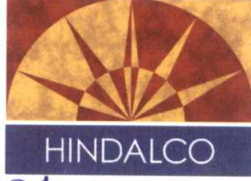


ADITYA BIRLA



Ref No: HIL/LHD/VP (M)/MoEF/ 684

Date: 26.05.14

To,
Joint Director(S)
MoEF ,GOI, Eastern Regional Office
A/3, Chandrashekharpur,
Bhubaneswar- 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'13 to March'14.

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'13 to March'14**.

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

HINDALCO INDUSTRIES LIMITED

Hindalco Complex
Court Road, Lohardaga-835302
Distt. Lohardaga (Jharkhand)

Telephone +91 6526 224112/224015/223113
Fax +91 6526 224118

Website www.hindalco.com

Compliance of conditions laid down in Environmental Clearance

HISRI (NEW) BAUXITE MINES(14.55 Ha)

Period :Oct'13 – March'14

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 and Consent to Operate has been obtained prior to start of mining. Implementations of stipulated conditions are fulfilled.
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.

	<p>level. 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 month basis.</p>	
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>	<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.</p>
9	<p>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.</p>	<p>The dimensions of the retaining wall OB dumps are based on the average rainfall.</p>
10	<p>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.</p>	<p>Being carried out progressively. During FY 2013-14 –around 1000 saplings planted in this mine.</p>

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.	Effective safe guard measures, such as regular water sprinkling are being carried out in critical areas prone to air pollution. Regular Ambient Air Quality monitoring are being carried out.
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.	Monitoring is being done, water quality report enclosed.
15.	It shall be ensured that there is no change in the hydrology of the area due to the project.	Being adhered to.
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.	Suitable rain water harvesting measures on long term basis have been planned and implemented.

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.	Appropriate mitigative measures have been taken to prevent pollution of the Kisco Nadi, the Sukri Nadi and other rivers in the buffer zone of the mine.
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.	Blasting operation is being carried out only during the daytime. Controlled blasting is in practice. The mitigative measures for control of ground vibration and to arrest fly rocks and boulders are being implemented.
21	Drills shall either be operated with dust extractors or equipped with water injection system.	Wet drilling is done in the drill holes intermittently for dust suppression by pumping water.
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.	We are exploring the possibilities. However, water sprinkling is being carried out regularly at loading and unloading areas.
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	System is already in place.

	drinking water, medical health care, crèche etc. 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 , 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. Monitoring report enclosed.
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.	Being adhered to.
2	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	Mining of ore and OB is being done as per approved calendar plan.
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.	Conservation measures for protection of flora and fauna in the core & buffer zone has been drawn up in consultation with the local forest and wildlife department.
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) PM _{2.5}) & NO _x monitoring. Location of the stations should be decided based on the	Being carried out. Enclosed as Annexure.

	metrological data, topographical features and 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.	Water spraying arrangements on haul roads, loading and unloading and at transfer points have been provided and properly maintained.
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.	Measures are being taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operation of HEMM, etc. has been provided with ear plug / muffs.
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.	Is being done as applicable.
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.	Complied. Use of Personal Protective Equipment (PPE) by the individuals is being ensured. All the mine workers are being regularly and periodically sent to our own hospital for health checkup for any contraction of diseases due to exposure in dusty and noisy areas. Training on safety, health and environmental aspects of mining is being regularly imparted through VT centre and also through various other training programmes conducted by the State Government, recognized agencies, etc

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 reported to the Ministry and its Regional Office located at Bhubneshwar.	The fund earmarked for environmental protection measures is being kept in separate account. Year wise expenditure is being reported to the Ministry and its 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. Date of Financial closure is 31 st March.
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.	Duly submitted.
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	Duly submitted.

	received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	
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.	Displayed.
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.	Submitted.
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 and informed.




BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2013-14

The composite cost during the year 2013-14 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of 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 New (14.55 Ha), Chiro kukud, Orsa pat(196.36 Ha), Bhusar (65.31 Ha)& Bimarla Bauxite Mines (134.52 Ha).

Sl No	Description	Budget (in Lakh Rupees) FY 2013-2014	Actual (in Lakh Rupees) FY 2013-2014 from April'13 to Sep'13	Actual (in Lakh Rupees) FY 2013-2014 from Oct'13 to March'14
1	Pollution Control & Environment monitoring	10.00	6.44	-
2	Reclamation/ Back filing & Rehabilitation	**	153.60	71.50
3	Green belt & Plantation	40.00	30.75	9.50
4	Rural Development	70.00	67.72	85.35

**Part of OB removed cost.


 Convener

Environment Management Cell.



Date: 30.10.13

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:

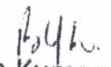
The Environment Management Cell will consist of:

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

Members:

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

By order


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-13 TO MAR-14

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	25.95	19.20	253610.00	371290
Gurdari Bauxite Mines	584.19	33.20	25.60	313975.00	487773
Jalim & Sanai	12.14	4.00	2.00	49445.00	30124
Serangdag	140.06	7.96	3.48	99795.00	98371
Pakhar Buxite Mines	115.13	3.71	5.09	296950.00	449483
Pakhar Buxite Mines	8.09	1.70	0.80	68400.00	11380
Kujam-I	80.87	14.12	7.52	149255.00	99902
Kujam-II	157.38	5.41	3.60	149790.00	82386
Amtipani	190.95	16.46	16.03	149665.00	419976
Chiro-Kukud	152.57	2.90	6.18	52929.00	62222
Orsa Bauxite Mines	196.36	0.00	0.00	0.00	0
Hisri New	14.55	1.17	0.00	93813.00	6699
Bagru	75.41	0.94	0.24	56804.00	31935
Bhusar	65.31	2.26	8.32	203532.00	150616
Minerals & Minerals Limited					
Pakhar Buxite Mines	109.507	7.61	6.45	234500.00	210702
Pakhar Buxite Mines	15.58	1.45	1.85	57065.00	174812

Monitored water level

Location (Mines)	Elevation (feet)	Elevation (Mtr)	Well type	Monsoon 2013		Post Monsoon 2013		Winter		Pre Monsoon		
				Inside ML	Outside ML	Inside ML	Outside ML	Inside ML	Outside ML	Inside ML	Outside ML	
Bagru	2970	905	Open Well		21.70		24.10			27.32		29.23
	2985	910	Open Well		24.20		24.50			26.89		27.19
	3001	915	Open Well		29.30		28.40			30.14		31.26
	2963	903	Open Well		22.90		33.10			35.21		35.89
	2983	909	Open Well		17.60		28.70			29.62		30.18
Pakhar	3279	1000	Open Well		24.90		22.60			24.51		25.93
	3552	1083	Hand Pump	35.40		31.60		34.34			35.49	
Sherengdag	3370	1027	Open Well		25.80		28.30			30.53		31.42
	3587	1094	Hand Pump	41.80		39.58		42.13			42.56	
	3546	1081	Hand Pump	39.60		31.26		41.37			41.31	
	3459	1055	Hand Pump	33.10		27.50		35.31			35.35	
	3495	1066	Hand Pump	27.70		26.13		29.12			30.25	
Gurdari	3428	1045	Hand Pump	29.34		27.85		29.64			30.41	
	3481	1061	Hand Pump	28.30		24.87		25.42			26.79	
	3472	1059	Hand Pump	38.10		36.63		35.21			35.98	
	3527	1075	Hand Pump	28.20		26.83		28.49			29.53	
	3526	1075	Hand Pump	28.30		29.32		30.29			30.05	
Kujam	3412	1040	Open Well		33.90		21.80			35.21		36.78
	3414	1041	Open Well		33.70		24.80			36.54		39.52
	3491	1064	Hand Pump	31.50		28.60		35.91		42.12		
Chiro Kukud	3450	1052	Hand Pump				21.12			24.13		23.54
	3765	1148	Hand Pump	33.40		28.35		34.12			37.26	
	3776	1151	Hand Pump	37.60		31.84		36.67			36.21	
	3556	1084	Hand Pump	34.30		36.85		35.69			39.19	

