HARYANA STATE POLLUTION CONTROL BOARD
C-11 Sector-6, Panchkula
Ph – 0172- 577870-73, Fax No. 2581201
E-mail- hspcbho@gmail.com
Website: hspcb.gov.in

Date: 26/07/2022

To
The Secretary,
Ministry of environment forest and climate change,
Impact Assessment division –II (I),
India Paryavaran Bhavan, Vayu Wing, 3rd floor, Aliganj
Jor Bagh Road, New Delhi110003

Sub: Proceedings of the Public Hearing for Project requiring clearance under Environmental Impact Assessment Notification, 14 September, 2006 (as amended) for proposed Installation of a 60 KTA Poly-Butadiene Rubber (PBR) plant at Panipat Naphtha Cracker Complex, Panipat, Haryana, on 25.05.2022 at 11:00 AM.

Reference No. IA –J-11011/306/2020-IA-II (I) dated 11.12.2020.

Please find enclosed herewith the proceeding of the public hearing conducted on 25.05.2022 under the provisions of EIA Notification dated 14.09.2006 for proposed project requiring environment clearance for Installation of a 60 KTA Poly-Butadiene Rubber (PBR) plant at Panipat Naphtha Cracker Complex, Panipat, Haryana forwarded by Regional Officer, Panipat Region, Haryana State Pollution Control Board vide letter dated 20.06.2022 alongwith attendance sheet, CD, photographs and other relevant documents for information and further necessary action.
DA/As above.

Sr. Environmental Engineer (PLG)
For Member Secretary

Endst. No. HSPCB/PLG/2022/ **Dated:**

A copy of above alongwith copy of proceeding with attendance sheet is forwarded to following for information and further necessary action please:-

1. The Member Secretary, SEIAA, Bays No. 55 - 58, Prayatan Bhawan, 1st floor, Sector 2, Panchkula.
2. The Additional Chief Secretary to Govt. Haryana, Environment Department, Chandigarh.
3. The Director, Environment Department, Haryana.
4. The Deputy Commissioner, Panipat.
5. The Chairman, Zila Parishad, Panipat.
6. Municipal Corporation, Panipat.

7. Regional Officer, Panipat Region. He is requested to send the copy of proceedings to all the concerned Village Panchayat for displaying in the same their offices.
8. PS to Chairman.
9. PA to Member Secretary.
10. Nodal Officer-IT for uploading the proceeding on the website of the Board.
11. M/s Indian Oil Corporation Limited, Panipat Refinery & Petro Chemical Complex, PO Panipat Refinery, District Panipat, 132140.

DA/Copy of Proceeding.

Sr. Environmental Engineer (PLG)
For Member Secretary

Signed by Bhupender Singh Rinwa
Date: 26-07-2022 14:15:05
Reason: Approved

HARYANA STATE POLLUTION CONTROL BOARD
SCO No.55, SECTOR-25, HUDA, PANIPAT
Ph. – (0180) 2672037, Telefax – 2664951, E-mail: hspcbropr@gmail.com

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To

The Chairman,
Haryana State Pollution Control Board,
Panchkula.

Kind Attn: SEE (Planning Cell) (HQ)

Sub: Proceedings of the Public Hearing for Project requiring clearance under Environmental Impact Assessment Notification, 14 September, 2006 (as amended) for proposed Installation of a 60 KTA Poly-Butadiene Rubber (PBR) plant at Panipat Naphtha Cracker Complex, Panipat, Haryana, State-Haryana on 25/05/2022 at 11:00 AM.

In this connection, please find enclosed herewith the copy of Proceedings of the Public Hearing for Project requiring clearance under Environmental Impact Assessment Notification, 14 September, 2006 (as amended) for proposed Installation of a 60 KTA Poly-Butadiene Rubber (PBR) plant at Panipat Naphtha Cracker Complex, Panipat, Haryana, State-Haryana on 25/05/2022 at 11:00 AM.

It is submitted for your kind information and further necessary action please.

DA/
1. Copy of attendance sheet of public present during the hearing.
2. Copy of attendance sheet of officers present during the hearing.
3. Soft copy (CD) of proceedings of hearing.
4. Photographs of the hearing.
5. Approved copy of proceeding of hearing by Ld. DC, Panipat.

Regional Officer
Panipat Region

Signed by Kamaljit Singh
Date: 20-06-2022 16:12:09
Reason: Approved

2125846/2022/REGION PANIPAT

Proceedings of the Public Hearing for Project requiring clearance under Environmental Impact Assessment Notification, 14 September, 2006 (as amended) for proposed Installation of a 60 KTA Poly-Butadiene Rubber (PBR) plant at Panipat Naphtha Cracker Complex, Panipat, Haryana, State-Haryana on 25/05/2022 at 11:00 AM.

Please find enclosed herewith the Proceedings of the Public Hearing for Project requiring clearance under Environmental Impact Assessment Notification, 14 September, 2006 (as amended) for proposed Installation of a 60 KTA Poly-Butadiene Rubber (PBR) plant at Panipat Naphtha Cracker Complex, Panipat, Haryana, for kind approval please.

Regional Officer, HSPCB

Ld Deputy Commissioner, Panipat

As proposed.

R.O (HSPCB)

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Proceedings of the Public Hearing

Proceedings of the Public Hearing for Project requiring clearance under Environmental Impact Assessment Notification, 14 September, 2006 (as amended) for proposed Installation of a 60 KTA Poly-Butadiene Rubber (PBR) plant at Panipat Naphtha Cracker Complex, Panipat, Haryana, State-Haryana on 25/05/2022 at 11:00 AM.

