HINDALCO INDUSTRIES LTD.

SAMRI BAUXITE MINES
P.O. : KUSMI DISTT. : SURGUJA (CHHATTISGARH), INDIA, PIN : 497 222
PH. NO. : (07778) 274442, 274326, 274327, FAX : (07778) 274325

Ref : HIL/SAM/CCF/208/2013/S

Date : 06.12.2013

To,
The Chief Conservator of Forest (Central),
MoEF Regional Office (Western Zone)
Kendriya Paryavaran Bhawan,Link Road
Bhopal-462016

Sub:- Status of compliance of EC condition (Half yearly status of compliance report) Samri Bauxite Mine(Lease area- 2146.746 Ha.) of Hindalco Industries Limited of Chhattisgarh state from Apr-2013 to Sep-2013.

Ref No:- Environment Clearance Letter No-J-11015/353/2007-IA. II(M 'ated July27,2007

Dear Sir,
We do hereby submit half yearly status of EC compliance with respect of Samri Bauxite Mine, Lease area - 2146.746 Ha, of Hindalco Industries Limited, located in Balrampur- Ramanujganj district of Chhattisgarh state from Apr -2013 to Sep-2013.

We assure that we comply all the conditions laid down in the consent letter and also abide to follow all the Rules and Regulations.

Thanking you,

Yours' faithfully

For Hindalco Industries Limited

(M. K. Nayak)
Agent of Mines

Encl:-

1. Half Yearly Status of compliance of Environment condition as annexure-I.
2. Copy of Diversion of Revenue Forest Land enclosed as annexure -II.
3. Apr-13 to Jun-13, Environment Status Report enclosed as annexure -III
4. Renewal copy of Consent to Operate from CECB enclosed as a exure -IV
5. Yearly Production report enclosed as annx-V.
6. Status report of mined out, reclaimed and afforestated land as annexure-VI.
7. Actual expenditure incurred in environment measure from Apr-13 to Sep-13 as annx-VII.

Annex - I

06.12.2013

Status of Compliance from Apr-2013 to Sep-2013 of Environmental Condition laid down by MOEF

Samri Bauxite Mine

The status of compliance of the conditions (as per point no.4) with reference to, environment clearance letter no.J-11015/353/2007-IA. II(M) dated 27.07.07 of Ministry of Environment & Forests, New Delhi, to maintain production capacity of Samri Bauxite Mine is as under.

A Specific condition:-

(i) The wild life management plan has been prepared and approved by PCCF Raipur.

(ii) We accept the condition.

(iii) The conservation plan for schedule I fauna have been prepared.

(iv) The report has been submitted to ministry. The rehabilitation of land ousters are not involved in the project.

(v) Top soil and solid waste is being utilized for simultaneous back filling of mined out area for reclamation purpose and practice is followed.

(vi) OB shall be stacked at earmark location and slope of dump is maintained less than 28 degree. All protective measure such as reclaiming walls, bunds are being taken to prevent erosion of soil.

(vii) Garland drains have been made around the active mining pits coupled with arrester to arrest silt from soil and dumps are maintained.

(viii) The slope of bench as per provision of approved mining scheme is being maintained.

(ix) Wet drilling and dust extractors are being used during drilling operations.

(x) The plantation in reclaimed area is carried out as per plan and being carried out as suggested. The density is being maintained about 2500 plant per hectare with the species like Karanj, accasia, mango, babul , Peras, Mango Awla & govava etc. Social forestry is also being encouraged among the local villagers.

The ground water table does not intersect our mining operation because of shallow depth of mining.

(xi) Regular monitoring of ground water quality is being carried out. The analysis reports are being submitted to Regional Office, CECB, Ambikapur.

(xii) If required, the permission will be taken from competent authority.

(xiii) Regular and periodic maintenance of HEMM is being carried out for control of vehicular emission in mines area. The bauxite ore are transported in trucks with tarpaulin cover.

(xiv) We accept the condition.

(B) General Condition.

(i) No change in mining technology and scope of working will be done without approval of MOEF New Delhi.

(ii) Calendar plan will be followed and there will not be any change in calendar plan.

(iii) The suggestion of local forest department will be implemented for conservation of flora and fauna in and around lease hold area.

(iv) Ambient Air quality monitoring is being carried out as per guideline and will be followed.

(v) Data of ambient air quality (RPM, SPM, SO2, Nox) are being submitted to CECB and will be submitted as per guidelines.

(vi) Fugitive dust emission from generating sources is being controlled. The dust extractor, wet drilling, regular water spraying with 12 KL water tanker in the mine lease hold area is being carried out regularly.

(vii) The noise level in working area being maintained below the limit prescribed and will be maintained. The operators of HEMM are being provided earplug/muffs. The proper maintenance of HEMM is being carried out to control noise emission

(viii) No waste water is generated from the mine however as suggested measures will be taken if required.

(ix) All workers are provided personal protective equipment and training are also being imparted to them for safety & health and will be continued as per guidelines.

(x) Periodical and Initial medical examination of all workers are being carried out as per provision of Mines Act.

(xi) Environment cell is already in place at Samri Mines Division headed by GM (Mines) and comprises of suitable qualified persons.

(xii) In case of final closure of mine the information will be submitted to Regional Office, Ministry of Environment & Forests, Bhopal.

(xiii) Adequate fund provision is already earmarked for environmental protection measures and will not be diverted to other purpose. The year wise expenditure will be submitted to concern authorities as per guidelines.

(xiv) The same will be intimated to Regional Office, Ministry of Environment & Forests, Bhopal.

(xv) All cooperation is being extended to regulatory authorities and will be extended as earlier.

(xvi) Although no suggestion/representation has been received by any Panchayat/Local NGO while processing the proposal. However we have forwarded the copy of clearance letter to Panchayat in our area. The copy of same has been already submitted to your good office.

(xvii) The copy has been displayed by CECB in Balrampur Collectorate.

(xviii) The information regarding environment clearance has been published in two local new papers namely Hari Bhumi & Ambika Vani. The copy of same has been already submitted to your good office.

Hope the above compliance will be found in order.

Yours truly,
(For Hindalco Industries Limited)

(M K Nayak)
Agent of Mines.

Encl. As Above

(M. K. Nayak)
Agent of mines
Samri mines Division
Hindalco Industries Ltd

Anx- ~~XVII~~ A

Annex - I

तार
Telegram : PARYAVARAN,
NEW DELHI
दूरभाष :
Telephone :
टेलेक्स (द्विभाषीय) :
Telex : (bi-lingual) : W-66185 DOE IN
FAX : 4360678

भारत सरकार
पर्यावरण एवं वन मंत्रालय
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS
पर्यावरण भवन, सी० जी० ओ० कॉम्प्लेक्स
PARYAVARAN BHAWAN, C.G.O. COMPLEX
लोदी रोड, नई दिल्ली - 110003
LODHI ROAD, NEW DELHI - 110003

Dated: 12th March, 1996.

SAMRI

No.8-22/95-FC

Suraj Gupta

To

The Secretary (Forests)
Government of Madhya Pradesh
Bhopal.

Sub: Diversion of 798.827 ha. of revenue forest land in favour of M/s HINDALCO Industries Ltd. for Bauxite mining in District Sarguja.

Sir,

I am directed to refer to your letter no.F.5/18/95/10/3 dated 9.3.95 on the above mentioned subject seeking prior approval of the Central Government in accordance with Section-2 of the Forest (Conservation) Act,1980 and to say that the proposal has been examined by the Advisory Committee constituted by the Central G overnment under Section-3 of the aforesaid Act.

2. A fter careful consideration of the proposal of the State Government and on the basis of the recommendation of the above mentioned Advisory Committee, the Central G overnment hereby conveys its approval under Section-2 of the Forest (Conservatio Act,1980 for diversion of 798.827 ha. of revenue forest land in favour of M/s HINDALCO Industries Ltd. for Bauxite mining in District Sarguja subject to the following conditions:

APPROVED

i) Legal status of forest land shall remain unchanged.

ii) Compensatory afforestation shall be carried out over double the degraded forest land at the project cost.

iii) Reclamation of the mining area will be done in consultation with the State Forest Deptt. at the project cost as per plan prepared in this regard.

iv) Demarcation of the mining area will be done on the ground at the project cost.

v) Forest land will not be used for construction of buildings etc. and any purpose other than those mentioned in the proposal.

vi) Lease period shall remain coterminus with lease under MMRD Act subject to maximum of 20 years.

vii) Free fuelwood will be provided to the labourers and staff working at the project site at the project cost.

viii) A ny other condition the State Govt. may impose.

ix) This clearance is subject to the environmental clearance of the project under the Environment Protection Act.

Yours faithfully,

12.3.96

(R.K. CHAUDHRY)
Asstt. Inspector General of Forests.

Copy to:

1. The P rincipal Chief Conservator of Forests Government of Madhya Pradesh, Bhopal.
2. Nodal Officer, Office of the Principal Chief Conservator of Forests, Govt. of Madhya Pradesh, Bhopal.
3. The CCF (Central), Regional Office, Bhopal.
4. RO(HQ), New Delhi.
5. Guard file.

(R.K. CHAUDHRY)
AIGF.

APPROVED

Annex -III

Environmental Status Report

for
Samri Bauxite Mine
at
Post & Teh.: Samri,(Kusmi) Dist: Balrampur – Ramanujganj(C.G.)

Duration: April- May- June -2013

for

HINDALCO

ADITYA BIRLA GROUP

(M. K. Nayak)
Agent of mines
Samri mines Division
Hindalco Industries Ltd

M/s Hindalco Industries Limited.,

Prepared and Compiled by

ANACONLABS
MARK OF PROGRESS FOR BETTER ENVIRONMENT & HEALTH

Recognised by MoEF (GOI) Notifn. No. D.L.33004/99 Dt.24.10.2007
NABL (DST GOI) Cert. No. T-1550 Dt. 16/05/2011
NABL (DST GOI) Cert. No.T-1826 dt. 04/10/2010
QCI-NABET Scheme for Accreditation of EIA Consultant
ISO 9001:2008 vide Registration No. 44 100 094152-E3
Head Office: 60, Bajiprabhu Nagar, Nagpur-440 033, MS
Lab. : FP-34, 35, Food Park, MIDC, Butibori, Nagpur – 441122
Ph. : (0712) 2242077, 9373287475 Fax: (0712) 2242077
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Foreword

The protection of environment plays a crucial role in maintaining the local environment quality for any mining industry. Hence compliance of the statutory requirements becomes very important to conserve the ecological balance within and surrounding the mine area. Therefore, environment protection is becoming a prerequisite for sustainable development. In line with this requirement, the management of **M/s Hindalco Industries Ltd.** has adopted a corporate responsibility of environment protection.