B. Chaudhary



Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 29/01/2014

Report No : KG14-000217.001

JOE No : KG14-000217

Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING
Report Control No : KGR0000045914

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : AMBIENT AIR QUALITY MONITORING
Received : 09/01/2014
Registered : 09/01/2014
Marks on Sample : Location : Bhusar Mine (pit) (Bagru Plateau), Sampling date : 21.12.2013
Test Start/End Date : 09/01/2014 - 14/01/2014

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:5182 (PART 23)	51.11	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	6.92	ug/m3	-	60
Nitrogen Dioxide (NO2)	IS:5182 (Part-6):1975 (Reaff 2004)	8.70	ug/m3	-	80
Sulphur Dioxide (SO2)	IS:5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	-	80
Carbon Monoxide (CO)	EPA 600/P-99/001F	<0.10	PPM		
<i>Analyzed at site.</i>					

Page 1 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd. | SGS India Pvt Ltd, CS Plot -512(p), Mouza, Hanspukura, Diamond Harbour Rd PO-Joka, South 24 Parganas Kolkata - 700104 Phone: +91 33 65009334/9335, Fax: +91 033-24301022
Regd & Corp. Off. | SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com



Test Report

Report No : KG14-000217.001

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 29/01/2014

JOE No : KG14-000217

Report Control No : KGR0000045914

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd, CS Plot -512(p), Mouza, Hanspukuna, Diamond Harbour Rd PO-Joka, South 24 Parganas, Kolkata - 700104 Phone +91 33 65009334/9335, Fax +91 033-24381022
Regd & Corp. Off. SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083 Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 29/01/2014

Report No : KG14-000217.002

JOE No : KG14-000217

Report Control No : KGR0000045914
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 : 09/01/2014
Registered : 09/01/2014
Marks on Sample : Location: Bagru Colony near office bagru plateau, sampling : 21.12.2013
Test Start/End Date : 09/01/2014 - 14/01/2014

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:5182 (PART 23)	73.64	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	46.87	ug/m3	-	60
Nitrogen Dioxide (NO2)	IS 5182 (Part-6):1975 (Reaff 2004)	<5.00	ug/m3	-	80
Sulphur Dioxide (SO2)	IS 5182 (Part-2):2001 (Reaff 2006)	<5.00	ug/m3	-	80
Carbon Monoxide (CO)	EPA 600/P-99/001F	<0.10	PPM	-	-

Analyzed at site.

Page 1 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd, CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd PO-Joka, South 24 Parganas Kolkata - 700104 Phone +91 33 65009334/9335, Fax: +91 033-24381022
Regd & Corp Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083 Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

Report No : KG14-000217.002


SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 29/01/2014

JOE No : KG14-000217

Report Control No : KGR0000045914

Per pro SGS India Private Ltd


Satya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt.Ltd.,CS Plot -512(p), Mezza, Hanspukuria,Diamond Harbour Rd PO-Joka, South 24 Parganas Kolkata - 700104 Phone:+91 33 65009334/9335 Fax: +91 033-24381022
Regd & Corp. Off SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083 Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 29/01/2014

Report No : KG14-000217.003

JOE No : KG14-000217

Report Control No : KGR0000045914

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 : 09/01/2014
Registered : 09/01/2014
Marks on Sample : Location : Hisri Pit(Bagru plateau), Sampling date : 22.12.2013
Test Start/End Date : 09/01/2014 - 14/01/2014

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:5182 (PART 23)	37.04	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	28.54	ug/m3	-	60
Nitrogen Dioxide (NO2)	IS:5182 (Part-6):1975 (Reaff.2004)	7.23	ug/m3	-	80
Sulphur Dioxide (SO2)	IS:5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	-	80
Carbon Monoxide (CO)	EPA 600/P-99/001F	<0.10	PPM		
<i>Analyzed at site</i>					

Page 1 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd., CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd PO-Joka, South 24 Parganas, Kolkata - 700104 Phone: +91 33 65009334/9335, Fax: +91 033-24381022
Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

Report No : KG14-000217.003


SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 29/01/2014

JOE No : KG14-000217

Report Control No : KGR0000045914

Per pro SGS India Private Ltd


Satya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd

SGS India Pvt Ltd, CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd, PO-Joka, South 24 Parganas, Kolkata - 700104, Phone: +91 33 65009334/9335, Fax: +91 033-24381022
Repd & Corp. Off. SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 29/01/2014

Report No : KG14-000217.004

JOE No : KG14-000217

Report Control No : KGR0000045914
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 : 09/01/2014
Registered : 09/01/2014
Marks on Sample : Location : Kekrang Village (Bagru plateau), Sampling date : 22.12.2013
Test Start/End Date : 09/01/2014 - 14/01/2014

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:5182 (PART 23)	57.97	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	32.04	ug/m3	-	60
Nitrogen Dioxide (NO2)	IS:5182 (Part-6):1975 (Reaff.2004)	<5.00	ug/m3	-	80
Sulphur Dioxide (SO2)	IS:5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	-	80
Carbon Monoxide (CO)	EPA 600/P-99/001F	<0.10	PPM		

Analyzed at site.

Page 1 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd, CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd PO-Joka, South 24 Parganas, Kolkata - 700104, Phone: +91 33 65009334/9335, Fax: +91 033-24381022
Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

Report No : KG14-000217.004

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 29/01/2014

JOE No : KG14-000217

Report Control No : KGR0000045914

Per pro SGS India Private Ltd



Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd, CS Plot - 512(p), Meuza, Hanspukuria, Diamond Harbour Rd PO-Joka, South 24 Parganas Kolkata - 700104, Phone: +91 33 65009334/9335, Fax: +91 033-24361022

Regd & Corp. Off.: SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



TEST REPORT

Report No. : KG14-000254.001

Date :11.01.2014

JOE No. : KG13-000254

Report Control No. : KGR0000044243

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

SAMPLE DESCRIPTION	MEASUREMENT OF NOISE LEVEL
COMPANY NAME	M/S. HINDALCO INDUSTRIES LIMITED (MINES DIVISION)
ADDRESS	MINES DIVISION, LOHARDAGA, JHARKHAND, PIN – 835 302
SAMPLING SITE	BAGRU MINES (BAGRU PLATEAU)
PROTOCOL	IS:9989/IS:7194
DATE OF SAMPLING	21.12.2013 TO 22.12.2013
TEST START DATE	10.01.2014
TEST END DATE	11.01.2014

LOCATION	RESULT		LIMIT IN dB(A) Leq (INDUSTRIAL AREA)	
	Day Time (L _{eq}) in dB(A)	Night time (L _{eq}) in dB(A)	Day Time	Night time
NEAR HINDALCO OFFICE	52	47	75	70

Note: (i) The value is the Leq of One Hundred Seventy 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

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

Checked by

per pro SGS India Private Ltd.

