



Ref No: HIL/LHD/ VP (M)/MoEF/ 628

Date: 28.11.12

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

Sub: **Compliance Report of EC conditions for Pakhar (35.12 ha) Bauxite Mining project of M/s Hindalco located in Lohardaga, Jharkhand for the period April' 2012 - Sep' 2012.**

Ref: **Environmental Clearance letter no J-11015/137/2006-IA II (M) dated 5<sup>th</sup> April 2007**


Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Pakhar (35.12 ha) Bauxite Mining project of M/s Hindalco located in Lohardaga, Jharkhand for the period April' 2012 - Sep' 2012.**

Hope you will find the same in order.

Thanking You

Yours Sincerely  
FOR HINDALCO INDUSTRIES LIMITED

  
(Bijesh Kumar Jha)  
VP (Mines)

Enclosure: - As Above

**Compliance of conditions laid down in Environmental Clearance**

**PAKHAR (35.12 Ha)BAUXITE MINES**

**Period : April'121 –Sep'12**

**Letter No-J-11015/137/2006-IA(M) Dated 05.04.2007**

<b>Sl No</b>	<b>Conditions</b>	<b>Compliance Status</b>
Specific Conditions		
1	All the conditions stipulated by SPCB in their NOC shall be effectively implemented.	Complied. <b>Mining operations closed w.e.f 08.06.2009</b>
2	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.	Complied
3.	Environmental clearance is subject to grant of forestry clearance, Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 3.45ha forestland shall be obtained before starting mining operation in that area.	<b>Mining operations closed w.e.f 08.06.2009</b>
4	Mining shall not intersect groundwater. The mine working shall be restricted to ground water table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.	<b>Mining operations closed w.e.f 08.06.2009.</b>
5	The project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operation.	complied
6	Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	<b>Mining operations closed w.e.f 08.06.2009</b>
7	The waste generated shall be concurrently backfilled in the mined out area. There shall be no external OB dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six monthly basis.	<b>Mining operations closed w.e.f 08.06.2009</b>



8	<p>Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working. 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 (size, gradient and length) shall be constructed for mine pit 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>	<b>Mining operations closed w.e.f 08.06.2009</b>
9	Plantation shall be raised in an area of 24.83ha including a green belt of adequate width by planting the native species around the ML area, roads, reclaimed area etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.	8 ha area has been planted in Pakhar area.
10	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.	<b>Mining operations closed w.e.f 08.06.2009</b>
11	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 monitoring should be carried out four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground water Authority and Regional Director Central Ground Water Board.	<b>Mining operations closed w.e.f 08.06.2009</b>
12	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	<b>Mining operations closed w.e.f 08.06.2009</b>
13	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. The vehicles should be covered with a tarpaulin and shall not be overloaded.	<b>Mining operations closed w.e.f 08.06.2009</b>
14	Drills should either be operated with dust extractors or should be equipped with water injection system.	<b>Mining operations closed w.e.f 08.06.2009</b>

15	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.	<b>Mining operations closed w.e.f 08.06.2009..</b>
16	Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.	<b>Mining operations closed w.e.f 08.06.2009</b>
17	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 effluent from mine.
18	The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Indian Python etc. Spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. Copy of action plan may be submitted to the Ministry and its Regional Office within 3 months.	<b>Mining operations closed w.e.f 08.06.2009</b>
19	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.	FMCP submitted.

### **GENERAL CONDITIONS**

<b>Sl No</b>	<b>Conditions</b>	<b>Compliance Status</b>
1	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forest	<b>Mining operations closed w.e.f 08.06.2009</b>
2	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	<b>Mining operations closed w.e.f 08.06.2009</b>
3	Four ambient air quality-monitoring station should be established in the core zone as well as in the buffer zone for RPM, SPM, SO <sub>2</sub> , NO <sub>x</sub> monitoring. Location of the stations should be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets and	<b>Mining operations closed w.e.f 08.06.2009</b>



	frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	
4	Data on ambient air quality (RPM, SPM, SO <sub>2</sub> , NO <sub>x</sub> ) 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.	<b>. Mining operations closed w.e.f 08.06.2009</b>
5	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.	<b>Mining operations closed w.e.f 08.06.2009</b>
6	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.	<b>Mining operations closed w.e.f 08.06.2009.</b>
7	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 <sup>th</sup> May, 1993 and 31 <sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	<b>Mining operations closed w.e.f 08.06.2009</b>
8	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.	<b>Mining operations closed w.e.f 08.06.2009</b>
9	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. (Annexure).
10	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.	Not applicable.