In order to comply with the Environment protection act, to fulfill statutory requirement and to be in tune with Environmental Preservation and sustainable development, **M/s Hindalco Industries Ltd.** has retained **ANACON LABORATORIES PVT. LTD.,** Nagpur as Environment Consultants and for various Environmental issues related to their mines.

This report presents the Environmental Status for the period **April 2013 to June 2013** as compliance to the statutory requirements.

The co-operation extended by the Staff and Management of **M/s Hindalco Industries Ltd.** during the work execution period is gratefully acknowledged.

for **ANACON LABORATORIES PVT. LTD.**

ANACON LABORATORIES PVT. LTD. NAGPUR

Authorized Signatory

Place : Nagpur

Date : **June, 2013**

1.1 Introduction

HINDALCO INDUSTRIES LIMITED (Hindalco) is one among the flagship companies of the Aditya Birla Group of Industries and is one of the largest corporate groups in India. This group is a leading manufacturer of Aluminum in India, having integrated facilities encompassing bauxite mining, refining and smelting to achieve Aluminium.

Various processing units of HINDALCO are strategically located in different parts of the nation to achieve optimum benefits. Over the past few decades the group has grown multifold in its production capacities, product mix and diversification in mining. HINDALCO possesses bauxite mine leases of Kudag, Samri and Tatijharia mines in Surguja district of Chhattisgarh State.

HINDALCO INDUSTRIES LTD. awarded the work to M/s ANACON LABORATORIES PVT. LTD. Nagpur (ALPL) for carrying out Environmental monitoring of parameters for assessing pollution levels and preparation of monthly report (April, May & June-2013) as per the requirement of Chhattisgarh Environment Conservation Board (CECB) and Ministry of Environment and Forest (MoEF) for Samri mining leases in Surguja District, Chhattisgarh State.

1.2 Background Information of Samri Mine

HINDALCO was granted Samri Bauxite mining lease over an area of 2146.746 ha in Samri, Dumarkholi, Gopatu villages in Post Office & tahsil Samri (Kusmi) of Surguja district, Chhattisgarh on 24/06/1998 for a period of 20 years. The mining operations were started on 25/05/1999. The production capacity of Bauxite is 5.0 Lakh Tonnes Per Annum (LTPA).

1.3 Salient Features of Samri Bauxite Mine

The deposits occur in Samri block, Post Office & tahsil Samri, (Kusmi) of Surguja district. This deposit has been identified as one of the resources to cater the raw material requirements of the HINDALCO Alumina refinery at Renukoot, Uttar Pradesh. The salient features of the project are presented below: **(Table 1)**

Table 1
Salient Features of Samri Bauxite Mines

S.No.	Particulars	Details
1.	Survey of India Topo sheet No.	64 M /15
2.	Latitude	23^0 23' 02"N to 23^0 27' 05"N
3.	Longitude	83^0 53' 50"E to 83^0 57' 59"E
4.	Elevation	1140-m above Mean Sea Level
5.	Climatic Conditions (as per IMD, Ambikapur)	Annual maximum temperature : 30.3^0C Annual minimum temperature : 17.7^0C Average annual rainfall : 1401.1 mm
6.	Mining lease area	2146.746 ha.

S.No.	Particulars	Details
7.	Method of mining	Open cast (Semi-Mechanized)
8.	Mode of transportation	Trucks
9.	Land use	Agricultural and Barren land
10.	Nearest Road	Samri to Kusmi (18 km)
11.	Nearest Airport	Ranchi (170 km, ESE)
12.	Nearest Town	Ambikapur (112 km, SW)

1.4 Environmental Monitoring

Regular monitoring of environmental parameters is of immense importance to assess the status of environment during mining operation. With the knowledge of baseline conditions, the monitoring program will serve as an indicator for any deterioration in environmental conditions due to mining operation of the project Suitable mitigation steps will be taken in time to safeguard the environment, based on monitoring reports. Monitoring is important in the control of pollution since the efficiency of control measures can only be determined by monitoring.

In order to find out the impact of mining activity on sensitive receptors, it is necessary to monitor Environmental Quality to know the level of concentrations of pollutants within and around the mining lease area. Accordingly Hindalco Industries through Anacon Laboratories Pvt. Ltd., Nagpur has been monitoring at following locations for air, water and Noise on monthly basis during these months. **(Table 2)**.

1.5 Air Environment

1.5.1 Ambient Air Quality Monitoring

Ambient Air Quality monitored at 8 locations in the core zone and buffer zone with reference to Samri mine lease area as shown in **(Fig. 1)**.

Table 2
Locations of Ambient Air Quality Monitoring (AAQM) & Fugitive Emission

S.No.	core zone	Sr. No.	buffer zone
1	Mining Area	5	Saraidih (Hindalco Campus)
2	Samri Chowk/Weigh Bridge	6	Piprapat Mines area
3	Village Sarjam	7	Jaljali Village
4	Rajenderpur Mine	8	Tatijharia Weighbridge

The sampling stations are selected at the above mentioned locations, in downwind and upwind directions of the mining site in the core zone and buffer zone. Anacon Laboratories Pvt. Ltd., Nagpur is carrying out regular monitoring for PM2.5, RPM(PM10), SO_2, NO_x and SPM,RSPM, SO_2, NO_x, Pb, Hg, As and Cr at above Ambient Air Quality Monitoring (AAQM) locations and Fugitive Emission. The dust fall rate was measured in the mining area and Samri chowk during April-2013. The AAQM and Fugitive Emission sampling sites are selected considering seasonal variation in wind speed and wind direction.

Sampling Duration and Frequency

Ambient air quality monitoring and Fugitive Emission monitoring was carried out for the parameters PM2.5, RPM (PM10), SO_2, NOx and SPM,RSPM, SO_2, NO_x Pb, Hg, As and Cr, from April-May-June-2013 as per CPCB norms. Sampling Duration and Frequency is given in **(Table 3).**

Data is compared with the present revised standards mentioned in the latest Gazette Notification of the Central Pollution Control Board (CPCB) 18th November, 2009 and as per consent conditions mentioned in consent letter.

Table 3
MONITORED PARAMETERS AND FREQUENCY OF SAMPLING

Parameters	Sampling frequency
Suspended Particulate Matter	24 hourly sample twice a week for Three months
Respirable Particulate Matter	24 hourly sample twice a week for Three months
Particulate Matter 2.5	
Sulphur dioxide (So2)	24 hourly sample twice a week for Three months
Oxides of Nitrogen (NOx)	24 hourly sample twice a week for Three months
Pb,Hg,As,Cr	8 hourly samples for 24 hour twice a week for three months

Methods and Instruments used for Sampling

The air samples were analyzed as per methods specified by Central Pollution Control Board (CPCB).

The levels of Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM), Sulphur Dioxide (SO_2), Oxides of Nitrogen (NO_X) , Pb, Hg, As and Cr were monitored for establishing the baseline status. SPM and RPM was collected with the help of respirable particulate sampler operating 24 hours by drawing air which passes through the cyclone at the rate of 1.0 -1.5 m^3/min which collects the particles less than 10 µm diameter over glass fiber filter paper and the bigger particulates from 10 to 100 µm are collected into the cup provided at the bottom of the cyclone. The dust deposited over the filter paper is measured as RPM and the Smaller particulates from 2.5 µm are collected into the Membrane filter paper. The dust fall rate was measured using dust fall jar. The jar was exposed for one month in the mining area and Samri chowk during pre and post monsoon period. The jar was filled with 2 lit of distilled water. The water in the jar is mixed with copper sulphate solution (0.02 N solution) to prevent any growth of algae. The water level in the jar is constantly maintained in such a way that 2 lit of water is always retained. The measurement techniques used

for various pollutants and other details are given in **(Table 5)**.

1.5.2 Ambient Air Quality

The background levels of SPM, RPM(PM10),PM2.5 SO_2, NOx, Pb, Hg,As and Cr measured are required to compute fugitive emissions. The sampling locations are selected at the above mentioned locations in downwind and upwind directions of the mine. The Minimum, Maximum concentration, Arithmetic mean (AM), Geometric mean (GM) and
98 Percentile are presented in tabular form **(Table 5 to 6)**.

The statistical analysis of SPM is presented in **Table 6** for the mining area. The minimum and maximum values varied between 131 to 357 $\mu g/m^3$ respectively during study period at all the 8 locations. The average values ranged between 146 to 323 $\mu g/m^3$ and 98^{th} percentile values ranged between 154 to 356 $\mu g/m^3$ in the study area.

The minimum and maximum values of RSPM varied between 37 to 84 $\mu g/m^3$ respectively **(Table 7)**. The average values varied between 42 to 78 $\mu g/m^3$. The 98^{th} percentile values varied between 46 to 84 $\mu g/m^3$ in the mining area. The overall values of SPM and RSPM were well within the CPCB limits prescribe for industrial and residential area in the study area during the study period.

The minimum and maximum values of $pm_{2.5}$ concentrations varied between 16 to 27$\mu g/m^3$ respectively. The average values range between 20 to 24 $\mu g/m^3$ and 98^{th} percentile values varied between 24 to 27 $\mu g/m^3$ **(Table 8)**.

