	Unit	Standards	Oct'15	Nov'15	Dec'15	Jan'16	Feb'16	March'16
				Inlet	Inlet	Inlet	Inlet	Inlet	Inlet
1	Colour & Odour	--	5 & U/O	<0.1 & U/O	<0.1 & U/O	<0.1 & U/O	<0.1 & U/O	2 & U/O	2 & U/O
2	Suspended Solids	mg/l	100	56.4	28.7	65	51.5	48	53
3	Particular Size of S.S.	μ(micron)	<850	<850	<850	<850	<850	<850	<850
4	pH	--	5.5-9.0	7.1	7.3	7.3	7.2	7.6	7.5
5	Temperature	°C	Shall not exceed 5°C above the receiving water	3.0	3	2	2	25	25
6	Oil & Grease	mg/l	10	<1.4	1.9	2.4	3.2	1.3	1.1
7	Total Residual Chlorine	mg/l	1	<0.1	<0.1	<0.1	<0.1	ND	ND
8	Amm. Nitrogen as N	mg/l	50	0.28	<0.1	<0.1	<0.1	0.26	0.35
9	Total Kjeldal Nitrogen as NH ₃	mg/l	100	1.18	<0.3	<0.3	<0.3	1.14	1.26
10	Free Ammonia as NH ₃	mg/l	5	<0.1	<0.1	<0.1	<0.1	0.002	0.003
11	BOD(3) days at 27°C	mg/l	30	5.4	2.4	7.8	20.5	1.1	1.2
12	COD	mg/l	250	39.6	10.94	47.6	127.5	3.28	3.58
13	Arsenic as As	mg/l	0.2	<0.01	<0.01	<0.01	<0.01	BDL	BDL
14	Mercury as Hg	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	BDL	BDL
15	Lead as Pb	mg/l	0.1	<0.005	0.3	0.06	0.27	BDL	BDL
16	Cadmium as Cd	mg/l	2	<0.001	<0.001	<0.001	<0.001	BDL	BDL
17	Hexa Chromium as Cr ⁺⁶	mg/l	0.1	<0.01	0.48	<0.01	0.42	BDL	BDL
18	Total Chromium as Cr	mg/l	2	0.44	0.56	0.48	0.66	0.22	0.28
19	Copper as Cu	mg/l	3	<0.02	<0.02	<0.02	<0.02	BDL	BDL
20	Zinc as Zn	mg/l	5	0.1	<0.02	<0.02	<0.02	0.25	0.31
21	Selenium as Se	mg/l	0.05	<0.005	<0.005	<0.005	<0.005	BDL	BDL
22	Nickel as Ni	mg/l	3	0.06	<0.02	<0.02	<0.02	BDL	BDL
23	Cyanide	mg/l	0.2	<0.01	<0.01	<0.01	<0.01	BDL	BDL
24	Fluoride as F	mg/l	2	0.42	0.46	0.63	0.6	0.05	0.06
25	Diss. Phosphate as P	mg/l	5	<0.05	<0.05	<0.05	<0.05	BDL	BDL
26	Sulphide as S	mg/l	2	<0.1	<0.1	<0.1	<0.1	ND	ND
27	Phenolic Compounds as C ₆ H ₅ OH	mg/l	1	<0.001	<0.001	<0.001	<0.001	BDL	BDL
28	Bio-assay Test,	%	90% survival of fish after 96 hours in 100% effluent	100%	100%	100%	100%	98%	98%
29	Manganese as Mn, mg/l	mg/l	2	0.26	<0.02	0.22	<0.02	0.023	0.026
30	Iron as Fe, mg/l	mg/l	3	0.58	0.43	1.66	1.88	0.34	0.31
31	Vanadium as V, mg/l	mg/l	0.2	<0.2	<0.2	<0.2	<0.2	BDL	BDL
32	Nitrate Nitrogen , mg/l	mg/l	10	0.26	<0.1	<0.1	0.32	0.24	0.21
33	Pesticides (as Benzene hexa chloride)	μg/l	10	<0.00001	<0.00001	<0.00001	<0.00001	Absent	Absent