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 reported to the Ministry and its Regional Office located at Bhubneshwar.	Statement of budgetary provision and actual expenses for environmental protection measure is enclosed. It is once again reiterated that the funds so ear marked shall not be diverted for any other purposes other than it is committed at the beginning of the financial year. (Annexure).
12	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.	Complied.
13.	The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhubaneshwar, Central Pollution Control Board and State Pollution Control Board.	Complied.
14	A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	Complied.
15	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.	Not applicable.
16	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 <a href="http://envfor.nic.in">http://envfor.nic.in</a> and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubneshwar.	Complied. Copies, of the advertisement made in the local newspapers, have already been submitted to the Regional Office during our six monthly report bearing letter no HIL/GMO(M)/ENV/142dated 23.05.2007.



## TEST REPORT

Report No. : CA:GL:3120010507

DATE : 23/07/2012

JOE No. : 1212804665

Report Control No.:3125011108

### SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

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

MARKS ON SAMPLE SITE:PAKHAR(8.09)/PAKHAR(15.58)/PAKHAR(115.13)/PAKHAR(109.507)/  
 BAUXITE MINES PAKHAR PLATEAU, LOCATION: PATRATOLI VILLAGE  
 DATE OF SAMPLING 29.06.2012 TO30-06-2012  
 SAMPLE RECD ON 18/07/2012  
 TEST START DATE 18/07/2012  
 TEST END DATE 23/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT As per CPCB (Residential area)	
			MIN	MAX
CARBON MONOXIDE (AT SITE)	GEN/SOP/CALLAB-88	<0.1 ppm*		1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	4.6 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	89.5 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	42.4 µg/m3		60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	<4.0 µg/m3		80 µg/m3

\* analysed at side.

\*\*\*\*\* End of Report \*\*\*\*\*

per pro SGS India Private Ltd.

Dr. Nimai Ghosh  
 Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010506

DATE : 23/07/2012

JOE No. : 1212804665

Report Control No.:3125011107

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

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

MARKS ON SAMPLE SITE:PAKHAR(8.09)/PAKHAR(15.58)/PAKHAR(115.13)/PAKHAR(109.507)/
DATE OF SAMPLING 28.06.2012 TO29.06.2012
SAMPLE RECD ON 18/07/2012
TEST START DATE 18/07/2012
TEST END DATE 23/07/2012

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

\* analysed at side.

per pro SGS India Private Ltd.
Dr.Nemai Ghosh
Manager Laboratory

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## TEST REPORT

Report No. : CA:GL:3120010505

DATE : 23/07/2012

JOE No. : 1212804665

Report Control No.:3125011106

### SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

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

MARKS ON SAMPLE SITE:PAKHAR(8.09)/PAKHAR(15.58)/PAKHAR(115.13)/PAKHAR(109.507)/  
 BAUXITE MINES PAKHAR PLATEAU, LOCATION: KEKRANG VILLAGE  
 DATE OF SAMPLING 28.06.2012 TO 29.06.12  
 SAMPLE RECD ON 18/07/2012  
 TEST START DATE 18/07/2012  
 TEST END DATE 23/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			As per CPCB (Residential area)	
			MIN	MAX
CARBON MONOXIDE (AT SITE)	GEN/SOP/CALLAB-88	<0.1 ppm*		1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	7.5 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	81.0 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	39.0 µg/m3		60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	<4.0 µg/m3		80 µg/m3

\* analysed at side.

\*\*\*\*\* End of Report \*\*\*\*\*

per pro SGS India Private Ltd.

Dr. Nemai Ghosh  
 Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010504

DATE : 23/07/2012

JOE No. : 1212804665

Report Control No.:3125011105

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

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

MARKS ON SAMPLE SITE:PAKHAR(8.09)/PAKHAR(15.58)/PAKHAR(115.13)/PAKHAR(109.507)/  
BAUXITE MINES PAKHAR PLATEAU, LOCATION: PAKHAR 38.50(COREZC  
DATE OF SAMPLING 26.06.2012  
SAMPLE RECD ON 18/07/2012  
TEST START DATE 18/07/2012  
TEST END DATE 23/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			As per CPCB (Residential area)	
			MIN	MAX
CARBON MONOXIDE (AT SITE)	GEN/SOP/CALLAB-88	<0.1 ppm*		1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	7 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	77.6 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	24.6 µg/m3		60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	<4.0 µg/m3		80 µg/m3

\* analysed at side.