The above project is required to obtain the Environment Clearance as this project is covered under amended EIA Notification dated 14thSeptember, 2006 of the Ministry of Environment and Forest, Govt. of India, New Delhi. The project proponents have applied for the Environmental Clearance to MoEF&CC, Government of India and requested to conduct a public hearing. In this regard, an advertisement regarding public hearing notice for publication in leading Hindi Newspaper was published by Haryana State Pollution Control Board. The public hearing was conducted on dated 25/05/2022 under the chairmanship of Sh. Sushil Sarwan, IAS, Deputy Commissioner, Panipat, Haryana and alongwith other officers from respective departments. The attendance sheets of the officers and general public who attended the above said hearing are enclosed as Annexure-**A & B**. The CDs of videography of the entire public hearing are enclosed as **Annexure-C**. No representation was submitted by the public at the time of Hearing.

The following officers were present in the public hearing meeting.

1. Sh. Sushil Sarwan, IAS, Deputy Commissioner, Panipat
2. Sh. Kamaljit Singh, Regional Officer, HSPCB, Panipat
3. Sh. G.C. Sikdar, ED&RH, Panipat Refinery & Petrochemical Complex, Panipat
4. Sh. Rajbir Singh, DDPO, Panipat
5. Sh. Jitender Kumar, BDPO, Israna, Panipat.
6. Sh. Pardeep Singh, AEE, HSPCB, Panipat
7. Sh. Kshitij Kapoor, Joint Director , District Industries Centre, Panipat

Sh. Kamaljit Singh, Regional Officer, Haryana State pollution Control Board, Panipat welcome the Deputy Commissioner, Panipat with all other officers & general public present during the hearing and thereafter sought permission from the Chairman to start the Public Hearing. He briefed about the EIA notification dated 14.09.2006 and process of Public Hearing.-He also requested the public to speak one by one and put up their question after the presentation of project and assured the public that their questions will be answered by the Project Proponents. Thereafter he asked the Project Proponent to give presentation of project.

Project Proponent explained about the proposed 60 KTA Poly-Butadiene Rubber (PBR) plant as detailed below:

The proposed project is for the installation of new Poly-Butadiene Rubber (PBR) plant within the existing PNC (Panipat Naphtha Craker) complex of IOCL, Panipat. The proposed capacity of the plant is 60,000 Tonnes per annum. The IOCL Panipat will be engaging world renowned process licensors M/s. Good Year, USA for this project. The land required towards the installation of the proposed PBR unit and associated facilities is located in available land in South-East corner of the PNC plot area.

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E.1 PROJECT LOCATION AND BRIEF DESCRIPTION

M/s IOCL has planned to set up a new PBR manufacturing unit within the existing plot of PNC Plant at Panipat Refinery in the city of Panipat, Haryana.The location of the project site is represented in **Figure E.1**:

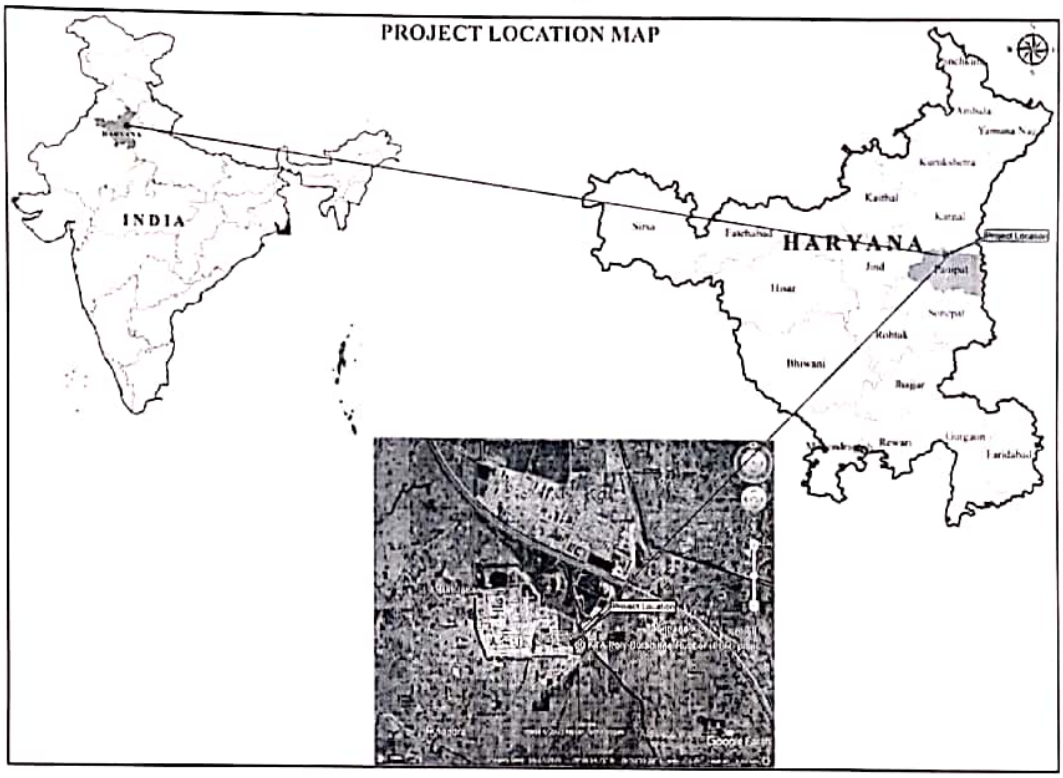

Figure E- 1: Location of the Project

Table E-1: Brief Description of the Project

S. No.	Particulars	Details
1.	Nature and size of the Project	Installation of a Poly-Butadiene Rubber (PBR) plant at Panipat Naphtha Cracker (PNC) Complex, Panipat (Haryana) Proposed capacity- 60 KTA
2.	Location details	Reg. add. PO: Panipat Refinery; Distt.: Panipat; Pin: 132140
	Geographical Coordinates	Lat: 29°26'48.80"N Long: 76°52'39.35"E
	Toposheet number	H43Q15
3.	**Area Details**	
	Total Project Area	10.92ha.
4.	**Environmental Setting Details (with approximate aerial distance and direction from the project site)**	
	Nearest City	Panipat: approx. 10 Km in SE
	Nearest Highway	NH 44 - 8.75 Km in East direction (aerial distance)
	Nearest Railway Station	Panipat Railway Station: 10 Km in SE
	Nearest Airport	Karnal Airport - approx. 33 Km in NNE (aerial distance) Indira Gandhi International Airport- 100 km (approx.) in South
	National Parks/ Wild Life	There is no National Park and Biosphere

