

ADITYA BIRLA



Ref No: HIL/LHD/VP (M)/MoEF/ 128

Date: 22.05.13

To,
Mr S Kerketta
Joint Director(S)
MoEF ,GOI, Eastern Regional Office
A/3,Chandrashekharapur,
Bhubaneshwar- 751023 (Orissa)

Sub: Compliance Report of EC conditions for Hisri New (14.55 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Lohardaga District of Jharkhand for the period Oct' 2012 - March' 2013.

Ref: Environmental Clearance letter no J-11015/531/2007-IA II (M) dated 17th June 2011

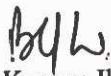
Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Hisri New (14.55 ha) Bauxite Mining project of M/s Hindalco Industries Limited**, located in Lohardaga District of Jharkhand for the period **Oct' 2012 - March' 2013**.

Hope you will find the same in order.

Thanking You

Yours Sincerely
FOR M/s Hindalco Industries Limited,


(Bijesh Kumar Jha)
VP (Mines)

Enclosure: - As Above

Compliance of conditions laid down in Environmental Clearance

HISRI (NEW) BAUXITE MINES(14.55 Ha)

Period : Oct'12 – March'13

Environmental Clearance letter no J-11015/531/2007-IA II (M) dated 17th June 2011

Sl No	Conditions	Compliance Status
Specific Conditions		
1	The project proponent shall obtain Consent to Establish and Consent to Operate from the Jharkhand State Pollution Control Board and effectively implement all the conditions stipulated therein.	Consent to Establish & Consent to operate obtained from Jharkhand State Pollution Control Board. Consent to operate is valid up to 31.12.13. Copy enclosed.
2	The environmental clearance is subject to forestry clearance.	Forest clearance obtained.
3	The environmental clearance is subject to approval of the state land use Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use.	Mining Lease is granted/ renewed by the State Govt. after due consideration and Cabinet approval on recommendation of DC who is the competent authority to give permission for using the agricultural land for non-agricultural purpose.
4	The mining operation shall be restricted to above ground water table and it should not intersect the ground water table. In case of working below ground water table, prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained, for which a detailed hydro – geological study shall be carried out.	Depth of mining will be 15-20 mtr bgl (maximum). Ground water table level is 40-50 mtr bgl. Thus there is no chance to intersect ground water table during mining operation. Working zone will be restricted to above ground water table.
5	The Project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operations. The first order streams and the seasonal nallahs originating from the mining lease area shall be protected.	It is being ensured. No natural water course has been obstructed.
6	The top soil, if any shall temporarily be stored at earmarked site (s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.	Sequential backfilling and reclamation of the mined out area are being exercised. Topsoil is being spread on backfilled area for reclamation of the area.
7	The solid waste generated during the mining operation shall be backfilled and there shall be no external overburden dump left at the end of the mine life. The entire excavated area of 12.19 ha. shall be backfilled and reclaimed by plantation. The backfilling should be carried out in such a manner that it is restored to the normal ground level. Monitoring and management of	Overburden and waste rock are being used for back filling. Data pertaining to backfilling is enclosed as Annexure.

	rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six month basis.	
8	<p>Catch drains and siltation ponds of appropriate size should be constructed around the working pit, sub-grade dump, soil and mineral dumps to arrest flow of silt and sediment directly into the agricultural fields, the Kisco Nadi, the Sukri Nadi, the Chungahat nallah, the Barki nallah and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted, particularly after monsoon and maintained properly.</p> <p>Garland drain, settling tanks and check dams of appropriate size, gradient and length shall be constructed for both around the minepit and sub grade dump to prevent run off of water and flow sediments directly into the agricultural fields, the Kisco Nadi, the Sukri Nadi, the Chungahat nallah, the Barki nallah and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.</p>	No run off is being generated from mining activities. However, to collect and manage rainwater during monsoon drains, Pit sumps are made, part of mined out area is used as settling tank. Settled water is being used for sprinkling of quarry, roads, green belt development, etc.
9	Dimension of the retaining wall at the toe of the sub-grade, dump and OB benches within the mine to check run-off and siltation should be based on the rain fall data.	Complied
10	Plantation shall be raised in an area of 12.7 ha including a 7.5 m. wide green belt in the safety zone around the mining lease by planting the native species around ML area, backfilled and reclaimed area, around water body, roads etc. in consultation with the local DFO / Agriculture Department. At least 1500 trees per year shall be planted with a tree density of 1000 trees per hectare. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.	Being carried out progressively.

11	Effective safe guard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels to particulate matter such as around loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	
12	The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	System is already in place.
13	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing 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 Bhubneshwar, The Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the ground water table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.	It is being monitored.
14	Monitoring to the springs shall be carried out for the quality and quantity of water regularly so as to ensure that there is no adverse impact on the same due to the project. Records in this regards shall be maintained.	Complied.
15.	It shall be ensured that there is no change in the hydrology of the area due to the project.	Complied.
16.	The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) required for the project.	Complied. Water cess is being paid to State Pollution Control Board regularly.
17.	Suitable rain water harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.	Complied.