\*\*\*\*\* End of Report \*\*\*\*\*

per pro SGS India Private Ltd.

Dr.Nemai Ghosh  
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010503

DATE : 23/07/2012

JOE No. : 1212804665

Report Control No.:3125011104

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

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

MARKS ON SAMPLE SITE:PAKHAR(8.09)/PAKHAR(15.58)/PAKHAR(115.13)/PAKHAR(109.507)/  
BAUXITE MINES PAKHAR PLATEAU, LOCATION:PAKHAR-115.13(PAKHAI  
DATE OF SAMPLING 26.06.2012  
SAMPLE RECD ON 18/07/2012  
TEST START DATE 18/07/2012  
TEST END DATE 23/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			As per CPCB (Residential area)	
			MIN	MAX
CARBON MONOXIDE (AT SITE)	GEN/SOP/CALLAB-88	<0.1 ppm*		1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	5.3 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	89.9 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	35.4 µg/m3		60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	<4.0 µg/m3		80 µg/m3

\* analysed at side.

\*\*\*\* End of Report \*\*\*\*

per pro SGS India Private Ltd.

Dr. Nema Ghosh  
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010502

DATE : 23/07/2012

JOE No. : 1212804665

Report Control No.:3125011103

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

SAMPLE IDENTIFIED AS : AMBIENT AIR

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

MARKS ON SAMPLE SITE:PAKHAR(8.09)/PAKHAR(15.58)/PAKHAR(115.13)/PAKHAR(109.507)/
DATE OF SAMPLING 25.06.2012
SAMPLE RECD ON 18/07/2012
TEST START DATE 18/07/2012
TEST END DATE 23/07/2012

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

\* analysed at side.

\*\*\*\* End of Report \*\*\*\*
per pro SGS India Private Ltd.
Dr.Nemai Ghosh
Manager Laboratory

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TEST REPORT

Report No. : CA:GL:3120010501

DATE : 23/07/2012

JOE No. : 1212804665

Report Control No.:3125011102

SAMPLE DRAWN BY SGS INDIA PRIVATE LIMITED

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

MARKS ON SAMPLE SITE:PAKHAR(8.09)/PAKHAR(15.58)/PAKHAR(115.13)/PAKHAR(109.507)/  
BAUXITE MINES PAKHAR PLATEAU, LOCATION: PAKHAR 270.509(BKB)  
DATE OF SAMPLING 25.06.2012  
SAMPLE RECD ON 18/07/2012  
TEST START DATE 18/07/2012  
TEST END DATE 23/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT As per CPCB (Residential area)	
			MIN	MAX
CARBON MONOXIDE (AT SITE)	GEN/SOP/CALLAB-88	<0.1 ppm*		1.7ppm(8h)
OXIDES OF NITROGEN (NOx)	IS 5182 PART 6:2006	7.3 µg/m3		80 µg/m3
PARTICULATE MATTER(10)	IS:5182(PART 23)2006	85.8 µg/m3		100 µg/m3
PARTICULATE MATTER(2.5)	USPEA CFR40(50), Appendix L	36.2 µg/m3		60 µg/m3
SULPHUR DIOXIDE (SO2)	IS 5182:PART 2:2001	<4.0 µg/m3		80 µg/m3

\* analysed at side.

\*\*\*\* End of Report \*\*\*\*  
per pro SGS India Private Ltd.  
Dr.Nemai Ghosh  
Manager Laboratory

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**TEST REPORT**

Report No. : CA:GL:3120010807-08

Date : 20.07.2012

JOE No: 1212804776

Report Control No: 3125010934-35

**SAMPLE DRAWN BY SGS INDIA PRIVATE LTD.**

**SAMPLE DESCRIPTION** : MEASUREMENT OF NOISE LEVEL  
**NAME OF THE CLIENT** : M/S. HINDALCO INDUSTRIES LIMITED  
**ADDRESS** : MINES DIVISION, LOHARDAGA, JHARKHAND, PIN – 835 302  
**SAMPLING METHOD** : INSTRUMENTAL, USING SOUND LEVEL METER  
**SAMPLING SITE** : PAKHAR(8.09)/PAKHAR(15.58)/PAKHAR(115.13)/PAKHER(109.509)/BAUXITE MINES( PAKHER PLTEAU)  
**PROTOCOL** : GENSOP/CALLAB-116  
**TEST START DATE** : 20.07.2012  
**TEST END DATE** : 20.07.2012