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

Annexure XVII

**NOISE SURVEY REPORT AT COB PLANT, LOP PLANT OF
SUKINDA CHROMITE MINE, TATA STEEL LTD.**

SL.No.	LOCATION	Dec'15	March'16	AVERAGE
		Noise level in dB(A)	Noise level in dB(A)	
1	COB Plant Gate	64.1	67.8	66.0
2	Canteen	59.5	63.5	61.5
3	Work Shop	67.6	68.7	68.2
4	Office	56.8	55.9	56.4
5	D.G.Shed	60.2	92.8	76.5
6	MCC Room	61.4	64.7	63.1
7	Vibrating Screen	71.4	73.9	72.7
8	Scrubber	66.6	66.4	66.5
9	Control Room	62.6	65.9	64.3
10	Secondary Apron	71.4	68.1	69.8
11	Cone Crusher	64.7	67.4	66.1
12	DTJ Crusher	68.8	78.1	73.5
13	Concentrated Ore Loading	71.4	68.4	69.9
14	Wobbler area	67.7	71.8	69.8
15	Primary Apron feeder	69.2	76.5	72.9
16	C -1A	64.2	66.4	65.3
17	Shaking Table	66.3	79.2	72.8
18	Multiple Bin	67.7	75.6	71.7
19	H.T Room	60	66.4	63.2
20	Hydro Cyclone	67.3	67.9	67.6
21	Spirals	63.6	64.8	64.2
22	VS Ball Mill	79.1	90.4	84.8
23	C.6A	74.4	76.9	75.7
24	H.F Screen	68.6	76.8	72.7
25	Sieve band area	74.2	76.4	75.3
26	C3	72.8	74.8	73.8
27	C4	71.4	75.5	73.5
28	LOPP Sayaji Crusher	74.1	58.9	66.5
29	LOPP Screen	72.4	64.1	68.3
30	LOPP Control Room	65.4	64.3	64.9
31	LOPP Hopper	71.3	58.9	65.1

Ambient Noise Level Survey in Residential Areas of SCM, TSL from 6AM to 6AM (Next Day)

SLNo	Time in Hrs.	Locations	Dec'15	March'16	AVERAGE
			Noise level in dB(A)	Noise level in dB(A)	
1	6.00	Main Gate	62.4	63.2	62.8
2	6.30	Market Complex	57.8	58.7	58.3
3	7.00	Hospital	47.7	48.5	48.1
4	7.30	Post Office	41.2	42.0	41.6
5	8.00	Study Center	46.5	47.4	47.0
6	8.30	Water treatment Plant (D.G was not in operation)	51.4	52.2	51.8
7	9.00	STP	52.9	52.2	52.6
8	9.30	Shishu Mandir	<40	<40	<40
9	10.00	Children's Park	48.4	49.2	48.8
10	10.30	3RSF Qtrs	49.9	50.7	50.3
11	11.00	L2R Qtrs	50.7	51.6	51.2
12	11.30	Recreation Club	47.6	48.4	48.0
13	12.00	B4-B6 Block Qtrs	55.7	56.6	56.2
14	12.30	B3-B4 Block Qtrs	49.2	50.0	49.6
15	13.00	Geological Camp	45.7	46.5	46.1
16	13.30	Babu Line	50.1	51.0	50.6
17	14.00	Guest House	48.2	49.0	48.6
18	14.30	3R Qtrs	55.1	56.0	55.6
19	15.00	VT Centre	52.2	53.0	52.6
20	15.30	SS High school	46.0	46.8	46.4
21	16.00	2RF Qtrs	47.3	48.2	47.8
22	16.30	CT Qtrs	<40	<40	<40
0.	17.00	STP	44.5	45.4	45.0
24	17.30	Police Out Post	51.1	51.9	51.5
25	18.00	Jagannath Temple	45.1	45.9	45.5
26	18.30	GM Banglow	47.0	47.9	47.5
27	19.00	Market Complex	59.3	60.1	59.7
28	19.30	Laboratory	44.3	45.2	44.8
29	20.00	Chrome Vally Club	50.8	51.6	51.2
30	20.30	Atwal's Camp	47.2	48.0	47.6
31	21.00	Duplex Qtrs	44.7	45.6	45.2
32	21.30	FootBall Ground	<40	<40	<40
33	22.00	B4-B6 Block Qtrs	42.1	43.0	42.6
34	22.30	Sisu Mandir	<40	<40	<40
35	23.00	5 Star Qtrs	45.8	46.6	46.2
36	23.30	Stewart School	<40	<40	<40
37	0.00	A9-A13 Qtrs	47.6	48.4	48.0
38	0.30	A14-A19 Qtrs	43.1	44.0	43.6
39	1.00	A-17 - A23 Qtrs	<40	<40	<40
40	1.30	B1-B3 Block	<40	<40	<40
41	2.00	Hospital	<40	<40	<40
42	2.30	SBI	<40	<40	<40
43	3.00	Jagannath Temple	<40	<40	<40
44	3.30	TSRDS	<40	<40	<40
45	4.00	Babu Line	40.3	41.1	40.7
46	4.30	Guest House Annexe	<40	<40	<40
47	5.00	Banabharati Dance School	<40	<40	<40
48	5.30	Main Gate	43.9	44.8	44.4