Dipankar De Sarkar
Manager (Operations)

Dr. Asish Chakraborty
Manager-Laboratory

Page 1 of 1

This This document is issued by the Company subject to its General Conditions of Service accessible at www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Any holder of his document is advised that information contained here on reflect the company finding at the time of its intervention only and with in the limit of client instructions, if any. The company sole responsibility is to its client and this document does not exonerate party to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless other wise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The sample from regulatory bodies are to be retained as specified. This document cannot be reproduced, except in full, without prior written approval of the Company.

SGS India Pvt. Ltd .Laboratory, CS Plot-512(p), Mouza, Hanspukuria, Diamond Harbour Road, PO.-Joke South 24 Parganas, Kolkata-700104 Phone : 91-33-65009334, 65009335
Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 20/01/2014

Report No : KG14-000157.001

JOE No : KG14-000157

Report Control No : KGR0000045067

Sample Described by Customer as : DRINKING WATER

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : DRINKING WATER
Received : 08/01/2014
Registered : 08/01/2014
Marks on Sample : Location:Bagru Colony Tap(Near Guest House)
- : Bagru Plateau
Quantity : 5.5L app
Sample Collected on : 06.01.2014
Sampling Method : APHA 1060B/9060A
Test Start/End Date : 08/01/2014 - 20/01/2014

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-8):1983 (Reaff.2006)	Agreeable		Agreeable	Agreeable
pH	IS:3025 (Part-11):1983 (Reaff.2006)	7.47		6.5	8.5
<i>Analyzed at site.</i>					
Total Hardness (as CaCO ₃)	IS:3025 (Part-21):1983 (Reaff.2006)	204.60	mg/L	200	600
Iron (as Fe)	IS:3025 (Part-2)	0.06	mg/L	0.3	No relaxation
Fluoride (as F)	IS:3025 (Part-60):2008	0.45	mg/L	1.0	1.5
Residual Free Chlorine	IS:3025 (Part-26):1986 (Reaff.2003)	<0.10	mg/L	0.2	1.0

Page 1 of 3

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd., CS Plot -512(p), Mouza, Hanapukuria, Diamond Harbour Rd PO-Joka, South 24 Parganas Kolkata - 700104 Phone: +91 33 65009334/9335 Fax: +91 033-24381022
Regd & Corp. Off: SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083 Tel.: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 20/01/2014

Report No : KG14-000157.001

JOE No : KG14-000157

Report Control No : KGR0000045067

Analysis	Method	Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissible
Chloride (as Cl)	IS:3025 (Part-32):1986 (Reaff.1999)	<5.00	mg/L	250	1000
Total Dissolved Solids	IS:3025 (Part-16):1984 (Reaff.1996)	278.60	mg/L	500	2000
E.coli	IS:1622:1981(Reaff.2003)	Absent	per 100ml		
Coliform bacteria	IS:1622-1981 (Reaffirmation 2003)	Absent	per 100ml		
Calcium (as Ca)	IS:3025 (Part-40):1991 (Reaff.2003)	52.08	mg/L	75	200
Magnesium (as Mg)	IS:3025 (Part-46):1994 (Reaff.1999)	18.08	mg/L	30	100
Copper (as Cu)	IS:3025 (Part-2)	<0.01	mg/L	0.05	1.5
Manganese (as Mn)	IS:3025 (Part-2)	0.02	mg/L	0.1	0.3
Sulphate (as SO4)	IS:3025 (Part-24):1986 (Reaff.1998)	<2.00	mg/L	200	400
Nitrate (as NO3)	IS:3025 (Part-34):1988 (Reaff.1999)	<0.50	mg/L	45	No relaxation
Phenolic Compound (as C6H5OH)	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)	0.008	mg/L	0.01	No relaxation
Zinc (as Zn)	IS:3025 (Part-2)	0.33	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

Page 2 of 3

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd., CS Plot -512(p), Mouza, Hanspurkura, Diamond Harbour Rd, PO-Joka, South 24 Parganas Kolkata - 700104 Phone: +91 33 65009334/0335, Fax: +91 033-24381022
 Regd & Corp Off: SGS House, 4B, A.S. Maru, Vikhroli (West), Mumbai-400083. Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 20/01/2014

Report No : KG14-000157.001

JOE No : KG14-000157

Report Control No : KGR0000045067

Analysis	Method	Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissible
Total Alkalinity (as CaCO3)	IS:3025 (Part-23):1986 (Reaff.2003)	197.54	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	<0.05	mg/L	0.5	1.0
Turbidity	IS:3025 (Part-10):1984 (Reaff.2006)	<0.02	NTU	1	5

Per pro SGS India Private Ltd

Aniruddha Das

Section Incharge-Microbiology

Authorized Signatory

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

Page 3 of 3

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd, CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd PO-Joka, South 24 Parganas Kolkata - 700104, Phone: +91 33 65009334/9335, Fax: +91 033-24381022
Regd & Corp. Off. SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

Print Date : 30/01/2014

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG14-000133.001

JOE No : KG14-000133

Report Control No : KGR0000046000
Sample Described by Customer as : EFFLUENT

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : EFFLUENT
Received : 08/01/2014
Registered : 08/01/2014
Marks on Sample : Location : STP Inlet(Bagru mines) (Bagru Plateau)
Sample Collected on : 06.01.2014
Sampling Site : Bagru Bauxite Mines(Bagru Plateau)
Quantity : 4L app
Sampling Method : APHA 1060B
Test Start/End Date : 08/01/2014 - 15/01/2014

Analysis	Method	Result	Unit
pH	APHA 22nd. EDN.:2012-4500-B	7.89*	
Total Suspended Solids	APHA 22 nd EDN.:2012-2540 D	38.50	mg/L
BOD @ 27 deg C for 3 days	IS:3025 (Part-44):1993 (Reaff 2003)	27.84	mg/L
Oil & Grease	APHA 22 nd EDN.:2012-5520 B	2.04	mg/L
Aluminium (as Al)	APHA 22nd. EDN.:2012-3120 B	<0.05	mg/L
Calcium (as Ca)	APHA 22nd. EDN.:2012-3120 B	24.06	mg/L
Iron (as Fe)	APHA 22nd. EDN.:2012-3120 B	0.81	mg/L
Total Dissolved Solids (TDS)	APHA 22 nd. EDN.:2012-2540 C	495.80	mg/L

*Analyzed at site.

