

FORM – V

(See Rule 14)

**ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING THE
31ST MARCH 2010**

PART – A

- I. Name & address of the owner / occupier of the industry operation or process.
**Mr. Motoki Numata , Director –Production
MCC PTA India Corp. Private Limited
Vill & P.O – Bhuniaraichak Via – Sutahata (Haldia)
Purba Midnapore, W.B. Pin - 721635**
- II. Industry category – Primary (STC Code) – Secondary (STC Code)
- III. Production capacity – **4,70,000 TPA of PTA**
- IV. Year of establishment- **Mechanical completion: Dec'1999, Commercial
Production: April'2000.**
- V. Date of last environment statement submitted – 29/9/2009

PART – B

Water & Raw Material Consumption

- I. Water consumption m³/d (**Actual Avg.**)
- | | |
|----------|----------------------------------|
| Process | 3627.2 m³/day |
| Cooling | 4198.81 m³/day |
| Domestic | 292.87 m³/day |

Name of products output	Process water consumption per unit of product	
	During the previous financial year	During the current financial year
(1)	(2)	(3)
(1) PURIFIED TEREPHTHALIC ACID (PTA)	6.70 Kl/tonne of PTA	6.5 Kl/tonne of PTA (Process water consumption includes cooling water also.)

II. Raw Material Consumption (Refer Annexure – I)

* Name of raw material	Name of products	Consumption of raw material per unit	
		During the previous financial year	During the current financial year

*Industry may use codes of disclosing details of raw materials would violate contractual obligations, otherwise all industries have to name the raw materials.

PART – C

Pollution discharged to environment / unit of output. **(Refer Annexure – II)**
(Parameter as specified in the consent issued)

Pollution	Quantity of pollutants	Concentrations of pollutants	Percentage or variation from prescribed standards with reasons
	Discharged (mass/day)	in discharges (mass/volume)	
(a) Water			
(b) Air			

PART – D

HAZARDOUS WASTES

(As specified under Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008.

Hazardous Wastes	Total Quantity (Kgs.)	
	During the previous financial year	During the current financial year
(a) From process *	Refer Ann: III b	Ref: Annexure – III a
(b) From pollution control facilities	# 75498	# 161992

***Organic residue from catalyst recovery unit along with ETP Sludge is burned in incinerator as exhaust gas is cleaned in ESP before emission.**

This includes ESP Ash as well as Kiln ash. The current financial year includes ESP Ash & Kiln ash from the new expansion plant also

PART – E

SOLID WASTES

	Total Quantity (Kgs.)	
	During the previous financial year	During the current financial year
(a) From process	-	-
(b) From pollution control facility	-	-
(c) (1) Quantity recycled or re-utilized within the unit	-	-
(2) Sold	MS Drum:742 HDPE: 1807	MS Drum: 228 HDPE :1372
(3) Disposed	NA	-

PART – F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both categories of wastes. **Refer Annexure - IV**

PART - G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of pollution. **Refer Annexure – V**

PART – H

Additional measures/ investment proposal for environmental protection, abatement of pollution, prevention of pollution. **Refer Annexure - VI**

PART – I

Any other particulars for improving the quality of the environment.
Refer Annexure - VII

Annexure - I

Raw material Consumption

Name of Raw material	Name of products	<u>Consumption of raw material per unit</u>	
		During the previous Financial year (ton/ton of PTA)	During the current financial year (ton/ton of PTA)
1. Paraxylene	Purified Terephthalic Acid (PTA)	0.656	0.655
2. Methanol		0.00224	0.00228
3. Acetic acid		0.0385	0.0395
4. Hydrobromic acid		0.00065	0.00061
5. Caustic soda		0.00473	0.00956

Pollutant discharged to environment/unit of output

Pollution	Quantity of pollutants Discharged (mass/day) Kg/day (avg.)	Concentration of pollutants discharged (mass/volume) mg/lit (avg.)	% or variation from prescribed standards with reasons
Water			
COD	1303	102.58	Nil
BOD	353	27.33	Nil
O&G	24	2.02	Nil
F	6	0.51	Nil
Fe	3	0.26	Nil
Total Cr	BDL	BDL	Nil
Mn	5	0.39	Nil
TSS	243	19.00	Nil

Note: The final discharge flow rate is taken as 12050 m³/day (Avg.) during this period.