18.	Appropriate mitigative measures shall be taken to prevent pollution of the Kisco Nadi, the Sukri Nadi and other rivers in the buffer zone of the mine, in consultation with the State Pollution Control Board.	Complied.
19	Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and transportation of mineral from mine face to the Beneficiation plant.. The vehicles should be covered with a tarpaulin and shall not be overloaded.	Regular maintenance of vehicles are undertaken to minimize vehicular emission. Care is taken on regular basis to arrest spillage/fugitive dust emission. At most care is taken to cover bauxite loaded trucks with Tarpaulin and overloading is avoided.
20	Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibration and to arrest fly rocks and boulders should be implemented.	Being complied with.
21	Drills shall either be operated with dust extractors or equipped with water injection system.	Being complied with.
22	Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	Complied.
23	Sewage treatment plant should be installed for the colony. ETP should also be provided for workshop and wastewater generated from mining operations.	There is no likely hood of effluent from mine, hence ETP is not required. The sewage water for working population is planned to be collected through Septic Tank/Soak Pit and treated in Sewage Treatment Plant already existing in adjoining Bagru ML.
24	The project authorities should undertake sample survey to generate data on pre-project community health status within a radius of 1 Km. from proposed mine.	Agreed. Being getting done through medical camp.
25	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.	System is already in place
26.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc.	System is already in place.

	The housing may be in the form of the temporary structures to be removed after the completion of the project.	
27	The critical parameters such as RSPM (Particulate matter with size less than 10 μm (i.e. PM_{10} , $\text{PM}_{2.5}$) and NO_x in the ambient air within the impact zone, peak particle velocity at 300 m. distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharge water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)] , The monitored data shall be uploaded on the website of the Company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in Public domain. The Circular no. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.	Being carried out.
28	A Final Mine Closure plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forest 5 years in advance of final mine closure for approval.	Progressive Mine Closure Plan duly approved by Indian Bureau of Mines is with us. FMCP is submitted to IBM for approval.

GENERAL CONDITIONS

Sl No	Conditions	Compliance Status
1	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	Complied.
2	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	Complied.
3	Conservation measures for protection of flora and fauna in the core & buffer zone should be drawn up in consultation with the local forest and wildlife department.	Complied.
4	Four ambient air quality-monitoring station should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 μm (i.e. PM_{10}) $\text{PM}_{2.5}$) & NO_x monitoring. Location of the stations should be decided based on the metrological data, topographical features and	Being carried out. Enclosed as Annexure.

	environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	
5	Data on ambient air quality RSPM (Particulate matter with size less than 10 μm i.e. PM_{10}) & NO_x should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.	Being carried out. Enclosed as Annexure.
6	Fugitive dust emission from all the sources should be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points should be provided and properly maintained.	Being carried out.
7	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operation of HEMM, etc. should be provided with ear plug / muffs.	Compiled.
8	Industrial waste water (workshops and waste water from the mine) Should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	Being carried out.
9	Personnel working in dusty areas should wear protective respiratory devices and they should also provided with adequate training and information on safety and health aspects. 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.	Being carried out.
10	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.	Separate Environmental Management Cell (EMC) has been constituted and is functioning effectively. Copy enclosed as Annexure.
11	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	The fund earmarked for environmental protection measures is being kept in separate account. Year wise expenditure is being reported to the Ministry and its

	reported to the Ministry and its Regional Office located at Bhubneshwar.	Regional Office located at Bhubneshwar.
12	The project authorities should inform to the Regional Office located at Bhubneshwar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Complied.
13	The Regional Office of this Ministry located at Bhubneshwar 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.	Agreed.
14	The project proponent shall submit six monthly report on the status of the compliance of the stipulated environmental Clearance conditions including results of monitoring data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Officer, Bhubaneshwar, the respective Zonal office of Central Pollution Control Board 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, Bhubneshwar, the respective Zonal Office of Central Pollution Control Board and State Pollution Control Board.	Being complied
15	A copy of clearance letter shall be sent by the proponent to concerned Panchyat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Complied.
16	State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Center and Collector's office / Tehsildar's Office for 30 days.	Complied.

17	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 the compliance of environmental clearance conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, Bhubneshwar by e-mail.	Complied.
18.	The Company shall submit within 3 month their policy towards Corporate Environment Responsibility which should inter-alia address (i) Standard operating process/ procedure to bring into focus any infringements/ deviation/ violation of environmental or forest norms/ conditions, (ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliance with environmental issues and ensuring compliance with Environment Clearance conditions and (iii) System of reporting of non compliance / violation of environmental norms to the Board of Directors of the Company and / or stakeholders or shareholders.	Already Submitted.
19	The project authorities should advertise at least in two local newspapers widely circulated, one of which locality concerned, within 7days 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 Bhubneshwar.	Complied.