Page 1 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

152, New Baradwan, Layout Extension, Sakchi, Jamshedpur - 831 001, Jharkhand Phone : (0657) 2422919

SGS India Pvt Ltd., CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd, PO-Joka, South 24 Parganas, Kolkata - 700104, Phone: +91 33 65009334/9335, Fax: +91 033-24381022

SGS India Pvt. Ltd. Regd & Corp Off: SGS House, 4B, A S Marg, Vikhroli (West), Mumbai-400083, Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

Print Date : 30/01/2014


SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG14-000133.001

JOE No : KG14-000133

Report Control No : KGR0000046000

Per pro SGS India Private Ltd


Satya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

152, New Beradwari, Layout Extension, Sakchi, Jamshedpur - 831 001, Jharkhand Phone : (0657) 2422619

SGS India Pvt Ltd, CS Plot - 512(p), Mouza, Hanspukuria, Diamond Harbour Rd PO-Joka, South 24 Parganas, Kolkata - 700104 Phone: +91 33 65009334/9335, Fax: +91 033-24381022

SGS India Pvt. Ltd, Regd & Corp. Off : SGS House, 4B, A S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 26 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 18/01/2014

Report No : KG14-000150.001

JOE No : KG14-000150

Sample Described by Customer as : EFFLUENT Report Control No : KGR0000044947

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : EFFLUENT
Received : 08/01/2014
Registered : 08/01/2014
Marks on Sample : Location : STP Outlet
Sample Collected on : 06.01.2014
Sampling Site : Bagru Mines, Bagru Plateau
Quantity : 4L app
Test Start/End Date : 08/01/2014 - 18/01/2014

Analysis	Method	Result	Unit	Requirement/Limit as Per	
				Min	Max
pH	APHA 22nd. EDN.:2012-4500-B	7.73*		5.5	9.0
Total Suspended Solids	APHA 22 nd EDN.:2012-2540 D	17.55	mg/L		200mg/l
BOD @ 27 deg C for 3 days	IS.3025 (Part-44):1993 (Reaff.2003)	6.55	mg/L		100mg/l
Oil & Grease	APHA 22 nd. EDN. 2012-5520 B	<2.00	mg/L		10mg/l
Total Dissolved Solids (TDS)	APHA 22 nd. EDN.:2012-2540 C	383.20	mg/L		N/A
Aluminium (as Al)	APHA 22nd. EDN.:2012-3120 B	<0.05	mg/L		N/A
Calcium (as Ca)	APHA 22nd. EDN. 2012-3120 B	20.74	mg/L		N/A
Iron (as Fe)	APHA 22nd. EDN.:2012-3120 B	0.62	mg/L		N/A

Remark : * analysed at site.

Page 1 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd., CS Plot -512(p), Mouza, Hanspukuria Diamond Harbour Rd. PO-Joka, South 24 Parganas, Kolkata - 700104. Phone +91 33 65009334/9335, Fax: +91 033-24381022
Regd & Corp. Off: SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 18/01/2014

Report No : KG14-000150.001

JOE No : KG14-000150

Report Control No : KGR0000044947

Per pro SGS India Private Ltd

Satya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd, C6 Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd, PO-Joka, South 24 Parganas, Kolkata - 700104 Phone +91 33 65009334/9335 Fax +91 033-24381022
Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083 Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 18/01/2014

Report No : KG14-000150.002

JOE No : KG14-000150

Report Control No : KGR0000044947
Sample Described by Customer as : EFFLUENT

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : EFFLUENT
Received : 08/01/2014
Registered : 08/01/2014
Marks on Sample : Location :Maintenance Garage
Sample Collected on : 06.01.2014
Sampling Site : Bagru Mines, Bagru Plateau
Quantity : 4L app
Test Start/End Date : 08/01/2014 - 18/01/2014

Analysis	Method	Result	Unit	Requirement/Limit as Per	
				Min	Max
pH	APHA 22nd. EDN.:2012-4500-B	8.11*		5.5	9.0
Total Suspended Solids	APHA 22 nd EDN.:2012-2540 D	28.05	mg/L		200mg/l
BOD @ 27 deg C for 3 days	IS 3025 (Part-44):1993 (Reaff.2003)	10.40	mg/L		100mg/l
Oil & Grease	APHA 22 nd. EDN.:2012-5520 B	<2.00	mg/L		10mg/l
Total Dissolved Solids (TDS)	APHA 22 nd. EDN.:2012-2540 C	158.00	mg/L		N/A
Aluminium (as Al)	APHA 22nd. EDN.:2012-3120 B	0.56	mg/L		N/A
Calcium (as Ca)	APHA 22nd. EDN.:2012-3120 B	21.35	mg/L		N/A
Iron (as Fe)	APHA 22nd. EDN.:2012-3120 B	0.68	mg/L		N/A

Remark : * analysed at site.

Page 1 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd. CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd PO-Joka, South 24 Parganas Kolkata - 700104 Phone: +91 33 65009334/9335 Fax: +91 033-24381022
Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 18/01/2014

Report No : KG14-000150.002

JOE No : KG14-000150

Report Control No : KGR0000044947

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt.Ltd.,CS Plot -512(p) ,Mouza, Hanspukuria,Diamond Harbour Rd,PO-Joka, South 24 Parganas,Kolkata - 700104 Phone +91 33 65069334/9335,Fax: +91 033-24381022
Regd & Corp. Off : SGS House, 4B, A S Marg, Vikhroli (West), Mumbai-400083 Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 30/01/2014

Report No : KG14-000234.001

JOE No : KG14-000234

Sample Described by Customer as : FUGITIVE AIR
Report Control No : KGR0000045988

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : FUGITIVE AIR
Received : 10/01/2014
Registered : 10/01/2014
Marks on Sample : Location: Bhusar Pit(Bhusar Mine)(Bagru Plateau), date : 06.01.2014
Test Start/End Date : 10/01/2014 - 15/01/2014

Analysis	Method	Result	Unit	Requirement/Limit as Per FACTORY ACT. 1948 & BIHAR/JHARKAND FACTORY RULE-1950
Suspended Particulate Matter (SPM)	IS:5182 (Part-23) 2006	638.97	ug/m3	Min 10000 Max

Per pro SGS India Private Ltd

Satya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

Page 1 of 1

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd, CS Plot -512(p), Mouza, Hanspukuria Diamond Harbour Rd, PO-Joka, South 24 Parganas Kolkata - 700104 Phone: +91 33 85009334/8335, Fax: +91 033-24381022

Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25796431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



TEST REPORT

REPORT NO.:KG14-000176.001

Date : 13.01.2014

JOE NO : KG14-000176

Report Control No. KGR000044341

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: 22.12.2013 (12:10 – 12:40 Hrs)

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

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 : 90 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 Lt/Hr.