SL NO.	SAMPLING LOCATION	DATE & TIME OF SAMPLING	DAY TIME NOISE LEVEL dB (A) Leq	LIMIT IN dB(A) Leq DAY TIME ( INDUSTRIAL AREA )
1.	DAMPER (OR-14R-0160)	25.06.2012 (15:20 Hrs)	79	75
2.	POCKLEN (EC 210 BLC)	25.06.2012 (15:30 Hrs)	80	75

\*\*\*\*End of Report\*\*\*\*

Note: (i) The value is the Leq of twenty readings taken in each location (Day time).  
(ii) Day time shall mean from 6:00 am to 10:00 pm

Checked by

*Dipankar De Sarkar*  
**Dipankar De Sarkar**  
Asst. Manager (Operations)

per pro SGS India Private Ltd.

*Dr. Nirmai Ghosh*  
**Dr. Nirmai Ghosh**  
Manager-Laboratory

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TEST REPORT

Report No. : CA:GL:3120009661

DATE : 10/07/2012

JOE No. : 1212804262

Control No.:3125010227

**SAMPLE COLLECTED BY SGS**

**SAMPLE IDENTIFIED AS : DRINKING WATER**

COMPANY NAME HINDALCO INDUSTRIES LIMITED (MINES DIVISION)  
ADDRESS LOHARDAGA, JHARKHAND  
CITY 835302  
SAMPLING METHOD APHA 1060B/9060A  
SAMPLE DESCRIPTION DRINKING WATER  
SAMPLE CONDITION IN PLASTIC,STERILISED BOTTLE  
SAMPLE QTY. 5.5L APP  
MARKS ON SAMPLE SITE : PAKHAR (8.09)/PAKHAR(15.58)/PAKHAR(115.13)/  
PAKHAR (109.507)/ BAUXITE MINES PAKHAR PLATEAU  
LOCATION : SPRING NEAR PAKHAR VILLAGE  
COLLECTED ON 26.06.2012  
REGISTERED ON 02/07/2012  
TEST START DATE 02/07/2012  
TEST END DATE 10/07/2012

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
ALKALINITY (as CaCO <sub>3</sub> )	IS 3025:PART 23 :1986(Reaff.1998)	<5.0 mg/l	200mg/l	600mg/l
ALUMINIUM (as Al)	IS 3025 : Part 55 : 2003	<0.02 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

Page 1 of 4

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## TEST REPORT

Report No. : CA:GL:3120009661

DATE : 10/07/2012

JOE No. : 1212804262

Control No.:3125010227

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
CADMIUM (as Cd)	IS 3025:PART 41 :1992(Reaff.1998)BY ICPOES	<0.005 mg/l	0.01mg/l	No Relax.
CALCIUM (as Ca)	IS 3025:PART 40 :1991(Reaff.2003)	<1.0	75mg/l	200mg/l
CHLORIDE ( as Cl)	Clause 2 of IS 3025 Part 32:1988(Reaff. 1999)	<2.0 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
Faecal coliforms	IS 1622:1981(Reaff2003)	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)	0.12 mg/l	0.3mg/l	1 mg/l
LEAD (as Pb)	IS 3025:PART 47:1994(Reaff.2003) BY ICPOES	0.01 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

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TEST REPORT

Report No. : CA:GL:3120009661

DATE : 10/07/2012

JOE No. : 1212804262

Control No.:3125010227

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
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.
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)	<0.50 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)	6.85*	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 24:1986(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 HARDNESS (as CaCO3)	IS 3025:PART 21 :1983(Reaff.2002)	<1.0 mg/l	300mg/l	600mg/l

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## TEST REPORT

Report No. : CA:GL:3120009661

DATE : 10/07/2012

JOE No. : 1212804262

Control No.:3125010227

TESTS	PROTOCOL	RESULT	REQUIREMENT/LIMIT	
			Desirable	Permissible
			<u>As per IS</u> <u>10500:1991(REAFF</u> <u>1993)</u>	
TURBIDITY( in NTU )	IS 3025:PART 10 :1984(Reaff.2002)	1.32	5.0NTU	10NTU
ZINC (as Zn)	IS 3025 Part 49:1991(Reaff.2003) BY ICPOES	0.13 mg/l	5mg/l	15mg/l
TOTAL DISSOLVED SOLIDS	IS 3025:PART 16:1984(Reaff.2002)	<10 mg/l	500mg/l	2000mg/l
Remarks : Based on the above parameters the sample complies with maximum desirable and maximum permissible limit as per IS:10500:1991 (Reaff 1993) , BDL=Below Detection Limit ; DL=Detection Limit Abs=Absent * Analyzed at site				

\*\*\*\*\* End of Report \*\*\*\*\*

per pro SGS India Private Ltd.