The minimum and maximum values of SO2 concentrations varied between 6 to 13µg/m3 respectively. The average values range between 7 to 12 µg/m3 and 98th percentile values varied between 8 to 13µg/m3 **(Table 9).**

The minimum and maximum values of NOx concentrations varied between 7 to 29µg/m3 respectively. The average values range between 10 to 24 µg/m3 and 98th percentile values varied between 12 to 29µg/m3 **(Table 10).**

The minimum and maximum Lead detected between <0.005 to 0.084µg/m3 respectively. The average Lead detected between <0.005 to 0.066µg/m3 98th percentile values varied between <0.005 to 0.083µg/m3 in the study region **(Table 11).**

The maximum concentrations of Hg varied 0.079µg/m3 respectively. The average concentration varied 0.065 µg/m3 98th percentiles values varied 0.078 µg/m3 in the study region **(Table 12).**

The maximum concentrations of As varied 1.42µg/m3 respectively. The average concentration varied 1.20 µg/m3 98th percentiles values varied 1.41 µg/m3 in the study region **(Table 13).**

Chromium was not detected at any of the locations in SPM samples as well as RSPM Samples. Graphical presentation of AAQ are shown is shown in **(Fig. 4)**

The dust fall rate was measured by exposing a jar during April 2013 in mining area and Samri Chowk. The dust fall rate was observed to be 21.42 and 18.72 MT/km^2/month respectively as given in (**Table 14**).

Overall the ambient air concentrations of SPM, RSPM, SO_2, NOx, Pb, Hg, As, Cr and Dust fall were well within the limits of concentrations promulgated by CPCB, New Delhi in the study area.

1.5.3 Meteorology: Wind Pattern

The data of wind pattern collected during the study period (*April-May-June-2013*) indicates that the wind was blowing dominantly from 270 (W), during study period, for 60.7 % hours wind was found to be calm. The details of wind pattern in form of wind frequency distribution are presented below in tabular form as well as in graphical illustration. The wind rose diagram is also presented in subsequent **Fig.1 & 2.**

Table.04

Wind Frequency Distribution Data

Directions / Wind Classes (m/s)	<0.3-<0.1	0.3-1.4	1.0-5.0	1.5-3.0	5.1-11.0-19	Total
0	60.7	0.0	0.1	0.9	0.3	1.3
22.5	0.0	0.0	0.0	0.1	1.0	1.2
45	0.0	0.0	0.0	2.2	0.7	2.9
90	0.0	0.0	0.0	4.8	3.5	8.3
135	0.0	0.0	0.1	1.5	0.4	2.0
180	0.0	0.0	0.0	0.1	0.4	0.6
225	0.0	0.0	0.0	3.4	3.9	7.3
247.5	0.0	0.0	0.0	0.1	0.4	0.6
270	0.0	0.0	0.1	5.7	8.2	14.0
315	0.0	0.0	0.0	0.7	0.1	0.9
337.5	0.0	0.0	0.0	0.0	0.1	0.1
Sub-Total	**60.7**	**0.0**	**0.3**	**19.5**	**19**	**39.2**
Calms						**60.7**
Non Clam						**39.3**
Total						**100**

SUMMARY OF WIND PATTERN

Season	First Predominant Winds	Second Predominant Winds	Calm Condition
April- June 2013	W (14.0%)	E (8.3%)	60.7 %

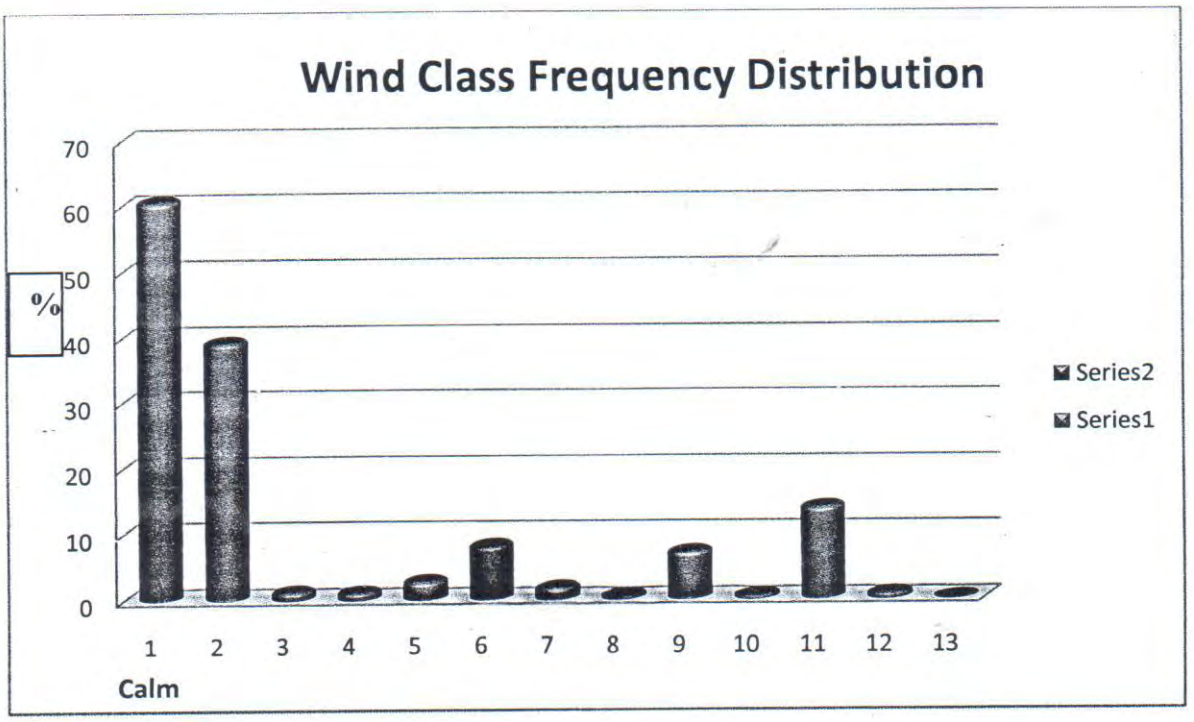


Fig.01 Wind Class Frequency Distribution

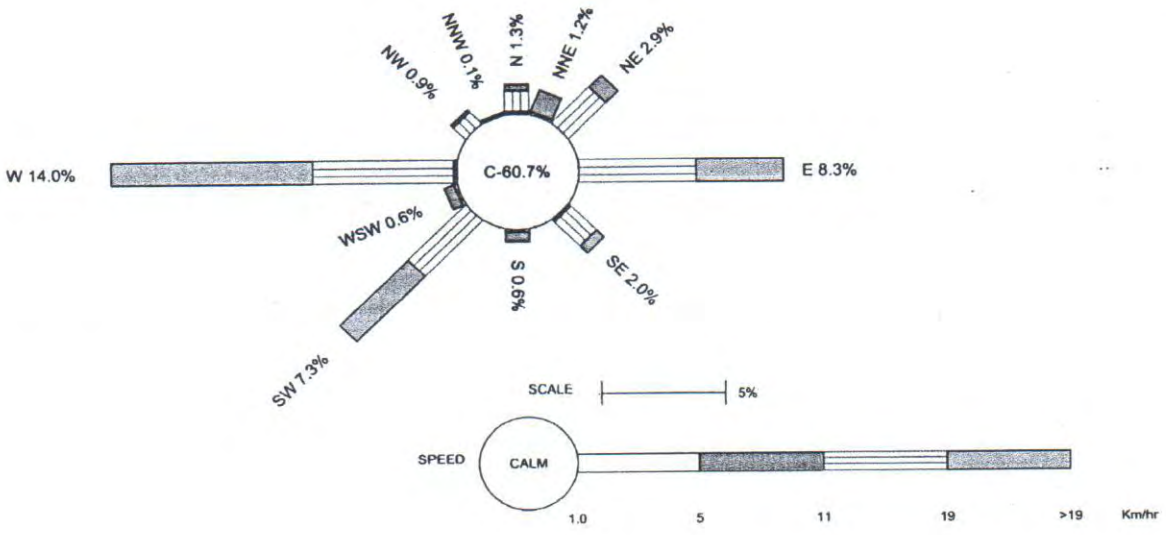


Fig.02 Wind Rose Diagram (April to June -2013)

1.6 Noise Environment

The Director General of Mines Safety in its circular No. DG (Tech)/18 of 1975, has prescribed the noise level in mining occupations (TLV) for workers, in an 8 hour shift period with unprotected ear as 90 dB(A) or less. There will be some noise sources in mines, which produce noise levels above 90 dB(A), however, the workers are not expected to be exposed continuously for 8 hours. In order to maintain this statutory requirement Noise monitoring has been carried out in and around the mining lease area.

Work zone noise level in the mining area shall increase due to blasting and excavation, transportation. The impacts due to the mining activities on the noise levels shall be negligible, if all the precautions for the elimination of the noise are taken. The mining activities will be undertaken during daytime only. The daytime equivalent noise levels, when all the machineries are in operation, shall be minimized as if machineries have been provided with noise control equipment. Noise monitoring is carried out on monthly basis at three locations in each month are shown in **(Fig. 3)**.

Identification of sampling locations

Noise at different noise generating sources has been identified based on the activities in the village area and ambient noise due to traffic.

The noise monitoring has been conducted for determination of ambient noise levels in the mining area and villages. The noise levels at each location were recorded for 24 hours.

Instrument used for monitoring

Noise levels were measured using integrated sound level meter manufactured by Envirotech made in India (Model no. SLM-100). This instrument is capable of measuring the Sound Pressure Level (SPL), L_{eq}.

Method of Monitoring

Sound Pressure Level (SPL) measurements were monitored at three locations. The readings were taken for every hour for 24 hours. The day noise levels have been monitored during 6 am to 10 pm and night levels during 10 pm to 6 am at three locations within 10-km radius of the study area.

Noise level monitoring was carried out continuously for 24 hours with one hour interval starting at 06.00 hrs to 06.00 hrs next day.

Noise levels monitored during day and night at 3 locations are found to be below the stipulated standard of CPCB for Industrial area as 75dB (A) and 70dB (A) for day and night respectively as given in **(Table 15)**

1.7 Water Quality

The existing status of water quality for groundwater and surface water was assessed by collecting the water samples from underground wells from the village Samri, Kudag, Tatijhariya, Saraidih, Rejendrapur and surface water sample from nallahs nearby Samri mines. The physico-chemical analysis of water samples collected during study period reported as average of three months given in **(Table 13)**. The overall water quality found to be below the stipulated standards of IS 10500-2012 for ground water & found to be fit for drinking purpose for tested parameters. Surface water quality is satisfactory as per IS: 2296 Class 'C'. Thus the impacts due to mining activities in each month have been found to be insignificant.