D. PARAMETERS	PROTOCOL	RESULTS	Limit as per MOEF G.S.R.448(E)
1. Temperature of emission (°C)	IS 11255 Part : 3 1985 (Reaff.2008)	315	...
2. Barometric pressure (mm of Hg)	IS 11255 Part : 3 1985 (Reaff.2008)	681	...
3. Velocity of gas (m/sec.)	IS 11255 Part : 3 1985 (Reaff.2008)	9.67	...
4. Quantity of gas flow (Nm ³ /hr.)	IS 11255 Part : 3 1985 (Reaff.2008)	496	...
5. Concentration of Carbon dioxide (% v/v)	IS 11255 Part : 3 1985 (Reaff.2008)	6.4	...
6. Concentration of Carbon monoxide (gm/kw-h)	IS 11255 Part : 3 1985 (Reaff.2008)	0.35	5.0
7. Concentration of Sulphur dioxide (mg/Nm ³)	USEPA – 6C	51	...
8. Concentration of Nitrogen dioxide (gm/kw-h)	USEPA – 7E	0.66	9.2
9. Concentration of Oxygen (% v/v)	IS 11255 Part : 3 1985 (Reaff.2008)	13.6	...
10. Concentration of Particulate Matters(gm/kw-h)	IS 11255 Part : 1 1985 (Reaff.2003)	0.12	0.3

E. Pollution control device

Details of pollution control devices attached with the stack : Nil

F. Remarks : Nil

Checked by

End of Report

per pro SGS India Private Ltd.

Dipankar De Sarkar
Manager (Operations)

Dr. Asish Chakraborty
Manager-Laboratory

Page 1 of 1

This document is issued by the Company subject to its General Conditions of Service accessible at www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Any holder of this document is advised that information contained here on reflect the company finding at the time of its intervention only and with in the limit of client instructions, if any. The company sole responsibility is to its client and this document does not exonerate party to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless other wise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The sample from regulatory bodies are to be retained as specified. This document cannot be reproduced, except in full, without prior written approval of the Company.



TEST REPORT

REPORT NO.: KG14-000177.001		Date : 13.01.2014
JOE NO : KG14-000177		Report Control No. KGR0000044344
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: 22.12.2013 (09:50 – 10:20 Hrs)		
Sampling Site : Crusher Large, Bagru Mines (Bagru Plateau)		
A. General information about stack :		
1. Stack connected to	: Crusher Large	
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	
B. Physical characteristics of stack :		
1. Height of the stack (a) from ground level	: 9.5 M	
2. Diameter of the stack at sampling point	: 0.2032 M	
3. Height of the sampling point from GL	: 6.7 M	
C. Analysis/Characteristic of Stack :		
1. Fuel used : H.S.D	2. Fuel Consumption: 13 Lt/Hr.	
D. PARAMETERS	PROTOCOL	RESULTS
1. Temperature of emission (°C)	IS 11255:Part 3 :1985(Reaff.2008)	184
2. Barometric pressure (mm of Hg)	IS 11255:Part 3 :1985(Reaff.2008)	681
3. Velocity of gas (m/sec.)	IS 11255:Part 3 :1985(Reaff.2008)	12.48
4. Quantity of gas flow (Nm ³ /hr.)	IS 11255:Part 3 :1985(Reaff.2008)	825
5. Concentration of Carbon dioxide (% v/v)	IS 11255:Part 3 :1985(Reaff.2008)	6.8
6. Concentration of Carbon monoxide (mg/Nm ³)	IS 11255:Part 3 :1985(Reaff.2008)	48
7. Concentration of Oxygen (% v/v)	IS 11255:Part 3 :1985(Reaff.2008)	13.2
8. Concentration of Particulate Matters (mg/Nm ³)	IS 11255 Part : 1 1985 (Reaff.2003)	73
E. Pollution control device		
Details of pollution control devices attached with the stack : Nil		
F. Remarks : Nil		

End of Report

Checked by

per pro SGS India Private Ltd.

Dipankar De Sarkar
Manager (Operations)

Dr. Asish Chakraborty
Manager-Laboratory

This document is issued by the Company subject to its General Conditions of Service accessible at www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Any holder of this document is advised that information contained here on reflect the company finding at the time of its intervention only and with in the limit of client instructions, if any. The company sole responsibility is to its client and this document does not exonerate party to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless other wise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The sample from regulatory bodies are to be retained as specified. This document cannot be reproduced, except in full, without prior written approval of the Company.



Test Report

Print Date : 29/01/2014

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG14-000134.001

JOE No : KG14-000134

Report Control No : KGR0000045884

Sample Described by Customer as : SOIL

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : SOIL
Received : 08/01/2014
Registered : 08/01/2014
Marks on Sample : Location:Re-claim Area(Bhusher Mines,Bagru Plateau)
Sample Collected on : 06.01.2014
Quantity : 2.5Kg app
Test Start/End Date : 08/01/2014 - 22/01/2014

Analysis	Method	Result	Unit
Conductivity (1:5) Soil Suspension.	F.A.U.N (2007)	10.6	µs/cm
pH (1:2) Soil Suspension	F.A.U.N (2007)	6.10	--
Porosity	F.A.U.N (2007)	56.63	%
Bulk Density	By Bulk Density Apparatus	1.06	gram/ml
Phosphorus (as P)	F.A.U.N (2007)	<20.000	mg/kg
Texture	F.A.U.N (2007)	Sandy clay	
Clay	F.A.U.N (2007)	41.8	%
Sand	F.A.U.N (2007)	42.2	%
Silt	F.A.U.N (2007)	16.0	%
Available Chloride (as Cl)	Soil & Agriculture Organization (U.N-2007)	<20.00	mg/kg
Available Nitrogen	Food & Agriculture Organization (U.N-2007)	326.92	mg/kg
Available Potassium (as K)	Soil & Water Book By P.K. Gupta	1893.15	mg/kg

Page 1 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

152, New Baradwari, Layout Extension, Sakchi, Jamshedpur - 831 001, Jharkhand Phone : (0657) 2422919

SGS India Pvt Ltd., CS Plot -512(p), Mouza, Hanspukuria Diamond Harbour Rd, PO-Joka, South 24 Parganas Kolkata - 700104 Phone: +91 33 85009334/9335, Fax: +91 033-24381022

SGS India Pvt. Ltd. Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25796421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

Print Date : 29/01/2014

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG14-000134.001

JOE No : KG14-000134

Report Control No : KGR0000045884

Analysis	Method	Result	Unit
Available Magnesium (as Mg)	Soil & Water Book By P.K Gupta	2196.98	mg/kg
Lead (as Pb)	USEPA 3052	18.83	mg/kg
Chromium (as Cr)	USEPA 3052	48.32	mg/kg
Mercury (as Hg)	USEPA 3052	<1.00	mg/kg
Total Organic Matter	Black & Walkely Wet Digestion Method	0.49	%

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

152, New Baradwan, Layout Extension, Sakchi, Jamshedpur - 831 001, Jharkhand Phone : (0657) 2422919

SGS India Pvt. Ltd., CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd, PO-Joka, South 24 Parganas Kolkata - 700104 Phone: +91 33 65009334/9335, Fax: +91 033-24381022

SGS India Pvt. Ltd. Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



TEST REPORT

Report No. : KG17-000179.001-004

Date : 10.01.2014

JOE No : KG14-000179

Report Control No:KGR0000044179

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 : BHUSAR MINES (BAGRU PLATEAU)
PROTOCOL : GENSOP/CALLAB-116
TEST START DATE : 09.01.2014
TEST END DATE : 10.01.2014

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.	WAGON DRILL (ROC-203)	23.12.2013 (11:03 Hrs)	83	75
2.	ATLAS COPCO – XAH – 210)	23.12.2013 (11:12 Hrs)	81	75
3.	DUMPER (TATA PRIMA 25280K)	23.12.2013 (11:20 Hrs)	73	75
4.	POCKLEN (TATA HITACHI EX- 850 KCGV)	23.12.2013 (11:30 Hrs)	78	75

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

****End of Report****

Checked by

per pro SGS India Private Ltd.