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	Sanctuaries/ Biosphere Reserves/ RF and PF within 10km radius	Reserve within 10 Km radius. No RF/PF within the 10 KM of the project site.
	Nearest Water Bodies	• Western Yamuna Canal- 1.90 Km in East direction (aerial distance) • Sithana Pond- 2.03 Km in East direction (aerial distance) • Shera Village Pond- 5.31 Km in West direction (aerial distance)
	Interstate Boundary	None
	Seismic Zone	Zone-IV
	List of industries/ Project activities	Project is within the existing Panipat Naphtha Cracker (PNC) unit.
5.	**Cost Details**	
	Project Cost	Rs. 1200.8 cr
	Environmental Management Plan Cost	Capital cost -Rs. 4377.14 Lakhs, Recurring cost –Rs. 93.84Lakhs
	Cost of OH&S	Rs. 8.08 Lakhs/Yr

E.1.1.1 Material Balance

Material balance is given below as:

Table E- 2: Material balance

Feed	MT/MT of product	Quantity in Kg/hr.
1,3-Butadiene	1.05	7875.0
Product	**Basis**	**Production rate Kg/hr**
Poly Butadiene Rubber		7500
Waste rubber	0.50%	37.5
Dimer (will be used as liquid fuel)		60

Source: Pre-feasibility report

Note: Dimer is not a hazardous waste; it is a liquid fuel and will be used in the process of swing unit of existing Naphtha Cracker complex.

E.1.1.2 Raw Material Requirement

Raw materials required for manufacturing of Poly-Butadiene Rubber (PBR) are given below:

Major Raw Material:

a. 1, 3-Butadiene

b. Mixed Hexane Solvent

c. Catalyst

Table E- 3: Typical raw material

Particulars	Source	Storage Condition
1,3-Butadiene	PNC butadiene plant of IOCL Panipat	It will be stored in tank at lower temperature where chilling medium is propylene. Pressure is around 1.6-1.9 kg/cm^2 and

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Mixed Hexane	IOCL Gujarat	It will be stored in tank
Ziegler Natta Catalyst (Nickel based)	To be imported as per specification	It will be unloaded from Iso-containers in to storage tanks

Mode of transportation of main raw materials Butadiene is by Pipeline and hexane will be by road tankers.

Details of other chemicals are given below as:

Raw Material Codename	Group
HONERIC0(KG)	R1
GASSIC (KG)	R2
WINKOL(KG)	R3
NICKIC (KG)	R4
TRIBUTIC(KG)	R5
DROFLIC(KG)	R6
BUTOL(KG)	R7
DIONAX(KG)	R8
GULASOL(KG)	R9
STERAX(KG)	R10
STURMAX(KG)	R11
DILLIC(KG)	R12
CAUSINE(KG)	R13
NITRAX(KG)	R14
PHOSIC(KG)	R15

Storage Details:

Final product PBR will be in the form of packaged bales stacked inside metal boxes. PBR bales filled metal boxes and empty metal boxes will be stored inside the new PBR plant Warehouse. Chemicals and consumables will be stored in new storage tanks to be built in PBR plant.

E.1.1.3 Water Requirement

Water requirement for the PBR plant is 97 m^3/hr. (Normal) and 133 m^3/hr. (peak).

The water required for the proposed project will be met by existing water supply system sourced from "MUNAK regulator on Western Yamuna Canal".

E.1.1.4 Power/Electricity

Total design capacity of CPP in PNC is 238 MW (including stand-by) and current power consumption for PNC is 145 MW.

For PBR plant, power requirement is 8 MW (or 8046 KWH) which will be met from PNC CPP. In case of power failure, supply will be from Panipat Refinery. Further, if any emergency arises or power failure occurred in Panipat Refinery then power will be

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drawn from the State power grids. Apart from it, there is availability of UPS back up for continuous power supply for DCS instrumentation and lights.

The proposed electrical distribution system has been envisaged considering primary &secondary power distribution at voltage level of 33kV & 6.6kV, 415V respectively.

E.1.1.5 Manpower Details

For the construction of proposed plant, all the non-skilled manpower and other workers shall be hired from local area leading to employment generation in the nearby areas of the plant. The manpower requirement during construction phase is as per the below table:

Table E- 4: Manpower requirements during Construction Phase

S. No.	Description	Numbers
1	Temporary	2500
2	Permanent	20
Total		**2520**

For regular maintenance works in the plant as well as for warehouse management & operation, contractual workers shall be outsourced. During operation phase, the manpower requirement is shown below.

Table E- 5: Manpower requirements during Operation Phase

S. No.	Description	Numbers
1	Temporary	25
2	Permanent	36
Total		**61**

E.1.1.6 Utility Requirements

Table E- 6: Total Utility Consumption

S. No.	Name of Utility	Type of Consumption	Consumption rate		UOM
			Normal	Peak	
1.	Condensate	Continuous	10.23	15.3	TPH
2.	Raw Water	Continuous	97	133	m^3/hr
3.	Power	Continuous	8046		KWH
4.	Nitrogen	Continuous	100	400	Nm^3/hr
5.	Instrument Air	Continuous	230		Nm^3/hr
6.	RLNG	Continuous	91		Kg/hr
7.	DM Water	Continuous	28	42	m^3/hr
8.	Plant Air	Intermittent		340	Nm^3/hr

Mode of transportation of raw materials & utilities will be through pipeline and trucks.