Test Report

Print Date : 01/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002092.001

JOE No : KG13-002092

Report Control No : KGR0000013682

Sample Described by Customer as : GROUND WATER

Client Name : Hindalco Industries Limited(Mines Division)
 Client Address : Lohardaga,
 Postal Code : 835203
 State : Jharkhand
 Country : India
 Sample Type : GROUND WATER
 Received : 18/03/2013
 Registered : 18/03/2013
 Marks on Sample : Location : Bagru Chappi GW-1
 Quantity : 5.5L app
 Sample Collected : 09.03.2013, time : 2.30 pm
 Test Start/End Date : 18/03/2013 - 01/04/2013

Analysis	Method	Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissible
Colour	IS:3025 (Part-4):1983 (Reaff.2006)	5.0	Hz	5	15
Odour	IS:3025 (Part-5):1983 (Reaff.2006)	Agreeable		Agreeable	Agreeable
Taste	IS:3025 (Part-6):1983 (Reaff.2006)	Agreeable		Agreeable	Agreeable
pH	IS:3025 (Part-11):1983 (Reaff.2006)	7.20*		6.5	8.5
Total Hardness (as CaCO ₃)	IS:3025 (Part-21):1983 (Reaff.2006)	33.33	mg/L	200	600
Iron (as Fe)	IS:3025 (Part-2)	0.08	mg/L	0.3	No relaxation
Fluoride (as F)	IS:3025 (Part-60):2006	<0.10	mg/L	1.0	1.5
Residual Free Chlorine	IS:3025 (Part-26):1986 (Reaff.2003)	<0.10	mg/L	0.2	1.0
Chloride (as Cl)	IS:3025 (Part-32):1988 (Reaff.1999)	5.39	mg/L	250	1000
Total Dissolved Solids	IS:3025 (Part-16):1984 (Reaff.1996)	58.00	mg/L	500	2000
E.coli	IS:1622:1981(Reaff.2003)	Absent	per 100ml		Absent/100ml
Coliform bacteria	IS:1622-1981 (Reaffirmation 2003)	Absent	per 100ml		Absent/100ml
Calcium (as Ca)	IS:3025 (Part-40):1991 (Reaff.2003)	10.50	mg/L	75	200
Magnesium (as Mg)	IS:3025 (Part-46):1994 (Reaff.1999)	1.72	mg/L	30	100

Page 1 of 3

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Test Report

Print Date : 01/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002092.001

JOE No : KG13-002092

Analysis	Method	Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissible
Copper (as Cu)	IS:3025 (Part-2)	<0.01	mg/L	0.05	1.5
Manganese (as Mn)	IS:3025 (Part-2)	<0.01	mg/L	0.1	0.3
Sulphate (as SO ₄)	IS:3025 (Part-24):1986 (Reaff.1998)	<2.00	mg/L	200	400
Nitrate (as NO ₃)	IS:3025 (Part-34):1988 (Reaff.1999)	6.91	mg/L	45	No relaxation
Phenolic Compound (as C ₆ H ₅ OH)	IS:3025 (Part-43):1992 (Reaff.2003)	<0.001	mg/L	0.001	0.002
Mercury (as Hg)	IS:3025 (Part-48):1994 (Reaff.1999)	<0.001	mg/L	0.001	No relaxation
Cadmium (as Cd)	IS:3025 (Part-41):1992 (Reaff.2003)	<0.003	mg/L	0.003	No relaxation
Selenium (as Se)	IS:3025 (Part-2)	<0.005	mg/L	0.01	No relaxation
Arsenic (as As)	IS:3025 (Part-37):1988 (Reaff.1999)	<0.005	mg/L	0.01	No relaxation
Cyanide (as CN)	IS:3025 (Part-27):1986 (Reaff.2003)	<0.020	mg/L	0.05	No relaxation
Lead (as Pb)	IS:3025 (Part-47):1994 (Reaff.1999)	<0.005	mg/L	0.01	No relaxation
Zinc (as Zn)	IS:3025 (Part-2)	0.12	mg/L	5	15
Anionic Surface Active Agent (as MBAS)	IS:13428:2005: Annex K	<0.05	mg/L	0.2	1.0
Chromium (as Cr)	IS:3025 (Part-2)	<0.01	mg/L	0.05	No relaxation
Mineral Oil	IS:3025 (Part-39):1991 (Reaff.2003)	<0.01	mg/L	0.5	No relaxation
Total Alkalinity (as CaCO ₃)	IS:3025 (Part-23):1986 (Reaff.2003)	38.61	mg/L	200	600
Aluminium (as Al)	IS:3025 (Part-55):2003	<0.03	mg/L	0.03	0.2
Boron (as B)	IS:3025 (Part-57):2005	0.06	mg/L	0.5	1.0
Turbidity	IS:3025 (Part-10):1984 (Reaff.2006)	1.15	NTU	1	5

Remark : *Analyzed at site.

Page 2 of 3

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Test Report

Print Date : 01/04/2013

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG13-002092.001

JOE No : KG13-002092

Report Control No : KGR0000013682

Per pro SGS India Private Lt

Asish Chakraborty

Asish Chakraborty
Laboratory Manager
Authorized Signatory

****End of Report****

Page 3 of 3

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TEST REPORT

Date : 12.03.2013

REPORT NO.:KG13-001887-001

Report Control No. KGR0000011070

JOE NO : KG13 001887

SAMPLE DRAWN BY SGS INDIA PRIVATE LTD.

