JAYPEE SIDHI CEMENT PLANT

JAIPRAKASH
ASSOCIATES LIMITED
Cement Division

JAL/JSCP/EC/2013

Date -25.09.2013

To,

The Member Secretary
M.P. Pollution Control Board
Parayavaran Parisar, E-5,
Arera Colony, Bhopal(M.P.)462016

Subject- Environmental Statement Report under Environment Protection Act, 1986 for 2X60 MW Captive Power Plant M/s Jaypee Sidhi Cement Plant .

Ref- Consent to Operate (Water & Air) granted by M.P. Pollution Control Board Vide letter No.3035 & 3037/TS/MPPCB/2012, Bhopal, Dated 04.05.2012

Dear Sir,

This has reference to above mentioned subject please find enclosed herewith Environmental Statement Report for the period of FY-2012-2013 for 2X60 MW Captive Power Plant M/s Jaypee Sidhi Cement Plant.

This is for your kind information and record please.

Thanking you
Your's faithfully

For Jaypee Sidhi Cement Plant

Office of the M.P. Pollution Control Board BHOPAL
No.
Dt.
Rec. 30/9/13

S.C. Srivastava
Sr.V.P.(Tech.)

Encl: As above

CC-**Regional Officer**
M.P.Pollution Control Board
HIG-190 & 191, Nehru Nagar Colony
Rewa(M.P.)486001

JAYPEE GROUP

JAYPEE CEMENT

Works : Post-Bharatpur, Jaypee Vihar, Majhigawan, District Sidhi-486 776 (M.P.) Ph. : +91 (7802) 276701 to 276714 Fax : +91 (7802) 276715

ENVIRONMENTAL STATEMENT REPORT

2X60 MW CAPTIVE POWER PLANT
JAYPEE SIDHI CEMENT PLANT
(A UNIT OF JAIPRAKASH ASSOCIATES LIMITED)
JAYPEE VIHAR, SIDHI (M.P)

2012-2013

SUBMITTED TO
M.P.POLLUTION CONTROL BOARD
BHOPAL (M.P.)

2X60 MW CAPTIVE POWER PLANTS
(A Unit of Jaiprakash Associates Limited)

Jaypee Group is 3 rd largest cement producer in the country. The group produces special blend of Portland Pozzolana Cement under the brand name Jaypee Cement (PPC) and Ordinary Portland Cement brand name Jaypee Cement (OPC).

The Group is well committed towards the safety and health of employees and the public & motto is Work for Safe, Healthy, Clean & Green Environment.

2x60 MW Captive Power Plant has come into operation in year October, 2012. The captive power plant is high pressure based technology of boiler to produce steam which will be fed to steam turbine which will drive the generator connected rigidly to it and the plant is convential steam cycle operating in Rankine cycle, consisting of 2 nos. of Circulating Fluidized Bed Combustion (CFBC) Boilers. Air cooled condenser is considered for condenser cooling system. The air cooled condenser has number of modules with each module having tube bundles. The tubes to be finned type either of aluminum or carbon steel galvanized material. Installation of air cooled condenser reduces the precious water requirement to a great extent. The fly ash from the bottom of the ESP hoppers to be collected in dry form and pneumatically conveyed to fly ash silos.

2x60 MW Captive Power Plant is located near Majhigawana village in Rampur Naikin Tehsil Sidhi District of Madhya Pradesh state at an aerial distance of about 50 km North-East of Sidhi & about 24km aerial distance from Rewa in Sothern direction. Geographically, it is located at Latitude 24^0 19' 35" North and Longitude 81^0 19' 08" East.