E.2 PROCESS DESCRIPTION

The proposed PBR plant of 60 KTPA of production capacity is considered as main project facility. PBR plant contains Feed & solvent preparation, polymerization, solvent & unreacted feed recovery, stripping, finishing and packaging section.

Incoming Honoric shall be washed with water to remove inhibitor. The washed Honoric shall be mixed with recycle Honoric steam and recycle solvent from the recovery area

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to form a "premix solution". The premix shall be passed over desiccant beds to remove water. The dried premix then goes to the premix tank. The premix make-up system shall be operated continuously.

Catalyst components, modifiers, short stops, antioxidants, and process additives will be diluted to specific concentrations in batch make-up systems.

The polymerization shall be conducted in one continuous reactor train consisting of two reactors in series. The reactors shall have specially design agitation to ensure proper mixing of the incoming feeds in the viscous polymer solution.

The reactor cement shall be pumped from one reactor to the next using special pumps. The reactor level shall be controlled by adjusting the pump speed. Short stop and antioxidant shall be added to the polymer cement as it will discharge from the second reactor.

The stabilized polymer cement shall be pumped to a cement hold tank. The tank is a surge vessel which buffers the reactor train from downstream operations. The cement from the hold tank shall be passed through a bank of specially designed strainers. The strainers remove any solid contamination from the polymer cement. The strained cement shall then feed to the steam stripping train.

The steam stripping train consists of a primary, secondary, and tertiary strippers. Steam stripping is the process of contacting polymer cement with water and steam. Solvent, unreacted butadiene and dimmers shall be stripped from the polymer leaving a rubber crumb in water slurry. The vaporized hydrocarbons and water will be condensed and collected in a decant tank. The rubber/water slurry from the primary strippers shall be pumped to the secondary strippers, then to the tertiary stripper.

The slurry from the tertiary stripper shall then be pumped to a crumb tank. The rubber/water slurry from the crumb tank shall be pumped to two finishing lines for drying.

The water from the steam stripper decanter is pumped to a wastewater stripper and is then discharged to the plant effluent system. The recovered hydrocarbon from the decanters shall be pumped to the feed tank for the distillation area.

The distillation area consists of two towers. The first tower separates the residual feed and from the solvent. Part of the recovered feed stream shall be recycled back to premix make-up with the remainder rejected from the process. The bottoms stream from the first column shall be fed to the second tower where the heavies shall be separated from the solvent. The purified solvent shall be recycled back to the front of the process. The heavies stream off the bottom of the tower shall be rejected from the process.

The drying process consists of two finishing lines which will be operated simultaneously. The rubber shall be separated from the free water then processed through an expeller to reduce the water level. The rubber will then dry in an expander down to an allowable moisture level. Vibrating conveyors shall be used to convey the dried rubber to the baler where it is compressed into a standard bale. The bale will be then film wrapped. The wrapped bales from both finishing lines shall be passed through a series of quality assurance devices: metal detector, moisture detector, and scale. Bales with metal contamination shall be rejected. Bales with high moisture or high/low weight shall also be rejected. Bales within acceptable limit shall be reworked by

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grinding the bales, re-slurrying the ground rubber in water, and returning to the crumb tank for reprocessing.

E.3 OTHER FACILITIES

E.3.1 Modifications in existing ETP system

Modification will be done in the existing ETP(PNC ETP is designed to treat 200 m^3/ hr OWS, the design capacity to treat OWS will be increased from 200 m3/hr to 210 m3/hr)to cater the requirement of PBR plant, as per PFR with modifications in the following sections: Effluent collection, oil and TSS removal section and Filtration. The Effluent from the new PBR unit shall be collected in PBR Effluent Receiving Tank and then pumped to the DAF unit for removal of suspended solids and oil from the effluent. The DAF outlet water is then routed to a Filter Feed Tank. Removal of BOD, COD and other contaminants through chemical oxidation by Ozonation shall be provided in the Filter Feed Tank. The effluent from Filter Feed Tank shall be pumped to the Dual Media and Activated Carbon Filter units for final filtration and treatment. The treated effluent shall be routed to the existing Guard Pond in the PNCP ETP.

ETP flow sheet in simplified form is given below as:

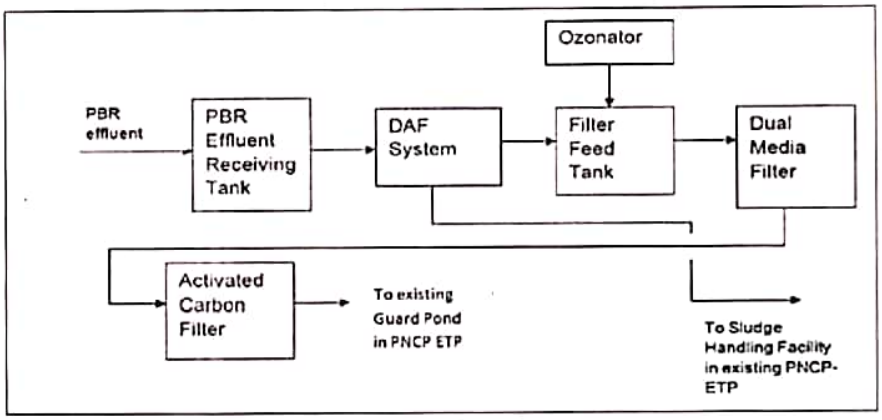

Figure E- 2: Schematic Diagram of Treatment for PBR Effluents

E.3.2 Cooling Tower

A new cooling tower cell of 3000 m^3/hr design capacity is considered in CT-II area, which will share cooling water sump with existing CT-II. With the common sump, spare cell of CT-X can be used as common spare for all 13 CT cells (12 cell of CT-II &one cell of new CT). Cooling water supply and return line to and from PBR, are considered to be aboveground and separate from existing CT-II network. New cooling tower cell make up water and blow down line will be connected with existing lines available for existing CT-II.