Sample described as : FLUE GAS

Name of the Industry : M/s. HINDALCO INDUSTRIES LIMITED
Address : Mines Division, Lohardaga, Jharkhand, PIN - 835 302

Date & time of sampling: 14 02 2013 (15:00 - 15:40 Hrs)

Sampling Site : Bagru/Bhuaisal/Hisri(Old)/Hisri(New) Bauxite Mines (Bagru Plateau)

Location : DG Set (250 KVA)

A. General information about stack :

- 1 Stack connected to : DG Set (250 KVA)
2 Emission due to : Burning of H.S.D
3 Material of construction of Stack : M S
4 Shape of Stack : Circular
5 Whether stack is provided with permanent platform & ladder : Yes
6 Capacity : 250 KVA
7 Running Load : 100 KVA

B. Physical characteristics of stack :

- 1 Height of the stack (a) from ground level : 7.0 M
2 Diameter of the stack at sampling point : 0.2032 M
3 Height of the sampling point from GL : 6.25 M

C. Analysis/Characteristic of Stack :

1 Fuel used : H S D

2. Fuel Consumption : 30 LU/Hr

Table with 4 columns: PARAMETERS, PROTOCOL, RESULTS, Limit as per MOEF G.S.R.448(E). Rows include Temperature of emission, Barometric pressure, Velocity of gas, etc.

E. Pollution control device

Details of pollution control devices attached with the stack : Nil

F. Remarks : Nil

End of Report

Checked by
Dipankar De Sarker
Manager(Operations)

per pro SGS India Private Ltd.
Dr. Ansh Chakraborty
Manager-Laboratory

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Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

Report No : KG13-001940.003

JOE No : KG13-001940

Report Control No : KGR0000012034

Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Client Name : Hindalco Industries Limited(Mines Division)
 Client Address : Lohardaga,
 Postal Code : 835203
 State : Jharkhand
 Country : India
 Sample Type : AMBIENT AIR QUALITY MONITORING
 Received : 12/03/2013
 Registered : 12/03/2013
 Marks on Sample : Location : Korgu Village, date : 14.02.2013
 Sampling Site : Bagru(BhusanRien NewRien Old Bauxite Mines(Bagru Plateau)
 Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit	Requirement/Limit as Per HAAQS	
				Min	Max
Particulate Matter (PM10)	IS-5182 (Part-23):2006	52	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	27.70	ug/m3	-	60
Oxides of Nitrogen (NOx)	IS-5182 (Part-6):1976 (Reaff.2004)	8.45	ug/m3	-	80
Sulphur Dioxide (SO2)	IS-5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	-	80
Carbon Monoxide	By NDIR Spectroscopy.	<0.10	PPM	-	-

Remark : CO Analyzed at site.

Page 1 of 2

WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings contains no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts its liability with regard to the origin or source from which the sample(s) were said to be extracted.

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Test Report

Report No : KG13-001940.003

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

JOE No : KG13-001940

Report Control No : KGR000012034

Per pro SGS India Private Ltd

Satya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

Page 2 of 2

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Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

Report No : KG13-001940 004

JOE No : KG13-001940

Report Control No : KGR000012034

Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Client Name : Hindalco Industries Limited(Mines Division)
 Client Address : Lohardaga
 Postal Code : 835203
 State : Jharkhand
 Country : India
 Sample Type : AMBIENT AIR QUALITY MONITORING
 Received : 12/03/2013
 Registered : 12/03/2013
 Marks on Sample : Location : Sijerpara Village, date : 14.02.2013
 Sampling Site : Bagru/Bhusar/Hasn New/Hasn Old Bauxite Mines(Bagru Plateau)
 Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:5182 (Part-23) 2006	53	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	70.55	ug/m3	-	60
Oxides of Nitrogen (NOx)	IS:5182 (Part-6):1975 (Reaff:2004)	7.97	ug/m3	-	60
Sulphur Dioxide (SO2)	IS:5182 (Part-2) 2001 (Reaff:2008)	<5.00	ug/m3	-	80
Carbon Monoxide	By NDIR Spectroscopy	<0.10	PPM	-	-

Remark : CO Analyzed at site.

Page 1 of 2

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Test Report

Report No : KG13-001940.004

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

JOE No : KG13-001940

Report Control No : KGR0000012034

Per pro SGS India Private Ltd

Satya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

Page 2 of 2

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Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

Report No : KG13-001940.002

JOE No : KG13-001940

Report Control No : KGR000012034

Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Client Name : Hindalco Industries Limited(Mines Division)
 Client Address : Lohardaga.
 Postal Code : 835203
 State : Jharkhand
 Country : India
 Sample Type : AMBIENT AIR QUALITY MONITORING
 Received : 12/03/2013
 Registered : 12/03/2013
 Marks on Sample : Location : Kakrang Village, date : 13.02.2013
 Sampling Site : Bagru/Bhusar/Hiran New/Hiran Old Bauxite Mines(Bagru Plateau)
 Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS-5182 (Part-2):2006	89	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	38.58	ug/m3	-	60
Oxides of Nitrogen (NOx)	IS-5182 (Part-6):1975 (Reaff.2004)	10.88	ug/m3	-	80
Sulphur Dioxide (SO2)	IS-5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	-	50
Carbon Monoxide	By NDIR Spectroscopy	<0.10	Ppm	-	-

Remark: CO Analyzed at site.

