

FORM V**ENVIRONMENTAL STATEMENT for the financial year ending March 31, 2011****PART-A**

- (i) Name and Address : P.A.B.Raju
Executive Director
Hindustan Petroleum Corporation Limited
Visakh Refinery, Malkapuram
Viskhapatnam -530 011 (A.P)
- (ii) Industry Category : Petroleum Refinery
- (iii) Production Capacity : 8.33 Million Metric Tonnes per annum of Crude
Processing (installed capacity)
- (iv) Year of Establishment : 1957
- (v) Date of last environmental Statement : August 2, 2010
Report submitted

PART - B**WATER AND RAW MATERIAL CONSUMPTION**

S.No	Water Consumption (m ³ / calendar day)	2009-2010	2010-11
1	Fresh water	11, 645	12,936
2	Sea Water For cooling	244, 382	205,440
3	Domestic	180	180

Name of products	Water consumption in m ³ /ton of crude processed		
		2009-2010	2010-2011
1. LPG/Propylene			
2. MS/Naphtha	Fresh water	0.48	0.57
3. Kerosene/ATF/MTO			
4. Diesel/JBO	Sea Cooling		
5. LDO	water for	10.1	9.1
6. FO/LSHS	Cooling.		
7. Bitumen			

(2) Raw Material Consumption

Name of Raw Material	Name of Products	Consumption of raw material per unit of output	
		2009-2010	2010-2011
Crude Oil	1. LPG/Propylene	1.07	1.07
	2. MS/Naphtha		
	3. Kerosene/ATF/MTO		
	4. Diesel/JBO		
	5. LDO		
	6. FO/LSHS		
	7. Bitumen		

PART - C
POLLUTION GENERATED
(As per Consent Order)

WATER

PARAMETERS	CONSENT LIMIT	ACTUAL (Typical)	% VARIATION WITH PRESCRIBED STANDARDS
pH	6.0 - 8.5	7.2	-Nil-
TSS (mg/Lit)	20	10	-Nil-
Oil & Grease (mg/Lit)	5	5	-Nil-
Phenols (mg/Lit)	0.35	0.32	-Nil-
Sulphides (mg/Lit)	0.5	0.32	-Nil-
BOD (mg/Lit)	15	12.9	-Nil-
Effluent quantity discharged (m ³ /1000 tons of crude)	700	223	-Nil-
Note: Quantity of effluent discharged pertains to process waste water (as MINAS is applicable to process waste water) as per CBPCWP letter No. 18/41/79-Tech February 06, 1985.			

AIR

Emission from Stack :

PARAMETERS	STANDARD	ACTUAL (Typical)	% VARIATION WITH PRESCRIBED STANDARDS
SPM (mg/Nm ³)	115	56.5	-Nil-
SO ₂ (Tons /day)	11.5	7.84	-Nil-
CO (mg/Nm ³) for FCCU stacks	500	31.75	-Nil-
HC (Kg/Ton of product)	0.2	0.027	-Nil-

Note: CO Boilers are in operation at FCCU-II and FCCU-I(R) for CO emissions control.

PART- D
HAZARDOUS WASTES

A. From Process : Included in Part E

B. From Pollution Control Facilities: Included in Part E

PART - E
SOLID WASTES

S.no	Source	Quantity (MT) 2009-2010	Quantity (MT) 2010-2011
1	Process	436 (Note-1) 453 (Note-2)	350 (Note-1) 167 (Note-2)
2	Pollution Control Facilities	240 (Note-3)	135 (Note-3)
3	Recycled/ re-utilized.		Refer Part F

Note-1: Approx. quantity of oily sludge generated.

Note-2: Approx quantity of spent catalyst generated.

Note-3: Approx. quantity of sludge from ETPs.

PART - F

Characteristics & Disposal practices for Hazardous & Solid Wastes

- **Oily Sludge:**

At Visakh Refinery, oily sludge to be handled is mainly from two sources. One is from the Crude/Slop oil tanks and the other is from Effluent Treatment Plants (ETPs), sumps cleaning, sewer cleaning, etc. Accumulated sludge stored in lined lagoons is being sold to CPCB / SPCB authorized recyclers. A total of 1333.1 MT of sludge was sold during 2010-11.