FORM- V
(See rule 14)

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31st MARCH 2013

PART- A

(i)	Name and address of the owner/ Occupier of the Industry, operation or process	**M/S JAYPEE SIDHI CEMENT PLANT (2x60 MW Captive Power Plant)** Vill-Kariyajhar P.O. Bhratpur – 486776 Tehsil-Rampur Naikin, Distt-Sidhi (M.P.)
(ii)	Industry category Primary-(STC Code) Secondary-(SIC Code)	: **Red Category and Large Industry (Primary STC Category)**
(iii)	Production Capacity	: **120 MW (Captive Power)**
(iv)	Year of Establishment	: **October, 2012**
(v)	Last Environment Statement Submitted	: **First Time**

PART- B

WATER AND RAW MATERIAL CONSUMPTION

(i) **Water consumption m^3 /d**

Cooling	:	1193.3
Domestic	:	Nil
Process	:	Nil

Name of Products	**Process water consumption per unit of Product output (Electricity) M^3/ Kwh**	
	During the previous Financial Year (2011-12)	**During the Current Financial Year (2012-13) Kwh**
Generation of Electricity	N.A	0.019

(ii) **Raw Material Consumption**

Name of raw material consume	**Name of products**	**Consumption of raw material Per unit of output MT/Kwh for Electricity**	
		During the Previous Financial Year (2011-12)	**During the Current Financial Year (2012-13)**
Coal Water	Electricity	N.A	0.011 MT 0.019 Kwh

(iii) **Generation of Electricity(Kwh)**

Generation	**During the Previous Financial Year(11-12)**	**During the Current Financial Year(12-13)**
Electricity	N.A	92003000 Kwh

PART- C

Pollution discharges to environment/ unit of output.
(Parameter as specified in the consent issued)

(i) Pollution	**Quality of Pollutants Discharged (Mass/day) Tons /Day**	**Concentration of Pollutants discharges (mass/volume) Mg/Nm3**	**Percentage of variation from prescribed standards**
(a) Water i)Domestic ii)Industrial	Zero discharge is maintained. Treated domestic water is being used in horticulture and plant process.		
(b)Air	RSPM parameter within limit and report attached as **Annexure-I**		
Stack emission Stack-ESP	0.2357	45.13	Within the permissible limit

PART- D
(HAZARDOUS WASTES)

Hazardous Wastes	**Total Quantity (Kg)**	
	During the previous financial Year (2011-12)	**During the current financial Year (2012-13)**
(a) From process Used Oil(5.1)	N.A.	7350
(b) From pollution Control Facilities	N.A.	Nil

PART- E

SOLID WASTES

TOTAL QUANTITY (Ts)		
Solid Waste	**During the Previous Financial Year (2011-12)**	**During the Current Financial Year (2012-13)**
(a) From Process	N.A	45693.96 MT Fly ash generated from the electricity generation process.
(b) From Pollution Control Equipment	N.A	All the collected material is recycled in the process.
(c) (i) Qty. recycled or reutilized within the unit. (ii)Sold (iii)Disposed	N.A	All the collected solid waste is reused in the process Nil Nil

PART- F

Please specify the characterizations (in terms of composition of quantum) of Hazardous as well solid waste and indicate disposal practice adopted for both these categories of wastes.

Hazardous waste: Analysis Report of Used Oil is attached as **Annexure-II**

Note-Used Oil 7.35 KL generated in period of March-13 but sold on 20.05.2013

Solid waste (Non Hazardous) : Fly ash 49217.24 MT (FY-2012-2013) from the 2X60 MW CPP electricity generation process is reused in cement production.

PART- G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production

The plant is equipped with best available technology for Air Pollution Control devices such as ESP, Bag Filters etc designed to control the emission level below 50 mg/Nm3 from any of the stacks installed at our captive power plant.

We are successfully managing the ambient RSPM level below the prescribed levels by installation of water spray system at each of the transfer points of raw coal materials conveying belts.

Covered belt conveyors, water sprinklers of raw material & coal conveyors and concreted roads for vehicular movement inside the power plant premises.

PART- H

Additional measures/ investment proposal for environmental protection including abatement of pollution, prevention of pollution

1. Replacement of damaged filter bags for effectively control the dust emission during material transport to improve the air quality inside the plant premises.