Table 5
Measurement Techniques for various pollutants

S.No.	Parameter	Technique	Technical Protocol	Minimum Reportable Value ($\mu g/ m^3$)
1.	Suspended Particulate Matter	Respirable Dust Sampler (Gravimetric Method)	IS-5182 (Part – IV)	5
2.	Respirable Particulate Matter	Respirable Dust Sampler (Gravimetric Method)	IS-5182 (Part-IV)	5
3.	Particulate Matter 2.5	Respirable Dust Sampler (Gravimetric Method)	IS-5182 (Part-IV)	5
4.	Sulphur Dioxide	Modified West and Gaeke	IS-5182 (Part – II)	4
5.	Oxide of Nitrogen	Jacob & Hochheiser Method	IS-5182 (Part – VI)	4
6.	Dust Full	Gravimetric	IS-5182 (Part-I)	–

Table 6
Statistical Analysis of SPM

Unit: $\mu g/m^3$

Location	Month & Year	Min.	Max.	A.M.	G.M.	98%
Mining Area	April-2013	258	304	281	281	303
	May-2013	249	287	268	268	286
	June-2013	164	201	183	183	200
Samri Chowk/ weigh bridge	April-2013	267	318	293	293	317
	May-2013	289	357	323	323	356
	June-2013	291	312	302	302	312
Rajendrapur mines	April-2013	242	298	270	270	297
	May-2013	264	328	296	296	327
	June-2013	257	298	278	278	297
Village Sarjam	April-2013	159	187	173	173	186
	May-2013	164	194	179	179	193
	June-2013	131	167	149	149	166
Saraidih (Hindalco Campus)	April-2013	187	238	213	213	237
	May-2013	194	212	203	203	212
	June-2013	182	198	190	190	198
Piprapat Mines Area	April-2013	167	212	190	190	211
	May-2013	171	209	190	190	208
	June-2013	158	172	165	165	172
Jaljali Village	April-2013	164	181	173	173	181
	May-2013	157	179	168	168	179
	June-2013	138	154	146	146	154
Tatijharia weighbridge	April-2013	218	267	243	243	266
	May-2013	247	291	269	269	290
	June-2013	167	189	178	178	189

Table 7
Statistical Analysis of RSPM

Unit : $\mu g/m^3$

Location	Month & Year	Min.	Max.	A.M.	G.M.	98%
Mining Area	April-2013	64	71	68	68	71
	May-2013	59	67	63	63	67
	June-2013	61	69	65	65	69
Samri Chowk/ weigh bridge	April-2013	67	81	74	74	81
	May-2013	72	84	78	78	84
	June-2013	68	79	74	74	79
Rajendrapur mines	April-2013	63	76	70	70	76
	May-2013	67	81	74	74	81
	June-2013	58	73	66	66	73
Village Sarjam	April-2013	46	59	53	53	59
	May-2013	53	64	59	59	64
	June-2013	41	53	47	47	53
Saraidih (Hindalco Campus)	April-2013	51	64	58	58	64
	May-2013	48	61	55	55	61
	June-2013	43	57	50	50	57
Piprapat Mines Area	April-2013	51	59	55	55	59
	May-2013	54	61	58	58	61
	June-2013	42	57	50	50	57
Jaljali Village	April-2013	42	53	48	48	53
	May-2013	48	57	53	53	57
	June-2013	37	46	42	42	46
Tatijharia weighbridge	April-2013	58	67	63	63	67
	May-2013	54	63	59	59	63
	June-2013	46	54	50	50	54

Table 8
Statistical Analysis of PM 2.5

Unit : µg/m³

Location	Month & Year	Min.	Max.	A.M.	G.M.	98%
Samari Weigh bridge	April-2013	18	25	22	22	25
	May-2013	16	24	20	20	24
	June-2013	21	27	24	24	27

Table 9
Statistical Analysis of SO_2

Unit : µg/m³

Location	Month & Year	Min.	Max.	A.M.	G.M.	98%
Mining Area	April-2013	10	13	12	12	13
	May-2013	9	11	10	10	11
	June-2013	6	8	7	7	8
Samri weigh bridge	April-2013	10	11	11	11	11
	May-2013	8	12	10	10	12
	June-2013	7	11	9	9	11
Rajendrapur mines	April-2013	7	10	9	9	10
	May-2013	9	12	11	11	12
	June-2013	6	10	8	8	10
Village Sarjam	April-2013	7	10	9	9	10
	May-2013	9	13	11	11	13
	June-2013	6	9	8	8	9
Saraidih (Hindalco Campus)	April-2013	7	13	10	10	13
	May-2013	8	11	10	10	11
	June-2013	6	9	8	8	9
Piprapat Mines Area	April-2013	8	11	10	10	11
	May-2013	8	13	11	11	13
	June-2013	7	9	8	8	9
Jaljali Village	April-2013	6	8	7	7	8
	May-2013	8	12	10	10	12
	June-2013	6	8	7	7	8

Tatijharia weighbridge	April-2013	10	13	12	12	13
	May-2013	8	12	10	10	12
	June-2013	6	9	8	8	9

Table 10
Statistical Analysis of NOx

Unit: $\mu g/m^3$

Location	Month & Year	Min.	Max.	A.M.	G.M.	98%
Mining Area	April-2013	11	19	15	15	19
	May-2013	13	18	16	16	18
	June-2013	9	12	11	11	12
Samri weigh bridge	April-2013	16	24	20	20	24
	May-2013	18	29	24	24	29
	June-2013	11	18	15	15	18
Rajendrapur mines	April-2013	10	14	12	12	14
	May-2013	12	16	14	14	16
	June-2013	9	13	11	11	13
Village Sarjam	April-2013	8	14	11	11	14
	May-2013	10	16	13	13	16
	June-2013	7	14	11	11	14
Saraidih (Hindalco Campus)	April-2013	11	16	14	14	16
	May-2013	13	21	17	17	21
	June-2013	9	14	12	12	14
Piprapat Mines Area	April-2013	11	18	15	15	18
	May-2013	14	21	18	18	21
	June-2013	9	14	12	12	14
Jaljali Village	April-2013	8	15	12	12	15
	May-2013	9	18	14	14	18
	June-2013	6	14	10	10	14
Tatijharia weighbridge	April-2013	11	19	15	15	19
	May-2013	13	22	18	18	22
	June-2013	9	17	13	13	17

Table 11
Statistical Analysis of Pb

Unit: µg/m^3

Location	Month & Year	Min.	Max.	A.M.	G.M.	98%
Mining Area	April-2013	0.029	0.038	0.034	0.034	0.038
	May-2013	0.024	0.031	0.028	0.028	0.031
	June-2013	0.017	0.022	0.020	0.020	0.022
Samri Chowk/weigh bridge	April-2013	0.052	0.064	0.058	0.058	0.064
	May-2013	0.047	0.084	0.066	0.066	0.083
	June-2013	0.029	0.062	0.046	0.046	0.061
Rajendrapur mines	April-2013	0.028	0.052	0.040	0.040	0.052
	May-2013	0.031	0.076	0.054	0.054	0.075
	June-2013	0.042	0.073	0.058	0.058	0.072
Village Sarjam	April-2013	<0.005	<0.005	<0.005	<0.005	<0.005
	May-2013	<0.005	<0.005	<0.005	<0.005	<0.005
	June-2013	<0.005	<0.005	<0.005	<0.005	<0.005
Saraidih (Hindalco Campus)	April-2013	0.016	0.019	0.018	0.018	0.019
	May-2013	0.019	0.023	0.021	0.021	0.023
	June-2013	0.012	0.016	0.014	0.014	0.016
Piprapat Mines Area	April-2013	0.024	0.029	0.027	0.027	0.029
	May-2013	0.028	0.034	0.031	0.031	0.034
	June-2013	0.018	0.024	0.021	0.021	0.024
Jaljali Village	April-2013	<0.005	<0.005	<0.005	<0.005	<0.005
	May-2013	<0.005	<0.005	<0.005	<0.005	<0.005
	June-2013	<0.005	<0.005	<0.005	<0.005	<0.005
Tatijharia weighbridge	April-2013	0.023	0.034	0.029	0.029	0.034
	May-2013	0.021	0.026	0.024	0.024	0.026
	June-2013	0.016	0.021	0.019	0.019	0.021

Table 12
Statistical Analysis of Hg

Unit: µg/m^3

Location	Month & Year	Min.	Max.	A.M.	G.M.	98%
Mining Area	April-2013	0.021	0.026	0.024	0.024	0.026
	May-2013	0.018	0.021	0.020	0.020	0.021
	June-2013	0.014	0.019	0.017	0.017	0.019
Samri Chowk/weigh bridge	April-2013	0.051	0.079	0.065	0.065	0.078
	May-2013	0.047	0.063	0.055	0.055	0.063
	June-2013	0.018	0.039	0.029	0.029	0.039
Rajendrapur mines	April-2013	0.052	0.061	0.057	0.057	0.061
	May-2013	0.047	0.057	0.052	0.052	0.057
	June-2013	0.036	0.048	0.042	0.042	0.048
Village Sarjam	April-2013	<0.01	<0.01	<0.01	<0.01	<0.01
	May-2013	<0.01	<0.01	<0.01	<0.01	<0.01
	June-2013	<0.01	<0.01	<0.01	<0.01	<0.01
Saraidih (Hindalco Campus)	April-2013	<0.01	<0.01	<0.01	<0.01	<0.01
	May-2013	<0.01	<0.01	<0.01	<0.01	<0.01
	June-2013	<0.01	<0.01	<0.01	<0.01	<0.01
Piprapat Mines Area	April-2013	0.024	0.039	0.032	0.032	0.039
	May-2013	0.019	0.034	0.027	0.027	0.034
	June-2013	0.016	0.028	0.022	0.022	0.028
Jaljali Village	April-2013	<0.01	<0.01	<0.01	<0.01	<0.01
	May-2013	<0.01	<0.01	<0.01	<0.01	<0.01
	June-2013	<0.01	<0.01	<0.01	<0.01	<0.01
Tatijharia weighbridge	April-2013	0.031	0.039	0.035	0.035	0.039
	May-2013	0.029	0.034	0.032	0.032	0.034
	June-2013	0.018	0.022	0.020	0.020	0.022