All results are average values of WBPCB monthly sampling during this period.

Air

	Quantity of pollutants Discharged (mass/day) Kg/day (avg.)	Concentration of pollutants discharged (mass/volume) mg/ Nm3 (avg.)	% or variation from prescribed standards with reasons
PM	805	119	Nil
CO	Average values are less than 0.2 %		Nil

Note: Above values are average results of WBPCB quarterly sampling.

Annexure - IV

Process waste i.e. organic residue from Catalyst recovery section & sludge from waste water treatment plant (ETP) is burned in the incinerator with ESP for cleaning flue gas before emission. The Incinerator for the expansion plant meets all the requirements of CPCB standards for common hazardous waste incinerators.

The sludge generated from Waste water treatment plant is dehydrated in sludge decanter & dryer and burned in the incinerator along with organic residue generated from Process plant. The sludge from waste water treatment plant contains about 90% moisture. The waste from process contains around 50 % moisture.

Ash generated from ESP is declared as hazardous waste. The list of hazardous waste with generation quantity & its disposal during this period is enclosed as **Annexure - IIIa**. The test reports of different Hazardous waste are also enclosed as **Annex - IVa**. Authorization for storage and disposal of hazardous waste obtained from WBPCB and renewed for 5 years (2006-2011). The hazardous as well as non-hazardous wastes are segregated and temporarily stored in an Integrated scrap yard from July 2006 onwards. The final disposal of hazardous waste is done through West Bengal Waste Management Limited (TSDF) at Haldia periodically. The Used & Waste oil is being taken by CPCB approved Registered recycler & Reprocessor. The lay out of the Integrated Scrap Yard is shown in **Annexure - IVb**.

All the identified hazardous waste including some expired chemicals is being disposed off periodically through TSDF.

Solid Waste

The non-hazardous waste i.e. scrap are also stored in the scrap yard in separate locations and finally sold to scrap vendor.

Around 228 nos. of MS drums, 1372 nos. of HDPE drums of Raw materials after decontamination/ cleaning have been sold to the outside vendor during the period April'09 – March'10.

Around 536 tonne of treated effluent holding pit bottom sludge disposed to TSDF as non-hazardous municipal solid waste.

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

MCC PTA's Corporate Principle is:

To contribute to the economy and society of India through its business activities, establishing the interrelationship among people, society and nature.

MCC PTA has full-fledged **Safety, Health & Environmental Policy**. The SH&E Policy is enclosed as **Annexure - Va**

Following actions have been implemented for waste reduction & improving environmental compliance:

1. PTA Manufacturing Process Technology employs the following:
 - Low utility consumption as by-produced energy even in a low level from the process is effectively recovered.
 - High yield of PTA from Paraxylene
 - Low acetic acid & catalyst consumption
 - Process with stable operation.
 - Recovery & recycling of by-products.
2. By-product Steam is used for driving low-pressure steam turbine & the off-gas from the paraxylene oxidation reactor is used for driving off-gas expander. Around 10 MW of power is generated from by produced steam & off-gas. Process air compressor, which requires around 15 MW of power is furnished with a motor & coaxially equipped with the steam turbine & the gas expander. Rest 5 MW of power is supplied by the DEG sets. Thus by-produced energy is effectively & efficiently recovered & reused for running the Air compressor. This also means reduction in use & conservation of natural resources ie Furnace oil.
3. Waste water (Process & domestic) is treated by extended activated sludge treatment (Diffused aeration system) with sludge cooler before discharge to the river so that treated effluent is well below the permissible limit so as to minimize any adverse effect on the aquatic life of the river. Waste water treatment plant is continuously monitored through DCS (Distributed Control System).

4. Off gas from the para-xylene oxidation reactor is used for generating steam and for recovery of heat by passing through various heat exchangers. The acetic acid vapour is condensed & recycled back to the oxidation reactor thereby reducing the consumption of acetic acid which lead to reduction in resource consumption.

5. Low NO_x burner is used in Boiler & Hot oil for minimizing NO_x emission. Low NO_x DEG are used for power generation

6. Adequate stack height for all emission so that GLC (Ground level concentration) of pollutant is well within the permissible limit. NO_x reduction from DEG & Incinerator in the expansion plant through diffusion & dispersion by providing increased stack height.