**Dr.Nemai Ghosh**  
Manager Laboratory



## TEST REPORT

Report No. : CA:GL:3120010717

Date : 19.07.2012

JOB No 1212804732

Report Control No. 3125010862

### SAMPLE DRAWN BY SGS INDIA PVT. LTD.

<b>SAMPLE DESCRIPTION</b>	<b>MEASUREMENT OF NOISE LEVEL</b>
<b>COMPANY NAME</b>	<b>M/S. HINDALCO INDUSTRIES LIMITED (MINES DIVISION)</b>
<b>ADDRESS</b>	<b>MINES DIVISION, LOHARDAGA, JHARKHAND, PIN – 835 302</b>
<b>SAMPLING SITE</b>	<b>PAKHAR(8.09)/PAKHAR(15.58)/PAKHAR(115.13)/PAKHAR(109.509)BAUXITE MINES ( PAKHAR PLATEAU )</b>
<b>PROTOCOL</b>	<b>GENSOP/CALLAB/116</b>
<b>DATE OF SAMPLING</b>	<b>25.06.2012 TO 26.06.2012</b>
<b>TEST START DATE</b>	<b>19.07.2012</b>
<b>TEST END DATE</b>	<b>19.07.2012</b>

LOCATION	RESULT		LIMIT IN dB(A) Leq ( INDUSTRIAL AREA )	
	Day Time (L <sub>eq</sub> ) in dB(A)	Night time (L <sub>eq</sub> ) in dB(A)	Day Time	Night time
MINE LEASE AREA (NEAR SITE OFFICE)	59	52	75	70

\*\*\*\*\*End of Report\*\*\*\*\*

Note: (i) The value is the Leq of One Hundred Sixty-Eight readings taken in day time and seventy reading taken in night time.  
(ii) Day time shall mean from 6:00 am to 10:00 pm  
(iii) Night time shall mean from 10:00 pm to 6:00 am

Checked by

*for Sujit Majumdar*  
**Dipankar De Sarkar**  
Asst. Manager (Operations)

per pro SGS India Private Ltd.

*Dr. Nimai Ghosh*  
**Dr. Nimai Ghosh**  
Manager-Laboratory

Page 1 of 1

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**BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2012-13 (Up to-Sep)**

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

Sl No	Description	Budget (in Lakh Rs.)	Actual (in Lakh Rs.)
1	Pollution Control & Environment monitoring	7.50	4.50
2	Reclamation/ Back filing & Rehabilitation	**	20.60
3	Green belt & Plantation	25.00	33.04
4	Rural Development	65.00	36.30

\*\*part of OB removed cost.





## 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, Sr. Manager (Geology), Convenor.

Members:

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

By order

A handwritten signature in blue ink, appearing to read "bkh".

Bijesh Kumar Jha  
VP (Mines)

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

**PRODUCTION, MINED OUT, BACKFILLED, PRODUCTION AND OVERBURDEN REMOVAL FROM APR-12 TO SEP-12**

Name of Mines	Mining lease area (Ha)	Mined Out area (in Acres)	Backfilled area (in Acres)	Production (in MT)	Overburden Removal (in Cub.M.)
Shrengdag Bauxite Mines	155.81	6.52	6.6	133955.00	178177.00
Gurdari Bauxite Mines	584.19	7.5	7	165423.00	123688.52
Jalim & Sanai	12.14	0.9	0.1	15425.00	19280.00
Serangdag	140.06	2.5	1.6	52707.00	50247.00
Pakhar Buxite Mines	115.13	1.45	0.5	72233.00	124920.48
Pakhar Buxite Mines	8.09	0.5	0	3760.00	10500.00
Kujam-I	80.87	1.9	1.2	12998.00	3074.30
Kujam-II	157.38	8.33	6.43	134992.00	209109.49
Amtipani	190.95	7.68	6.74	67025.00	87430.64
Chiro-Kukud	152.57	2	1.2	36700.00	27525.00
Orsa Bauxite Mines	196.36	0	0	0.00	0.00
Hisri New	14.55	1.24	0	99651.00	51620.92
Bagru	75.41	1.78	1.5	84320	84477.09
<b>Minerals &amp; Minerals Limited</b>					
Pakhar Buxite Mines	109.507	5.5	3	67850.00	75608.15
Pakhar Buxite Mines	15.58	0.8	0.2	9075.00	28863.15