Table 13
Statistical Analysis of As

Unit: µg/m^3

Location	Month & Year	Min.	Max.	A.M.	G.M.	98%
Mining Area	April-2013	0.64	0.79	0.72	0.72	0.79
	May-2013	0.68	0.71	0.70	0.70	0.71
	June-2013	0.54	0.62	0.58	0.58	0.62
Samri Chowk/weigh bridge	April-2013	0.84	1.32	1.08	1.08	1.31
	May-2013	0.79	1.42	1.11	1.11	1.41
	June-2013	0.51	0.84	0.68	0.68	0.83
Rajendrapur mines	April-2013	0.87	1.07	0.97	0.97	1.07
	May-2013	1.08	1.31	1.20	1.20	1.31
	June-2013	0.91	1.03	0.97	0.97	1.03
Village Sarjam	April-2013	<0.1	<0.1	<0.1	<0.1	<0.1
	May-2013	<0.1	<0.1	<0.1	<0.1	<0.1
	June-2013	<0.1	<0.1	<0.1	<0.1	<0.1
Saraidih (Hindalco Campus)	April-2013	<0.1	<0.1	<0.1	<0.1	<0.1
	May-2013	<0.1	<0.1	<0.1	<0.1	<0.1
	June-2013	<0.1	<0.1	<0.1	<0.1	<0.1
Piprapat Mines Area	April-2013	0.64	0.91	0.78	0.78	0.90
	May-2013	0.58	0.73	0.66	0.66	0.73
	June-2013	0.39	0.47	0.43	0.43	0.47
Jaljali Village	April-2013	<0.1	<0.1	<0.1	<0.1	<0.1
	May-2013	<0.1	<0.1	<0.1	<0.1	<0.1
	June-2013	<0.1	<0.1	<0.1	<0.1	<0.1
Tatijharia weighbridge	April-2013	0.41	0.63	0.52	0.52	0.63
	May-2013	0.38	0.69	0.54	0.54	0.68
	June-2013	0.18	0.27	0.23	0.23	0.27

Table 14
Dust fall Rate (April-2013)

Sl.No.	Lacatioin	Rate (MT/km2/month)
1	Mining Area	21.42
2	Samri chowk	18.72

Table-15
Noise Level Monitoring

Sl. No.	Location	April-2013		May-2013		June-2013	
		Day	Night	Day	Night	Day	Night
1	Mining Area	61	54	67	56	59	51
2	Samri Weigh bridge	68	62	71	64	67	62
3	Rajenderpur Mines area	71	68	68	61	71	69

CPCB Standards for Residential Area: 55 (Day time) 45 (Night time)
Industrial Area: 75 (Day time) 70 (Night time)

Note: D –Day, N - Night

Table 15-(A)
HEMM Spot Noise Level Monitoring

Sl. No.	Location	April-2013		May-2013		June-2013	
		Max	Min	Max	Min	Max	Min
1	**Rajenderpur Mines**	82.7	76.9	79.3	74.8	82.1	76.3

1.9 Ground Water Quality:- Most of the villages in the nearby plant area have hand pumps and wells, as most of the residents of these villages make use of this water for drinking and other domestic uses for

TABLE NO.16

Table 13 : Report on Chemical Examination of Ground Water

(Average of Three Months April-May-June -2013)

Location:	GW1) Village Samri Hand pump near dispensary	GW2) Village Tatijharia
	GW3) Village Saraidih	GW4) Village Rajenderpur

Sr. No	Test Parameters	Units	Permissible Requirement As per IS:10500-2012	Results			
				GW1	GW2	GW3	GW4
1	Apparent Colour	Hazen units	5	2	3	3	4
2	Turbidity NTU	NTU	5	2.3	1.9	2.7	1.6
3	pH Value	-	6.5 to 8.5	7.64	7.82	7.71	8.01
4	Total Hardness	mg / l	300	168.3	181.3	167.2	168.9
5	Iron (as Fe)	mg / l	0.3	0.14	0.12	0.16	0.19
6	Chlorides (as Cl)	mg / l	250	49.6	53.8	42.7	54.8
7	TDS	mg / l	500	212.8	197.6	229.7	242.8
8	Calcium (as Ca)	mg / l	75	56.8	61.2	54.9	57.2
9	Magnesium (as Mg)	mg / l	30	6.4	6.9	7.3	6.3
10	Sulphate (as SO_4)	mg / l	200	18.9	16.4	18.3	19.2
11	Nitrates (as NO_3)	mg / l	45	< 2	< 2	< 2	< 2
12	Fluoride (as F)	mg / l	1	<0.1	<0.1	<0.1	<0.1
13	Total Alkalinity	mg / l	200	146.9	151.7	142.8	152.9
14	Free Residual Chlorine	mg / l	Min.0.2	< 0.1	< 0.1	< 0.1	< 0.1
15	Electrical Conductivity at 25^0C	µs/cm	-	594.8	812.4	728.3	709.2
16	Copper as(Cu)	mg / l	0.05	< 0.03	< 0.03	< 0.03	< 0.03
17	Manganese as (Mn)	mg / l	0.1	< 0.05	< 0.05	< 0.05	< 0.05
18	Cadmium as (Cd)	mg / l	0.01	< 0.001	< 0.001	< 0.001	< 0.001
19	Selenium as (Se)	mg / l	0.01	< 0.001	< 0.001	< 0.001	< 0.001
20	Arsenic as (As)	mg / l	0.05	< 0.01	< 0.01	< 0.01	< 0.01

21	Mercury as (Hg)	mg / l	0.001	0.0005	<0.0005	<0.0005	<0.0005
22	Lead as (Pb)	mg / l	0.05	0.01	< 0.01	0.01	< 0.01
23	Zinc as (Zn)	mg / l	5	0.1	< 0.1	< 0.1	< 0.1
24	Aluminum as (Al)	mg / l	0.03	<0.005	<0.005	<0.005	<0.005
25	Boron as (B)	mg / l	1	0.3	0.6	0.4	0.4
26	Chromium as (Cr^{+6})	mg / l	0.05	< 0.03	< 0.03	< 0.03	< 0.03
27	Cyanide as (CN)	mg / l	0.05	< 0.005	< 0.005	< 0.005	< 0.005
28	Odour	-	unobjectionable	unobjectionable	unobjectionable	unobjectionable	unobjectionabl
29	Taste	-	Acceptable	-	-	-	-
30	Total Coliform	MPN/100 ml	Absent	Absent	Absent	Absent	Absent
31	Phenolic Compounds	mg / l	0.001	< 0.001	< 0.001	< 0.001	< 0.001
32	Mineral oil	mg / l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
33	Total Chromium as Cr	mg / l	0.05	< 0.01	< 0.01	< 0.01	< 0.01

Remark:- Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

Table 14
Monthly Report on Chemical Examination of Surface Water
(Nallahs Near by Samri Mines)

S No.	Parameters	Unit	IS 2296 Class 'C' Limits	Results		
				April-13	May-13	June-13
1	pH Value	-	6.5 to 8.5	8.1	7.9	7.8
2	Total Hardness ($CaCO_3$)	mg / l	$	94.3	83.5	101.8
3	Iron as (Fe)	mg / l	50	4.1	3.9	3.7
4	Chlorides as (Cl)	mg / l	600	21.8	18.9	23.4
5	Electrical Conductivity	µs/cm	$	412	386	359
6	Total Dissolved Solids (TDS)	mg / l	1500	187	201	198
7	Calcium as (Ca)	mg / l	$	31	27	33
8	Magnesium as (Mg)	mg / l	$	4.1	3.9	4.7
9	Sulphate as (SO_4)	mg / l	400	38	42	37
10	Nitrates as (NO_3)	mg / l	$	6.4	6.1	5.7
11	Fluoride as (F)	mg / l	1.5	0.4	0.3	0.8
12	Alkalinity	mg / l	$	168	174	149
13	Chemical Oxygen Demand (COD)	mg / l	$	11	9	9
14	BOD at 27°C for 3days	mg / l	3	3.8	3.1	2.9
15	Total Suspended Solid (TSS)	mg / l	$	43	49	38

$ Limits not specified

Table 15
Soil Analysis Report

Date of collection: April-2013

Sr. No	Test Parameters	Measurement Unit	Results	
			Samri	Rajendrapur village
1	pH	-	6.7 at 26^{0}C	6.9
2	Electrical Conductivity at 25^{0}C	µS/cm	342	287
3	Texture	-	Silty clay	Clay Loam
4	Sand	%	18.4	16.2
5	Silt	%	23.9	28.6
6	Clay	%	36.4	37.9
7	Bulk Density	g/cc	2.52	2.61
8	Porosity	%	28	31
9	Water Holding Capacity	%	26	32
10	Exchangeable Calcium as Ca	mg/kg	17.4	16.2
11	Exchangeable Magnesium as Mg	mg/kg	9.1	8.4
12	Exchangeable Sodium as Na	mg/kg	32.6	34.9
13	Available Potassium as K	kg/ha.	39.6	28.7
14	Available Phosphorous as P	kg/ha.	174	162
15	Available Nitrogen as N	kg/ha.	43.8	49.7
16	Organic Matter	%	4.1	4.7
17	Organic Carbon	%	2.1	2.6
18	Water Soluble Chloride as Cl^+	mg/kg	16.4	14.8
19	Water Soluble Sulphate as SO_4	mg/kg	4.3	5.1
20	Sodium Absorption Ratio	-	7.9	8.3
21	CEC	meq/100 gm	31.8	29.7
22	Total Iron	%	10.7	8.2
23	Available Manganese	mg/kg	0.05	0.003
24	Available Zinc	mg/kg	0.004	0.002
25	Available Boron	mg/kg	0.004	0.003

Method of sampling and analysis: IS: 2720 and methods of soil analysis, part I, 2nd Ed, 1986 of (American society for Agronomy and soil science society of America)