2. Green belt development in and around the CPP premises

3. Construction of concrete roads in and around factory premises.

4. Continuous water spraying on roads for controlling the fugitive emission.

5. Water sprinkler installed at coal handling plant.
6. Good housekeeping practices being followed to avoid dust deposition on roads.
7. Extension of Covered shed for coal.
8. Installed two nos. of CAAQMS(Continuous Ambient Air Quality Monitoring Station)

PART- I

Any other particulars for improving the quality of the environment.

Following measures have been adopted for abatement of pollution, conservation of natural resources:

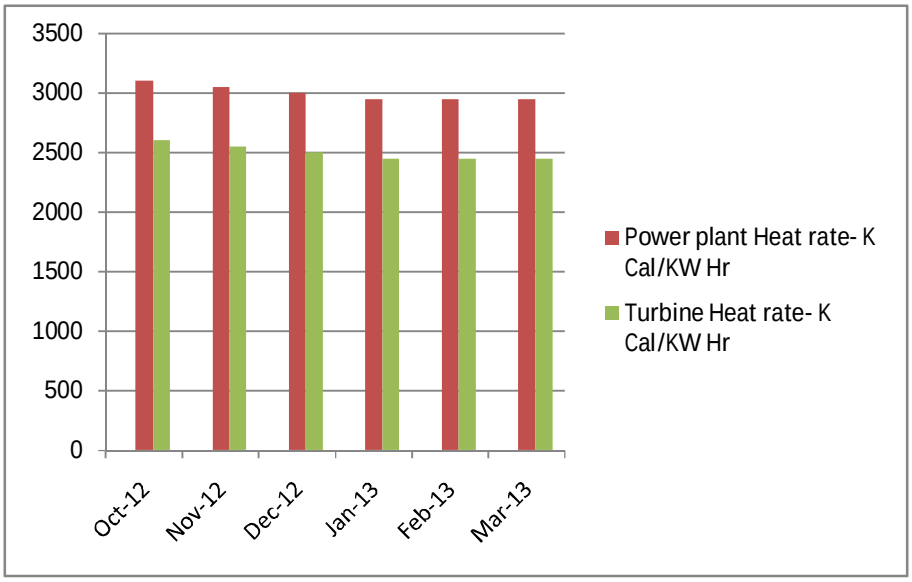
1. Conservation of Water: Cycle of Concentration (COC)

We are maintaining Cycle of Concentration of Auxiliary Cooling Tower greater than 5 by reducing of blow down water of cooling tower to get desired quality of cooling water used in 2x60 MW. By reducing the blow down of cooling water we are saving a lot of water, this activity leads to the conservation of raw water.

2. Energy conservation

a. Reduction in Overall Power Plant Heat Rate and Turbine Heat Rate consumption-

The boiler design and process parameters have been maintained which resulted to reduction in power plant heat rate K Cal/KW Hr and turbine heat rate of electricity generation. The last six month trend of overall heat rate is depicted as under: Oct-12-3100, Nov-12-3050, Dec-12-3000, Jan-13-2950, Feb-13-2950, March-13-2950 .The last six month trend of turbine heat rate is depicted as under: Oct-12-2600, Nov-12-2550, Dec-12-2500, Jan-13-2450, Feb-13-2450, March-13-2450.



b. Use of Air Cooled Condenser (ACC)-

Air Cooled surface condenser is a direct system using ambient air for rejecting the heat to the atmosphere without cooling water as the mean of heat transport. The turbine back pressure is a function of the ambient dry bulbs temperature. To reject the heat to the atmosphere an adequate fin tube surface is necessary. To create and maintain the necessary vacuum inside the condenser, air ejector is provided.

The ACC will be 85.1 TPH designed to condense steam at 0.22 kg/cm2 with the inlet air temperature as 42^0C. The ACC will have number of modules with each module having tube bundles. The tubes will be of finned type either of Aluminum extruded or carbon steel material (Galvanized).

Forced draft fans will be used to supply cooling air. Fans will be axial flow type located below the ACC. The fan motors will be regulated with variable frequency drives. The operation of the ACC will be with necessary steam ejector (1W+1S) for holding and one number for hogging.