Page 1 of 2

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Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

Report No : KG13-001940.002

JOE No : KG13-001940

Report Control No : KGR000012034

Per pro SGS India Private Ltd

Setya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

Page 2 of 2

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Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

Report No : KG13-001940.001

JOE No : KG13-001940

Report Control No : KGR000012034
Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING

Client Name : Hindalco Industries Limited(Mines Division)
 Client Address : Lohardaga,
 Postal Code : 835203
 State : Jharkhand
 Country : India
 Sample Type : AMBIENT AIR QUALITY MONITORING
 Received : 12/03/2013
 Registered : 12/03/2013
 Marks on Sample : Location : Mine Lease Area, date : 13.02.2013
 Sampling Site : Bagru/Bhusar/Hisan New/Hisan Old Bauxite Mines(Bagru Plateau)
 Test Start/End Date : 12/03/2013 - 18/03/2013

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:3182 (Part-23):2006	85	ug/m ³	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	31.72	ug/m ³	-	60
Oxides of Nitrogen (NOx)	IS:5182 (Part-6):1975 (Reaff 2004)	<8.00	ug/m ³	-	80
Sulphur Dioxide (SO2)	IS:5182 (Part-2):2001 (Reaff 2008)	<5.00	ug/m ³	-	80
Carbon Monoxide	By NDIR Spectroscopy	<0.10	PPM	-	-

Remark : CO Analyzed at site.

Page 1 of 2

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Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 18/03/2013

Report No : KG13-001940 001

JOE No : KG13-001940

Report Control No : KGR0000012034

Per pro SGS India Private Ltd

Satya Manna
Section Incharge - ENVI
Authorized Signatory

End of Report

Page 2 of 2

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TEST REPORT

Report No. : CA:GL:3120015211 DATE : 19/10/2012

JOE No. : 1212806597

Report Control No.:3125016394

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR QUALITY MONITORING
CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS LOHARDAGA, JHARKHAND
CITY 835302
COUNTRY INDIA
SAMPLING METHOD N.A.
SAMPLE DESCRIPTION AMBIENT AIR QUALITY MONITORING

MARK/LOCATION SITE: BAGRU/BHUSAR/HISRI OLD/HISRI NEW/BAUXITE MINES(BAGRU PLATEAU)
LOCATION: MINE LEASE AREA (CORE ZONE)
DATE: 07.10.12 TO 08.10.12

SAMPLE RECD ON 11/10/2012
TEST START DATE 11/10/2012
TEST END DATE 19/10/2012

Table with 4 columns: TESTS, PROTOCOL, RESULT, REQUIREMENT/LIMIT. Rows include Carbon Monoxide (CO), Oxides of Nitrogen (NOx), Particulate Matter(10), Particulate Matter(2.5), and Sulphur Dioxide (SO2).

**** End of Report ****

per pro SGS India Private Ltd.

Signature of Asish Chakraborty
Asish Chakraborty
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120015212 DATE : 19/10/2012

JOE No. : 1212806597

Report Control No.:3125016395

SAMPLE IDENTIFIED AS : AMBIENT AIR QUALITY MONITORING
CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS LOHARDAGA, JHARKHAND
CITY 835302
COUNTRY INDIA
SAMPLING METHOD N.A.
SAMPLE DESCRIPTION AMBIENT AIR QUALITY MONITORING

MARK/LOCATION SITE: BAGRU/BHUSAR/HISRI OLD/HISRI NEW/BAUXITE MINES(BAGRU PLATEAU)
LOCATION: KEKRANG VILLAGE (BUFFER ZONE)
DATE: 07.10.12 TO 08.10.12
SAMPLE RECD ON 11/10/2012
TEST START DATE 11/10/2012
TEST END DATE 19/10/2012

Table with 4 columns: TESTS, PROTOCOL, RESULT, REQUIREMENT/LIMIT. Rows include CARBON MONOXIDE (CO), OXIDES OF NITROGEN (NOx), PARTICULATE MATTER(10), PARTICULATE MATTER(2.5), and SULPHUR DIOXIDE (SO2).

**** End of Report ****

per pro SGS India Private Ltd.

Signature of Asish Chakraborty
Asish Chakraborty
Manager Laboratory

Signature of Hemisam
Hemisam

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TEST REPORT

Report No. : CA:GL:3120015213 DATE : 19/10/2012

JOE No. : 1212806597

Report Control No.:3125018396

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED
SAMPLE IDENTIFIED AS : AMBIENT AIR QUALITY MONITORING
CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS LOHARDAGA, JHARKHAND
CITY 835302
COUNTRY INDIA
SAMPLING METHOD N.A.
SAMPLE DESCRIPTION AMBIENT AIR QUALITY MONITORING

MARK/LOCATION SITE: BAGRU/BHUSAR/HISRI OLD/HISRI NEW/BAUXITE MINES(BAGRU PLATEAU)
LOCATION:KORGO VILLAGE (BUFFER ZONE)
DATE:08.10.12 TO 09.10.12
SAMPLE RECD ON 11/10/2012
TEST START DATE 11/10/2012
TEST END DATE 19/10/2012

Table with 4 columns: TESTS, PROTOCOL, RESULT, REQUIREMENT/LIMIT. Rows include CARBON MONOXIDE (CO), OXIDES OF NITROGEN (NOx), PARTICULATE MATTER(10), PARTICULATE MATTER(2.5), and SULPHUR DIOXIDE (SO2).

**** End of Report ****

per pro SGS India Private Ltd.