Two new cooling tower pumps (1+1) of 3000 m^3/hr capacity each will be installed for PBR unit.

E.3.3 PBR warehouse, dispatch facility, maintenance building, substation and control room

Storage & dispatch facilities of materials have been conceptualized based on the following assumptions.

- Dedicated warehouse for 30 day product storage of PBR

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- Dispatch will be done by truck only
- Scrap rubber yard capacity is considered as 30 days of scrap rubber production.
- A new substation and control room is considered for PBR and ETP.

E.4 ENVIRONMENTAL BASELINE STUDY

Various environmental factors as existing in the study area which are liable to be affected by the activities have been assessed both quantitatively and qualitatively. Baseline environmental data generation of study area was carried out during the period from March to May, 2021.

Table E- 7: Baseline environmental data (March to May, 2021)

Parameters	No. of Sites	Description	Permissible Level
Air Quality	8	PM_{10} - 82.0 µg/m^3 and 41.0µg/m^3 $PM_{2.5}$-48.0 µg/m^3 to 25.0 µg/m^3 SO_2 -17.0 µg/m^3 to 5.0 µg/m^3 NO_2 -29.0 µg/m^3 to 12.0 µg/m^3 O_3 - 46.0 µg/m^3 to 20.0 µg/m^3 NH_3 - 38.0 µg/m^3 to 18.0 µg/m^3 CO-0.58 mg/m^3 to 0.97mg/m^3 C_6H_6- 2.14 µg/m^3 to 0.43 µg/m^3 B(a)P (ng/ m^3) - BDL HC as CH_4 - 2.14 ppm to 0.54 ppm HC as NMHC – 1.44 ppm to 0.16 ppm VOC (µg/m^3) - BDL	100 µg/ m^3 60 µg/ m^3 80 µg/ m^3 80 µg/ m^3 100 µg/ m^3 - 2 mg/ m^3 05 µg/ m^3 01 ng/ m^3 - - -
Ground Water Quality	8	pH - 7.09 to 8.19 Hardness - 100 to 472 mg/l TDS - 171 to 642 mg/l.	6.5-8.5 200-600 mg/l 500-2000 mg/l
Surface Water Quality	8	pH - 6.97 to 7.62 Hardness - 164 to 318 mg/l TDS - 232 to 615 mg/l BOD - 5 to 14 mg/l COD - 18 to 68 mg/l	---
Soil Quality	8	pH - 6.14 to 7.65 Nitrogen - 13.4 to 18.6 mg/100gm Organic Matter- 1.34 % - 1.85%	---
Noise Level	8	Noise Level (Day) : 48.2-70.4Leq dB (A) Noise Level (Night) : 36.5-58.6Leq dB(A)	**For industrial:** 75 (day) – 70 (night) **For commercial:** 65 (day) – 55 (night) **For residential:** 55 (day) –45 (night)

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Parameters	No. of Sites	Description	Permissible Level
			For silence zone: 50 (day) – 40 (night)

E.4.1 Ecological Environment

Ecological data has been collected through site survey as well as secondary sources. Babul (*Acacia nilotica*), Chilbil (*Holopteleaintegrifolia*), Neem (*Azadirachtaindica*), Shisham (*Dalbergiasissoo*), Pipal (*Ficusreligiosa*), Aam (*Mangiferaindica*), Jamun (*Syzygiumcumini*), Imli (*Tamarindusindica*), Banyan (*Ficusindicus)* Nilgai,Golden Jackal, Three-striped Palm Squirrel, Indian HareandWildBoarare reported in the area. Among birds crow, sparrow, pigeon, myna, bulbul, etc. are common in the study area. There are no rare or endangered or threatened plant species in the study area. All the plants found in the area are of common occurrence.

E.4.2 Sensitive Ecosystem

No ecologically sensitive area like biosphere reserve, tiger reserve, and elephant reserve, migratory corridors of wild elephant, wetland, national park and wildlife sanctuary are present within 10km distance of the project site. There is no Reserve and Protected Forests present around the project site of 10 km. Agriculture and industrial workers dominate the occupation structure of the study area.

E.5 RISK ASSESSMENT

The objective of the Rapid Risk Analysis is to identify vulnerable zones, major risk contributing events, understand the nature of risk posed to nearby areas and form a basis for the Emergency Response Disaster Management Plan or ERDMP. In addition, the Risk Analysis study is also necessary to ensure compliance to statutory rules and regulations.

E.6 SOCIO-ECONOMIC CONDITION

Socio-economic status has been studied after visiting the site and through secondary sources. The social requirements identified such as drinking water requirement, Promotion of Educational institutions and Medical facilities to the villagers (especially Senior Citizens and infants or pregnant ladies). Community centers, recreation facilities etc. will also be developed as part of social responsibility.

E.7 ENVIRONMENR MANAGEMENT PLAN

Environment Management Plan (EMP) is required to ensure sustainable development in the study area of the project. Hence, it needs to be an all encompassive plan for which the proposed industry, Government, regulating agencies like Pollution Control Board working in the region and more importantly the concerned population of the study area need to extend their cooperation and contribution. The Management Action Plan aims at controlling pollution at the source level to the possible extent with the available. So far, amount of Rs. 4377.14 Lakhs as Capital Cost and Rs. 93.84 Lakhs amount will be incurred for Environmental Management activities.

E.7.1 Green Belt Development

A comprehensive green belt development plan has been prepared for the Panipat Naphtha Cracker in consultation with eminent ecologist. Utmost priority is given to the tree plantation activity, which is undertaken on a regular basis for catering environment as well as statutory obligations.