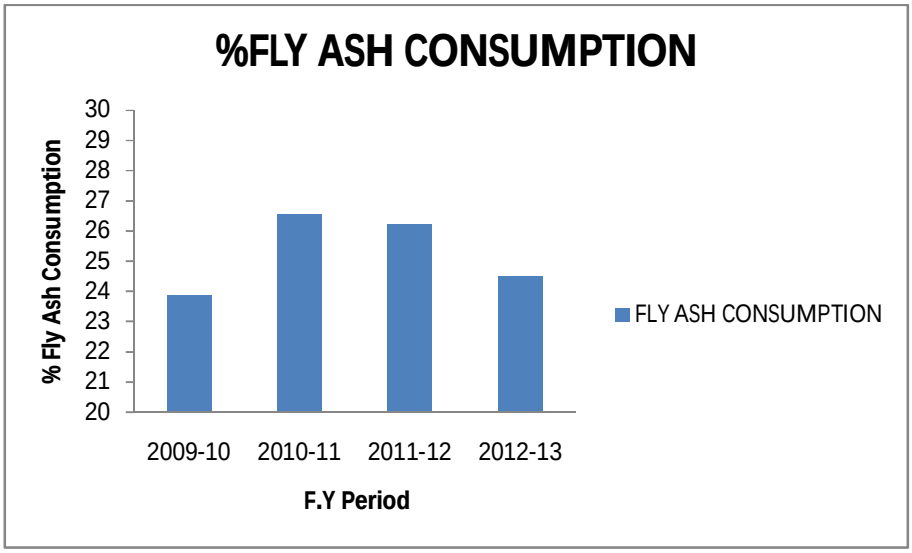
c. Installation of Air Pollution Control Devices (ESP) at CPP Stack-

To limit the dust load at the inlet to the chimney to a value of 50 mg/Nm^3 as prescribed by the MoEF, Adequate sized Electrostatic precipitators (ESP) are to be provided for each unit. Each of the steam generating units would be provided with electrostatic precipitators .Each precipitators have 2 parallel gas paths, any of which can be isolated for maintenance, when required, keeping the other paths in operation. Each path would comprise minimum 6 fields

in series for collection of fly ash and would be capable of limiting the solid particulate matter in the flue gases at the outlet of ESP to acceptable value with any one of its fields, transformers/rectifiers out of service while working at 100% BMCR with worst coal. The ESP would have an efficiency of around 99.93%. Each ESP would be provided with adequate number of ash hoppers having capacity suitable for storing ash generated in a shift of 8 hours duration under 100% BMCR.

3. Utilization of fly ash for the manufacturing of cement-

Captive Power Plants have capacity of 2X60 MW CPP which generation about 49217.24 MT of fly ash for the period FY-2012-13 which is being stored in closed silos from where it has been pneumatically conveyed to cement plant and directly to the cement mill for the cement grinding process. Apart from this we are also consuming approx 24.53% (278649 MT) fly ash for PPC cement manufacturing which is being collected from the different thermal power plant and being transported in closed container and being directly feed in the cement grinding through pneumatic feeding system.



4. Online real time Ambient Air Quality Monitoring Station (AAQMS)

Commissioned two no. of CAAQMS as per the approved location by RO, MPPCB, Rewa. The transmission of real time data started displaying in CPCB website & plant main gate w.e.f. 20.07.2012 & Online stack monitoring equipment (CMS) work order for the supply equipment has already been placed on ESA India.

AAQM STATION NO. 1 & 2

7. **Solid Waste Management:**

The Collected bio-degradable Waste of colony and plant canteen waste is used for the biogas generation. The basic concept of our biogas plant design is on process known as up flow Anaerobic Sludge Blanket (USAB), with Capacity of 400 kg/day. The produced is used in our Annapurna Mess that will help in reduction in Green House Gases emissions.

8. Noise Abatement

Provision of acoustic enclosures for noise generating equipment will help to attenuate noise levels. Equipment will confirm to noise levels prescribed by regulatory authorities. The noise level has been come down up to 7.0% in impulsive noise monitoring.