Signature of Asish Chakraborty
Asish Chakraborty
Manager Laboratory



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TEST REPORT

Report No. : CA:GL:3120015214

DATE : 19/10/2012

JOE No. : 1212806597

Report Control No..3125016397

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR QUALITY MONITORING
CUSTOMER NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS LOHARDAGA, JHARKHAND
CITY 835302
COUNTRY INDIA
SAMPLING METHOD N.A.
SAMPLE DESCRIPTION AMBIENT AIR QUALITY MONITORING

MARK/LOCATION SITE: BAGRU/BHUSAR/HISRI OLD/HISRI NEW/BAUXITE MINES(BAGRU PLATEAU)
LOCATION:SIYARPARA VILLAGE (BUFFER ZONE)
DATE:08.10.12 TO 09.10.12
SAMPLE RECD ON 11/10/2012
TEST START DATE 11/10/2012
TEST END DATE 19/10/2012

Table with 4 columns: TESTS, PROTOCOL, RESULT, REQUIREMENT/LIMIT. Rows include CARBON MONOXIDE (CO), OXIDES OF NITROGEN (NOx), PARTICULATE MATTER(10), PARTICULATE MATTER(2.5), and SULPHUR DIOXIDE (SO2).

**** End of Report ****

per pro SGS India Private Ltd.

Signature of Asish Chakraborty, Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120011468

DATE : 10/08/2012

JOE No. : 1212805099

Control No.:3125012287

SAMPLE COLLECTED BY SGS

SAMPLE IDENTIFIED AS : GROUND WATER

COMPANY NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS LOHARDAGA, JHARKHAND
CITY 835302
SAMPLING METHOD APHA 1060B
SAMPLE DESCRIPTION GROUND WATER
SAMPLE CONDITION IN PLASTIC BOTTLE
AMPLE QTY. 7L APP
MARKS ON SAMPLE LOCATION : CHAPPY VILLAGE OPEN WELL - I
COLLECTED ON 31.07.2012, TIME : 2.30 PM
REGISTERED ON 02/08/2012
TEST START DATE 02/08/2012
TEST END DATE 10/08/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
ALKALINITY (as CaCO ₃)	IS 3025:PART 23 :1986(Reaff.1998)	7.53 mg/l	200mg/l	600mg/l
ALUMINIUM (as Al)	IS 3025 : Part 55 : 2003	0.09 mg/l	0.03mg/l	0.2mg/l
ANIONIC DETERGENTS (as MBAS)	ANNEX. K of IS 13428: 2005	<0.05 mg/l	0.2mg/l	1mg/l
ARSENIC (as As)	IS 3025:PART 37:1988(Reaff.1999)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.
BORON	Annex.H OF IS:13428:2005	<0.05 mg/l	1.0mg/l	5.0mg/l
CADMIUM (as Cd)	IS 3025:PART 41 :1992(Reaff.1998)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.

Page 1 of 4

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TEST REPORT

Report No. : CA:GL:3120011468 DATE : 10/08/2012

JOE No. : 1212805089

Control No.:3125012287

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
CALCIUM (as Ca)	IS 3025:PART 40 :1991(Reaff.2003)	2.66 mg/l	75mg/l	200mg/l
CHLORIDE (as Cl)	Clause 2 of IS 3025 Part 32:1988(Reaff. 1999)	7.15 mg/l	250mg/l	1000mg/l
CHROMIUM (Cr6+)	IS 3025:PART 52:2003	<0.01 mg/l	0.05mg/l	No Relax.
COLOUR (HAZEN UNITS)	IS 3025:PART 4 :1983(Reaff.2002)	5	5.0	25
COPPER	IS 3025: PART 42:1992(Reaff. 2003) BY ICPOES	<0.01 mg/l	0.05mg/l	1.5mg/l
CYANIDE (as CN)	IS 3025:PART 27 :1986(Reaff.1998)	<0.02 mg/l	0.05mg/l	No Relax.
E.coli	IS 1622:1981(Reaff.2003)	Absent/100ml		ABS/100ml
FLUORIDE	IS:3025(PART 60):2008	<0.10 mg/l	1.0mg/l	1.5mg/l
IRON (as Fe)	IS 3025:PART 53:2003 (BY ICPOES)	0.07 mg/l	0.3mg/l	1 mg/l
LEAD (as Pb)	IS 3025:PART 47:1994(Reaff.2003) BY ICPOES	<0.005 mg/l	0.05mg/l	No Relax.
MAGNESIUM (as Mg)	IS 3025:PART 46 :1994(Reaff.1999)	<1.0 mg/l	30mg/l	100mg/l
MANGANESE	IS:3025(PART 59) 2006	<0.01 mg/l	0.1mg/l	0.3mg/l
MERCURY (as Hg)	IS 3025:PART 48 :1994(Reaff.1999)BY ICPOES	<0.001 mg/l	0.001mg/l	No Relax.