Ambient Noise Level Survey in Industrial Areas of SCM, TSL from 6AM to 6AM(Next Day)

Sl. No	Time in Hrs.	Location	Dec15	March'16	AVERAGE
			Noise level in d B(A)	Noise level in d B(A)	
1	6.00	Canteen Gate	51.9	52.8	52.4
2	6.30	Quarry Pump House	62.4	63.2	62.8
3	7.00	Stack Yard	59.4	60.2	59.8
4	7.30	Lumpy Plot	59.9	60.8	60.4
5	8.00	40 t. Weigh Bridge	62.3	63.1	62.7
6	8.30	Concentrated Ore Stack Yard	65.7	65.0	65.4
7	9.00	OB Dump	60.5	61.4	61.0
8	9.30	OB IX Quarry	46.4	47.2	46.8
9	10.00	Atwal's Pyroxinate Crusher	65.8	66.6	66.2
10	10.30	Magazine	65.7	66.6	66.2
11	11.00	Pyroxinate Quarry	69.5	70.3	69.9
12	11.30	OB-II Quarry	64.1	65.0	64.6
13	12.00	OB Dump	60.3	61.1	60.7
14	12.30	Naresh Kumar Crusher	72.2	73.0	72.6
15	13.00	OB-X Quarry	69.3	70.2	69.8
16	13.30	Old ETP	50.1	50.9	50.5
17	14.00	Mining Complex	67.5	68.4	68.0
18	14.30	Slime Dam	55.6	56.4	56.0
19	15.00	OB-IX Quarry	61.9	62.7	62.3
20	15.30	Pyroxinate Plot	62.0	62.9	62.5
21	16.00	OB Dump	60.2	61.0	60.6
22	16.30	Temple Gate	42.0	42.9	42.5
0.	17.00	Air Strip	46.9	47.7	47.3
24	17.30	Hauling Gate	56.6	57.4	57.0
25	18.00	Work Shop	66.3	67.2	66.8
26	18.30	New ETP	46.7	47.5	47.1
27	19.00	20T Weigh Bridge	46.4	47.3	46.9
28	19.30	Engg. Complex	47.6	48.4	48.0
29	20.00	Atwal's Chrome Crusher	54.8	55.6	55.2
30	20.30	New ETP	51.6	52.5	52.1
31	21.00	Canteen Gate	56.7	57.5	57.1
32	21.30	Hauling Gate	51.5	52.4	52.0
33	22.00	Work Shop	53.5	54.3	53.9
34	22.30	Old ETP	45.4	46.2	45.8
35	23.00	Diesel Pump	46.1	47.0	46.6
36	23.30	Quarry Pump House	45.1	45.9	45.5
37	0.00	Hospital Gate	42.7	43.6	43.2
38	0.30	OB X Quarry	59.9	60.7	60.3
39	1.00	Alwal's chrome crusher	62.7	63.5	63.1
40	1.30	Atwal's Garage	55.3	56.2	55.8
41	2.00	Old OK Line	41.1	41.9	41.5
42	2.30	Air Strip	<40	<40	<40
43	3.00	Stack Yard	57.9	58.7	58.3
44	3.30	40Ton Weigh Bridge	61.0	61.8	61.4
45	4.00	Naresh Kumar Crusher	65.9	66.8	66.4
46	4.30	OB IX Quarry	59.9	60.7	60.3
47	5.00	Work shop	70.6	71.5	71.1
48	5.30	Canteen Gate	49.3	50.1	49.7