ACOUSTIC ENCLOSURES AT 2x60 MW CPP TURBINES

9. Extensive plantation in and around the plant- We have complete dedicated a team of skilled horticulturists for the forestation and greenery development program at our plant and mines under the supervision of senior experienced person.

We are on fast progress to achieve the full target of development green belt in 40 ha. (33%) area of the plant. The areas for the plantation have already being earmarked. We have already planted 29367 trees in plant area of 14.5 ha. up to March, 2013.

10. Good housekeeping- Following measures have been taken for good housekeeping at Jaypee Sidhi Cement Plant.

* All the raw material is being stored in the covered sheds.

* The conveyor belts are fully covered.

* * CPPs treated water is being utilized for the regular road water spraying.

* **Concreting of kachcha roads**- All the kachcha roads of plant and colony has been concreted as well as flowers and plantation has been done side by the roads for the beautification.

CONCERETE ROAD

11 MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES:

- Conservation of water due to maintaining Cycle of Concentration (COC) within 5.
- Use of Neutralization pit treated water for green belt development & dust suppression purpose
- Schedule maintenance and monitoring of pollution control device

III. PROPOSAL TO CARRYOUT THE ACTIVITIES IN FUTURE:.

- Online monitoring system (CEMS) for stack emissions.
- Peripheral tree plantation in plant boundary.
- Collection and segregation of bio degradable & non bio degradable waste from door to door.
- Installation of RO plant at colony area.
- Vermi-composting of biodegradable matter

Prepared By Environment Cell
Dated: 26.08.2013

For Jaypee Sidhi Cement Plant

(Authorized Signatory)
S.C. Shrivastava
Sr. Vice President (Tech)

JAYPEE SIDHI CEMENT PLANT

AMBIENT AIR QUALITY MONITORING REPORT APRIL- 2012 TO MARCH- 2013

LOCATION ->		Near CPP					Near office complex					Near L/S Crusher					Near Autowork shop			
PARAMETERS ->	PM2.5 µg/M3	PM10 µg/m3	SO2 µg/m3	NOX µg/m3	CO µg/m3	PM2.5 µg/M3	PM10 µg/m3	SO2 µg/m3	NOX µg/m3	CO µg/m3	PM2.5 µg/M3	PM10 µg/m3	SO2 µg/m3	NOX µg/m3	CO µg/m3	PM2.5 µg/M3	PM10 µg/m3	SO2 µg/m3	NOX µg/m3	CO µg/m3
Apr-12	-	57.31	10.0	23.0	130.0	-	56.21	9.0	24.0	125.0	-	58.19	10.0	22.0	128.0	-	57.17	11.0	25.0	132.0
May-12	-	62.75	8.0	25.0	138.0	-	60.11	7.0	27.0	132.0	-	57.27	8.0	28.0	130.0	-	58.15	9.0	30.0	142.0
Jun-12	-	63.50	7.0	22.0	154.0	-	61.24	6.0	24.0	148.0	-	58.38	7.0	25.0	145.0	-	57.42	8.0	27.0	158.0
Jul-12	-	47.5	8.0	22.0	162.0	-	48.5	6.0	21.0	160.0	-	43.2	5.0	18.0	148.0	-	45.2	7.0	20.0	158.0
Aug-12	-	46.5	7.0	28.0	165.0	-	47.6	5.0	23.0	172.0	-	44.9	4.0	18.0	152.0	-	46.3	6.0	21.0	163.0
Sep-12	23.10	47.7	6.0	25.0	190.0	25.1	48.7	6.0	24.0	180.0	22.3	46.3	4.0	20.0	175.0	24.4	47.2	5.0	22.0	184.0
Oct-12	28.5	50.6	5.0	26.0	190.0	27.4	52.5	6.0	24.0	192.0	24.8	53.8	5.0	21.0	183.0	25.1	51.4	7.0	23.0	198.0
Nov-12	55.26	74.2	7.0	26.0	198.0	54.3	75.3	8.0	24.0	192.0	57.2	78.3	6.0	27.0	190.0	56.3	78.3	6.0	25.0	193.0
Dec-12	58.25	50.6	5.0	25.0	180.0	53.2	52.5	7.0	24.0	190.0	55.3	53.8	6.0	21.0	182.0	54.2	51.6	7.0	22.0	196.0
Jan-13	28.5	50.6	5.0	26.0	190.0	27.4	52.5	6.0	24.0	192.0	24.8	53.8	5.0	21.0	183.0	25.1	51.4	7.0	23.0	198.0
Feb-13	55.26	74.2	7.0	26.0	198.0	54.3	75.3	8.0	24.0	192.0	57.2	78.3	6.0	27.0	190.0	56.3	78.3	6.0	25.0	193.0
Mar-13	58.25	50.6	5.0	25.0	180.0	53.2	52.5	7.0	24.0	190.0	55.3	53.8	6.0	21.0	182.0	54.2	51.6	7.0	22.0	196.0
AVERAGE ->	**43.88**	**56.36**	**6.67**	**24.92**	**172.92**	**42.10**	**56.90**	**6.75**	**23.92**	**172.08**	**42.42**	**56.68**	**6.00**	**22.42**	**165.67**	**42.22**	**56.18**	**7.17**	**23.75**	**175.92**
MPPCB LIMIT	**60**	**100**	**80**	**80**	**2000**	**60**	**100**	**80**	**80**	**2000**	**60**	**100**	**80**	**80**	**2000**	**60**	**100**	**80**	**80**	**2000**
Min	**23.10**	**46.48**	**5.00**	**22.00**	**130.00**	**25.12**	**47.58**	**5.00**	**21.00**	**125.00**	**22.30**	**43.21**	**4.00**	**18.00**	**128.00**	**24.35**	**45.23**	**5.00**	**20.00**	**132.00**
Max	**58.25**	**74.24**	**10.00**	**28.00**	**198.00**	**54.29**	**75.26**	**9.00**	**27.00**	**192.00**	**57.20**	**78.26**	**10.00**	**28.00**	**190.00**	**56.27**	**78.34**	**11.00**	**30.00**	**198.00**