Dipankar De Sarkar
Manager (Operations)

Dr. Asish Chakraborty
Manager-Laboratory

Page 1 of 1

This This document is issued by the Company subject to its General Conditions of Service accessible at www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Any holder of his document is advised that information contained here on reflect the company finding at the time of its intervention only and with in the limit of client instructions, if any. The company sole responsibility is to its client and this document does not exonerate party to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless other wise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The sample from regulatory bodies are to be retained as specified. This document cannot be reproduced, except in full, without prior written approval of the Company.



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 20/01/2014

Report No : KG14-000164.001

JOE No : KG14-000164

Report Control No : KGR0000045103

Sample Described by Customer as : SURFACE WATER

Client Name : Hindalco Industries Limited(Mines Division)
 Client Address : Lohardaga,
 Postal Code : 835203
 State : Jharkhand
 Country : India
 Sample Type : SURFACE WATER
 Received : 08/01/2014
 Registered : 08/01/2014
 Marks on Sample : Location:Pond Bhusher V-25
 - : Bagru Plateau
 Quantity : 5.5L app
 Sample Collected on : 06.01.2014
 Sampling Method : APHA 1060B/9060A
 Test Start/End Date : 08/01/2014 - 20/01/2014

Analysis	Method	Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissible
Colour	IS:3025 (Part-4):1983 (Reaff.2006)	5.0	H _z	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)	7.59		6.5	8.5
<i>Analyzed at site.</i>					
Total Hardness (as CaCO ₃)	IS:3025 (Part-21):1983 (Reaff.2006)	14.88	mg/L	200	600
Iron (as Fe)	IS:3025 (Part-2)	<0.05	mg/L	0.3	No relaxation
Fluoride (as F)	IS:3025 (Part-60):2008	0.37	mg/L	1.0	1.5
Residual Free Chlorine	IS:3025 (Part-26):1986 (Reaff.2003)	<0.10	mg/L	0.2	1.0

Page 1 of 3

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd., CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd, PO-Joka, South 24 Parganas Kolkata - 700104. Phone +91 33 65009334/9335, Fax: +91 033-24381022

Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 20/01/2014

Report No : KG14-000164 001

JOE No : KG14-000164

Report Control No : KGR0000045103

Analysis	Method	Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissible
Chloride (as Cl)	IS:3025 (Part-32):1988 (Reaff 1999)	<5.00	mg/L	250	1000
Total Dissolved Solids	IS:3025 (Part-16):1984 (Reaff 1996)	37.00	mg/L	500	2000
E.coli	IS:1622:1981(Reaff 2003)	Absent	per 100ml		
Coliform bacteria	IS:1622-1981 (Reaffirmation 2003)	Present(34cfu)	per 100ml		
Calcium (as Ca)	IS:3025 (Part-40):1991 (Reaff 2003)	3.72	mg/L	75	200
Magnesium (as Mg)	IS:3025 (Part-46):1994 (Reaff 1999)	1.36	mg/L	30	100
Copper (as Cu)	IS:3025 (Part-2)	<0.01	mg/L	0.05	1.5
Manganese (as Mn)	IS:3025 (Part-2)	0.12	mg/L	0.1	0.3
Sulphate (as SO4)	IS:3025 (Part-24):1986 (Reaff 1998)	<2.00	mg/L	200	400
Nitrate (as NO3)	IS:3025 (Part-34):1988 (Reaff 1999)	16.48	mg/L	45	No relaxation
Phenolic Compound (as C6H5OH)	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)	0.01	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

Page 2 of 3

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd., CS Plot -512(p), Mouza, Hanspukuria Diamond Harbour Rd PO-Joka, South 24 Parganas Kolkata - 700104 Phone: +91 33 65009334/9335 Fax: +91 033-24381022
Regd & Corp. Off: SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400053 Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 20/01/2014

Report No : KG14-000164.001

JOE No : KG14-000164

Report Control No : KGR0000045103

Analysis	Method	Result	Unit	Requirement/Limit As per IS:10500:2012	
				Acceptable	Permissible
Total Alkalinity (as CaCO ₃)	IS:3025 (Part-23):1986 (Reaff.2003)	<2.00	mg/L	200	600
Aluminium (as Al)	IS:3025 (Part-55):2003	0.61	mg/L	0.03	0.2
Boron (as B)	IS:3025 (Part-57):2005	<0.05	mg/L	0.5	1.0
Turbidity	IS:3025 (Part-10): 1984 (Reaff.2006)	1.29	NTU	1	5

Per pro SGS India Private Ltd

Aniruddha Das

Section Incharge-Microbiology

Authorized Signatory

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

Page 3 of 3

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd, CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd, PO-Joka, South 24 Parganas Kolkata - 700104. Phone +91 33 65009334/9335. Fax +91 033-24381022
Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel. (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



TEST REPORT

REPORT NO.: KG14-002592.001		Date : 23.04.2014		
JOE NO : KG14-002592		Report Control No. KGR0000054210		
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: 27.03.2014 (10:00 Hrs)				
Sampling Site : Bagru/Bhuisal/Hisri(Old)/Hisri(New) Bauxite Mines (Bagru Plateau)				
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	: 110 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 Lt/Hr.		
D.	PARAMETERS	PROTOCOL	RESULTS	Limit as per MOEF G.S.R.448(E)
1.	Temperature of emission (°C)	IS 11255 Part : 3 1985 (Reaff.2008)	318	...
2.	Barometric pressure (mm of Hg)	IS 11255 Part : 3 1985 (Reaff.2008)	682	...
3.	Velocity of gas (m/sec.)	IS 11255 Part : 3 1985 (Reaff.2008)	9.63	...
4.	Quantity of gas flow (Nm ³ /hr.)	IS 11255 Part : 3 1985 (Reaff.2008)	509	...
5.	Concentration of Carbon dioxide (% v/v)	IS 11255 Part : 3 1985 (Reaff.2008)	5.8	...
6.	Concentration of Carbon monoxide (gm/kw-h)	IS 11255 Part : 3 1985 (Reaff.2008)	0.19	5.0
7.	Concentration of Sulphur dioxide (mg/Nm ³)	USEPA – 6C	36	...
8.	Concentration of Nitrogen dioxide (gm/kw-h)	USEPA – 7E	0.42	9.2
9.	Concentration of Oxygen (% v/v)	IS 11255 Part : 3 1985 (Reaff.2008)	14.2	...
10.	Concentration of Particulate Matters(gm/kw-h)	IS 11255 Part : 1 1985 (Reaff.2003)	0.005	0.3
E. Pollution control device				
Details of pollution control devices attached with the stack : Nil				
F. Remarks : Nil				

End of Report

Checked by

per pro SGS India Private Ltd.