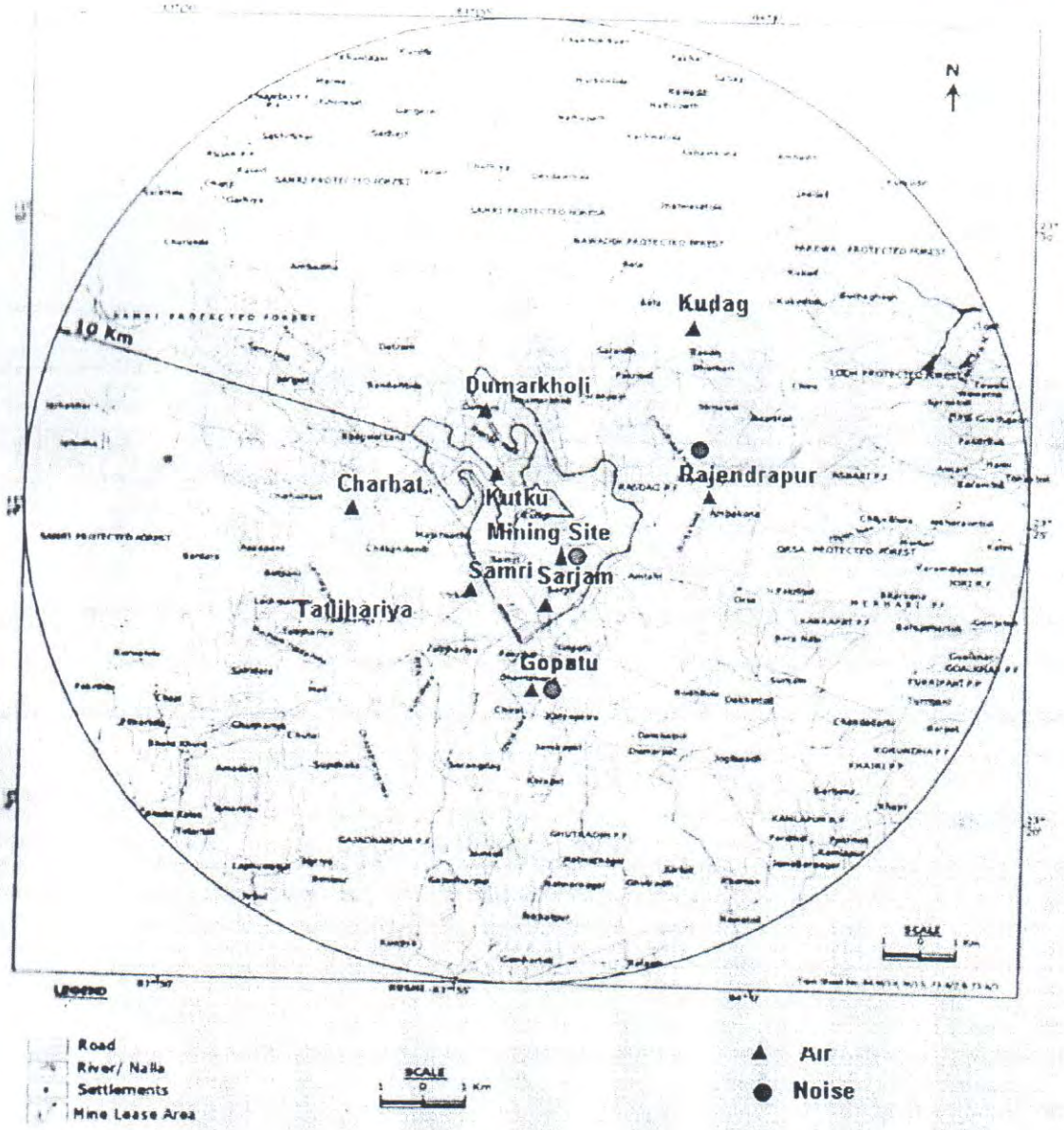
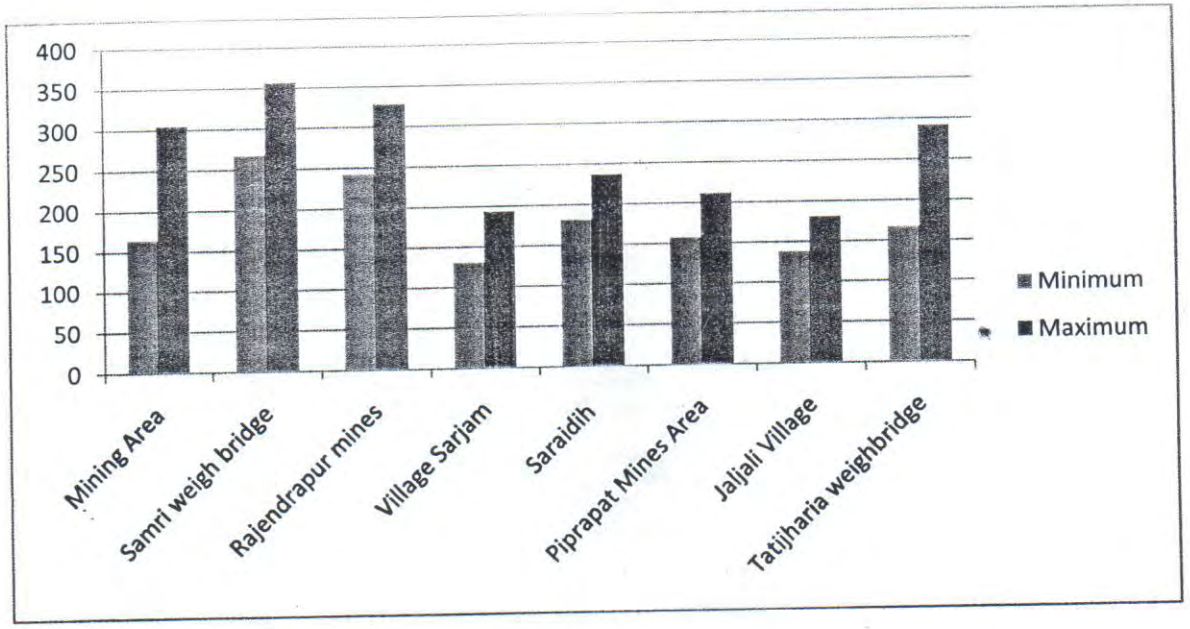


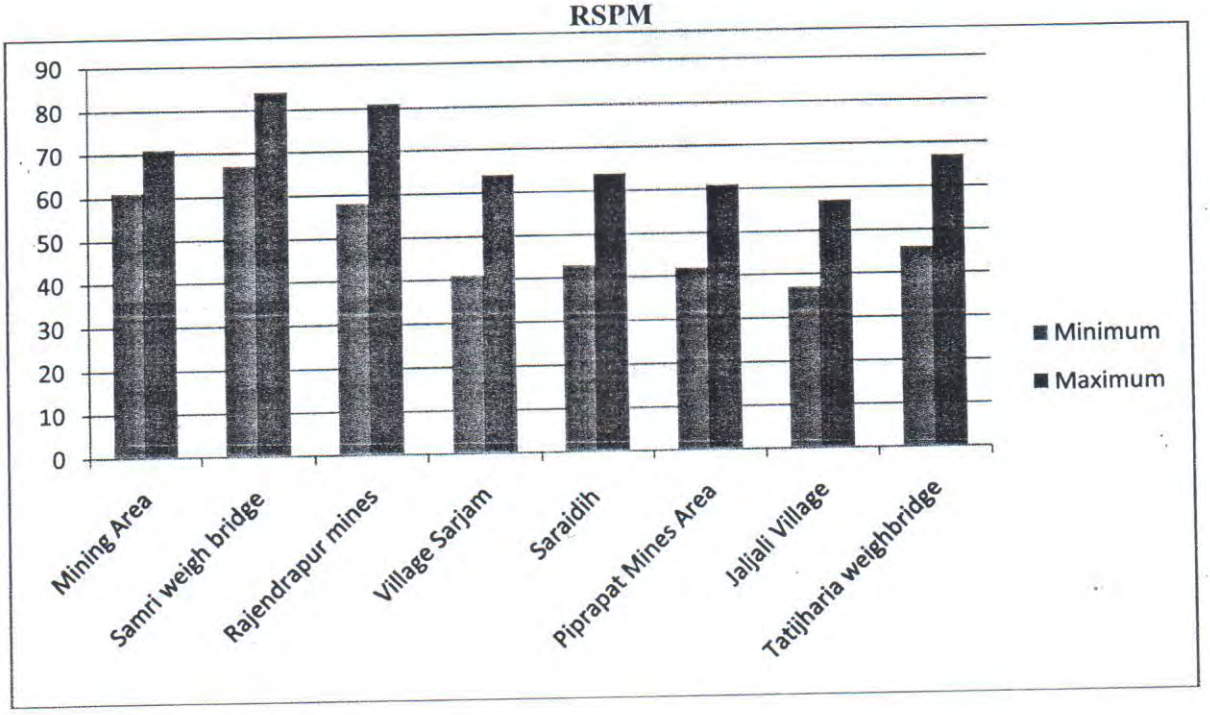
Fig 3: Sampling Locations for Air, Noise

Fig 4: Graphical Presentation of Ambient Air Quality Monitoring (AAQM) & Fugitive Emission