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Due to land constraint, green belt for proposed PBR plant will be developed in the Gwalara village (about 25 km on SE from the project site). Plantation will be carried out in 18 acres of land which is 40% of total project area i.e. 45 acre (installation area will be 27 acre).

E.8 CER ACTIVITIES (CORPORATE ENVIRONMENTAL RESPONSIBILITY)

The budget allocation for CER activities will be decided during the public hearing consultation as per OM. 30.09.2020 by MoEF&CC.

However, more focus will be given to the growth of the surrounding areas by increased direct and indirect employment opportunities in the region including ancillary development and supporting infrastructure. Special emphasis on Financial and Social benefits will be given to the local people.

E.9 MITIGATION MEASURES

S. No.	Particulars	Mitigation measures adopted
1.	Air Environment	• Online Air monitoring system for stack emission (for Particulate Matter) will be installed and transmission of online data on Real time basis to HPCB and CPCB will be done. • Physical sampling and analysis of Ambient Air Quality is also carried out through Respirable Dust Sampler (RDS) by an external agency, NABL accredited and approved by MoEF&CC. • One mobile AAQM van, equipped with analyzers for assessing Particulate Matters ($PM_{2.5}$, PM_{10}), Nitrogen Oxides (NO, NO_2,NO_X) Sulphur Oxides (SO_X), Carbon-Mono-Oxide (CO), Ammonia (NH_3), Ozone (O_3) & Benzene (C_6H_6), is also operated, which measures the pollutant loads in the area. • The mobile van is operated round the clock basis and daily report is generated. External storage has been provided to collect historical data. • Leak detection and repair (LDAR) is a statutory requirement to control fugitive emission from various point and area source of pollution. The major fugitive emissions primarily resulting in HC emissions include Storage Tanks, Waste Water separators, blow down systems, catalyst regenerators, pumps, valves, compressors, flanges, joints, cooling towers etc. Fugitive emission monitoring with Leak Detection and Repair Program (LDAR) is in place since 2006 well before enactment of rule by MoEF&CC. • Monitoring of fugitive emissions for Total Hydrocarbon from Block valves, Control valves, pump seals, pressure relief valves, heat exchanger flanges, piping flanges, piping connectors, open ended lines, compressors, sampling points, process drains etc. will be done for the proposed PBR plant to minimize the fugitive emissions and to repair it at the earliest according to the EPA method 21.

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S. No.	Particulars	Mitigation measures adopted
		• Volatile Organic Compound (VOC) concentrations are recorded using handheld VOC analyser, which is commonly used for outdoor/ ambient monitoring. The Tiger handheld VOC gas detector is a revolutionary handheld, portable PID instrument for rapid, accurate detection of volatile organic compounds (VOCs). • Thermal oxidizer will be installed to control the pollution of hydrocarbon. • In case of emergency, flare system will be used for gaseous emission to avoid HC pollution. • The CEMS (Continuous Emission Monitoring Systems) measures directly the pollutant of concern or measures a surrogate pollutant for the pollutant of concern. • Greenbelt development & management- A comprehensive green belt development plan has been prepared for the Panipat Naphtha Cracker in consultation with eminent ecologist. Utmost priority is given to the tree plantation activity, which is undertaken on a regular basis for catering environment as well as statutory obligations. Due to land constraint, green belt for proposed PBR plant will be developed in the Gwalara village (about 25 km on SE from the project site). Plantation will be carried out in 18 acres of land which is 40% of total project area i.e. 45 acre (installation area will be 27 acre).
2.	Water Environment	• Waste Water generated from various process units will be treated in state of art Effluent Treatment Plants (ETP) and treated effluent will be used for make up water in cooling tower. • As a part of sustainable development and step towards reduction in specific water footprint, company has continuously striving for reduction in fresh water consumption from Refinery and Petrochemical operation by adopting 100% recycle, reuse of ETP effluent as RO feed Petrochemical water foot print with this stringent target, • Domestic sewage to be treated in the existing PNC ETP with a separate chain of treatment.
3.	Solid/Hazardous Waste Environment	• An exhaustive SOP for disposal of HW has been prepared and implemented at PNC. And same will be adopted in proposed PBR plant • Catalysts, adsorbents and molecular sieves after fixed service life have to be replaced with fresh batch for efficient process operation. During shutdowns and annual turnarounds, reactors and dryer beds are packed with fresh catalyst with removal of spent catalyst. • ETP Sludge from ETP Filter will be collected and disposed at TSDF site. • Discarded plastic bags sold to authorized recyclers. • Waste paper and packaging material will be recycled. • Used lead Acid batteries will be exchanged for new batteries. • Electrical and electronic waste will be sold to authorized

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S. No.	Particulars	Mitigation measures adopted
		recyclers. • The waste and scrap rubber will be sold to non critical rubber users, like toys rubber rings, valve packings etc.
4.	Soil Environment	• Storage of Oily , Chemical and Biological sludge in lined, impervious RCC pits • Impervious RCC lined , covered spent catalyst storage yard • 'Oil-spill' and 'Chemical-spill' Response Mechanism.