Page 2 of 4

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TEST REPORT

Report No. : CA:GL:3120011468 **DATE : 10/08/2012**

JOE No. : 1212805089 Control No.:3125012287

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
MINERAL OIL	CLAUSE 6 OF IS 3025:PART 39:1991(Reaff. 2003)	BDL(DL-0.01 mg/l)	0.01mg/l	0.03mg/l
NITRATE	IS 3025:PART 34 :1988(Reaff.1999)	6.05 mg/l	45mg/l	No Relax.
ODOUR	IS 3025:PART 5:1983(Reaff.2002)	Unobjectionable	Unobject.	Unobject.
pH	IS 3025:PART 11:1983(Reaff.2002)	7.1 *	6.5-8.5	No Relax.
PHENOLIC COMPOUNDS (as C6H5OH)	IS 3025(Part 43)1992(Reaff 2005)	<0.001 mg/l	0.001mg/l	0.002mg/l
RESIDUAL FREE CHLORINE	GEN/SOP/CALLAB-13 3	<0.10 mg/l *	0.2mg/l	--
SELENIUM	IS 3025:PART 56:2003 (BY ICPOES)	<0.005 mg/l	0.01mg/l	No Relax.
SULPHATE	CLAUSE 4 OF IS 3025:PART 24:1988(Reaff. 2003)	<2.0 mg/l	200mg/l	400mg/l
TASTE	IS 3025:PART 7 :1984(Reaff.2002)	Agreeable	Agreeable	-
Total Coliforms	IS 1622:1981(Reaff.2003)	<2 MPN/100ml		10/100 ml
TOTAL DISSOLVED SOLIDS	IS 3025:PART 16:1984(Reaff.2002)	37 mg/l	500mg/l	2000mg/l
TOTAL HARDNESS (as CaCO3)	IS 3025:PART 21 :1983(Reaff.2002)	9.50 mg/l	300mg/l	600mg/l
TURBIDITY(In NTU)	IS 3025:PART 10 :1984(Reaff.2002)	8.20	5.0NTU	10NTU

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Ref.No- PC/RNC/170/08-

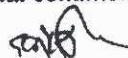
Date.....

CONSENT TO OPERATE

With reference to the application dated 28.08.2012 of G.M. (Operation), M/s Hindalco Industries Ltd; Court Road, I/C Hisri New Bauxite Mines-14.55 Ha, P.O+Dist- Lohardaga for consent under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and that under section 21 of the Air (Prevention & Control of Pollution) Act, 1981, he (they) is (are) granted consent to bring into use his(their) new/altered/existing outlet(s) for discharge of trade effluent and (or) domestic sewage and to operate his (their) industrial plant to produce maximum 1,00,000 TPA of Bauxite At – Hisri New, P.O + Dist- Lohardaga for the period from 01.01.2013 to 31.12.2013 with the following conditions :

1. That, he(they) shall not make any alteration, addition, deletion or modification in the mines without the prior clearance from the Board.
2. That, he(they) shall abide by the obligations provided under section 24, 31 and 33A of the Water (Prevention & Control of Pollution) Act, 1974 and shall extend co-operation to the Board in performing its functions entrusted under section 20, 21, 23, 30 and 32 of the Act.
3. That, he(they) shall comply with the requirements of the Water (Prevention & Control of Pollution) Cess Act, 1977 read with the Water (Prevention & Control of Pollution) Cess Rules, 1978.
4. That, he(they) shall abide by the obligations provided under section 22, 23 and 31A of the Air (Prevention & Control of Pollution) Act, 1981 and shall extend co-operation to the Board in performing its functions entrusted under sections 24, 25 and 26 of the Act.
5. That, he(they) shall abide by the obligations provided under sections 5, 7, 8 and 9 of the Environment (Protection) Act, 1986 and shall extend co-operation in performing the functions entrusted under section 3, 10 and 11 of the Act.
6. That, he(they) shall abide by the applicable provisions of the Environment (Protection) Rules, 1986, the Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008; the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989; the Bio-medical Waste (Management & Handling) Rules, 1998; the Municipal Solid Wastes (Management & Handling) Rules, 2000 and the Batteries (Management & Handling) Rules, 2001.
7. That, he(they) shall maintain the quality of discharge and (or) emission and (or) noise level of environmental pollutants in conformity with the standards as laid under Rule 3 of the Environment (Protection) Rules, 1986.
8. That, he(they) shall monitor his(their) effluent(s), emission(s) and the ambient air, noise level regularly and shall submit the report to the Board in compliance of the condition laid in paragraph 7.

9. That, he(they) shall establish well equipped environmental laboratory with the facilities of system(s) of continuous monitoring of effluent(s), emission(s) ambient water quality(ies), ambient air quality(ies) and ambient noise level(s) and transferring them (monitoring results) to his(their) website(s) and to the e-mail address(es) of the key persons of Jharkhand State Pollution Control Board, Zonal Office, Kolkata and Ministry of Environment & Forests, Regional Office, Bhubaneswar with simultaneous displaying at prominent locations in front of his(their)premises. [*Unit(s) of medium and large scale under 17 categories of polluting industries of category A of EIA Notification, 2006.]
10. That, he(they) shall submit the environmental statement every year by 30th September and shall harvest all rain water precipitating in the premises and do three tier tree plantation in the premises as air barrier.
11. That, he(they) shall submit application for consent under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and that under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 again 120 days before the expiration of the consent order 31.12.2013 or within 120 days from the date of receipt of the order, whichever is earlier.
12. That, unit shall submit quality report of Ambient Air Quality and Ground Water Quality every quarter of the year.
13. That, unit shall submit the status of compliance Environmental Clearance every quarter to the Board.
14. That, unit) shall reclaim the mined out area in phased manner as per EIA/EMP report.
15. That, the unit shall implement harvest rain water of the mine and recharge it to the ground by the method of Central Ground Water Board Guideline that fits most to the mine.
16. That, the unit shall make arrangement to control the fugitive emissions occurring during the mining activities and plying of vehicles on haul as well as transport roads.
17. That, the unit shall ensure that no transport vehicle should ply on road without covering the materials.
18. That, the proponent shall submit compliance report of Environmental Clearance dated 17.06.2011 and submit photographs in compliance of special condition No. ~~VII and IX~~ of the same.