SPM



RSPM



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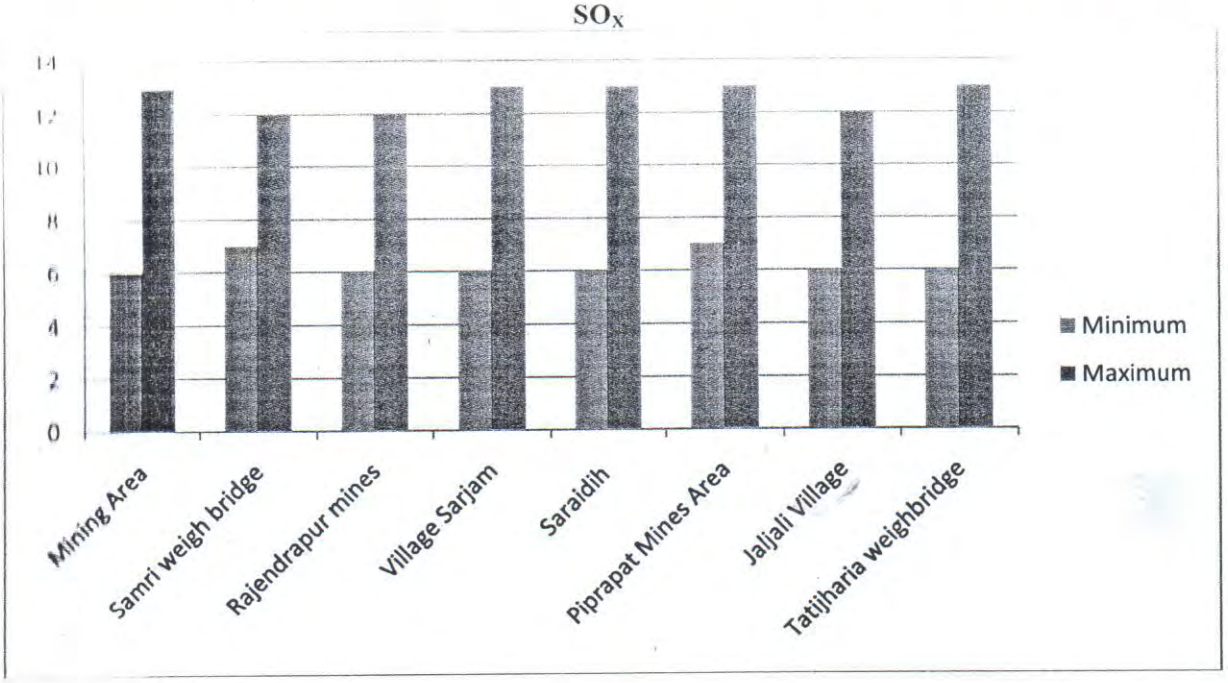
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10
8
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2
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Minimum
Maximum
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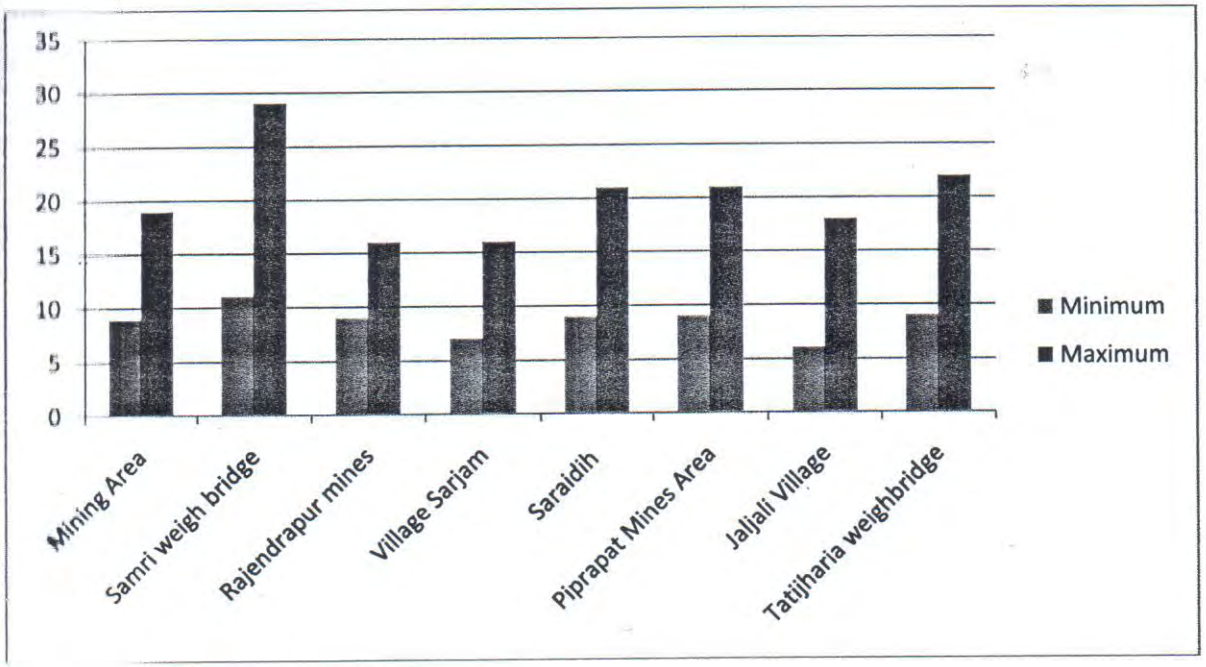
Samri weigh bridge
Rajendrapur mines
Village Sarjam
Saraidih
Piprapat Mines Area
Jaljali Village
Tatijharia weighbridge

NO_x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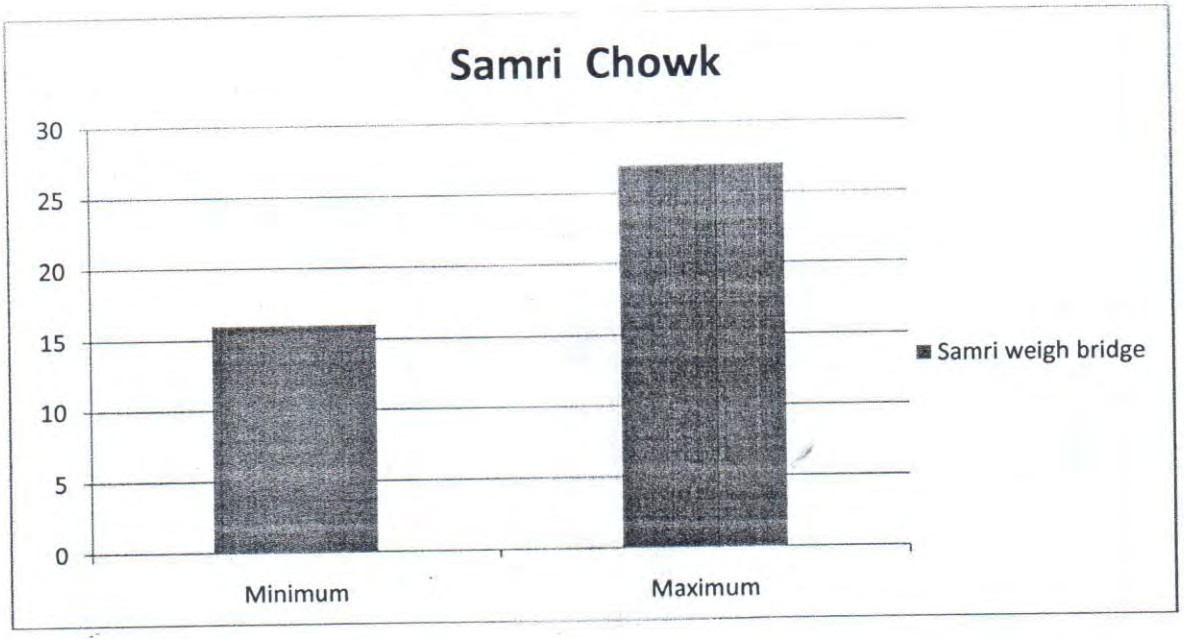
30
25
20
15
10
5
0
Minimum
Maximum
Mining Area
Samri weigh bridge
Rajendrapur mines
Village Sarjam
Saraidih
Piprapat Mines Area
Jaljali Village
Tatijharia weighbridge

PM2.5


Samri Chowk
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25
20
15
10
5
0
Minimum
Maximum
Samri weigh bridge