After the completion of Presentation by Project Proponent, Regional Officer, HSPCB asked the general public to raise their Queries/ suggestion which are given as below:

S No	Name	Village	Question	Reply
1	Sh. Vikram Singh	Baholi	He suggested that employment/vehicle on rent from villagers should be in proportion to the land acquired for construction of refinery.	Project proponent replied that preference will be given to the local villagers in employment and for the vehicle to be taken on rent.
2	Sh. Malkeet Singh	Baholi	He suggested that alternative arrangement for drainage system near CISF colony to be provided because Crops are being damaged due to lack of drainage system.	Deputy Commissioner, Panipat replied that written application is to be submitted to him by the farmers of Baholi villages and further action will be taken regarding drainage problem in association with IOCL and Irrigation Department, Panipat.
			He further stated that shadow of green belt implanted by IOCL has reduced the fertility of the land. He stated that crops were damaged and 40% fertility of the soil has decreased due to sudden polluted air blown from IOCL, Panipat in the month of January 2022.	Deputy Commissioner, Panipat replied that survey will be done by the team of agriculture dept. of the nearby area of IOCL, Panipat to find out the real facts of matter. Deputy Commissioner, Panipat replied that Soil samples of the nearby area of IOCL, Panipat will be collected by Agriculture & Farmer Welfare Department, Panipat to find out the fertility of the

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			He said that IOCL had assured that a survey would be done and adequate compensation would be given for damage of crops. No survey was done and compensation was pending.	soil of the area. Deputy Commissioner, Panipat replied that it would be checked if any compensation is pending. Replied by ED , IOCL Panipat: Crops damages during Jan'22 was caused by the yellow rust (crop disease) and refinery has nothing to do with it. It was also certified by the analysis of agricultural dept. that damaging of crops in month of Jan'22 has nothing to do with the refinery. During that time in the month of Jan'22, yellow rust was also seen in crops in some part of Punjab and Haryana also.
3	Sh. Satnam Singh	Dera Baholi	He stated that while we protested in front of the Refinery gate (during discussions with IOCL officials), it was committed by IOCL panipat that crops will be surveyed for analysis but nothing has been done till now.	Deputy Commissioner, Panipat replied that he would look in to it.
4	Sh. Khan Chand	Baholi	He stated that a team consisting of agricultural dept. officials, IOCL officials and Patwari, surveyed the crops and found that 40% crops have been damaged but nothing has been told after that. Nobody came afterwards. He further stated that air and water to be checked.	Deputy Commissioner, Panipat replied that air, water and soil would be tested and reported.
			He asked why compensation was not given for damaged crops.	Deputy Commissioner, Panipat replied that the matter will be enquired and needful will be done by the District Administration.
5	Sh. Avatar Singh	Baholi	He stated that IOCL does not pay heed to problems of villagers.	Deputy Commissioner, Panipat directed IOCL to appoint a nodal Officer to pay attention and resolve the problems of nearby villagers.
			He suggested that IOCL should take responsibility for damage of crops. He said that damage crop was not tested.	Deputy Commissioner, Panipat replied that testing of water, soil and air would be done.
			He also suggested that compensation to be provided to the farmers for damaged crops.	Deputy Commissioner, Panipat replied that the matter will be enquired

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				and needful will be done by the District Administration.

Thereafter, Regional Office, HSPCB, Panipat again appealed to the general public present during the time of hearing to ask any more questions/suggestions w.r.t. the said project. No more question/suggestion asked by the public present during hearing and thereafter public hearing was ended with permission of the chair.

Pardeep Singh,
AEE, HSPCB

Kamaljit Singh,
Regional Officer, HSPCB

Deputy Commissioner, Panipat

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सार्वजनिक सुनवाई

60 KTA पॉलीब्यूटाडाइन रबड़ (पीबीआर) उत्पादन

क्रम	नाम	पिता का नाम	पता	हस्ताक्षर
(1)	विक्रम सिंह सरपंच	सरपंच	न्यू बोहली	[illegible]
(2)	रंजीत सिंह	सुरेन्द्र सिंह	न्यू बोहली	[illegible]
(3)	Madan lal	Chhinda Ram	old Baholi Dera	[illegible]
(4)	Sukhwinder	Surjit Singh	New Baholi	[illegible]
(5)	Laadi Lakhwinder	Karnail Singh	Old Baholi	[illegible]
(6)	Surender kumar	Janeshwar	Nohra	[illegible]
(7)	सतनाम सिंह	तारा सिंह	Baholi Dera	[illegible]
(8)	भजन सिंह	बिर सिंह	Baholi Dera	[illegible]
(9)	सतनाम सिंह	जरनैल सिंह	Kutana	[illegible]
(10)	मालिक सिंह	जकरला सिंह	Bahola Dera	[illegible]
(11)	जगवीर शर्मा	रामधन शर्मा	लाल जटान	[illegible]
(12)	आशीष भार्गव	महावीर भार्गव	लाल जटान	[illegible]
(13).	पवन कुमार	पाल सिंह	बाहोली	[illegible]
(14)	सतपाल	सज्जनचंद	सिठाना	[illegible]
(15)	MALKIAT S.	Sh. Nishabar Singh	Bohli	Malkeetam
16.	Satnam Sing	Sh. Nazar S.	Bohli	Satnamsg
17.	Kuldeep Sin	Sh. Anoop S.	"	कुलदीप
(18)	VIKRAM SWAMI	Sarabjeet Singh	old bahoil	[illegible]
(19)	Jaskaran Singh	Satnam Sing	"	Jaskaran
(20)	Jagkaran Singh	Hemant Singh	"	[illegible]
(21)	Sureash Kumar	Jile Singh	Bal Jattan	[illegible]
(22)	Sushil	Ramkishan	Dhargarh	[illegible]
(23)	Jai Bagwan	Lakhi Chand	Dharmgarh	[illegible]
(24)	Vinod	Dahkha	Salwan	[illegible]
(25)	Rajbir	Rambhag	Dharmgarh	[illegible]
(26)	Kishori	Bhagwan das		[illegible]
(27)	Rajkumar	Banwari lal	Dharmgarh	[illegible]
(28)	Krishan	Ramchandar	Ahar	[illegible]
(29)	Raginder	Jagdish	Sodhapur	[illegible]
(30)	Ravi	Rohtash	Baholi	[illegible]
(31)	Naresh Kumar	Punna Singh	Baholi	[illegible]

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[illegible] (कोविड ...) [illegible]