7. Incinerator for burning ETP sludge & process sludge for volume reduction & to destroy organic toxicity. Separate & dedicated Incinerator installed for the expansion plant complying with the norms of CPCB for common hazardous waste Incinerators.

8. Electrostatic precipitator (ESP) installed for controlling dust emission from the incinerator.

9. Suitable scrubbers are provided to decrease the level of organic pollutant in negligible range before emission.

10. On-line stack monitoring devices installed for the new plant

11. Storage tanks are provided for holding & storing influent before being feed to the ETP.

12. Greenbelt (around 33% of the total plant land) has been developed surrounding the factory for minimizing the effect of pollution & increasing aesthetic aspects. Yearly maintenance & development of the existing green belt are undertaken. At present, around 40000 trees are available. Moreover, a water body of capacity 3.5 lakh m³ also exists.

13. Effluent & Storm water drains are segregated. In case of any spillage of chemicals in process section it is led into the underground sump pits from where it is fed to the ETP at a controlled rate for treatment.

14. Treated effluent from ETP after continuous monitoring of pH & temperature is discharged to the river. New & dedicated waste water treatment plant with Equalization tank installed for the new plant. Both the waste water treatment plant are DCS controlled & on-line monitoring devices are installed at various stages.

15. Integrated Scrap yard for storing Hazardous as well as Non-hazardous solid waste have been constructed & in operation. Final disposal of hazardous waste is being done through TSDF at Haldia.

16. Double sealed equipment; mono pumps have been installed in highly volatile organic chemicals handling equipment in Expansion project to reduce VOC leaks at source

17. Resource Conservation

- a) Industrial water reduction due to reduction in timer of backwash & rinse steps
- b) Furnace oil consumption reduction by
 - PTA product quality optimization.
 - Hot oil heater burner replacement at periodic interval.
- c) Steam turbine/Gas expander capacity utilization of Air compressor section has resulted in Electricity consumption decrease.
- d) Used & Waste Oil is being periodically disposed off through Registered Recycler & Reprocessor. Initiative taken for Re-processing & taking back the contaminated Heat Transfer Oil into our system.

18. Energy Conservation

As the process technology itself is such that steam is generated as a by-product so it is effectively & efficiently used. Boiler is only required during Start up & Shut down of the process for steam generation.

- As a part of Energy conservation, Energy conservation committee has been formed in different buildings & Energy manager appointed. Several action plans have been formulated for energy savings
- Energy Audit conducted for the plant.
- Furnace oil (FO) consumption reduction per tonne of production in the expansion plant is about 20 % less compared to the existing plant.
- Reduction of Compressor train power in the expansion plant
- Awareness Campaign

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

New Expansion Project:

- MCPI has set up another PTA plant of capacity 900000 lakhs TPA (Max.) with an approximate investment of Rs 1760 crores (max.). The NOC & Consent to Operate from WBPCB & Environmental clearance from MOEF already obtained. The project is under stabilization. Some new PTA Technology is being incorporated in this new project. The objectives are:
 - a) Better Environmental Compliance
 - b) Better Resource conservation
 - c) Energy Conservation
 - d) Reduction of fixed cost

Main highlights of the Project w.r.t Environmental protection are:

- i) Installation of Desulphurization units (Alkaline Scrubber) for SO_x reduction
 - ii) Off-gas burning unit for VOC reduction
 - iii) Azeotropic distillation to reduce COD load
 - iv) Incinerator & ESP with much higher design standard
 - v) Waste water Treatment plant
 - vi) Fluidized bed dryer
 - vii) Flash drying etc.
- Planned to install Sedimentation cum Filtration Unit in the De-Sulphurisation Unit in order to separate SS before the ETP. NOC already obtained for this modification (Vide Memo No 424-SEE-camc-WBPCB-2N-123/2010 dtd 30/4/10)
 - Co-processing of solid Hazardous waste (ETP & Process Sludge, Scrap PTA, PTA Liner, Oil & Chemical soaked cotton waste) with M/s Ambuja Cements initiated & now waiting for trial burn in their Incinerator.
 - Dioxin & Furan monitoring conducted annually from the Incinerator. The results are within the permissible limit.

- LDAR Monitoring initiated & will be completed in due course of time.
- Conducted Marine Impact Assessment study for the additional discharge from the new plant to River. The study shows no adverse impact.