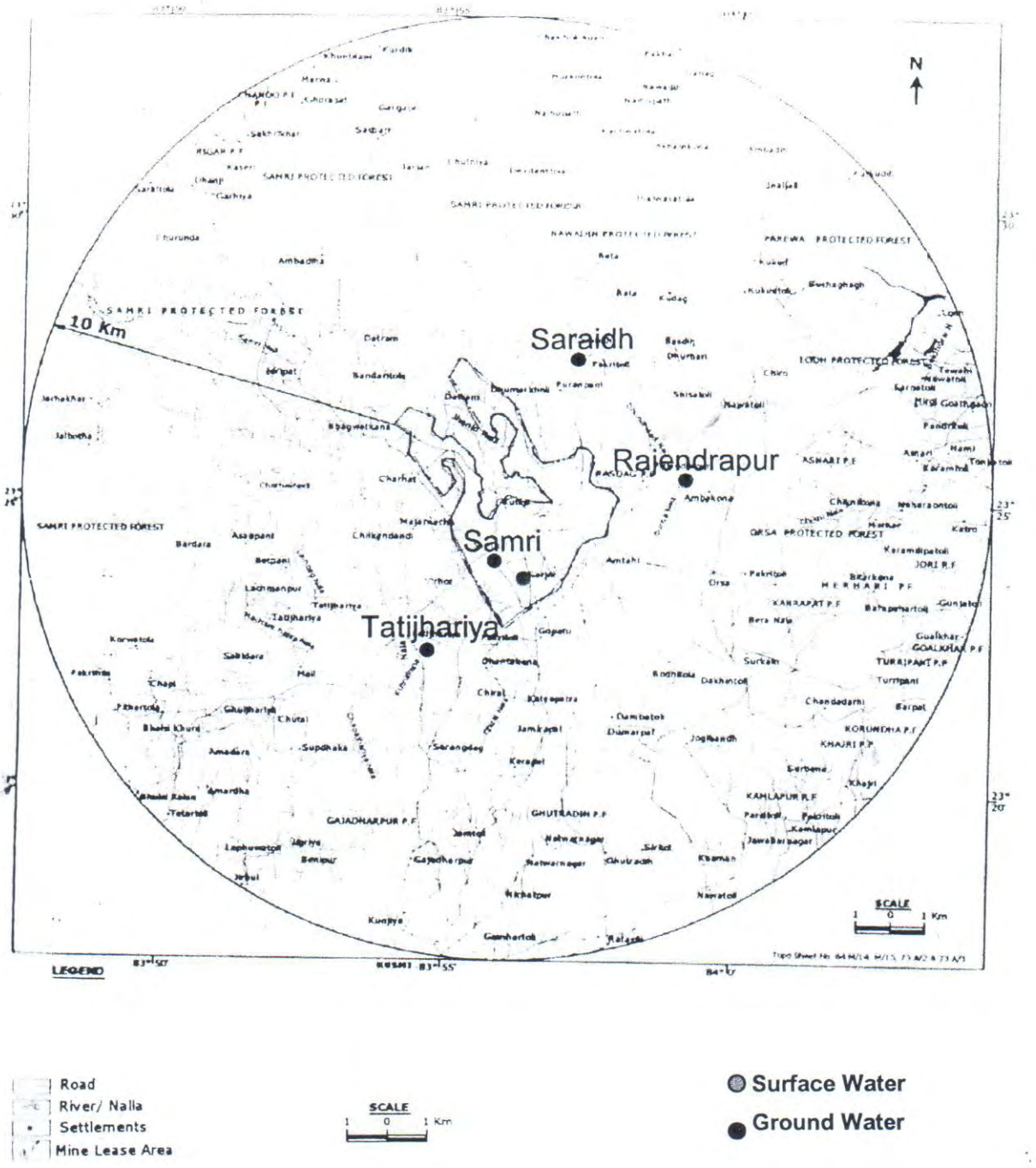

Fig 05: Sampling Locations for Water

Annex-IV

छत्तीसगढ़ पर्यावरण संरक्षण मंडल, रायपुर

CHHATTISGARH ENVIRONMENT CONSERVATION BOARD, RAIPUR

Commercial Complex, Housing Board Colony, Kabir Nagar, Raipur – 492 099

E-mail:hocecb@gmail.com, Ph.-0771-2970070, Fax- 0771-2970074

No. 1823 /TS/CECB/2013 Raipur, dated: 5/7/2013

To,

M/s Hindalco Industries Limited,
Samri Bauxite Mine,
Village-Samri, Gopatu & Dumerkholi,
Tehsil-Samri,
District- Balrampur (C.G.)

Recd 13/7/13

Hindalco Industries L...
Date 13/7/13
Okay

Sub: Renewal of consent of the Board for Bauxite Ore Mine under section 21 of the Air (Prevention and Control of Pollution) Act, 1981.

Ref:
1. Consent of the Board for Bauxite Ore Mine issued under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 6878/TS/CECB/2007 Raipur, dated: 24/12/2007.
2. Last renewal of the Board for Bauxite Ore Mine issued under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 vide letter no. 1099/TS/CECB/2012 Raipur, dated: 01/06/2012.
3. Your Letter No.HIL/SAM/CECB/142/2012/SAMRI, dated: 25/08/2012 and subsequent correspondence ending letter dated: 15/12/2012..

--:: oo ::--

With reference to your above application consent is hereby renewed for a period of one year i.e. from 01/12/2012 to 30/11/2013, subject to the fulfillment of the terms and conditions incorporated in the consent letter No. 6878/TS/CECB/2007 Raipur, dated: 24/12/2007 and additional conditions mentioned below.

This renewal of consent is valid for: -

Name of Product	Production Capacity
Mining of bauxite ore	5.0 Lakhs Tonne per Annum [Five Lakhs Tonne per Annum]

Additional Conditions

1. Industry shall operate & maintain the existing air pollution control facilities to ensure the emission of air pollutants within the prescribed emission standard the all time. Industry shall install some additional fixed type water sprinklers in haul roads fapproach roads for dust suppression. The industry shall also maintain the ambient air quality in and around the mine lease area within prescribed limits.
2. All internal roads shall be made pucca. Good house keeping practices shall be adopted by the industry.

3. Blasting operations shall be carried out as per the standards prescribed by Director General of Mine Safety.

4. Industry shall transport Bauxite Ore in duly covered vehicles to avoid dust emission during transportation.

5. Industry shall submit Environment Statement to this Board as per provision of Environment (Protection) amendment Rule, 1993 for the previous year ending 31st March on or before 30th September every year.

6. Extensive tree plantation shall be carried out in the reclaimed areas and with mining lease area to the plants.

Please acknowledge the receipt of this letter.

For & on behalf of
Chhattisgarh Environment Conservation Board Raipur (C.G.)

Member Secretary
Chhattisgarh Environment Conservation Board
Raipur (C.G.)

Endt. No. /TS/CECB/2013 Raipur, dated: / /2013

Copy to: -

Regional Officer, Regional Office, Chhattisgarh Environment Conservation Board, Ambikapur (C.G.). Please ensure compliance and report, if any condition/conditions are violated by the industry.

Member Secretary
Chhattisgarh Environment Conservation Board
Raipur (C.G.)

छत्तीसगढ़ पर्यावरण संरक्षण मंडल, रायपुर

CHHATTISGARH ENVIRONMENT CONSERVATION BOARD, RAIPUR

Commercial Complex, Housing Board Colony, Kabir Nagar, Raipur – 492 099

E-mail:hocecb@gmail.com, Ph.-0771-2970070, Fax- 0771-2970074

No. 1821 /TS/CECB/2013

Raipur, dated: 5/7/2013

To,

M/s Hindalco Industries Limited,
Samri Bauxite Mine,
Village-Samri, Gopatu & Dumerkholi,
Tehsil-Samri,
District- Balrampur (C.G.)

Hindalco Industries Ltd.
Kusmi
Date 15/7/13
Received by

Sub: Renewal of consent of the Board for Bauxite Ore Mine under section 25/26 of the Water (Prevention and Control of Pollution) Act, 1974.

Ref:
1. Consent of the Board for Bauxite Ore Mine issued under section 25/26 of the Water (Prevention and Control of Pollution) Act, 1974 vide letter no. 6876/TS/C ECB/2007 Raipur, dated: 24/12/2007.
2. Last renewal of the Board for Bauxite Ore Mine issued under section 25/26 of the Water (Prevention and Control of Pollution) Act, 1974 vide letter no. 1097TS/CECB/2012 Raipur, dated: 01/06/2012.
3. Your Letter No. HIL/SAM/CECB/142/2012/SAMRI, dated: 25/08/2012 and subsequent correspondence ending letter dated: 15/12/2012.

--:: oo ::--

With reference to your above application consent is hereby renewed for a period of One year i.e. from 01/12/2012 to 30/11/2013, subject to the fulfillment of the terms and conditions incorporated in the schedule of the consent letter No. 6876/TS/CECB/2007 Raipur, dated: 24/12/2007 and additional conditions mentioned below.

This renewal of consent is valid for: -

Name of Product	Production Capacity
Mining of bauxite ore	5.0 Lakhs Tonne per Annum [Five Lakhs Tonne per Annum]

Additional Conditions

1. Industry shall ensure the treated effluent quality within prescribed effluent standard all the time. Industry shall not discharge effluent out side the mine lease area in any circumstances; hence zero discharge condition shall be maintained all the time.
2. All internal roads shall be made pucca. Good house keeping practices shall be adopted. Dust muck generated on the road shall be dispose doff properly.
3. Bauxite ore shall be transported in duly covered vehicles.

4. Industry shall submit Environment Statement to this Board as per provision of Environment (Protection) amendment Rule, 1993 for the previous year ending 31st March on or before 30th September every year.

5. All the solid waste rejects shall be disposed off property and reclaimed scientifically. Industry shall obtain authorization under Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 from the Board (If required).

6. Extensive tree plantation shall be carried out in the reclaimed areas and within the mining lease area.

Please acknowledge the receipt of this letter.

For & on behalf of
Chhattisgarh Environment Conservation Board Raipur (C.G.)

Member Secretary
Chhattisgarh Environment Conservation Board
Raipur (C.G.)

Endt. No. /TS/CECB/2013 Raipur, dated: / /2013

Copy to: -

1- Regional Officer, Regional Office, Chhattisgarh Environment Conservation Board, Ambikapur (C.G.). Please ensure compliance and report, if any condition/conditions are violated by the industry.

2- Cess Section, Chhattisgarh Environment Conservation Board, Raipur (C.G.)

Member Secretary
Chhattisgarh Environment Conservation Board
Raipur (C.G.)

ANNEXURE-V

Lease	EC (in Lakh Tonnes)	Production { (April-2013 to September-2013 (in Tonnes)}
Samri	5.0	213083.00
Tatijharia	4.0	194670.00
Kudag	0.6	26541.00

(M. K. Nayek)
Agent of mines
Samri mines Division
Hindalco Industries Ltd

Annexure - VI

SAMRI LEASE

Particulars	Samri Lease
Approved lease area	2146.746 Ha
Total Mined out up to the year (2012-13)	130.0698 Ha
Total Reclaimed up to the year (2012-13)	101.0383 Ha
Total afforestation in reclaimed land up to the year (2012-13)	51.754 Ha
Total nos. of plants up to the year (2012-13)	126412
% of survival of plants	73
Mined out during April 2013 to September 2013	5.589 Ha
Reclaimed during April 2013 to September 2013	2.326 Ha
Afforestation (2013-14)	8700
Afforestation in 2013-14 (Ha.)	3.500

(M. K. Nayak)
Agent of mines
Samri mines Division
Hindalco Industries Ltd

Annexure-VII

Actual Expenditure incurred in Environment Management Plan:-

Composite cost during the year 2013-14 (Apr to Sep) for environment protection & pollution control by Samri Mines division, it includes Samri Bauxite Mine , Tatijharia Bauxite Mine & Kudag Bauxite Mine of Chhattisgarh state.

Sl No-	Environment Protection Measures	Actual Cost (Lacs)	
		Budget (2013-14)	Actual (Up to Sep-13)
1	Pollution Control	6.0	3.20
2	Environment Monitoring	3.15	1.48
3	Green Belt	11.0	8.15
4	Reclaimation/Rehablitation of mined out area	---	--
5	**Rural Development** (This include capital cost of on going construction of 2.5km ring road , Building for 6 Bed hospital & Primary School)		80.86
6	Total		93.69

- Environment monitoring jobs has been out sourced to Annacon Lab, recognized by MoEF (GOI) & NABL etc.
- One centralized nursery has been established at Samri mines among three leases viz, Samri, Tatijharia & Kudag.
- Reclamation and rehabilitation is part of mining operation. Mined out area has been backfilled by using mines rejects, laterite, morrum and at the top of surface by top soil. As per type of the land we decide for cultivation or planting species. Cost of reclamation /rehabilitation already included in the mining operation.
-

(M. K. Nayak)
Agent of mines
Samri mines Division
Hindalco Industries Ltd