NOISE LEVEL SURVEY AT GEOLOGICAL LABORATORY IN COB PLANT SCM TSL

Sl.No	Location	Dec'15		March'16		AVERAGES	
		Noise Level in dB(A)		Noise Level in dB(A)		Noise Level in dB(A)	
		Max	Min	Max	Min	Max	Min
1	Exhaust Fan	68.4	62.4	58.5	54.3	63.5	58.4
2	Dry Sieve Shaker Machine	67.9	59.7	65.6	60.2	67.0	60.0
3	Wet Sieve Shaker Machine	65.2	57.4	62.3	57.8	63.8	57.6
4	Manual sample preparation table	67.9	59.1	66.5	57.1	67.2	58.1

ANEXURE-XVIII

Uploaded EC, EC Status Condition and Annual Environment Statement

Tata Steel - Compliance Reports##### - Microsoft Internet Explorer provided by ITS, TATA STEEL

http://www.tatasteelindia.com/compliance-report.asp#

File Edit View Favorites Tools Help

http://176.0.1.102/GIS053.a... Tata Steel - Complianc... X


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Values stronger than steel

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TATA

You are in: Home > Compliance Reports



Compliance Reports

▶ [Half Yearly Environment Compliance Reports](#)

- EC for Jamadoba Coal Washery
- EC for 6&7 Pits Colliery
- CRZ Clearance Gopalpur project
- EC Compliance Sukinda Chromite Mines April 13 - September 13
- Environment Statement of Sukinda Chromite Mines for 2012-13
- Environment Statement of Tiringpahar Manganese Mines for 2012-13
- **Environmental clearance to Sukinda chromite mine of Tata Steel limited**
- Environmental Clearance for Kotre Basantpur & Pachmo Opencast Coal mine, West Bokaro, Tata Steel Ltd.
- Six Monthly Compliance Report for Rebar Mill and Ferro Chrome Plant, Tata Steel Ltd.
- Six Monthly Compliance Report for Kalinganagar Project, Tata Steel Ltd.
- Environmental Statement for the year 2011-12, Kalinganagar Project, Tata Steel Ltd.
- Environmental Clearance to Bamebari Manganese Mine, Tata Steel Ltd.
- Environmental Clearance to Joda West Manganese Mine, Tata Steel Ltd.
- Environmental Clearance to Malda Manganese Mine, Tata Steel Ltd.
- Environmental Clearance to Manmora Manganese Mine, Tata Steel Ltd.
- Environmental Clearance to Tiringpahar Manganese Mine, Tata Steel Ltd.
- Environmental Clearance conditions of Noamundi Iron Mine, Tata Steel Ltd.
- Environmental Clearance conditions of Khondbond Iron & Manganese Mine, Tata Steel Ltd.
- Environmental Clearance conditions of Kalamati Iron Mine, Tata Steel Ltd.
- Environmental Clearance conditions of Joda East Iron Mine, Tata Steel Ltd.
- Environmental Clearance of West Bokaro Opencast Coal Mine, Tata Steel Ltd.