- **Spent Catalyst:**

Spent catalyst generation is from process units. Generation of spent catalysts is on periodic basis, once in 4-5 years. Non - regenerable catalysts are being sold to CPCB / SPCB authorized recyclers. A total of 438 MT of spent catalyst was sold during 2010-11.

PART - G
Impact of Pollution Control Measures on Conservation of Natural Resources
and consequently on the Cost of Production

- Installation and commissioning of Excess Oil Ingress Project facilities in ETP-I & II was completed by April-2010. The O&G concentration in the final effluent from ETPs is meeting the stipulated discharge standards.
- The average process effluent generated during the year was 210 m³/hr. Re-use of treated water from ETPs was maximized for commissioning activities of ETP-IV and Excess Oil Ingress project facilities.
- ETP-IV was commissioned during February-2011 and stabilization is in progress.
- Sulphur Recovery Units are in operation to limit the sulphur dioxide emissions from the Refinery below the stipulated limit of 11.5 tons/day. The total sulphur recovered in SRU's in 2010-11 was 22,199 MT.
- Fuel Gas Amine Absorption Unit (FGAAU) for treatment of sour fuel gas treatment was in continuous operation leading to complete sour gas treatment and contributing to minimum SO₂ emissions from Fuel Gas. The total Fuel Gas treated in FGAAU in 2010-11 was 80.418 TMT.
- On line connectivity of ambient air data from South gate Continuous Ambient Air Monitoring station (CAAMS) to APPCB server was established on 28.01.2011.
- CDU-II atmos and vaccum heater furnace improvement study recommendations were implemented resulting in an increase in furnace efficiency by around 7% (from 82% to 89%). This resulted in reduction of fuel consumption by approximately 4200 MT per annum.

PART - H

Additional investment for Environment protection including abatement of pollution

Project	Approx. Project Cost (₹ Lakhs)
Excess Oil Ingress Project implementation in ETP-I & II	7,200
Periodic steam leak and compressed air surveys	5
Environment monitoring by MOE&F approved laboratory	6.5
Repair & Maintenance of Continuous Ambient Air Monitoring Stations & Stack analyzers.	260
Hydrogen Peroxide treatment for Sulphides in ETP-II	475
Leak Detection And Repair (LDAR) program	10
Guage pole socks on floating roof tanks	5

PART-I

MISCELLANEOUS

ANY OTHER PARTICULARS IN RESPECT OF ENVIRONMENT

- **Continuous Ambient Air Monitoring Stations:**

Continuous Ambient Air Monitoring Stations (CAAMS), 3 in number, were in operation to measure ground level concentration of SO_x, NO_x, HC, SPM and CO in ambient air along with weather monitoring station to monitor the meteorological conditions. Monitoring by MOEF approved laboratory is also done on regular basis.

- **ENCON ACTIVITIES:**

Refinery is carrying out periodic surveys for identifying and arresting steam leaks and compressed air leaks in process units and offsite areas.

- **Leak Detection And Repair:**

LDAR program for monitoring and control of VOC emissions is in practice. Testing of around 21650 points covering all the pump seals, valves, and flanges is in practice.

- **Oil Spill Response Plan:**

Refinery entered into agreement with VPT for oil spill management in Port area.

- **Ongoing Environment Projects:**

Installation of Flue Gas Desulphurizers (FGDs) in the FCCs for SPM and SO₂ reduction is being taken up at a cost of approximately ₹ 75 Crores. A project towards installation of facilities for production of Euro-IV Diesel is in progress.

- **ISO-14001:**

Refinery's ISO-14001 Certificate is valid up to 3rd May, 2012.

- **Recent Environment & ENCON Awards:**

1. HPCL-Visakh Refinery has been awarded with "11th Annual Greentech Environment Excellence Award-2010" in Gold Category. The award was presented during an Award presentation ceremony held at Hyderabad on 12th December 2010.
2. HPCL-Visakh Refinery has been awarded with "Most Innovative Environmental Project" at the CII Environmental Best Practices Award 2011 organized by CII - Godrej Green Business Centre on 28 & 29 January 2011 at CII - Sohrabji Godrej Green Business Centre, Hyderabad.
3. HPCL-Visakh Refinery participated in the Andhra University Academic Exhibition during Feb. 12-13, 2011 by displaying & demonstrating process models of the Environment control facilities at VR.