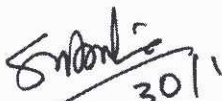


Sd/-
(Sanjay Kumar Sinha)
MEMBER SECRETARY

Memo no. PC/RNC/170/08-16540

Ranchi, Dated31.1.13

Copy forwarded to:- G.M. (Operation), M/S Hindalco Industries Ltd; (I/C Hisri New Bauxite Mines-14.55 Ha.), Court Road, P.O+Dist- Lohardaga/ Deputy Commissioner, Lohardaga/ D.F.O, Ranchi West Forest Division, Lohardaga/ D.M.O, Lohardaga/ Regional Officer, Regional Office, Ranchi for information & necessary action.


(Sanjay Kumar Sinha)
MEMBER SECRETARY





BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2012-13

The composite cost during the year 2012-13 (April to March) for environmental protection & pollution control by Jharkhand Mines division of Hindalco Industries Ltd for implementation the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Pakhar (115.13 Ha), Pakhar (15.58 Ha), Pakhar (109.507 Ha), Pakhar (8.09 Ha), Pakhar (35.12Ha), Serengdag (140.06 Ha), Serengdag (155.81 Ha), Jalim & Sanai (12.14 Ha), Gurdari (584.19 Ha), Amtipani (190.95 Ha), Kujam I (80.97 Ha) Kujam II (157.38 Ha) and Bagru (75.41 Ha), Hisri, Chiro kukud, & Orsa pat.

Sl No	Description	Budget (in Lakh Rs.)	Actual (in Lakh Rs.) FY 2012-2013
1	Pollution Control & Environment monitoring	7.50	11.32
2	Reclamation/ Back filing & Rehabilitation	**	46.60
3	Green belt & Plantation	25.00	88.09
4	Rural Development	65.00	81.50

**part of OB removed cost.


 Convener

Environment Management Cell.

ADITYA BIRLA



Date:20.03.13

OFFICE ORDER

In connection with the earlier office order dated 12.11.2011 the re constituted team of Environment management cell to ensure compliance of various environmental Acts, regulations & rules at Mines Division, Hindalco, Lohardaga as follows:

The Environment Management Cell will consist of:

1. B. K. Mahapatra, AGM (Quality & Environment), Convenor.

Members:

2. Utpal Gupta, Manager (Environment)
3. Biplab Mukherjee (Asst Manager Geology)
4. S. Joshi, Manager (Bagru Mines)
5. A. Anbarasu, Mines Manager (Serengdag A)
6. Ajay Pandey, Mines Manager (Pakhar)
7. Kiran Sankar Singh, Mines Manager (Gurdari)
8. Vidya Sagar Singh, Mines Manager (Serengdag B)
9. Ashish Upadhyay, Mines Manager (Kujam I & II)
10. Amar Bharati, Mines Manager (Amtipani)
11. Monaj Kumar Singh, Mines Manager (Pakhar 109.507 Ha)
12. Rajesh Ambastha, Mines Manager (Chiro Kukud & Orsa)

By order

A handwritten signature in black ink, appearing to read "Bijesh Kumar Jha".

Bijesh Kumar Jha
VP (Mines)

Cc to: - All Mines Manager
All Department head
Notice Board.

DETAILS OF PRODUCTION, OVERBURDEN HANDLING, AREA MINED OUT AND AREA RECLAIMED
FROM APR-12 TO MAR-13

SN	Name of Leases	Lease Area (in Ha)	Production (in MT)	Overburden Handling (in MT)	Mined Out Area (in Acres)	Reclaimed Area (in Acres)
1	Pakhar Bauxite Mines	8.09	78470	51682	0.75	1.10
2	Pakhar (115.13)	115.13	208503	425872	7.42	2.42
3	Gurdari	584.19	324648	832640	14.70	24.80
4	Kujam-I	80.87	149018	158530	14.70	12.10
5	Kujam-II	157.38	149542	677633	18.18	11.41
6	Amtipani	190.95	149579	468731	18.02	15.37
7	Shrengdag	155.81	259630	570878	19.50	35.00
8	Srengdag Bauxite Mines	140.06	99772	133089	6.52	5.80
9	Jalim & Sanai	12.14	49505	34438	1.24	0.80
10	Bagru	75.41	84320	188767	1.78	9.69
11	Hisri New	14.55	99651	115676	1.24	0.00
12	Chiro-Kukud	152.57	64847	78598	3.13	5.37
M/s Minerals & Minerals Limited						
1	Pakhar Bauxite Mines	15.58	34445	115848	1.25	2.00
2	Pakhar (109.507)	109.507	99840	204868	6.76	1.92