Uploaded EC, EC Status Condition

The screenshot shows a web browser window with the following details:

- Browser tabs: "New Tab", "Corporate Citizen | Enviro: X"
- Address bar: www.tatasteelindia.com/corporate-citizen/environment-compliance-reports.asp
- Report list (from top to bottom):
 - Half Yearly EC Compliance Report of Sukinda Manganese Mine (Oct'14 to Mar'15)
 - Half Yearly EC Compliance Report of Tingpahar Manganese Mine (Oct'14 to Mar'15)
 - Half Yearly EC Compliance Report of Manmora Manganese Mine (Oct'14 to Mar'15)
 - Washery - III Production Data (Monthly Average) (June 2015)
 - Compliance Status of Environmental Clearance of West Bokaro Opencast Coal Mine
 - Washery - III Production Data (Monthly Average) (April - May 2015)
 - Half Yearly EC Compliance Report of Sukinda Chromite Mine (Oct'14 to Mar'15)** (highlighted with a red box)
 - Half Yearly EC Compliance Report of Kalimela Open Cast Project, Jamadoba Colliery, Dhanbad (Oct'14 to Mar'15)
 - Half Yearly EC Compliance Report of 6&7 Pits Colliery, Dhanbad (Oct'14 to Mar'15)
 - Half Yearly EC Compliance Report of Mahal Sahajuri Bagula Sand Lease, Dhanbad (Oct'14 to Mar'15)
 - Half Yearly EC Compliance Report of Lagla Mahal Sand Lease, Dhanbad (Oct'14 to Mar'15)
 - Half Yearly EC Compliance Report of Digwadhi Colliery, Dhanbad (Oct'14 to Mar'15)
 - Half Yearly EC Compliance Report of Jamadoba Coal Washery, Dhanbad (Oct'14 to Mar'15)
 - Half Yearly EC Compliance Report of Joda East Iron Mine (Oct'14 to Mar'15)
 - Half Yearly EC Compliance Report of Khondbond Iron & Manganese Mine (Oct'14 to Mar'15)
- Taskbar (bottom):
 - Address: www.tatasteelindia.com/corporate-citizen/pdf/env-sukinda-16jun15.pdf
 - System tray: 10:35 AM, 11/13/2015

EC Compliance of Oct-14 to March-15

The screenshot shows a web browser window with the URL www.tatasteelindia.com/corporate-citizen/environment-compliance-reports.asp. The page title is "Environment Compliance Reports". A left-hand navigation menu includes links for Environment, Infrastructure Development, Case Studies, Environment Compliance Reports, and Events. The main content area lists the following reports:

- Half Yearly Compliance Report (April 2015 to September 2015) for Environmental Clearance of the Plant at Gopalpur villages Chamakhandi, Sindhigaon and Jagannathpur, Tehsil Chhatrapur, District Ganjam, Odisha
- Half Yearly Compliance Report for CRZ Clearance of Gopalpur Plant, Odisha
- Environmental Statement : Joda West Manganese Mines - 2014-15
- Environmental Statement : Malda Manganese Mines - 2014-15
- Environmental Statement : Tingpahar Manganese Mines - 2014-15
- Environmental Statement : Bamebari Manganese Mines - 2014-15
- Environmental Clearance for Tata Steel Residential Complex of M/s Tata Steel Ltd. for Tata Steel Plant located at Kalinganagar Industrial Complex at Khurunti & Gadapur
- Environmental Statement for the financial year 2014-2015 of 6.0 MTPA Steel Plant, Kalinganagar Project
- Environmental Clearance of Ferro Alloys Plant, Bammipal
- Environmental Statement of Ferro Alloys Plant, Bammipal, Keonjhar for the year 2014-2015
- Environment Statement for the financial year ending March 2015 for Sukinda Chromite Mine
- Environment Statement for the financial year ending March 2015 for 6&7 PITS Colliery

At the bottom of the browser window, the taskbar shows the system tray with the date and time: 10:41 AM, 11/13/2015.