क्र०	नाम	पिता का नाम	पता	हस्ताक्षर
(32)	श्यामलाल	वीर सिंह	बाल	
33)	सुरेन्द्र सिंह	[illegible] सिंह	बोहली	[illegible]
34)	प्रताप सिंह	हरिचंद	धर्मगढ़	[signature]
(35)	अर्जुन	सुरेन्द्र सिंह	बल्ला	[signature]
(36)	सुभाष	सेवा सिंह	बाल	[signature]
(37)	तेजवीर सिंह	बलवान सिंह	बल्ला	[signature]
(38)	कप्तान सिंह	नरेन्द्र	धर्मगढ़	[signature]
(39)	विकास	सुखदेव	पलाना	Vikas Kumar
(40)	बारी लाल	रामसजीवन	धर्मगढ़	[signature]
(41)	रामप्रकाश	सुरतदीन	बाल	[signature]
(42)	साहब सिंह	सुखदेव सिंह	बोहली डेरा	[signature]
(43)	नवीन	हवा सिंह	[illegible]	[signature]
(44)	अमृत	महा सिंह	मनाक	[signature]
(45)	अमरजीत	बहादुर	बराना	Amarjeet
(46)	संजय	बहादुर	बराना	Sanjay
(47)	नरेश	बलवंत		naresh
(48)	दलबीर सिंह	सिंगारा सिंह	बोहली	[signature]
(49)	कृष्णचंद	दईचंद	पलाना	[signature]
(50)	मोहनलाल	कृष्णचंद	बाल जाटान	[signature]
(51)	राहताश	मांगेराम	पाढा	[signature]
(52)	रमेश कुमार	रामेश्वरदास	मनाक	Ramesh Kr
(53)	सुनील	रमेश	रेर	[signature]
(54)	जसमेर	बलवान	पाढा	[signature]
(55)	दिनेश कुमार	विश्वम्भर प्रसाद	बाल जाटन	[signature]
(56)	सतीश	रणबीर	पलाना	[signature]
(57)	बीरा	चन्द्रभान	पलाना	[signature]
(58)	ज्ञानचंद	[illegible]	बोहली	[signature]
(59)	रमेश	[illegible] सिंह	बोहली	
(60)	महर सिंह	[illegible]राम	बोहली	
(61)	महावीर चंद	[illegible]	बोहली	[thumb impression]

क्र०	नाम	पिता का नाम	पता	हस्ताक्षर
(61)	नारायण सिंह	तल्लीराम	रेर कला	[signature]
(62)	संदीप राणा	नरेश	पबाना	[signature]
(63)	सतपाल	फुलाराम	कुताना	
(64)	प्रमोद कुमार	महेन्द्र	कुताना	प्रमोद
(65)	मेहर सिंह	जमदीप सिंह	मुनक	मेहर सिंह
(66)	प्रेम सिंह	महावीर सिंह	मुनक	Prem Singh
(67)	सतीश	धर्मबीर	पबाना	सतीश
(68)	कुलदीप	अशोक	बल्ला	कुलदीप
(69)	कर्मबीर	जोगिन्द्र	कम्बड़ी	करमबीर
(70)	रामफल	किशन सिंह	काबड़ी	रामफल
(71)	सतपाल	रामसिंह	काबड़ी	सतपाल
(72)	मोहन तिवारी	जगदीश	पबाना	
(73)	महेन्द्र सिंह	रामकिशन	बल्ला	महेन्द्र सिंह
(74)	नीरज कुमार	सुरेन्द्र ठाकुर	बिधाए	नीरज कुमार
(75)	हरकेश	शिवचरण	रेर कलां	हरकेश
(76)	Sureshkumar	Dharam Singh	Karnal	[signature]
77	Rajender	S/o Rakeemsingh	बड़ौली	[signature]
78	Ramphal	Ram Rakha	बालजाटान	[signature]
(79)	कालूराम	काशीराम	जुण्डला	
(80)	राजेश कुमार	लीलूराम	राजबन्द्रा	Rajesh
(81)	अरुण	बलदेव	सुल्तान कोटली	अरुण
(82)	रामपाल	बाल राम	उकलाना	रामपाल
(83)	शिशपाल	राधेश्याम	बहोली डेरा	शिशपाल
(84)	निरंजन	विनोद शर्मा	बहोली डेरा	निरंजन
(85)	सुनील कुमार	पुलीश	बहोली डेरा	सुनील कुमार
(86)	रोहित	रणबीर	पबाना	रोहित
(87)	गौरव	बलविन्द्र	पबाना	गौरव
(88)	हरदीप सिंह	तरसेम सिंह	बडोली	Hardeep Singh
89	Sultan Rani	जसवन्त सिंह	बलजाटान	Sultan Rani

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2125846/2022/REGION PANIPAT

क्र०	नाम	पिता का नाम	पता	हस्ताक्षर
(90)	पाल्सराम	गंगाराम	पबाना	
(91)	जोगिन्द्र	बलिराम	पबाना	जोगिन्द्र
(92)	छोटू कुमार	कूल सिंह	पबाना	chhotu Kumar
(93)	Anil Kumar	~~Pabana~~ Panipat	Pabana	Anil Kumar
(94)	गुलशन कुमार	ठाकुर मेन्डल	बाल	गुलशन कुमार
(95)				

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Attendence Sheet of officers regarding Public Hearing of Poly-Butadine Rubber Project in Panipat Naphtha Cracker held on 25/05/2022 at 11:00 AM

Sr.No.	Name of officer	Designation	Department.	Signature
1	SUSHIL SARWAN/IAS	D.M	Revenue	
2.	Pardeep Singh,	A.E.E	HSPCB Panipat	
3.	Jeelender Kumar	BDEPO Israna.	Dev. Panchayat	
4.	Kamaljit Singh	EE	HSPCB, Panipat	
5.	G. C. SIKDER	EDERH	Panipat Refinery & Petrochemical Complex.	
6.	Kshitij Kapoor	GM DIC	Industry	
7	Rajbir Singh	DDPO	D-eV & Panchayat	

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