Hazardous Waste:

- All hazardous as well as non-hazardous wastes are temporarily stored in Integrated Scrap Yard and finally disposed off through TSDF at Haldia periodically.

Air Emission:

- Dioxin sampling and analysis once in a year is being conducted for the incinerator emission as a part of yearly checking.

Green Belt:

- Around 5200 nos. of trees planted (Pollutant Attenuation Species) as a part of World Environment Day celebration in our existing & future green belt.

Emergency Preparedness:

- Adequate resources available for emergency tackling. MCPI have Mutual Aid agreement with IOC, HPL & PHBPL. Periodic emergency drills are conducted for maintaining highest level of preparedness.
- On-site Emergency mock drill conducted twice a year taking various probable scenarios for Emergency Preparedness.

Any other particulars for improving the quality of the environment

Re-certified to Integrated Management System (ISO-9001:2008, ISO-14001:2004 & OHSAS-18001:2007).

MCPI is a signatory of Responsible Care programme. Published Responsible Care report.

MCPI have got First position in Environment Excellence Award – 2004 in Industry sector.

MCPI got second position in SHE award competition conducted by CII, Eastern Region in 2005.

MCPI got third position in National Safety Council Safety Award for the year 2006.

MCPI is also a member of District Crisis Group for Disaster management

MCPI have full- fledged Occupational Health center and manned round the clock. Periodic health checks up of all employees are conducted to ascertain the health status.

PLI Policy is being renewed periodically. Latest policy is enclosed.
Annexure- VIIa

Stack Monitoring, Ambient Air monitoring, Work zone monitoring (Static & Personal), Bio-assay test are being conducted periodically by 3rd party.

MoEF Half yearly compliance report for the existing as well as for the new expansion project being submitted as per schedule.

To strengthen its Emergency Preparedness, MCPI have mutual aid agreement with IOC, HPL & HBCPL.

World Environment day celebrated on every 5th June for increasing the environmental awareness. Besides periodic awareness in-house training are conducted for increasing the environmental & Safety awareness among the employees.

Japanese 5'S' model on Housekeeping has been adopted in our company since commercial production. The basic goal of the 5'S' system is to create clean, safe & work friendly environment by effective participation of all employees. In order to achieve the basic goal, Factory 5'S' committee for Housekeeping & improving the work environment have been formed. The action plan has been formulated starting with creating awareness within the employees followed by effective implementation & monitoring of 5'S' system by the respective departments. Regular 5'S' patrol & inter departmental audit in various sections of the plant are being conducted as per prepared schedule. The audit findings and counter measures for improvement of housekeeping standards are planned to implement in the meeting within specific target date. Every Friday of the week has been declared as 5'S' day and each member is responsible for cleaning his/her job area. As a part of 5'S' activity, regular cleaning of plant areas, drains & pits etc. are being done as per the schedule.

Quality Circle groups within the organization exist from various department. These groups take different problem area in the working area including problems related to Safety, Health & Environment. These groups represent at regional, national as well as international levels.

MCPI have undertaken Corporate Social Responsibilities (CSR) programme which includes commitment towards society for better environment through various initiatives like- Medical camp, Book distribution to children, eye check up etc. **Annexure- VIIIb**

Member Secretary
WB Pollution Control Board
Paribesh Bhawan
LA-10A, Sector –III, Salt lake
Kolkata – 700098

Date: 29/09/10

**Kind Attention: Mr. D Sarkar– Sr. Environmental Engineer
(Planning)**

**Sub: Environment Statement for the financial year ending 31st
March'2010**

Dear Sir,

We would at the outset like to convey our sincere thanks & gratitude to you & to your officials at Kolkata & Haldia for continuous support & guidance for smooth running of the PTA plant at Haldia.

We are now submitting herewith two copies & one CD of Environment Statement for the PTA plant for the financial year ending 31st March'10 (April'2009 – March'2010) in prescribed format along with relevant documents for your kind perusal.

Thanking you,

Sincerely yours,
For **MCC PTA India Corp. Pvt. Ltd.**

M Numata
Director- Production

Encl: a/a

cc: Director (S), MoEF, Bhubaneswar
Environmental Engineer, WBPCB, Haldia
In-charge, CPCB, Eastern Regional office