ANEXURE-XIX
Environment Clearance Intimation letters Panchayat, Zila Parisad



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 Pyrocorintha ore capacities and change of mining & beneficiation technologies vide its letter no. F-11015/96/2011-GA.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

Chand (Mining)
&
Manager Cum Agent
Sukinda Chromite Mine

Encl: As above

Bhagabati Mohanta
Chairman
Sukinda

TATA STEEL LIMITED

Tata Steel Limited, Plot No. 1, Export Zone, Sakchi, Bhubaneswar, Odisha
Phone: +91 674 244 2000 Fax: +91 674 244 2001
Registered Office: Sakchi, Bhubaneswar, Odisha, India. Website: www.tatasteel.com



Ref: SCM/ENV/ 66 / 13

Date: 25/9/13

Mr. Bidhyadhar Patra
Member,
Zila Parishad, Jaipur

Sub: Intimation of obtaining Environmental Clearance under EIA Notification,
2006 in respect of Sakinda Chromite Mine having Mining Lease area over
406 ha in Jaipur 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 Sakinda Chromite Mine, M/s Tata Steel Limited for renewal of mine lease, expansion of Chrome Ore Beneficiation plant and Pyrocentric ore capacities and change of mining & beneficiation technologies vide its letter no. J-11015/96/2013-IA.II(M), Dated 06.09.2013.

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

Yours Faithfully
T: Tata Steel Limited

Chief (Mining)
&
Manager Cum Agent
Sakinda Chromite Mine

End: As above

Bidhyadhar Patra
Bidhyadhar Patra 25/9/13
Zilaparisad Member
IT Zone, Sakinda, Jaipur

TATA STEEL LIMITED

Head Office: Sakinda, PO, Jamnagar (Raj) India - 345005
Phone No. 91-079-2500000 Fax: 91-079-2500001
Registered Office: Company House, 22, Market Street, London, EC3A 3DF
www.tatasteel.com



Ref: SCM/ENV/ 69 / 13

Date: 25/09/13

Mrs. Jinita Munda,
Sarpanch,
Kaliapani Grama Panchayat
Kaliapani

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 Pyrometallurgical capacities and change of mining & beneficiation technologies vide its letter no. J-11015/96/2013-IA.II(M), Dated 06.09.2013.

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

Yours Faithfully
Tata Steel Limited


Chief (Mining)
&
Manager Cum Agent
Sukinda Chromite Mine

Jinita Munda
Sarpanch
KALIAPANI G.P.

Encl: As above

TATA STEEL LIMITED

Sukinda Chromite Mine, Jajpur District, Orissa
Phone No. 0674 2602111-110111, 2602112
Registered Office: Mumbai House, 44 Park Road, Jajpur, Orissa - 751013
www.tatasteel.com



Ref: SCM/ENV/ 70 / 13
Date: 26/11/13

Mrs. Sushama Nayak
Sarpanch,
Ransol Grama Panchayat,
Ransol

Sub: Intimation of obtaining Environmental Clearance under EIA Notification, 2006 in respect of Sakinda 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 Sakinda Chromite Mine, M/s Tata Steel Limited for renewal of mine lease, expansion of Chrome Ore Beneficiation plant and Pyrometallurgical capacity and change of mining & beneficiation technologies vide its letter no. J-11015/96/2013-LA(I)(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 Core Agent
Sakinda Chromite Mine

Encl: As above


Sarpanch
Ransol Grama Panchayat

TATA STEEL LIMITED

Head Office: Chhatrapati Shivaji Maharaj Water Park, Sakinaka, Bhubaneswar-751005, Orissa, India
Registered Office: Sakinaka, Bhubaneswar-751005, Orissa, India
www.tatasteel.com



Ref: SCM/ENV/31 / 13

Date: 25/09/13

Mrs. Renuka Dehari
Sarpanch,
Chingulpal Grama Panchayat,
Chingulpal

Sub: Intimation of obtaining Environmental Clearance under EIA Notification, 2006 in respect of Sakinda 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 Sakinda Chromite Mine, M/s Tata Steel Limited for renewal of mine lease, expansion of Chrome Ore, Beneficiation plant and Pyrovents ore capacities and change of mining & beneficiation technologies vide its letter no. J-11015/96/2011-IA(E/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
Sakinda Chromite Mine

Encl. As above

Renuka Dehari
Sarpanch
Chingulpal G.P.