Annexure-II

ENVIRO ANALYSTS & ENGINEERS PVT. LTD.
(Recognized by Ministry of Environment & Forest, Govt. of India)
Head Office : 1-A, Enviro House, Hansa Complex, Carter Road No. 2, Datta Pada, Borivali (E), Mumbai - 400 066
Tel. : 2854 1647 / 48 / 49, Fax : 28541286, E - mail : desaisaurabhs@rediffmail.com hkdesai@bom3.vsnl.net.in
Website : enviroanalysts.com

KAEPL/U.O./2013-14/001 Dt.: 08.04.2013

CERTIFICATE OF ANALYSIS

Issued to : M/s Jaypee Sidhi Cement Plant
(A Unit of Jaiprakash Associates Ltd.)
Jaypee Vihar, Distt. Sidhi (M.P.) - 442 401.

Sample details : Used Oil

Date of receipt of sample : 11th Mar. 2013

Results of Analysis

Sr. No.	Parameter	Unit	Result	Maximum Permissible limit as per Schedule 5^
1	Colour	Hazen	7.3	8
2	Water	%	3.6	15
3	Density	g/cc	0.91	0.85 to 0.95
4	Kinematic Viscosity at 100°C	CST	1.2	1.0 to 32
5	Dilutent	% Vol.	8.2	15
6	Neutralisation No.	mg KOH/g	2.4	3.5
7	Saponification Value	mg KOH/g	8.3	18
8	Total Halogens	ppm	3240	4000
9	Polychlorinated biphenyls (PCBs)	ppm	1.76	< 2
10	Lead as Pb	ppm	22	100
11	Arsenic as As	ppm	1.15	5
12	Cadmium + Chromium + Nickel	ppm	24.7	500
13	Polyaromatic hydrocarbons (PAH)	%	2.1	6

Thanking you for utilizing our services.

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

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5, Sambhaji Nagar
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