Satya Charan Manna
Asst. Manager (Multi Laboratory)

Dr. Ashish Chakraborty
Manager-Laboratory

Page 1 of 1

This document is issued by the Company subject to its General Conditions of Service accessible at www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Any holder of his document is advised that information contained here on reflect the company finding at the time of its intervention only and with in the limit of client instructions, if any. The company sole responsibility is to its client and this document does not exonerate party to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless other wise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The sample from regulatory bodies are to be retained as specified. This document cannot be reproduced, except in full, without prior written approval of the Company.

SGS India Pvt. Ltd. Laboratory, CS Plot-512(p), Mouza, Hanspukuria, Diamond Harbour Road, PO.-Joke South 24 Parganas, Kolkata-700104 Phone : 91-33-65009334, 65009335
Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



TEST REPORT

REPORT NO.: KG14-002590.001		Date : 23.04.2014	
JOE NO : KG14-002590		Report Control No. KGR0000054207	
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: 27.03.2014 (15:10 Hrs)			
Sampling Site : Crusher Large, Bagru Mines (Bagru Plateau)			
A. General information about stack :			
1.	Stack connected to	: Crusher Large	
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		
B. Physical characteristics of stack :			
1.	Height of the stack (a) from ground level	: 9.5 M	
2.	Diameter of the stack at sampling point	: 0.2032 M	
3.	Height of the sampling point from GL	: 6.7 M	
C. Analysis/Characteristic of Stack :			
1.	Fuel used : H.S.D	2. Fuel Consumption: 13 Lt/Hr.	
D. PARAMETERS		PROTOCOL	RESULTS
1.	Temperature of emission (°C)	IS 11255:Part 3 :1985(Reaff.2008)	174
2.	Barometric pressure (mm of Hg)	IS 11255:Part 3 :1985(Reaff.2008)	682
3.	Velocity of gas (m/sec.)	IS 11255:Part 3 :1985(Reaff.2008)	16.71
4.	Quantity of gas flow (Nm ³ /hr.)	IS 11255:Part 3 :1985(Reaff.2008)	1168
5.	Concentration of Carbon dioxide (% v/v)	IS 11255:Part 3 :1985(Reaff.2008)	5.4
6.	Concentration of Carbon monoxide (mg/Nm ³)	IS 11255:Part 3 :1985(Reaff.2008)	34
7.	Concentration of Oxygen (% v/v)	IS 11255:Part 3 :1985(Reaff.2008)	14.6
8.	Concentration of Particulate Matters (mg/Nm ³)	IS 11255 Part 1 1985 (Reaff.2003)	34
E. Pollution control device			
Details of pollution control devices attached with the stack : Nil			
F. Remarks : Nil			

End of Report

Checked by

per pro SGS India Private Ltd.

Satya Charan Manna
Asst. Manager (Multi Laboratory)

Dr. Asish Chakraborty
Manager-Laboratory

This document is issued by the Company subject to its General Conditions of Service accessible at www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Any holder of his document is advised that information contained here on reflect the company finding at the time of its intervention only and with in the limit of client instructions, if any. The company sole responsibility is to its client and this document does not exonerate party to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extend of the law. Unless other wise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The sample from regulatory bodies are to be retained as specified. This document cannot be reproduced, except in full, without prior written approval of the Company.



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 30/04/2014

Report No : KG14-002511.001

JOE No : KG14-002511

Report Control No : KGR0000055133
Sample Described by Customer as : EFFLUENT

Client Name : Hindalco Industries Limited(Mines Division)
 Client Address : Lohardaga,
 Postal Code : 835203
 State : Jharkhand
 Country : India
 Sample Type : EFFLUENT
 Received : 16/04/2014
 Registered : 16/04/2014
 Marks on Sample : Location : STP Outlet (Bagru Mines)
 Sample Collected on : 12.04.2014
 Quantity : 4L app
 Test Start/End Date : 16/04/2014 - 29/04/2014

Analysis	Method	Result	Unit	Requirement/Limit as Per	
				CPCB DIS. LAND FOR IRREGATION	
				Min	Max
pH	APHA 22nd. EDN.:2012-4500-B	7.55*		5.5	9.0
Total Suspended Solids	APHA 22 nd EDN.:2012-2540 D	15.70	mg/L		200mg/l
BOD @ 27 deg C for 3 days	IS:3025 (Part-44):1993 (Reaff.2003)	9.25	mg/L		100mg/l
Oil & Grease	APHA 22 nd. EDN.:2012-5520 B	<2.00	mg/L		10mg/l
Total Dissolved Solids (TDS)	APHA 22 nd. EDN.:2012-2540 C	422.40	mg/L		N/A
Aluminium (as Al)	APHA 22nd. EDN :2012-3120 B	0.12	mg/L		N/A
Calcium (as Ca)	APHA 22nd EDN.:2012-3120 B	23.09	mg/L		N/A
Iron (as Fe)	APHA 22nd. EDN.:2012-3120 B	0.91	mg/L		N/A

Remark : * analysed at site.

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 30/04/2014

Report No : KG14-002511.001

JOE No : KG14-002511

Report Control No : KGR0000055133

Per pro SGS India Private Ltd

Satya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd, CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd, PO-Joka, South 24 Parganas Kolkata - 700104 Phone +91 33 65009334/9335 Fax: +91 033-24381022
Regd & Corp. Off. SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083 Tel (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 30/04/2014

Report No : KG14-002511.002

JOE No : KG14-002511

Report Control No : KGR0000055133

Sample Described by Customer as : EFFLUENT

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : EFFLUENT
Received : 16/04/2014
Registered : 16/04/2014
Marks on Sample : Location :Maintenance Garage(Bagru Mines)
Sample Collected on : 12.04.2014
Quantity : 4L app
Test Start/End Date : 16/04/2014 - 29/04/2014

Analysis	Method	Result	Unit	Requirement/Limit as Per	
				Min	Max
pH	APHA 22nd, EDN.:2012-4500-B	7.85*		5.5	9.0
Total Suspended Solids	APHA 22 nd EDN.:2012-2540 D	7.00	mg/l		200mg/l
BOD @ 27 deg C for 3 days	IS:3025 (Part-44):1993 (Reaff 2003)	5.69	mg/L		100mg/l
Oil & Grease	APHA 22 nd. EDN.:2012-5520 B	<2.00	mg/L		10mg/l
Total Dissolved Solids (TDS)	APHA 22 nd. EDN.:2012-2540 C	165.40	mg/L		N/A
Aluminium (as Al)	APHA 22nd. EDN.:2012-3120 B	<0.05	mg/L		N/A
Calcium (as Ca)	APHA 22nd. EDN.:2012-3120 B	17.55	mg/L		N/A
Iron (as Fe)	APHA 22nd. EDN.:2012-3120 B	0.57	mg/L		N/A

Remark : * analysed at site.