TATA STEEL LIMITED

Corporate Office: Tata Steel House, 100, Jawahar Road, Kolkata - 700001
Telephone: 91 33 2622 2222/3333/4444/5555

Registered Office: Sakinda, District of Jajpur, Orissa
www.tatasteel.com



Ref: SCM/ENV/ 72 / 13

Date: 25/04/13

Mr. Gobinda Chandra Dethari,
Sarpanch,
Kankadpal Grama Panchayat,
Kankadpal

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 Pyrocentric ore capacities and change of mining & beneficiation technologies vide its letter no. J-11015/96/2011-GJ(M), Dated 06.09.2013.

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

Yours faithfully
Tata Steel Limited


Chief (Mining)
&
Manager-Cum Agent
Sukinda Chromite Mine

Encl: As above


02-09-2013
SARAPANCH
KANKADAPAL G.P.

TATA STEEL LIMITED

Corporate Office: Tata Steel Limited, Sakchi, Bhubaneswar-751 005
Registered Office: Tata Steel Limited, Sakchi, Bhubaneswar-751 005
www.tatasteel.com

ANEXURE-XX

Environmental Clearance Advertisement and Intimation to Eastern Regional Office of the MoEF



**Addl. Director(S)
Ministry of Environment & Forests
Eastern Regional Office
A/3, Chandrasekharapur,
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-11015/96/2011-1A.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-11015/96/2011-1A.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 (S) - Kalamangata Dist. Jajpur Circle 755024
Phone no. 01 6726 266761 Fax : 01 6726 268734
Registered Office: 9th Floor, Tower 24, One One One, Mumbai - 400 001

ANEXURE-XXI
Photographs of Backfilling (In Progress)



ANEXURE-XXII
Year wise Plantation target and Actual Plantation Achieved

Year	Plan (Within ML)		Actual (within ML)		Plan (Outside ML)		Actual (Outside ML)	
	Nos. of Sapling	Area in Ha	Nos. of Sapling	Area in Ha	Nos. of Sapling	Area in Ha	Nos. of Sapling	Area in Ha
1998-99	4000	1.62	4000	1.7				
1999-00	4000	1.62	18000	4				
2000-01	5000	2.02	28342	2				
2001-02	5000	2.02	15000	0.5				
2002-03	5000	2.02	22000	1.5				
2003-04	10000	4	45500	1.5				
2004-05	2500	1	48000	1				
2005-06	6250	2.5	75000	2.5				
2006-07	14375	5.75	129500	5.75				
2007-08	13550	5.42	94000	4.42	Additional Area (100ha)obtained (#)			
2008-09	3000	1.2	85250	2.94	8750	3.5	36750	1.76
2009-10	4000	1.6	28000	3.9	17750	7.1	56000	5.6
2010-11	0	0	25000	2	20000	8	60000	6.5
2011-12	11250	4.5	45000	4.5	8750	3.5	35000	3.5
2012-13	4625	1.9	5700	1.83	21375	8.55	40000	6.5
2013-14	6250	2.5	3700	1.32	20000	8	54326	5.6
2014-15	4000	1.6	4050	1.2	19875	7.95	50100	5.1
2015-16	7500	3	6000	1	20125	8.05	61473	8
TOTAL	110300	44.27	682042	43.56	136625	54.65	393649	42.56
NB : (#) Actual less than plan due to delay in phased allotment of land								
Plantation during 2015-16 is continuing.								

Environment Awareness Programs