Page 1 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd.,CS Plot -512(p), Mouza, Hanspukuria Diamond Harbour Rd.PO-Joka, South 24 Parganas Kolkata - 700104. Phone +91 33 65009334/9335. Fax: +91 033-24381022
Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Print Date : 30/04/2014

Report No : KG14-002511.002

JOE No : KG14-002511

Report Control No : KGR0000055133

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd., CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd. PO-Joka, South 24 Parganas Kolkata - 700104. Phone: +91 33 65009334/6335, Fax: +91 033-24381022
Regd & Corp. Off: SGS House, 4B, A S. Marg, Vikhroli (West), Mumbai-400083. Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

Print Date : 29/04/2014

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG14-002510.001

JOE No : KG14-002510

Report Control No : KGR0000054874
Sample Described by Customer as : EFFLUENT

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : EFFLUENT
Received : 16/04/2014
Registered : 16/04/2014
Marks on Sample : Location : STP Inlet(Bagru mines)
Sample Collected on : 12.04.2014
Quantity : 4L app
Sampling Method : APHA 1060B
Test Start/End Date : 16/04/2014 - 28/04/2014

Analysis	Method	Result	Unit
pH	APHA 22nd. EDN.:2012-4500-B	7.68*	
Total Suspended Solids	APHA 22 nd EDN.:2012-2540 D	53.80	mg/L
BOD @ 27 deg C for 3 days	IS:3025 (Part-44):1993 (Reaff.2003)	19.66	mg/L
Oil & Grease	APHA 22 nd. EDN.:2012-5520 B	3.16	mg/L
Aluminium (as Al)	APHA 22nd. EDN.:2012-3120 B	0.22	mg/L
Calcium (as Ca)	APHA 22nd. EDN.:2012-3120 B	21.16	mg/L
Iron (as Fe)	APHA 22nd. EDN.:2012-3120 B	1.37	mg/L
Total Dissolved Solids (TDS)	APHA 22 nd. EDN.:2012-2540 C	407.20	mg/L

Page 1 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

152, New Baradwari, Layout Extension, Sakchi, Jamshedpur - 831 001, Jharkhand Phone : (0657) 2422919

SGS India Pvt Ltd., CS Plot - 512(p), Mouza, Hanspukuria, Diamond Harbour Rd. PO-Joka, South 24 Parganas, Kolkata - 700104 Phone +91 33 65009334/9335 Fax: +91 033-24381022

SGS India Pvt. Ltd. Regd & Corp Off : SGS House, 4B, A S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

Print Date : 29/04/2014

SAMPLE COLLECTED BY SGS INDIA PVT. LTD.

Report No : KG14-002510.001

JOE No : KG14-002510

Report Control No : KGR0000054874

Per pro SGS India Private Ltd

Satya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

152, New Baradwari, Layout Extension, Sakchi, Jamshedpur - 831 001, Jharkhand Phone - (0657) 2422919

SGS India Pvt Ltd, CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd. PO-Joka, South 24 Parganas, Kolkata - 700104 Phone: +91 33 65009334/9335, Fax: +91 033-24381022

SGS India Pvt. Ltd. Regd & Corp. Off : SGS House, 4B, A S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 24/04/2014

Report No : KG14-002514.001

JOE No : KG14-002514

Sample Described by Customer as : AMBIENT AIR QUALITY MONITORING
Report Control No : KGR0000054254

Client Name : Hindalco Industries Limited(Mines Division)
Client Address : Lohardaga,
Postal Code : 835203
State : Jharkhand
Country : India
Sample Type : AMBIENT AIR QUALITY MONITORING
Received : 16/04/2014
Registered : 16/04/2014
Marks on Sample : Location: Bagru Colony Near Office
Sampling Date : 26.03.2014
Test Start/End Date : 16/04/2014 - 23/04/2014

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:5182 (PART 23)	67.47	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	38.53	ug/m3	-	60
Nitrogen Dioxide (NO2)	IS:5182 (Part-6):1975 (Reaff.2004)	<5.00	ug/m3	-	80
Sulphur Dioxide (SO2)	IS:5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	-	80
Carbon Monoxide (CO)	EPA 600/P-99/001F	0.11	PPM		

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt. Ltd., CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd PO, Joka, South 24 Parganas Kolkata - 700104 Phone: +91 33 65009334/9335 Fax: +91 033-24381022
Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400063. Tel : (022) 25798421 to 26 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

Report No : KG14-002514.001

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 24/04/2014

JOE No : KG14-002514

Report Control No : KGR0000054254

Per pro SGS India Private Ltd

Satya Manna

Section Incharge - ENVI

Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd, CS Plot -512(p), Mouze, Hanspukuria, Diamond Harbour Rd, PO-Joka, South 24 Parganas Kolkata - 700104 Phone: +91 33 65009334/9335, Fax: +91 033-24381022
Regd & Corp. Off : SGS House, 4B, A. S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 24/04/2014

Report No : KG14-002514.003

JOE No : KG14-002514

Report Control No : KGR0000054254
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 : 16/04/2014
Registered : 16/04/2014
Marks on Sample : Location: Bhusar Mine Pit(Bagru Platu)
Sampling Date : 27.03.2014
Test Start/End Date : 16/04/2014 - 23/04/2014

Analysis	Method	Result	Unit	Requirement/Limit as Per NAAQS	
				Min	Max
Particulate Matter (PM10)	IS:5182 (PART 23)	81.83	ug/m3	-	100
Particulate Matter (PM2.5)	USEPA CFR(40) Appendix-L	43.82	ug/m3	-	60
Nitrogen Dioxide (NO2)	IS:5182 (Part-6):1975 (Reaff.2004)	<5.00	ug/m3	-	80
Sulphur Dioxide (SO2)	IS:5182 (Part-2):2001 (Reaff.2006)	<5.00	ug/m3	-	80
Carbon Monoxide (CO)	EPA 600/P-99/001F	0.11	PPM		

Page 1 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd., CS Plot -512(p), Mouza, Hanspukura, Diamond Harbour Rd, PO-Joka, South 24 Parganas, Kolkata - 700104, Phone +91 33 65009334/9335, Fax: +91 033-24381022
Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083, Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)



Test Report

Report No : KG14-002514.003


SAMPLE DRAWN BY SGS INDIA PVT. LTD.

Print Date : 24/04/2014

JOE No : KG14-002514

Report Control No : KGR0000054254

Per pro SGS India Private Ltd


Satya Manna
Section Incharge - ENVI
Authorized Signatory

****End of Report****

Page 2 of 2

This document is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm and Terms and Conditions for electronic documents www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples. The samples from regulatory bodies are to be retained as specified. This document cannot be reproduced except in full, without prior written approval of the Company.

SGS India Pvt. Ltd.

SGS India Pvt Ltd, CS Plot -512(p), Mouza, Hanspukuria, Diamond Harbour Rd, PO-Joka, South 24 Parganas, Kolkata - 700104 Phone: +91 33 65009334/9335, Fax: +91 033-24381022
Regd & Corp. Off: SGS House, 4B, A. S. Marg, Vikhroli (West), Mumbai-400083. Tel: (022) 25798421 to 28 Fax: (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)